APPROPRIATE ASSESSMENT STUDY

PROJECT:

NEPTUN DEEP

PROJECT TITLEHOLDERS:

OMV Petrom S.A

Romgaz Black Sea Limited

DOCUMENT AUTHORIZATION AND DISTRIBUTION		
Document reference	BMF – ND –AA– 00 – 002	
Description:	” Neptun Deep” **APPROPRIATE ASSESSMENT STUDY**	
Prepared for:	OMV PETROM SA și ROMGAZ BLACK SEA LIMITED NASSAU (BAHAMAS) SRL, Sucursala București	
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APPROPRIATE ASSESSMENT STUDY

NEPTUN DEEP PROJECT

Revision history

Revision no	Date	Description	Author	Checked	Approved
00	19.07.2023	Document drafting	Blumenfield® Working group	Cristiana Crapcea	Gabriela Stanciu
01	01.08.2023	Internal issue	Blumenfield® Working group	Cristiana Crapcea	Gabriela Stanciu
02	16.10.2023	Issued for authorities	Blumenfield® Working group	Cristiana Crapcea	Gabriela Stanciu

DOCUMENT REFERENCE: BMF – ND – EA – 00 -02

Company	Project	Study type	Chapter	Revision
BMF	**ND**	**AA**	**-**	**02**

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SECTION I. DESCRIPTION AND ANALYSIS OF THE PROJECT SUBMITTED FOR APPROVAL

A.1 PRESENTATION OF THE PROJECT

A.1.1. General Information about the Project

A.1.1.1. Project title

Neptun Deep Project, including:

- **Onshore facilities (on land)** : Pipeline and Communications Cable Installation, Beach, Cliff, Roads, and Railway Undercrossings; Realization of Temporary Railway Level Crossing; Construction of Regulation and Measurement Station - NGMS, Control Centre - CCR, Fencing, Lighting, Parking, Green Spaces, Platforms and Internal Roads; Site Organization, Insurance and Connection to Utilities.
- **Offshore facilities (at sea)** : Domino and Pelican South infrastructure (Drilling Centres, Wells, Manifolds, Umbilical Systems, Risers, Flowlines, Auxiliary Equipment); Production Platform located in shallow waters; Natural Gas Production Pipeline; Fibre optic cable; Undercrossing the Shore; Utilities.

The Neptun Deep Project represents a proposal for the development of natural gas resources in the deep-sea area of the Black Sea within the exploration-exploitation-development block XIX Neptun.

OMV Petrom SA serves as the operator and holder of 50% of the rights acquired and obligations assumed through the Concession Agreement for the exploration, development, and exploitation of XIX Neptun Deep, alongside Romgaz Black Sea Limited Nassau (Bahamas) Branch Bucharest.

A.1.1.2. Titleholder

The titleholders of the project are: OMV Petrom SA and Romgaz Black Sea LTD.

- OMV Petrom SA, Romanian legal entity, with headquarters in Bucharest, Strada Coralilor no. 22, Sector 1 (Petrom City), postal code 013329, registered at the Trade Registry Office under number J40/ 8302/ 1997, unique registration code RO1590082, legal representative Martin Simon Urquhart, as Neptun Deep Project Director.
- RomGaz Black Sea Limited Nassau (Bahamas) Sucursala București, Romanian legal entity, with headquarters in Calea Floreasca no. 169A Corp B, floor 8, registered at the Bucharest Trade Register under no. J40/ 17387/ 2008, tax code RO 2459376, legal representative Diana Lupu as General Director.

A.1.1.3. Purpose

The aim of the current holders of the concession agreement is to sustainably develop the gas resources in the Neptun Deep perimeter, with an emphasis on environmental protection during the development and operation of the installations, an objective aligned with Romania's Energy Strategy 2019-2030, with perspectives until 2050 The identified gas is a very clean gas with high methane gas content and low carbon dioxide (CO_2), Sulphur and other hydrocarbons (ethane, propane, butane, etc.).

A.1.1.4. SCOPE

The proposed objective of the Neptun Deep project is to develop natural gas reserves from the Pelican South and Domino fields and to deliver the gas treated on the shallow water production platform to the Romanian NTS operated by Transgaz.

The Pelican South deposit is located in the area of the continental shelf at water depths of approximately 130 meters. The larger deposit, Domino, is located outside the continental shelf at depths of approximately 1000 meters.

The Domino field is proposed to be developed through 2 subsea drilling Centres – Domino Drilling Centre 1 (referred to as DODC1) and Domino Drilling Centre 2 (DODC2), and the Pelican South field is proposed to be developed through a single drilling Centre drilling – South Pelican Drilling Centre 1 (referred to as PSDC1). Each drill Centre will contain a group of wells drilled near a production manifold.

A.1.2. Geographical and administrative location of the project

Location of the onshore and offshore location of the project

The project proposes the execution of the Neptun Deep production facilities both at sea and on land as follows:

- **Onshore facilities (on land)** : Pipeline and Communications Cable Installation, Beach, Cliff, Roads, and Railway Undercrossings; Realization of Temporary Railway Level Crossing; Construction of Regulation and Measurement Station - NGMS, Control Centre - CCR, Fencing, Lighting, Parking, Green Spaces, Platforms and Internal Roads; Site Organization, Insurance and Connection to Utilities (Appendix G. Coordinates).
- **Offshore facilities (at sea)** : Domino and Pelican South infrastructure (Drilling Centres, Wells, Manifolds, Umbilical Systems, Risers, Flowlines, Auxiliary Equipment); Production Platform located in shallow waters; Natural Gas Production Pipeline; Fibre optic cable; Undercrossing the Shore; Utilities (Appendix G. Coordinates).

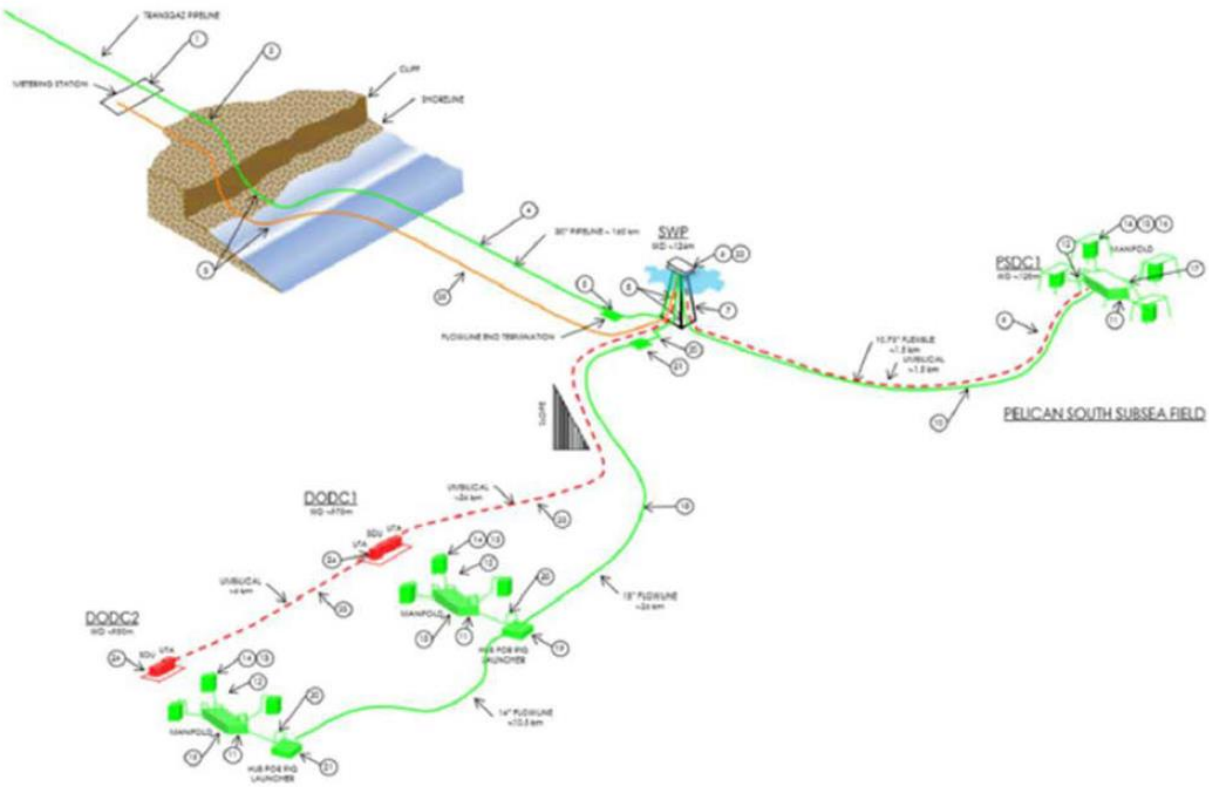

Figure A.1 General layoutof the Neptun Deep project

Table A.1 Coordinates of the entry and exit points of the microtunnel

Location	Stereo 70 coordinates	
	North (m)	East (m)
Land entry point	281495.40	793230.70
Exit point from the sea	281233.00	794081.70

The site plan with the route of the production pipeline and Fibre optic cable is presented in *Appendix A Site - General Layout Map.*

A.1.2.1. Onshore location

The proposed site for the construction/ installation of the onshore facilities of the Neptun Deep Project is located in the southern area of the administrative territory of Tuzla commune, Constanța County, close to the northern border of the administrative territory of Costinești commune.

OMV Petrom SA owns three plots of land located in the inner and outer areas of Tuzla commune:

- Intra-urban land S1 with a total area of 85,000 m^2, registered under cadastral number 109216;
- Extra-urban land S3 with a total area of 70,880 m^2, registered under cadastral number 109659;
- Extra-urban land S4 with a total area of 67,304 m^2, registered under cadastral numbers 109729 and 100819.

The vicinity of the onshore project site is represented by:

- North: Exploitation Road DE 229/ 1, private property (plot A 259/ 89, cadastral number 108838), private property (plot A 259/ 91);
- East: Exploitation Road DE 269, cliff on land, beach and Black Sea (at about 60 m);
- South: private property (plot A 289/ 3b), plant protection curtain (cadastral number 109189), private property (plot A 259/ 105, cadastral number 100794 and plot A 259/ 106, cadastral number 107526);
- West: private property (plot A 289/ 1a, lot 2/ 1, cadastral number 109365 and lot 2/ 2, cadastral number 109364).

This documentation provides below a table containing the coordinates in the STEREO 70 system (Datum: Dealul Piscului 1970) of the lands owned by OMV Petrom SA that will be impacted by the construction/installation works of the onshore facilities and the under-crossing of the shore by microtunnel, as part of the project.

Table A.2 The inventory of coordinates in the STEREO 70 system of the lands affected by the realization of the project in the onshore area

Description	Cadastral Number	Total Area (m^2)	Coordinates in Stereo 70		
			Point no	North(X) m	East(Y) m
S1 – the proposed location for NGMS, CCR and related facilities	109216	85,000	56	281679.30	792252.52
			57	281610.29	792478.52
			5	281440.02	792476.37
			6	281452.29	792426.28
			7	281282.95	792384.74
			8	281358.35	792149.48
			9	281657.24	792245.43
S3 – proposed location of a section of gas production pipeline and Fibre optic cable (onshore section) and station shut-off valve housing	109659	70,880	1	281628.59	792510.22
			2	281625.47	792881.61
			3	281576.74	792881.12
			4	281522.81	792880.57
			5	281511.08	792880.45
			6	281491.87	792880.26
			7	281482.67	792880.16
			8	281473.46	792880.07
			9	281464.25	792879.98
			10	281439.75	792879.73
			11	281434.02	792879.67

Description	Cadastral Number	Total Area (m^2)	Coordinates in Stereo 70		
			Point no	North(X) m	East(Y) m
			12	281437.12	792510.41
			13	281442.86	792510.41
			14	281467.35	792510.39
			15	281476.56	792510.41
			16	281485.77	792510.41
			17	281494.98	792510.32
			18	281514.19	792510.50
			19	281514.19	792510.41
			20	281525.91	792510.52
			21	281579.86	792510.75
			22	281579.86	792510.37
S4 – proposed location of a gas production pipeline section and Fibre optic cable (onshore section) and microtunnel entry point	100819 109729	67,304	2	281520.10	793350.93
			3	281514.69	793352.43
			4	281508.32	793354.20
			5	281503.30	793355.60
			6	281495.57	793357.74
			7	281488.80	793359.62
			8	281484.41	793360.84
			9	281479.41	793362.23
			10	281470.07	793364.83
			11	281460.78	793367.41
			12	281460.74	793367.42
			13	281457.28	793368.38
			14	281435.88	793374.33
			15	281433.15	793375.09
			16	281430.17	793375.92
			17	281434.30	792883.68
			18	281440.00	792883.74
			19	281464.84	792883.99
			20	281474.11	792884.08
			21	281483.43	792884.18
			22	281492.79	792884.27

Description	Cadastral Number	Total Area (m^2)	Coordinates in Stereo 70		
			Point no	North(X) m	East(Y) m
			2. 3	281499.55	792884.34
			24	281512.27	792884.47
			1	281524.02	792884.59
			28	281577.03	792885.14
			27	281573.25	793335.25
			26	281565.69	793337.60
			25	281539.48	793345.55

The situation plan with the location of the lands in the area is presented in *Appendix A Site - General Layout Map.*

a) Location of the NGMS and CCR locations and the shut-off valve Station

The Regulation and Measurement Station (NGMS) and the Control Centre/ Centralized Control Room (CCR) and other related facilities included in the NGMS and CCR sites will be built/ installed on the S1 land.

NGMS will be an automatic, unmanned natural gas metering and custody transfer facility to NTS operated by Transgaz. The total area occupied by the NGMS site will be approximately 23,183 m^2.

The CCR site will be fenced with an estimated area of approximately 3,459 m^2.

A shut-off valve station will be located east of the railroad grade crossing, located in a buried reinforced concrete shaft with a perimeter guardrail. The coordinates in the Stereo 70 system (Date: Dealul Piscului 1970) of the fenced location of the NGMS, CCR, and shut-off valve are presented in the table below:

Table A.3 The inventory of coordinates in the STEREO 70 system of the NGMS and CCR perimeter

Description	Coordinates in Stereo 70		
	Point no	North(X) m	East(Y) m
Regulation and measurement station (NGMS)	1	281533.00	792257.49
	2	281435.89	792257.49
	3	281415.00	792243.38
	4	281343.00	792243.38
	5	281343.00	792373.38
	6	281533.00	792373.38
Centralized Control Room (CRC)	1	281633.83	792324.46
	2	281583.98	792310.68
	3	281566.01	792375.72
	4	281615.21	792389.31
The perimeter of the station Tap closing	1	281513.41	792976.46
	2	281493.13	792976.46
	3	281493.13	792996.62
	4	281513.41	792996.62

The situation plan with the location of NGMS and CCR is presented in Annex A *Appendix A Site - General Layout Map.*

b) Location of the onshore route of the production pipeline and Fibre optic cable

The total length of the production pipeline and Fibre optic cable in the project is 160 km, with approximately 1.772 km being located onshore.

The production pipeline and the onshore Fibre optic cable will be installed in parallel, side by side, within the onshore microtunnel and trench.

To safeguard the configuration of the shore and the protected natural area ROSAC0273 Zona marină de la Capul Tuzla, a decision was made to employ a cemented microtunnel spanning 890 meters. This approach will allow the coastal area to remain undisturbed and protected during the project's implementation

The microtunnel will have its entry point, on land, located on land plot S4 and will undercut the Exploitation Road DE 269 (cadastral number 109115), the cliff (cadastral number 110670) and the beach (cadastral number 106571), located adjacent to the eastern side of the site on dry of the project. The exit point of the microtunnel will be located in the coastal waters of the Black Sea.

Between the microtunnel entry point and the pigging station at the NGMS entrance, both production pipeline and Fibre optic cable will be installed underground, covering a distance of 882 m. The onshore section will be primarily placed underground on the land plots S4, and S3 and will undercut the communal road DC 4, the exploitation road DE 259/ 4 and the Constanța-Mangalia railway line.

The table below illustrates the Stereo 70 coordinates (Datum: Dealul Piscului 1970) of the route of the production pipeline, the onshore Fibre optic cable, and the microtunnel.

Table A.4 STEREO 70 system coordinate inventory of onshore production pipeline, Fibre optic and microtunnel route.

Description	Coordinates in Stereo 70		
	Item no.	North(m)	East(m)
Route of production pipeline and onshore Fibre optic cable (section between undercrossing and NGMS) KP 156.965÷157.847	1	281507.90	792349.10
	2	281507.70	792374.70
	3	281506.60	792519.60
	4	281506.20	792566.60
	5	281503.70	792880.40
	6	281503.00	792973.70
	7	281502.30	793067.10
	8	281501.70	793136.40
	9	281501.10	793212.30
	10	281500.00	793215.70
Microtunnel KP 156.075÷156.965	1	281493.00	793234.30
	2	281495.30	793235.00
	3	281234.20	794081.40
	4	281231.90	794080.70

c) Location of construction sites

The temporary level crossing will be located immediately east of the NGMS and CCR site. The coordinates in Stereo 70 system of the area affected by the temporary level crossing are shown in Table A.5 below:

Table A.5 Coordinates for temporary level crossing with the railway

No.	Stereo 70 coordinates	
	North (m)	East (m)
1	281611.30	792478.50
2	281589.60	792478.30
3	281576.70	792525.60
4	281598.50	792525.60

The construction site for NGMS and CCR will be located on the S1 land plot (cadastral number 109216) owned by OMV Petrom. The coordinates in the Stereo 70 system of the surface affected by the construction site are presented in Table A.6 below:

Table A.6 NGMS and CCR construction site coordinates

No.	Stereo 70 coordinates	
	North (m)	East (m)
1	281621.00	792384.60
2	281594.80	792476.00
3	281515.60	792476.00
4	281516.30	792364.00
5	281566.70	792364.00
6	281566.70	792374.20
7	281592.00	792381.10
8	281593.20	792377.10

The facilities and temporary works (microtunnel construction site and access roads) required for the construction of the microtunnel and the installation of the gas production pipeline, and the Fibre optic cable in the tunnel will be carried out mainly on the land plots S3 (cadastral number 109659) and S4 (number cadastral 109792 and 100819) owned by OMV Petrom. The exploitation road DE 259/ 4 will be partially affected by the temporary works.

The coordinates in the Stereo 70 system of the fenced site of the microtunnel construction site are shown in Table A.7 below:

Table A.7 Construction site coordinates for the microtunnel

No.	Stereo 70 coordinates	
	North (m)	East (m)
1	281522.90	793181.60
2	281522.40	793246.70

No.	Stereo 70 coordinates	
	North (m)	East (m)
3	281432.50	793245.90
4	281433.10	793180.70

The coordinates in the Stereo 70 system of the temporary access roads to the microtunnel construction site and the pipe assembly and storage areas are shown in Table A.8 below:

Table A.8 Coordinates of temporary access roads

No.	Stereo 70 coordinates	
	North (m)	East (m)
1	281590.50	792525.80
2	281583.50	792525.80
3	281580.90	792535.60
4	281580.60	792536.60
5	281580.50	792537.60
6	281579.50	792545.90
7	281574.50	792586.40
8	281573.50	792590.30
9	281570.90	792594.50
10	281568.10	792597.10
11	281565.10	792598.80
12	281559.70	792600.20
13	281556.60	792600.30
14	281462.90	792600.40
15	281460.70	792600.50
16	281458.40	792600.80
17	281455.20	792601.60
18	281451.70	792603.10
19	281448.40	792605.10
20	281446.00	792607.30
21	281443.30	792610.50
22	281441.70	792613.00
2. 3	281440.10	792616.90
24	281439.30	792620.90
25	281439.10	792623.30
26	281439.10	792624.70
27	281439.10	792628.10
28	281439.10	793161.60

No.	Stereo 70 coordinates	
	North (m)	East (m)
29	281439.10	793164.90
30	281439.20	793168.10
31	281439.90	793172.30
32	281440.80	793175.70
33	281442.10	793179.00
34	281442.90	793180.80
35	281451.10	793180.90
36	281450.30	793179.60
37	281449.60	793178.40
38	281448.60	793176.60
39	281448.00	793175.00
40	281447.50	793173.50
41	281446.90	793171.60
42	281446.50	793169.30
43	281446.20	793167.60
44	281446.10	793166.00
45	281446.10	793162.10
46	281446.10	792624.40
47	281446.40	792620.60
48	281447.40	792617.30
49	281450.20	792612.90
50	281452.40	792610.90
51	281456.70	792608.50
52	281460.70	792607.50
53	281462.80	792607.40
54	281466.10	792607.40
55	281556.00	792607.40
56	281559.20	792607.40

No.	Stereo 70 coordinates	
	North (m)	East (m)
57	281561.00	792607.20
58	281565.00	792606.40
59	281567.90	792605.30
60	281569.80	792604.40
61	281570.90	792603.70
62	281571.30	792603.60
63	281571.70	792603.70
64	281572.00	792603.90
65	281572.30	792604.20
66	281572.30	792604.60
67	281572.20	792605.40
68	281509.50	793122.40
69	281506.30	793148.80
70	281504.50	793163.50
71	281504.00	793167.90
72	281503.50	793170.60
73	281502.90	793172.90

No.	Stereo 70 coordinates	
	North (m)	East (m)
74	281501.90	793175.60
75	281501.10	793177.40
76	281500.00	793179.40
77	281498.80	793181.40
78	281506.90	793181.50
79	281507.50	793180.30
80	281508.20	793178.80
81	281508.70	793177.50
82	281509.10	793176.40
83	281509.60	793175.00
84	281510.00	793173.50
85	281510.50	793171.20
86	281510.70	793169.90
87	281510.90	793169.00
88	281511.20	793166.70
89	281587.60	792536.60
90	281590.50	792525.80

The situation plan with the location of the construction site, the railway crossing area, the pipeline assembly area, the pipeline storage area, and the internal access roads is presented in *Annex B Onshore and offshore situation plan.*

A.1.2.2. Location of the site at sea (offshore)

The development area of the Neptun Deep perimeter is located in the Neptun perimeter in the western Black Sea, in the exclusive economic zone (EEZ) of Romania.

The general location of the offshore components of the Neptun Deep project is shown in *Appendix* A.

a) <u>Marine production platform Neptun Alpha</u>

The marine production platform, hereinafter referred to as the Neptun Alpha Platform, to which the Domino and Pelican South infrastructures will be connected, is located on the continental platform of the Black Sea, approximately 160 km East of Tuzla, Constanța County.

The coordinates in the Stereo 70 system of the location of the production platform are shown in Table A.9 below:

Table A.9 Coordinates of the Neptun Alpha Platform

Location	Stereo 70 coordinates	
	North (m)	East (m)
Marine production platform	298534.29	947751.25

b) Drilling Centres

In the Neptun perimeter, for the two fields Domino and Pelican South, there are three proposed drilling centres. One drilling centre will be located in Pelican South, and the other two drilling centres will be situated in Domino.

The South Pelican Drilling Centre (PSDC1) is located on the Black Sea continental shelf, approximately 160 km est of Tuzla and approximately 2 km northeast of the production platform.

The Domino drilling Centres (DODC1 and DODC2) are located on the continental slope of the Black Sea, approximately 175 km est of Tuzla and approximately 24 km southeast of the production platform.

A selection of coordinates in the Stereo 70 system for drilling Centres is presented in table no. 1.10, below:

Table A.10 Drilling Centre coordinates

Location	Stereo 70 coordinates	
	North (m)	East (m)
PSDC1	299471.11	948682.68
DODC1	280058.98	964335.02
DODC2	279072.99	959245.90

Plans with drilling Centres are presented in *Appendix* B.

c) Gas production wells

The project provides for the drilling of 10 underwater gas production wells, respectively:

- 6 wells will be drilled to a vertical depth of 3,000 m from the DODC1 and DODC2 drill Centres (3 wells/ drill centre) in the Domino field, at a water depth of 800 – 1,100 m;
- 4 wells will be drilled to a vertical depth of 3,400 m from a single drilling Centre (PSDC1) in the South Pelican field, at a water depth of 120 - 130 m;

Table A.11 Domino and Pelican South production well coordinates

The drilling center	Probe ID	Stereo 70 coordinates	
		North (m)	East (m)
DODC1	VXT581006	280086.50	964329.44
DODC1	VXT581007	280032.87	964341.32
DODC1	VXT581008	280050.92	964309.35

The drilling center	Probe ID	Stereo 70 coordinates	
		North (m)	East (m)
DODC2	VXT581010	279046.42	959252.03
DODC2	VXT581011	279100.05	959240.15
DODC2	VXT581012	279082.00	959272.12
PSDC1	VXT581001	299445.21	948674.49
PSDC1	VXT581002	299460.49	948708.22
PSDC1	VXT581003	299482.62	948657.58
PSDC1	VXT581004	299497.90	948691.31

d) Pelican South and Domino flowlines

The flowlines have the role of ensuring the active management of hydrates with the help of electric heating.

The route of the flowlines was established through a route study conducted by a specialized contractor.

The route study included evaluation of route investigation data (e.g. geophysical investigations), feed/ intake pipeline data, gas field and offshore production platform details, and manifold connection details.

The route of the feed/transfer pipeline from the Neptun Alpha Platform to the DODC1 drilling centre, as well as from the DODC1 drilling centre to the DODC2 drilling centre, is presented in Annex B.

The route of the Pelican South flowline is presented in *Annex B.*

A selection of Domino direct heating flowline route coordinates is shown in Table A.12 below:

Table A.12 Selection of coordinates from the route of the Domino flowline

No.	Stereo 70 coordinates	
	North (m)	East (m)
1	279025.23	959218.53
2	276777.67	963127.25
3	279825.01	964862.25
4	281781.66	961391.27
5	282876.55	960055.45
6	285033.30	957585.58
7	298468.42	947769.66

A selection of coordinates along the route of the Pelican South flexible flowline is shown in Table A.13, below.

Table A.13 Selection of coordinates from the route of the Pelican South flowline

No.	Stereo 70 coordinates	
	North (m)	East (m)
1	298529.48	947778.10
2	298571.46	948025.82
3	299330.15	948715.31
4	299467.24	948686.46

e) Pelican South and Domino umbilical control systems

The Domino and Pelican South subsea systems will be monitored and controlled using electrical and hydraulic control systems connected to the Neptun Alpha Platform via dedicated umbilical control connections. The Domino subsea system will include two electrical and hydraulic control umbilical segments: one between the offshore production platform and the DODC1 drilling Centre and one between the DODC1 drilling Centre and the DODC2 drilling centre.

The Pelican South subsea system will include an electrical and hydraulic control umbilical system between the Neptun Alpha Platform and the PSDC1 drilling centre.

A selection of coordinates in the Stereo 70 projection system (Date: Dealul Piscului 1970), along the tracks of the Domino and Pelican South umbilical systems is shown in Tables 1.14 and 1.15, below:

Table A.14 Selection of coordinates from the route of the Domino umbilical systems

No.	Stereo 70 coordinates	
	North (m)	East (m)
1	279121.45	959273.77
2	278877.80	963092.03
3	280010.52	964307.35
4	286370.59	955974.01
5	279121.45	959273.77
6	278877.80	963092.03
7	280010.52	964307.35

Table A.15 Selection of coordinates from the route of the South Pelican umbilical system

No.	Stereo 70 coordinates	
	North (m)	East (m)
1	298546.51	947776.63
2	298616.90	947858.51
3	298600.03	948011.18
4	299466.47	948684.77

f) Location of the offshore route of the production pipeline and Fibre optic cable

The route of the gas production pipeline and fibre optic cable has a total length of 160 km out of which approximately 1,772 km is installed in the onshore section of the project.

The offshore section of the 762 mm (30 in) production pipeline and Fibre optic cable will occupy an underwater area of approximately 638,080 m^2.

The Fibre optic cable will be installed parallel to the gas production pipeline to near shore.

A selection of coordinates of the offshore route of the production pipeline, in the Stereo 70 system (Date: Dealul Piscului 1970) and WGS84/ TM30NE is presented in Table A.16, below:

Table A.16 Selection of coordinates of the offshore route of the production pipeline

No.	Stereo 70 coordinates	
	North (m)	East (m)
1	281233.00	794081.70
2	280514.69	796410.36
3	291750.12	871995.75
4	292997.32	884786.55
5	293912.28	888135.82
6	294566.70	899038.30
7	299913.63	916468.31
8	298791.36	933715.27
9	299142.90	936628.57
10	298950.56	940460.87
11	299299.92	944046.66
12	298595.21	947777.93

A selection of coordinates of the sea route of the optical Fibre cable, in the Stereo 70 system and is presented in Table A.17, below:

Table A.17 Selection of coordinates from the sea route of the Fibre optic cable

No.	Stereo 70 coordinates	
	North (m)	East (m)
1	281233.00	794081.70
2	280514.69	796410.36
3	291750.12	871995.75
4	292997.32	884786.55
5	293912.28	888135.82
6	294566.70	899038.30
7	299913.63	916468.31

No.	Stereo 70 coordinates	
	North (m)	East (m)
8	298791.36	933715.27
9	299142.90	936628.57
10	298950.56	940460.87
11	299299.92	944046.66

A.1.3. Rationale for the project's necessity

Presentation of the need for project implementation:

The owners of the Neptun Deep project have carried out initial activities for the identification and exploration of hydrocarbon deposits in the Romanian sector of the Black Sea in order to analyse their characteristics and to determine the existence of a feasible production potential from these resources. In 2012, the exploration campaign discovered natural gas reserves in the deep waters of the XIX Neptun perimeter located in the Romanian sector of the Black Sea.

The proposed objective of the Neptun Deep project is to develop natural gas reserves from the Pelican South and Domino fields and to deliver the gas treated on the production platform to the Romanian NTS operated by Transgaz.

The aim of the current holders of the concession agreement is to sustainably develop the gas resources in the Neptun Deep perimeter, with an emphasis on environmental protection during the development and operation of the installations, an objective aligned with Romania's Energy Strategy 2019-2030, with perspectives until 2050 The identified gas is a very clean gas with a high content of methane gas and a low content of carbon dioxide (CO_2), Sulphur and other hydrocarbons (ethane, propane, butane, etc.).

The project will be developed in adherence to the national regulations governing the construction and operation of natural gas infrastructure. This includes compliance with provisions related to the protection and safety zones applicable to natural gas installations and facilities. To ensure successful execution, the project will leverage international expertise from professionals experienced in similar deep-water development projects. The implementation process will follow the industry's best construction and installation practices, incorporating the latest technologies utilized in the field.

The development of the proposed project includes a number of advantages, such as: minimizing the impact on local communities due to the location of the production platform and offshore underwater equipment approximately 160 km from the shore and avoiding the current and planned tourist area, by using the latest methods of construction of the shore crossing (microtunnelling).

The exploitation of new natural gas reserves has a positive economic impact by generating additional revenues to the national budget and represents an option for ensuring national energy independence and feasible energy costs for public and private customers.

This development of gas resources can generate a positive impact on the local and national economy and on neighbouring local communities. Additional revenues to the local budget will be provided

from taxes and contributions implied by the development of the project. The project can also contribute to the economic development of the area and represent an opportunity for the development of other investments and socio-economic activities in the project area.

The project would generate a positive impact on the local road infrastructure due to the construction of a new access road (subject to a separate authorization procedure) to the NGMS and CCR sites. This new access road will represent a new connection of the national road DN 39 to the communal road DC 4. In addition, the project would contribute to the development of the local electricity distribution system thanks to the installation of a transformer station in the area of the NGMS site and the extension of the transmission line electricity distribution to the onshore project site (project subject to separate authorization procedure). This would represent an opportunity to connect to the electricity grid also the owners (currently not connected) in the onshore site area.

The zonal urban plan - PUZ, which regulates the location and development of the project on land, was approved by the Tuzla City Council (Decision no. 100 of November 16, 2020) and the Constanța County Council (Opinion no. 67 of November 27, 2019).

A.1.4. Description of the life cycle of the PP Plan Project (construction, operation, decommissioning) and the interventions and activities associated with each stage, as well as the duration of construction, operation, decommissioning of the project and the phasing of the project implementation period

The construction and installation of the project infrastructure is estimated to be completed in approximately 2 years, according to the current schedule, from the date of obtaining all project development approvals from the regulatory authorities. The main stages of construction/ installation onshore, in the coastal area and offshore are presented in the following paragraphs, in the graphic with the scheduling of the construction works, see table no. 1.18. and image with the identification of work areas, Figure A.2, from **Section A 1.4.4 Drilling campaign execution plan**

The onshore and offshore facilities will operate for maximum 20 years.

At the end of their useful life, the facilities will be decommissioned/ abandoned according to the specific decommissioning/ abandonment plans that will comply with the legislation in force from that date. The decommissioning/ abandonment works will be executed in accordance with an appropriate execution plan (program) which will be part of the decommissioning/ abandonment plans.

A.1.4.1. Onshore Construction/ Installation of Infrastructure

The main stages of onshore construction/ installation activities will include:

- Construction/ installation of temporary construction site for NGMS and CCR (including site preparation, earthworks, arrangement of storage spaces, installation of containers, etc.) and other temporary works (e.g. work corridor for installation of pipelines, temporary level crossing by railway, temporary construction roads, etc.);

- Construction/ installation of NGMS and CCR (including site preparation, earthworks, civil works, installation of buildings/ offices and equipment, utilities, etc.) and other related facilities (utilities, roads and inner platforms, parking, fencing, landscaping, etc..);
- Installation of onshore section of gas production pipeline (including shut-off valve) and Fibre optic cable, including execution of undercrossing of local roads, railway and existing utilities (e.g. existing RAJA water pipeline);
- Construction and temporary decommissioning facilities (construction site, temporary railway level crossing, temporary construction roads, etc.) and restoration of the land affected by the construction/ installation works.

NGMS and CCR sites will consist of a prepared surface, foundations, skid and stand-alone equipment, and prefabricated and assembled structures (prefabricated structural steel components), buildings (e.g., CCR building, LER, shelter for gas chromatograph and gas humidity analyser), equipment packages (e.g. electric heaters, pigging station, separator/ filter, transformers, backup diesel generator with built-in diesel storage tank) and piping assemblies (including pipes, fittings and valves) and internal roads, parking and platforms.

The installation of the onshore production pipeline and Fibre optic cable (including shut-off valve and sub-crossings) will be managed in such a way as to avoid conflicts of simultaneous operations with the other onshore installations.

Upon completion of the construction/ installation works, the temporary works will be decommissioned, and the sites affected by the construction/ installation works will be returned to their original state.

For certain operations, seasonal work restrictions and mitigation measures will be considered during the construction period and the decommissioning period of temporary works and land restoration, given the proximity of the project site to residential and tourist areas.

A.1.4.2. Construction/ Installation of Undershore Crossing by Gas Production Pipeline and Fibre Optic Cable

An estimated total construction duration of approximately 10 months has been established, considered from the start of the shore underpass execution works to the end of the land restoration works. The tunnelling works will be executed in 3 shifts, 24/ 7, respectively 10 working hours/ day for other construction works related to microtunnelling. The shore undercut execution plan will include both onshore and offshore works as outlined below.

- Works performed on land:
  - Construction of temporary access roads, arrangement of the construction site and restoration of the areas occupied by the temporary access roads, organization of the construction site for the microtunnel to the completion of the construction works;
  - Work related to the launch shaft, including launch shaft construction, launch shaft conversion and launch shaft removal;

  - Tunnel construction work, including mobilization, tunnel excavation (launching, operation and arrival), tunnel preparation (removal of equipment, installation of pipes, tunnel flooding) and demobilization of equipment;
  - Pipeline construction, including delivery, stringing, welding, non-destructive testing, hydro testing (pre-installation) and gooseneck welding;
  - Tunnel filling, including equipment mobilization, equipment filling and demobilization.
- Works performed at sea:
  - Execution of the drilling rig recovery pit;
  - Recovery of the drilling machine;
  - Excavation of the trench near the shore;
  - (Partial) filling of the ditch near the shore;
  - Pulling pipelines to shore.

Upon completion of the construction and installation works related to the shore undercrossing, the construction site will be decommissioned and the onshore and offshore areas affected by the works will be restored to their original conditions.

For certain operations, seasonal work restrictions and mitigation measures will be considered during the construction period and the decommissioning period of temporary works and land restoration, given the proximity of the project site to residential and tourist areas.

A.1.4.3. Offshore Construction/ Installation of Infrastructure

According to the current schedule, it is expected that the construction/ installation works of the offshore infrastructure will be completed in several seasons. The main stages of installation activities at sea will include:

- Installation of offshore gas production pipeline (including operations of vessels used for installation):
- Installation of prefab pipe assemblies – offshore pipeline section to nearshore pipeline connection point, pipeline end assembly and riser to connecting pipe;
- Execution of the foundation for the end-of-pipe assembly;
- Gravel/ crushed stone reinforcement for rock berms on seabed faults;
- Installation and pre-commissioning of prefabricated pipeline;
- Marine installation of Domino flowlines (including vessel operations used for installation):
  - Installation of prefabricated pipe assemblies – pipe end assembly, in-line T-assembly, riser bushing, flowline connection pipes, underwater pigging station and in-line direct electric heating components;
  - Execution of foundations for pipe end assembly, in-line T assembly and underwater pigging station;
  - Installation and pre-commissioning of prefabricated flowlines;
  - Subsea installation of the Pelican South prefabricated flowline and pre-commissioning (including installation vessel operations);

  - Subsea installation of Pelican South and Domino umbilical control systems;
- Offshore installation (including installation vessel operations) of subsea equipment (manifold foundations, manifolds, flowline connection pipes, well connection pipes, connecting pipes and cables, flowline risers and anti-trawling protection structures, including:
  - Suction pile foundations for the subsea production manifolds for the Domino and Pelican South drilling Centres;
  - Installation of subsea production manifolds (pre-filled with conservation fluid) for the Domino drilling Centres (DODC1 and DODC2) and the Pelican South drilling Centre - PSDC1 (equipped with a pre-installed anti-trawling protection structure);
  - Installation of rigid connection pipes to the flowlines from DODC1 and DODC2;
  - Installation of rigid connection pipes to wells from DODC1 and DODC2;
  - Installation of the risers of the gas production pipeline and the Domino flowline at the marine production platform;
  - Installation of the gas production pipeline segments between the offshore and the near shore sections;
  - Installation and pre-commissioning of prefabricated support equipment;
- Offshore installation of the production platform jacket and superstructure, including vessel operations used for installation and connection work;
- Offshore installation of fibre optic cable between shore sub-crossing and offshore production platform.

A.1.4.4. Drilling Campaign Execution Plan

The total drilling and completion period is estimated to be approximately 700 days (10 wells, 70 days/ well), 4 wells at Pelican South and 6 wells at Domino. All wells will be drilled in a continuous drilling and completion campaign using a mobile propulsion assisted and anchored offshore drilling unit – MODU.

The execution plan is presented in Figure A.2 correlated with Table A.18, below.

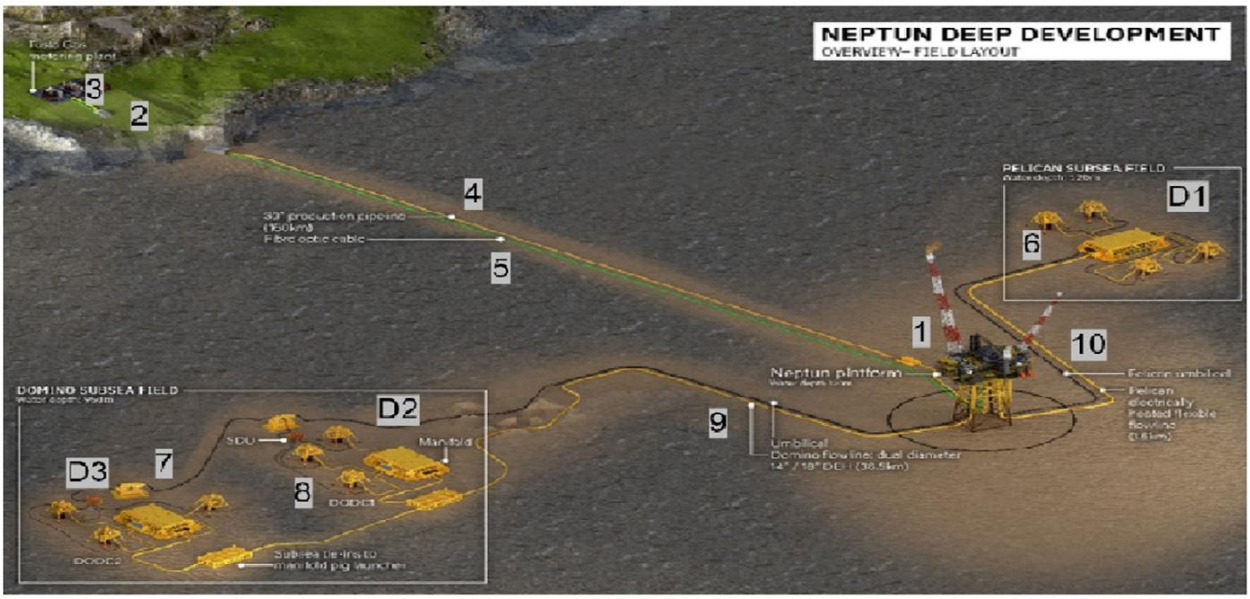

Figure A.2 Identification of installation/ construction areas of project components

Legend:

D1	Pelican well drilling	3	Installation/ construction of NGMS/ CCR	8	Installation of aquatic components Domino1 drilling centre
D2	Drilling Domino 1 wells	4	Installation of the production pipeline	9	Installation of Domino umbilical pipe/ system at SWP
D3	Drilling Domino 2 wells	5	Fibre optic cable installation	10	Pelican pipeline/ umbilical system installation at SWP
1	Installation of the production platform	6	Installation of aquatic components Pelican drilling centre		
2	Execution of the microtunnel including the installation of the pipeline	7	Installation of aquatic components Domino1 drilling centre		

Table A.18 Implementation schedule Neptun Deep project

	WEEK	2024						2025												2026									
		VII	VIII	IX	X	XI	XII	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	I	II	III	IV	V	VI	VII	VIII	IX	X
Lucrari de instalare/construire SRM/CCR (3)																													
Amenajare organizare de santier, drumuri de acces, platforme de lucru	4																												
Lucrari civile	17																												
Instalarea conductei pe uscat	4																												
Instalarea conductei de productie si CFO cu executarea subtraversarilor	3																												
Construire SRM/LER/CCR	61																												
Lucrari construire microtunel (2)																													
Amenjarea organizarii de santier microtunel	4																												
Construirea caminului de lansare	13																												
Lucrări de construcție a microtunelului	9																												
Mobilizarea navei si construirea caminului de iesire	4																												
Executare santului de trazitie	4																												
Instalarea conductei de productie si FCC	4																												
Forare sonde Pelican Sud(D1)																													
Forarea sondei Pelican 4 si conservarea sondei	8																												
Forarea sondei Pelican 1 si conservarea sondei	9																												
Forarea sondei Pelican 2 si conservarea sondei	4																												
Forarea sondei Pelican 3 si conservarea sondei	9																												
Instalarea capetelor de sonda(Xmas tree)	4																												
Forare sonde Domino 1 (D2)																													
Forarea sondei Domino E1 si conservarea sondei	9																												
Forarea sondei Domino E2 si conservarea sondei	9																												
Forarea sondei Domino E3 si conservarea sondei	4																												
Instalarea capetelor de sonda(Xmas tree)	2																												
Forare sonde Domino 2 (D3)																													
Forarea sondei Domino C2 si conservarea sondei	4																												
Forarea sondei Domino C1 si conservarea sondei	4																												
Forarea sondei Domino C3 si conservarea sondei	4																												
Instalarea capetelor de sonda(Xmas tree)	2																												
Instalare Platforma de foraj(1)	26																												
Instalare Jacket + suprastructura	26																												
Instalare Conducta de productie (4)																													
Instalare conducta de productie inclusiv testele(4)	22																												
Instalare cablu cu fibra optica(5)																													
Instalare cablu cu fibra optica	4																												
Instalare structuri de protectie antitraulare FOC	4																												
Instalare componente subacvatice Centru de foraj Pelican SUD(6)																													
instalare Manifold + SDU Pelican	3																												
Instalare conducta de alimentare/aductiune Pelican	2																												
Instalare sistem ombilical Pelican	2																												
Instalare componente subacvatice Centru de foraj Domino 1(7)																													
instalare Manifold + SDU DODC1	3																												
Instalare conducta de alimentare/aductiune DODC1	2																												
Instalare conducta De-watering DODC1	2																												
Instalare sistem ombilical DODC1	2																												
Instalare componente subacvatice Centru de foraj Domino 2(8)																													
instalare Manifold + SDU DODC2	3																												
Instalare conducta de alimentare/aductiune DODC2	2																												
Instalare conducta De-watering DODC2	2																												
Instalare sistem ombilical DODC2	2																												
Instalare conducte/ sistem ombilical de la Domino la SWP (9)																													
Instalare conducta de alimentare si sistem ombilical 1x / 1b de la Domino la SWP	3																												
Instalare conducte/ sistem ombilical de la Pelican la SWP (10)																													
Instalare conducta de alimentare si sistem ombilical Pelican la SWP	4																												

A.1.5. The Natural Resources Necessary for the Implementation of the Project (use of water, Renewable Resources, Non-Renewable Resources, highlighting those that will be Exploited within ANPIC)

Natural resources (fresh water, sea water, mineral aggregates, etc.) will be used during the construction and installation phase. The use of natural resources will be predominantly indirect, natural resources being purchased from authorized suppliers/ contractors on a contract basis.

During the operational period, the proposed project will utilize various natural resources, such as natural gas, fresh water, and petroleum-based fuels. The primary purpose of the project is to exploit the natural gas reserves from the offshore gas fields, Pelican South and Domino, and deliver dehydrated gas to Romania's National Transmission System (NTS). The estimated average annual gas production rate is expected to be 19,000,000 cubic meters per day. This average encompasses the projected daily production from all wells in both the Domino and South Pelican gas fields throughout the entire project duration.

During the operating period, downstream of the gas drying unit and before entering the production pipeline, a small stream of dried gas will be used on the production platform as fuel gas for power generation.

Fresh water from onshore suppliers will be used for domestic and sanitary water needs at onshore facilities and on board vessels used for operation and maintenance.

Refined petroleum-based fuels (e.g. diesel, jet fuel) purchased from authorized onshore suppliers will be used during the operating period to power diesel generators (e.g. standby primary generators installed at CCR, generators of energy located at the platform), support vessels and helicopters.

If necessary, mineral aggregates (e.g. sand, gravel, concrete) will be used for the maintenance/ rehabilitation of internal roads, parking and technology platforms during the operation of the onshore NGMS and CCR.

Electricity for the onshore facilities will be provided by connecting to the local power grid (ENEL) through the substation that will be installed in the vicinity of the NGMS and CCR sites during the construction period.

The main raw materials used during the preparation and organization period will be mineral aggregates, which will be transported from the nearest quarries authorized by ANRM. The other materials used in this stage will be provided by specialized units.

Water required for onshore construction works will be delivered by water trucks from water sources operated by the regional water supplier. The need for fresh water for the development of the offshore project will be provided by construction/ installation vessels fed from authorized water sources in the Constanța Port.

The raw materials and mineral aggregates will be sourced from authorized economic operators in Constanta County with sufficient production capacities, located within less than 100 km (depending on availability). This approach aims to enhance efficiency and to reduce the environmental impact

caused by transportation equipment emissions. The materials will be loaded at the extraction site and transported using authorized vehicles to the onshore construction sites or the logistic base in the port. Subsequently, they will be taken on board construction/installation vessels for offshore operations.

The production processes of the project will not require the use of water. The Neptun Alpha platform is normally an unmanned platform and this eliminates the need to install a water system at the SWP. Water requirements at the SWP will be limited and will only occur while personnel are arriving at the SWP in case of emergencies and for scheduled operations and maintenance, with water provided by support vessels.

During the operation period, sea water will be used for the gas cooling process.

The NGMS was designed as a stand-alone, normally unmanned facility with no water requirements. The CCR building will be a stand-alone building that will be permanently staffed. The limited number of permanent staff requires a minimum consumption of water for domestic use.

In conclusion, natural resources necessary for the implementation of the project will not be taken over or exploited within the ANPIC.

The implementation, operation and decommissioning stages of the project do not involve the use of biodiversity resources within the ANPIC or its vicinity.

A.1.6. Information on the Production Being Carried Out, Information on the Used Raw Materials, Substances or Chemical Preparations

A.1.6.1. Gas Production Information

The proposed objective of the Neptun Deep project consists in the development of natural gas resources from the Pelican South and Domino fields. The Pelican South deposit is located in the area of the continental shelf at water depths of approximately 130 meters. The larger deposit, Domino, is located outside the continental shelf at depths of approximately 1000 meters.

The Domino field is proposed to be developed through 2 subsea drilling Centres – Domino Drilling Centre 1 (referred to as DODC1) and Domino Drilling Centre 2 (DODC2), and the Pelican South field is proposed to be developed through a single drilling Centre drilling – South Pelican Drilling Centre 1 (referred to as PSDC1). Each drill Centre will contain a group of wells drilled near a production manifold. This underwater system will be monitored and controlled by an electro-hydraulic control system, which is connected to the offshore production platform, through 2 underwater umbilical systems. The umbilical systems will also supply the chemicals required for the underwater installations.

The current concept proposed for the development of the underwater infrastructure involves the realization of a number of 10 (ten) exploitation wells. The production from the wells related to the two drilling Centres (DODC1 and DODC2) of the Domino field, will be collected cumulatively through the manifolds mounted on the seabed and sent to the marine production platform through a rigid

feed/ adduction pipeline, which will be thermally protected and heated by a direct electric heating system. Well production from the Pelican South field well Centre (PSDC1) will also be collected cumulatively using the installed subsea manifold and sent to the production platform via a heated and thermally protected flexible feed/ supply pipe.

The Pelican South and Domino fields will be connected to the automated (unmanned) offshore production platform located near the Pelican South field, in waters approximately 130 m deep. The offshore production platform consists of a metal jacket (structure) with an upper deck, with related facilities. The offshore production platform will include treatment facilities consisting of the separation of wellbore fluids and dewatering of gases prior to transport to shore.

The separation of gas, liquids and particles will be achieved by means of a two-phase separator. The gas thus separated will be dehydrated/ dried using Triethylene glycol (TEG) to meet the dew point parameter for the gas in the transport pipelines of the National Transport System - NTS. The water resulting from the separation process will meet the legal requirements and will be discharged as approved by the competent authorities.

The offshore facilities will be powered by three gas turbine generators located on the deck of the production platform. On the deck of the platform, generator for essential services and a backup generator will also be located. The offshore facilities will be controlled through a control system located on the offshore production platform and within the Centralized Control Room (CCR). For intervention and maintenance activities, qualified personnel will be transported to/ from the platform using support vessels. The platform deck will be equipped with a helipad for emergency helicopter evacuation, if necessary.

The offshore facilities will be connected to the onshore regulation and measurement station via a 30-inch diameter gas production pipeline and a Fibre-optic cable for communication and control. Communication via Fibre optic cable is doubled by the existence of a redundant VSAT type satellite control system used as an alternative to Fibre optic cable.

From the offshore production platform, the dehydrated natural gas will be transported approximately 160 kilometres through the 30-inch (762 mm) diameter gas production pipeline for delivery to Romania's NTS gas. The gas production pipeline will undercut the southern sector of the Romanian coast of the Black Sea through a micro-tunnelling method to avoid affecting the protected area ROSAC 0273 Zona marină de la Capul Tuzla, the beach and the cliff. A Regulation and Metering Station (NGMS) will be located onshore and will function as a transfer station between the Project and Transgaz - the NTS natural gas operator.

The primary purpose of the NGMS will be to serve as a custody transfer point for natural gas delivered by the production facility operated by OMV Petrom upstream to the downstream NTS operated by Transgaz. The Control Centre (CCR) will be located near the NGMS and will include facilities for monitoring and automated operation of the production platform and wells.

At the exit from the NGMS, the gases will be taken into the national transport network through a new pipeline that will be built by Transgaz. The Transgaz facilities are not part of the Neptun Deep Project and will be subject to a separate authorization procedure.

A.1.6.2. Raw Materials, Energy and Fuels Used in the Project

The construction and installation works proposed by the project will be executed using natural resources (fresh water, sea water, wood, etc.), mineral aggregates (for example, sand, gravel, limestone, bentonite, etc.), construction materials (e.g. concrete, geotextile and other construction materials specific to the project), energy, fuels, chemical substances and preparations, as well as other materials and products required for the realization of the project.

Fresh water will be provided by water tankers fed from water sources located in the project area, based on specific contracts signed with the regional water supply operator, until the moment of connection to the supply network. For construction/ installation activities at sea, fresh water will be supplied by construction/ installation vessels from authorized water sources.

Seawater required for construction/ installation activities (e.g., hydrostatic testing of production pipeline/ feed/ intake pipelines, tunnel filling, preparation of drilling fluids) will be taken from the Black Sea.

The mineral aggregates (for example sand, crushed stone, bentonite, etc.) will be brought from authorized sites with sufficient production capacities, located in Constanța County (less than 100 km away) for better efficiency and to reduce the impact on the environment generated by transport equipment emissions. The materials will be loaded from the extraction site and transported by authorized vehicles to the construction sites located on land or to the designated shore base location and then on board the vessels used for the construction/ installation work carried out at sea.

The specific construction materials required for the construction/ installation of the project will be purchased based on specific contracts concluded with specialized authorized suppliers. All construction materials will be manufactured in accordance with the applicable standards and norms and will be accompanied by certificates of conformity. Construction materials and equipment will be properly stored and managed in accordance with applicable legislation and standards.

The overall philosophy used in material selection is based on minimizing full life cycle costs (capital and operating costs), ensuring the design life of the production, and maintaining the manufacturing schedule, while aiming to minimize the maintenance required and recognizing longer response times large at any production shutdown and considering that during operation scheduled trips to the offshore production platform are estimated to be made every 3 months.

Chemical substances and preparations used for the construction/ installation of onshore facilities will be purchased from authorized suppliers and temporarily stored on the sites of onshore construction sites. Chemical substances and preparations used for the construction/ installation of offshore facilities (for example, chemicals used during pipeline testing before commissioning) will be purchased from authorized suppliers and temporarily stored at the shore logistics base location. From the logistics base, the substances and chemical preparations will be picked up and transported to the offshore work areas by vessels specialized in offshore construction/ installation works. Chemical substances and preparations will be stored and handled in accordance with legal provisions and safety data sheet requirements. Details on the management of chemical substances and preparations during the life of the project are presented in Chapter 6.1.9.

The electrical energy required during the construction, installation and commissioning of the onshore facilities/ facilities, the shore underpass tunnel, as well as the offshore facilities/ facilities shall be provided by:

- A transformer station that will supply power to the facilities (including offices and lighting) and equipment of the onshore NGMS construction site. The substation will be connected to the local electricity supply network (located approximately 1,400 m South of the onshore project site). The connection for the supply of electricity (transformation station and connection to the power grid) is not part of the project described in this presentation memorandum and will be subject to a separate authorization/ regulation procedure.
- The diesel electric generators that will be temporarily installed within the construction site for the execution of the microtunnel and the NGMS/ CCR locations and will supply power to the equipment and facilities related to the microtunnel, pipe assembly facilities, administrative offices and construction equipment.
- Specific electricity generation and distribution systems installed on board support vessels for work at sea.
- A portable power generator to be provided at the offshore production platform to provide power for the first start-up of the facilities on the platform.
- Diesel generators will be required for underwater pre-commissioning activities located onshore in the NGMS area, on offshore support vessels and on drilling rigs.

The fuels required for the equipment and vehicles used in onshore construction/installation works will be regularly supplied from local fuel stations. They will be transported to the construction site by fuel distributors using fuel tank trucks. To ensure safety and compliance with regulations, the fuels will be temporarily stored on-site in approved and certified containers or tanks equipped with spill containment measures to prevent any potential leaks or spills.

Fuels for ships and equipment at sea will be provided by the regional port distributor (from Constanța area) and transported to the project area from the sea by supply ships. Fuels for vessels and equipment used at sea will be temporarily stored within the designated logistics base ashore and then on board the vessels used at sea.

Chemical substances and preparations used for the construction/ installation of onshore facilities will be purchased from authorized suppliers and temporarily stored on the sites of onshore construction sites. Chemical substances and preparations used for the construction/ installation of offshore facilities (for example, chemicals used during pipeline testing before commissioning) will be purchased from authorized suppliers and temporarily stored at the shore logistics base location. From the logistics base, the substances and chemical preparations will be picked up and transported to the offshore work areas by vessels specialized in offshore construction/ installation works. Chemical substances and preparations will be stored and handled in accordance with legal provisions and safety data sheet requirements. Details on the management of chemical substances and preparations during the life of the project are presented in **Section A.1.6.3.**

A 1.6.3. Management of Dangerous Chemical Substances and Preparations

A.1.6.3.1. Hazardous Chemical Substances and Preparations Used and/ or Produced

Chemical substances and preparations will be used during drilling operations, construction, and installation works, as well as project operation and maintenance activities.

The main substances and chemical preparations expected to be used during the drilling period include water-based and non-aqueous drilling fluid preparation products, well cementing (e.g., fluid loss control, defoamer, blended cement, etc.), filling-probes (e.g., gelling agent, hydrate inhibitor, corrosion inhibitor, antifoam, demulsifier, etc.), blow-up preventer control, and antifreeze protection.

The main substances and chemicals expected to be used during the construction/ installation period include chemicals for hydro testing the production pipeline and supply/ intake pipelines, chemicals for coating and painting equipment and pipelines (e.g. coating paint, thinner paint, etc.), nitrogen to facilitate flushing of hydro test water from equipment, chemicals required during equipment installation (e.g. lubricants, adhesives, etc.), chemicals required for vehicles used for onshore construction (e.g. fuels, lubricants, lubricating oils) and diesel fuel for marine vessels.

The main substances and chemical preparations estimated to be used during the operation and maintenance period include diesel fuel for the standby electric power generator, fuels for the operations and maintenance vessels at sea, Triethylene glycol for the gas dehydration system, injected chemicals to ensure flow (methanol, corrosion inhibitor, scale inhibitor, antifoam), nitrogen to facilitate equipment purging, hydraulic fluids for hydraulic units, and minimal amounts of biocide for occasional cleaning of the open drain system (including storage tank). Sodium hypochlorite will be continuously injected as an inhibitor of the development of organisms for the sea water used as cooling water.

Lists of substances and chemical preparations estimated to be used during drilling, construction/ installation and operation are presented in **Appendix C of the EIA List of estimated chemical substances and preparations**. The lists include information on the description of chemical substances and preparations, use, quantities, risk phrases, danger, caution, and safety.

Other specific information related to the estimated chemical substances and preparations (e.g. composition, physical and chemical properties, toxicological and ecological information, exposure control, handling and storage, disposal considerations, transport information, etc.) are presented in the Data Sheets of safety for each chemical product.

A.1.6.3.2. How to manage dangerous chemical substances and preparations and ensure the conditions for the protection of environmental factors and the health of the population

- Construction/ installation period

Chemical substances and preparations required for onshore construction/ installation and shore sub-crossing (e.g. lubricating oils, paint, thinners, etc.) will be purchased from authorized suppliers and temporarily stored within the onshore site arrangements.

Chemicals and preparations required for drilling and construction/ installation of offshore facilities (e.g. drilling fluid chemicals, pipeline pre-commissioning chemicals) will be procured from authorized suppliers and temporarily stored at the designated location in the port (shore base in the Constanța area). Chemical substances and preparations will continue to be transported to offshore drilling/ construction/ installation locations by specialized support vessels.

All chemical substances and preparations shall be properly stored in dedicated storage areas within the onshore site sites and on board the vessels and offshore drilling rig and shall be managed in accordance with legal provisions and data sheet requirements Safety.

- Operating period

Fuel

Diesel fuel for the onshore back-up power generator, used to provide back-up electricity to both the CCR and NGMS, will be stored in a small diesel fuel tank sized to support 3 days of continuous operation at full load. The fuel tank will be installed/ built into the backup generator. If necessary (e.g. power outage), the diesel tank will be regularly replenished by fuel tankers.

The storage of diesel in the crane pedestal of the SWP is ensured through a tank with a capacity of approximately 35m^3. The diesel fuel is gravity-fed to a separate tank within the essential service generator and the emergency start up generators. Refuelling takes place during maintenance campaigns or scheduled visits to the platform.

TEG

For start-up (initial filling) and planned preparation during normal operations, the TEG will be stored in a storage tank of 200 m^3 storage volume, installed in one of the jacket legs at the offshore production platform. The TEG storage tank has been designed with sufficient capacity to accommodate the total volume of TEG required in the degassing/ drying system and regeneration if necessary.

The TEG will be delivered to the production platform by the supply vessels and a hose connection will be used to discharge the TEG from the supply vessels into the TEG storage tank.

The TEG storage tank will be lined with fuel gas. The lean TEG storage tank pump supplies lean TEG from the TEG storage tank to the TEG drain pan. This is a centrifugal, suction, submersible (hydraulic driven) caisson type pump located in a caisson. The caisson is connected to the jacket leg at the bottom and therefore the level in the caisson equals the level of the storage tank (jacket leg). Also, the pump will be started/ stopped based on the TEG drain pan level control. A minimum flow control is provided for pump protection.

Chemical substance and preparation injection system

A chemical injection system is required to provide chemical injection capabilities to support production, gas separation and protect the interior of pipelines and offshore equipment. Injection is

performed continuously or intermittently during normal operations, operational disturbances and start/ restart operations.

The chemical injection system implemented at the offshore production platform is designed to reliably deliver the required chemical substances and preparations to be injected at predetermined injection points. Methanol (well start-up and restart only), scale inhibitor and corrosion inhibitor (Domino only) are the chemicals that must be injected into subsea systems to ensure flow and material integrity. Antifoam is currently expected to be the only chemical potentially used on the platform superstructure. Each chemical injection system is equipped with a flow meter for individual injection points to allow setting of dosing requirements.

Methanol

Methanol injection is required to prevent hydrate formation in the unheated portions of the subsea production system during starting, shutdown and start up periods. In the event of a shutdown, the blow head and wellbore are inhibited by injecting (forcing fluids into the formation) methanol (MeOH) into the wellbore. In addition, MeOH will be injected to treat the connecting pipes, manifolds, unheated sections of the feed/ supply pipes and the base of the riser to prevent the formation of hydrates inside the pipes.

At the start of operations, electric heating will be used to warm up the Domino and Pelican South flowlines to the safe operating temperature. Once the flowlines reach the safe operating temperature, the wellheads will be started with methanol injection at the wellhead upstream of the choke. The methanol injection at the wellhead will cease when the wellhead, the wellhead connection pipelines, the manifold, and the feed/production pipeline connection pipe are heated to prevent hydrate formation inside the pipelines.

The methanol injection system includes:

- 2 methanol storage tanks of 200 m3 each located in the legs of the jacket.
- 2 methanol tank pumps, each operating at 100% capacity.
- 2 methanol pre-filters, each operating at 100% capacity.
- 2 methanol injection underwater and high-pressure pumps, each operating at 100% capacity.
- 2 x Methanol injection pumps for columns and SSIV valves, each operating at 100% capacity.
- 2 x Superstructure Methanol Injection Pumps, each operating at 100% capacity.

The methanol will be stored in the two storage tanks installed in two interconnected legs of the platform jacket. Hoses will be provided for the transfer of methanol from the vessel. During a charging event, there will be an audible alarm at the charging station in the event of a high liquid level in the leg of the jacket. Each leg will have an inspection port. Methanol tank pumps located in the caisson are used to transfer methanol from the jacket leg to the methanol pre-filters. Methanol pre-filters are cartridge filters and are used to filter particles down to 10 microns.

The required flow rate for the methanol system is 11 m^3 per hour to clean the water from the production and connecting pipes in the subsea system. To provide reliability, the tank pumps and methanol injection pumps will be fully protected in a 2 X 100% configuration.

Scale inhibitor, corrosion inhibitor and antifoam

The corrosion inhibitor will be injected into the manifold, while the antifoam injection is done upstream of the production separator. Downhole scale inhibitor injection will be performed in each production well to mitigate expected scale formation. Antifouling injection will be made from the production platform and distributed through the umbilical systems to the subsea equipment.

The scale inhibitor, corrosion inhibitor and antifoam will be stored in a single, segmented (4-compartment) storage tank with double outer walls to provide an additional level of isolation, with each chemical occupying a tank compartment. The segmented tank will have an additional compartment for a future chemical substance/ preparation.

A backup tank and pump will be provided for currently unidentified chemical injection needs. The chemical injection pump will use suction for the chemical from the chemical storage tank and then pump it through the subsea umbilical system to the wells, manifolds, and feed/ supply lines.

The package for storage and injection of chemical substances/ preparations will include the following equipment:

- Corrosion inhibitor: tank, damper, pump, filter.
- Deposit inhibitor: tank, silencer, pump, filter.
- Antifoam: tank, tank heater, silencer, pump, filter.
- Spare chemical: tank, silencer, pump, filter.

The storage capacity for each chemical (corrosion inhibitor, scale inhibitor, antifoam, and backup chemical) is based on 3 months of continuous use with a 25% reserve. The workload required for a 3-month supply of each chemical tank compartment is shown below:

- Corrosion inhibitor tank compartment: 21.5 m^3;
- Deposit inhibitor tank compartment: 21.5 m^3;
- Antifoam tank compartment: 14.4 m^3;
- Reserve chemical tank compartment: 14.4 m^3.

Storage tanks are intended to be filled by gravity using canisters. Dedicated storage tanks will be arranged to allow gravity feeding into tanks from canisters or iso-containers, positioned in any portion of the upper deck discharge area with crane access, rather than a designated area. It is anticipated that these canisters will be lifted onto the platform in shipping bins or similar shipping containers rather than individually to minimize the number of lifts. Hoses will be used to connect the canisters to all filling lines without removing the canisters from the transport basket. The filling lines and fittings must be color-coded and equipped with a special identifiable locking mechanism for each type of substance/chemical preparation to prevent cross-connection.

The chemical injection pump will draw in the product from the chemical storage tank and then pump the chemical through the subsea umbilical system to the wells, manifolds, and flowlines or through pipelines to the injection point on the top of the platform. Connections between the chemical injection package and the end of the umbilical system will be provided during the connection process. The chemical injection package will have a single drain vessel for all tanks and pumps.

Sodium hypochlorite

Sodium hypochlorite solution will be injected to prevent the formation of algae and marine deposits in the seawater pumping system, which provides cooling for the wet gas exchanger. The seawater intake pumps will be fitted with a hypochlorite dosing ring to inhibit the formation of algae and other marine deposits in the seawater supply system. Therefore, a hypochlorite dosing system should be installed that includes a hypochlorite generator, along with a backup generator and a buffer tank to allow a continuous dosing rate of 1-2 ppm. The dosing control functionality must allow remote adjustment. The common seawater return line from the wet gas exchanger, cooling water filters and minimum flow from the seawater lift pumps must include an analyser to measure the concentration of free chlorine in the returned seawater.

Nitrogen for purging

To facilitate the purging of equipment, such as pigging stations, pressurized nitrogen cylinders will be supplied along with a distribution manifold. The nitrogen system also provides the capability for emergency dispersion stack extinguishing and is designed to offer a minimum of three extinguishing attempts in addition to maintenance purging.

Nitrogen is supplied in accessible cylinder racks with a crane on the upper deck.

Hydraulic fluids

Three separate HPU systems will be installed on the production platform using water-based fluid.

Underwater hydraulic unit

The underwater system is designed with a ventilation opening, where the used fluid is locally discharged into the sea upon valve closure, along with minimal leakage from the Subsea Control Modules (SCMs). A water-glycol-based hydraulic fluid is selected for the Subsea Hydraulic Power Unit (HPU) to minimize environmental impact when discharged into the sea.

The HPU system supplies both the High-Pressure (HP) and Low-Pressure (LP) systems in the Domino and Pelican reservoirs through umbilical connections. There is redundancy within each umbilical in case of future hydraulic fluid core damage. The HP supply has a design pressure of 690 bar, while the LP supply has a design pressure of 345 bar. Pump flow rates are sized to meet the subsea control system requirements. There are no valves or Subsea Safety Isolation Valves (SSIVs) connected from the platform to the subsea HPU system.

Hydraulically operated unit for topsides and SSIV

HPU for Topsides and SSIV equipment HPU for Topsides and SSIV equipment will comprise two systems in the same installation; Topsides valves and operating lines for SSIV valves. The HPU for the Topsides and SSIV equipment consists of a supply and return tank, a circulation/ transfer pump, two LP pumps, LP accumulators and distribution for both the Topsides valves and the operating lines for the SSIV valves. Control equipment for SSIVs and associated valves will be incorporated into the HPU. The feed tank provides suction for both service pumps and is sized to allow over three months of operation without refuelling.

The return tank allows filling with new hydraulic fluid, returning hydraulic fluid from the Topsides valves and depressurizing the operating lines of the SSIV valves. It shall be sized to allow depressurization of the entire volume of the Topsides and SSIV valves, plus a given margin. The circulation/ transfer pump will be configured to circulate fluid from the return tank, through a set of filters, and then back into the return tank until a specified level of fluid cleanliness is achieved. The hydraulic fluid to be used in the HPU will be a water-glycol control fluid and will be of the same type as that used in the underwater HPU.

Hydraulic caisson pump

The hydraulic drive system of the caisson pumps consists of a reservoir, two service pumps at 100% capacity each, a cooler, and a filter. The service pumps will be of rotary type with the ability to recirculate back to the reservoir without activating a certain caisson pump. The system operates at a minimum temperature, and the service pumps will provide the necessary heat to reach that minimum temperature before initiating the operation of any mud pump. To prevent overheating once the required temperature is reached, an air cooler is installed on the return line. Additionally, a filter will be incorporated into the circulation path to maintain the cleanliness of the system.

Biocide

Maintenance chemicals will not normally be injected into the open drain system from the production platform. However, every 5 years or as needed, the open drain system, including the storage tank, will be flushed with an approved biocide. During this clean-up activity, all fluids captured in the open drain system will be pumped to the storage tank(s) on the maintenance vessel for proper onshore disposal at an approved wastewater management facility.

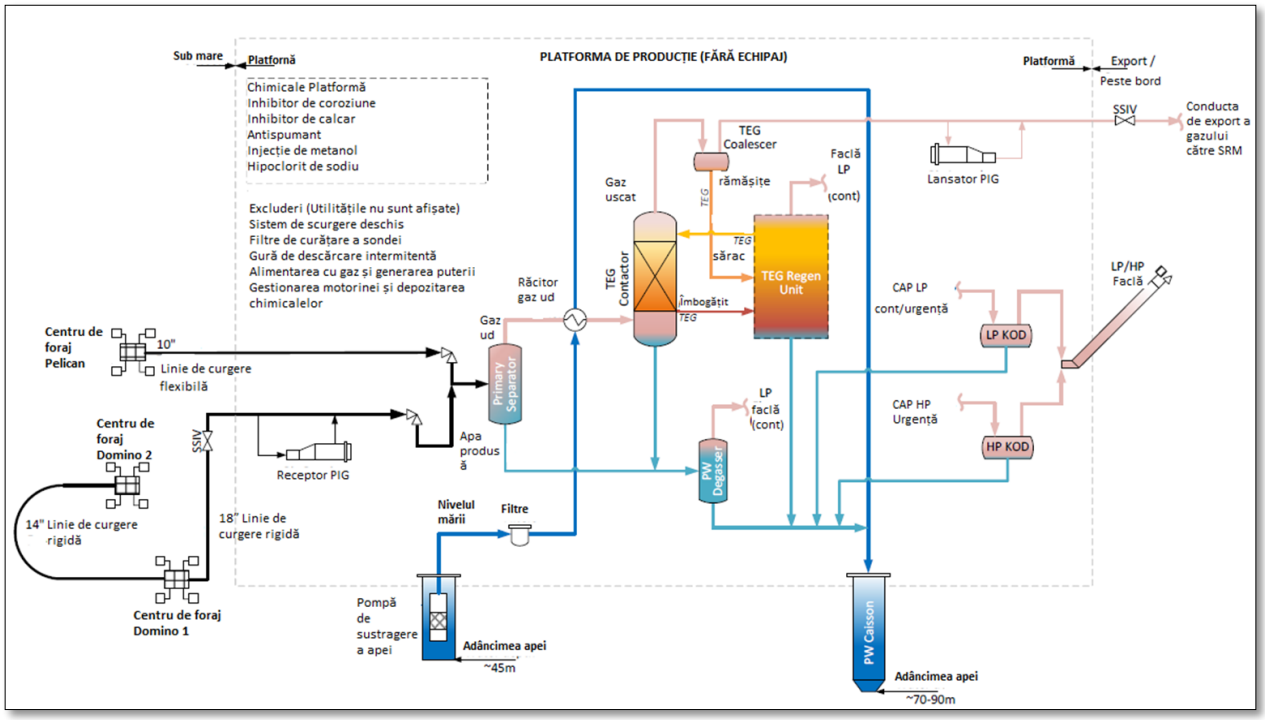

Figure A.3 General technological scheme of the Neptun Deep Project

A.1.7. Emissions of physical, chemical and biological pollutants generated by project interventions and activities

A.1.7.1. Information regarding the types and quantities of liquid effluents generated by the project

a) Information regarding the types and quantities of liquid effluents generated during construction and installation

The main streams of wastewater/ produced water generated during the construction and installation period of the onshore facilities of the project, the execution period of the shore-crossing microtunnel, as well as the installation of offshore facilities, include:

- Domestic wastewater generated from the administrative area (containers) related to the construction site organizations at the NGMS and microtunnel will be collected on-site in wastewater storage tanks, which will be periodically emptied by vacuum trucks. The wastewater will then be transported and discharged to authorized disposal facilities based on specific agreements signed with authorized contractors.
- Wastewater generated from the truck wheel washing facility will be periodically collected with vacuum trucks, transported, and discharged at authorized disposal facilities based on specific agreements signed with authorized contractors.
- Water produced from the construction of the launch shaft, tunnelling process (drilling fluid system, and tunnel cleaning).
- Water produced from the construction/installation of the production pipeline (hydro testing of the pipeline).
- Water displaced from the tunnel (seawater) following the grouting operation of the tunnel.
- Wastewater from the hydrostatic testing of the underwater pipelines.
- Wastewater and storm water generated by support vessels during construction/installation works.

Domestic wastewater

A total volume of domestic wastewater of **1,803 m^3** is estimated to be generated during the construction period from the NGMS and microtunnel construction sites, of which a volume of 1,586 m^3 will be generated by the NGMS construction site and a volume of 217 m^3 will be generated by the construction site related to the microtunnel.

Produced water resulting from the construction of the launch shaft

Fresh water will be used to prepare the fluid required during the drilling of secant piles.

A total volume of produced water of 200 m^3 is estimated to be generated by the construction of the launch shaft.

Water resulting from the tunnelling process

During tunnel construction, fresh water is required for drilling fluid preparation and tunnel cleaning. The total estimated volume of water produced as a result of the tunnelling process (drilling fluid system and tunnel cleaning) is **3,140 m^3**, of which a volume of 1,740 m^3 will result from the drilling fluid system and a volume of 1,400 m^3 will result from the tunnel cleaning process.

Hydro test water used for production pipeline testing

For hydro testing the production pipeline installed in the microtunnel, fresh water will be used, without other additives.

A total water volume of **300 m^3** is estimated to be used for hydro testing the production pipeline section in the microtunnel.

Displaced water from the tunnel (sea water) resulting from filling the tunnel with mortar

The estimated total amount of displaced tunnel water (seawater) resulting from tunnel filling is **3,250 m^3**.

Underwater Pipeline Hydrostatic Test

The water used for hydrostatic testing will be extracted from the Black Sea. It will be filtered and treated with preservation chemicals to inhibit pipeline deterioration. The hydrostatic testing water sourced from the Black Sea will be treated with a common chemical product (Hydrosure HD5002) commonly used in the marine pipeline construction industry.

A total volume of **72,441 m^3** of hydrostatic test water is expected to be discharged from the following sections:

- Domino flowline: 4,794 m3;
- Pelican flowline: 104 m3;
- Gas production pipeline to shore: 67,543 m3.

b) Information on the types and quantities of liquid effluents generated during well drilling

The main streams of wastewater during the drilling/construction/installation/testing/commissioning period include:

- Water resulting from drilling and well start-up activities.
- Wastewater and storm water generated by support vessels during construction/ installation works.

Waters resulting from drilling and well start-up activities

Water-based drilling fluids and non-aqueous drilling fluids will be used to drill production wells.

Water-based drilling fluids will be used for the first two sections of the wells, where drilling is done without a riser. Water-based drilling fluids, on the other hand, are discharged directly onto the seabed from the wellbore during casing installation. The estimated total volume of water-based fluids used for drilling is 2,400 m^3/ well, respectively 24,000 m^3 in total.

The estimated volume of preservation fluid (brine plus chemicals) in one well is 50 m^3 for Domino wells and 70 m^3 for Pelican wells.

The total volume of well start-up fluids is estimated to be between 347 m^3 per well, 3,470 m^3.

Wastewater generated by the drilling rig and support vessels

Wastewater (e.g., grey water, black water, storm water, etc.) generated by the drilling rig and support vessels will be collected on board, managed and discharged in accordance with appropriate maritime regulations (e.g. MARPOL Convention, Convention on the Sea Black) regarding the disposal of waste water.

During the drilling campaign, it is estimated that a total volume of domestic wastewater of **35,168 m^3** will be generated, considering 194 operators, a daily volume of 200 l/ day/ person and a duration of 800 days.

Rainwater falling in the operational areas will be collected on board, managed and discharged in accordance with the appropriate maritime regulations (e.g., MARPOL Convention, Black Sea Convention) regarding wastewater disposal. Rainwater falling outside the operational areas of the drilling rig will be discharged directly into the sea.

Bilge water from the drilling rig and support vessels will be transported onshore for treatment/ disposal at an authorized facility.

c) Information on the types and quantities of liquid effluents generated during operation

The main wastewater flows resulting during the operating period include:

- Effluent (produced water) resulting from operation and maintenance and effluent resulting from well restart;
- Underwater valve actuation fluid;
- Rainwater/ wash water resulting from the marine production platform;
- Sewage and storm water from support vessels for operations and maintenance.

Effluent (produced water) resulting from operation and maintenance and well restart effluent.

The reservoir water (produced water) will be the largest volume of wastewater produced during the operating period.

During the life of the project, it is assumed that the volume of water produced will be between 50 and 1,590 m^3/ day. The volume of 50 m^3/ day of condensed water will remain a relatively constant component of the produced water wastewater flow throughout the lifetime of the field. In the middle period of the project, the reservoir water becomes part of the produced water flow and increases to the point where the total volume of produced water can reach 1,590 m^3/ day in the last years of the project.

The estimated annual volume of produced water discharged into the sea is 18,250 cubic meters per year in the first 10 years and 511,000 cubic meters per year in the final years of production.

The seawater used in the cooling process will be discharged into the sea and will have an annual volume of 2,766,920 m^3.

Discharge of underwater valve actuation fluid

Underwater valves on the wellhead of the wells use the pressure of a control fluid to be actuated.

It is estimated that there will be 22 actuations per year for each of the taps, i.e., a total effluent volume of 0.78 m^3.

Rainwater/ wash water from the marine platform

Precipitation falling on the production platform and fresh water used during maintenance washing are two sources of water expected to result at the production platform.

Precipitation falling on the open platform deck and stairs will not be collected and will drain directly to the sea surface.

Precipitation falling in the landscaped areas around the production platform equipment will be captured and diverted into the open drainage system. Similarly, any wash water falling into the landscaped areas will be captured and diverted into the open drain system.

Based on average rainfall and the total area of the open drainage system, accumulation in the storage tank over a 3-month period is expected to total approximately 53 m^3. To accommodate the excess volumes, the tank will have a capacity of 200 m^3.

Wastewater generated from operations and maintenance vessels.

Wastewater (e.g., domestic wastewater, storm water, etc.) generated by operations and maintenance vessels will be collected on board, managed and discharged in accordance with the appropriate maritime regulations (e.g., MARPOL Convention, Black Sea Convention) on the disposal of wastewater.

It is estimated that a total volume of domestic wastewater of approximately **11,200 m^3** will be generated during the quarterly routine maintenance campaigns and major maintenance campaigns carried out by the operation and maintenance teams.

d) Information regarding the types and quantities of liquid effluents generated during decommissioning

At this moment, it is estimated that the volumes of wastewater/ technological water generated during the decommissioning phase will be lower than those generated during the construction/ installation period.

The volumes of wastewater/ process water generated during decommissioning will be available upon completion of the decommissioning/ abandonment plan before the start of decommissioning works.

A.1.7.2 Composition, toxicity or hazard of all liquid effluents produced by the project

The composition, toxicity, or hazardous nature of liquid effluents generated during construction and installation

Produced water resulting from the construction of the launch shaft.

Freshwater will be used to prepare the fluid required during the drilling of secant piles.

Water resulting from the tunnelling process.

During tunnelling, freshwater is required for drilling fluid preparation and tunnel cleaning.

Hydro test water used for production pipeline testing

Freshwater, without other additives, will be used for the hydro testing of the production pipeline section installed in the microtunnel.

Displaced water from the tunnel (seawater) resulting from filling the tunnel with mortar

The estimated total amount of tunnel water displaced (seawater) resulting from the tunnel filling is **3,250 m^3.**

Hydrostatic test waters of underwater pipelines

Hydrostatic test water from the Black Sea will be treated with a common chemical (Hydrosure HD5002) used in the marine pipeline construction industry. This additive is specially designed for such operations and is based on didecyldimethylammonium chloride (20-25%) and ammonium bisulphite (10-20%) and has the role of preventing corrosion and algae formation inside the pipeline during of the test, as well as monitoring the maintenance of that pressure for a certain period. The concentration of the Hydrosure chemical in the hydrostatic test effluent is 200 - 500 ppm (depending on the duration of the hydro test).

b) The composition, toxicity or hazardous nature of the effluent's fluids generated during well drilling

Waters resulting from drilling and well start-up activities.

Water-based drilling fluids and non-aqueous drilling fluids will be used to drill production wells.

Water-based drilling fluids will be used for the first two sections of the wells, where drilling is done without a riser. Water-based drilling fluids, on the other hand, are discharged directly onto the seabed from the wellbore during pipe installation.

The composition of the drilling fluid is a mix of desalinated water and more chemicals.

Once the non-riser sections are drilled and the riser installed, non-aqueous drilling fluids will be used until the full depth of the well is reached. The estimated total volume of non-aqueous drilling fluids

used in drilling is 5,300 m^3/ well, respectively 53,000 m^3 in total. The non-aqueous drilling fluid returns to the drilling platform, where it is separated from the detritus to be reused in drilling.

Non-aqueous drilling fluid consists of a mixture of desalinated seawater with specific chemicals (e.g., weighting agent, emulsifiers, fluid loss reducing agent, fluid loss control agent, viscosifier, filtrate control agent, base hydrocarbons, low toxicity pipe cleaners, coupling agent, return loss materials, etc.).

After drilling completion, the wells will be filled with a clean inhibited brine to serve as completion fluid for well preservation until the start of production. Freshwater mixed with calcium chloride ($CaCl_2$) will be used to create the well completion fluid (brine). The effluent in which this brine is found will not be discharged into the sea, being collected and transported to shore.

The effluent resulting from well start-up will reach the production platform along with the produced water. This effluent will not be discharged into the sea. Instead, it will be collected at the production platform and transported to the shore.

Well start-up effluent will contain the following chemicals:

- Corrosion inhibitor (concentration in effluent of 3 kg/ m^3);
- Oxygen inhibitor (concentration in effluent of 2 kg/ m^3);
- Biocide (concentration in effluent of 1 kg/ m^3);
- Caustic soda (concentration in effluent of 1 kg/ m^3);
- Monoethylglycol MEG (concentration in effluent of 500 kg/ m^3);
- Calcium Chloride Brine (concentration in effluent of 150 kg/ m^3);
- Calcium Bromide Brine (concentration in effluent of 463 kg/ m^3);
- Xantan brine (concentration in effluent of 15 kg/ m^3);
- Inhibitor J228 (concentration in effluent of 10 kg/ m^3);
- Surfactant (concentration in effluent of 10 kg/ m^3);
- Organic acid (concentration in effluent of 10 kg/ m^3).

c) The composition, toxicity or hazardous nature of the liquid effluents generated during the operation

Effluent (produced water) resulting from operation and maintenance and well restart effluent

The discharged effluents will comply with all provisions established through operating permits and defined in the national legislation (NTPA 001 - regarding setting pollutant load limits for industrial and urban wastewater discharged into natural receptors), except for those parameters naturally found in higher concentrations in the Black Sea water. For chemical parameters not covered by NTPA001 provisions, discharge limits (maximum allowable concentrations) have been developed in collaboration with the National Institute for Marine Research and Development (INCDM) "Grigore Antipa". INCDM conducted laboratory ecotoxicity tests using native marine species to provide the necessary information for the development of permits and monitoring programs.

The ecotoxicity testing of the concentrations was conducted using whole effluent toxicity (WET) testing, employing three marine species from three trophic levels (phytoplankton, zooplankton, and fish) that are representative of the organisms present in the receiving waters of the wastewater.

Whole effluent toxicity testing was considered an appropriate and acceptable approach for examining the potential cumulative environmental toxicity of an effluent without the need to examine individual constituents. The three test species (*Acartia tonsa, Skeletonema costatum* and *Chelon aurata)* were selected to best reflect the trophic levels of the Black Sea marine community potentially exposed to the effluents considered in the toxicity study.

The chemicals expected to be found in discharged water fall into two categories: geogenic substances and well management substances. Geogenic chemicals are natural and come from the mined deposit.

The management substances for well operations represent additives introduced into the system to ensure the safe and efficient functioning of the wells and the production platform. The composition and concentration of these substances in the produced water and well restart effluent, in accordance with their Safety Data Sheets (SDS), and the maximum allowable concentration for these substances in the effluent discharge are as follows:

Table A.19 Recommended maximum concentrations of chemical products

Chemical product	The recommended concentration to be used to achieve the maximum permissible limits specified in NTPA 001
Corrosion inhibitor	61 ppm
Deposit inhibitor	108 ppm
Antifoaming	30 ppm

During the chemical selection and testing process, dosage rates were reviewed for optimization. Following their test-based optimization, the following injection rates, calculated discharge concentrations in process water and dilution with cooling water were selected.

The concentration of products at injection, the concentration at discharge into the outfall and respectively the volumes of effluent estimated to be discharged during the life cycle of the project, are highlighted in the table below.

Table A.20 Injection concentration of chemicals

Use	Concentration of injection (ppm)	Concentration at discharges in emissary (ppm)	Estimation of discharged effluent volume (m^3/day)		
			0-3 years	3-6 years	6-20 years
Corrosion inhibitor	50	5.9	0.36	0.72	1.24
Deposition inhibitor	15	2.6	0.11	0.22	0.57
Antifoaming	10	1.7	0.07	0.14	0.38

It is important to note that throughout the project's lifecycle, the concentration of substances discharged into the outfall will remain constant, while the volume of water (effluent) will increase as the reservoir reaches maturity.

The effluent resulting from operation and maintenance has the following concentrations:

Table A.21 Composition of the effluent resulting from operation and maintenance

Effluent/ Composition	Concentration (ppm)
1. Effluent resulting from operation and maintenance	**1%**
Corrosion inhibitor	5,975
Scale inhibitor	2,591
Antifoaming	1,727
Sodium hypochlorite	0.2
TEG	0.495

Whole Effluent Toxicity (WET) testing is included as a monitoring parameter and will serve to document the effects of the combination of substances in the effluent, if any.

Discharge of subsea valve actuation fluid

The subsea valves on the wellhead of the wells use the pressure of a control fluid to be actuated. The hydraulic fluid is typically an aqueous solution of ethylene glycol and contains 55-70% water and 30-45% ethylene glycol (biodegradable product).

Wastewater generated from operations and maintenance vessels

Wastewater (e.g. household water, storm water, etc.) generated by operations and maintenance vessels will be collected on board, managed and discharged in accordance with the appropriate maritime regulations (e.g. MARPOL Convention, Black Sea Convention) regarding the disposal of water worn out.

d) The composition, toxicity or hazardous nature of the effluent's liquids generated during decommissioning

The composition, toxicity or hazardousness of the wastewater/ process water generated during decommissioning will be available upon completion of the decommissioning/ abandonment plan before the start of decommissioning work.

A.1.7.3. Estimated emissions of gaseous and particulate pollutants to be generated by the project during drilling of wells, construction and installation, operation, and project decommissioning

A.1.7.3.1 The types, quantities, and composition of gaseous and particulate pollutant emissions generated by the project.

a) Types, quantities of gaseous and dust pollutant emissions and their composition generated by the project during the construction phase including testing and commissioning

- Onshore emissions

The associated sources of airborne dust emissions from non-directed emission sources are as follows:

- Site development and execution of civil works;
- Dust emissions generated by site traffic;
- Handling of excavated soil, fill material, aggregates and construction materials;
- Construction waste handling (for example, detritus resulting from the execution of the microtunnel);
- The operations performed on the site before commissioning (welding, painting, etc.);
- Use of diesel generators for powering construction facilities and equipment.
- Sources of emissions from mobile sources:
- Combustion gas emissions from the operation of the crane with Diesel fuel which generate the following pollutants: CO_2, CO, NO_X, N_2O, CH_4, SO_2, VOCs.
- Emissions of combustion gases from the operation of heavy machinery with Diesel fuel (cranes, excavators, trucks, front loaders, concrete mixers, compactors, nacelles, generators, air compressors).

CALCULATION OF FLOWS OF EMITTED POLLUTANTS

The calculation of pollutant flows emitted by mobile sources was made using the EPA Air Emissions Factors Quantification methodology AP-42: Compilation of Air Emissions Factors, section 1.3[1]

In the calculation hypothesis, the following were considered:

- The density of Diesel fuel is a minimum of 820 kg/ m^3 and a maximum of 845 kg/ m^3. An average density of 832.5 kg/ m^3 was used in the calculation. LHV = 11.83 KWh/ kg and HHV = 12.67 KWh/ kg, where LHV is the Lower Heating Value and HHV the Higher Heating Value;
- It is estimated that the machines will work 8 hours/ day and the consumption 1-42 l/ h depending on the machine.

Diesel consumption for each machine is as follows:

[1] https:// www.epa.gov/ air-emissions-factors-and-quantification/ ap-42-compilation-air-emissions-factors

Table A.22 Diesel consumption for each machine used in construction

Machinery	Hours of operation (hours)	Fuel consumption (l/ h)
Crane	3,200	2.5
Excavation	21,760	15
Transport trucks	86,400	30
Front-end loaders	26,800	12
Concrete mixer	6,400	1.0
Compactor	2,240	5.0
Nacelle	6,720	4.0
Diesel generators	14,400	1.25
Air compressor	360	42

Table A.23 Estimation of the amount of pollutants emitted into the air during construction period onshore

Description	Pollutant	Amount of pollutant (tons/ construction period)	Emission	Observations
Equipment used in land construction	NO_X	164.500055	Continuous	During the construction period
	CO	43.478971		
	PM	-		
	CH_4	-		
	VOC	5.538722		
	SO_2	11.077445		
	N_2O	-		
	CO2	8,861.9558		

- Offshore emissions

Sources of air emissions from offshore construction/ installation vessels include:

- Emissions from the operation of ships, tugs, machinery, barges, cranes from construction/ installation at sea, fuelled with Diesel Fuel, the emitted pollutants being the following: CO_2, CO, NO_X, N_2O, CH_4, SO_2, VOCs
- Emissions from the operation of vessels used at the Pelican drilling Centre for pre-commissioning (filling pipelines, Hydro test, emptying and pressure tests) the emitted pollutants being the following: CO_2, CO, NO_X, N_2O, CH_4, SO_2, VOCs
- Emissions from the operation of the vessels used at the Domino drilling Centres for pre-commissioning (pipeline filling, hydro test, and emptying and pressure tests) the emitted pollutants being the following: CO_2, CO, NO_X, N_2O, CH_4, SO_2, VOCs.
- Emissions from the operation of vessels for gas production pipeline filling and tightness tests.
- Emissions from the platform's temporary diesel power generators (essential and backup generator) for commissioning and start-up.

- Emissions from gas turbine generators since commissioning.

Emissions sources from the start-up and commissioning of equipment on the platform:

- Pilot Offshore LP/ HP Flare - The low pressure (LP) flare is only used during this transition phase from the commissioning phase to the operating phase. The low pressure (LP) flare will be ignited when the first underwater protection system (SPS) begins to release gas forward (expected to be the Pelican). It is assumed that a combination pipe will be used for the Low Pressure (LP) and High Pressure (HP) Torch, with 3 piles. The pilots will also be lit during the process of closing with nitrogen (GPP N2) and outgassing in the opposite direction. This process is assumed to take 2 days, bearing in mind that the pilots cannot be ignited until natural gas is present in the exhaust gas, as the nitrogen will extinguish the pilots, generating gaseous combustion products including CO_2, CO, NO_X, CH_4, particulate matter (PM) and volatile organic compounds (VOC).
- HP Flare - Initial Cold Start (Increase Production at Pelican Wells) - Based on the Pelican system being commissioned first and could take up to 5 days to generate gas combustion products including CO_2, CO, NO_X, CH_4, PM and VOCs.
- Combustion of gases - Turning on the gas - Cleaning the Domino pipeline by combustion. The Domino pipeline is initially filled with nitrogen (N2) and production from the Pelican well is flared while the nitrogen system purges (24 hours - slow production increase). A mixing zone of 50% of the total volume of the Domino pipeline is assumed, with the worst case of 100% CH4 in the mixing zone that will be burned, generating gas emissions including CO_2, CO, NO_X, CH_4, PM and VOCs.
- Evacuation of start gas (flaring) which generates CO_2, CH_4 and VOCs. It is assumed that there is no pig train barrier during the return gas exhaust operation, with a relatively displaced flow, and that some mixing will occur. The estimated mass of methane vented prior to ignition of the high-pressure gas combustion (HP Flare) is 66 tonnes (assuming 100% methane in the mixing zone). The discharge is calculated as an average over the whole year; however, the maximum flow rate is 96,500 kg/ h for a duration of 41 minutes.

<u>Sources of air emissions from offshore shipping</u> include:

- Helicopter emissions that generate CO_2, CO, NO_X, N_2O, CH_4, SO_2, VOCs. The distance to the offshore production platform (SWP) and return is considered to be 320 km, it is assumed that during construction 4 helicopter trips will be made per day for 90 days, assuming it covers the winter period.
- Emissions from support vessels used for transport that generate CO_2, CO, NO_X, N_2O, CH_4, SO_2, VOCs.

CALCULATION OF POLLUTANT FLOWS EMISSIONED DURING OFFSHORE CONSTRUCTION/ INSTALLATION

The calculation of pollutant flows emitted by mobile sources was carried out using the EPA Air Emissions Factors Quantification AP-42 methodology, using:

- The emission factors in section 1.32 for the calculation of emissions from Diesel generators, and for testing and commissioning equipment;
- Emission factors from Table 3.1-1 and Table 3.1-2a for gas turbine main generators at start-up, LP/ HP pilot flare, HP cold start flare;
- Emission factors from table 13.5.1 Emission Factors for Flare operations for - Flaring of gases - Ignition of gas - Cleaning of Domino pipe by flaring.

Emission factors from ships are from the EMEP/ EEA Air Pollutant Emission Inventory Guidebook, 1.A.3.d Navigation-Shipping 2019 - update 2021. (Efs for MGO users), Table 0-2.

The emission factors for helicopters are from the EMEP/ EEA Air Pollutant Emission Inventory Guidebook, 1.A.3.a Aviation 2019. (Efs for helicopters), table 3.3.

In the calculation hypothesis, the following were considered:

- The density of Diesel fuel is a minimum of 820 kg/ m3 and a maximum of 845 kg/ m^3. An average density of 832.5 kg/ m3 was used in the calculation. LHV = 11.83 KWh/ kg
- The density of MGO marine fuel at a temperature of 15 °C is 860 kg/ m^3
- The density of helicopter fuel is 762 kg/ m^3
- It is estimated that the ships will operate 24 hours/ day
- Diesel consumption on each type of ship is as follows:

Table A.24 Fuel consumption of ships used to build/ install components at sea

Vessel	Days of operation (days)	Fuel consumption (l/ h)
Ship pipeline installation	190	35
Support vessels	802	10
Crane ship (10000t)	88	50
Heavy transport vessel	10	20
Flexlay installation vessel	43	15
Heavy Subsea Construction Vessel	101	15.0
Light Subsea Construction Vessel	299	15
Inspection vessel	146	8
Transport barge including tugboat or coaster	6,720	4.0
Fleet	300	12
Crew transfer ship (CTV)	540	3

[2] https:// www.epa.gov/ air-emissions-factors-and-quantification/ ap-42-compilation-air-emissions-factors

Vessel	Days of operation (days)	Fuel consumption (l/ h)
Intervention and rescue ship in emergency situations	140	5
Dredging vessel	45	10
Dumper wheels	10	10

Table A.25 Estimation of the amount of pollutants emitted into the air during construction period onshore

Description	Pollutant	Combustible	Quantity tons/ year	Emission type	Observations
The platform's temporary power Diesel generators	NO_X	Diesel	0.040355	Continuous	24 hours/ day, 1 MW during the commissioning period of the platform (120 days)
	CO		0.010719		
	PM		0.001261		
	CH_4		-		
	VOC		-		
	SO_2		0.012737		
	N_2O		-		
	CO_2		1,814.59		
Main generators for commissioning	NO_X	Gas	2.972131	Continuous	2 generators, 24 h/ day for 7 days 4.605 MW, 2.73 MMSCFd (2200 kg/ hr)
	CO		0.761609		
	PM		0.061300		
	CH_4		0.079876		
	VOC		0.019505		
	SO_2		-		
	N_2O		-		
	CO2		1,010.059943		
Backup generator for preparation and commissioning	NO_X	Diesel	0.000566	Intermittent	800 kW @ 50 kg/ hour for 24 hours/ day for 7 days.
	CO		0.000150		
	PM		0.000018		
	CH_4		-		
	VOC		-		
	SO_2		0.000178		
	N_2O		-		
	CO_2		25.43		
Essential generator for setup and commissioning	NO_X	Diesel	0.003608	Intermittent	1.4 MW @ 319 kg/ hour for 24 hours/ day for 7 days.
	CO		0.017493		
	P.M		1,394.229375		
	CH_4		-		
	VOC		-		
	SO_2		0.001139		
	N_2O		-		
	CO_2		162.2410		
Construction ships - commissioning preparation - Pelican - filling	NO_X	Diesel	0.000380	Intermittent	Duration for pre-commissioning the Pelican rig for 7 days based on the diesel units of the offshore construction vessel. Diesel consumption is expressed in litres per hour. The total duration of the activity is 7 days.
	CO		0.000082		
	PM		0.000027		
	CH_4		-		
	VOC		-		
	SO_2		0.000025		
	N_2O		-		

Description	Pollutant	Combustible	Quantity tons/ year	Emission type	Observations
	CO2		12.399665		Filling - 24 hours, Filling Pump - x1 @ 80 litres/ hour, Service Air Compressor - x1 @ 80 litres/ hour and Electric Current Generator - x1 @ 45 litres/ hour.
Construction ships - commissioning preparation - Pelican - Hidrotest	NO_X	Diesel	0.0005190	Intermittent	Duration for pre-commissioning the Pelican rig for 7 days based on the diesel units of the offshore construction vessel. Diesel consumption is expressed in litres per hour. The total duration of the activity is 7 days. Hydro test - 4 days, Service air compressor x 1 @ 45l/ hr, Generator x 1 @ 25l/ hr = 70 l/ h.
	CO		0.000112		
	PM		0.000036		
	CH_4		-		
	VOC		-		
	SO_2		0.000034		
	N_2O		-		
	CO_2		16.93613		
Construction vessels - commissioning preparation - Emptying and pressure tests	NO_X	Diesel	0.00916	Intermittent	The total duration of the activity is 7 days Emptying and pressure tests - 2 days, Primary compressor x 12 @ 140l/ hr, Generator for NPU x 2 @ 50l/ hr, Booster x 3 @ 155l/ hr, Exhaust pump x 2 @ 100l/ hr, Energy generator x 1 @ 25l/ hr.
	CO		0.001973		
	PM		0.000644		
	CH_4		-		
	VOC		-		
	SO_2		0.000602		
	N_2O		-		
	CO_2		298.80168		
Construction ships - preparation and commissioning - Domino - filling	NO_X	Diesel	0.000271	Intermittent	Pipeline preparation time is 15 days on a marine construction unit with diesel engines. Duration 15 days. Filling- 4 days, Lifting pump - x1 @ 160l/ hr, Filling pump - x1 @ 80l/ hr, Power generator x 1 @ 45l/ hr, Air compressor x 1 @ 80lt/ hr.
	CO		0.000058		
	PM		0.000019		
	CH_4		-		
	VOC		-		
	SO_2		0.000018		
	N_2O		-		
	CO_2		8.830908		
Construction ships - preparation and commissioning - Domino - Hydrotest	NO_X	Diesel	0.000266	Intermittent	Hydro test - 5 days, Lift pump - x1 @ 77l/ hr, HP pump - x2 @ 70l/ hr, energy generator x 1 @ 25l/ hr, compressor x 1 @ 45l/ hr.
	CO		0.000057		
	PM		0.000019		
	CH_4		-		
	VOC		-		
	SO_2		0.000017		
	N_2O		-		
	CO_2		8.679856		
Construction vessels - commissioning preparation – Domino Emptying and pressure tests	NO_X	Diesel	0.027339	Intermittent	Emptying and pressure tests 6 days, Primary compressor x 12 @ 140l/ hr, Generator for NPU x 2 @ 50l/ hr, Booster x 3 @ 155l/ hr, Exhaust pump x 2 @ 100l/ hr, Energy generator x 1 @ 13l/ hrs.
	CO		0.005889		
	P.M		0.001922		
	CH_4		-		
	VOC		-		
	SO_2		0.001798		
	N_2O		-		
	CO_2		892.050039		
	NO_X	Diesel	0.000851	Intermittent	

Description	Pollutant	Combustible	Quantity tons/ year	Emission type	Observations
Construction vessels - preparation and commissioning - Production pipeline - filling	CO		0.000183		The total duration of preparation and commissioning is 7.5 days. The duration of the filling is 6.5 days. filling - 6 days, lift pump - x3 @ 160l/ hr, flood pump - x2 @ 80l/ hr, power generator x 1 @ 45l/ hr, Air compressor x 1 @ 80l/ hr.
	PM		0.00006		
	CH_4		-		
	VOC		-		
	SO_2		0.000056		
	N_2O		-		
	CO_2		27.763043		
Construction vessels - preparation and commissioning - Production pipeline tightness test	NO_X	Diesel	0.000195	Intermittent	Leakage test duration - 1.5 days Power generator x 1 @ 25l/ hr, Air compressor x 1 @ 45l/ hr = 70 l/ h.
	CO		0.000042		
	P.M		0.000014		
	CH_4		-		
	VOC		-		
	SO_2		0.0000128		
	N_2O		-		
	CO_2		6.351048		
Offshore LP Torch Pilot	NO_X	Gas	0.000571	Intermittent	The LP torch is only used in this phase during the transition from commissioning to operation. The LP flame will be lit when the first SPS starts supplying gas at the start (expected to be Pelican). It is estimated to be a combined LP and HP Flare, so the assumption is that pilot gas is included in the HP flare allocation = 0.09 tonnes/ day
	CO		0.0001428		
	PM		0.0001999		
	CH_4		0.001604		
	VOC		0.00002970		
	SO_2		-		
	N_2O		0.00001513		
	CO_2		0.492		
Offshore LP/ HP Torch Pilot	NO_X	Fuel Gas	0.000571	Intermittent	3 Pilot LP & HP Flare Combo Torch. Pilots will be ignited while introducing N2 This process is assumed to take 2 days, noting that the pilots cannot be ignited until natural gas is present in the exhaust as the nitrogen will extinguish the pilots. Propane gas stored in containers will be used to light the piles 0.09 tons/ day
	CO		0.0001428		
	PM		0.0001999		
	CH_4		0.001604		
	VOC		0.00002970		
	SO_2		-		
	N_2O		0.00001513		
	CO_2		0.492		
HP Torch - Initial Cold Start (Increasing production on Pelican probes)	NO_X	Gas	25.04936	Intermittent	Considering that the Pelican system will be started first, it is expected to be done within 2 days, although 5 days have been allocated for this process. The total estimated amount of gas sent to the HP Flare is 15,000 tons). Once the performance of the probes has been monitored and understood, faster restarts are expected, especially with respect to the HP Torch restart. During the initial start-up of the Pelican system, propane gas from canisters will be required to ignite the pilots from the HP flare.
	CO		136.2979777		
	PM		0.8541561		
	CH_4		51.572208		
	VOC		-		
	SO_2		-		
	N_2O		-		
	CO_2		40,993		
Combustion of gases - Turning	NO_X	Gas	8.349786	Intermittent	The Domino pipe was originally filled with nitrogen (N2); It is assumed that
	CO		45.432659		

Description	Pollutant	Combustible	Quantity tons/ year	Emission type	Observations
on the gas - Cleaning the Domino pipeline by combustion	PM		0.284719		the system will be left at a pressure of 95 bar. The Domino well ramp-up operation will be done slowly while Pelican produces under stable conditions (250MMscfd). Pelican production will be burned during the N2 purge process (24 hours - slow well rise A mixing zone of 50% of the total volume of the Domino stream is estimated - worst case, 100% CH4 (methane) in the mixing zone to be burned.
	CH_4		17.190736		
	VOC		-		
	SO_2		-		
	N_2O		-		
	CO_2		13,664		
Onshore Production pipeline preparation and commissioning (GPP) - filling	NO_X	Diesel	0.000389	Intermittent	The duration of pipeline preparation is 15 days with operation 12 hours/ day Filling duration 6 days. Filling - 6 days, energy generator x 1 @ 25l/ hr, air compressor x 1 @ 45l/ hr.
	CO		0.000084		
	PM		0.000027		
	CH_4		-		
	VOC		-		
	SO_2		0.000026		
	N_2O		-		
	CO_2		12.70210		
Onshore Production Pipeline Preparation and Commissioning (GPP) - Hydro test	N_X	Diesel	0.002920	Intermittent	Hydro test - 5 days, Transfer pump - x1 @ 80lt/ hr, HP pump - x4 @ 120l/ hr, energy generator x 1 @ 25l/ hr, compressed air compressor x 1 @ 45lt/ hr.
	CO		0.000629		
	PM		0.000205		
	CH_4		-		
	VOC		-		
	SO_2		0.000192		
	N_2O		-		
	CO_2		95.2657		
Onshore Production Pipeline Preparation and Commissioning (GPP) – Draining and pressure testing	NO_X	Diesel	0.061484	Intermittent	Emptying and pressure tests - 4 days, Primary compressor x 10 @ 140l/ hr, Generator for NPU x 5 @ 50l/ hr, Booster x 2 @ 155l/ hr, Exhaust pump x 1 @ 100l/ hr, Energy generator x 1 @ 13l/ hr.
	CO		0.013245		
	PM		0.004322		
	CH_4		-		
	VOC		-		
	SO_2		0.004043		
	N_2O		-		
	CO_2		2,006.2053		
Installation of offshore equipment and facilities	NO_X	Diesel	1.401416	Intermittent	See estimates 24 hours/ day - 2 forklifts and 1 crane estimate 3L/ forklift. estimate 8L/ hmacara Consumption 350 litres/ day.
	CO		0.301892		
	PM		0.098512		
	CH_4		-		
	VOC		-		
	SO_2		0.092157		
	N_2O		-		
	CO_2		45,727.545		
Evacuation of the starting gas	NO_X	Gas	-	Intermittent	The mixing zone is estimated to represent 10% of the GPP requirement, or c16 km of N2 at 14 bar
	CO		-		
	PM		-		

Description	Pollutant	Combustible	Quantity tons/ year	Emission type	Observations
(ignition of the torch)	CH_4		65.408372		pipe pressure. Estimated mass of methane vented prior to HP Flare ignition is 65 tons (100% CH4 assumed in mixing zone). Pelican, 1.5 km pipeline It is estimated that the system is left at 14 bar pressure and N2 is blown throughout the system before the HP pilots are ignited. It is estimated that 0.5 t of methane is vented prior to ignition of the HP Flare (cold methane) pilots. 1 te = 66 tons. Duration is unknown
	VOC		0.447550		
	SO_2		-		
	N_2O		-		
	CO_2		0.144078		
Emissions from transport (helicopter)	NO_x	Aviation fuel	0.063842	Intermittent	The distance to the platform is 160km (*2=320km). During construction, it is estimated that there will be 4 helicopter flights per day. Fuel consumption is 5.5 km/ l at a density of 762 kg/ m3
	CO		19.152524		
	PM		-		
	CH_4		-		
	VOC		0.303248		
	SO_2		0.01596		
	N_2O		-		
	CO_2		49,477		
Transport emissions (vessels using MGO)	NO_X	MGO	3,021.425600	Intermittent	Consumption per ship and per day is presented in table 2.32
	CO		160.696320		
	PM		-		
	CH_4		-		
	VOC		73.234000		
	SO_2		76.16336		
	N_2O		-		
	CO_2		134,164.688		

The total amount of pollutants emitted during the offshore construction period is presented in the table below:

Table A.26 The total amount of pollutants emitted into the air during the offshore construction period

Pollutant	Average quantity (tons)	
	Continuous emissions	Intermittent emissions
NO_X	3.01	3,056
CO	0.77	361.92
PM	0.06	1,395
CH_4	0.08	134.17
VOC	0.02	73.98
SO_2	0.01	76.28
N_2O	-	-
CO_2	2,825	238,173

b) The types, amounts of gaseous and dust pollutant emissions and their composition generated by the project during the well drilling phase

The sources of emissions during the well drilling phase are the following:

- Emissions from diesel powered crane operation generating CO_2, CO, NO_X, N_2O, CH_4, SO_2, VOCs and VOCs. The cranes are assumed to operate for 12 hours per day for a total of 800 days during the drilling period and consume 2.5 litres of fuel per hour of operation.
- Gas emissions from the operation of the rig's eight diesel fuelled power generators generating CO_2, CO, NO_X, N_2O, CH_4, SO_2, VOCs. It is estimated that they operate 24 hours/ day for 800 days, with an estimated diesel consumption of 50 tons/ day.
- Emissions from the operation of temporary diesel fuelled equipment that generate CO2, CO_2, CO, NO_X, N_2O, CH_4, SO_2, VOCs. The Riserless Mud Recovery (RMR) system is estimated to consume 500 litres/ hour for 80 days. Wireline (WL) and General Pumps (GP) are estimated to consume 458.37 litres/ hour of, for 5 days and 2 days respectively.

The sources of emissions from transport are the following:

- Helicopter emissions that generate CO_2, CO, NO_X, N_2O, CH_4, SO_2, VOCs. It is estimated that during construction, 1 trip/ day will be made for 800 days. The distance from NGMS and Pelican is 218 km and to Domino is 238 km. Fuel consumption is estimated at 5.5 km/ l.
- Emissions from vessels used for transport (support vessels, anchor handling tugs, multipurpose vessels (MSVs)) generate CO_2, CO, NO_X, N_2O, CH_4, SO_2, VOCs. An estimated duration of 800 days for support vessels and anchor handling tugs, multi-functional vessels (MSV) 60 days. Fuel consumption is estimated at 35 tons/ day.

CALCULATION OF THE FLOW OF POLLUTANTS EMISSIONED DURING WELL DRILLING

The calculation of pollutant flows emitted by mobile sources was carried out using the EPA Air Emissions Factors Quantification AP-42 methodology, using:

- The emission factors from section 1.3 for the calculation of emissions from Diesel generators,
- Emission factors from ships are from the EMEP/ EEA Air Pollutant Emission Inventory Guidebook, 1.A.3.d Navigation-Shipping 2019 - update 2021. (Efs for MGO users), Table 0-2;
- The emission factors for helicopters are from the EMEP/ EEA Air Pollutant Emission Inventory Guidebook, 1.A.3.a Aviation 2019. (Efs for helicopters), table 3.3.

In the calculation hypothesis, the following was considered:

- The density of Diesel fuel is minimum 820 kg/ m^3 and maximum 845 kg/ m^3. An average density of 832.5 kg/ m^3 was used in the calculation. LHV = 11.83 KWh/ kg
- The density of MGO marine fuel at a temperature of 15 °C is 860 kg/ m^3. The density of MGO taken as 860 (at 15°C).
- The density of helicopter fuel is 762 kg/ m^3.

Table A.27 Estimated amount of pollutant emissions in the well drilling phase

Description	Pollutant	Combustible	Amount tons/ year	Issue type	Remarks
Diesel generators	NO_X	Diesel	2.6930	Continuous	31.5 MW @ 50 t/ day, 24 hours/ day, 800 days 8 Diesel generators (42 MW) 75% utilization is estimated under normal conditions (drilling system, DP thrusters, utilities) for 24 hours/ day Estimated consumption is 50 t/ day
	CO		0.7153		
	PM		0.0842		
	CH_4		-		
	VOC		-		
	SO_2		0.850		
	N_2O		-		
	CO_2		121,093		
Diesel temporary equipment	NO_X	Diesel	0.228483	Intermittent	RMR uses 12m^3/ day, 80 days = 500L/ hour WL - 5 days, 1m^3/ day/ well = 458.37L/ hour GP pump skids - 2 days/ well 1m^3/ day = 458.37L/ hour for 10 wells + 1 new drill = 1416.74 L/ hour
	CO		0.049220		
	PM		0.016061		
	CH_4		-		
	VOC		-		
	SO_2		0.015025		
	N_2O		-		
	CO_2		7,455.306068		
Crane	NO_X	Diesel	0.001854	Intermittent	Average 12 hours/ day, 800 days with consumption of 2.5 L/ hour
	CO		0.000399		
	PM		0.000130		
	CH_4		-		
	VOC		-		
	SO_2		0.000122		
	N_2O		-		
	CO		60.4862		
Transport emissions (Helicopter)	NO_X	Aviation fuel	0.305908	Intermittent	It is estimated that during the construction, 1 trip/ day will be carried out for 800 days. The distance from NGMS and Pelican is 218 km and to Domino is 238 km. Fuel consumption is estimated at 5.5 km/ l with a fuel density of 762 kg/ m^3.
	CO		91.772509		
	PM		-		
	CH_4		-		
	VOC		1.453065		
	SO_2		0.076477		
	N_2O		-		
	CO_2		237.0790		
Transport emissions (ships with MGO fuel)	NO_X	MGO	9,476,250	Intermittent	2 transport vessels per campaign, 2-3 continuous support vessels with continuous rotation (platform/ transit/ port). Pelican anchor handling tug - 1 month mobilization and 1 month demobilization.
	Co.		504.00		
	P.M		-		
	CH_4		-		
	VOC		229.68750		
	SO_2		238.8750		
	N_2O		-		
	CO2 _		420,787.50		

Table A.28 The total amount of pollutants emitted into the air during the well drilling period

Pollutant	Average quantity (tons)	
	Continuous emissions	Intermittent emissions
NO_X	2.6930	9.477
CO	0.7153	595.82
PM	0.0842	0.0162
CH_4	-	-
VOC	-	231.14
SO_2	0. 850	238.97
N_2O	-	-
CO_2	121,093	428,540

c) The types, amounts of gaseous and dust pollutant emissions and their composition generated by the project during the operation phase

Onshore emissions

The sources of emissions during the operating period, from transport, are the following:

- Emissions of combustion gases from motor vehicles using petrol or diesel. These generate CO_2, CO, NO_X, N_2O, CH_4, SO_2, VOCs. It is estimated that the team's vehicles will travel at 60 km/ h, 365 days/ year with 50% diesel vehicles and 50% gasoline.
- Sources of emissions in normal conditions operation are the following:
- Emissions from the diesel backup power generator;
- Emissions from filter replacement are estimated 2 times/ year, for 20 minutes to change the filters and empty the separator (0.6 t/ event).
- Emissions from pigging calibration, an annual calibration is estimated in the first two years and once every 4 years thereafter, according to the risk integrity analysis (together with the annual technical maintenance) (0.19 t/ event), time of 20 minutes.
- Emissions during planned technical maintenance (8 tons/ event), based on the physical volume of the entire onshore facility of 170 m^3 (between inlet and outlet valves), maintenance is estimated once every 4 years, in parallel with the maintenance of at the platform for 40 minutes.
- Fugitive emissions – emissions from safety valves (PSV) due to sealing losses of PSV valves, assuming emission class V. Estimated annual emissions are 0.11 tonnes, including a 100% margin.
- Fugitive emissions from flange emissions (0.25 tonnes/ year), based on a current estimate of 200 flanges (which could increase), each flange having an acceptable emission rate of <1.4 m^3/ year.

CALCULATION OF FLOWS OF POLLUTION ȚEMISSIONS IN THE PERIOD OF ONSHORE OPERATION

The calculation of pollutant flows emitted by mobile sources was carried out using the EPA Air Emissions Factors Quantification AP-42 methodology, using the emission factors from section 1.3.

In the calculation hypothesis, the following was considered:

- The density of Diesel fuel is a minimum of 820 kg/m^3 and a maximum of 845 kg/m^3. An average density of 832.5 kg/m^3 was used in the calculation. LHV = 11.83 KWh/ kg.

Table A.29 Estimation of the amount of pollutants emitted into the air during the period of operation

Description	Pollutant	Combustible	Amount tons/ year	Issue type	Remarks
Backup Diesel Generator	NO_X	Diesel	0.000205	Intermittent	It is estimated 1 hour/ week It is estimated 305 KVA with a consumption of 70l/ hour
	CO		0.000054		
	PM		0.000006		
	CH_4		-		
	VOC		-		
	SO_2		0.000065		
	N_2O		-		
	CO_2		9.21		
Emissions from filter replacement	NO_X	Gas		Intermittent	It is estimated 2 times/ year, for 20 minutes to change the filters and empty the separator (0.6 t/ event).
	CO		-		
	PM		-		
	CH_4		1.189243		
	VOC		0.008137		
	SO_2		-		
	N_2O		-		
	CO_2		0.002620		
Emissions from pigging calibration	NO_X	Gas	-	Intermittent	An annual calibration is estimated in the first two years and once every 4 years thereafter, in accordance with the risk integrity analysis (together with the annual technical maintenance) (0.19 t/ event), for 20 minutes
	CO		-		
	PM		-		
	CH_4		0.188297		
	COV		0.001288		
	SO_2		-		
	N_2O		-		
	CO_2		0.000415		
Emissions during planned technical maintenance	NO_X	Gas	-	Intermittent	The volume of gas in the entire installation is 170 m^3 (between the inlet and outlet valves) - a depressurization is estimated at a pressure of 55 Bar. Every 4 years in parallel with platform maintenance. During operation, there will be 5 maintenances, so there will be emissions of 40 tons per 8 t/ operation.
	CO		-		
	PM		-		
	CH_4		7.928287		
	VOC		0.054248		
	SO_2		-		
	N_2O		-		
	CO_2		0.017464		
Emissions from Safety Valves (PSV)	NO_X	Gas	-	Intermittent	Based on emission class V (tbc during EPC phase). 3 x 40E50 PSV (heaters), 2 x 80J100 PSV (filter separator - 1 active and one reserve, in stand-by) - only one was taken into account in the calculation. The annual emission is 0.11 t (with a margin of 100%
	CO		-		
	PM		-		
	CH_4		0.109014		
	VOC		0.000746		
	SO_2		-		

Description	Pollutant	Combustible	Amount tons/ year	Issue type	Remarks
	N_2O		-		because Emission Class V refers to liquids and not gases).
	CO_2		0.000240		
Fugitive emissions caused by emissions at flanges	NO_X	Gas	-	Intermittent	Based on a current estimate of 200 flanges (which could increase), each flange having an acceptable emission rate of <1.4 m3/ yr, emission 0.25 t/ yr.
	CO		-		
	PM		-		
	CH_4		0.247759		
	VOC		0.001695		
	SO_2		-		
	N_2O		-		
	CO_2		0.000546		
Transport emissions (diesel and petrol)	NO_X	Diesel and gasoline	0.007175	Continuous	It is estimated that the team vehicles will travel at 60 km/ h, 365 days/ year with 50% diesel and 50% gasoline vehicles.
	CO		0.010139		
	PM		0.000135		
	CH_4		-		
	VOC		0.001133		
	SO_2		0.000014		
	N_2O		0.000087		
	CO_2		0.070128		

Table A.30 Total annual amount of pollutants emitted into the air during the operating period from the onshore activity

Pollutant	Average quantity (tons/ year)	
	Continuous emissions	Intermittent emissions
NO_X	0.00717	0.00020
CO	0.01014	0.00005
PM	0.00014	0.00001
CH_4	0.00000	9.66260
COV	0.00113	0.06442
SO_2	0.00001	0.00006
N_2O	0.00009	0.00000
CO_2	0.07013	9.22652

Offshore emissions under normal operating conditions

The sources of offshore emissions during the operating period are the following:

- Emissions from gas turbine generators (GTG) containing the following pollutants CO_2, CO, NO_X, N_2O, CH_4, SO_2, VOCs. GTGs are estimated to operate for 24 hours a day with 2 active units and a fuel consumption of 2,251 kg/ h;
- Fugitive emissions due to flange losses (exhaust), which generate CO_2, CH_4 and VOCs. An estimated number of 750 flanges (this number may increase) and each flange has an acceptable loss rate of <1.4 $m^{3/}$ year. Fugitive emissions from flange losses are not connected to the platform's flare systems, so they are released into the air.

- Emissions from analyser venting, which generate CO_2, CO, NO_X, CH_4, and VOCs. An estimation is made based on the dew point analyser for the wet gas, which is expected to be a "grab" type with sequential analysis. Due to very small sampling and emission volumes, it is assumed that the emissions are 0.0024 t/day.
- Operating emissions from the essential service generator and the backup start generator (BSG) powered by diesel, which generate CO_2, CO, NO_X, N_2O, CH_4, SO_2, and VOCs. It is estimated that there will be a 4-hour operational test every two weeks for each generator, with the essential service generator (ESG) having a nominal power of 1 MW, and the backup start generator (BSG) having a nominal power of 800 kW.
- Emissions from the testing of the fully enclosed diesel powered survival craft (TEMPSC), which generates CO_2, CO, NO_X, N_2O, CH_4, SO_2 and VOCs. It is assumed that TEMPSC tests will take place during visits to the SWP for 4 hours per day and 4 times per year, for a total duration of 16 hours per year.

<u>Emission sources from maritime transport:</u>

- Emissions from vessels resulting from the use of Perimeter Support Vessels (FSVs) and Underwater Inspection, Repair and Maintenance (IRM) FSVs, as well as Domino pig cleaning, include the following pollutants CO_2, CO, NO_X, CH_4, SO_2 and VOCs. The FSV and FSV for underwater MRI, cleaning with the Domino pig are assumed to be operational for 90 and 30 days per year, respectively, with a fuel consumption of 20 tons/ day.

<u>Emissions sources from flare systems, fugitive emissions during normal operating conditions</u>:

- Continuous emissions from the LP Flare from the TEG regenerator and produced water degasser, as well as the Header Purge, generate gaseous combustion products including CO_2, CO, NO_X, CH_4, PM and VOCs;
- The purging of LP/HP flare systems and pilots generates CO2, CO, NOX, CH4, and VOCs. Continuous supply of purge gas to LLP, LP header, and HP header is estimated to be required, and the fuel consumption is based on GBA (Gas Burning Appliance) burning rates.
- Fugitive emissions due to losses at pressure relief valves (PSVs) and pressure control valves (PCVs) generate CO_2, CH_4 and VOCs. The PSVs are expected to be "leak tight" as they will be tested and replaced in service in the event of lifting to confirm tightness. Losses from the PCV are caused by wear and tear during operation. The loss class is assumed to be V for both PSVs and PCVs. It is estimated that emissions with a margin of 100% are 1.2 tons/ year.
- Methanol, the blanket gas of TEG tanks (flame) generates CO_2, CO, NO_X, CH_4 and VOCs. It is estimated that the full refill of the storage tanks occurs quarterly, with a low pressure, assuming a density of 1 kg/ m^3 and an additional loss of 20% during the year.
- The TAR (Inspection and Maintenance) for the HP Torch generates CO_2, CO, NO_X, N_2O, CH_4, SO_2 and VOCs. Five TARs are planned per production period, one every 4 years, with a duration of 2 days and a total volume of 4,000 tons for each TAR event.

- Planned check of platform pig receiver/ launcher to HP Flare generates CO_2, CO, NO_X, N_2O, CH_4, SO_2 and VOCs. Receiver cleaning/ launcher pig SWP will be held annually for the first two years and then conducted with the SWP TAR. Therefore, two additional inspections will take place during the production period with emissions of 0.72 t/ event with a duration of 27 seconds.

CALCULATION OF FLOWS OF POLLUTANTS EMITTED DURING OFFSHORE OPERATION

The calculation of pollutant flows emitted by mobile sources was carried out using the EPA Air Emissions Factors Quantification AP-42 methodology, using:

- The emission factors from section 1.3 for the calculation of emissions from Diesel generators
- Emission factors from Table 3.1-1 and Table 3.1-2a for gas turbine main generators
- Emission factors from table 13.5.1 Emission Factors for Flare operations
- Emission factors from ships are from the EMEP/ EEA Air Pollutant Emission Inventory Guidebook, 1.A.3.d Navigation-Shipping 2019 - update 2021. (Efs for MGO users), Table 0-2

In the calculation hypothesis, the following was considered:

- The density of Diesel fuel is a minimum of 820 kg/ m^3 and a maximum of 845 kg/ m^3. An average density of 832.5 kg/ m^3 was used in the calculation. LHV = 11.83 KWh/ kg
- The density of MGO marine fuel at a temperature of 15 °C is 860 kg/ m^3. The density of MGO taken as 860 (at 15°C).

Table A.31 Estimation of pollutant emissions during the offshore operation period

Description	Pollutant	Combustible	Amount tons/ year	Issue type	Observations
Diesel generator essential services	NO_X	Diesel	0.0022	Intermittent	It is estimated to test the generator for 4 hours every 2 weeks. (Total number of hours per year = 104 at 1 MW).
	CO		0.0006		
	PM		0.0001		
	CH_4		-		
	VOC		-		
	SO_2		0.0007		
	N_2O		-		
	CO_2		100.43		
Backup Diesel Generator	NO_X	Diesel	0.000350	Intermittent	Generator testing is estimated for 4 hours every 2 weeks. (Total number of hours per year = 104 at 800 MW).
	CO		0.000093		
	PM		0.000011		
	CH_4		-		
	VOC		-		
	SO_2		0.000110		
	N_2O		-		
	CO_2		15.74		
Gas turbine generators	NO_X	Gas	158,677	Continuous	GTGs are estimated to operate 24 hours a day with 2 active units and a fuel consumption of 2,251 kg/ h
	CO		40,661		
	PM		3,273		
	CH_4		4,264		

Description	Pollutant	Combustible	Amount tons/ year	Issue type	Observations
	VOC		1,041		
	SO_2		-		
	N_2O		0.0119625		
	CO_2		53,925.25		
TEMPSC test	NO_X	Diesel	0.0000004	Intermittent	It is assumed that the TEMPSC tests will take place during visits to the SWP for 4 hours per day and 4 times per year, for a total duration of 16 hours per year.
	CO		0.0000001		
	PM		0.00000003		
	CH_4		-		
	VOC		-		
	SO_2		0.00000002		
	N_2O		-		
	CO_2		0.012109		
Flare LP – Purge and Pilots	NO_X	Gas fuel	0.434471	Continuous	LLP and LP purge head requires daily - 0.6 tons/ day Based on GBA torch tip, 1.2 kg/ hour per pilot, 3 pilots - 0.09 tons/ day. Total gas consumption = 0.69 t/ day.
	CO		2.36403602		
	PM		0.01481501		
	CH_4		0.89450012		
	VOC		-		
	SO_2		-		
	N2O		-		
	CO_2		694,728		
HP torch and easy pilot	NO_X	Gas	0.483	continuously	HP torch purge gas required under normal conditions - 0.7 tons/ day Based on GBA torch tip, 1.2 kg/ hour per pilot, 3 pilots - 0.09 tons/ day Total gas consumption = 0.79 t/ day.
	CO		2,629		
	PM		0.016		
	CH_4		0.995		
	VOC		-		
	SO_2		-		
	N2O		-		
	CO_2		790.55		
TAR (Inspection and Maintenance) for Facla HP - 1 TAR event (average - t/ event)	NO_X	Gas	6.679829	Intermittent	5 TARs during the production period, 1 every 4 years and lasts 7 days 4,000 tons/ TAR event
	CO		36.346127		
	PM		0.227775		
	CH_4		13.752589		
	VOC		-		
	SO_2		-		
	N_2O		-		
	CO_2		10,931.384667		
HP Torch – Planned check on platform godevil receiver/ launcher	NO_X	Gas	0.001209	Intermittent	Cleaning of the SWP godevil receiver/ launcher will occur annually for the first two years, and then with the SWP TAR. Therefore, two additional inspections will take place during the production period with emissions of 0.72 t/ event with a duration of 27 seconds.
	CO		0.006576		
	PM		0.000041		
	CH_4		0.002488		
	VOC		-		
	SO_2		-		
	N_2O		-		
	CO_2		1.977897		
Methanol, the blanket gas of TEG tanks (flame)	NO_X	Gas fuel	0.004843	continuously	The tanks are refilled quarterly: Methanol 400 x 4m^3, TEG 200 x 4 m^3 Total 2400 m^3. Low pressure at density of 1kg/ m$^{3.}$
	CO		0.026351		
	PM		0.000165		
	CH_4		0.009971		
	VOC		-		

Description	Pollutant	Combustible	Amount tons/ year	Issue type	Observations
	SO_2		-		an additional loss of 20% per year is estimated = 2.9 tons/ year
	N_2O		-		
	CO_2		7.925254		
Fugitive emissions – losses from PSV & PCV (Flaring)	NO_X	Gas	0.002004	continuously	It is estimated that the Pressure Safety Valves (PSVs) will be "leak tight" since they will be tested and replaced in service if leakage is detected to confirm their tightness. The leakage from Pressure Control Valves (PCVs) is caused by wear and deterioration during operation. The assumed leakage class for both PSVs and PCVs is V. Based on class V losses (tbc during the EPC phase). 1 x 16" PCV (Primary Separator), 1 x 6" PCV (TEG contactor, 1 x 12" PSV (Primary Separator), 1 x 4" PSV (TEG Contactor) = 1.2 t/ year
	CO		0.010907		
	PM		0.000068		
	CH_4		0.004127		
	VOC		-		
	SO_2		-		
	N_2O		-		
	CO_2		3.279355		
LP torch - continuous flame	NO_X	Gas	0.191958	continuously	LP discharged continuously from TE regenerator and produced water degasser. From H&MB Case 3 (Max water), the total is 0.253 MMscfd (all hydrocarbons, CH_4) Purging is additional and continuous (26.1 kg/ hour) estimated (extra line) = 4.9 tons/ day.
	CO		1.044476		
	PM		0.006546		
	CH_4		0.395207		
	VOC		-		
	SO_2		-		
	N_2O		-		
	CO_2		4,891.0		
Fugitive emissions - losses from flanges (Venting)	CH_4	Gas	0.990366	Continue u	An estimated number of 750 flanges (this number may increase) and each flange has an acceptable loss rate of <1.4 m^3/ year. Fugitive emissions from flange losses are not connected to the platform flare systems and are not burned. Emissions of 1 t/ year are estimated.
	C_2H_6		0.00130		
	C_3H_8		0.000546		
	iC_4H_{10}		0.000360		
	iC_5H_{12}		0.000447		
	nC_5H_{12}		0.000447		
	nC_6H_{14}		0.001068		
	N_2		0.002604		
	CO_2		0.002182		
Analyzer Losses (Venting)	CH_4	Gas	0.868742	Continue u	An estimate is made based on the dew point analyzer for the wet gas, which is expected to be of the "rapid" type with sequential analyses. As sampling volumes and emissions will be very small, emissions are assumed to be 0.0024 t/ day.
	C_2H_6		0.00114		
	C_3H_8		0.000479		
	iC_4H_{10}		0.000316		
	iC_5H_{12}		0.000392		
	nC_5H_{12}		0.000392		
	nC_6H_{14}		0.000937		
	N_2		0.002284		
	CO_2		0.001914		
Emissions from transport (Ships use MGO)	NO_X	MGO	173.3	Intermittent	It is estimated that FSV and FSV for underwater MRI, cleaning with the Domino godevil are operational for 90 and 30 days per year, respectively, with a fuel consumption of 20 tons/ day.
	CO		9.2160		
	PM		-		
	CH_4		-		
	VOC		4.20		
	SO_2		4.3680		
	N_2O		-		

Description	Pollutant	Combustible	Amount tons/ year	Issue type	Observations
	CO_2		7,694.40		

Table A.32 Total annual amount of pollutants emitted into the air during the operating period from the offshore activity

Pollutant	Average quantity (tons/ year)	
	Continuous emissions	Intermittent emissions
NO_X	159.79	179.96
CO	46.72	45,57
PM	3.31	0.2279
CH_4	8.42	13.76
COV	-	4.20
SO_2	-	4.37
N_2O	0.01	-
CO_2	70,453.61	18,743.95

d) Types, quantities of gaseous and dust pollutant emissions and their composition generated by the project during the decommissioning phase

The types, amounts of gaseous and dust pollutant emissions and their composition generated during decommissioning will be available upon completion of the decommissioning/ abandonment plan prior to the commencement of decommissioning work.

The composition of atmospheric emissions during the decommissioning phase include:

- NO_x, SO_2, CO, CO_2, PM, from internal combustion engines of vehicles, ships and barges and other equipment;
- Dust (dust) site clearance, vehicle traffic, material, and waste handling.

A.1.7.3. Noise and vibration sources

A.1.7.3.1. Identification and quantification of noise and vibration sources during construction

Noise and vibration sources during construction/ installation on land

During the construction period, the noise sources will have a temporary character and duration and will manifest themselves locally and intermittently.

The Constanța - Mangalia railway passes in the project perimeter, so there will be a background noise that manifests itself locally and is for a short period of time.

The main sources of noise during the construction/ installation period on land will be represented by:

- Car traffic in the project area
- Operation of equipment used during construction works

- The excavation activities for the arrangement of construction sites, the execution of trenches for laying the production pipeline, the construction of the launching pit, as well as the loading and unloading of soil.

Noise and vibration sources during construction/ installation at sea

The noise generated will be surface and underwater.

The sources of noise during construction/ installation at sea are the following:

- Execution of dredging works/ creation of ditches and their filling;
- Execution of the home of the microtunnel string;
- Installation of the production platform (eg, jacket piles), production pipeline, flowlines and other underwater equipment;
- Noise generated by transport ships, construction/ installation.

In order to assess the level of noise associated with the construction/ installation activity, an underwater noise modeling was carried out. The modeling **is presented in Appendix F.**

A.1.7.3.2. Identification and quantification of noise and vibration sources during well drilling

The sources of noise and vibration during well drilling are the following:

- Wells drilling
  - Ambiental noise (equipment and machinery);
  - Underwater noise (the actual drilling);
- Equipment related to the drilling platform (for example, power generators, cranes, etc.)
- Noise generated by support vessels;
- Aerial noise, produced by helicopters used to transport personnel, equipment, or medical emergencies.

In order to evaluate the level of noise associated with the drilling activity of the wells, an underwater noise modelling was carried out. The modelling is **presented in Appendix F.**

A.1.7.3.3. Identification and quantification of noise and vibration sources during operation

Noise sources during operation in the NGMS and CCR area

- Operation under normal operating conditions:
  - Control valve and overhead piping ~ 75 dB LpA at 1m;
  - Flow conditioning devices and downstream overhead pipes~ 75 dB LpA at 1m;
  - Other additional noise-generating/ flow-restricting devices in the piping system and downstream overhead piping with estimated noise levels >75 dB LpA at 1 meter
  - Relief valves, pressure relief valves and associated openings and downstream overhead piping up to and including the ventilation trench - 85 dB LpA at the nearest normally accessible location in an emergency, if practicable but without exceed 110 dB LpA
  - External air conditioning unit from CCR building ~ 60 dB LpA at 1m

- Diesel generator operation: estimated 1 hour/ week ~ 75 dB LpA at 1m. The generator is equipped with an insulating case and vibration dampers.
- Outgassing during maintenance: It is estimated that maintenance will be performed once every 4 years for approximately 20 minutes.

During maintenance or emergency situations, the installation is depressurized, redirecting the gas flow to the flare stack through pressure safety valves (PSV), blowdown valves (BV), and restriction orifices (RO) in the NGMS. Pressure safety valves (PSV), blowdown valves (BV), restriction orifices (RO), and connected downstream pipelines will generate high noise levels, typically in the range of 120-140 dB LpA at 1 metre, due to the high flow rates and pressure drop across the valves and associated orifices. However, it is expected that with acoustic insulation on the downstream pipelines and the flare stack equipped with a noise attenuator, the noise levels will be reduced by 20-30 dB (A).

To assess the level of noise associated with the NGMS, a noise modelling was performed. The modelling **is presented in Appendix F.**

Noise sources during operation at sea

The sources of noise during operation at sea are the following:

- Offshore production platform equipment and operations;
- Operations and maintenance vessel traffic and equipment.

A.1.7.4. Identification and quantification of sources of heat, light or other form of electromagnetic radiation originating from the project

During the lifetime of the project, the following main sources of radiation are expected:

- The use of sealed radioactive sources contained in instruments such as geophysical investigation devices executed in the borehole during drilling, construction and operating periods;
- Welding quality control investigations during the construction/ installation period (e.g. during preparation of the pipeline for installation in the onshore pipeline assembly area, offshore pipeline and offshore production platform installation, etc.) and the period of operation (for example, welding work during the performance of periodic maintenance work);
- Thermal radiation resulting from the gas dispersion system within the NGMS installed to allow the safe disposal of gases released from the facility as a result of emergency depressurization and manual venting operations;
- Thermal radiation from the gas dispersion and flare system installed on the offshore production platform;
- Welding work is a source of light and thermal radiation, during the construction/ installation period (for example, during the preparation of the pipeline for installation in the onshore pipeline assembly area, the installation of offshore pipelines and the Neptun

Alpha Platform, etc.) and the period of operation (for example, welding work during the performance of periodic maintenance work).

A.1.7.5. Sources of pollutants for soil, subsoil, groundwater and deep water

The main sources of potential soil and subsoil pollution during the construction period of the project's onshore components include:

- Accidental leakage of fuels, oils, chemicals and other liquids from vehicles and equipment during the execution of construction/ installation works;
- Inadequate management of fuels and chemicals in onshore site setups (NGMS site setup, microtunnel site setup, pipe assembly area, pipe storage area, etc.);
- Improper use, handling and storage of materials (eg mineral aggregates, concrete, etc.);
- Land clearing, digging and excavation works for the realization of NGMS and CCR sites, trenching and installation of the onshore section of the production pipeline and Fibre optic cable and the construction of the microtunnel (for example, the execution of the launch shaft and the microtunnel);
- Inadequate storage of construction waste, as well as excavated soil or other waste;
- Uncontrolled sewage discharges;
- Atmospheric emissions due to construction vehicles that can lead, as a consequence of rain washing, to potential soil and groundwater pollution.
- The main sources of potential pollution of seabed sediments during the period of drilling, construction/ installation, testing and commissioning of the offshore project components include:
- Accidental spills of fuel, oils, chemicals, waste or other materials from the drilling platform and support vessels used during drilling, construction and installation, testing and commissioning;
- Improper management and discharge of wastewater generated during drilling, construction/ installation, testing and commissioning;
- Dredging/ trenching and anchoring works in the nearshore and offshore areas;
- Improper storage of dredged/ excavated material (potentially polluted) resulting from dredging/ trenching works;
- Installation on the seabed of the equipment related to the offshore infrastructure (for example, production pipeline installation, flowlines and umbilical systems, production platform jacket installation, etc.);

No sources of potential soil and subsoil pollution are identified during the period of operation of the onshore facilities:

The main sources of potential pollution of seabed sediments during the operation and maintenance period of the sea infrastructure:

- Accidental spills of fuel, oils, chemicals, waste or other materials from the offshore production platform and support vessels used for operation and maintenance activities;

- Improper management and discharge of water/ technological wastewater from the production platform and support vessels used for operations and maintenance.

A.1.8. Waste generated by Plan Project PP and the methods of its management

A.1.8.1. Presentation of the waste expected to be generated by the project during well drilling, construction and installation, operation and decommissioning of the project, including information on the types and quantities of waste

A.1.8.1.1. Waste estimated to be generated by the project during construction and installation of components

Estimated types and amounts of waste associated with the construction stage of the onshore components, including the microtunnel, and how they are managed are presented in the following table:

Table A.33 List of waste generated during construction

Waste code	Waste description	M.U.	Estimated quantity	Physical state	Method for storage	Recovery/ disposal operation according to GEO 92/ 2021
A. Waste generated by the offshore construction activities						
20 03 06	Sewage cleaning wastes	m^3	21,600	liquid	Tank	Transported to shore, to a sewage treatment plant
08 01 11*	Paints and varnishes containing organic solvents or other hazardous substances	tons	0.5	solid	Metal container	Authorized economic operators
13 02 05*	Non-chlorinated mineral engine, transmission and lubricating oils	m^3/ year	0.5	liquid	Closed metal container ethane etc	R12 capitalization through authorized economic operators
16 10 01*	Aqueous liquid wastes containing hazardous substances _	m^3	1.0	liquid	Metal container	authorized economic operators
20 03 01*	Mixed municipalities wastes	tons	54.0	solid	Collected in big bags and in a metal container	D9 disposal by sanitation operators
15 01 03	Wooden packaging	tons	10.0	solid	Metal container	R12 capitalization through authorized economic operators
11 01 98*	Other concrete containing hazardous substances (cement)	tons	15.0	solid	Collected in big bags and in a metal container	authorized economic operators
16 01 17	Ferrous metals	tons/ year	5.0	solid	Metal container	R12 capitalization through authorized economic operators

Waste code	Waste description	M.U.	Estimated quantity	Physical state	Method for storage	Recovery/ disposal operation according to GEO 92/ 2021
16 01 18	Non-ferrous metals	tons/ year	3.0	solid	Metal container	R12 capitalization through authorized economic operators
16 01 19	Plastic materials	tons/ year	3.0	solid	Metal container	authorized economic operators
16 01 17	Ferrous metals	tons	1,920.0	solid	Metal container	R12 capitalization through authorized economic operators
20 01 33*	batteries and accumulators included in 16 06 01, 16 06 02 or 16 06 03 and unsorted batteries and accumulators containing these batteries	tons/ year	0.1	solid	Metal container	D9 disposal by sanitation operators
17 05 04	Earth and stones other than those specified in 17 05 03	tons	40,950.0	solid	Deposited on the seabed and fully reused in backfilling the pit and trench after pipeline installation	Used to fill the pit and trench after the pipe is installed
15 01 01	Paper packaging and cardboard	tons	10.0	solid	Metal container	R12 capitalization through authorized economic operators
16 10 01*	Aqueous liquid wastes containing hazardous substances	m^3	3500	liquid	Metal pools	Transported to shore, to a sewage treatment plant
18 01 03*	wastes whose collection and disposal are subject to special measures regarding the prevention of infections	tons/ year	0.02	solid	Special containers for medical wastes collection	D10 disposal disposed of by authorized economic operators
B. Waste generated by the onshore construction activities						
20 03 06	Sewage cleaning wastes	m^3	1400	liquid	Basin	Transported to a sewage treatment plant
20 03 06	Sewage cleaning wastes	m^3	192	liquid	Basin	Transported to a sewage treatment plant
01 05 04	Freshwater-based drilling muds and cuttings	m^3	200.0	liquid	Metal pools	Transported to a sewage treatment plant
01 05 04	Freshwater-based drilling muds and cuttings	m^3	3140.0	liquid	Metal pools	Transported to a sewage treatment plant
16 10 01*	Aqueous liquid wastes containing hazardous substances _	m^3	1070.0	liquid	Metal pools	Transported to a sewage treatment plant

Waste code	Waste description	M.U.	Estimated quantity	Physical state	Method for storage	Recovery/ disposal operation according to GEO 92/ 2021
20 03 01*	Mixed municipalities wastes	tons	17.5	solid	Collected in big bags and in metal containers	D9 disposal by sanitation operators
17 05 04	Earth and stones other than those specified in 17 05 03 (excavated soil)	m^3	7770.0	solid	Bulk storage in the developed area	R10 launch pit and trench filling and pipeline D5 disposal by authorized economic operators
15 01 03	Wooden packaging	tons	10.0	solid	Metal container	R12 capitalization through authorized economic operators
15 01 01	Paper and cardboard packaging	tons	10.0	solid	Metal container	R12 capitalization through authorized economic operators
16 01 17	Ferrous metals	tons	5.0	solid	Metal container	R12 capitalization through authorized economic operators
16 01 19	Plastic materials	tons	3.0	solid	Metal container	authorized economic operators
20 01 33*	batteries and accumulators included in 16 06 01, 16 06 02 or 16 06 03 and unsorted batteries and accumulators containing these batteries	tons	0.1	solid	Metal container	D9 disposal by sanitation operators
08 01 11*	Paints and varnishes containing organic solvents or other hazardous substances _	tons	0.1	solid	Metal container	authorized economic operators

Recovery/ disposal operations according to GEO 92/ 2021

R1 *Use mainly as fuel or other energy source*

R3 *Recycling/ Recovery of organic substances that are not used as solvents (including composting and other biological transformation processes*

R4 *Recycling/ Recovery of metals and metal compounds*

R10 *Land treatment resulting in agricultural or ecological benefits*

R12 *Exchange of waste with a view to exposure to any of the operations numbered R 1 to R 11. If there is no other corresponding R-code, this includes preliminary operations before recovery, including pre-processing, as would be, among others, dismantling, sorting, crushing, compacting, granulating, dry grinding, conditioning, repacking, separating and mixing before undergoing any of the operations numbered R1 to R11.*

D5 *Specially constructed storage facilities (eg, storage in separate watertight compartments that are covered and isolated from each other and from the environment, etc.)*

D9 *Physico-chemical treatment not mentioned elsewhere in this annex, which generates final compounds or mixtures removed by means of one of the processes numbered D1 to D12 (e.g. evaporation, drying, calcination, etc.)*

D10 *Incineration on the ground*

D13 *Mixing prior to any operation numbered D1 to D12. If there is no other corresponding D-code, this includes preliminary operations before disposal, including pre-processing such as, but not limited to, sorting, crushing, compacting, granulating, drying, dry grinding, conditioning or separation before undergoing any of the operations numbered D1 to* D12.

The list generated waste from the construction activity with the types of wastes presented in appendix D.

A.1.8.1.2. Waste estimated to be generated by the project during the execution of well drilling

Estimated types and amounts of waste associated with the drilling stage of exploitation wells and their management are presented in Table A.34

Table A.34 List of waste generated during drilling

Waste code	Description	UM	Estimated quantity	Physical condition	Method for storage	Recovery/ disposal operation according to GEO 92/ 2021
20 03 06	Sewage cleaning waste	m^3	31,040	liquid	Basin	Transported to shore, to a sewage treatment plant
01 05 04	Freshwater-based drilling muds and cuttings	m^3	72,678	liquid	Not stored	Spilled onto the bottom of the sea
20 03 01*	Mixed municipalities waste	tons	78.0	solid	Collected in big bags and in a metal container	D9 disposal by sanitation operators
01 05 05*	Oil - bearing cuttings and drilling muds	m^3	3,989	solid	Metal skips	authorized economic operators
16 01 15	Antifreeze liquids other than those specified in 16 01 14	m^3	350	liquid	Metal container	authorized economic operators
01 05 04	Freshwater-based drilling muds and cuttings	m^3	8,784	solid	Not stored	Spilled onto the bottom of the sea
16 10 02	Aqueous liquid waste , other than those specified in 16 10 01	m^3	31,300.0	liquid	Basin open drainage system	Discharge into the sea if the concentration of hydrocarbons is checked < 15 ppm
16 10 01*	Aqueous liquid wastes containing hazardous substances _	m^3	61,480.0	liquid	Pool contaminated water	authorized economic operators
11 01 98*	Other concrete containing hazardous substances (cement)	tons	15.0	solid	Collected in big bags and in a metal container	authorized economic operators

Waste code	Description	UM	Estimated quantity	Physical condition	Method for storage	Recovery/ disposal operation according to GEO 92/ 2021
15 01 03	Wooden packaging	tons	10.0	solid	Metal container	R12 capitalization through authorized economic operators
15 01 01	Paper packaging and cardboard _	tons	10.0	solid	Metal container	R12 capitalization through authorized economic operators
20 01 33*	batteries and accumulators included in 16 06 01, 16 06 02 or 16 06 03 and unsorted batteries and accumulators containing these batteries	tons	0.1	solid	Metal container	D9 disposal by sanitation operators
08 01 11*	Paints and varnishes containing organic solvents or other hazardous substances _	tons	0.5	solid	Metal container	authorized economic operators
18 01 03*	wastes whose collection and disposal are subject to special measures regarding the prevention of infections	tons	0.02	solid	Special containers for Medical collection waste	D10 disposal disposed of by authorized economic operators

The list waste generated from the well drilling activity with the types of waste is presented in Annex D.

A.1.8.1.3. Waste estimated to be generated by the project during the operational phase

The estimated types and quantities of waste associated with the operational phase and their management are shown in Table A.35, below.

Table A.35 List waste generated in the operational phase

I code _	Name of and me	UM	Estimated quantity	Physical condition	Method for storage	Recovery/ disposal operation according to GEO 92/ 2021
A. Waste generated in the operation activity at sea						
20 03 06	Sewer cleaning hours	m^3	480	liquid	Basin	Transported to the shore, to a treatment plant
16 10 01*	Aqueous liquid wastes containing hazardous substances _	m^3/ year	50.0	liquid	Metal container	Transported to the shore, to a treatment plant

I code _	Name of and me	UM	Estimated quantity	Physical condition	Method for storage	Recovery/ disposal operation according to GEO 92/ 2021
16 06 02	of aqueous liquid salts, other than those specified in 16 10 01	m^3/ year	150.0	liquid	Basin open drainage system	It is discharged into the sea after checking the concentration of hydrocarbons < 15 ppm
20 03 01*	Mixed municipal waste	tons/ day	0.005	solid	Collected in big bags and in a metal container	D9 disposal by sanitation operators
20 01 33*	batteries and accumulators included in 16 06 01, 16 06 02 or 16 06 03 and unsorted batteries and accumulators containing these batteries	tons/ year	0.1	solid	Metal container	D9 disposal by sanitation operators
08 01 11*	Paints and varnishes containing organic solvents or other hazardous substances _	tons	0.5	solid	Metal container	authorized economic operators
15 01 03	Wooden packaging	tons	2.0	solid	Metal container	R12 capitalization through authorized economic operators
15 01 01	Paper packaging and cardboard _	tons	3.0	solid	Metal container	R12 capitalization through authorized economic operators
16 01 19	Plastic materials	tons	2.0	solid	Metal container	authorized economic operators
20 01 40	Metals	tons	10.0	solid	Metal container	R12 capitalization through authorized economic operators
18 01 03*	Waste whose collection and disposal are subject to special infection prevention measures	tons	0.005	solid	Special containers for collecting medical waste	D10 disposal disposed of by authorized economic operators
B. Waste generated in the construction activity on land						
16 10 01*	Aqueous liquid wastes containing hazardous substances _	m^3/ year	20.0	liquid	Metal container	Transported to shore, to a waste sewage treatment plant
18 01 03*	Waste whose collection and disposal are subject to special infection prevention measures	tons	0.01	solid	Special containers for collecting medical waste	D10 disposal disposed of by authorized economic operators

I code _	Name of and me	UM	Estimated quantity	Physical condition	Method for storage	Recovery/ disposal operation according to GEO 92/ 2021
15 01 03	Wooden packaging	tons	1.0	solid	Metal container	R12 capitalization through authorized economic operators
15 01 01	Paper packaging and cardboard	tons	1.0	solid	Metal container	R12 capitalization through authorized economic operators
20 01 33*	Batteries and accumulators included in 16 06 01, 16 06 02 or 16 06 03 and unsorted batteries and accumulators containing these batteries	tons/ year	0.05	solid	Metal container	D9 disposal by sanitation operators
08 01 11*	Paints and varnishes containing organic solvents or other hazardous substances	tons/ year	2.0	solid	Metal container	authorized economic operators
20 03 01*	Mixed municipal waste	tons/ day	0.005	solid	Collected in big bags and in a metal container	D9 disposal by sanitation operators
16 01 19	Plastic materials	tons	2.0	solid	Metal container	authorized economic operators
20 01 40	Metals	tons	15.0	solid	Metal container	R12 capitalization through authorized economic operators

A.1.8.1.4. Waste estimated to be generated by the project during decommissioning

Upon completion of the project lifetime (at least 20 years), the project infrastructure will require decommissioning/ abandonment in accordance with a dedicated demolition/ decommissioning/ abandonment plan.

The full list and estimated quantities of hazardous and non-hazardous waste generated during the decommissioning phase will be available upon completion of the decommissioning/ abandonment plan.

All waste resulting from the decommissioning phase will be managed in accordance with the legal provisions in force at the date of the decommissioning/ abandonment works.

A.1.8.2. Methods for collection, storage, treatment, transport and final disposal of waste

All waste streams (hazardous and non-hazardous), which will be generated during all phases of the project, will be managed in accordance with domestic and international regulations applicable to land and sea operations to ensure proper management of waste streams, to preserve health personnel and to protect the environment.

The fundamental requirements of effective waste management are based on the following key principles:

- Use only those waste management processes and methods that do not endanger human life and the environment;
- The "polluter pays" principle;
- The principle of producer responsibility;
- Using the most cost-effective technologies and best practices available.

A.1.8.2.1. Collection of waste during construction

All onshore construction site will have designated waste collection areas. Metal or plastic containers will be provided for the selective collection of waste. Hazardous waste will be temporarily stored in a closed enclosure in suitable containers to prevent accidental spills. For identification, all containers will be labelled with the waste type and code.

The contractor will conclude waste collection contracts with authorized economic operators.

The person responsible for waste management will keep a chronological record of the management of generated, disposed of, and recovered waste.

In the case of offshore work, the waste generated during the drilling activity will be selectively collected and stored in appropriate containers in dedicated areas on the drilling platform. They will be transported ashore with support vessels. A temporary waste storage area will be set up in the logistics base in the port until it is sent to certified economic operators for disposal or recovery.

A.1.8.2.2. Waste collection in the operational phase

In the land area they will be generated waste by the maintenance of facilities and administrative performed by CCR employees.

The waste generated at the Neptun Alpha Platform comes from the maintenance operations carried out periodically, is collected, loaded onto the support ships and transported to the shore from where it is sent to certified economic operators for intermediate collection, recovery, and disposal.

A.1.9. The requirements related to the use of land, required for the execution of the project (category of land use, land areas that will be temporarily/ permanently occupied by the project)

A.1.9.1. Areas of land temporarily occupied on land by construction sites and other temporary works/ facilities

The land areas temporarily occupied by construction sites and other temporary works will temporarily occupy a total area of approx. **52,451 m^2,** of which the area of approximately:

- 1,030 m^2 will be occupied by the temporary level crossing with the railway, including the connection with local roads;
- 16,523 m^2 will be occupied by the installation corridor of the gas production pipeline;

- 539 m^2 will be occupied for the undercrossing of the railway and local roads by the gas production pipeline;
- 9,490 m^2 will be occupied by the construction site for NGMS and CCR (including office containers, parking and pre-assembly area) of which :
- 5,379 m^2 of total pre-assembly area including material storage shed, the fenced chemical storage area and fuel tank;

2,981 m^2 total area occupied by containers, administrative area, construction site road, and household waste water collection tank and water tank;

1,130 m^2 surface of the temporary parking area.

- 5,850 m^2 will be occupied by the construction site for the microtunnel, including the pipeline launch area;
- 9,499 m^2 will be occupied by the temporary access roads to the construction site for the microtunnel;
- 1,100 m^2 topsoil storage area;
- 8,420 m^2 Excavated soil storage area;

The plan with the temporary components of the onshore project are presented in **Annex** B.

Description of land areas temporarily occupied by construction sites and other works/ temporary facilities

A.1.9.2. Permanently occupied land area on land

The permanent onshore components of the project (NGMS, CCR and the station shut-off valve) will be located on the land owned by OMV Petrom SA, respectively Land S1, cadastral code 109216) NGMS, CCR and auxiliaries components NGMS and CCR) and land S3 cadastral code 109659 (station shut-off valve).

Total area permanently occupied is approximately 28,132 m^2, of which:

- 23,183 m^2, the area occupied by NGMS;
- 3,459 m^2, the area occupied by CCR;
- 25 m^2, the surface of the rainwater collection basin;
- 409 m^2, the area occupied by the station shut-off valve;
- 1,056 m^2, internal roads to the Transgaz and NGMS connection point.

The underground onshore section of the gas production pipeline and Fibre optic cable, from the NGMS to the onshore microtunnel entry point, will occupy an area of approximately 2,117 m^2.

The green areas (perimeter curtain of trees, green hedge of shrubs and grass covered areas) designed for the land site of the project will occupy a total area of approximately 20 ha.

A.1.9.3. Permanently occupied surface at sea

The area permanently occupied by offshore components (marine production platform, Domino and Pelican South drilling Centres, umbilical systems, flowlines, gas production pipeline and other auxiliary facilities) is approximately 813,607 m^2, of **which approximately**:

- 3,547 m^2 will be occupied by the marine production platform;
- 8,686 m^2 will be occupied by the Domino Drilling Centre 1 (DODC1) and related underwater equipment (manifold, breakout heads, etc.);
- 8,722 m^2 will be occupied by the Domino Drilling Centre 2 (DODC2) and related underwater equipment (manifold, breakout heads, etc.);
- 11,088 m^2 will be occupied by the South Pelican Drilling Centre (PSDC1) and related underwater equipment (manifold, breakout heads, etc.);
- 73,260 m^2 will be occupied by the Domino flowline;
- 2,952 m^2 will be occupied by the Pelican South flowline;
- 2,952 m^2 will be occupied by the umbilical system from the production platform to the PSDC1 drilling centre;
- 52,280 m^2 will be occupied by the umbilical system from the production platform to the drilling Centre DODC1;
- 12,040 m^2 will be occupied by the umbilical system from the DODC1 drilling Centre to the DODC2 drilling centre;
- 638,080 m^2 will be occupied by the 30 inch (762 mm) natural gas production pipeline and Fibre optic cable.

A.1.9.4. Area occupied by the under-crossing of the shore

The microtunnel undercuts the shore, the beach and the DE 259 exploitation road. The entrance point to the tunnel is located on the S4 land owned by OMV Petrom SA and the exit point is in the coastal area of the Black Sea. The underground surface occupied by the microtunnel is approximately 2,136 m^2, of which:

- 678 m^2 in the land area;
- 1,458 m^2 in the coastal area of the sea.

A.1.10. The additional services required by the project implementation

The associated/ ancillary works required for the project are described below, including information on water supply, waste water management, electricity supply, gas supply, heating, ventilation and air conditioning systems, and telecommunications and security systems.

A.1.10.1. Water supply

a) Water supply on land

No connections to the local water supply network are planned during construction periods

Water supply during the construction phase

Fresh water will be provided by water tankers supplied from water sources located in the project area, based on specific contracts signed with the regional water supply operator, until the moment of connection to the supply network.

Each construction site (from NGMS and Microtunnel) will be provided with temporary water storage and supply tanks with a volume of 12 m^3, to ensure the necessary water for household and hygienic-sanitary consumption for offices and the construction site staff (e.g. from showers, toilets). The tanks are equipped with thermal insulation and electrical resistance against freezing.

As part of the organization of the site for the construction of the microtunnel, a water tank with a diameter of 15 m and a volume of 1,000 m^3 will be provided, to ensure the water requirement for the construction works construction/ installation works (for example, the water required for the process tunnelling, pipeline installation and testing, etc.). Fresh water will be used for the hydro testing of the pipeline in the under shore microtunnel.

The tanks will be fed based on agreements concluded with authorized economic operators.

Drinking water will be provided from commercial sources (bottled water), based on agreements concluded with service providers.

Water supply during operation

During the period of operation, drinking water supply (for hygienic and sanitary purposes) will be carried out from the network of the regional water supply operator (RAJA Constanța).

Fresh water will only be used to supply sanitary installations (toilets, sinks, sinks).

Drinking water will be provided from commercial sources (bottled water) based on agreements concluded with service providers.

Details on the water supply network are presented in **ANNEX E Details on onshore facilities.**

b) Water supply to the components from the sea

Water supply during the construction phase

Fresh water required for domestic/ sanitary and potable purposes for the drilling platform will be provided by transport from the port or by desalination of sea water by the desalination facilities available on the drilling platform. The drilling platform will be provided with a potable water storage tank of approximately 160 m^3 (1,000 barrels).

Seawater or desalinated seawater will be used for extinguishing fires, and desalinated seawater will be used for cooling equipment.

The desalinated water will be used to produce the drilling fluids needed to drill the production wells.

The need for fresh water for the construction/ installation works carried out at sea will be provided by the support vessels for the construction/ installation works, the water being taken from authorized water sources located on land, in the Constanța port area.

During the project, drinking water will be provided from commercial sources (bottled water) brought from the shore based on agreements concluded with service providers.

Water supply during operation

The Neptun Alpha platform is an autonomous platform that normally operates without personnel, and that requires the presence of personnel only in case of emergency and/ or for scheduled maintenance/ maintenance works. The crew responsible for carrying out maintenance/ maintenance work will be housed on the transport vessel, so there is no need for a domestic water supply system on the production platform.

The water supply will be necessary during the presence of personnel on the platform in order to carry out maintenance/ maintenance operations and for the provision of water for sanitary purposes for showers. The water requirement will be provided by the support vessel, equipped with pressure regulation capacity. Water will be supplied to the production platform through a hose. To avoid cross-contamination, the hose connections will be differentiated so that the connection on the ship only matches the corresponding hose connection on the production platform.

The shower tanks will be replenished with fresh water coming from the support ship through a water connection permanently connected to the tanks. Eyewash units will be refilled from drinking water canisters brought from shore.

Drinking water will be provided from commercial sources (bottled water) brought from the shore based on agreements concluded with service providers.

A.1.10.2. Waste water management

a) Waste water management is on land

Wastewater management during the construction phase

No connections to local sewage networks are planned. Each construction site (for NGMS and Microtunnel) will be provided with 20 m^3 domestic wastewater storage basins. The basins are periodically emptied, and the used water is transported to treatment plants based on an agreement concluded with authorized economic operators.

Waste water resulting from construction/ installation works (for example, excess water from the drilling fluid production system and from cleaning the tunnel) will be collected in a basin, which will be periodically emptied and the waste water is transported to the stations treatment based on an agreement concluded with authorized economic operators or it is discharged into the sea in compliance with the concentration limit of quality indicators, approved by the authorities (for example excess water from the installation of the pipeline in the microtunnel, seawater from filling the microtunnel).

A truck wheel washing area will be set up on the access road proposed to be built before exiting DN 39. The washing area will be regulated separately (it is provided in the procedure for obtaining agreements and approvals for the access road).

Wastewater management during operation

During operation, domestic wastewater will be discharged into the network of the regional water operator.

The sewage system of the CCR area is designed to be connected to the local sewage network under the management of RAJA Constanța, considering all the requirements of local regulations, and the NGMS is a normally unmanned installation, which eliminates the need for a sewage system at the scene.

The water from the concrete platforms, internal roads, parking areas will be discharged through a hydraulic separator into the buffer tank, and the water collected from the buildings will be discharged directly into the buffer tank. Outfalls will be designed to collect water from platforms, roads and parking areas.

Pumped water from the buffer tank will be gravity discharged to drain naturally into dedicated designed areas within the onshore site boundaries.

***b)* Waste water management of components at sea**

Drilling period

Domestic wastewater (grey water, black water) is collected in a dedicated storage tank. Domestic wastewater is treated in a treatment system installed on board the drilling platform, tested and then discharged into the sea, unless it exceeds the maximum concentration of 15 ppm of hydrocarbons according to the MARPOL Convention.

Bilge water from the drilling platform will be collected and transported onshore for treatment/ disposal at an authorized facility.

Waters (precipitation, fresh water used for washing the deck, effluent from starting the well, etc.) that do not correspond to the limits imposed by maritime conventions will be transported ashore for treatment/ disposal at an authorized facility.

Well completion and start-up effluent are planned to be captured and barged to shore for further disposal at licensed wastewater treatment facilities.

Construction/ installation period

Wastewater (e.g. grey water, black water, storm water) generated by the support vessels will be collected on board, managed/ purified, tested and discharged into the sea, after meeting the discharge criteria according to the maritime conventions in force (MARPOL Convention, Black Sea Convention, etc.). If the wastewater does not meet the regulatory criteria for discharge into the sea, the wastewater will be transported on land for treatment/ disposal at an authorized facility.

Bilge water from support vessels used for construction/ installation work will be transported onshore for treatment/ disposal at an authorized facility.

Operating period

The water produced will represent the largest volume of wastewater related to the operating period. It is currently anticipated that the produced water will be discharged through the produced water discharge caisson mounted on the offshore production platform. The total volume of produced water discharged will be continuously monitored and measured by means of a flow meter. Monitoring produced water discharge volumes will also facilitate the calculation of chemicals required for well management. Well management chemical usage calculations will be performed quarterly or as needed using telemetry data based on rig activities.

Rainfall and any wash water falling on the covered surfaces around the rig equipment will be captured and diverted into an open drain system which includes a 200 m^3 storage tank fitted with a hydrocarbon analyser. The oily fraction will be periodically removed from the support vessels and shipped ashore for proper management by authorized/ certified contractors. If acceptable hydrocarbon content is confirmed, water from the open drain system is pumped into the produced water discharge caisson for combined discharge into the sea with the produced water.

Rainfall and fresh water used for safety showers and platform washing falling on the grating deck areas and stairs will not be collected and will pass directly to the sea surface.

The subsea valves on the wellheads are operated by a water-based hydraulic control fluid. An extremely small amount of fluid operating underwater valves will be released into the sea when they are operated.

Volumes of water discharged into the sea or transported ashore for further disposal in authorized facilities will be monitored and recorded.

A.1.10.3. Electricity supply

a) Electricity supply on land

Energy supply during the construction phase

Power supply is required for onshore site setups (for NGMS and microtunneling). The electricity supply for the construction site from NGMS will be provided from the electrical substation (*which is not part of the project described in this presentation memorandum and will be the subject of a separate authorization procedure)* which will be installed in the part of east of the future location of NGMS. The electrical switchboards installed in the NGMS construction sites car will provide the necessary energy for its facilities and equipment (including lighting).

The electrical energy required for the construction site for the microtunnel will be provided by three diesel generators of 750 kW each, which will be installed within it. Diesel generators will provide power for microtunneling installations and equipment (including lighting).

Power supply during operation

The electricity supply to the onshore components of the project (NGMS, CCR, etc.) will be made from the network of the local energy supplier through a transformer station that will be installed in the

eastern part of the NGMS site. The electricity grid connection project will include an access road and a perimeter fence. ***The electricity grid connection project is not part of the project described in this technical memorandum and will be subject to a separate authorization procedure.***

Electricity supplied from the local power grid will serve as the primary power source for the onshore project facilities. Power and distribution cables shall be buried and designed to minimize obstruction of aboveground activities.

A standby diesel generator equipped with an automatic power transfer switch will be installed in the CCR area and will provide backup power for both the CCR and the NGMS. The standby generator will be sized to support the essential operational consumption for both NGMS and CCR during power outages. A small diesel fuel tank, sized to provide 3 days of continuous operation at full load, will be installed/ built into the backup generator. If necessary, the diesel tank will be supplied by fuel tankers based on a contract signed with authorized contractors.

b) Power supply of the components at sea

Electricity supply during the construction phase

The vessels used in different periods of the project (construction/ installation, commissioning, maintenance and operations and decommissioning) will be provided with specific power generation and distribution systems to ensure the power supply on board the vessels.

The drilling rig will provide electricity through its own power generation systems and will be equipped with an emergency generator.

Power supply during operation

The electricity required to operate the offshore infrastructure (production platform, underwater systems, lighting systems, etc.) will be produced on site using natural gas from the production pipeline as a fuel source.

Main electricity will be generated on the platform by three gas turbine generators operating in an N + 1 configuration, thus allowing one main generator to be always on standby.

If all main gas turbine generators are shut down, all subsea wells will be shut down and rig equipment will be locked out. No electrical power is required to safely isolate underwater or platform equipment.

Backup for gas turbine generators is represented by a non-redundant 230 V AC uninterruptible power supply system (UPS) which is a battery system whose function is to provide power to keep the control and communication equipment running for more many hours.

The Primary Power Generation System provides fail-safe operation or shutdown of the Subsea Well Protector (SWP) in the event of loss of primary electrical power. This is achieved by means of a main essential generator, which is a 690 V, 3 phase, 50 Hz diesel generator with a rated power of 1,500

kW. Critical equipment includes uninterruptible power supplies (UPS), safety systems, equipment protection, critical heating, critical operating equipment, and safety and control systems.

Power Backup Generation - has the role of allowing the SWP to restart in the event of loss of primary and essential electricity supply. This is provided by a secondary generator of 690 V, 3 phase, 50 Hz, with a diesel engine. Typically, start-up requirements in the event of a power outage will be limited to the equipment required to start a gas turbine (GTG), after which plant operation can be resumed in the normal order.

A Local Equipment Room (LER) will be used to ensure efficient distribution of electrical power on the SWP, to minimize/ optimise the size and length of cables and to protect the equipment from the external ambient environment. The LER will house all necessary electrical, instrumentation, control and fire protection equipment to meet process and infrastructure requirements.

A.1.10.4. Gas supply

a) Onshore gas supply

Connection to local gas supply networks is not planned during construction and operation periods.

b) Gas supply of offshore components

Downstream of the gas dehydration unit and before entering the production pipeline, a stream of dehydrated gas will be taken for use as fuel gas for power generation and instrument gas for process control valves. The gas production pipeline will function as a storage tank for instrumental gas in the event of plant shutdown.

A.1.10.5. Heating, ventilation, and air conditioning systems

a) Heating, ventilation and air conditioning systems on land

Heating, ventilation and air conditioning systems during the construction phase

The containers related to the construction sites will be equipped with electric heating, ventilation and air conditioning systems.

Heating, ventilation and air conditioning systems during operation

HVAC systems will be installed at the LER and CCR buildings located on land. The HVAC system will consist of an air handling control unit connected to an external evaporative unit with variable refrigerant volume, high efficiency, and low energy consumption. The air conditioning system will be mounted on the roof of the building.

The distribution of air conditioning in the rooms will be done through rectangular air ducts made of galvanized sheet, thermally insulated with basalt mineral wool mattresses.

The selection of the routes of the distribution channels was made considering the location of the air treatment station and the possibilities of laying and masking the pipes.

To introduce air into the rooms, exhaust holes were provided with ceiling mounting. The connection between the discharge mouth and the flexible aluminium connection with which it is connected to the air distribution pipe is made by means of a telescopic plenum.

The air evacuation from the rooms will be done through the air recirculation/ exhaust holes with a grid, mounted in the false ceiling, these being equipped with an exhaust flow control system.

b) Heating, ventilation and air conditioning systems for offshore components

The ships will be equipped with specific heating systems on board.

The HVAC system will be installed within the Neptun Alpha Platform to ensure an acceptable environment (temperature, humidity, and filtration standards) in all enclosed areas and to maintain the separation of hazardous from non-hazardous areas through pressure differentials and/ or ventilation dilution.

A.1.10.6. Telecommunications and security systems

***a)* Telecommunications and security systems on land**

Telecommunications and security systems under construction

Telecommunications within the construction site will be done with mobile phones and high frequency radios.

Telecommunications and security systems in operation

The communication between LER and CCR, then between CCR and the Neptun Alpha Platform will be by direct link through the Fibre optic cable installed parallel to the production pipeline. The Fibre optic cable will ensure communication between the Neptun Alpha Platform and the operators working within the CCR located on land. Optical Fibre was selected based on bandwidth and availability for the remote process control application.

The CCR will be equipped with facilities for communication with the NGMS and the offshore production platform. The offshore section of the Fibre optic cable will serve as the primary means of communication with the offshore production platform. A backup VSAT type satellite dish will also be installed in the CCR framework to provide satellite communications with the offshore production platform.

Telephone and internet services will be provided by local providers. The antennas for the wireless connection will be located on the roof of the CCR.

The CCR will be equipped with specialized security systems, including a monitored CCTV system and access card readers.

The NGMS site will be provided with security systems including CCTV, intrusion detection and card reader access gates. Security systems and cameras will be connected to the CCR for remote alarming and monitoring. Both CCR and NGMS sites will be provided with perimeter fences.

***b)* Telecommunication systems and security at sea**

The main communication and security systems related to the sea facilities will include:

- Fibre optic cable and backup VSAT;
- Ultra-High Frequency (UHF) radio system;
- Maritime radio system;
- CCTV system;
- VOC system with dedicated line and satellite phones;
- Automatic identification system;
- Public announcement and general alarm system.

The Fibre optic cable will transmit dedicated VOC lines between the CCR and the offshore production platform, general alarm as part of the instrumented safety system, video camera, marine radio and two-way radio. Provision shall be made for remote access to the Beneficiary's private communications network and to allow suppliers to remotely access their respective networks within the production platform.

In the event of unforeseen loss of Fibre optic cable transmission, the Neptun Alpha Platform is equipped with a backup satellite dish (VSAT) to ensure data transmission between the offshore production platform and the onshore CCR. When communicating via back-up VSAT instead of Fibre optic cable, in order to determine what level of control and oversight will be lost, the bandwidth elimination/ network prioritization philosophy will be adopted. The production platform will continue to operate normally on the backup communication (VSAT). If both the Fibre optic cable and the VSAT cannot transmit data from the production platform to the CCR, the production platform will safely shut down based on the control and interlock systems provided on the platform.

UHF radio system

The system will provide radio communications for platform personnel and land-based control room operators for emergency and maintenance activities.

Maritime radio system

For marine operations, the system will provide communications between supply vessels/ crew vessels, production rig, drilling rig and control room operators. The marine radio on the production platform must be located in the LER and include the remote control function for operation in the temporary shelter. The radio on the production platform will be connected to the control room operators via Fibre optic link. The crane/ platform operator must also be equipped with a marine radio for communications with supply vessels/ crew vessels.

CCTV system

This system will provide CCR operators with high definition video images from most areas of the Neptun Alpha Platform. The CCTV system will be a dual role system, one for operations and one for security, and will include the latest technology for security monitoring and surveillance on an

unmanned platform. Thus, if a major hazard event occurs while operators are on board the production platform, the CCR operators will be able to monitor the potential major hazard event, including the affected areas, and thus assist the operators on board the platform with situational awareness.

VOC Hot-Line system and satellite phones

Hot-Line VOC system will provide e immediate VOC communications between CCR operators and various locations on the production platform. Locations for the dedicated line will include the LER, the temporary shelter and the DEH building. The operator interface for the hotline system will be available at the CCR console. Satellite phones will be available for critical or emergency phone service from the production platform. Satellite phones will also serve as back-up communications to the CCR in the event of a dedicated line system failure.

Automatic identification system

On the production platform, an automatic identification system will transmit a safety message to similarly equipped vessels in the vicinity of the production platform. Data received from similarly equipped vessels in the production platform area will be displayed on a console screen at the CCR. This system uses transponders on ships and will be used to eliminate ship collisions with the production platform.

Public Announcement and General Alarm System (PAGA)

The Public Announcement and General Alarm (PAGA) system on the platform has the functionality to provide both general alarms and public announcements. The PAGA will interface with the SIS (Instrumented Safety System) and F&G (Fire and Gas Control System) systems to initiate general platform alarms. This will be achieved through secure and fail-safe hardwired signals. There will be an additional interface with the UHF two-way radio system. It will be possible to make PAGA broadcasts from selected handheld devices and interrupt activity on all radio channels via PAGA announcements.

A.1.10.7. *Support logistic bases*

An authorized logistics base will be established onshore in the Constanța area to support both onshore and offshore project activities and will include port and warehousing facilities to provide storage, loading and unloading, transportation, security, monitoring and tracking of goods, equipment, materials, and supplies.

Personnel required to operate the shore base will include dock workers, crane and forklift operators, truck drivers and warehouse workers.

Facilities operation and maintenance activities will require part-time maritime support of a supply vessel that can function as a way of transporting personnel from shore to the offshore production platform, as an accommodation, supply vessel and will have sufficient space on deck for the transport of materials and the crane.

Tuzla Airport will provide part-time helicopter transport services, including medical evacuation, search and rescue, and personnel transport for urgent operations.

A.1.11. Activities generated as a result of project implementation HOLD until the guidance is issued

Upon the completion of the project's development, the natural gas network of the National Transportation System will be expanded, allowing more localities to be connected to the gas distribution system.

A new 2 km access road will be constructed to connect the European Road E87 (National Road DN 39) and the county road DC4.

To supply electric power to the onshore components of the project (SRM, CCR, etc.), a transformer substation will be built.

A.1.12. Description of the technological processes of the project

The description of the production processes necessary for the operation of the project (including the presentation of flow charts related to the technological process) can be found in chapter 2.4 DESCRIPTION OF THE MAIN CHARACTERISTICS OF THE PROJECT OPERATION STAGE, INCLUDING PRODUCTION PROCESSES, ENERGY REQUIREMENT AND ENERGY USED, NATURE AND QUANTITY OF MATERIALS AND RESOURCES NATURAL MATERIALS USED, from the Environmental Impact Assessment Report (EIA).

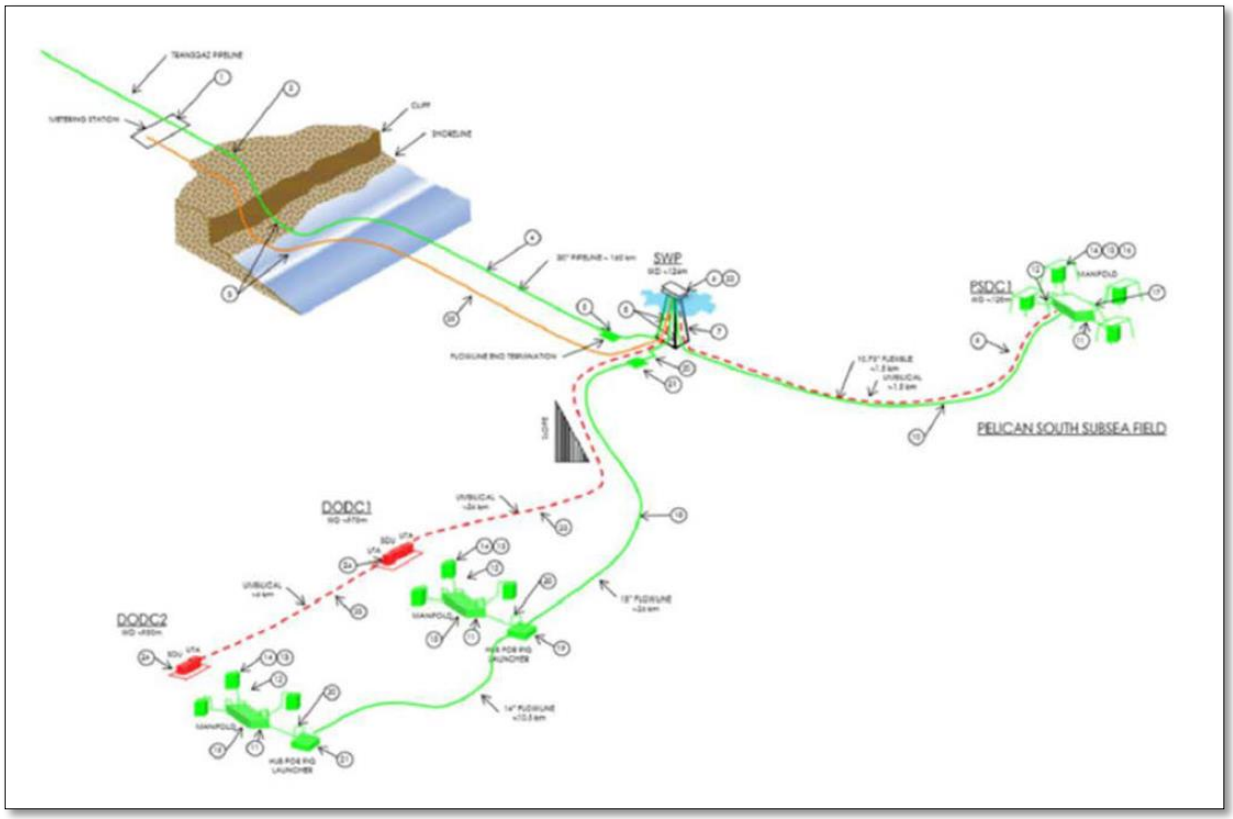

Figure A.4 Neptun Deep project - general development concept

A.1.13. Characteristics of existing, proposed, or approved plans/projects that can generate cumulative impact with the project under evaluation and may affect ANPIC

Relationship with other existing or planned projects.

Existing or planned projects in the Neptun Deep project area are shown in Tables 1.36 and 1.37 below.

Table A.36 Existing projects and activities in the Neptun Deep project area

No. crt.	Project Name	Description	Status	Location of the project/activity	Remarks
1.	Reduction of coastal erosion Phase II (2014-2020) Holder: Romanian Waters National Administration - Dobrogea-Litoral Constanța Water Basin Administration (ABADL)	Perimeters: 2 Mai, Mangalia, Saturn, Balta Mangalia, Venus, Cap Aurora, Jupiter, Neptune, Olimp, Costinești, Eforie Sud, Eforie Centru, Agigea, Port Tomis-Constanța, Mamaia Centru, Mamaia Nord, Stavilar Edighiol , Stavilar Periboina The purpose of this project is to ensure adaptation to climate change, prevention and risk management through protection against coastal erosion by building dykes and extending beaches.	Ongoing	As part of this project, erosion protection works will be carried out in an area located between Stăvilarul Periboina (to the north) and 2 Mai locality, Limanu commune (to the south). The nearest perimeter of sandblasting is the Costinești Area at approx. 1.2 km from the land area of the project and approx. 1.5 km from the marine area of the project sanding perimeter in the Costinești area intersects with ROSPA0076 Marea Neagră and is located in the immediate vicinity of ROSCI0293 Costinești-23 August	APM Constanța address no. 6102 of 29.05.2023 Environmental agreement no. 20/11.11.2016
2.	Works to strengthen the seafront in the area of Tuzla, Constanța county. Holder: Romanian Waters National Administration - Dobrogea-Litoral Constanța Water Basin Administration (ABADL)	The aim of the project is to prevent the extension of landslides and increase the tourist attraction in the coastal sector of Tuzla municipality. The works involve excavation and filling to ensure a cliff slope of 1:1.5, berms 2.5 m wide and 4 m high from the ground, stone and concrete block protection at the base of the cliff and the construction of a flagstone walkway concrete.	Partially completed	The seawall strengthening works will be carried out on the seawall located along the eastern side of the onshore project site, at a distance of approx. 20 m The microtunnel related to the Neptun Deep project will undercut the cliff area, being drilled in the rock layer below the cliff, > 2 m deep, thus not affecting the cliff or its consolidation works.	Currently, the works are suspended due to a dispute between ABADL and Tuzla City Hall.
3.	The regional project for the development of water and wastewater infrastructure in the area of operation of SC RAJA SA Constanța, in the period 2014-2020 - Rehabilitation and expansion of distribution and sewerage networks, rehabilitation of the wastewater pumping	The general objective of the project is to continue the strategy for the development of the water and wastewater sector, to achieve the objectives assumed by Romania through the Treaty of Accession to the European Union, by preparing the Application for funding to access European funds for environmental infrastructure in the programming period 2014-2020 and	Ongoing	The analyzed project intersects with the RAJA site in the railway area. The project also includes the rehabilitation of a 500 mm discharge pipe that crosses from south to north the S3 surface owned by OMV Petrom within the project site by removing the old water pipe and installing a new pipe along the local road De 277.	Address CJ Constanța no. 17489/15.05.2023 AC no. 3 of 20.01.2022 Constanța CJ

No. crt.	Project Name	Description	Status	Location of the project/activity	Remarks
	station and water discharge pipes used from Tuzla, Constanța county, Holder: RAJA Constanta	making the necessary technical-economic documentation. The scope of the project also includes the rehabilitation and expansion of the distribution and sewerage networks, the rehabilitation of the wastewater pumping station and the wastewater discharge pipes in the town of Tuzla, Constanța county. The project is financed from European funds within the Large Infrastructure Operational Program (POIM), Priority Axis 3 - Development of environmental infrastructure under conditions of efficient resource management, Specific Objective 3.2. - Increasing the level of collection and treatment of urban wastewater, as well as the degree of ensuring the supply of drinking water to the population. Implementation period: ongoing		The onshore section of the Neptun Deep production pipeline and fiber optic cable will undercut the location of the new RAJA discharge pipeline.	
4.	Midia Natural Gas Development Project Holders: Black Sea Oil & Gas SA in partnership with Petro Ventures Resources SRL and Gas Plus Dacia SRL	The Midia Natural Gas Development Project includes the Ana and Doina gas fields discovered in 2007 and 1995, respectively. Both are of Miocene and Upper Dacian age, contained in biocene gas reservoirs made up of shallow marine sands, located approximately 120 km from the Romanian coast, in the shallow water area of the XV Midia perimeter where the water depth is 70 meters. Regarding the industrial facilities, the project consists of digging five production wells (one underwater well at Doina and four production wells at Ana), an underwater production	In operation	The Ana production platform of the Midia Natural Gas Development project is located approx. 49.5 km west of the production platform of the Neptun Deep project and approx. 3.5 km north of the Neptun Deep production pipeline.	

No. crt.	Project Name	Description	Status	Location of the project/activity	Remarks
		assembly on the Doina field that will be connected by an 18 km pipeline to the platform of production monitored and operated from the shore, located on the Ana field. A 121 km underwater pipeline will transport gas from the Ana platform to shore, where a 4.1 km underground pipeline follows to the new gas treatment plant. The treated gases will be delivered through the gas measurement station located in the perimeter of the gas treatment station, to the SNT operated by Transgaz.			
5.	Electrification and rehabilitation of the Constanta Mangalia railway line Holder: National Railway Company CFR SA through SC Baicons Impex SRL	The project aims to rehabilitate and electrify the railway infrastructure on the railway section between Constanta and Mangalia. The modernization mainly involves the improvement of the infrastructure and the railway system so that the maximum permitted speed of the route of 160 km/h can be reached. The project has an estimated completion time of 24 months , but the start date of the works is not specified	In regulatory procedure	The railway to be rehabilitated intersects with the project area. In the Neptun Deep project, under-crossing works of the gas production pipeline are foreseen, and during the construction period, a temporary crossing at railway level will be set up, which will also include an arrangement of existing road connections (DC 4 and De 277) at temporary railroad crossing.	Address CJ Constanța no. 17489/15.05.2023 City Hall address no. 3908/18.06.2023 APM Constanța address no. 6102 of 29.05.2023
6.	Black Sea sand mining projects (Extrasand 1 and 2, Mamaia- Black Sea I and II, Comprest 2, Mamaia 2, Van Ooord 9 and 10, Envisan Sud, Envisan Zona B, Eforie 1,2 and 3, Boskalis 1, 2 and 3) Owners: SC EXTRASAND PCM SRL, SC STRICT AQUASERV SRL, SC COMPREST UTIL SRL, SRL, SC METAL TRADE RNG SRL, SC VAN OORD DREDGING AND MARINE CONTRACTORS, ENVISAN NV BELGIA -	Exploitation perimeters of sand from the Black Sea	In various stages of regulation/implementation	They are located on the continental shelf in the exclusive economic zone of Romania at distances greater than 10 km from the marine area of the analyzed project.	Most of the sand exploitation targets sand areas located outside the protected natural areas (except MAMAIA 2, Owner: SC METAL Trade RNG SRL).

No. crt.	Project Name	Description	Status	Location of the project/activity	Remarks
	PITEȘTI BRANCH, SAGA LOGISTICS MANAGEMENT SRL, BOSKALIS INTERNATIONAL BV				

No. crt.	Project Name	Description	STATUS	Location of the project/activity	Remarks
1.	Reduction of coastal erosion Phase II (2014-2020) Holder: Romanian Waters National Administration - Dobrogea-Litoral Constanța Water Basin Administration (ABADL)	Perimeters: 2 Mai, Mangalia, Saturn, Balta Mangalia, Venus, Cap Aurora, Jupiter, Neptune, Olimp, Costinești, Eforie Sud, Eforie Centru, Agigea, Port Tomis-Constanța, Mamaia Centru, Mamaia Nord, Stavilar Edighiol , Stavilar Periboina The purpose of this project is to ensure adaptation to climate change, prevention and risk management through protection against coastal erosion by building dykes and extending beaches.	Ongoing	As part of this project, erosion protection works will be carried out in an area located between Stăvilarul Periboina (to the north) and 2 Mai locality, Limanu commune (to the south). The nearest perimeter of sandblasting is the Costinești Area at approx. 1.2 km from the land area of the project and approx. 1.5 km from the marine area of the project sanding perimeter in the Costinești area intersects with ROSPA0076 Marea Neagră and is located in the immediate vicinity of ROSCI0293 Costinești-23 August	APM Constanța address no. 6102 of 29.05.2023 Environmental agreement no. 20/11.11.2016
2.	Works to strengthen the seafront in the area of Tuzla, Constanța county. Holder: Romanian Waters National Administration - Dobrogea-Litoral Constanța Water Basin Administration (ABADL)	The aim of the project is to prevent the extension of landslides and increase the tourist attraction in the coastal sector of Tuzla municipality. The works involve excavation and filling to ensure a cliff slope of 1:1.5, berms 2.5 m wide and 4 m high from the ground, stone and concrete block protection at the base of the cliff and the construction of a flagstone walkway concrete.	Partially completed	The seawall strengthening works will be carried out on the seawall located along the eastern side of the onshore project site, at a distance of approx. 20 m The microtunnel related to the Neptun Deep project will undercut the cliff area, being drilled in the rock layer below the cliff, > 2 m deep, thus not affecting the cliff or its consolidation works.	Currently, the works are suspended due to a dispute between ABADL and Tuzla City Hall.

No. crt.	Project Name	Description	Status	Location of the project/activity	Remarks
3.	The regional project for the development of water and wastewater infrastructure in the area of operation of SC RAJA SA Constanța, in the period 2014-2020 - Rehabilitation and expansion of distribution and sewerage networks, rehabilitation of the wastewater pumping station and water discharge pipes used from Tuzla, Constanța county, Holder: RAJA Constanta	The general objective of the project is to continue the strategy for the development of the water and wastewater sector, to achieve the objectives assumed by Romania through the Treaty of Accession to the European Union, by preparing the Application for funding to access European funds for environmental infrastructure in the programming period 2014-2020 and making the necessary technical-economic documentation. The scope of the project also includes the rehabilitation and expansion of the distribution and sewerage networks, the rehabilitation of the wastewater pumping station and the wastewater discharge pipes in the town of Tuzla, Constanța county. The project is financed from European funds within the Large Infrastructure Operational Program (POIM), Priority Axis 3 - Development of environmental infrastructure under conditions of efficient resource management, Specific Objective 3.2. - Increasing the level of collection and treatment of urban waste water, as well as the degree of ensuring the supply of drinking water to the population. Implementation period: ongoing	Ongoing	The analyzed project intersects with the RAJA site in the railway area. The project also includes the rehabilitation of a 500 mm discharge pipe that crosses from south to north the S3 surface owned by OMV Petrom within the project site by removing the old water pipe and installing a new pipe along the local road De 277. The onshore section of the Neptun Deep production pipeline and fiber optic cable will undercut the location of the new RAJA discharge pipeline.	Address CJ Constanța no. 17489/15.05.2023 AC no. 3 of 20.01.2022 Constanța CJ
4.	Midia Natural Gas Development Project Holders:	The Midia Natural Gas Development Project includes the Ana and Doina gas fields discovered in 2007 and 1995, respectively. Both are of Miocene and Upper Dacian age, contained in biocene gas reservoirs made up of shallow marine sands,	In operation	The Ana production platform of the Midia Natural Gas Development project is located approx. 49.5 km west of the production platform of the Neptun Deep	

No. crt.	Project Name	Description	Status	Location of the project/activity	Remarks
	Black Sea Oil & Gas SA in partnership with Petro Ventures Resources SRL and Gas Plus Dacia SRL	located approximately 120 km from the Romanian coast, in the shallow water area of the XV Midia perimeter where the water depth is 70 meters. Regarding the industrial facilities, the project consists of digging five production wells (one underwater well at Doina and four production wells at Ana), an underwater production assembly on the Doina field that will be connected by an 18 km pipeline to the platform of production monitored and operated from the shore, located on the Ana field. A 121 km underwater pipeline will transport gas from the Ana platform to shore, where a 4.1 km underground pipeline follows to the new gas treatment plant. The treated gases will be delivered through the gas measurement station located in the perimeter of the gas treatment station, to the SNT operated by Transgaz.		project and approx. 3.5 km north of the Neptun Deep production pipeline.	
5.	Electrification and rehabilitation of the Constanta Mangalia railway line Holder: National Railway Company CFR SA through SC Baicons Impex SRL	The project aims to rehabilitate and electrify the railway infrastructure on the railway section between Constanta and Mangalia. The modernization mainly involves the improvement of the infrastructure and the railway system so that the maximum permitted speed of the route of 160 km/h can be reached. The project has an estimated completion time of 24 months , but the start date of the works is not specified	In regulatory procedure	The railway to be rehabilitated intersects with the project area. In the Neptun Deep project, under-crossing works of the gas production pipeline are foreseen, and during the construction period, a temporary crossing at railway level will be set up, which will also include an arrangement of existing road connections (DC 4 and De 277) at temporary railroad crossing.	Address CJ Constanța no. 17489/15.05.2023 City Hall address no. 3908/18.06.2023 APM Constanța address no. 6102 of 29.05.2023
6.	Black Sea sand mining projects (Extrasand 1 and 2, Mamaia-Black Sea I and II, Comprest 2,	Exploitation perimeters of sand from the Black Sea	In various stages of	They are located on the continental shelf in the exclusive economic zone of Romania at distances greater than 10	Most of the sand exploitation targets sand areas located

No. crt.	Project Name	Description	Status	Location of the project/activity	Remarks
	Mamaia 2, Van Ooord 9 and 10, Envisan Sud, Envisan Zona B, Eforie 1,2 and 3, Boskalis 1, 2 and 3) Owners: SC EXTRASAND PCM SRL, SC STRICT AQUASERV SRL, SC COMPREST UTIL SRL, SRL, SC METAL TRADE RNG SRL, SC VAN OORD DREDGING AND MARINE CONTRACTORS, ENVISAN NV BELGIA - PITEȘTI BRANCH, SAGA LOGISTICS MANAGEMENT SRL, BOSKALIS INTERNATIONAL BV		regulation/implementation	km from the marine area of the analyzed project.	outside the protected natural areas (except MAMAIA 2, Owner: SC METAL Trade RNG SRL).

Table A.37 Potential future projects in the Neptun Deep Project area

No. crt.	Project Name	Project description	Connection with the Neptun Deep project	Remarks
1.	Neptun Deep - Creation of an access road, organization of the construction site, securing and connection to utilities, the access roads to them, related to SRM and CCR, Owner : OMV Petrom	The overall objective of the project is to build a new access road connecting DN39 to the SRM and CCR sites within the Neptun Deep project. Construction work for the new access road is expected to be executed prior to the construction of the SRM and CCR.	The new permanent access road will support the construction and operation of the Neptun Deep project facilities. It will intersect with the location in the land area of the analyzed project on the S1 surface	Town planning certificate issued by the Tuzla Commune Local Council no. 80/ 08.07.2021

No. crt.	Project Name	Project description	Connection with the Neptun Deep project	Remarks
2.	Development of a roundabout intersection in the area of the national road DN39 (E87) - km 23 + 190, Tuzla commune, Constanța county, Holder: Romanian National Road Infrastructure Administration Company (CNAIR)	The purpose of the project is to build a roundabout on the national road DN39 - KM 23 + 190 to connect the new access road proposed for the Neptun Deep Project and the new access road proposed for Tuzla Airport with DN39. It is expected that the construction work for the new roundabout will be executed before the construction of SRM and CCR.	The proposed roundabout will connect the proposed new access road for the Neptun Deep project with DN39. It is located at approx. 1.6 km from the western boundary of the S1 surface	Urban planning certificate issued by the Tuzla Joint Local Council, no. 113/3.08.2021
3.	Neptun Deep – Electricity supply site organization natural gas measuring station and control center Holder: OMV Petrom	The purpose of the project is to provide an electrical connection for the SRM and CCR sites during construction and operation periods. The works will include the construction and installation of: • overhead power line (LEA) connected to the existing power grid in Costinești; • An electrical substation that will be installed in the eastern part of the SRM site (20 / 0.4kV - 630kVA); **and** • An underground cable connection between the LEA network in Costinești and the new transformer station (1,459 m long).	The proposed substation will provide electricity for the construction and operation of the onshore components of the Neptun Deep project (SRM, CCR, etc.). the Cța - Mangalia railway.	Town planning certificate issued by the Council Constanta County , no. 16446/30.07.2021
4.	Podisor (RO) pipeline for the collection of gas from the Black Sea, Holder: The National Natural Gas Transport Company Transgaz SA	The "Black Sea Coast Pipeline - Podișor (RO) for the collection of gas from the Black Sea" project consists in the construction of a telescopic pipeline with diameters of 48 inches (Dn 1200) and respectively 40 inches (Dn 1000), designed for the transport of natural gas at a pressure of 63 bars. The pipeline will have a total length of approximately	A Transgaz facility will be built connected to the SRM within the Neptun Deep project. The Transgaz connection point *(installation that is not part of the Neptun Deep project, will be subject to a separate authorization procedure)* will be installed on the private land owned by OMV	Environmental agreement no. 1/10/05/2018

No. crt.	Project Name	Project description	Connection with the Neptun Deep project	Remarks
		308 km and will connect the Black Sea coast with the Podisor technological hub, crossing Amzacea and Vlasin. The pipeline will transfer the gas to the NTS with the possibility of transmitting through the BRUA pipeline (Bulgaria, Romania, Hungary, Austria) to other European countries the expected gas production of ExxonMobil and OMV Petrom from the Domino and Pelican Sud fields in the Black Sea. Implementation period: 2020-2022	Petrom (area S1, cadastral number 109216). The Black Sea Coast - Podișor (RO) pipeline will transport the gas produced in the operational phase of the Neptun Deep project, in the SNT in Romania.	

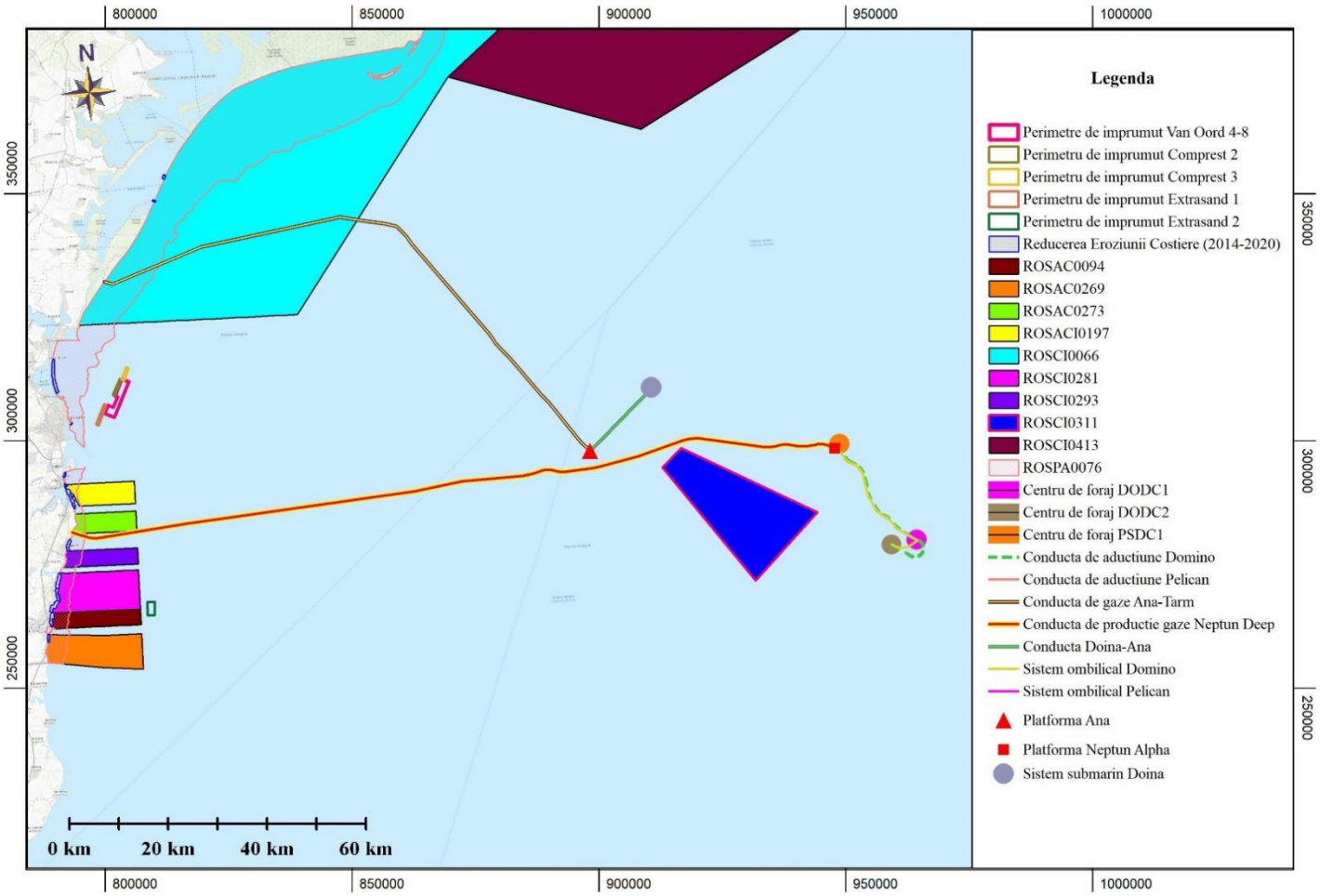

Figure 1.5 Projects or their elements that can generate cumulative impact together with the analyzed project (onshore)

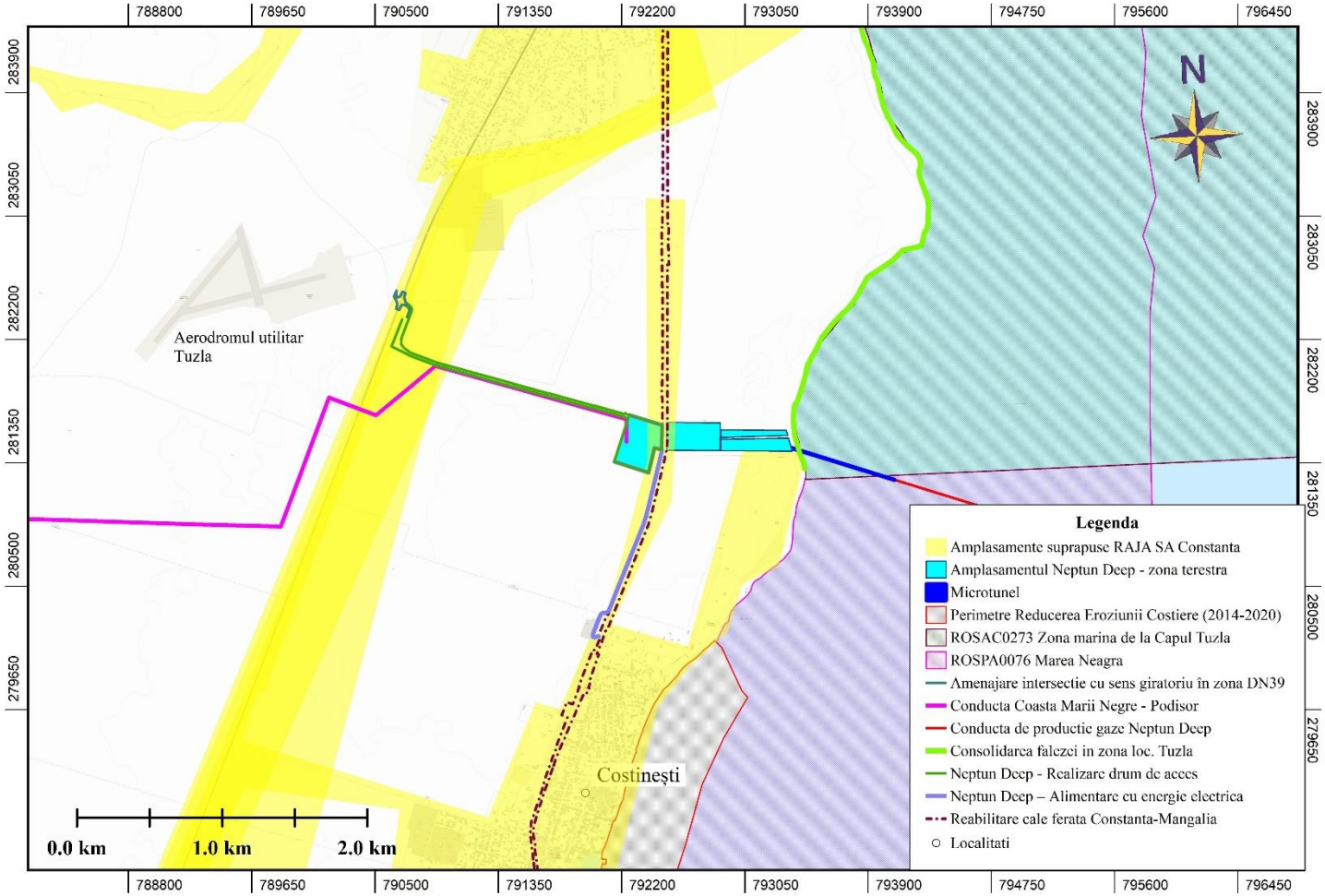

Figure 1.6 Projects or their elements that can generate cumulative impact together with the analyzed project (onshore)

A.1.14. Other information requested by ACPM;

Not applicable

A.1.15. Summary of the effects generated by the implementation of the project

Table A.38 Tabular presentation of interventions and components of the Neptun Deep project

Phase	Type of intervention	Compound	Location	Distance to the nearest ANPIC	Other additional information
Construction	Development of temporary access roads	Temporary access roads to the construction site for the microtunnel	In the terrestrial area of the project	Approx. 228 m from the common boundary ROSAC0273 and ROSPA0076	To the west of the shoreline - the communal boundary ROSAC0273 and ROSPA0076
Construction	Setting up construction sites	Construction site for NGMS and CCR	In the terrestrial area of the project	Approx. 920 m from the common boundary ROSAC0273 and ROSPA0076	To the west of the shoreline - the communal boundary ROSAC0273 and ROSPA0076
		Construction site for the microtunnel	In the terrestrial area of the project	Approx. 161 m from the common boundary ROSAC0273 and ROSPA0076	To the west of the shoreline - the communal boundary ROSAC0273 and ROSPA0076
Construction	Arrangement of the temporary railway level crossing	Railway level crossing	In the terrestrial area of the project	Approx. 870 m from the common boundary ROSAC0273 and ROSPA0076	To the west of the shoreline - the communal boundary ROSAC0273 and ROSPA0076
Construction	Building/ NGMS and CCR installation	Regulation and measurement station - NGMS	In the terrestrial area of the project	Approx. 1030 m against the common limit ROSAC0273 and ROSPA0076	To the west of the shoreline - the communal boundary ROSAC0273 and ROSPA0076
		Control Centre - CCR	In the terrestrial area of the project	Approx. 1004 m against the common limit ROSAC0273 and ROSPA0076	To the west of the shoreline - the communal boundary ROSAC0273 and ROSPA0076
Construction	Installation of gas production pipeline and Fibre optic cable on land	Natural gas production pipeline and Fibre optic cable	In the terrestrial area of the project	Approx. 182 m from the common boundary ROSAC0273 and ROSPA0076	To the west of the shoreline - the communal boundary ROSAC0273 and ROSPA0076

Phase	Type of intervention	Compound	Location	Distance to the nearest ANPIC	Other additional information
Construction	Sub-shore crossing (microtunnel construction)	Microtunnel	In the marine area of the project	The outlet point overlaps with ROSPA0076	ROSPA0076 is undercrossed for a length of approx. 673 m
				The point of exit to the sea is located approx. 30 m distance from ROSAC0273	ROSAC0273 is undercrossed for a length of approx. 586 m
Construction	Drilling production wells	10 underwater gas production wells	In the marine area of the project	Approx. 14.4 km from the ROSCI0311 boundary	-
Construction	Excavation/dredging trench for gas production pipeline	Natural gas production pipeline	In the marine area of the project	Between 30 m and 1090 m from boundary ROSAC0273 Partially overlaps (1.86 km) with ROSPA0076	South of ROSAC 0273
Construction	Installation of pipeline and Fibre optic cable from platform to shore	Natural gas production pipeline and Fibre optic	In the marine area of the project	ROSPA0076 is undercrossed for a length of approx. 2,533 km	1.86 km measured from the outer boundary, along the pipeline route, to the microtunnel exit; 0.673 km the pipeline undercuts through microtunnel ROSPA0076
				ROSAC0273 is undercrossed for a length of approx. 586 m	The undercrossing is done through the microtunnel
				Approx. 1.26 km from the ROSCI0311 boundary	Measured distance from the site of community interest to the Fibre optic route
Construction	Neptun Alpha platform installation	Neptun Alpha platform	In the marine area of the project	Approx. 13.2 km from the ROSCI0311 boundary	Northeast of ROSCI0311
Construction	Installation of subsea systems including pipelines and umbilical systems from the drilling Centres to the platform	Adduction ducts and umbilical systems	In the marine area of the project	Approx. 10.8 km from the ROSCI0311 boundary	East of ROSCI0311
Construction	Pre-commissioning inspection of the production pipeline	Natural gas production pipeline	In the terrestrial area of the project	ROSPA0076 is undercrossed for a length of approx. 2,533 km	1.86 km measured from the outer limit of the site to the exit of the microtunnel; 0.673 km the pipeline undercuts through microtunnel ROSPA0076

Phase	Type of intervention	Compound	Location	Distance to the nearest ANPIC	Other additional information
				ROSAC0273 is undercrossed for a length of approx. 586 m	The undercrossing is done through the microtunnel
				Approx. 1.km from the boundary of ROSCI0311	Measured distance from the site of community interest to the route of the gas production pipeline
Construction	Checks during the commissioning of the equipment on the platform	The Neptun Alpha platform in the offshore area	In the marine area of the project	Approx. 13.2 km from the ROSCI0311 boundary	Northeast of ROSCI0311
Construction	Environmental restoration works	At the level of surfaces S3 and S4	In the terrestrial area of the project	Approx. 161 m from the common boundary of ROSAC0273 and ROSPA0076	West of the shore line common boundary of ROSAC0273 and ROSPA0076
Operating	Operation of the Neptun Alpha platform	The Neptun Alpha platform in the offshore area	In the marine area of the project	Approx. 13.2 km from the ROSCI0311 boundary	Northeast of ROSCI0311
Operating	Operation of NGMS and CCR	Regulation and measurement station - NGMS	In the terrestrial area of the project	Approx. 1,030 m against the common limit ROSAC0273 and ROSPA0076	To the west of the shoreline - the common boundary ROSAC0273 and ROSPA0076
		Control Centre - CCR	In the terrestrial area of the project	Approx. 1,004 m against the common limit ROSAC0273 and ROSPA0076	To the west of the shoreline - the communal boundary ROSAC0273 and ROSPA0076
Decommissioning	Decommissioning of facilities within NGMS and CCR	Regulation and measurement station - NGMS	In the terrestrial area of the project	Approx. 1,030 m against the common limit ROSAC0273 and ROSPA0076	To the west of the shoreline - the communal boundary ROSAC0273 and ROSPA0076
		Control Centre - CCR	In the terrestrial area of the project	Approx. 1,004 m against the common limit ROSAC0273 and ROSPA0076	To the west of the shoreline - the communal boundary ROSAC0273 and ROSPA0076
Decommissioning	Decommissioning the Neptun Alpha Platform and underwater facilities	The Neptun Alpha platform in the offshore area	In the marine area of the project	Approx. 13.2 km from the ROSCI0311 boundary	Northeast of ROSCI0311

A.1.16. Synthetic maps of all interventions that have the potential to affect ANPIC

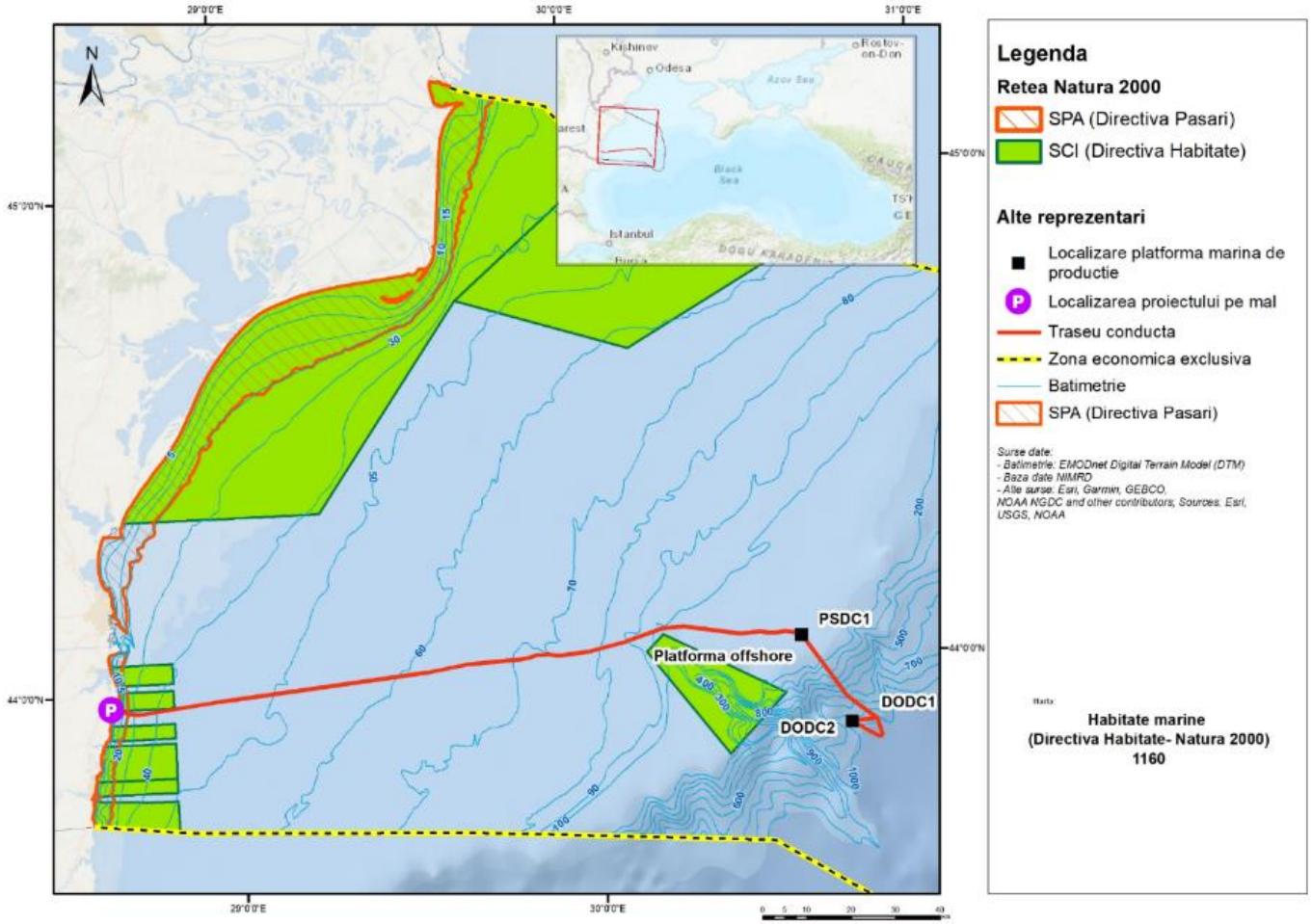

Figure A.7 General map. Location of the Neptun Deep project on land and at sea

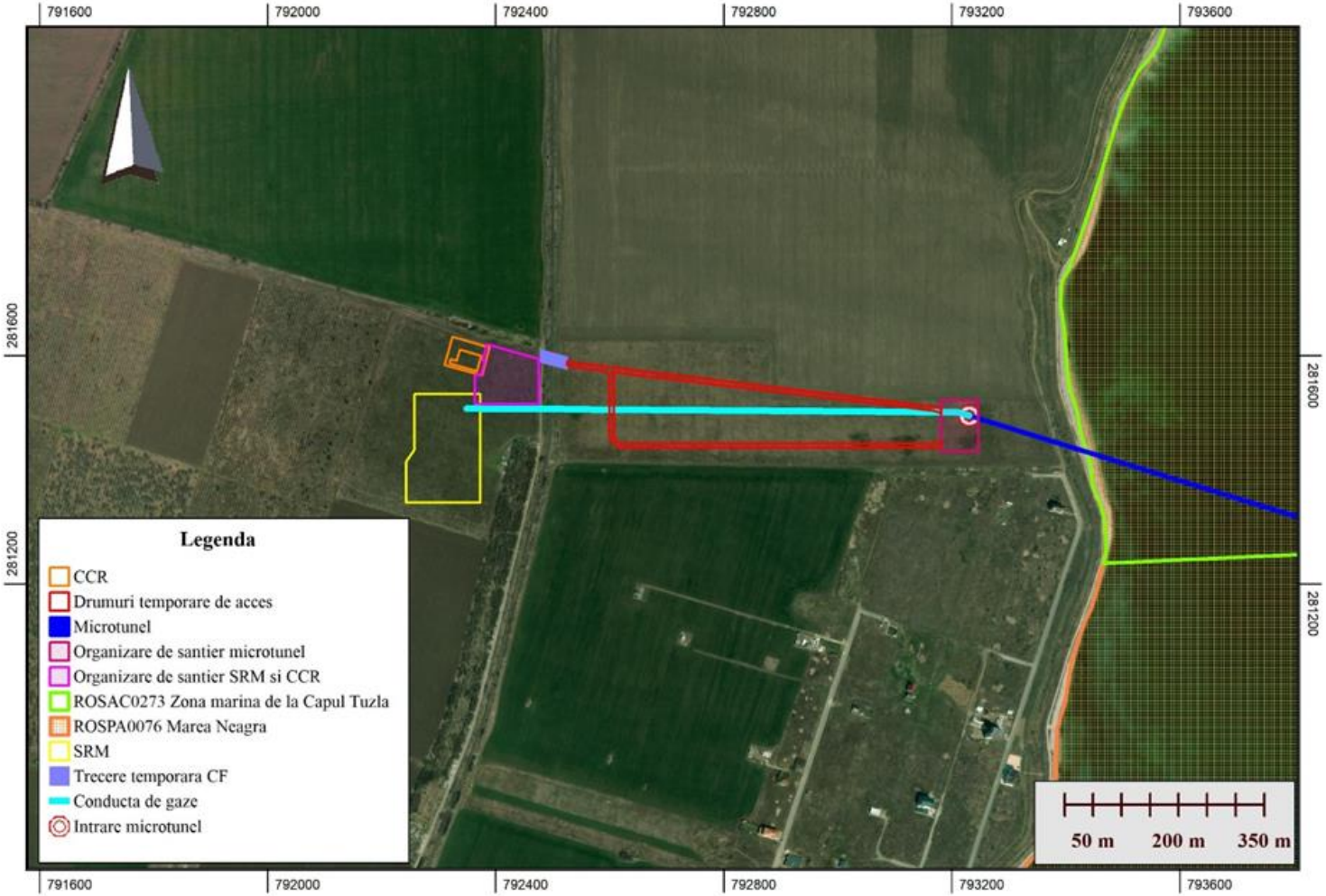

Figure A.8 Detail map. Location of the Neptun Deep project on land

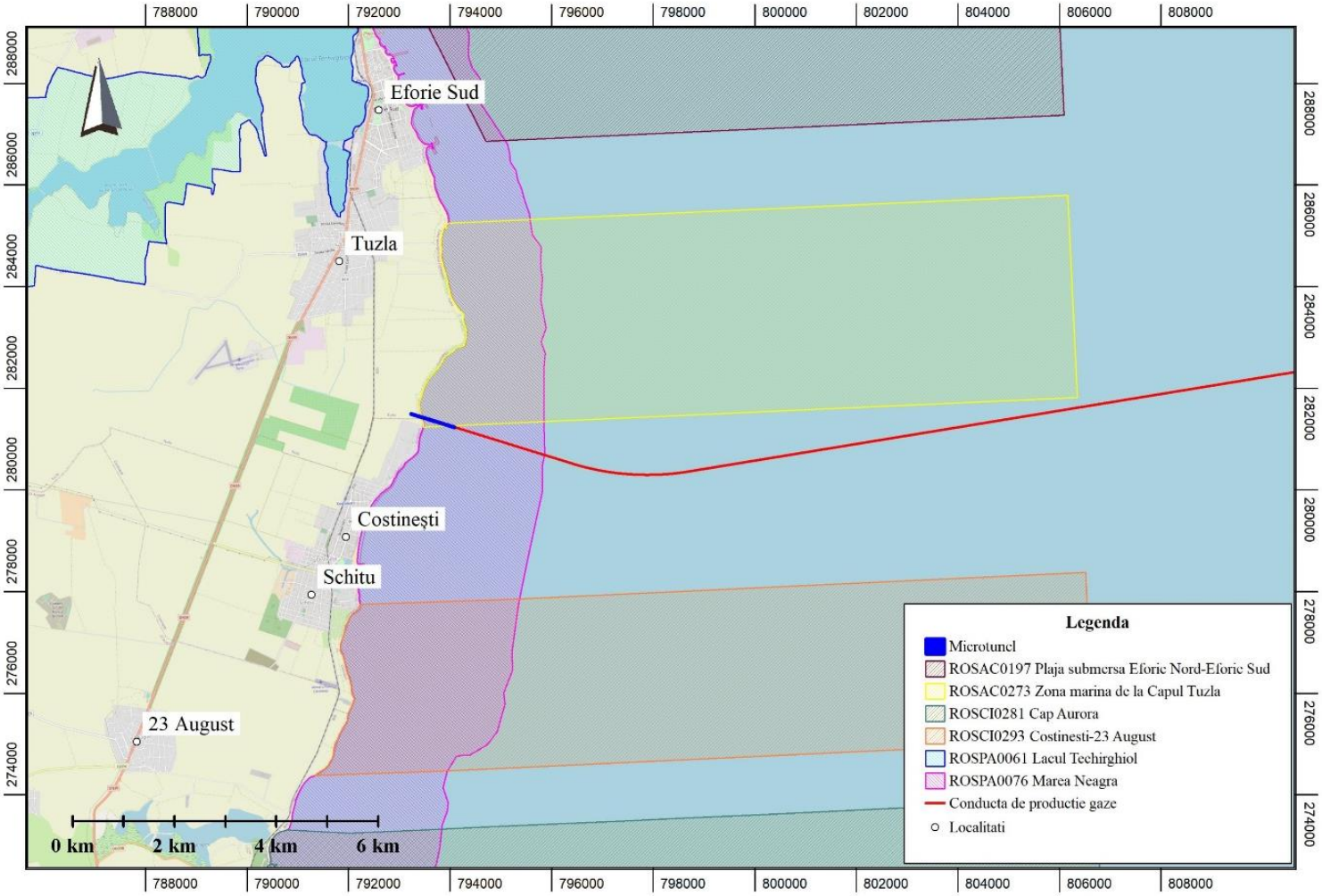

Figure A.9 Detail map. Location of the Neptun Deep project nearshore

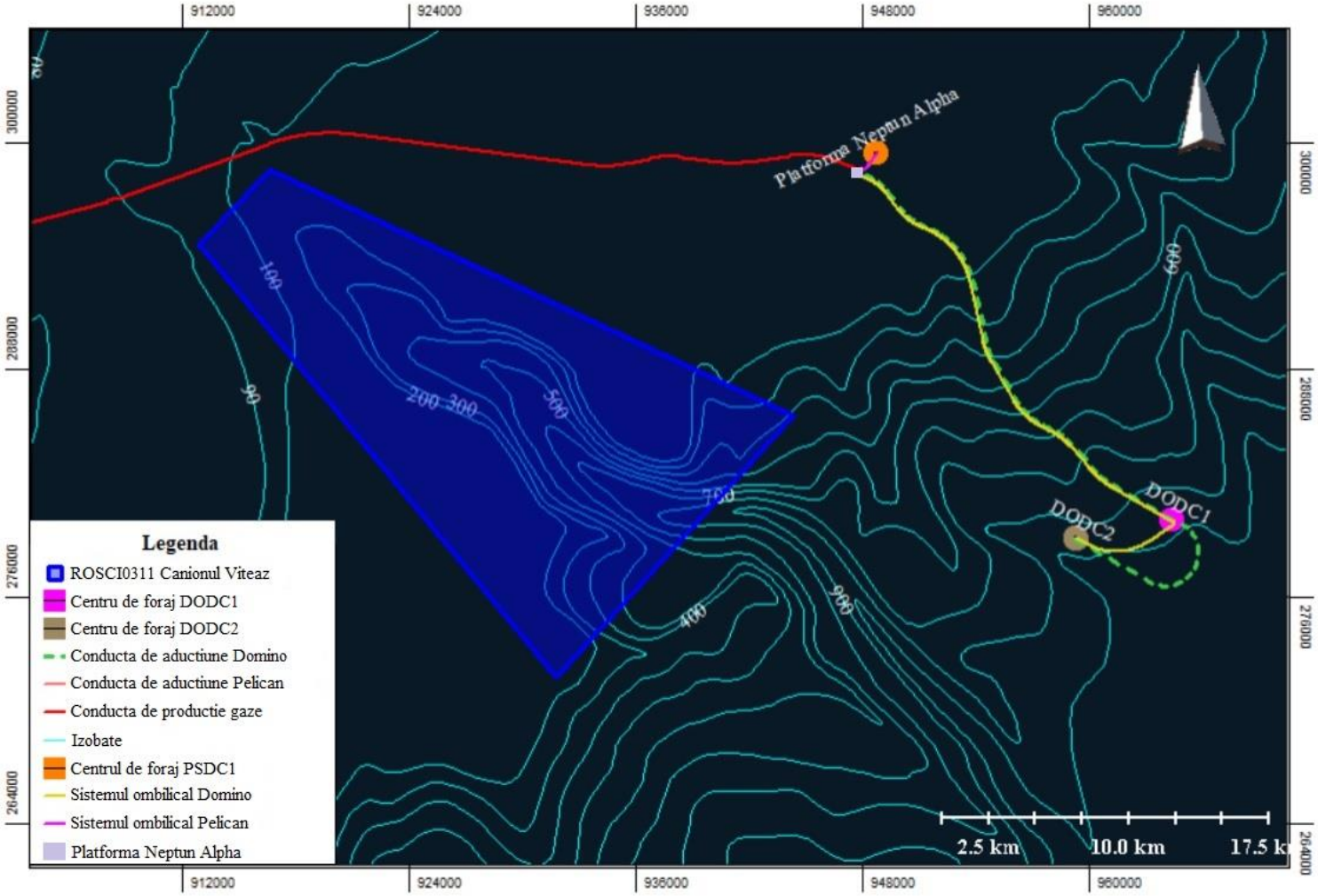

Figure A.10 Detail map. Location of the Neptun Deep project offshore SWP location

a.2) Effects generated by PP interventions

Table A.39 Summary of the effects generated by the implementation of the Neptun Deep project

Stage	Effects	Type/types of interventions that generate the effect	The method of quantification	Quantification of effects	The distance to which the effects are felt	ANPIC potentially affected	Other additional information
Construction	Noise emissions	Development of temporary access roads	Noise modeling	55dB	50 m	ROSPA0076 Marea Neagră	Does not cross ROSPA0076 Marea Neagră
		Arrangement of site organizations					
		Temporary railway level crossing					
		Construction/ Installation of SRM and CCR					
		Installation of gas production pipeline and fiber optic cable on land					
Construction	Substrate relocation with living organisms	Sub-shore crossing (microtunnel construction) and dig a trench for the gas production pipeline	Calculations and modeling	8438 ^{m2}	5-500 m	ROSAC0273 Zona marină de la Capul Tuzla	Does not intersect ROSAC0273 Zona marină de la Capul Tuzla. The excavated/dredged material will be used to cover a 1775 m segment of the pipe located in the trench, at a minimum distance of approx. 570 m from ROSAC0273.
	Turbidity		Sediment plume modeling	1 mg/l	2-3 km	ROSAC0273 Zona marină de la Capul Tuzla,	Intersects ROSPA0076 Marea Neagră, ROSAC0273 Zona marină de la Capul Tuzla and

Stage	Effects	Type/types of interventions that generate the effect	The method of quantification	Quantification of effects	The distance to which the effects are felt	ANPIC potentially affected	Other additional information
						ROSCI0293 Costinesti - 23 August and ROSPA0076 Marea Neagră	ROSCI0293 Costinești - 23 August
	Temporary and local increase in nutrients and possibly some pollutants present in sediments due to sediment resuspension		appraisal	N-NO $_3$ > 0.03 mg/l TP*** -film visible at water surface	2-3 km	ROSAC0273 Zona marină de la Capul Tuzla, ROSCI0293 Costinesti - 23 August and ROSPA0076 Marea Neagră	Intersects ROSPA0076 Marea Neagră, ROSAC0273 Zona marină de la Capul Tuzla ROSCI0293 Costinești - 23 August
	Underwater noise emissions		Underwater noise modeling	153 dB (VHF)*	920 m	ROSAC0273 Zona marină de la Capul Tuzla	Intersects ROSAC0273 Zona marină de la Capul Tuzla
	Crushing and/or denudation of the hard substrate populated by marine organisms as a result of the placement of the ship's anchors used in the installation		Calculation of the occupied surface	1350 ^{m2}	27 anchor positions	ROSAC0273 Zona marină de la Capul Tuzla	Intersects ROSAC0273 Zona marină de la Capul Tuzla on an area of 350 m ^{2} (7 anchor positions)
Construction	Underwater noise emissions	Drilling production wells	Underwater noise modeling	125-140 dB	100 m	ROSCI0311 Canionul Viteaz	Do not intersect ROSCI0311 Canionul Viteaz
Construction	Underwater noise emissions	Neptun Alpha platform installation	Underwater noise modeling	153 dB (VHF) *	19 km	ROSCI0311 Canionul Viteaz	intersects ROSCI0311 Canionul Viteaz

Stage	Effects	Type/types of interventions that generate the effect	The method of quantification	Quantification of effects	The distance to which the effects are felt	ANPIC potentially affected	Other additional information
Construction	Underwater noise emissions	Installation of subsea systems including production pipelines and umbilical systems from drilling centers to the platform	Underwater noise modeling	153 dB (VHF) *	700 m	ROSCI0311 Canionul Viteaz	Do not intersect ROSCI0311 Canionul Viteaz
Construction	Underwater noise emissions	Vessel operation	Underwater noise modeling	Max. 153 dB (VHF) *	410-700 m	ROSAC0273 Zona marină de la Capul Tuzla and ROSPA0076 Marea Neagră	Intersects ROSAC0273 Zona marină de la Capul Tuzla and ROSPA0076 Marea Neagră
Operation	Emissions in offshore marine waters of some chemical compounds that have the potential to affect the aquatic environment	Carrying out the production activity on the Neptun Alpha Platform	Effluent plume modeling. Assessment of potential risk to the marine environment (DREAM modelling)	EIF > 5% **	7 km	ROSCI0311 Canionul Viteaz	Do not intersect ROSCI0311 Canionul Viteaz
Operation	Noise emissions	The operation of the equipment installed inside the SRM and CCR station	Noise modeling	41 dB	10 m	ROSPA0076 Marea Neagră	Do not intersect ROSPA0076 Marea Neagră
Operation	Noise emissions during depressurization	Carrying out maintenance at the SRM station, once every 4 years	Noise modeling	60 dB	2 km	ROSPA0076 Marea Neagră	intersects ROSPA0076 Marea Neagră
Decommissioning	Noise emissions	Decommissioning SRM and CCR installations	Estimate based on calculations	55 dB	500-600 m	ROSPA0076 Marea Neagră	intersects ROSPA0076 Marea Neagră
Decommissioning	Noise emissions	Decommissioning the Neptun Alpha Platform and underwater facilities	appraisal	153 dB (VHF) *	700 m	ROSCI0311 Canionul Viteaz	Do not intersect ROSCI0311 Canionul Viteaz

*** VHF** - from Eng. Very High Frequency - 153 dB (VHF) represents the threshold value for continuous noise power beyond which behavioral changes occur in individuals of the *Phocoena species phocoena* (Southall , 2019).

**** EIF** - from Eng. Environment Impact Factor - Environmental Impact Factor; EIF > 5% - a probability of effect or risk of 5% is often used as a reference value, assuming that there is a risk of harm to the environment if more than 5% of the species are exposed to a concentration higher than the values limit below which no effects on aquatic organisms were recorded. EIF values < 10 are generally accepted as having a low risk to the environment, while EIF > 100 typically require further action, such as changing the chemical composition or technical disposal solutions.

***** TP -** Oil and oil products

a.3) Other PP with which the analyzed PP may generate cumulative impact

Table A.40 The characteristics of other PPs (under implementation, approved or under evaluation) that may have a cumulative impact with the evaluated PP on the ANPIC

No.	PP name	Location to ANPIC (distance)	Effects generated	Impacts
1	Reduction of coastal erosion Phase II (2014-2020)	Intersects ROSPA0076 Marea Neagră In the vicinity (5-28 m) ROSCI0293 Costinești-23 August	Turbidity Noise	Temporary indirect disturbance of habitats 1110 and 1170 from the site ROSCI0293 Costinești-23 August. According to the evaluation of the project, the site ROSAC0273 Zona marină de la Capul Tuzla will not be affected/ impacted. Temporary disturbance to fish and marine mammal species due to noise generated by excavation work. Temporary damage to some perimeters where fish, marine mammals and waterfowl feed
2.	Works to strengthen the seafront in the area of Tuzla, Constanța county.	Intersects ROSAC0273 Zona marină de la Capul Tuzla, ROSPA0076 Marea Neagră	Substrate modifications Noise	Following the works carried out at the base of the cliff, habitat 1140 was completely destroyed. Loss of habitat area.

No.	PP name	Location to ANPIC (distance)	Effects generated	Impacts
		In the vicinity (3.5 km) ROSCI0293 Costinești-23 August	Turbidity	Habitats 1110 and 1170 were affected. Disturbance of waterfowl in the resting area (Tuzla beach)
3.	The regional project for the development of water and wastewater infrastructure in the area of operation of SC RAJA SA Constanța	In the vicinity ROSAC0273 Zona marină de la Capul Tuzla, ROSCI0293 Costinești-23 August, ROSPA0076 Marea Neagră	It does not affect the protected natural areas: ROSAC0273 Zona marină de la Capul Tuzla, ROSCI0293 Costinești-23 August, ROSPA0076 Marea Neagră	No impact
4.	Midia Natural Gas Development Project	It intersects with ROSPA0076 Marea Neagră Approx. 12.7 km from ROSCI0311 Canionul Viteaz. Approx. 46 km from ROSAC0273 Zona marină de la Capul Tuzla Approx. 53 km to ROSCI0293 Costinesti-23 August.	The work in the coastal area of the installation of the gas pipeline has been completed. The disturbance of the species was temporary, during the construction period.	The impact was temporary
5.	Electrification and rehabilitation of the Constanta Mangalia railway line	ROSPA0076 is located at a distance of 40 m in front of the railway. ROSAC0273 Zona marină de la Capul Tuzla is located at a distance of approximately 900 m from the railway.	Mortality due to collision of individuals with power lines and moving train sets.	The project will not alter the habitats of community interest or the favorable habitats of species of community interest in ROSAC0273 and ROSCI0293, neither during the construction stage nor during the operation stage.

No.	PP name	Location to ANPIC (distance)	Effects generated	Impacts
		ROSCI0293 Costinești-23 August is at a distance of approximately 200 m from the railway.		The project is not considered to be able to lead to the disturbance of the activity of bird species in the site (ROSPA0076). It is located at a distance against the site limit, in a heavily populated area. The project may generate an impact on the size of the populations of bird species present in ROSPA0076, caused by the existence of the risk of collision.
6.	Black Sea sand exploitation projects	Over 2 km from ROSPA0076 Marea Neagră Over 7 km from ROSAC0273 Zona marină de la Capul Tuzla and ROSCI0293 Costinești-23 August	Turbidity Noise	Temporary disturbance to fish and marine mammal species due to dredging noise. Temporary damage to some perimeters where fish, marine mammals and waterfowl feed The species and their habitats within the protected natural areas will not be affected.
7.	Neptun Deep - Creation of access road, site organization, securing and connection to utilities, access roads to them, related to SRM and CCR.	Approx. 915 m to the commune border ROSPA0076 and ROSAC0273 Approx. 3.5 km to ROSCI0293 Costinesti-23 August	Noise Roadkill (accidental killing as a result of road traffic)	Temporary disturbance of waterfowl in ROSPA0076 resting on arable land. Road traffic will not cause deaths in the case of the conservation objectives of the protected natural areas located in the vicinity.
8.	Development of a roundabout intersection in the area of the national road DN39 (E87) - km 23 + 190	Approx. 2.7 km to the commune border ROSPA0076 and ROSAC0273 Approx. 4.8 km to ROSCI0293 Costinesti-23 August	Noise	Given the location of the project and the great distance from ANPIC, there will be no impact on the conservation objectives of the protected natural areas.

No.	PP name	Location to ANPIC (distance)	Effects generated	Impacts
9.	Neptun Deep – Electricity supply site organization natural gas measuring station and control center	Approx. 600 m to the border ROSPA0076 Marea Neagră Approx. 930 m to the limit ROSAC0273 Zona marină de la Capul Tuzla. Approx. 2.4 km to ROSCI0293 Costinesti-23 August	Risk of collision	The impact on the size of bird populations is negligible. The LEA will only have a length of 27 m, and the rest of the route (1460 m) will be represented by the LES.
10.	The Black Sea Coast - Podișor (RO) pipeline for the collection of gas from the Black Sea	Approx. 1.17 km to the border of the commune ROSPA0076 and ROSAC0273 Approx. 3.7 km to ROSCI0293 Costinesti-23 August	Morphological changes of the land Noise	Temporary fragmentation of habitats on the site. Given the fact that the works are not carried out inside ANPIC analyzed from the aspect of the occurrence of cumulative impact with the activities of the Neptun Deep project, we consider that there will be no cumulative impact.

CHAPTER B. INFORMATION ON THE NATURAL PROTECTED AREAS OF COMMUNITY INTEREST AFFECTED BY THE IMPLEMENTATION OF THE NEPTUN DEEP PROJECT

In order to identify the ANPIC potentially affected by the implementation of the project, the criteria established by the Adequate Evaluation guidelines approved by Ord. 1682/2023 and Ord. 1679/2023 were taken into account, as follows:

a) intersection;
b) neighbourhood (area of influence);
c) species mobility;
d) ecological connectivity.

- Criterion no. 1 - ***Intersection***

The project partially overlaps (intersects) with ROSPA0076 Marea Neagră and ROSAC0273 Zona marină de la Capul Tuzla.

- Criterion no. 2 - ***Neighbourhood (area of influence)***

From underwater noise modelling during construction, noise modelling from the project's land area (during construction and operation), sediment plume dispersion modelling, Neptun Alpha platform effluent plume modelling and potential marine risk assessment (DREAM modelling) results that the sites ROSCI0293 Costinești-23 August as well as ROSCI0311 Canionul Viteaz are located in the area of direct influence of the project.

The area where effects generated by other activities appear (indirect influence area) modified as a result of the implementation of the Neptun Deep project is terrestrial and does not intersect with ANPIC.

- Criterion no. 3 - ***Mobility of species***

For this criterion, the form of impact considered acc. the EA guide approved by Order no. 1,682/2023 is the reduction of the population as a result of the increase in the mortality rate.

Taking into account the location of the analysed project, the activities proposed within the project, the characteristics of the site, from the category of species of community interest with high mobility are part: fish, birds, bats, marine mammals.

The impact on species with high mobility can have a large magnitude only as a result of the noise and vibrations generated during the fixing in position (beating of the pillars) of the jacket of the Neptun Alpha platform, an activity that will be carried out in the sea, more than 100 km from the line the shore.

Among the species of community interest, only dolphins can reach the area of influence of the activities generating the effects that have as an impact the reduction of population numbers, and the only natural protected area located in the vicinity (13.2 km) of the source of noise emissions, and which has as a conservation objective a species of marine mammals (*Tursiops truncatus)* is ROSCI0311 Canionul Viteaz.

➢ Criterion no. 4 - ***Ecological connectivity***

Regarding the Natura 2000 sites connected by terrestrial and aquatic ecological corridors in the project area, it should be noted that the implementation of the project cannot cause interruptions or the appearance of a barrier effect at the level of these corridors.

The main form of impact considered in this case is the fragmentation of habitats of community interest and/or the habitats of species of community interest, but through the implementation of the analysed project, the occurrence of structural or functional changes at the level of terrestrial ecological corridors and marine areas of ecological continuity, which implicitly leads to the manifestation of this form of impact.

In conclusion, the potentially affected ANPIC list includes the following NATURA 2000 sites:

- ROSAC0273 Zona marină de la Capul Tuzla;
- ROSCI0293 Costinești-August 23;
- ROSCI0311 Canionul Viteaz;
- ROSPA0076 Marea Neagră.

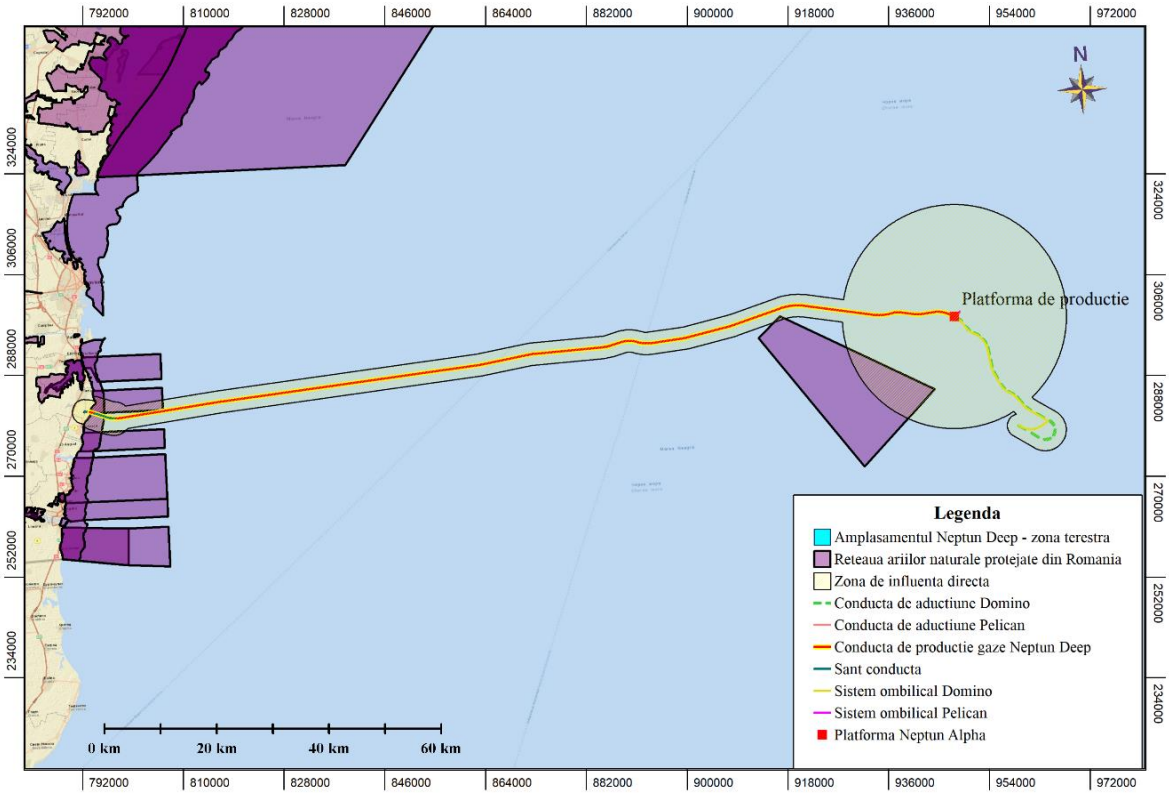

Figure B.1 Area of direct influence of the Neptun Deep project

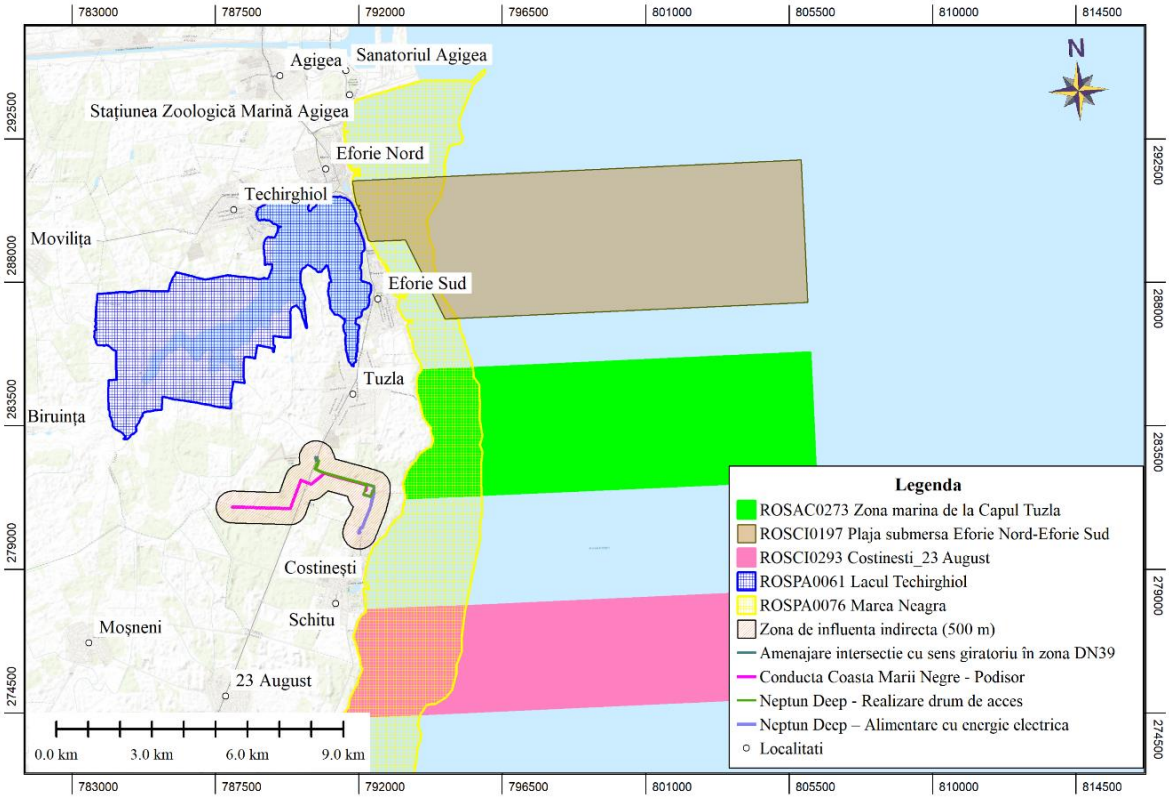

Figure B.2 The area of indirect influence of the Neptun Deep project

B.1. DATA ON NATURAL AREAS PROTECTED OF COMMUNITY INTEREST

The information presented in this chapter is based on data included in the most recent Standard Forms of Natura 2000 sites (2021-2023), Site Management Plans, Specific Conservation Objectives developed for sites or Minimum Sets of Special Protection and Conservation Measures biological diversity, as well as the conservation of natural habitats, flora and fauna, safety of the population and investments, as well as other available public information (Methodological guidelines, scientific literature, studies).

B.1.1. ROSAC0273 Zona marină de la Capul Tuzla

Located to the north and east of the project limits, ROSAC0273 - Zona marină de la Capul Tuzla is a special conservation area (SAC), which initially covered, when declared as a site of community importance (SCI), an area of 1738 ha. By Order no. 46/2016 of the Minister of the Environment, Waters and Forests, regarding the regime of natural protected areas and the establishment of sites of community importance within the European ecological network Natura 2000 in Romania, the area of the Zona marină de la Capul Tuzla increased to 4946.8 ha.

Management of the Natura 2000 site:

The institution responsible for the management of ROSAC0273 Zona marină de la Capul Tuzla is ANANP.

Site Importance:

Importance of ROSAC0273 for biodiversity and/or for the conservation of species/habitat types considered at the European level consists in the high biodiversity and uniqueness given by the following aspects:

- the only place in Romania where the habitat 8330 Marine caves is present;
- spectacular underwater relief;
- one of the very few places in Romania where the natural rocky mid-coast was present.

In the Cape Tuzla area, the rocky reef bottom has the greatest depth extension and the most varied and rugged relief in the Romanian sector of the Black Sea. Therefore, the most diverse range of micro-habitats of this type is found here and, consequently, a very diverse aquatic fauna and flora. The area is not yet affected by major anthropogenic impacts and is not favourable for navigation due to the very rough underwater relief.
A high cliff with an outlet to the sea, Cape Tuzla continues with a rocky submarine promontory. The marine habitats for which the site was declared are of particular importance: reefs, sandbars permanently covered by a thin layer of seawater, sands and marshy areas not covered by seawater at low tide.

In the Cape Tuzla area, the rocky reef bottom has the largest extension to the sea and the most varied and rugged relief in the Romanian sector of the Black Sea. It therefore contains the most diverse range of microhabitats of its kind and, consequently, a very diverse aquatic fauna and flora.

Management plan:
The site has a Management Plan approved by Order no. 1433/2016 of the Minister of Environment, Water and Forests. However, the plan only covers the old site of 1,738 ha.
Specific conservation objectives:
For the Natura 2000 site ROSAC0273, the National Agency for Natural Protected Areas (ANANP) established the specific conservation objectives, approved by Decision no. 490/06.10.2021.
The biogeographical region(s) in which the site is located:
ROSAC0273 lies entirely within the Black Sea biogeographic region.
Overlap of ROSAC0273 with other ANPIC and/or other natural protected areas:
ROSAC0273 partially overlaps with ROSPA0076 Marea Neagră.
ROSAC0273 Zona marină de la Capul Tuzla overlaps with the Black Sea avifaunistic special protection area on an area of approx. 7.74 km $^{2.}$
The role of ROSAC0273 within the Natura 2000 network and terrestrial and aquatic ecological corridors:
By declaring Zona marină de la Capul Tuzla a site of community importance, part of the European ecological network Natura 2000, the protection of habitats and species of aquatic flora and fauna was taken into account because within this site a diverse range of microhabitats characteristic of the rocky bottom can be found reef and consequently a very diverse aquatic fauna and flora.
Thus, the main role of the site is to protect and conserve important marine habitats from a floristic and faunal point of view as well as marine fauna species of conservation interest.
The site is not in relation to ecological corridors identified at the national level within the Natur Regio project, developed by ICAS and the PN Apuseni Administration.
In the terrestrial area of the project, 2 areas of ecological corridors were identified, most of them being located near the Municipality of Constanța, the Olimp tourist resort, between the Neptun

and Venus resorts, in humanized areas. ROSAC0273 is not interconnected with or dependent on these ecological corridors.

Relationships of ROSAC0273 with other neighbouring ANPICs or within the same biogeographical region:

ROSAC0273 Zona marină de la Capul Tuzla is at the following distances from other marine sites within the Natura 2000 ecological network:

- 1.58 km from ROSAC0197 Plaja submersă de la Eforie Nord - Eforie Sud
- 3.4 km from ROSCI0293 Costinești-23 August.

Table B.1 Types of habitats present on the site (information from the Standard Site Form (updated September 2021)

No.	Habitat type	Area (ha)
1	1110 Shallow submerged sandbars	450
2	1140 Sand and shore surfaces exposed at low tide	2
3	1170 Reefs	1285
4	8330 Submerged or partially submerged sea caves - no. 7	0

Table B.2 Species listed in Annex II to Directive 92/43/EEC (information from the standard website form updated in September 2021)

No.	Species code	Scientific name	Population information		
			Presence type	Min.	Max.
1	4125	*Immaculate aloe*	Permanent	100	1000
2	4127	*Alosa tanaica*	Permanent		1000
3	1351	*Phocoena phocoena relicta*	Permanent/ concentrations	5	20
4	1349	*Tursiops truncatus ponticus*	Permanent/ concentrations	5	20

B.1.2. ROSCI0311 Canionul Viteaz

The site of community importance ROSCI0311 Canionul Viteaz is located at a distance of approximately 13 km from the technological water discharge area and from the Neptun Alpha Platform.

The area of the site is 35,376.70 ha and it is located entirely in the marine biogeographic zone.

Management of the Natura 2000 site:

The institution responsible for the management of ROSCI0311 Canionul Viteaz is ANANP.

Site Importance:

The Canionul Viteaz located off the Romanian coast is the largest submarine canyon in the Black Sea area, being probably the former delta of the ancient Danube in the Quaternary. It begins to form at a depth of -100m and opens onto the continental glacis at -1000m through an abyssal cone.

The site has been designated for conservation habitats 1180 and 1170 (Table B.1) which occur here in a unique and highly representative combination. Globally, this habitat is present only in the Black Sea and reaches its maximum representativeness only in two locations - one of them is this and the other is in the EEZ of Ukraine.

Management plan:

The site does not have an approved Management Plan and Regulation.

Specific conservation objectives

For the Natura 2000 site ROSCI0311, ANANP, no specific conservation objectives have been established. A Note was issued regarding the approval of the minimum set of special measures for the protection and conservation of biological diversity, as well as the conservation of natural habitats, flora and fauna, safety of the population and investments in ROSCI0311 Canionul Viteaz, with no. 377/20.01.2022.

The biogeographical region(s) in which the site is located:

The natural area protected by community interest Canionul Viteaz is located entirely in the Black Sea biogeographical region.

Overlap of the site with other ANPIC and/or other protected natural areas:

It does not overlap with any type of natural protected areas.

The role of ROSCI0311 within the Natura 2000 network and terrestrial and aquatic ecological corridors:

It is important for the conservation of the two habitat types 1180 and 1170 for which this site has been designated.

There are no connections with other Natura 2000 sites.

The relations of ROSCI0311 with other neighbouring ANPICs or within the same biogeographical region:

ROSCI0311 has no connection with other natural protected areas, nor with the other area in the Black Sea where this unique combination of habitats exists, 1180 and 1170, which is positioned in the waters of the exclusive economic zone of Ukraine.

Table B.3 Types of habitats present in the site and the evaluation of the site with respect to them

Types of habitats					Assessment			
Code	Habitat name	Area (ha)	Caves (no.)	Data Quality	A B C D	A B C		
					Rep.	Rel. Area	Conserv. status.	Overall Eval.
1170	Reef	5050	-	moderate	B	A	A	B

Types of habitats					Assessment			
Code	Habitat name	Area (ha)	Caves (no.)	Data Quality	A B C D	A B C		
					Rep.	Rel. Area	Conserv. status.	Overall Eval.
1180	Underwater structures created by gas emissions	15500	-	Hi	A	A	A	A

Table B.4 Species provided in Annex II to Directive 92/43/EEC

No. crt.	Species code	Scientific name	Population information		
			Presence type	Min.	Max.
1	1349	*Tursiops truncatus*	Permanent	10	1000

B.1.3. ROSCI0293 Costinesti-23 August.

The Site of Community Importance ROSCI0293 Costinești-23 August is located south of the project site in the marine area, approximately 2.3 km from the Neptun Deep production pipeline.

The surface of the site is 4883.60 ha, being also 100% marine.

Management of the Natura 2000 site:

The institution responsible for site management is ANANP.

Site Importance:

Habitats 1110, 1140 and 1170 have a significant presence in the site. The latter has the largest extension, both in the coastal and offshore areas (30-45 m depth). The site is in a very good state of conservation, especially for habitat 1170.

Habitat 1170 has the largest extension in the site but also the largest diversity, including a wide variety of subtypes, acc. the national classification (Micu et al., 2008): 1170-2, 1170-4, 1170-5, 1170-7, 1170-8, 1170-9 and 1170-10. Of these, the most important for conservation are: 1170-2 Biogenic reefs of *Mytilus galloprovincialis,* present in the offshore part of the site, between 30-45m deep and 1170-10 Infralittoral shoals of hard clay with Pholadidae, in which the species *Pholas* dactylus lives. Subtype 1170-8 Infralittoral rock with photophilous algae, with a large extent and variability of the relief, hosts a flora very diverse alga.
Also, it has 6 subtypes of habitat 1110 (acc. the national classification Micu et al., 2008), with a very good state of conservation. Three of these: 1110-5 "Coarse wave-beaten sands and fine pebbles, 1110-6 Infralittoral pebbles, 1110-8 Mica sands depth bioturbated by *Arenicola* and *Callianassa,* are very rare in the Romanian sector of the Black Sea and are of particular interest for conservation.

Management plan:

The site does not have an approved Management Plan and Regulation.

Specific conservation objectives

For the Natura 2000 site ROSCI0311, ANANP, no specific conservation objectives have been established. A Note was issued regarding the approval of the minimum set of special measures for the protection and conservation of biological diversity, as well as the conservation of natural habitats, flora and fauna, safety of the population and investments from ROSCI0293 Costinești- 23 August, with no. 375/20.01.2022.

The biogeographical region(s) in which the site is located:

The natural area protected by community interest Costinești- 23 August is located entirely in the Black Sea biogeographical region.

Overlap of the site with other ANPIC and/or other protected natural areas:

ROSCI0293 Costinești- 23 August partially overlaps with ROSPA0076 Marea Neagră.
ROSCI0293 Costinești- 23 August overlaps with the Black Sea avifaunistic special protection area on an area of approx. 10,388 km $^{2.}$

The role of ROSCI0293 within the Natura 2000 network and terrestrial and aquatic ecological corridors:

The site is important within the ecological network Natura 2000 for the conservation of the three types of habitats 1110, 1140 and 1170, for which it was designated. The site is in a very good state of conservation, particularly for habitat 1170 (acc. information in the updated standard site form).

The site is not in relation to ecological corridors identified at the national level within the Natur Regio project, developed by ICAS and the PN Apuseni Administration.
In the terrestrial area of the project, 2 areas of ecological corridors were identified, most of them being located near the Municipality of Constanța, the Olimp tourist resort, between the Neptun and Venus resorts, in anthropized areas. ROSCI0293 is not interconnected with or dependent on these ecological corridors.

The relations of ROSCI0293 with other neighbouring ANPICs or within the same biogeographical region:
ROSCI0293 Costinești- 23 August is at the following distances from other marine sites within the Natura 2000 ecological network:

- 3.4 km from ROSAC0273 Zona marină de la Capul Tuzla
- 1.12 km from ROSCI0281 Cap Aurora.

Table B.5 Types of habitats present in the site and the evaluation of the site with respect to them

Types of habitats					Assessment			
Code	Habitat name	Area (ha)	Caves (no.)	Data Quality	A B C D	A B C		
					Rep.	Rel. Area	Conserv. status.	Overall Eval.
1110	Shallow submerged sandbars	1220	-	Hi	B	B	A	A

Types of habitats					Assessment			
Code	Habitat name	Area (ha)	Caves (no.)	Data Quality	A B C D	A B C		
					Rep.	Rel. Area	Conserv. status.	Overall Eval.
1140	Sand and mud flats exposed at low tide	244	-	Hi	B	C	A	B
1170	Reef	3418	-	Hi	A	B	A	A
8330	Submerged or partially submerged sea caves	0	3	low	C	A	B	B

*Regarding the surfaces of habitats 1110, 1140 and 1170 in ANANP Note no. 375/20.01.2022 it is mentioned that in the standard form (2020) the surfaces of these habitats are 0 ha and despite this, they have an excellent state of conservation.

Table B.6 Species provided in Annex II to Directive 92/43/EEC

No. crt.	Species code	Scientific name	Population information		
			Presence type	Min.	Max.
1	1351	*Phocoena phocoena*	Permanent	-	-
2	1351	*Phocoena phocoena*	Concentration	10	50
4	1349	*Tursiops truncatus*	Permanent	-	-
5	1349	*Tursiops truncatus*	Concentration	20	200
6	4125	*Immaculate aloe*	Permanent	-	-
7	4125	*Immaculate aloe*	Concentration	-	-
8	4127	*Alosa tanaica*	Permanent	-	-
9	4127	*Alosa tanaica*	Concentration	-	-

B.1.4. ROSPA0076 Marea Neagră

Located in the coastal area of the project, the site is crossed over a length of 2.5 km by the gas production pipeline.

ROSPA0076 Marea Neagră is a site of community importance, acc. the Birds Directive 79/409/EEC, it was declared a special protection area for birds by HG no. 1284/2007 regarding the declaration of avifaunistic protected areas as an integral part of the European Natura 2000 ecological network in Romania.

The site has an area of 149,143.9 ha.

Management of the Natura 2000 site:

The institution responsible for the management of the Black Sea avifaunistic special protection area is ANANP.

Site Importance:

This site is important for conservation of some specific protected bird species, used mostly during bird migration and wintering. During the migration period, the site can host over 20,000 birds, thus being a site designated as an IBA (Important Bird Area) meeting the following criteria established by BirdLife International at sub-regional level, respectively: C1 (Species of global conservation concern- Species of global importance for conservation), C2 (Concentrations of a species threatened at the European Union level), C4 (Large congregations- multi-species aggregations) and C6 (Species threatened at the European Union level).

Management plan:

The site has a Management Plan approved by Order no. 1197/2016 of the Minister of Environment, Water and Forests.

Specific conservation objectives:

For the Natura 2000 site ROSPA0076, ANANP established the specific conservation objectives, approved by Decision no. 195/ 23.03.2023 (attached in Appendix 1).

The biogeographical region(s) in which the site is located:

ROSPA0076 Marea Neagră lies entirely within the Black Sea biogeographic region.

Overlap of ROSPA0076 with other ANPIC and/or other natural protected areas:

The special avifaunistic protection area of the Black Sea partially overlaps with the following Natura 2000 sites in the marine area: ROSCI0065 Delta Dunării, ROSCI0066 Delta Dunării – zona marină, ROSCI0237 Structuri submarine metanogene - Sf. Gheorghe, ROSAC0197 Plaja submersă Eforie Nord - Eforie Sud, ROSAC0273 Zona marină de la Capul Tuzla, ROSCI0293 Costinești – 23 August, ROSCI0281 Cap Aurora, ROSAC0094 Izvoarele sulfuroase submarine de la Mangalia, ROS AC0269 Vama Veche - 2 Mai.

The role of ROSPA0076 within the Natura 2000 network and terrestrial and aquatic ecological corridors:

The role of this natural protected area is to conserve, maintain and, where appropriate, restore to a favourable state of conservation the species of migratory birds as well as their specific habitats, resting, sheltering, and feeding, in the coastal area of the Black Sea.

In the project area, areas of ecological corridors have been identified, represented by the connections between the Natura 2000 sites in the project area, respectively the possibly affected site ROSPA0076 Marea Neagră and other areas of special avifaunistic protection adjacent, respectively: ROSPA0061 Lacul Techirghiol, ROSPA0067 Lacul Siutghiol, ROSPA0066 Limanu Herghelia, which constitutes a corridor for bird species in the area. The maps below indicate that no ecological barriers have been identified in the Neptun Deep project area that could disrupt the movement of species.

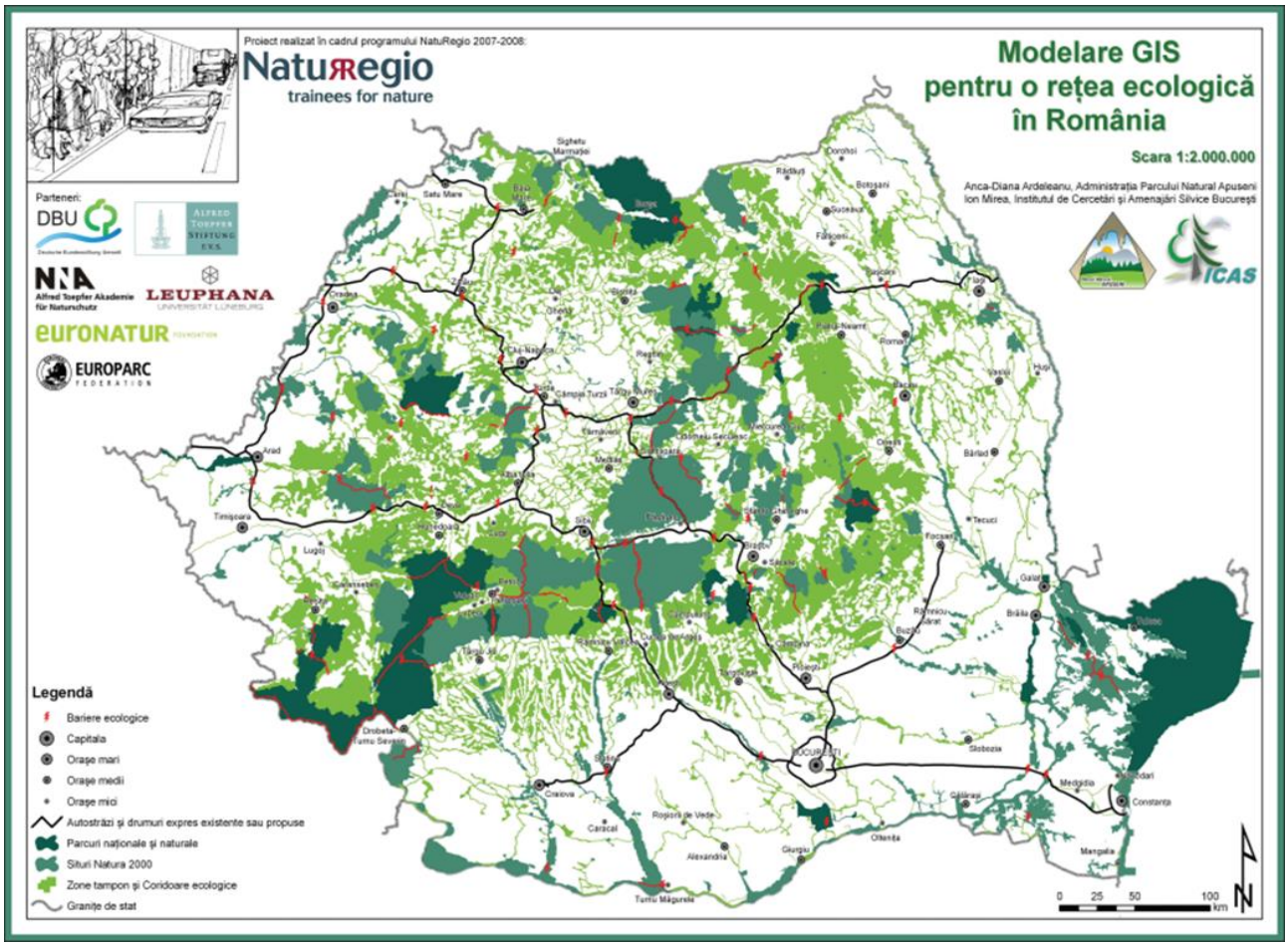

Figure B.3 National ecological corridors (source: NatuRegio project 2007-2008)

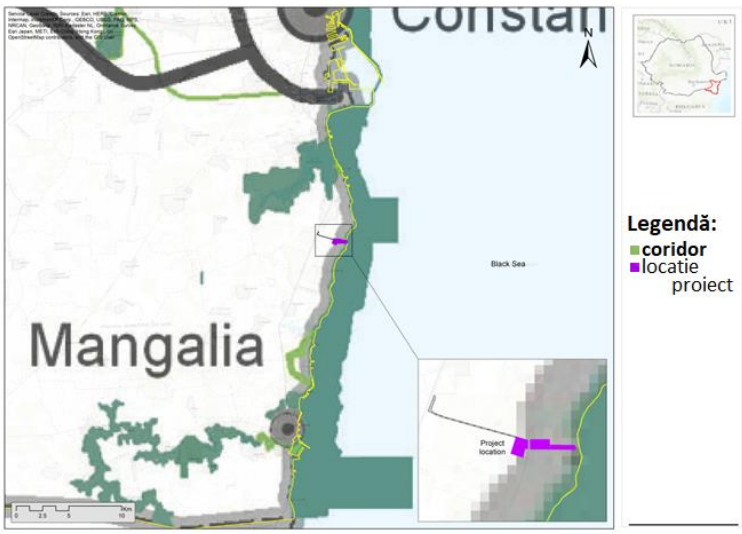

Figure B.4 Ecological corridors in the land area of the project

Relationships of ROSPA0076 with other neighbouring ANPICs or within the same biogeographical region:

In the southern sector of the Romanian coast, the Black Sea avifaunistic special protection area borders ROSPA0061 Lake Techirghiol (approx. 128 m) and ROSPA0066 Limanu-Herghelia (approx. 106 m).

It is known that the aquatic birds (of community interest and not only) characteristic of the lake areas: Razim-Sinoie, Lake Siutghiol, Lake Techirghiol, Balta Mangaliei or Mlastina Hergheliei make local flights between these areas and the coastal marine waters within the ROSPA0076 Marea Neagră.

Birds using the Sarmatian route (an important migration corridor along the Romanian Black Sea coast) use both paramarine lakes and coastal waters as resting and feeding sites during the passage. Bird species whose nesting habitats are located in the area of lakes and littoral cordons frequently arrive for the purpose of feeding within the limits of ROSPA0076 Marea Neagră.

Most of the bird species mentioned in the standard form of the ROSPA0076 Marea Neagră site are also found in the standard forms of the protected natural areas, such as ROSPA0061 Lacul Techirghiol and ROSPA0066 Limanu-Herghelia, which demonstrates the interconnectivity of these areas of special avifaunistic protection.

Along the Romanian coastal area you know, ROSPA0076 Marea Neagră overlaps with most of the sites of community importance in the marine area, these sites constitute, through the diversity of habitats and the specific richness, feeding habitats for the birds that arrive here during the migration and wintering period.

Table B.7 Bird species listed in Annex I of Council Directive 2009/147/EC (information from the website's Standard Form updated in September 2021)

No.	Species code	Scientific name	Population information		
			Presence type	Min. (individuals)	Max. (individuals)
B	A050	*Anas Penelope*	concentration	1,200	1,500
B	A053	*Anas platyrhynchos*	wintering	7,000	9,000
B	A051	*Anas screamed*	wintering	340	410
B	A059	*Aythya ferina*	wintering	18,000	20,000
B	A061	*Aythya fuligula*	wintering	6,300	7,450
B	A396	*Insole ruficollis*	concentration	200	300
B	A067	*Bucephala clangula*	wintering	1,500	3,000
B	A196	*Chlidonias hybridus*	concentration	4,000	5,000
B	A197	*Chlidonias niger*	concentration	120	140
B	A038	*Cygnus cygnus*	wintering	1,000	1,500
B	A125	*The coot attracts*	wintering	25,000	40,000
B	A002	*Arctic marlin*	wintering	250	300
B	A001	*Gavia starata*	wintering	100	200
B	A189	*Gelochelidon nilotica*	concentration	320	350
B	A459	*Larus cachinnans*	concentration	25,000	30,000
B	A182	*Larus canus*	concentration	12,000	15,000
B	A183	*Larus fuscus*	concentration	200	400

No.	Species code	Scientific name	Population information		
			Presence type	Min. (individuals)	Max. (individuals)
B	A180	*Larus gene*	concentration	1,000	1,500
B	A176	*Larus melanocephalus*	concentration	12,000	15,000
B	A177	*Larus minutus*	concentration	10,000	12,000
B	A179	*Larus ridibundus*	concentration	20,000	50,000
B	A156	*Limosa limosa*	concentration	2,000	5,000
B	A068	*Mergus albellus*	wintering	1,000	1,500
B	A070	*Mergus merganser*	wintering	120	180
B	A069	*Sawmill walk*	concentration	230	340
B	A020	*Pelecanus crispus*	concentration	70	120
B	A017	*Phalacrocorax carbo*	wintering	10,000	27,000
B	A170	*Phalaropus lobatus*	concentration	700	1,200
B	A005	*Podiceps cristatus*	concentration	4,500	6,000
B	A006	*Podiceps grisegena*	concentration	500	1,000
B	A008	*Podiceps nigricollis*	wintering	2,000	20,000
B	A464	*Puffinus yelkouan*	concentration	1,000	17,000
B	A195	*Sterna albifrons*	concentration	300	500
B	A190	*Caspian tern*	concentration	500	1,000
B	A193	*Sterna hirundo*	concentration	8,000	10,000
B	A191	*Sterna sandvicensis*	concentration	5,200	6,000
B	A004	*Tachybaptus ruficollis*	concentration	1,200	1,500

Information regarding the protected natural areas of community interest potentially affected by the implementation of the Neptun Deep project is briefly presented in the table below:

Table B.8 Data on ANPIC potentially affected by the implementation of the Neptun Deep project

Name and ANPIC code	Area (ha)	Importance/ Role	Management plan and no. OM by which it was approved	Decision/ Note of approval of the conservation objectives of ANPIC	The biogeographical region(s) in which the ANPIC is located	Ecosystem types	Overlap with other ANPIC or AP	ANPIC's relations with other ANPIC	Other particularities of ANPIC
ROSAC 0273 Zona marină de la Capul Tuzla	4,946.8	The site has been designated for the conservation of 4 marine habitats 2 species of fish 2 species of dolphins	Management plan approved by Order no. 1433/2016 of the Minister of Environment, Water and Forests	ANANP decision no. 490/ 06.10.2021	MBL	Marine areas (N01) 99.81% coverage Crops (arable land) (N12) 0.15% coverage	ROSPA0076 Marea Neagră	approx. 1.58 km from ROSAC0197 Submerged beach Eforie Nord - Eforie Sud approx. 3.4 km from ROSCI0293 Costinești-23 August.	Habitat 1140 no longer exists on the site (it was destroyed following the 2010-2011 seawall consolidation works) It is the only place in Romania where the habitat 8330 Marine caves is present It has a spectacular underwater relief It is one of the very few places in Romania where the natural rocky mid-coast was present
ROSCI 0311 Canionul Viteaz	35,376.70	The site has been designated for habitat conservation 1180 and 1170 and for a species of dolphin	It does not have an approved Management Plan and Regulation	ANANP note no. 377/ 20.01.2022	MBL	Marine areas 100%	-	No relationship with the other ANPICs in the marine area	It is the largest underwater canyon in the Black Sea area
ROSCI 0293 Costinești-August 23	4,883.60	The site has been designated for the conservation of 4 marine habitats 2 species of fish 2 species of dolphins	It does not have an approved Management Plan and Regulation	ANANP note with no. 375/20.01.2022	MBL	Marine areas (N01) 99.81% coverage Crops (arable land) 0.15 % coverage	ROSPA0076 Marea Neagră	approx. 3.4 km from ROSCI0273 Zona marină de la Capul Tuzla approx. 1.12 km from ROSCI0281 Cap Aurora.	The site has a very good conservation status especially for habitat 1170 with a wide variety of subtypes

Name and ANPIC code	Area (ha)	Importance/ Role	Management plan and no. OM by which it was approved	Decision/ Note of approval of the conservation objectives of ANPIC	The biogeographical region(s) in which the ANPIC is located	Ecosystem types	Overlap with other ANPIC or AP	ANPIC's relations with other ANPIC	Other particularities of ANPIC
ROSPA 0076 Marea Neagră	149,143.9	The avifaunistic special protection area is important for migratory and wintering bird species in the coastal area of the Black Sea	Management plan approved by Order no. 1197/2016 of the Minister of Environment, Water and Forests	ANANP decision no. 195/ 23.03.2023	MBL	Marine areas (N01) 96.96% coverage Estuaries, lagoons (N02) 2.18% coverage	ROSCI0065 Delta Dunării ROSCI0066 Delta Dunării – zona marină ROSCI0237Structuri submarine mutagene Sf. Gheorghe ROSAC0197Plaja submersă Eforie Nord - Eforie Sud ROSAC0273 Zona marină de la Capul Tuzla ROSCI0293 Costinesti – August 23 ROSCI0281 Cap Aurora ROSAC0094 Izvoarele sulfuroase submarine de la Mangalia ROSAC0269 Vama Veche – 2 Mai	approx. 128 m in front of ROSPA0061) approx. 106 m in front of ROSPA0066 Limanu-Herghelia approx. 4.6 km to ROSCI0413 Lobul sudic al Câmpului de Phyllophora al lui Zernov	The site is only important during migration and wintering for 37 species of birds

Legend: MBLS- Black Sea Marine Region

B.2. DATA ON THE HABITATS/SPECIES IN ANPIC POSSIBLY AFFECTED BY THE NEPTUN DEEP PROJECT

The description of the habitats and species of community interest for the protection of which the protected natural areas of community interest potentially affected by the implementation of the Neptun Deep project were designated was made based on the content of the updated standard forms of each individual ANPIC (FS 2021) and other official data and information available or published, such as Management Plans (for the sites for which they were developed and approved), Decisions or Notifications issued by ANANP regarding the implementation of conservation objectives, the Synthetic Report on the State of Conservation of Species and Habitats of Community Interest in Romania, national reports in accordance with Article 12 of the Birds Directive and Article 17 of the Habitats Directive.

Also, for the realization of this description, the scientific information available to the public and the data collected from the field were used, following the investigation activities carried out in the marine environment and the observations on the bird populations in the terrestrial and coastal area of the project, within ROSPA0076 and from the vicinity of this avifaunistic special protection area. The method of data collection was done in accordance with the recommendations of the specialized guidelines. The collected data were integrated into a database and further processed/analysed.

B.2.1. Description of the habitats of community interest in the protected natural areas of community interest (ANPIC)

The descriptions presented in this sub-chapter are based on the information provided by the latest standard forms on Natura 2000 sites (FS 2021), the approved Management Plan of the site ROSAC0273 Zona marină de la Capul Tuzla (approved by Order no. 1433/2016 of the Minister of Environment, Water and Forests), approved Management Plan of ROSPA0076 Marea Neagră (approved by Order no. 1197/2016 of the Minister of Environment, Water and Forests), ANANP decision no. 490/06.10.2021 regarding the approval of the Methodological Norms regarding the implementation of conservation objectives, ANANP Note no. 377/20.01.2022, ANANP Note no. 375/20.01.2022, scientific information available to the public as well as data obtained from field and information collection activities.

Habitat 1140 Surfaces of sand and mud discovered at low tide were destroyed in the Tuzla area by the hydro technical works (Works to strengthen the cliffs in the area of the Tuzla town) carried out during 2010-2011.

The dominant surface in the case of ROSAC0273 is represented by **habitat 1170 Reefs** with 7 subtypes, distributed in the central and eastern part of the site (almost 80%), followed by **habitat 1110 Shallow submerged sandbars,** with 5 subtypes, present in the immediate vicinity of the shore (approx. 18%).

In the Site Management Plan ROSAC0273 **the habitat is described 1170 Recife** which, in the Romanian sector of the Black Sea, is represented by the following 7 subtypes:

- ***Mytilus galloprovincialis* biogenic reefs**

Mussel reefs appear on sedimentary substrate: mud, sand, silt or mixture, most frequently between the isobaths of 35 and 60 m. They are spread all along the Romanian coast, between the isobaths mentioned above.

Mytilus galloprovincialis biogenic reefs consist of shoals of mussels whose shells have accumulated over time, forming a hard support raised above the surrounding sediments, mud, sand, silt or mix, on which live mussel colonies live. Among the sedimentary substrate habitats of the Black Sea, it harbours the greatest specific diversity due to its extension over a wide spectrum of depths and due to the multitude of microhabitats in the mussel reef matrix, which provide living conditions for a great diversity of species.

This type of reef is unique due to the crucial ecological role of mussel beds in the self-purification of the ecosystem and the achievement of benthic-pelagic coupling, by the existence here of several threatened species, by its socio-economic importance as a habitat and fishing area for many valuable species commercial, *Psetta maeotica, Squalus acanthias, Acipenseridae, Gobiidae, Rapana venosa.* Floristic composition: *Peyssonellia rubra, Phyllophora nervosa, Lithothamnion crispum, Lithothamnion cystoseirae, Lithothamnion propontidis.*

Conservative value: very high. Mussels themselves are the most consumed mollusc species by the peoples around the Black Sea, and mussel schools are a source of larvae for aquaculture.

- **1170-4 Aggregations of rocks and boulders**

The habitat occurs in the mediolittoral and infralittoral of rocky shores, at the foot of cliffs made of hard rocks. Stone blocks can be rolled and eroded by wave movements. The structural complexity of the spaces between the blocks and the obscurity, attract an unusually diverse fauna for such shallow depths. This habitat provides a mosaic of microhabitats, allowing for the nearshore presence of species that typically live in the deeper layers.

In the Romanian Black Sea, this habitat is found in the few places with natural rocky shores Agigea, Tuzla, Costinești, Vama Veche. The large seawalls of the ports of Constanța and Mangalia can be considered the artificial version of this type of habitat

Conservative value: high.

- **1170-5 The littoral rock**

It is located above sea level and is wetted by wave spray or watered during storms. Vertical expansion depends on hydrodynamics, sun exposure and slope. The harsh conditions offered by this habitat are only suitable for a few species: the lichen *Verrucaria maura,* the gastropod *Melaraphe neritoidis* and the crab *Pachygrapsus marmoratus.* In eutrophic, organically polluted areas, the habitat can be covered with a film of epi- and endolithic cyanophyces.

Conservative value: moderate.

- **1170-6 Upper mediolittoral rock**

It is located in the upper part of the break zone, and is not permanently covered by water, being intermittently watered by higher waves. The most characteristic faunal element is the cirriped crustacean *Chthamalus stellatus,* rare on the Romanian coast.

Conservative value: moderate.

- **1170-7 Lower mediolittoral rock**

It is located in the lower part of the break zone and is covered by water most of the time. High and constant humidity, strong hydrodynamics and strong light constitute the dominant environmental factors in this habitat.

The flora consists of encrusting coralline algae, *Lithophyllum incrustans* and articulated *Corallina officinalis,* ephemeral macrophyte algae such as *Ulva compressa, Cladophora* sp., *Ceramium* sp.

The characteristic fauna is dominated by the cirriped crustacean *Balanus improvisus,* the actinia *Diadumene lineata,* the bivalves *Mytilus galloprovincialis* and *Mytilaster lineatus,* to which are added bryozoans, amphipod and isopod crustaceans, the crabs *Eriphia verrucosa* and *Pachygrapsus marmoratus.* In clean waters the habitat is easily recognizable by the dense belts formed by the calcareous alga *Corallina officinalis* and the bivalve *Mytilaster lineatus,* and in waters with a high organic load their place is taken by *Ulva compressa* and *Balanus improvisus.*

Conservative value: very high.

- **1170-8 Infralittoral rock with photophilic algae**

It begins immediately below the lower mediolittoral floor, where emergences are only accidental, and extends to the lower limit of the distribution of photophilous algae and marine phanerogams. This lower limit is conditioned by light penetration and therefore highly variable depending on topography and water clarity. In general, on the Romanian coast, this limit is around 10-15 m deep, but in areas with high turbidity it can be below 1 m.

The rocky substrate between these boundaries is covered with rich and varied populations of photophilous algae. It comprises numerous facies differentiated by the dominant algal associations, which vary acc. the season.

Cystoseira barbata have the greatest conservation value. They develop between 0.2-4 m deep, only in areas with clear, clean water and relatively sheltered from waves. *Cystoseira* thallus are solid, resistant, elastic, reach 1.5-2m in length and form true dense "forests", whose structural complexity and permanent over time allow the development of a rich and diverse fauna, which includes many rare or threatened species.

Conservative value: very high.

- **1170-9: Infralittoral rock with *Mytilus galloprovincialis***

The rocky bottom-covering mussels Mytilus galloprovincialis are also present in the former habitat, but become dominant starting at its lower limit, continuing as a compact carpet to the lower limit of the rocky substrate distribution at 30-35 m depth. The fauna is diverse, including numerous species of sponges, hydrozoa, polychaete worms, molluscs, crustaceans, ascidians and fish, characteristic only of this habitat, some of which are rare or protected.

The conservation value is high, due to the crucial ecological role of mussels in ecosystem self-purification and achieving benthic-pelagic coupling. Biological production can exceed 12 kg/m ^{2} for mussels alone, and the food web is extremely complex and open to other habitats. It is an important feeding, spawning and refuge area for many commercially valuable fish species. It has the main role in the biofiltration of the surrounding coastal waters, ensuring their quality.

For the Romanian sector of the Black Sea, **the habitat 1110 Submerged sandbars of shallow depth is described,** which is represented by the following 5 subtypes:

- **1110-3 Shallow fine sands**

On the Romanian coast, this habitat is present from the mouths of the Danube to Vama Veche, where there are sandy beaches. The substrate consists of fine terrigenous, siliceous or biogenic sands mixed with remains of shells and pebbles, arranged from the shore to the 5-6 m isobath.

In the south, in Tuzla, Mangalia, where the salinity is more stable, this habitat harbours the *Donax trunculus biocenosis,* which is characterized by abundant populations of this bivalve. Due to the high hydrodynamics, the associated fauna is not very diverse: the gastropod *Cyclope neritea,* the crustaceans *Liocarcinus vernalis* and *Diogenes pugilator,* but it can be abundant.

Conservative value: very high.

- **1110-4 Well graded sands**

This habitat is arranged in the immediate continuity of shallow fine sands, from 5-6 m to 10-15 m deep. The substrate consists of finer and more homogeneous sand, much less affected by wave agitation. The silt and clay content of the sediment increases with depth.

The characteristic species are the molluscs *Chamelea gallina, Tellina tenuis, Anadara inaequivalvis, Cerastoderma glaucum, Cyclope neritea, Nassarius nitidus;* crustaceans *Liocarcinus vernalis* and *Diogenes pugilator,* fish *Gymnammodytes cicerelus, Trachinus draco, Uranoscopus scaber, Callionymus* sp., *Pomatoschistus* sp.

Conservative value: very high.

- **1110-5 Wave-beaten coarse sand and fine gravel**

They are found in the small bays of exposed natural rocky coasts and do not exceed a few tens of centimetres in depth. It is presented in the form of very narrow submerged beaches, made of coarse sand and gravel from the degradation of the rock, continuously reshuffled by the waves.

- **1110-6 Infralittoral boulders**

They occur in places along naturally exposed rocky coasts between depths of 0.5 and 2.5 m. Such submerged beaches are partially covered with rounded and flattened, usually calcareous, white, wave-shaped pebbles. They occur only in areas with strong hydrodynamism and are populated by isopod crustaceans, amphipods and the crab *Xantho poressa.*

- **1110-9 Silty sands and sandy muds bioturbated by *Upogebia***

The habitat forms a continuous belt along the Romanian coast, on the sandy banks between 10-30 m deep. The substrate is sifted by the very numerous galleries of the decapod thalassinid crustacean *Upogebia pusilla,* which penetrate to a depth of 0.2-1 m, depending on the consistency of the sediment. *Upogebia* populations are very dense 100-300 individuals m $^{-2}$ and cover very large areas; biofiltration, bioturbation and sediment resuspension exerted by these crustaceans have a notable influence on the ecosystem.

The edifying species is the decapod thalassinid crustacean *Upogebia pusilla,* which feeds by filtering plankton and organic suspensions from the current of water it continuously pumps through its galleries. The density of bivalve molluscs is reduced in this habitat, due to competition

for food and predation of planktonic larvae and postlarvae by *Upogebia.* Other species, especially commensals that live in the galleries of Upogebia, are facilitated.

Conservative value: very high. The role of the thalassinid *Upogebia* in biofiltration and ensuring benthic-pelagic coupling in the functioning of the ecosystem is essential.

Within ROSCI0293 Costinești-23 August, the protection and conservation of the same main types of habitats as in the case of the ROSAC0273 site, respectively: **1110, 1140, 1170 and 8330.**

Within this site, unlike ROSAC0273, subtype **1110-7 Shallow sands bioturbated by *Arenicola* and *Callianassa is also of conservation interest***

The habitat has a fragmentary distribution, covering small disparate areas on the submerged beaches located south of Cap Midia, between 4 and 7 m deep. It is best represented in the Cap Aurora and Mangalia sites. At the upper part (4-5m) the habitat is contiguous with 1110-3, from where it extends to a depth of 7m. The sand is bioturbated up to a depth of 1m and the surface of the sediment is marked by funnels and mounds characteristic of *Callianassa truncata* and cones of droppings of *Arenicola marina.* Conservative value: very high

For the Romanian sector of the Black Sea, in the sites ROSAC0273 and ROSCI0293, there is **the habitat 8330 Submerged or partially submerged marine caves** (acc. approved MP, Synthetic monitoring guide for marine species and coastal and marine habitats of community interest in Romania-2013), type of marine habitat that has high conservation value.

In the Romanian Black Sea this habitat corresponds to vertical walls, overhangs, caves and tunnels. Light and hydrodynamics are reduced or linear, which generates a stable environment but selective to the groups of organisms that can develop here.

The bottom and side walls of these caves harbour communities of marine invertebrates and algae, red sciaphyllous algae such as *Hildebrandtia prototypus* and *Phyllophora nervosa,* which can develop at the entrance of the galleries and in the overhangs.

The fauna is dominated by sponges, cnidarians, bryozoans, ascidians, mysid and decapod crustaceans and cavefish.

Habitat 1180 Undersea Structures Created by Gas Emissions is present at site ROSCI0311 Canionul Viteaz and is notable for its conservation significance due to its rarity and regional conservation importance. Its description takes into account the information from FS 2021, the ANANP Note and the Synthetic Monitoring Guide for marine species and coastal and marine habitats of community interest in Romania-2013.

The submarine structures consist of sandstone slabs, pavements and columns up to 4 m high, formed by the aggregation of carbonate cement resulting from the microbial oxidation of gas emissions, especially methane. The formations have vents that emit gas intermittently.

The first type of underwater structures is known as bubble emission reefs, the second type consists of "pinch" carbonate structures.

Bubble emission reefs can be found in association with habitat types **1110** and **1170.**

These structures are present in the form of carbonate sandstone slabs and pavements starting at a depth of 10 m, and in the form of straight or branched ridges and columns starting at a depth of

40-50 m, extending far deeper into the anoxic zone. The size and complexity of these formations increase with depth. They are spread throughout the Romanian sector of the Black Sea, but the highest density is recorded near the Danube Delta.

B.2.2. Description of the species of marine fauna of community interest from ROSAC0273 Zona marină de la Capul Tuzla, ROSCI0293 Costinești - 23 August and ROSCI0311 Canionul Viteaz

The species of community interest for which the protected natural areas of community importance in the Neptun Deep project area have been designated are the following:

- *Tursiops truncatus* - Annex II and IV of the Habitats Directive (92/43/EEC); Annex 3 and 4A to GEO no. 57/2007 with subsequent amendments and additions
- *Phocoena phocoena* - annex II and IV of the Habitats Directive (92/43/EEC); Annex 3 and 4A to GEO no. 57/2007 with subsequent amendments
- *Alosa immaculata* - annexes II and V of the Habitats Directive (92/43/EEC); Annex 3 and 5A to GEO no. 57/2007 with subsequent amendments and additions
- *Alosa tanaica* - annexes II and V of the Habitats Directive (92/43/CEE); Annex 3 and 5A to GEO no. 57/2007 with subsequent amendments

Other fauna species of community interest for which the Natura 2000 site ROSAC0273 was designated are:

- *Delphinus delphis* – annex IV of the Habitats Directive (92/43/EEC); Annex 4A and 4B to GEO no. 57/2007 with subsequent amendments
- *Acipenser gueldenstaedtii* – annex V of the Habitats Directive (92/43/CEE); annex 5A to GEO no. 57/2007 with subsequent amendments
- *Acipenser stellatus* – Annex V of the Habitats Directive (92/43/EEC); annex 5A to GEO no. 57/2007
- *Huso huso* – Annex V of the Habitats Directive (92/43/CEE); annex 5A to GEO no. 57/2007 with subsequent amendments

<u>Information on the ecology of dolphin species from ROSAC0273 Zona marină de la Capul Tuzla, ROSCI0293 Costinești-23 August</u> and from <u>ROSCI0311 Canionul Viteaz:</u>

Phocoena phocoena relicta) and the bottlenose dolphin (*Tursiops truncatus* ssp. *ponticus)* are present within the site ROSAC0273 Zona marină de la Capul Tuzla and ROSCI0293 Costinești- 23 August. Within ROSCI0311 Canionul Viteaz, only the bottlenose dolphin is mentioned.

The species *Delphinus delphis* ssp. *ponticus* (Common Dolphin) is not listed in the Site Management Plan ROSAC0273 Zona marină de la Capul Tuzla but is listed in the Updated Site Standard Form (FS 2021).

- ***Phocoena phocoena* ssp. *relicta* (Abel, 1905) (Pork, Porpoise)**

The relatively shallow coastal waters of the Black Sea constitute the typical range for the species *Phocoena phocoena* ssp. *relicta* (porpoise) (Figure B.5). Along the Romanian coast, the species can be observed from April to November, most often in front of the mouths of the Danube. It can even be seen in harbours in search of food. After the lactation period, both juveniles and adults feed on

small benthic fish species (gobies), pelagic species (anchovy, atherina) as well as benthic invertebrates.

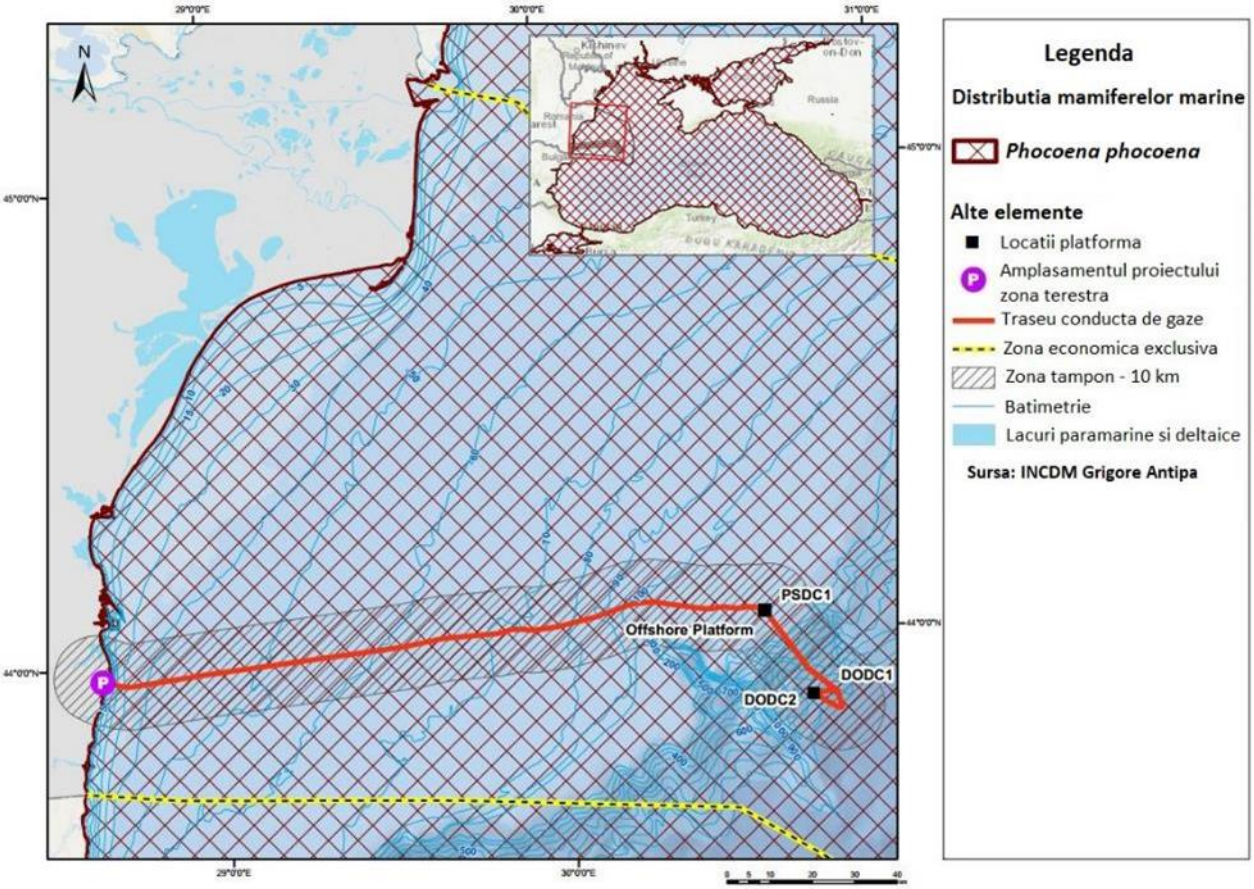

Figure B.5 Distribution of the species *Phocoena phocoena* ssp. *relicta* in the project area (source: INCDM Grigore Antipa)

- ***Tursiops truncatus* ssp. *ponticus* (Barabasch, 1940) (Bottlenose dolphin)**

Tursiops truncatus ssp. ponticus (the bottlenose dolphin) is the most frequently observed species, due on the one hand to its coastal habitat, but also to its higher ability to live in captivity. It is the most robust pontic species, reaching up to 3.3 m in length, with a very long average lifespan (20-30 years) and high fertility. The species is common throughout the Black Sea continental shelf, but it can occasionally appear in open waters and very rarely in the Sea of Azov. On the Romanian coast it can be observed from the end of June to the end of August; in November it leaves Romanian waters, migrating to the shores of Crimea and Anatolia. The bottlenose dolphin can associate in flocks of 30-500 specimens; adults and juveniles always associate in herds. In the spring, they appear near the shore in search of food, represented by most pelagic fish species, small or large: anchovy, cod, turbot, mullet, etc.

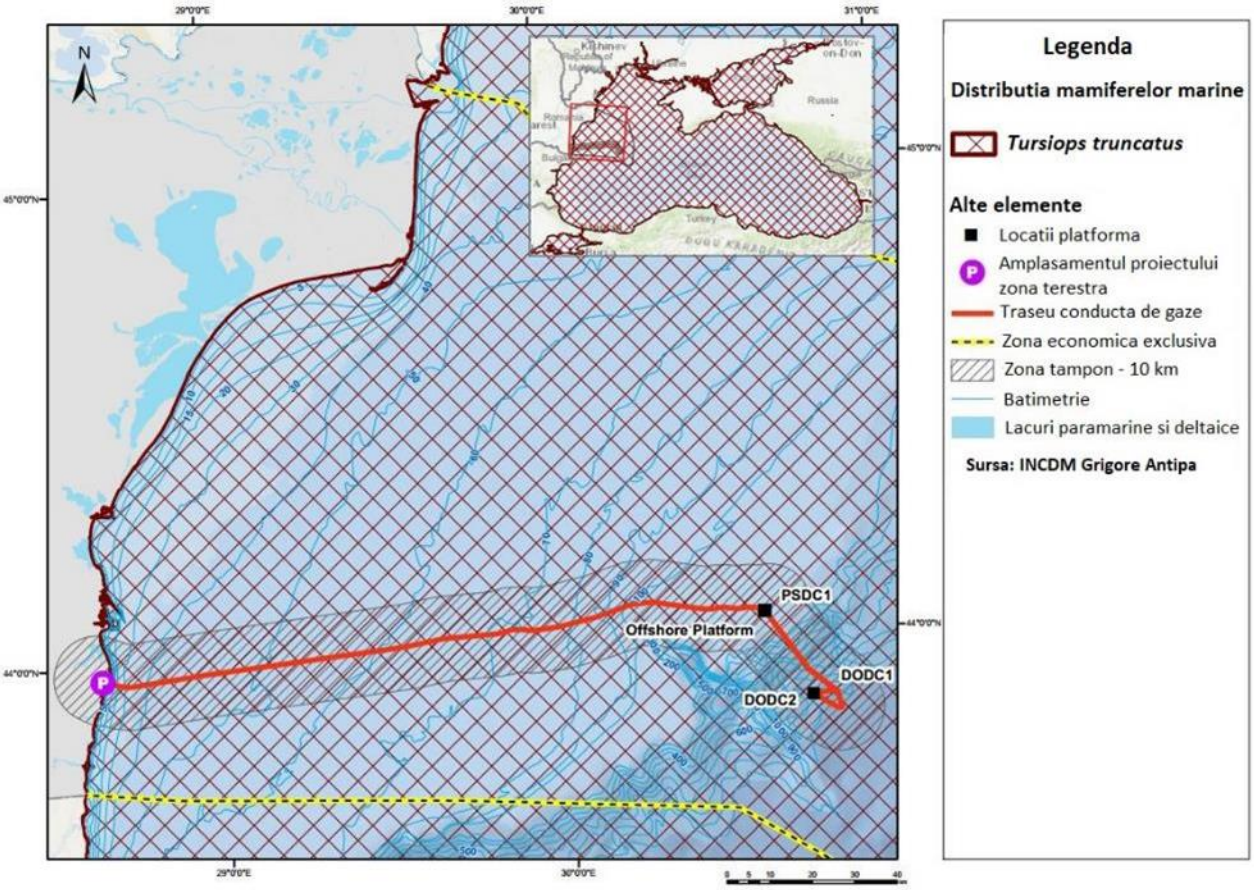

Figure B.6 Distribution of the species *Tursiops truncates* in the project area (source: INCDM Grigore Antipa)

- ***Delphinus delphis* ssp. *ponticus* (Barabash-Nikiforov, 1935) (Common dolphin)**

The distribution of the common dolphin (*Delphinus delphis* ssp. *ponticus)* covers almost the entire Black Sea, including the territorial waters and exclusive economic zones of Bulgaria, Georgia, Romania, Russia, Turkey and Ukraine, as well as the internal waters of Ukraine in Karkinitsky Bay. Common dolphins also occur in the Bosphorus, Sea of Marmara and Dardanelles, but the possibility that they belong to the Black Sea subspecies should be verified by appropriate taxonomic studies, including genetic analyses. The species is not found in the Sea of Azov and usually avoids the Kerch Strait.

Its main habitat is the offshore areas of the sea, usually at depths greater than 200 m, and it visits shallower coastal waters following seasonal aggregations and regular mass migrations of preferred prey such as anchovy and sprat. As with the porpoise, annual concentrations of anchovies in the southeastern Black Sea and, to a lesser extent, southern Crimea, create favourable conditions for wintering concentrations of common dolphins. Conversely, sprat aggregations in the summer in the north-west, north-east and central Black Sea attract common dolphins to different feeding areas. These dolphins avoid waters with low salinity, which could explain why they never appear in the Sea of Azov and normally in the Kerch Strait.

In Bulgarian waters, during spring (March-April, sometimes in February), common dolphins first appear in the southern area (from the Rezovska River to Cape Maslen). As the season progresses,

their distribution shifts to deeper waters and north. Here they form larger gatherings - up to several thousand individuals. In autumn, these cetaceans make a reverse migration along the same route.

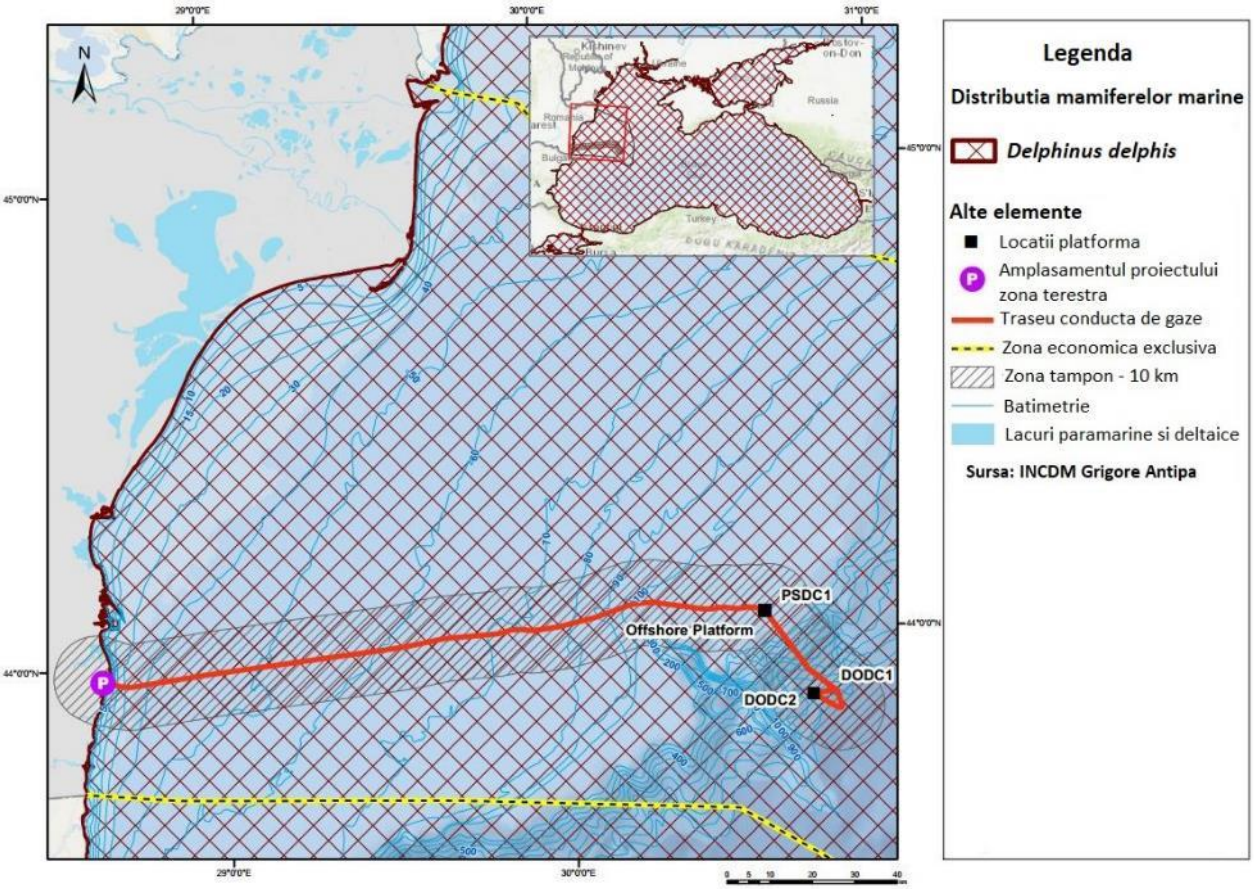

Figure B.7 Distribution of the species *Delphinus delphis* in the project area (source: INCDM Grigore Antipa)

<u>Information on the ecology of the flounder species (*Alosa* spp.) from ROSAC0273 Zona marină de la Capul Tuzla and ROSCI0293 Costinești-23 August:</u>

- ***Alosa immaculata* (Danube mackerel)**

Marine species, eel, migratory, wintering in the sea and breeding in the river. It is considered a Ponto-Caspian relic.

The species winters at a great distance from the shore and at depths of up to 90 m, near the Ukrainian coasts. The migration starts in March, reaches its peak in April-May and takes place along the Bulgarian and Romanian coasts, up to the mouths of the Danube, going up the river. After reproduction, adult specimens descend into the sea, a period that can last until July; the return migration to the sea is clustered, retreating into deep water away from shore.

After hatching, the fry are carried by the current towards the sea, staying for a long time in front of the river mouths.

The food consists, in proportion of 70-75% of fish, in sea-anchovies, shad, sprat, and in freshwater cyprinids, the rest consists of crustaceans- *Crangon, Upogebia, Idothea* and gamarids.

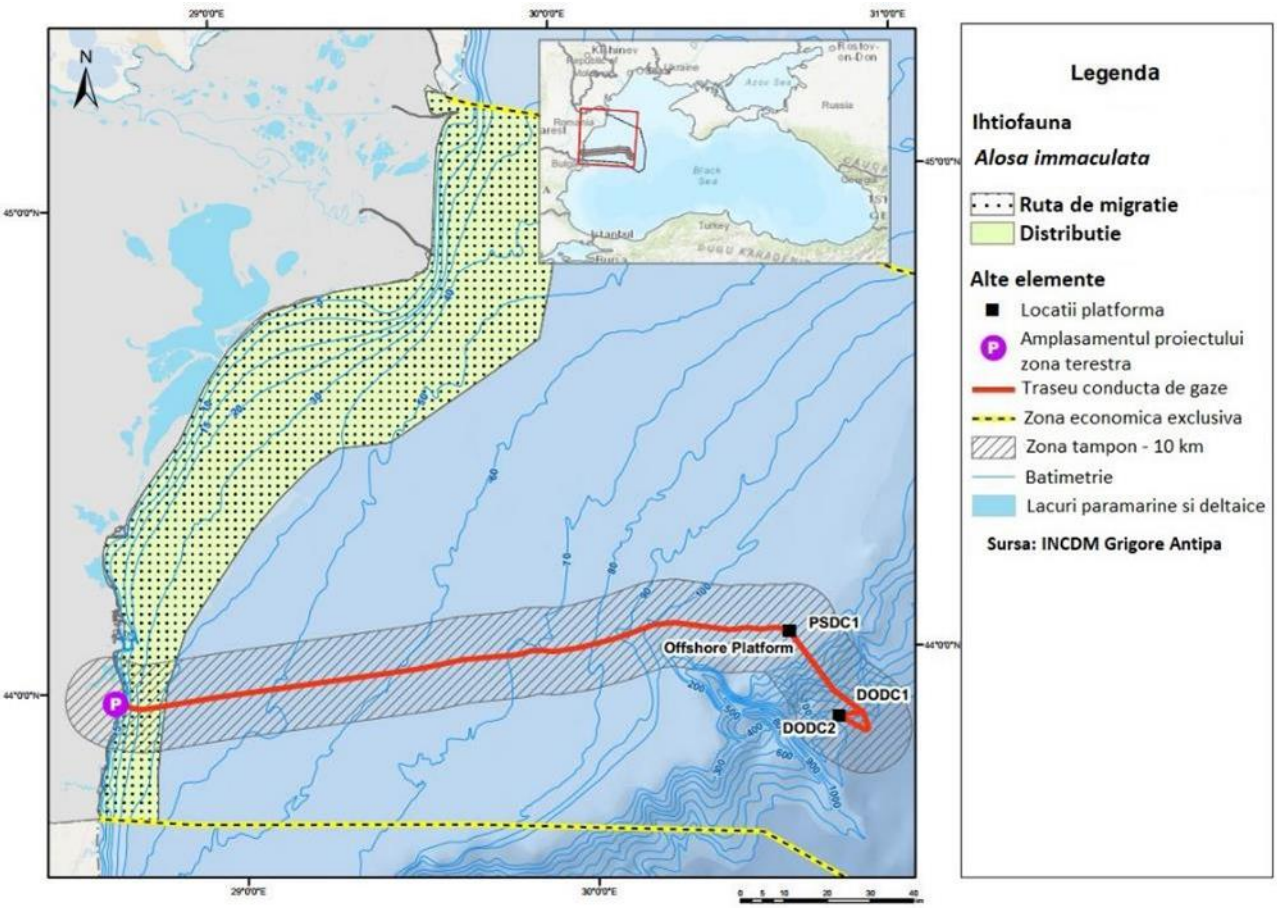

Figure B.8 Distribution of the species Alosa immaculata on the Romanian coast (source: INCDM Grigore Antipa)

- ***Alosa tanaica* (Laughs)**

Anadromous marine species that migrates to breed from the sea in the fresh waters of coastal lakes, ponds and rivers. It is a euryhaline species, it winters in the sea and appears in spring in the coastal area, in mixed shoals with other related species, at a water temperature of 6˚C. It has a very wide distribution in the western part of the Black Sea, inhabiting the Romanian, Bulgarian, Russian, Ukrainian and Anatolian coasts. In the Danube it reaches the Iron Gates II. Some of the specimens go up the Danube, others stay at the mouths of the Danube.

Breeding takes place from late April to early June. The withdrawal of the fry and the adults to the sea takes place between August and September.

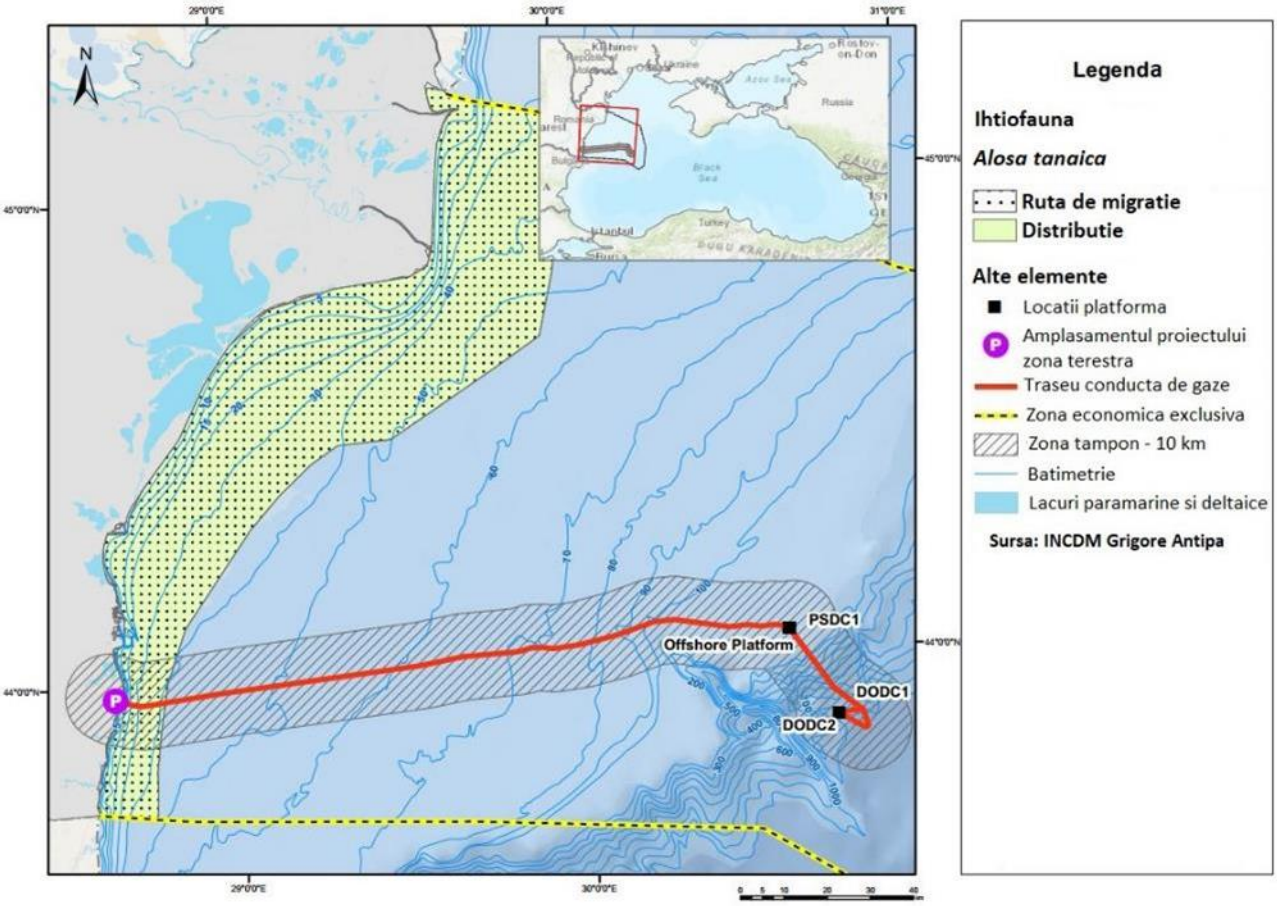

Figure B.9 Distribution of the *Alosa tanaica species* on the Romanian coast (source: INCDM Grigore Antipa)

Other fish species of Community interest for which ROSAC0273 has been designated:

- ***Acipenser gueldenstaedtii* (Nisetru)**

It is a marine benthic species that, for reproduction, migrates to rivers.

This species is abundant in the Black Sea and the Sea of Azov, present in the Caspian Sea, but absent in the Mediterranean. Being an anadromous migratory species, it enters the rivers that flow into the previously listed seas.

The spring migration starts after that of the brown, lasts from February-March to May, with a maximum intensity in April, at 8-11 ˚C, and the autumn migration lasts from August-September to November.

The spawning grounds are located in the Danube at a depth of 4-20 m, with a rocky bottom or with boulders between which there are small crevasses, which provide shelter for the eggs and embryos after hatching, against the guvid species.

After spawning, the adults return to the sea, living and especially wintering in the area of mytiloid and phaselinoid facies, at depths of 6-70 m, together with turbot and monkfish or sea fox.

The fry also go down to the sea, but slowly, in certain places they stop for a period of time, forming clusters together with the fry of other sturgeon species. Some of the chicks stay in the lower part of the Danube for 1-2 years, after which they enter the sea.

The fry show a preference for small oligochaete worms. Adults feed on mollusks (*Nassa, Cardium, Mactra)*, crustaceans (*Portunus arcuatus)*, less on fish.

It has a slow growth rate, reaching sexual maturity at the age of 8-12 years for males and 13-15 years for females.

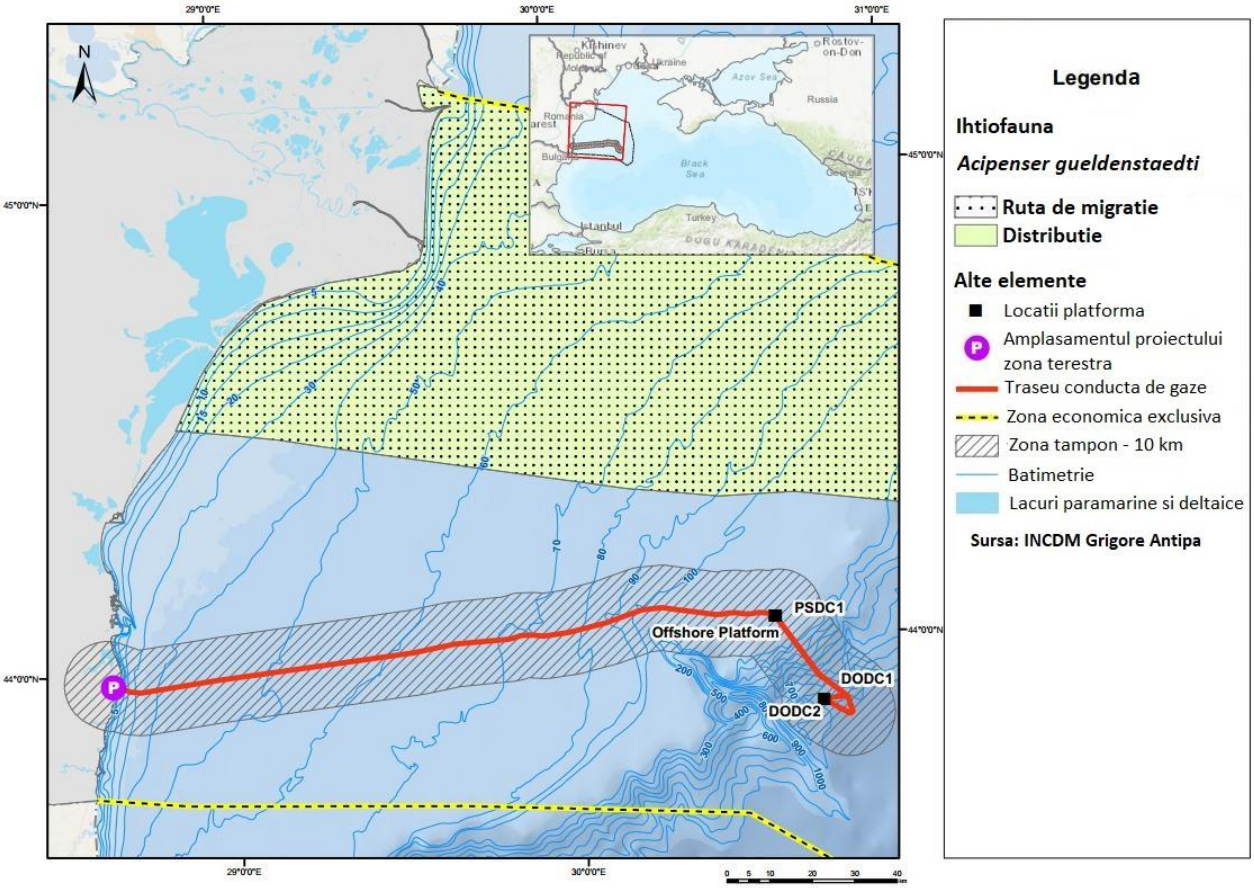

Figure B.10 Distribution of the species in *Acipenser gueldenstaedtii* the Romanian coast (source: INCDM Grigore Antipa)

- ***Acipenser stellatus* (Trout)**

It is an anadromous migratory species, distributed in the Black Sea, the Sea of Azov, the northern Caspian Sea and the rivers flowing into them. It leads a pelago-benthic life, regularly rising to the surface at night in search of food. It spends most of its life in the sea, at shallower depths than whiting and whiting, in the mytiloid facies zone, often approaching the shore in summer, and retreating again to deeper waters of 80-100 m in autumn m.

Young specimens are found in large numbers in the immediate vicinity of the shore, especially in front of the mouths of the Danube and near Lake Razelm.

The spring migration in the Danube begins in April or May, at a temperature of 8-11˚C. the second migration sometimes starts in June, usually in August and lasts until September-October. Specimens that migrate in summer-autumn are sexually immature, while specimens that migrate in spring are in the reproductive phase.

Reproduction takes place in the Danube, in April and May, at water temperatures of 8-15 ˚C. the breeding grounds are the same as for the sandpiper and tern. The fry go down to the sea, one part in July-August and the other part in September, congregating along the way in certain places. A lot of young trout also congregate in the sea, in front of the mouths of the Danube. Some specimens remain in the Danube until the age of 2 years, after which they retire to the sea.

The food of the brood in the Danube consists of larvae of chironomids, tricopters, ephemerides, crustaceans. The larger brood also begins to feed on molluscs.

Adults feed on molluscs, crustaceans and fish.

Sexual maturity is reached in males at 5 years and in females at 7 years.

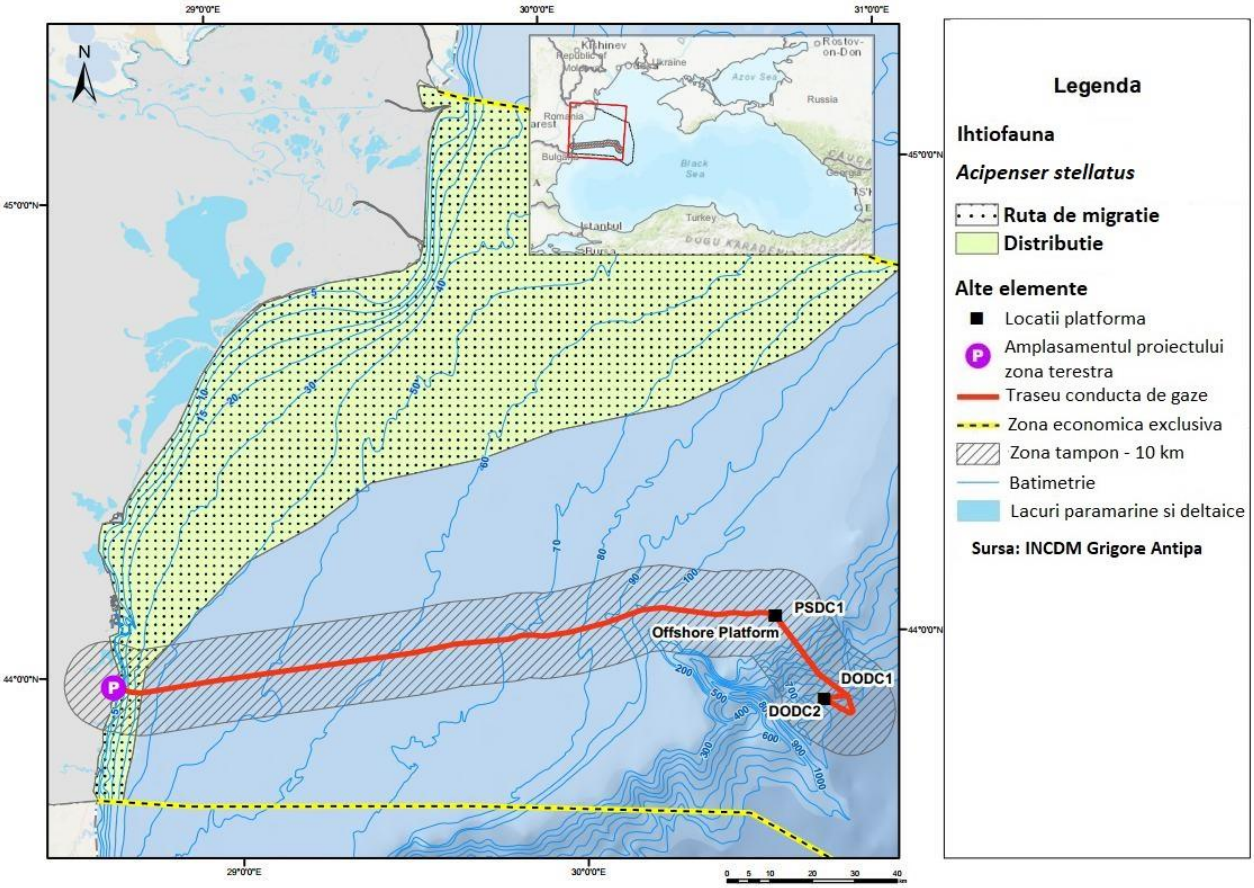

Figure B.11 Distribution of the species *Acipenser stellatus* on the Romanian coast (source: INCDM Grigore Antipa)

- ***Huso Huso* (Beluga sturgeon)**

It is an anadromous species, distributed in the Black, Caspian and Adriatic seas and the rivers flowing into these seas. It is frequent in the north-western part of the Black Sea, meeting in the whole sector of the Romanian coast.

It is one of the largest sturgeons from us, 100-250 kg and 4-6 m long, maximum 9 m.

It is a solitary species that congregates in larger groups only during the winter.

Migration in the Danube begins when spring is early, as early as January or in the second half of March, at a temperature of 4-5˚C. The peak intensity of spring migration is in March or April. In May-June it stops completely and starts again in autumn, reaching the maximum intensity in October-November, after which it stops again.

Spawning sites are located at a depth of 4-20 m, with a rocky bottom or boulders with small crevices between them, which provide shelter for the eggs and free embryos after hatching, against round goby species. Belugas breed in the Danube starting from water temperatures of 6.5˚C.

The alevins are quite similar to the adults from the start. After 9 days from hatching, at a temperature of 16-17˚C, the alevin switches to active feeding.

After spawning, belugas return to the sea, where they disperse, living on deep bottoms of 50-70 m (sometimes even over 100 m), in the area of silty, phaseolinoid facies and at water salinities of 18-24‰. The brood also retreats towards the sea, relatively slowly and on the bottom of the water, stopping in places with suitable conditions, where agglomerations of brood of various species of sturgeon are found. The retreat to the sea takes place between July and September. At first, the fry remains confined in the brackish waters in front mouths of the Danube and only later retreats deeper, spreading along the continental platform.

During their life in the Danube, baby beluga feed mainly on gammarids, then on other crustaceans and insect larvae. In front of the mouths of the Danube, mysidaceae and palemonids are dominant in food. Specimens longer than 20 cm begin to feed on fish. Adults feed mainly on fish (80% of the food), in the Danube on cyprinids (carp, avat, babushka, bream), and in the sea on round gobies, mullets, turbot, sardines, anchovies and crustaceans (Crangon), *molluscs* (*Modiola)* and algae. During the winter, the beluga feeds very little.

In terms of longevity, the beluga holds the first place among sturgeons, living typically 30-60 years, but they can also pass over 100 years. Sexual maturity is reached at 12-14 years for males and 14-16 years for females.

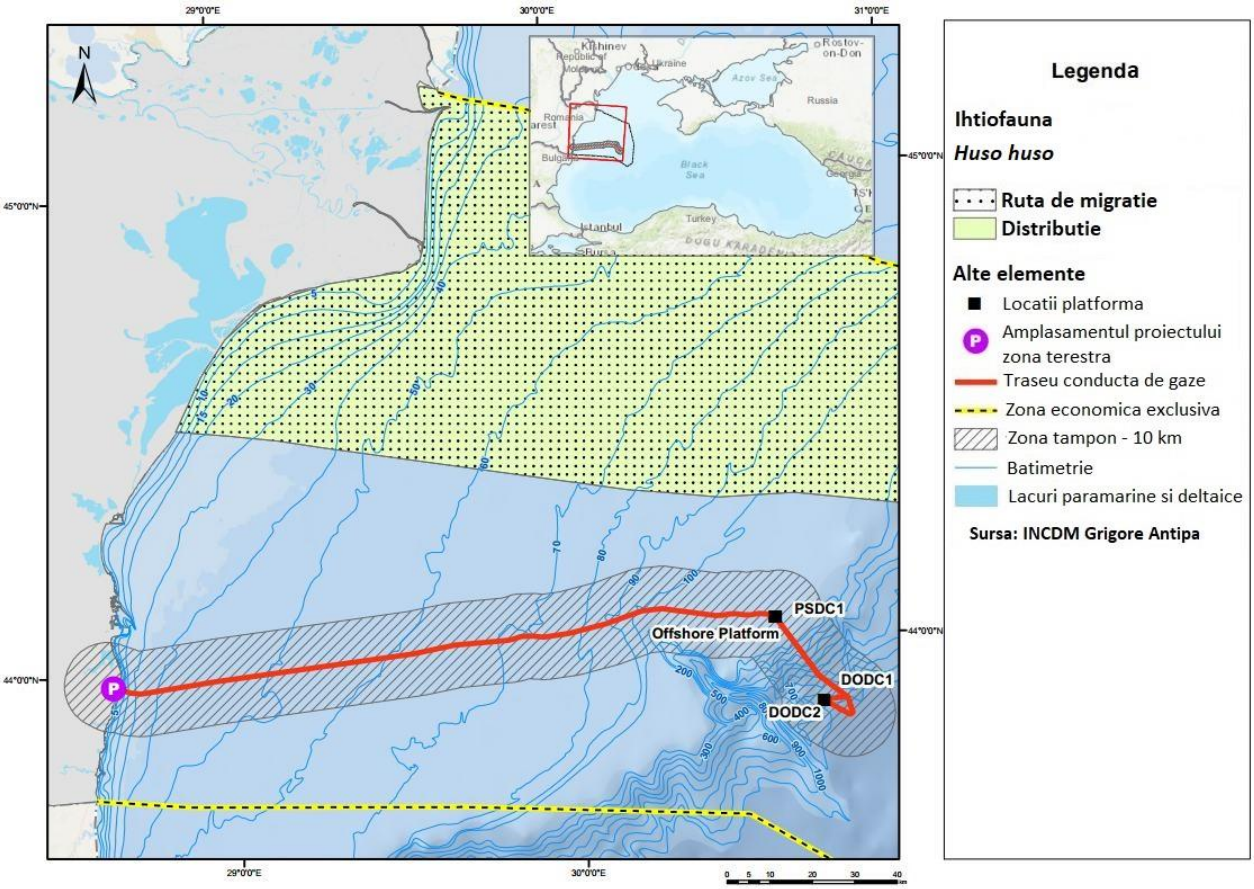

Figure B.12 Distribution of the *Huso huso species* on the Romanian coast (source: INCDM Grigore Antipa)

B.2.3. Description of avifauna species of community interest in the ROSPA0076 Marea Neagră

The information on the species of birds of community interest within ROSPA0076 Marea Neagră is taken from the Atlas of bird species of community interest in Romania, 2nd edition (2022). The information made available to the public through the SOR portal entitled Birds from Romania, a portal dedicated to the knowledge of bird species in Romania: ecology, distribution and conservation, and the site cdr.eionet.europa.eu (The European Environment Information and Observation Network), managed by the European Environment Agency (EEA).

The distribution of bird species, for which the protection and conservation regime of the avifaunistic special protection area was established, in the project area, is acc. the GIS data identified in the approved Management Plan of ROSPA0076 Marea Neagră and in the database with field observations 2028 -2019 and 2023.

- ***Anas penelope* (Eurasian wigeon)**

syn. *Great Penelope*

Migratory species, nesting in the northern part of Europe and Asia, especially in arctic and subarctic areas. The Eurasian wigeon can be found all over Romania, in low-altitude aquatic areas, during winter or passage, especially near the Black Sea.

The population that winters in our country was estimated at 588-6,874 individuals, and the one that transits during the passages is 40,000-80,000 specimens.

In late summer they gather in large flocks and during September they leave the nesting areas and reach the wintering areas in October-November. In the spring, during the months of March-April, they leave the wintering areas and head to the nesting areas. It is a noisy and gregarious species outside the breeding season. They gather in large flocks, often together with other duck species.

It feeds almost entirely on vegetable matter, i.e. leaves, roots, bulbs, rhizomes and grass. The preferred places for feeding are represented by shallow water areas, meadows and farmland adjacent to these areas. It can rarely consume seeds and animal food.

Legal conservation status - Birds Directive - Annex II A, GEO 57/2007 with subsequent amendments and additions - Annexes 5C and 5E.

- ***Anas platyrhynchos* (mallard/ wild duck)**

A species with a very wide range, present in almost the entire northern hemisphere, from the subarctic to the tropics, in Europe, Asia, the eastern part of Africa, North and Central America. In Romania, it can be found in most aquatic areas that correspond to the preferred habitat type, especially those at low and medium altitude.

The mallard population in the country is estimated at 76,662-146,831 breeding pairs. In winter, between 54,397 and 228,791 specimens can be observed.

The mallard is a species that readily adapts to a multitude of habitats that include slow-flowing or standing, relatively sheltered waters, estuaries and deltas, lagoons, sea coasts where the water is shallow, lakes, rivers, ponds and ponds. Prefers shallow waters with adjacent submerged or floating vegetation. Generally avoids deep or exposed water.

Predominantly migratory species, but some populations are sedentary. Wintering and nesting territories overlap for many populations.

The mallard is an omnivorous and opportunistic species, its diet comprising plant debris, leaves, tubers, rhizomes, roots, seeds, insects and their larvae, snails, crustaceans, tadpoles and even small fish.

It is a very active species at night and makes daily flights between roosting and feeding sites. Gregarious, gathers in large groups outside the nesting period.

They migrate in flocks, during the spring migration the flocks are predominantly made up of pairs. Flocks separate in February, when pairs start looking for nesting sites.

Legal conservation status- Birds Directive - Annexes II A and III A, GEO 57/2007 with subsequent amendments and additions - Annexes 5C and 5D.

- ***Anas strepera* (Gadwall)**

syn. *Mareca Strepera*

Wide-ranging species, covering temperate and southern Europe and Asia, northern and Nile region of Africa, and central and southern North America.

In Romania, the gadwall can be found in low-altitude, open, shallow, stagnant or slightly flowing water areas.

Population in Romania is between 505 and 8,948 pairs. During the passages, between 20,000 and 50,000 specimens can be seen and between 605 and 4,796 specimens of this species winter here (acc. Atlas of bird species of community interest in Romania, Second Ed.).

It prefers fresh, still or slightly flowing waters, productive, in open, low-altitude areas, especially sheltered ones, rich in emergent vegetation and islands covered with grassy vegetation.

It can be found in canals, ponds or lakes. In winter, it can also be found on reservoirs or flooded lands, but avoiding saltwater habitats.

The gadwall feeds predominantly in shallow water, where it filters water from the surface with its beak or searches the bottom for aquatic vegetation, sprouts, buds, seeds and roots. It also eats insects, worms, small fish, amphibians and tadpoles. Animal feed is especially preferred during the breeding season. It comes out of the water to eat plants and seeds from agricultural crops. Out in the water it is rarely seen, it usually swims towards the thickets of vegetation. It goes in search of food especially in the evening or during the night.

Migratory species in the northern part of the range, but there are nesting populations in temperate zones. They usually form small groups outside of the nesting season. This lasts about four weeks, after which the fall migration begins. They return from their winter quarters in March-April.

Legal conservation status - Birds Directive - Annex II A, GEO 57/2007 with subsequent amendments and additions - Annex 5C.

- ***Aythya ferina* (Common pochard)**

The species has a large range, which includes during the nesting period central and southern Europe, western and central Asia. It winters in southern Europe, Asia Minor, northern Africa and southern Asia. In the last 150 years, an expansion of the area towards the west and north was recorded. In Romania, it is a relatively frequent nesting species in areas with suitable habitat, being found in Dobrogea, Muntenia, Oltenia, Banat, Moldova and Transylvania. In winter, large numbers are camped in the Delta, on the course of the Danube and on the streams and lakes adjacent to the large rivers in the country (Olt, Siret, Prut, etc.).

Based on the latest data, the population in the country was estimated at 3,050-12,315 breeding pairs, the trend being downward. Between 20,000 and 40,000 specimens can be observed during passages. A number of 14,549-35,738 specimens winter here.

The species can be found in a wide variety of wetlands. Prefers fresh or brackish lakes of at least several hectares, 1.5-2 m deep, with rich understory vegetation and surrounded by dense reed beds. During the winter and in migration, it can also be found on reservoirs, marine waters, etc. It is an omnivorous species, consuming mainly submerged vegetation (especially seeds and vegetative parts). It can also eat aquatic insects and small crustaceans. Food is mainly obtained by diving in waters 1.5-2 m deep. Highly gregarious species outside the breeding season.

Legal conservation status - Birds Directive - Annexes II A and III B, GEO 57/2007 with subsequent amendments and additions - Annexes 5C and 5E.

- ***Aythya fuligula* (Tufted duck)**

The species has a very large range, nesting in Northern and Central Europe and in Asia (up to the Pacific).

In Romania it is a rare nesting species, nesting being proven in several areas (Avrig accumulation on Oltul Mijlociu, Lilieci accumulation on Siret, Ciuperceni Danube, Danube Delta, Cefa lakes, etc.). Common species during passage and winter.

Based on the latest data, the population in the country was estimated at 1-3 nesting pairs, the data being fluctuating. Also, a number of 9,219-17,800 specimens winter on the territory of Romania.

Species of wider ecological valence than other species of the genus *Aythya,* particularly due to the ability to dive to greater depths (3–14 m) for food.

Omnivorous species, procuring its food mainly by diving. It mainly eats molluscs (*Dreissena polymorpha)*, crustaceans, aquatic insects, but also plant material. Highly gregarious species, especially outside the breeding season.

Legal conservation status - Birds Directive - Annexes II A and III B, GEO 57/2007 with subsequent amendments and additions - Annexes 5 C and 5 E.

- ***Branta ruficollis* (Red-breasted goose)**

The red-breasted goose is a species characteristic of the tundra areas of Arctic Siberia. It winters in the north-west of the Black Sea, in Romania, Bulgaria and Ukraine, occasionally reaching south to Greece.

According to the latest estimates, the global population was estimated at about 56,000 individuals, with the European population in moderate decline. In Romania, between 5,488 and 10,887 specimens can be observed during the passages, wintering in us between 9,915 and 16,141 specimens.

In the wintering quarters of South-Eastern Europe, it feeds during the day on agricultural crops, at first on the corn kernels that have been scattered after the harvest, and then on autumn wheat (sometimes also on rapeseed). In the evening, they spend the night on the lakes, and when they freeze, they also settle on the sea.

When the distance between roosting and feeding sites increases to more than 30 km, they prefer to look for other roosting and roosting sites, usually further south, especially if crops are covered by snow.

They fly together with other species of geese (especially the great merganser, *Anser albifrons)*, in rows arranged in a "V" shape. When the flock consists only of red-breasted goose, the formation is irregular and similar in shape to that of starlings or crows.

It nests in northern Siberia in small colonies, located on the banks of rivers. The distance travelled between nesting areas and wintering quarters exceeds 4,000 km. Arrives in early May to nesting territories.

Legal conservation status - Birds Directive - Annex I, GEO 57/2007 with subsequent amendments and additions - Annex 3.

- ***Bucephala clangula* (Common goldeneye)**

Species with Holarctic nesting area, being found in northern Europe, Asia and North America. In Romania it is a very rare nesting species, the recent reports being from the Danube Delta area. Instead, it is a common species during migration and winter.

The breeding population in Romania is estimated at 2-10 pairs, and the wintering population is represented by 3,035-13,343 individuals.

Migratory species in the main nesting area. It shows gregarious behaviour outside the nesting season.

The breeding habitat is taiga, where wetlands are bordered by forests with old trees. Outside the breeding season, it can be found in a wide variety of wetlands, the species not having strict ecological requirements during this period.

During the nesting period, the diet consists predominantly of aquatic insects. It can also be seen eating fish eggs and aquatic plants. During winter and migrations, they mainly eat molluscs and crustaceans. It feeds during the day, and food is procured by diving.

Legal conservation status - Birds Directive - Annex II B, GEO 57/2007 with subsequent amendments and additions - Annex 5 C.

- ***Chlidonias niger* (Black tern)**

It is a species present in most of the European continent, being found from Scandinavia to southern Spain.

The estimated population in Romania is 10-200 nesting pairs, and during passages between 20,000 and 80,000 specimens can be observed.

The black black tern is characteristic during the nesting period of freshwater and brackish wetlands rich in vegetation.

In winter it can be seen in coastal areas, in bays and salt water lagoons.

It is a species that feeds on insects, small fish and frogs. In winter, the diet consists mainly of small fish. It hovers in place, flapping its wings in pursuit of prey. To feed, it catches prey from the surface of the water or insects in flight and very rarely dives. It usually feeds at a distance of up to 2-5 km away from the colony where it nests. It is a very sociable species, forming very large flocks during migrations. It flies at an average speed of 34 km/h. Known longevity is up to 21 years.

Legal conservation status - Birds Directive - Annex I, GEO 57/2007 with subsequent amendments and additions - Annex 3.

- ***Cygnus cygnus* (Whooper swan)**

The species has a wide transpalearctic distribution, encompassing Europe and Asia. In Europe, the breeding range includes two populations: in the east, the Scandinavian countries, Russia, the Baltic countries and Poland, respectively Iceland in the west. Northern populations migrate south and southwest, with the western and north-western Black Sea areas representing an important wintering quarter in Europe. In Romania, the species winters mainly in the Danube Delta, in the lagoon system and on the ponds in the south and east of the country. It can also be observed in smaller numbers on the lakes of Transylvania or western Romania.

The species is a winter guest in Romania, arriving in the wintering areas starting in October, the movements being influenced by the winter weather conditions. It is estimated that between 1,021 and 3,653 specimens appear in our country during the winter, and between 2,000 and 5,000 specimens can be observed during the passages.

It prefers both large lakes with fresh or brackish water (for example those in the lagoon system) and those with abundant swamp vegetation. It is also found on lakes with less developed vegetation and in small ponds or ponds. In the vicinity of wetlands, where they congregate in larger flocks, they can frequently be seen on cultivated farmland or ploughs, where they often graze in the company of flocks of wild geese. Food is almost exclusively vegetable, generally consuming swamp vegetation. They also rarely eat worms, insects, molluscs or even fish. He has a loud, trumpet-like voice, used to vocalize in groups. During migrations they fly in groups at very high altitudes, up to 2,000 m. They swim with their heads upright and, unlike the summer swan (*Cygnus olor*), they do not flap their wings like sails blown by the wind. They often sing when standing on the water, and the chorus formed by the large flocks is impressive. To take flight they need large areas of water. They fly in V-shaped flocks. The maximum known longevity is 26 years and six months.

Legal conservation status - Birds Directive - Annex I, GEO 57/2007 with subsequent amendments and additions - Annex 3.

- ***Fulica atra* (Eurasian coot)**

The coot is a widespread species, mostly nesting near freshwater lakes and ponds in Europe, Asia and Africa. In areas with mild winters it is a largely sedentary species, but as the waters freeze it migrates south. In Romania, it is spread throughout the country, with the exception of the mountainous areas.

In Romania, the nesting population has an unknown trend and is estimated at 48,698-95,138 pairs, and during the winter the population is between 78,773 and 134,561 individuals, with a stable trend.

The coot can be found in areas with small, quiet bodies of water, lakes, ponds, irrigation canals, reservoirs, marshes and ballast water bodies. Often found in winter and in estuaries. During the winter they gather in flocks on large lakes and rivers, these gatherings are peaceful compared to the territorial battles they display during the breeding season. It reaches sexual maturity at the age of two. It is a diurnal species, but may sometimes feed during nights when the moonlight is

strong. It has an omnivorous diet, feeding mainly on aquatic plants, but also consumes invertebrates, bird eggs, amphibians, fish and even small mammals. To procure food it dives clumsily, but quickly returns to the surface of the water due to its high buoyancy. Unlike ducks, coots bring their food to the surface before consuming it, thus being exposed to food theft. Monogamous species, highly territorial during mating season. It is aggressive both towards members of its own species and towards other species.

The nest is a mound of dead reed leaves, usually built in emerging vegetation. In mid-March, the female lays a clutch of between 6 and 10 eggs. Parents take turns incubating the brood for 21-24 days and caring for the baby birds until they become independent, 55-60 days after hatching. A pair has 2 or 3 litters in a breeding season.

Legal conservation status - Birds Directive - Annex II A, GEO 57/2007 with subsequent amendments and additions - Annexes 5C and 5 E.

- ***Gavia arctica* (Black-throated loon)**

The breeding range of the species is vast, starting from northern Great Britain and the Scandinavian Peninsula, then covering northern European Russia, central and northern Asia, and reaching as far north as the Far East and far west Alaska. The wintering quarters are formed by the European coastal areas of the Atlantic Ocean, part of the northern shores of the Mediterranean Sea, the shores of the Black Sea and the Caspian Sea, as well as lakes in the interior of Europe.

In Romania, the species appears during migration and as a winter guest, both on the shores of the Black Sea and on lakes in the interior of the country.

The wintering population in Romania is between 17 and 219 individuals.

It is a migratory species that reproduces in solitary pairs starting in April. Populations in the extreme north nest later, depending on the timing of the thaw. During migration they often form flocks of tens of individuals, and spend the winter singly, in pairs or in small groups, occasionally forming large groups in fish-rich coastal areas.

The food of the black-throated loon consists predominantly of fish, but it also consumes aquatic insects, molluscs, crustaceans and some vegetable matter.

The pair is formed for life. Sexual maturity is reached in 2-3 years.

Legal conservation status - Birds Directive - Annex I, GEO 57/2007 with subsequent amendments and additions - Annex 3.

- ***Gavia stellata* (Red-throated loon)**

The nesting area of the species is extremely vast, being a circumpolar one. In Europe it stretches from Iceland, through the north of Great Britain and the Scandinavian Peninsula, to the north of Russia. The wintering quarters are formed mainly from temperate coastal areas of the three continents on which it nests, but also from inland waters.

In Europe, it winters on the Atlantic coasts, from the northern Scandinavian Peninsula to Portugal, including the coasts of Great Britain. Then, on the southern shores of the Baltic Sea, the western shores of the Black Sea, the southern shores of the Caspian Sea, in the central area of the northern coasts of the Mediterranean and in the Adriatic Sea.

In Romania, it appears in migration and as a winter guest, in small numbers, both on the shores of the Black Sea and on inland lakes.

The European population is between 42,100 and 93,000 breeding pairs, the trend is not known. The wintering population in Romania is estimated at only 1-29 specimens.

It is a migratory species, with inland populations moving south or to coastal areas after breeding. Large shoals of 200-1,200 may form during migration, and similar concentrations may occur in winter in fish-rich marine areas. However, as a rule, small divers spend the winter individually, in pairs or in small groups. Outside the breeding season, the species frequents sheltered coastal waters, but also occurs inland, on ponds, natural or artificial lakes and rivers.

The food of the little grebe consists predominantly of fish, but also crustaceans, molluscs, eggs, aquatic insects, ringworms and plant matter.

Legal conservation status - Birds Directive - Annex I, GEO 57/2007 with subsequent amendments and additions - Annex 3

- ***Gelochelidon nilotica* (Gull-billed tern)**

The gull-billed tern breeds in southern Europe, with very small and isolated populations in northern Germany and Denmark, in temperate and eastern Asia, on the coasts of central and southern North America, on the north-western and southern coasts of South America and Australia.

In Romania it occasionally nests in the area of the Black Sea coast.

The nesting population in Romania is fluctuating, being estimated at 0-10 pairs. Between 500 and 2,000 specimens can be seen during passages.

Nests on non-vegetated or sparsely vegetated islands, on dry sand and silt terraces, on sandbanks, dunes, in salt marshes, salt marshes, freshwater lagoons, estuaries, deltas, on lakes, rivers and swamps. During this period it can also feed near lakes, on arable land, pastures or even in semi-desert regions. In migration, the species usually feeds on salt marshes, lagoons, mudflats, marshes and wet fields. It winters in estuaries, salt marshes, lagoons, and salt marshes, or in areas more inland, such as large rivers, lakes, flooded arable land (rice fields), ponds, reservoirs, salt marshes, and irrigation canals. It reaches a maximum longevity of 16 years in the wild. It reaches sexual maturity at the age of five.

It is an opportunistic species, in this respect more similar to gulls than to terns. Its diet consists of fish (6-9 cm long), insects and their larvae, but also arachnids, worms or snails. It may occasionally capture lizards, small snakes, frogs, and even mice or small birds. Unlike the other crayfish, it does not dive into the water to dive for fish, but feeds by searching for its food on the surface of the water and on the ground. It catches insects in flight and can fly to a fixed point by flapping its wings. Arrives from winter quarters in the latter part of April. Nests in monospecific colonies of 5-

500 pairs (occasionally up to 1,000 pairs) or as lone pairs in colonies of other species (herons, gulls, woodpeckers, etc.). The nest is located in open areas, but very close to tufts of vegetation. The female lays 1-4 eggs in the second part of May and the beginning of June. The litter is incubated by both parents for 22-23 days. After hatching, the young leave the nest after a few days and, although they become fliers after 28-35 days, they remain in the care of their parents for another 3 months.

Legal conservation status - Birds Directive - Annex I, GEO 57/2007 with subsequent amendments and additions - Annex 3.

- ***Larus cachinnans* (Pontic Gull)**

The Pontic Gull is a Palaearctic species, with breeding populations in Eastern Europe, Northwest Africa, and the Middle East to Central Asia. There is a possibility that the populations along the Black Sea to the Caspian coast are sedentary. Migratory populations winter in the northern regions of France and Germany, Central Europe, the Balkan Peninsula and through the coastal region of the Middle East, reaching as far as India.

In Romania it nests in the Dobrogea region and in the Danube Delta.

In Romania, the nesting population is between 2,000 and 4,000 pairs, and during the passage between 10,000 and 50,000 specimens can be seen. Also, the territory of the country is also a wintering place for 718-14,561 specimens.

Nests in the area of lakes surrounded by extensive reeds in steppe and semi-desert regions, on reservoirs, rivers and on river islands with short grass and rush vegetation. They form colonies both on cliffs along the coasts and on islands and rocky, sandy littoral sections, headlands, sand dunes and brackish marshes along the coasts. Out of the breeding season it occurs more often in coastal areas, but also forages in agricultural areas and along large rivers. The species can be frequently observed on large garbage dumps. They eat fish, molluscs, crustaceans, insects, reptiles, small mammals, waste, even eggs or chicks.

It nests in monospecific colonies of over 8,000 pairs, or in small groups interspersed in mixed and extensive colonies. The nest is built from various materials such as vegetation, feathers, etc.

The clutch consists of 2-3 eggs and is incubated by both parents in turn for 27-31 days. Chicks leave the nest a few days after hatching, becoming flightless in 35-40 days.

Legal conservation status - Birds Directive - Annex II B.

- ***Larus canus* (Common Gull)**

It is a widespread species, nesting in northern Eurasia and north-western North America.

In Romania it appears only during the winter on the coast, in Dobrogea and along the Danube.

In Romania, between 0 and 2 pairs nest, the trend being increasing, and between 5,000 and 15,000 individuals pass during the passages.

It breeds in steppe and temperate climates to boreal and subarctic territories. It is also found from the interior of the continent to coasts and islands, avoiding frozen or desert parts.

It is more common on ponds, lakes, and open areas, away from water or even on arable land.

In winter they occupy coastal habitats. Outside the nesting period it is gregarious, feeding in flocks of 100 or even more individuals. The maximum longevity achieved in the wild is 33 years and seven months. Food consists of worms, insects, aquatic and terrestrial invertebrates and small fish. During the spring they also consume seeds.

It nests from May in solitary pairs or in large colonies of up to 300 pairs, made up of one or more species.

Legal conservation status - Birds Directive - Annex II B.

***Larus fuscus* (Lesser black-backed gull)**

It is an accidental seagull species here, being a northern species. The nesting area is located mainly on the north-western coasts of Europe, in Romania it can reach in search of milder wintering places. It winters in Africa and Southeast Asia. The distribution area is extensive including the entire coast of the North Sea, much of the coasts of the Mediterranean Sea, the Black Sea and the Caspian Sea, the north and east coasts of Africa (including inland rivers) and around the Arabian Peninsula to the north -western India (acc. Bird Life International - http://datazone.birdlife.org on 04/10/2023).

The species is omnivorous, but still predominantly ichthyophage. It also feeds on insects, crustaceans, worms, molluscs, seeds, fruits, eggs and even small birds.

Legal conservation status - Birds Directive - Annex II B.

- ***Larus genei* (Herring Gull)**

The species' breeding range consists of many relatively small areas in Africa, Europe and Asia.

In Europe it breeds in coastal areas of southern and eastern Spain, southern France, southern Sardinia, north-eastern and southeaster Italy, in the area of Thessaloniki in Greece, as well as in the northern Black Sea (in Ukraine and Russia). Wintering areas cover much of the coasts of North, West and East Africa north of the equator, the coasts of the Arabian Peninsula, the shores (European, Asian and African) of the Mediterranean Sea, the Black Sea, the southern Caspian Sea and Pakistan and the western India.

In Romania it appears in migration, almost only on the shore of the Black Sea and in the lagoon area, rarely in inland waters.

It is estimated that during the migration period Romania is transited by 500-2,000 specimens.

Migratory populations return to breeding colonies in late February, many using the migration route along the western shore of the Black Sea, and leave nesting grounds in July.

The Herring Gull feeds mainly on fish (about 50% of its diet), as well as insects and marine invertebrates.

Legal conservation status - Birds Directive - Annex I, GEO 57/2007 with subsequent amendments and additions - Annex 3.

- ***Larus melanocephalus* (Mediterranean gull)**

syn. *Ichthyaetus melanocephalus*

The Mediterranean gull is an almost entirely European species, distributed in coastal areas from the North Sea to the Mediterranean and Black Seas. It is a migratory species, which winters in the south of the range, especially on the shores of the Mediterranean and in Crimea, but also in northwest Africa.

In Romania, the nesting population is between 20 and 200 pairs, and during migration the population can reach 20,000-40,000 specimens.

The Black-headed Gull is a characteristic species of wet, open, lagoon and coastal areas. It easily adapts to different types of habitat; in migration it occurs in wetlands, lakes, lagoon and coastal areas, but also in agricultural areas and pastures. It is very gregarious, especially during migrations and wintering. It is a coastal species, very rarely seen offshore. The maximum observed longevity in the wild is 15 years. It reaches sexual maturity at two years.

Its diet is omnivorous and during nesting consists of aquatic or terrestrial insects, gastropods, fish and mammals. Outside of nesting, it also feeds on seeds such as barley, wheat and sunflower, and occasionally on scraps and waste from the landfill area.

It can fly for feeding up to 80 km away from the colony.

Arrives from winter quarters in April and early May. It nests in colonies, sometimes together with other species, very close to water.

Legal conservation status - Birds Directive - Annex I, GEO 57/2007 with subsequent amendments and additions - Annex 3

- ***Larus minutus* (Little Gull)**
  syn. *Hydrocoloeus minutus*

The Eurasian breeding range of the species starts from the eastern Scandinavian Peninsula and northern Poland, and also includes - in Europe - Finland, Belarus, northern Ukraine and much of European Russia.

Wintering territories include the coastal areas of northern and eastern Great Britain, the southern North Sea and southwestern Baltic Sea, the Atlantic and Mediterranean coastal areas of France and Spain, much of the African Mediterranean coast, the Greek archipelago and the Aegean Sea, as well as the north-eastern and eastern shores of the Mediterranean Sea. Further north and east, there are wintering grounds on the western, northern and southeaster coasts of the Black Sea, as well as north and south of the Caspian Sea.

In Romania, the species appears during migration and as a winter guest, especially on the shores of the Black Sea and in the lagoon area, but it can also be observed (in relatively small numbers) in the interior of the country, on lakes, ponds and rivers.

It is estimated that during the migration period Romania is transited by 20,000 - 40,000 specimens.

It is a migratory species, arriving at the breeding grounds between late April and late May, leaving them towards the end of July (with the mention that migration movements are poorly known).

Groups of thousands of specimens gather on Lake Techirghiol to moult, before leaving for migration to the wintering grounds. During migration, the species occurs in marine areas, along shores and on natural or artificial lakes or lagoons. It winters along coasts, on muddy or sandy beaches, at river mouths and in seas, especially at the mouths of rivers or canals.

In the breeding territories, the species is predominantly insectivorous, consuming dragonflies, beetles, midges, midges, plecopters, etc.

During the migration period, the diet is similar to that in the nesting territories, i.e. it is based on insects, but during the winter it changes, being mainly composed of marine invertebrates and small fish.

Legal conservation status - Birds Directive - Annex I, GEO 57/2007 with subsequent amendments and additions - Annex 3.

- ***Larus ridibundus* (Black-headed gull)**

syn. *Chroicocephalus ridibundus*

The black-headed gull breeds in North America and most of Europe and Asia, apart from the northern parts of each continent (northern Scandinavia and Russia) and southern Asia.

In Romania there are resident populations along the Danube, in the Delta, in Dobrogea, in the lowland areas of Moldova, in the Transylvanian Depression and in the lowland areas in the western part of the country.

In Romania, the nesting population is between 4,000 and 10,000 pairs and has an increasing trend, and the flocks that pass during passages consist of 100,000-300,000 specimens.

The species nests mainly inland and prefers shallow, temporarily flooded wetlands with tall vegetation. Forms colonies on the shores of lakes, lagoons, slow-flowing rivers, in deltas, estuaries and mound marshes, but may nest in elevated areas of salt marshes, on dunes and islands near coasts. It also uses man-made habitats, such as ponds, drains, dykes, canals and flooded areas, and may also nest in drained marshes, sand dunes, coastal areas and rocky islands.

In winter it occurs mostly in coastal habitats, with a preference for estuaries with sandy or muddy shores, and generally avoids rocky or exposed coastal areas. During this period it can occur in the interior of the continent visiting arable land, wet pastures, parks, sewage treatment plants, water reservoirs and spends the night on the sandy and gravel shores of lakes.

It feeds in different habitats, mainly on food of animal origin. Watch tractors sowing, visit landfills and riverside waste dumping sites. It catches live animals, but also eats scavengers.

It nests in April and May in high-density colonies of several thousand pairs, often with other species of gulls and herons. In these colonies each pair defends its territory. The clutch of 2-3 eggs is incubated by both parents for 23-26 days. The chicks do not leave the nest immediately, but at the age of 10 days they already move away from it. They leave the nest for good after 33-37 days,

when they already know how to fly. During all this interval they are protected and nourished by both parents. A pair produces only one row of young per year.

Legal conservation status - Birds Directive - Annex II B.

- ***Limosa limosa* (Black-tailed godwit)**

The black-tailed godwit has a large area, but is distributed insularly. In Europe, the breeding area is largely represented by the east and north-west of the continent, stretching from Iceland to eastern Russia, Mongolia and China. It is a migratory species, wintering in southern Europe and Asia, coastal and central Africa and Australia.

In Romania, the nesting population is between 10 and 100 pairs, and in the passage between 25,000 and 50,000 individuals can transit our country.

Outside of nesting periods, the species is found near freshwater aquatic habitats, preferring lake edges, flooded meadows, rice paddies, swampy lagoons and estuaries, as well as saline habitats (marshes or meadows). The maximum longevity achieved in the wild is 23 years.

The diet is omnivorous, but preferring invertebrates, such as insect larvae, annelids, polychaetes, crustaceans, spiders, fish eggs, spawn, and frog tadpoles. During migration, orthopterans predominate in their diet, while during the winter it also feeds on plant matter such as berries, seeds or rice grains.

It returns from its wintering quarters in February-April to the same nesting sites, being known as a species that has an increased affinity for these sites.

Nests in small colonies. The female lays a clutch consisting of 3-6 eggs, the incubation is carried out by both parents and lasts about 22-24 days. The baby birds are nestless and are warmed by their parents on cold nights. After hatching, they are led by their parents to specific feeding habitats, represented by lake edges and marshes. Baby birds become fliers at 25-30 days. After the chicks fledge, adults roam foraging, but do not leave the nesting area until late October.

Legal conservation status - Birds Directive - Annex II B.

- **Mergus albellus (Smew)**

syn. *Mergellus albellus*

Breeding species in the northern Palearctic. In Europe it nests in northern Scandinavia, with the main population being concentrated in Asia. It winters in Central and Eastern Europe, Asia Minor, along the Caspian Sea and in Southeast Asia.

In Romania, the species can be observed predominantly in migration (late autumn and early spring) and during winter. In Romania it nests locally, in the Danube Delta.

The nesting population in Romania is represented by 1-5 pairs; between 411 and 5,571 individuals winter, and during the passages they can be seen in the aquatic habitats of our country between 2,000 and 4,000 specimens.

It prefers wet areas for nesting, bordered by forests, with old trees and open water areas without much aquatic vegetation (submerged or surface). Outside the breeding season, it can be found in a wide variety of wetlands, the species not having strict ecological requirements during this period. In migration they fly in groups, with individuals arranged in a diagonal line or "V". During freezing, it retreats to the seashore, where it forms numerous flocks.

It feeds on fish, crustaceans, water insects and their larvae. Food in winter consists mainly of fish, which are caught by rapid dives, performed almost vertically. Arrives from wintering quarters in early April.

Legal conservation status - Birds Directive - Annex I.

- ***Mergus merganser* (Common merganser)**

Species with a very large range, Holarctic, nesting in northern Europe, Asia and North America. In Romania, it nests in mountainous areas, especially in the area of dam lakes, but also near the courses of some mountain rivers. In the cold period, the number of specimens is greater, many northern specimens wintering in the aquatic areas near us.

The nesting population in Romania is estimated at 100-250 pairs, the population that winters here is between 63 and 741 specimens.

For nesting, they prefer upper courses of rivers, lakes located in forested areas, generally in hilly or mountainous areas.

In migration and in winter, it can be found mainly in freshwater wetlands, such as river courses, natural lakes or reservoirs. A gregarious species for most of the year, it forms during migrations or wintering groups of several thousand specimens in coastal habitats or of several hundred on large lakes.

The food consists mainly of fish. The composition of the food depends on the potential of the habitat, but in general a preference for trout has been noted. Food is obtained by diving, the species prefers for this purpose waters with a depth of up to 4 m, although it can dive up to 10 m. Occasionally, it supplements its diet with molluscs, worms, insects and crustaceans. Very rarely, it can even consume amphibians, birds and small mammals.

It nests most commonly in large hollows and cavities in steep banks. More rarely, it may be found nesting on stony or gravelly river banks, sheltered by a fallen tree trunk. They readily accept nesting in artificial boxes mounted in suitable habitat. The nesting period extends (depending on the region) between the beginning of April and the end of June. The brood consists of 8-12 yellowish-white eggs, which are incubated for a period of 30-32 days only by the female. It picks up the nidifugal chicks immediately after hatching and carries them in its beak to the most suitable aquatic habitat. Often they are carried by the female on her back, especially in case of danger; they feed on invertebrates and very small fish. Juveniles become fully independent of the female and able to fly at the age of 60-70 days after hatching. Only one clutch is laid in a breeding season.

Legal conservation status - Birds Directive - Annex II B.

- ***Mergus* serrator (Red-breasted merganser)**

Species with a very large range, Holarctic, nesting in northern Europe, Asia and North America. European populations are migratory or semi-migratory, wintering on the coast of the Baltic Sea, the North Sea and the Atlantic Ocean.

Part of the population winters on the Black Sea coast. In Romania, it can be found during migration and on inland waters, but also during winters (especially on the Black Sea coast and large rivers).

The population that winters on the Romanian coast of the Black Sea and in other unfrozen aquatic habitats is between 4 and 195 specimens.

The species is mainly concentrated in the marine environment during the winter. During migration it can also be found on inland waters (natural lakes, ponds, reservoirs, river courses), but in winter it is mainly present on the Black Sea coast.

The food consists mainly of fish. For the procurement of food, it prefers waters of 3-6 m depth, because it is procured mainly by diving. It can feed individually or in groups, cooperating to catch fish. Food is supplemented by crustaceans, insects, fish eggs and even various plant matter. In our country, the food of this species consists mainly of the bighead goby, *Neogobius fluviatilis,* especially between the months of April and December.

Legal conservation status - Birds Directive - Annex II B.

- ***Pelecanus crispus* (Dalmatian pelican)**

The Dalmatian pelican nests in eastern Europe and east-central Asia, in Serbia, Montenegro, Albania, Greece, Romania, Bulgaria, Russia, Azerbaijan, Turkey, Ukraine, Mongolia, Iran, Turkmenistan, Uzbekistan and Kazakhstan. It is a migratory species, European populations migrate to Eastern Mediterranean countries.

The European population of the species is estimated at 4,350-4,800 individuals, representing less than half of the global population of the species. Due to the continuous degradation of the range, this species is considered threatened and - although in the recent period the population trend is slightly upward - a decline is possible in the future.

In Romania, the nesting population is estimated at 221-432 pairs. During the migration, the herds in our country are between 900 and 1,500 individuals, and over the winter they can remain between 13 and 704 individuals.

The species is mostly found in the continental area, in freshwater habitats, but also in coastal lagoons, deltas and estuaries.

In Romania, it nests in the Danube Delta, together with the common pelican, *Pelecanus onocrotalus,* but also isolated, in small colonies of a few dozen pairs, in the southern area of the Danube Delta and the Razelm-Sinoe lagoon complex. A part of this population winters on the lower corridor of the Danube. It is a cautious and fearful species. It reaches sexual maturity at the age of 3-4 years.

It is an almost exclusively ichthyophage species, the size of the fish caught is between 3-50 cm. In fresh waters it prefers carp, *Cyprinus carpio,* perch, *Perca uviatilis,* red bream, *Scardinius*

erythrorhtalmus, flounder, *Rutilus rutilus* and pike, *Esox lucius,* and in lagoon systems it catches eels, *Anguilla anguilla,* mullets, *Mugil cephalus,* guvizi, *Gobius* sp., or atherine, *Atherina mochon pontica.* Occasionally, it can also catch large crustaceans (crabs, crabs). It can also feed away from the breeding colony.

It returns from its winter quarters earlier than the common pelican, in early March. The nest is positioned on floating or stationary islands, isolated from the shore to avoid predators. It consists of reed rhizomes and other plant debris, being 1 m high. At high densities, nests may be located a short distance from each other. The clutch consists of 1-6 whitish eggs, which are hatched by both parents. Incubation lasts 30-32 days, and the chicks are ready to fly after 75-85 days. After the age of 98-105 days they are completely independent of their parents. The most sensitive period is incubation, the hatching success of the chicks being 35-70%.

Legal conservation status - Birds Directive - Annex I, GEO 57/2007 with subsequent amendments and additions - Annex 3.

- ***Phalacrocorax carbo* (Great Cormorant)**

The great cormorant nests in almost all of Europe, which thus represents less than half of the species' global nesting area. It is found all along the coast of the Atlantic Ocean, as well as on the coasts of the Mediterranean Sea and the Black Sea.

In Romania, the species is partially migratory, in the winter staying mainly on stagnant, inland, non-frozen waters or even on the courses of large rivers, and in the summer it can be observed on the surface of the water in the vast majority of aquatic habitats (for example, in fish facilities, reservoirs, on the course of the Danube, in the Razelm-Sinoe lagoon complex, the Danube Delta, on larger rivers with still water, etc.).

The nesting population in Romania was estimated at 12,000-20,000 pairs, mostly found on inland waters and in the Danube Delta. During the passages, between 20,000 and 50,000 specimens can be observed and on the territory of our country, a number of 2,815-14,153 specimens winter.

The species frequents both coastal and inland wetland habitats. In the marine environment it is found in protected coastal areas such as estuaries, brackish lakes, lagoons, floodplain forests, deltas and bays. Fresh water habitats are represented by lakes, rivers, flooded areas, marshes with water holes, fish ponds, etc. It is a very good swimmer and diver, floating with its body on the surface, and if it feels in danger, it enters the immersion, leaving only the head and neck. On land it moves quite hard, and in order to take flight it has to run by walking on water. It reaches a maximum longevity of 23 years and 5 months in the wild. It reaches sexual maturity at the age of three.

Food generally consists of fish up to 30-40 cm long. It obtains food by diving from the surface of the water, using legs or wings for propulsion. The depth to which it dives is up to 8 m, the time spent under water reaching 2 minutes. It consumes prey both while diving and at the surface of the water, depending on its size. Among the preferred freshwater species are crucian carp, carp, pike, bream or perch, and among marine species they prefer bream, mullet, mullet, sprat and anchovy.

The mating is monogamous, the pairs forming during one breeding season, there are cases and longer periods, if the pair uses the same territory, returning to their old nests, located on the trees on the islands, in flooded forests or directly on the reeds. It often nests in mixed colonies of up to 400 nests, together with other bird species (herons or little cormorants).

There can be up to 15 nests on the same tree, these being completely defoliated and stripped of bark due to corrosive droppings. The clutch consists of 4-7 eggs, which are laid in May-June, with incubation lasting 23-30 days. Both partners incubate and defend the nest from predators. The chicks are first fed with digested fish, then with regurgitated fish, 3-5 times a day. Cubs begin to climb the branches of the tree at the age of 35 days; they can swim and jump in the water 42 days after hatching, after about 44 days they can fly, and at 56 days they leave the nest for good.

Legal conservation status - GEO 57/2007 with subsequent amendments and additions - Annex 5 C.

- ***Phalaropus lobatus* (Red-necked phalarope)**

The breeding area of the species is extremely vast, covering the northern areas of the continents in our hemisphere.

In Romania, the note appears during the migration period, especially in the lagoon areas of Dobrogea, but it is also reported on lakes in the interior of the country, especially in low-lying areas.

It is estimated that during the migration period Romania is transited by 300-500 specimens.

It is a long-distance migratory species, crossing continents on both migration routes and broad fronts and using wetlands as stopovers.

Red-necked phalarope leaves the breeding territories at the end of June - beginning of September, migrating in flocks, and winters at sea in groups of 20-100 specimens. The species nests in arctic tundra, on sea coasts and inland continents, in tree tundra areas and in alpine tundra near lakes, ponds, lagoons, running water or other permanent bodies of water with marshy banks rich in grasses, reeds or moss, as well as in freshwater marshes. It may also frequent coastal marshes, floodplains and river islets, and in Iceland it frequently nests on volcanic terrain with some vegetation.

During migration, the species frequents saline and hypersaline lakes in the interior of continents, natural or artificial freshwater lakes, tailings basins, and coastal marshes. In winter, the species is predominantly pelagic, feeding at sea in areas rich in plankton.

In the breeding territories, the weevil feeds on insects (especially diptera, coleoptera, tricoptera, ants and hemiptera, in the larval or adult stage), with other small invertebrates (snails, crustaceans, ringworms), with amphibian larvae (tadpoles) and with seeds. During the migration period, on the salt lakes, it can feed on diptera larvae of the genus Ephydra.

In winter, at sea, it feeds on zooplankton and other floating organic particles.

Legal conservation status - Birds Directive - Annex I, GEO 57/2007 with subsequent amendments and additions - Annex 3.

- ***Podiceps cristatus* (Great crested grebe)**

It is a generally sedentary species in Europe, breeding in central, eastern and northern Europe, as well as central, southern and eastern Asia.

In Romania, the species is partially migratory, in the winter it stays mainly on stagnant, unfrozen inland waters or even on the courses of large rivers, and in the summer it can be observed on the surface of the water in the vast majority of aquatic habitats (fisheries, reservoirs, the course of the Danube, the complex Razelm-Sinoe lagoon, Danube Delta, calm water rivers, etc.).

The population in Romania was estimated at 15,000-30,000 pairs, found mainly on inland waters, such as lakes, marshes, fishponds, ponds, swamps, etc., but also in the Danube Delta.

It is a semi-migratory species, nesting in a wide variety of aquatic habitat types, such as freshwater or brackish lakes with abundant emergent and submerged vegetation, also preferring eutrophic waters that have silty or sandy substrate and more or less a little steep. It generally prefers aquatic habitats that have depths of up to 5 m and a large surface area of water gloss.

During winters, it is a common species on wide open lakes where the water does not freeze, and may only occasionally be seen along the coast of marine habitats, in estuaries or bays protected from high wave action. The great crested grebe usually leads a solitary life, rarely being seen in large groups of up to 100 individuals.

It is little active at the surface of the water, but a very good swimmer and diver. It reaches a maximum longevity of 19 years and 2 months in the wild. It reaches sexual maturity at the age of two.

Food generally consists of aquatic insects and small to medium-sized fish. The depth to which it dives is up to 4 m, but it can exceptionally reach 6 m, the time spent under water being up to 1 minute.

Among insects, they prefer ephemeroptera, water bugs, dragonfly larvae, water beetles, etc., and among freshwater fish species, we mention roach and juvenile carp, bream, perch, etc. It can also rarely feed on small water snakes and amphibians.

It is a monogamous species, with pairs maintaining a nesting season, and there are cases for longer periods, if the pair uses the same territory. The nuptial games are very animated, mimicking the preening of feathers, shaking of the head, presentation of nest material, etc., in which several birds sometimes participate.

It usually nests in solitary pairs, but colonies of more than 20 nests have been reported, between which there was a distance of 20-25 m. The clutch consists of 3-6 eggs that are laid in May-June, the incubation is 21-29 days and being provided by both partners. When they leave the nest, they cover the eggs with decaying vegetation to maintain their temperature. The juveniles emerge and swim or dive from day one, being cared for by their parents until they are 10-11 weeks old. In bad weather, the fledglings can be carried on the parents' backs, and in case of danger they can enter the immersion with the cubs.

Legal conservation status - Birds Directive - Art.1.

- ***Podiceps grisegena* (Red-necked grebe)**

It breeds throughout Europe, western and eastern Asia, and northern North America, migrating to winter in central and southern Africa, as well as southern and south-eastern Asia.

In Romania it is generally a summer guest, nesting mainly on inland stagnant waters or even on the puddles formed along the rivers; in winter, in small numbers, it can be observed in coastal areas and on reservoirs with a large area (the Razelm-Sinoe lagoon complex, the lakes of the Danube Delta, etc.).

The population in Romania has been estimated at 130-1,300 nesting pairs, and in winter between 1 and 10 specimens can be seen.

The species nests on small inland lakes of up to 3 ha, with maximum depths of 2 m and abundant emergent vegetation, preferring waters in wooded areas.

Feeding habitats include marshes and small lakes, ponds formed along rivers, as well as coastal lagoons and estuaries. In marine habitats, offshore areas with depths of up to 15 m and with sand and gravel substrate, solitary rocks and shoals of floating algae are preferred. In winter it is common on wide open lakes where the water has not frozen, and may occasionally be seen along the coast in estuaries or bays protected from the action of large waves, abundant in fish. It usually spends the day in the thickets, and in the evening on the water surface.

The diet consists generally of aquatic invertebrates such as insects, molluscs and crustaceans, feeding to a lesser extent on small fish. It obtains food by diving or by swimming to the surface with its head submerged. The depth to which it dives is 7-10 m, the time spent under water being up to 74 seconds. It consumes prey both while diving and at the surface of the water, depending on its size. It also rarely feeds on reptiles and frogs.

It is a monogamous species, with pairs forming during one nesting season and remaining in subsequent years if the partners return to the same territory. It usually nests in solitary pairs. Nesting in colonies was also observed, with a distance of 50 m between nests. The brood consists of 3-6 white eggs, which are laid in May-June, with incubation lasting 20-23 days. Both partners hatch the eggs and defend the nest from predators. The chicks take turns emerging and swimming and diving from day one, rarely returning to the nest. Up to 7-15 days they are cared for by their parents and often carried on their backs, then they start to become independent and fully developed by 8-10 weeks of age. Families usually stay at the nesting sites and separate only at the beginning of the fall migration. Frequent cases have been reported of a pair also producing a second set of young in a breeding season.

Legal conservation status - Birds Directive - Art.1.

- ***Podiceps nigricollis* (Black-necked grebe)**

It is a migratory species, which has a distribution area throughout Europe. The south of the continent represents the districts where they migrate to spend the winter.

In Romania, the species is partially migratory, nesting especially in the south-east of the country (the area of the lakes of Bărăgan and the Danube Delta), with many specimens remaining over the winter, especially in the area of coastal lakes, large dam lakes and the Danube Delta.

The population in Romania was estimated at 300-3,000 breeding pairs, of which the largest numbers are present in the Danube Delta and in the Razelm-Sinoe complex. Between 20,000 and 50,000 specimens can be seen during the passages and between 283 and 1,815 specimens winter in the country.

During the breeding season, the species frequents temporary or permanent, highly eutrophicated pools with shallow water and abundant vegetation, such as marshes and lakes with scattered submerged vegetation and reed beds. They also prefer ponds and fishponds, irrigation canals, ponds formed along rivers and floodplains. Outside of the nesting season, the species migrates to salt lakes, reservoirs, and even shallow-water coastal estuaries, bays, and marine channels.

During passages and in wintering quarters they form flocks, sometimes very large.

Food generally consists of aquatic invertebrates such as insect larvae and adults, molluscs and crustaceans, to a lesser extent also feeding on worms, snails, small fish, amphibians and even small snakes. It obtains food by turning its head from side to side at the surface of the water or dives to 5.5 m, staying submerged for up to 1 minute.

It is a monogamous species, with pairs forming for a nesting season, and there are cases for longer periods, if the pair uses the same territory. It usually nests in solitary pairs, although in Romania it has been observed nesting in colonies of several dozen nests. The brood consists of 3-4 yellowish-white eggs, which are laid in May-June, with incubation lasting 20-21 days. The chicks take turns emerging and swimming and diving from day one, rarely returning to the nest. In August the chicks are fully developed.

After the nesting period, the birds that remain in the same places until the beginning of the autumn migration pass to large lakes with a large surface area of water gloss, or even to the sea.

Legal conservation status - Birds Directive - Art.1.

- ***Puffinus yelkouan* (Yelkouan shearwater)**

It is a pelagic species, present in the Mediterranean Sea and the Black Sea. Nesting territories are on many of the islands and in a few coastal areas (southern France, north-eastern Algeria, the Albanian coast north of Corfu) in the Mediterranean Sea.

The species is reported in the Romanian territorial waters of the Black Sea, during the migration.

The population that transits Romanian territorial waters during the migration is between 15,000 and 25,000 individuals.

The species nests in holes in the ground, in small cavities in rocks and in caves on the rocky coasts of the islands, as well as on inaccessible rocky cliffs on the shores of the Mediterranean Sea.

Outside the breeding season, it spreads over long distances across the Mediterranean and Black Seas, often forming large flocks.

The food consists of fish and marine invertebrates.

Legal conservation status - Birds Directive - Annex I.

- ***Sterna abifrons*** **(Little tern)**

syn. *Sternula albifrons*

Little tern nesting populations can be found throughout most of Europe along the coasts. In the southern parts of its range it is a sedentary species, while in the northern part of the range it is migratory. Migratory populations winter in the coastal area of Africa and the Arabian Peninsula, the western coastal area of India and most of the wet areas of Australasia (Australia, New Zealand, the island of New Guinea and neighbouring islands).

The nesting population in Romania is between 200 and 600 pairs, and approximately 2,000-10,000 specimens pass through our country during the passage.

The species is characteristic of coastal wetlands, but also of inland lakes with fresh water, located at a distance of several kilometres from the sea. The maximum known longevity is 23 years. It reaches sexual maturity at 2-3 years. To feed, it detects prey from a height of 3-10 m, hovers in place, flapping its wings in pursuit of prey, then dives at speed.

It feeds mainly on small fish of various species, such as bream, roach, carp and perch, but its diet also includes small crustaceans, annelids, molluscs and insects. It has been observed that some terns can specialize in catching insects, flying at water level and picking up those that float.

It is a monogamous and territorial species. Arrives from wintering quarters in late April. It nests singly or in small colonies, in bare or sparsely vegetated places, located at the edge of water, on islands, in salt flats, marshes, bays or on muddy terraces at the water's edge, where other pretentious birds would not nest the place chosen for reproduction. The nests are placed at least 2 m apart from each other. The female lays a clutch of usually 2-3 eggs in the second part of May and the first part of June. Incubation lasts around 17-22 days and is provided by both partners. The chicks leave the nest a few days after hatching, staying around it and hiding in case of danger. They are cared for by both parents until they become fliers at 19-20 days of age.

Legal conservation status - Birds Directive - Annex I, GEO 57/2007 with subsequent amendments and additions - Annex 3.

- ***Sterna caspia*** **(Caspian tern)**

syn. *Caspian Hydroprogne*

It is a cosmopolitan species with sporadic distribution. It breeds in the area of large lakes and oceanic coasts in North America (including the Great Lakes area) and locally in Europe (around the Baltic Sea and the Black Sea), in Asia, Africa and Australasia (Australia and New Zealand).

Flocks from Europe and Asia spend the winter in the tropics of the Palearctic.

In Romania, the species has been reported in the Danube Meadow and in the lower part of the Prut River, but also in the Danube Delta and the lakes of the Western Plain.

The breeding population in Europe is small, between 11,800 and 14,800 pairs, and although it declined considerably between the 1970s and 1990s, the trend is increasing.

In the past, they nested in Romania in the area of the Razim-Sinoe lagoon complex, but nowadays Caspian terns can be observed only during passages, when the numbers are between 1,000 and 5,000 individuals.

The species' nesting, migration and wintering habitats are similar, although in winter the Caspian tern occurs almost exclusively in coastal areas. It visits sheltered coasts, estuaries, inlets, bays, coastal lagoons or salt marshes. It also occasionally occurs inland in wet, saline or freshwater grasslands, extensive lakes, rivers, flooded areas, reservoirs and heathland. During the nesting period it prefers sandy or stony coastlines, sand dunes, smooth surfaces on rocks and islands with sparse vegetation. It is an active species both during the day and at night. Outside of the breeding season it is not gregarious but may gather in flocks during migration and in winter where fish-rich areas are found. It reaches a maximum longevity of 30 years in the wild. It reaches sexual maturity at the age of three.

The diet consists predominantly of fish of various species, the size of which varies from 5 to 25 cm. Apart from fish, they also consume the eggs and young of other species of birds, shrews, aquatic invertebrates, flying insects and earthworms.

It feeds at a distance of up to 60 km from the colony.

The species nests between April and June in large, monospecific colonies with a high nest density. It can also be found nesting in solitary pairs or in small groups, interspersed in the colonies of other species. The colony is aggressively defended and approaching birds are chased away. It is a monogamous species, in which the nuptial ritual involves flights of partners up to 200 m high, followed by a return to the ground. It has only one clutch per year, consisting of 1-3 eggs, which are incubated by both partners for 20-22 days. After hatching, the chicks leave the nest after a few days, or stay close to it, waiting for the food brought by the two parents. They become fliers after 30-35 days but remain dependent on their parents for a very long time (several months), which sometimes even includes their first winter.

Legal conservation status - Birds Directive - Annex I, GEO 57/2007 with subsequent amendments and additions - Annex 3.

- ***Sterna hirundo* (Common tern)**

It is a circumpolar species that has a very large area, being found on all continents, except Antarctica. It is a highly migratory species that winters in the southern hemisphere.

In our country, the nesting population with the largest flock is in the Danube Delta, but important populations can also be found inside the country, where it finds favourable habitats.

The estimated population in Romania is 6,000-15,000 nesting pairs, and during migration flocks between 50,000 and 200,000 individuals can be found.

Common tern is characteristic of coastal wetlands, but also of inland freshwater lakes. Nests on sandy beaches or islands, on sand dunes inside marshes, sometimes on plant debris or floating vegetation. In the wild, the maximum recorded longevity is 33 years. It reaches sexual maturity at three years.

To feed, it dives, after detecting prey, from a height of 1-6 m to a depth of 50 cm. It hovers in place, flapping its wings in pursuit of prey. It feeds at a distance of up to 5-10 km from the colony.

Its diet consists mainly of small fish, but it also captures small crustaceans, annelids, molluscs and insects.

Arrives from winter quarters in the latter part of April. It nests in small monospecies or mixed colonies, and the distance between nests can vary from 0.5 m to 3.5 m. It is a monogamous and territorial species. The pair usually uses the same territory for nesting, showing a strong attachment to it. The brood laid in the second part of May and in June usually consists of 2-3 eggs, incubation lasts around 22-28 days and is provided by both partners. The species is very aggressive near the nest or young, so it can attack large predatory species. The chicks leave the nest a few days after hatching and are cared for by the adults until they become fliers at around 27-30 days.

Legal conservation status - Birds Directive - Annex I, GEO 57/2007 with subsequent amendments and additions - Annex 3.

- ***Sterna sandvicensis* (Sandwich tern)**

syn. *Thalasseus sandvicensis*

The species is found in Europe, the western part of Africa and the southern part of the United States. It breeds seasonally in coastal areas throughout most of Europe and east of the Caspian Sea. The wintering range of the species extends from the Caspian Sea, the Black Sea and the Mediterranean Sea to the coasts of West and South Africa and from the Red Sea to the north-western part of India and Sri Lanka.

In Romania it is found in the Danube Delta and in the Razelm-Sinoe lagoon complex.

The population in Romania is estimated at 100-1,000 nesting pairs, and during the passages the numbers increase, reaching 5,000-50,000 specimens.

It is a species that occurs exclusively in coastal regions, especially in warm water areas. During the breeding season, colonies occupy territories on sandy or calcareous islands, sand dunes, coastal areas and in deltas. For nesting, they prefer mounds of sand, gravel, mud or coral.

Outside the breeding season, they visit sandy or rocky coastlines, mud flats, estuaries and bays, feeding at sea. It is a year-round gregarious species, often gathering to feed in flocks in areas where prey is abundant (although it can also forage solitary). It reaches a maximum longevity of 30 years and eight months in the wild. It reaches sexual maturity at the age of three.

It feeds mostly on small marine fish, worms, shrimps and steals the flightless young of other birds. To catch fish, it locates them by flying on the spot (sometimes from a height of 10 m), after which it gathers its wings and dives vertically or obliquely into the water with speed and almost always successfully. Sometimes adult birds can defend their own feeding territories located along the shore, driving away other specimens of the same species.

Arrives from wintering quarters in April.

It nests in large colonies with other species of herons or Black-headed gull (*Larus ridibundus)*. It is a monogamous species. The clutch is laid in the second part of May and consists of 1-2 eggs of

different colours, incubation lasts around 21-29 days and is provided by both partners. In the first week, only the female hatches, which is fed during this time by the male. After hatching, the chicks gather in nurseries for better protection from predators. They are fed by adults. The juveniles become fliers at 28-30 days but remain dependent on the care of their parents for a while.

Legal conservation status - Birds Directive - Annex I, GEO 57/2007 with subsequent amendments and additions - Annex 3.

- ***Tachybaptus ruficollis* (Small grebe)**

It is a migratory species in Europe, nesting in central and south-eastern Europe and central and eastern Asia. It migrates to winter in central and southern Africa, as well as southern Asia.

In Romania, the species is partially migratory, some of the specimens staying over the winter, staying mainly on inland stagnant waters, not frozen or even near the shores of the Black Sea. It can also be observed in fish facilities, on reservoirs, the course of the Danube, in the Razelm-Sinoe lagoon complex, the Danube Delta, on rivers with still water, etc.

The nesting population in Romania was estimated at 2,400-24,000 pairs, and the wintering population is 1,086-2,351.

The species is found in a wide variety of shallow aquatic habitat types to depths of up to 1 m, which have rich vegetation and a high density of aquatic invertebrates. Suitable habitats for the small grebe include small lakes, marshes, bays of areas with high water clarity but with vegetated banks, alkaline or saline lakes and reservoirs, slow-flowing rivers, canals, flooded meanders, coastal lagoons, floodplains seasonal, swamps, ballast lakes and even rice crops.

In Romania, the species is mainly found in the Danube Delta and on small inland waters, such as ponds and fishponds; in winter it is common on large open lakes and may occasionally be seen along the Black Sea coast in bays protected from high wave action. When changing its plumage, the species requires areas with abundant food. It reaches a maximum longevity of 17 years and 5 months in the wild. It reaches sexual maturity at the age of one year.

Food generally consists of aquatic insects, grubs, small molluscs, crustaceans, frogs, and rarely fish fry. It obtains food by diving from the surface of the water, using legs or wings for propulsion. The depth to which it dives is a maximum of 2 m, the time spent under water being a maximum of 30 seconds.

The mating is monogamous, the pairs forming throughout the nesting period, there are cases and for longer periods, if the pair uses the same territory. Pairing begins towards the end of summer, with the moulting. Most arrive in the nesting territories already in pairs at the beginning of the migration period, which takes place in February-April. It usually nests in solitary pairs. The clutch is 4-6 eggs, which are laid in the months of May-June, the incubation being 20-21 days. Both partners hatch the eggs and defend the nest from potential predators. The young are fed by both parents, and after 2-3 days they leave the nest together with the adults, under their wings or on their backs. Feathers are fully developed 44-48 days after hatching. Chicks become independent after 30-40 days of plumage development.

Legal conservation status - GEO 57/2007 with subsequent amendments and additions - Annex 4 B.

B.2.4. Data on species and habitats of community interest possibly affected by the implementation of the analysed project

Data on species and habitats potentially affected by the Neptun Deep project within the Special Area of Conservation (SAC) and Sites of Community Importance (SCI) are presented in the following tables.

Table B.9 ROSAC0273 Zona marină de la Capul Tuzla

ROSAC0273 Zona marină de la Capul Tuzla	Description of the species and habitats possibly affected by the Neptun Deep project
Habitat name	**1110 Shallow submerged sandbars** Subtypes: 1110-3 Shallow fine sands, 1110-4 Well-graded sands, 1110-5 Wave-beaten coarse sands and fine gravels, 1110-6 Infralittoral gravels, 1110-9 Upogebia bioturbated silty sands and sandy *muds*
Habitat location	The habitat is unevenly distributed along the entire Romanian coast and on the entire continental shelf. An updated habitat map is not available for ROSAC0273
Habitat area (ha)	450 ha (acc. FS 2021); the area of the habitat is not specified in the approved Management Plan (MP) Areas of habitat subtypes 1110 are not known
Conservation status	In the site: Good (B) acc. FS 2021; Favourable acc. ANANP and MP decision At bioregion level: Unfavourable-Inadequate
trend	Stable (=)**
Sensitivity to the effects generated by the proposed project	Small
Climate change perspectives	The impacts of climate change, such as rising sea surface temperatures, acidification of seas and oceans, changing currents and wind patterns, will significantly alter the physical and biological structure of seas and oceans* In the Black Sea, the trend of recent years reveals a warming and salinization that requires records and analyses over longer time series to confirm the trends (Lima, 2021)

ROSAC0273 Zona marină de la Capul Tuzla	Description of the species and habitats possibly affected by the Neptun Deep project
Habitat name	**1140 Sand and mud flats exposed at low tide**
Habitat location	It is present in Romania in several places: Agigea, Tuzla, Costinești, Vama Veche acc. P.M; was completely destroyed in the Tuzla area in 2010 and 2011 by hydrotechnical coastal protection works
Habitat area (ha)	0 (acc. ANANP Decision no. 490/06.10.2021 and PM) 2 (acc. FS 2021)
Conservation status	In the site: Good (B) acc. FS 2021; It requires checks regarding the presence and subsequent formulation of the state of conservation acc. ANANP decision; Not rated in PM At bioregion level: Unfavourable-Inadequate**
trend	Trend – Impairment (-) **
Sensitivity to the effects generated by the proposed project	This is not the case - the habitat has not been identified in the area of influence of the project
Climate change perspectives	The impacts of climate change, such as rising sea surface temperatures, acidification of seas and oceans, changing currents and wind patterns, will significantly alter the physical and biological structure of seas and oceans* In the Black Sea, the trend of recent years reveals a warming and salinization that requires records and analyses over longer time series to confirm the trends (Lima, 2021) Threats and pressures due to climate change have not been characterized for this habitat type.
Habitat name	**1170 Reefs** *Mytilus galloprovincialis* biogenic reefs, 1170-4 Aggregations of rocks and boulders - in artificial form (dykes), 1170-5 Supralittoral rock, 1170-6 Upper mediolittoral rock - located in the upper part of the break zone of waves and is not permanently covered by water, 1170-7 lower mediolittoral rock, 1170-8 Infralittoral rock with photophilous algae, 1170-9 Circolittoral rock with *Mytilus galloprovincialais*
Habitat location	Mussel reefs appear on sedimentary substrate: mud, sand, silt or mixture, most frequently between the isobaths of 35 and 60 m. They are spread all along the Romanian coast, between the previously mentioned isobaths.

ROSAC0273 Zona marină de la Capul Tuzla	Description of the species and habitats possibly affected by the Neptun Deep project
	1170-5 - located above sea level and is wetted by wave spray or watered during storms 1170-7- located in the lower part of the breakwater area 1170-8- *Cystoseira belts,* have a fragmentary disposition, one of the few remaining fragments is at Mangalia, acc. P.M 1170-9– cover the rocky bottom, are also present in the former habitat, but become dominant starting from its lower limit, continuing as a compact carpet to the lower limit of the rocky substrate distribution, 30-35 m depth An updated map is not available in ANPIC
Habitat area (ha)	1285 (acc. FS 2021 and ANANP Decision) No information is available on the areas of habitat subtypes 1170 Subtype 1170-9: 586.23 ha (ANANP Decision)
Conservation status	On the site: Excellent (A) acc. FS 2021; Favourable acc. ANANP and MP decision At bioregion level: Unfavourable-Inadequate
trend	Stable (=) **
Sensitivity to the effects generated by the proposed project	Medium- for subtype 1170-2 Small - for the other subtypes of habitat 1170 within the ANPIC
Climate change perspectives	The impacts of climate change, such as rising sea surface temperatures, acidification of seas and oceans, changing currents and wind patterns, will significantly alter the physical and biological structure of seas and oceans* In the Black Sea, the trend of recent years reveals a warming and salinization that requires records and analyses over longer time series to confirm the trends (Lima, 2021) Pressures and threats related to climate change have been characterized for this habitat type: N01 - Temperature changes (eg temperature increase and extremes) due to climate change, pressure and threat of medium importance for habitat 1170 Recife.**
Habitat name	**8330 Submerged or partially submerged sea caves**
Habitat location	In the Romanian Black Sea, this habitat corresponds to vertical walls, overhangs, caves and tunnels (acc. PM)

ROSAC0273 Zona marină de la Capul Tuzla	Description of the species and habitats possibly affected by the Neptun Deep project
	An updated habitat map is not available for ROSAC0273
Habitat area (ha)	0.7 acc. FS 2021 and at least 7 caves
Conservation status	In the site: Good (B) acc. FS 2021, Unknown in PM, Requires clarification of conservation status within 2 acc. ANANP decision At bioregion level: Unknown **
trend	Not specified **
Sensitivity to the effects generated by the proposed project	Large- due to the fragility of the biotope (under the action of abiotic and biotic factors), caves can collapse even due to the action of natural environmental factors (currents, waves, storms); it is particularly sensitive to the mechanical action caused by the placement of the anchors. It presents a high vulnerability to clogging.
Climate change perspectives	The impacts of climate change, such as rising sea surface temperatures, acidification of seas and oceans, and changing currents and wind patterns, will significantly alter the physical and biological structure of seas and oceans * In the Black Sea, the trend of recent years reveals a warming and salinization that requires records and analyses over longer time series to confirm the trends (Lima, 2021) Threats and pressures due to climate change have not been characterized for this habitat type.
Species name	***Immaculate aloe***
Species location	According to the species distribution map (Source: INCDM Grigore Antipa) Use the site as a transit area for migration (acc. ANANP Decision and approved MP)
Population size	Undefined (acc. ANANP Decision) Minimum 100 individuals – Maximum 1000 individuals (acc. FS 2021)
Quantified information on the presence of individuals	The presence of juveniles in the catch in scientific beach seine fishing: ≥ 3 individuals/tonne (acc. ANANP decision)
Population dynamics	No data available
The area of the species' habitat	According to the species distribution map (Source: INCDM Grigore Antipa)

ROSAC0273 Zona marină de la Capul Tuzla	Description of the species and habitats possibly affected by the Neptun Deep project
Conservation status	In the site: Good (B) acc. FS 2021, Favourable acc. ANANP and MP decision At bioregion level: Unfavourable-Inadequate **
trend	Stable (=) **
Ecology of the species	Anadromous migratory marine species. It is a Ponto-Caspian relict. The species winters at a great distance from the shore and at depths of up to 90 m, near the Ukrainian coasts. After hatching, the fry are carried by the current towards the sea, staying for a long time in front of the river mouths. The food consists, in proportion of 70-75% of fish, in sea-anchovies, shad, sprat, and in freshwater cyprinids, the rest consists of crustaceans- *Crangon, Upogebia, Idothea* and gammarids.
Sensitivity to the effects generated by the proposed project	small
Climate change perspectives	The impacts of climate change, such as rising sea surface temperatures, acidification of seas and oceans, and changing currents and wind patterns, will significantly alter the physical and biological structure of seas and oceans * In the Black Sea, the trend of recent years reveals a warming and salinization that requires records and analyses over longer time series to confirm the trends (Lima, 2021) Pressures and threats related to climate change have been characterized for this species: N01 - Temperature changes (eg temperature increase and extremes) due to climate change, pressure and threat of high importance/impact.**
Species name	*Alosa tanaica*
Species location	The species is present along the Black Sea coast for most of the year. According to the species distribution map (Source: INCDM Grigore Antipa)
Population size	non-quantified
Quantified information on the presence of individuals	The presence of juveniles in the catch in scientific beach seine fishing: ≥ 3 individuals/tonne (acc. ANANP decision)

ROSAC0273 Zona marină de la Capul Tuzla	Description of the species and habitats possibly affected by the Neptun Deep project
Population dynamics	No data available
The area of the species' habitat	According to the species distribution map (Source: INCDM Grigore Antipa)
Conservation status	In the site: Good (B) acc. FS 2021, Favourable acc. ANANP and MP decision At bioregion level: Unfavourable- Inadequate**
trend	Stable (=)
Ecology of the species	Thermophilic species preferring shallow waters, migratory anadromous. It winters in the sea, it appears in the spring near the coast, it does not form pure shoals, but in a mixture with other shoals. Some of the individuals enter the Danube, the others stay at the mouths of the Danube. Reproduction takes place in late April - early June. The withdrawal of juveniles and adults to the sea takes place between August and September.
Sensitivity to the effects generated by the proposed project	small
Climate change perspectives	The impacts of climate change, such as rising sea surface temperatures, acidification of seas and oceans, and changing currents and wind patterns, will significantly alter the physical and biological structure of seas and oceans * In the Black Sea, the trend of recent years reveals a warming and salinization that requires records and analyses over longer time series to confirm the trends (Lima, 2021) Pressures and threats related to climate change have been characterized for this species: N01 - Temperature changes (eg temperature increase and extremes) due to climate change, pressure and threat of high importance/impact.**
Species name	***Phocoena phocoena***
Species location	In the Romanian area of the Black Sea, populations are concentrated near the coastal area, where food is more abundant and accessible. It can also be seen in the harbours, sometimes near the locks of the canals that connect to the Danube. Use the site only as a passage and feeding area.

ROSAC0273 Zona marină de la Capul Tuzla	Description of the species and habitats possibly affected by the Neptun Deep project
Population size	5-20 individuals during the spring seasons (acc. ANANP Decision)
Quantified information on the presence of individuals	Along the border between Bulgaria and Romania, where a large group of 100 individuals was observed during the 2019 monitoring program (ACCOBAMS, 2021) The estimated population size in the western area of the Black Sea was approximately 29,000 individuals, of which 8,059 in Romanian waters (Birkun, 2014). The estimated population size in the north-western Black Sea area is approximately 29,464 individuals (ANEMONE 2021)
Population dynamics	The number of specimens observed depends on the period in which the observations take place, the platform used for the observations (observations from the boat or from fixed points in the shore area) and especially the time invested/work effort in making the observations.
The area of the species' habitat	It has not been evaluated at the site level. A target value of the parameter *Habitat area* of 4,900 ha is indicated. According to the species distribution map (Source: INCDM Grigore Antipa)
Conservation status	In the site: Good (B) acc. FS 2021, Unfavourable-grave acc. ANANP and MP decision At bioregion level: Unfavourable-Inadequate**
trend	Stable (=)**
Ecology of the species	It is a neritic species 6-200 m deep that also penetrates the Danube and lagoons (acc. PM). It is an ichthyobentophagous species, feeding on fish and invertebrates (flounder, turbot, goby, aterina, gastropods) lives alone or in small groups of 8-10 individuals. They swim along the coast and it is very difficult to get close to them and they never play in the bows of ships. (acc. Synthetic monitoring guide for marine species and coastal and marine habitats of community interest in Romania-2013) The relatively shallow coastal waters of the Black Sea constitute the typical range for the species *Phocoena phocoena* ssp. *relicta* (porpoise).
Sensitivity to the effects generated by the proposed project	Great - due to the existence within the project of several sources of noise emissions - especially in the installation area of the Neptun Alpha platform
Climate change perspectives	The impacts of climate change, such as rising sea surface temperatures, acidification of seas and oceans, and changing currents and wind patterns,

ROSAC0273 Zona marină de la Capul Tuzla	Description of the species and habitats possibly affected by the Neptun Deep project
	will significantly alter the physical and biological structure of seas and oceans * In the Black Sea, the trend of recent years reveals a warming and salinization that requires records and analyses over longer time series to confirm the trends (Lima, 2021) Threats and pressures due to climate change have not been characterized for this species.
Species name	***Tursiops truncatus***
Species location	The dolphin is present in the Romanian marine area in the warm season, on the entire surface of the continental plateau. It also enters the Danube. Use the site only as a passage and feeding area. According to the species distribution map (Source: INCDM Grigore Antipa)
Population size	5-20 individuals (acc. MP and FS 2021)
Quantified information on the presence of individuals	The size of the population in the western area of the Black Sea was estimated at approximately 26,000 specimens and in the Romanian area 6413 individuals were indicated (Birkun et al. 2014). The most recent monitoring based on aerial surveys (2019) led to estimates suggesting a rather small population size of around 18,000 (excluding Russian waters) or 42,000 (including Russian waters), confirming that Tursiops *truncatus* ssp. *ponticus* is indeed the least abundant cetacean species in the Black Sea (ACCOBAMS 2021b). Within the site, the presence of individuals was not quantified.
Population dynamics	Bottlenose dolphins have been considered the least abundant of the three Black Sea cetacean species since past studies in the 1950s or 1970s (ACCOBAMS 2021). The number of individuals observed depends on the period in which the observations take place, the platform used for the observations (observations from a boat or from fixed points on the shore) and especially the time invested/work effort in making the observations.
The area of the species' habitat	It has not been evaluated at the site level. A target value of the parameter Habitat area of 4,900 ha is indicated. According to the species distribution map (Source: INCDM Grigore Antipa)
Conservation status	In site: Medium or low preservation (C) acc. FS 2021, Unfavourable – inadequate acc. ANANP and MP decision

ROSAC0273 Zona marină de la Capul Tuzla	Description of the species and habitats possibly affected by the Neptun Deep project
	At bioregion level: Unfavourable-Inadequate**
trend	Stable (=)**
Ecology of the species	Nektonic species, predominantly benthic, approach the shore area especially in early summer. Mature specimens feed on benthic and pelagic fish, shrimp, crabs and molluscs. It can also be fed with large fish (mullet). Bottlenose dolphins are found in small, family groups of 4-10 individuals above the continental slope, and groups larger than 25 individuals are common in offshore areas. It is the most sociable towards humans and the most frequently observed. The habitat of the species is represented by the entire Black Sea basin, the Kerch Strait together with the adjacent part of the Sea of Azov, and probably (because there is no definite genetic evidence so far), the Sea of Marmara and the Bosphorus and Dardanelles straits (Birkun, 2014).
Sensitivity to the effects generated by the proposed project	Great - due to the existence within the project of several sources of noise emissions - especially in the installation area of the Neptun Alpha platform
Climate change perspectives	The impacts of climate change, such as rising sea surface temperatures, acidification of seas and oceans, and changing currents and wind patterns, will significantly alter the physical and biological structure of seas and oceans * In the Black Sea, the trend of recent years reveals a warming and salinization that requires records and analyses over longer time series to confirm the trends (Lima, 2021) Threats and pressures due to climate change have not been characterized for this species.
Species name	***Delphinus delphis***
Species location	It prefers deep water and is rarely seen in shallow water. They are mainly distributed offshore and visit shallow coastal waters following seasonal aggregations and regular migrations of their preferred prey (small pelagic fish). No data are available on the distribution of the species in the site.
Population size	It is not known on the site
Quantified information on the	5447 individuals in the Romanian waters of the Black Sea acc. ANEMONES

ROSAC0273 Zona marină de la Capul Tuzla	Description of the species and habitats possibly affected by the Neptun Deep project
presence of individuals	No quantified information is available regarding the presence of the species within the site
Population dynamics	The estimated population size in the western area of the Black Sea Basin (2019) was approximately 60,000 individuals (ACCOBAMS 2021). The number of specimens observed depends on the period during which the observations take place, the platform used for the observations (boat, ship or coastal observations) and especially the time invested/work effort in making the observations.
The area of the species' habitat	According to the species distribution map (Source: INCDM Grigore Antipa)
Conservation status	On site: not rated At bioregion level: Unfavourable-Inadequate**
Trend	Stable (=)**
Ecology of the species	*Delphinus delphis* ssp. *ponticus* from the Black Sea prefers deep waters (from a minimum of 50 m to the deepest depths of the basin) where temperatures are between 5° and 18°C (ACCOBAMS 2021). It is very sensitive to chemical and acoustic pollution. They generally group in herds of 10-15 individuals, in couples or isolated individuals. It swims very fast, reaching speeds of 50 km/h. The basic food is represented by small pelagic fish (sprat, anchovy, Black Sea sprat) and crustaceans. They perform regular migrations, being linked to the seasonal change of food. In winter, common dolphins stay near the coast of Georgia and the south-western coasts of Crimea, in wintering places of anchovies. In the summer, it moves to the north-western part of the Black Sea, where the schools of sprat are camped (acc. Synthetic monitoring guide for marine species and coastal and marine habitats of community interest in Romania)
Sensitivity to the effects generated by the proposed project	Great - due to the existence within the project of several sources of noise emissions - especially in the installation area of the Neptun Alpha platform
Climate change perspectives	The impacts of climate change, such as rising sea surface temperatures, acidification of seas and oceans, and changing currents and wind patterns, will significantly alter the physical and biological structure of seas and oceans *

ROSAC0273 Zona marină de la Capul Tuzla	Description of the species and habitats possibly affected by the Neptun Deep project
	In the Black Sea, the trend of recent years reveals a warming and salinization that requires records and analyses over longer time series to confirm the trends (Lima, 2021) Threats and pressures due to climate change have not been characterized for this species.
Species name	***Acipenser gueldenstaedtii***
Species location	According to the species distribution map (Source: INCDM Grigore Antipa) This species is widespread in the Black Sea and the Sea of Azov, present in the Caspian Sea, but absent in the Mediterranean. Being an anadromous migratory species, it enters the rivers that flow into the previously listed seas.
Population size	No population size information is available at the site
Quantified information on the presence of individuals	No quantified information is available regarding the presence of the species within the site
Population dynamics	Population dynamics within the site are unknown
The area of the species' habitat	According to the species distribution map (Source: INCDM Grigore Antipa)
Conservation status	On site: not rated At bioregion level: Unfavourable-Bad**
trend	Damage (-)**
Ecology of the species	Anadromous migratory species, enters the rivers flowing into the Black, Azov and Caspian seas to reproduce. It is a marine benthic species that, for reproduction, migrates to rivers. The spawning grounds are located in the Danube at a depth of 4-20 m, with a rocky bottom or boulders between which there are small crevasses, which provide shelter for the eggs and embryos after hatching. The fry show a preference for small oligochaete worms. Adults feed on molluscs, crustaceans and less on fish. It has a slow growth rate, reaching sexual maturity at the age of 8-12 years for males and 13-15 years for females.

ROSAC0273 Zona marină de la Capul Tuzla	Description of the species and habitats possibly affected by the Neptun Deep project
Sensitivity to the effects generated by the proposed project	This is not the case - the species does not reach the project area (acc. Species distribution map - INCDM Grigore Antipa)
Climate change perspectives	The impacts of climate change, such as rising sea surface temperatures, acidification of seas and oceans, and changing currents and wind patterns, will significantly alter the physical and biological structure of seas and oceans * In the Black Sea, the trend of recent years reveals a warming and salinization that requires records and analyses over longer time series to confirm the trends (Lima, 2021) Pressures and threats related to climate change have been characterized for this species: N01 - Temperature changes (e.g. temperature increase and extremes) due to climate change, medium pressure and threat.**
Species name	***Acipenser stellatus***
Species location	According to the species distribution map (Source: INCDM Grigore Antipa) It is an anadromous migratory species, distributed in the Black Sea, the Sea of Azov, the northern Caspian Sea and the rivers flowing into them.
Population size	No population size information is available at the site
Quantified information on the presence of individuals	No quantified information is available regarding the presence of the species within the site
Population dynamics	Population dynamics within the site are unknown
The area of the species' habitat	According to the species distribution map (Source: INCDM Grigore Antipa)
Conservation status	On site: not rated At bioregion level: Unfavourable-Bad**
trend	Damage (-)**
Ecology of the species	It is a migratory, anadromous species. The spring migration in the Danube begins in April or May, at a temperature of 8-11˚C. the second migration sometimes starts in June, usually in August and lasts until September-October. Specimens that migrate in summer-autumn are sexually

ROSAC0273 Zona marină de la Capul Tuzla	Description of the species and habitats possibly affected by the Neptun Deep project
	immature, while specimens that migrate in spring are in the reproductive phase. Reproduction takes place in the Danube, in April and May, at water temperatures of 8-15˚C. The breeding grounds are the same as for the sandpiper and tern. It leads a pelago-benthic life, regularly rising to the surface at night in search of food. It spends most of its life in the sea, at shallower depths than whiting and whiting, in the mytiloid facies zone, often approaching the shore in summer, and retreating again to deeper waters of 80-100 m in autumn m. The food of the brood in the Danube consists of larvae of chironomids, tricopters, ephemerides, crustaceans. The larger brood also begins to feed on molluscs. Adults feed on molluscs, crustaceans and fish. Sexual maturity is reached in males at 5 years and in females at 7 years.
Sensitivity to the effects generated by the proposed project	High- given the pressure/threat represented by oil and natural gas extraction activities and related infrastructure (pressure/threat code C3)
Climate change perspectives	The impacts of climate change, such as rising sea surface temperatures, acidification of seas and oceans, and changing currents and wind patterns, will significantly alter the physical and biological structure of seas and oceans * In the Black Sea, the trend of recent years reveals a warming and salinization that requires records and analyses over longer time series to confirm the trends (Lima, 2021) Pressures and threats related to climate change have been characterized for this species: N01 – Temperature changes (eg temperature increase and extremes) due to climate change, medium pressure and threat.**
Species name	***Huso huso***
Species location	It is an anadromous species, distributed in the Black, Caspian and Adriatic seas and the rivers flowing into these seas. It is frequent in the north-western part of the Black Sea, meeting in the whole sector of the Romanian coast.
Population size	No population size information is available at the site

ROSAC0273 Zona marină de la Capul Tuzla	Description of the species and habitats possibly affected by the Neptun Deep project
Quantified information on the presence of individuals	No quantified information is available regarding the presence of the species within the site
Population dynamics	Population dynamics within the site are unknown
The area of the species' habitat	According to the species distribution map (Source: INCDM Grigore Antipa)
Conservation status	On site: not rated At bioregion level: Unfavourable-Bad**
trend	Damage (-)**
Ecology of the species	It is an anadromous migratory species. Migration in the Danube begins when spring is early, as early as January or in the second half of March, at a temperature of 4-5˚C. The peak intensity of spring migration is in March or April. In May-June it stops completely and starts again in autumn, reaching the maximum intensity in October-November, after which it stops again. It is one of the largest sturgeons from us, 100-250 kg and 4-6 m long, maximum 9 m. It is a solitary species that congregates in larger groups only during the winter. Beluga chicks feed mainly on gammarids, then on other crustaceans and insect larvae. In front of the mouths of the Danube, mysidaceae and palemonids are dominant in food. Specimens longer than 20 cm begin to feed on fish. The adults feed mainly on fish (80% of the food), in the Danube on cyprinids, and in the sea on gobies, mullets, turbot, sardines, anchovies and crustaceans, molluscs and algae. During the winter, the moray eel feeds very little. In terms of longevity, the beluga holds the first place among sturgeons, living typically 30-60 years, but they can also pass over 100 years. Sexual maturity is reached at 12-14 years for males and 14-16 years for females.
Sensitivity to the effects generated by the proposed project	This is not the case - the species does not reach the project area (acc. Species distribution map - INCDM Grigore Antipa)

ROSAC0273 Zona marină de la Capul Tuzla	Description of the species and habitats possibly affected by the Neptun Deep project
Climate change perspectives	The impacts of climate change, such as rising sea surface temperatures, acidification of seas and oceans, and changing currents and wind patterns, will significantly alter the physical and biological structure of seas and oceans * In the Black Sea, the trend of recent years reveals a warming and salinization that requires records and analyses over longer time series to confirm the trends (Lima, 2021) Pressures and threats related to climate change have been characterized for this species: N01 - Temperature changes (eg temperature increase and extremes) due to climate change, medium pressure and threat.**
ROSCI0311 Canionul Viteaz	**Description of the species and habitats possibly affected by the Neptun Deep project**
Habitat name	**1170 Reefs** No information is available on the existing subtypes on the site
Habitat location	The habitat and its subtypes within the site are not mapped Presence on the site requires reconfirmation
Habitat area (ha)	5,050 ha acc. FS 2021 No subtype area information available
Conservation status	In site: Excellent (A) acc. FS 2021 At bioregion level: Unfavourable-Inadequate**
trend	Stable (=) **
Sensitivity to the effects generated by the proposed project	High- high sensitivity to toxic chemical compounds for the aquatic environment (of macrozoobenthos organisms)
Climate change perspectives	The impacts of climate change, such as rising sea surface temperatures, acidification of seas and oceans, and changing currents and wind patterns, will significantly alter the physical and biological structure of seas and oceans * In the Black Sea, the trend of recent years reveals a warming and salinization that requires records and analyses over longer time series to confirm the trends (Lima, 2021) Pressures and threats related to climate change have been characterized for this habitat type: N01 - Temperature changes (eg temperature increase

ROSAC0273 Zona marină de la Capul Tuzla	Description of the species and habitats possibly affected by the Neptun Deep project
	and extremes) due to climate change, pressure and threat of medium importance for habitat 1170 Recife.**
Habitat name	**1180 Submarine structures created by gas emissions** Subtypes: subtype 1 – Reefs with bubble emissions, subtype 2 – "Pinches"
Habitat location	It is not charted within the site
area (ha)	15,500 ha No data are available for areas of habitat subtypes 1180
Conservation status	In site: Excellent (A) acc. FS 2021 At bioregion level: Favourable**
trend	Unknown (x)**
Sensitivity to the effects generated by the proposed project	High- given the pressure/threat represented by oil and natural gas extraction activities and related infrastructure (pressure/threat code C3)
Climate change perspectives	The impacts of climate change, such as rising sea surface temperatures, acidification of seas and oceans, and changing currents and wind patterns, will significantly alter the physical and biological structure of seas and oceans * In the Black Sea, the trend of recent years reveals a warming and salinization that requires records and analyses over longer time series to confirm the trends (Lima, 2021) Threats and pressures due to climate change have not been characterized for this habitat type.
Species name	***Tursiops truncatus***
Species location	According to the species distribution map (Source: INCDM Grigore Antipa) The dolphin is present in the Romanian marine area in the warm season, on the entire surface of the continental plateau. It also enters the Danube. Use the site only as a passage and feeding area.
Population size	Very general estimate of population size within the site of 10-1,000 specimens (acc. FS 2021)
Quantified information on the	The size of the population in the western area of the Black Sea was estimated at approximately 26,000 specimens and in the Romanian area 6413 individuals were indicated (Birkun et al. 2014).

ROSAC0273 Zona marină de la Capul Tuzla	Description of the species and habitats possibly affected by the Neptun Deep project
presence of individuals	The most recent monitoring based on aerial surveys (2019) led to estimates suggesting a rather small population size of around 18,000 (excluding Russian waters) or 42,000 (including Russian waters), confirming that Tursiops *truncatus* ssp. *ponticus* is indeed the least abundant cetacean species in the Black Sea (ACCOBAMS 2021b). Within the site, the presence of individuals was not quantified.
Population dynamics	Bottlenose dolphins have been considered the least abundant of the three Black Sea cetacean species since past studies in the 1950s or 1970s (ACCOBAMS 2021). The number of individuals observed depends on the period in which the observations take place, the platform used for the observations (observations from the boat or from fixed points on the shore) and especially the time invested/work effort in making the observations.
The area of the species' habitat	It has not been evaluated at the site level. A target value of the parameter Habitat area of 35,300 ha is indicated. The habitat is represented by the Black Sea, the Kerch Strait together with the adjacent part of the Sea of Azov and probably (because there is no definite genetic evidence so far) the Sea of Marmara and the Bosphorus and Dardanelles straits (Birkun, 2014) According to the species distribution map (Source: INCDM Grigore Antipa)
Conservation status	In site: Unknown acc. FS 2021, must be clarified within 2 years from the issuance of the ANANP Note At bioregion level: Unfavourable-Inadequate**
trend	Stable (=)**
Ecology of the species	Nektonic species, predominantly benthic, approach the shore area especially in early summer. Mature specimens feed on benthic and pelagic fish, shrimp, crabs and molluscs. It can also be fed with large fish (mullet). Bottlenose dolphins are found in small, family groups of 4-10 individuals above the continental slope, and groups larger than 25 individuals are common in offshore areas. It is the most sociable towards humans and the most frequently observed.
Sensitivity to the effects generated by the proposed project	Great - due to the existence within the project of several sources of noise emissions - especially in the installation area of the Neptun Alpha platform

ROSAC0273 Zona marină de la Capul Tuzla	Description of the species and habitats possibly affected by the Neptun Deep project
Climate change perspectives	The impacts of climate change, such as rising sea surface temperatures, acidification of seas and oceans, and changing currents and wind patterns, will significantly alter the physical and biological structure of seas and oceans * In the Black Sea, the trend of recent years reveals a warming and salinization that requires records and analyses over longer time series to confirm the trends (Lima, 2021) Threats and pressures due to climate change have not been characterized for this species.

Table B.10 ROSCI0293 Costinești-23 August

ROSCI0293 Costinești-23 August	Description of the species and habitats possibly affected by the Neptun Deep project
Habitat name	**1110 Shallow submerged sandbars** Habitat subtypes: 1110-1 with the characteristic species *Zostera noltii,* 1110-7 Shallow sands bioturbated by *Arenicola* and *Callianassa* Information about all existing subtypes is not available on the site. Documentation is required (acc. ANANP Note)
Habitat location	No information is available on the location of the habitat and its subtypes, their mapping has not been done. The habitat is unevenly distributed along the entire Romanian coast and on the entire continental shelf.
Habitat area (ha)	1,220 ha acc. FS 2021 No information is available on the surfaces of habitat subtypes 1110 (acc. ANANP Note).
Conservation status	In site: Excellent (A) acc. FS 2021 At bioregion level: Unfavourable-Inadequate**
trend	Stable (=)**
Sensitivity to the effects generated by the proposed project	small

ROSCI0293 Costinești-23 August	Description of the species and habitats possibly affected by the Neptun Deep project
Climate change perspectives	The impacts of climate change, such as rising sea surface temperatures, ocean acidification and changing currents and wind patterns, will significantly alter the physical and biological structure of the sea* In the Black Sea, the trend of recent years reveals a warming and salinization that requires records and analyses over longer time series to confirm the trends (Lima, 2021) Pressures and threats related to climate change have been characterized for this habitat type: N01 - Temperature changes (eg temperature increase and extremes) due to climate change, pressure and threat of medium importance to the habitat 1110 Submerged sandbanks shallow.**
Habitat name	**1140 Sand and mud flats exposed at low tide** Habitat subtypes: 1140-1 Supralittoral sands, 1140-2 Slow-drying supralittoral detrital deposits, 1140-3 Midlittoral sands - most important from a conservation point of view, 1140-4 Midlittoral detrital accumulations
Habitat location	It is present in Romania in several places: Agigea, Tuzla, Costinești, Vama Veche acc. Approved MP of ROSAC0273; was completely destroyed in the Tuzla area in 2010 and 2011 by hydrotechnical coastal protection works It is necessary to map the habitat in the cnf site. ANANP notes
Habitat area (ha)	244 ha acc. FS 2021 No data are available on the area of each habitat subtype separately
Conservation status	In site: Excellent (A) acc. FS 2021 At bioregion level: Unfavourable-Inadequate**
trend	Trend – Deterioration (-)**
Sensitivity to the effects generated by the proposed project	small
Climate change perspectives	The impacts of climate change, such as rising sea surface temperatures, ocean acidification and changing currents and wind patterns, will significantly alter the physical and biological structure of the sea* In the Black Sea, the trend of recent years reveals a warming and salinization that requires records and analyses over longer time series to confirm the trends (Lima, 2021)

ROSCI0293 Costinești-23 August	Description of the species and habitats possibly affected by the Neptun Deep project
	Threats and pressures due to climate change have not been characterized for this habitat type.
Habitat name	**1170 Reefs** Habitat subtypes: 1170-8 with *Cystoseira* - mentioned as a conservation objective parameter for habitat 1170 Information about all existing subtypes is not available on the site. Documentation is required (acc. ANANP Note)
Habitat location	No information available. It is necessary to map the habitat and its subtypes in the site.
Habitat area (ha)	3,418 ha acc. FS 2021
Conservation status	In site: Excellent (A) Cnf. FS 2021 At bioregion level: Unfavourable-Inadequate**
trend	Stable (=)**
Sensitivity to the effects generated by the proposed project	small
Climate change perspectives	The impacts of climate change, such as rising sea surface temperatures, acidification of seas and oceans, and changing currents and wind patterns, will significantly alter the physical and biological structure of seas and oceans* In the Black Sea, the trend of recent years reveals a warming and salinization that requires records and analyses over longer time series to confirm the trends (Lima, 2021) Pressures and threats related to climate change have been characterized for this habitat type: N01 - Temperature changes (eg temperature increase and extremes) due to climate change, pressure and threat of medium importance for habitat 1170 Recife.**
Habitat name	**8330 Submerged or partially submerged sea caves**
Habitat location	No data available
Habitat area (ha)	0.3 acc. FS 2021 and a number of 3 caves
Conservation status	In the site: Good (B) cnf FS 2021 At bioregion level: Unknown **

ROSCI0293 Costinești-23 August	Description of the species and habitats possibly affected by the Neptun Deep project
trend	Not specified **
Sensitivity to the effects generated by the proposed project	Large- due to the fragility of the biotope (under the action of abiotic and biotic factors), caves can collapse even due to the action of natural environmental factors (currents, waves, storms)
Climate change perspectives	The impacts of climate change, such as rising sea surface temperatures, ocean acidification and changing currents and wind patterns, will significantly alter the physical and biological structure of the sea* In the Black Sea, the trend of recent years reveals a warming and salinization that requires records and analyses over longer time series to confirm the trends (Lima, 2021) Threats and pressures due to climate change have not been characterized for this habitat type.
Species name	***Alosa immaculata***
Species location	According to the species distribution map (Source: INCDM Grigore Antipa) Using the site as a transit area for migration
Population size	Undefined (acc. ANANP Note) Unquantified in FY 2021
Quantified information on the presence of individuals	The presence of juveniles in the catch in scientific beach seine fishing: ≥ 3 individuals/tonne (acc. ANANP decision)
Population dynamics	No data are available regarding the dynamics of the species in the site
The area of the species' habitat	According to the species distribution map (Source: INCDM Grigore Antipa) Not evaluated within the site and must be defined within 3 years from the issuance of the ANANP Note
Conservation status	In the site: Good (B) acc. FS 2021 At bioregion level: Unfavourable-Inadequate **
trend	Stable (=) **
Ecology of the species	Marine, eel, migratory species. It is often found in the western part of the Black Sea. It is a Ponto-Caspian relict species.

ROSCI0293 Costinești-23 August	Description of the species and habitats possibly affected by the Neptun Deep project
	The food consists, in proportion of 70-75% of fish, in sea-anchovies, shad, sprat, and in freshwater cyprinids, the rest consists of crustaceans- *Crangon, Upogebia, Idothea* and gammarids.
Sensitivity to the effects generated by the proposed project	small
Climate change perspectives	The impacts of climate change, such as rising sea surface temperatures, acidification of seas and oceans, and changing currents and wind patterns, will significantly alter the physical and biological structure of seas and oceans * In the Black Sea, the trend of recent years reveals a warming and salinization that requires records and analyses over longer time series to confirm the trends (Lima, 2021) Pressures and threats related to climate change have been characterized for this species: N01 - Temperature changes (eg temperature increase and extremes) due to climate change, pressure and threat of high importance/impact.**
Species name	***Alosa tanaica***
Species location	The species is present along the Black Sea coast for most of the year. In the Black Sea it is widespread in the western part, on the Romanian, Bulgarian, Russian, Ukrainian and Anatolian coasts. It enters the Danube as far as Porțile de Fier II. It also occurs in the Sea of Azov and the Caspian Sea (Tiganov, 2013) According to the species distribution map (Source: INCDM Grigore Antipa)
Population size	Unquantified in FY 2021 Undefined acc. ANANP note
Quantified information on the presence of individuals	The presence of juveniles in the catch in scientific beach seine fishing: ≥ 3 individuals/tonne (acc. ANANP decision)
Population dynamics	No data available
The area of the species' habitat	According to the species distribution map (Source: INCDM Grigore Antipa)

ROSCI0293 Costinești-23 August	Description of the species and habitats possibly affected by the Neptun Deep project
	Not evaluated within the site and must be defined within 3 years from the issuance of the ANANP Note
Conservation status	In the site: Good (B) acc. FS 2021 At bioregion level: Unfavourable- Inadequate**
trend	Stable (=)
Ecology of the species	Thermophilic species that prefers shallow waters. It winters in the sea, it appears in the spring near the coast, it does not form pure shoals, but in a mixture with other shoals. Some of the individuals enter the Danube, the others stay at the mouths of the Danube. Reproduction takes place in late April - early June. The withdrawal of juveniles and adults to the sea takes place between August and September.
Sensitivity to the effects generated by the proposed project	small
Climate change perspectives	The impacts of climate change, such as rising sea surface temperatures, acidification of seas and oceans, and changing currents and wind patterns, will significantly alter the physical and biological structure of seas and oceans * In the Black Sea, the trend of recent years reveals a warming and salinization that requires records and analyses over longer time series to confirm the trends (Lima, 2021) Pressures and threats related to climate change have been characterized for this species: N01 - Temperature changes (eg temperature increase and extremes) due to climate change, pressure and threat of high importance/impact. **
Species name	***Tursiops truncatus***
Species location	The dolphin is present in the Romanian marine area in the warm season, on the entire surface of the continental plateau. It also enters the Danube. It probably uses the site only as a passage and feeding area. There are no data on the location of the species in the site.
Population size	20-200 individuals (acc. FS 2021)

ROSCI0293 Costinești-23 August	Description of the species and habitats possibly affected by the Neptun Deep project
Quantified information on the presence of individuals	The size of the population in the western area of the Black Sea was estimated at approximately 26,000 specimens and in the Romanian area 6413 individuals were indicated (Birkun et al. 2014). The most recent monitoring based on aerial surveys (2019) led to estimates suggesting a rather small population size of around 18,000 (excluding Russian waters) or 42,000 (including Russian waters), confirming that Tursiops *truncatus* ssp. *ponticus* is indeed the least abundant cetacean species in the Black Sea (ACCOBAMS 2021b). Within the site, the presence of individuals was not quantified.
Population dynamics	Bottlenose dolphins have been considered the least abundant of the three Black Sea cetacean species since past studies in the 1950s or 1970s (ACCOBAMS 2021). The number of individuals observed depends on the period in which the observations take place, the platform used for the observations (observations from the boat or from fixed points on the shore) and especially the time invested/work effort in making the observations.
The area of the species' habitat	In ANANP Note no. 375/20.01.2022, a target value of the Habitat surface parameter of 4,800 ha is indicated, using the entire surface of the site. The habitat is represented by the Black Sea, the Kerch Strait together with the adjacent part of the Sea of Azov and probably (because there is no definite genetic evidence so far) the Sea of Marmara and the Bosphorus and Dardanelles straits (Birkun, 2014) According to the species distribution map (Source: INCDM Grigore Antipa)
Conservation status	In site: excellent (A) acc. FS 2021 At bioregion level: Unfavourable-Inadequate**
trend	Stable (=)**
Ecology of the species	Nektonic species, predominantly benthic, approach the shore area especially in early summer. Mature specimens feed on benthic and pelagic fish, shrimp, crabs and molluscs. It can also be fed with large fish (mullet). Bottlenose dolphins are found in small, family groups of 4-10 individuals above the continental slope, and groups larger than 25 individuals are common in offshore areas. It is the most sociable towards humans and the most frequently observed.
Sensitivity to the effects generated	Great - due to the existence within the project of several sources of noise emissions - especially in the installation area of the Neptun Alpha platform

ROSCI0293 Costinești-23 August	Description of the species and habitats possibly affected by the Neptun Deep project
by the proposed project	
Climate change perspectives	The impacts of climate change, such as rising sea surface temperatures, acidification of seas and oceans, and changing currents and wind patterns, will significantly alter the physical and biological structure of seas and oceans * In the Black Sea, the trend of recent years reveals a warming and salinization that requires records and analyses over longer time series to confirm the trends (Lima, 2021) Threats and pressures due to climate change have not been characterized for this species.
Species name	***Phocoena phocoena***
Species location	In the Romanian area of the Black Sea, populations are concentrated near the coast, where food is more abundant and accessible. It can also be seen in the harbours, sometimes near the sea lock gates in the canals that connect to the Danube. Use the site only as a passage and feeding area. There are no data on the location of the species in the site.
Population size	10- 50 individuals (acc. FS 2021)
Quantified information on the presence of individuals	Along the border between Bulgaria and Romania, where a large group of 100 individuals was observed during the 2019 monitoring program (ACCOBAMS, 2021) The estimated population size in the western area of the Black Sea was approximately 29,000 individuals, of which 8,059 in Romanian waters (Birkun, 2014). The estimated population size in the north-western Black Sea area is approximately 29,464 individuals (ANEMONE 2021)
Population dynamics	The number of specimens observed depends on the period in which the observations take place, the platform used for the observations (observations from a boat or from fixed points in the shore area) and especially on the time invested/work effort in making the observations.
The area of the species' habitat	In ANANP Note no. 375/20.01.2022 a target value of the parameter Habitat area of 4,800 ha is indicated, using the entire area of the site. The relatively shallow coastal waters of the Black Sea constitute the typical range for the species *Phocoena phocoena* ssp. *relicta* (porpoise).

ROSCI0293 Costinești-23 August	Description of the species and habitats possibly affected by the Neptun Deep project
	According to the species distribution map (Source: INCDM Grigore Antipa)
Conservation status	In site: Excellent (A) acc. FS 2021 At bioregion level: Unfavourable-Inadequate**
trend	Stable (=)**
Ecology of the species	It is a neritic species 6-200 m deep that also penetrates the Danube and lagoons (acc. PM). It is an ichthyobentophagous species, feeding on fish and invertebrates (flounder, turbot, gobies, atherine, and gastropods) lives alone or in small groups of 8-10 individuals. They swim along the coast and it is very difficult to get close to them and they never play in the bows of ships. (acc. Synthetic monitoring guide for marine species and coastal and marine habitats of community interest in Romania-2013)
Sensitivity to the effects generated by the proposed project	Great - due to the existence within the project of several sources of noise emissions - especially in the installation area of the Neptun Alpha platform
Climate change perspectives	The impacts of climate change, such as rising sea surface temperatures, acidification of seas and oceans, and changing currents and wind patterns, will significantly alter the physical and biological structure of seas and oceans * In the Black Sea, the trend of recent years reveals a warming and salinization that requires records and analyses over longer time series to confirm the trends (Lima, 2021) Threats and pressures due to climate change have not been characterized for this species.

*https://climate.ec.europa.eu/climate-change/consequences-climate-change_ro

**acc. Reporting based on Article 17 of the Habitats Directive-2001-2018

Table B.11 ROSPA0076 Marea Neagră

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
Species name	***Anas penelope* (syn. *Mareca penelope*)**
Species location	In the site: On the surface of the entire site acc. database MP ROSPA0076 In the area of influence of the project: 2014-2015- was observed (acc. database MP ROSPA0076); 2018-2019- was observed (Neptun Deep project database); 2023- not observed

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
Population size	In the site: acc. FS 1,200-1,500 individuals in passage At national level: wintering: 588-6,874 individuals, migration/passage: 40,000-80,000 specimens (acc. SOR&Milvus, 2022)
Quantified information on the presence of individuals	Acc. of MP database records ROSPA0076: 25 individuals in spring migration/in the project area Acc. records from the Neptun Deep project database: 8 records with a no. of 4-153 individuals in 2018-2019; 0 records in 2023
Population dynamics	No data are available regarding the dynamics of the wintering population in the site. In the period 2013-2018, the number of individuals in the wintering period at the national level was estimated at a minimum of 588 and a maximum of 6,874 individuals
The area of the species' habitat	No information available in approved MP of ROSPA0076; the most intensively used area is generally the coastal area near the shore.
Conservation status	In the site: Good (B) acc. FS 2021 At the level of the bioregion: it has not been evaluated
trend	In site: unknown Within the Natura 2000 network: Short-term trend in population size: Unknown (X); long-term trend in population size: Unknown (X)* Nationwide: population trend is currently unknown**
Ecology of the species	Phenology: The species does not nest in Romania, being present only in the cold half of the year, during the passage and wintering period. It appears starting from August-September and is present until March-April. Habitats: During the nesting period, they prefer swamps, lakes and lagoons in boreal forests and tundra areas. Outside of the breeding season it occurs on most types of backwaters and in coastal areas. Food: The species feeds mainly on plants, consuming leaves, stems, roots, rhizomes and seeds of aquatic plants and those in marshy habitats. It also feeds on invertebrates, especially in the first days after hatching, the chicks feed mainly on diptera, gradually switching to a vegetable diet. Reproduction: The breeding period starts from April to June, this being variable depending on the latitude. It lays 1-2 clutches per year, consisting of 6 - 12 eggs, which are incubated by the female for 24 - 25 days. The chicks are capable of flight 40 - 45 days after hatching, still partially cared for by the

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
	female. The nest is built in a hollow in the ground, of grass and branches and lined with a thick layer of down. Does not nest in ROSPA0076. Activity: daytime
Sensitivity to the effects generated by the proposed project	Small - because the risk of collision is low; it does not frequently use offshore marine habitats but mainly the shore area
Climate change perspectives	Among the main pressures and threats to the species are climate change causing droughts and reduced rainfall *
Species name	***Anas platyrhynchos***
Species location	In the site: On the surface of the entire site acc. database MP ROSPA0076 In the area of influence of the project: 2014-2015- was observed (acc. database MP ROSPA0076); 2018-2019- was observed (Neptun Deep project database); 2023- was observed (Neptun Deep project database);
Population size	In the site: acc. FS 7,000-9,000 individuals (wintering) Nationally: in winter: 54,397-228,791 specimens (acc. SOR&Milvus, 2022)
Quantified information on the presence of individuals	Acc. records from the database of MP ROSPA0076: 1-48 individuals/in the project area Acc. records from the Neptun Deep project database: 20 records with a no. of 3-2,000 individuals in 2018-2019; 1 record with a no. of 2 individuals in 2023
Population dynamics	No data are available regarding the dynamics of the wintering population in the site. In the period 2013-2018, the number of individuals in the wintering period at the national level was estimated at a minimum of 54,397 and a maximum of 228,791 individuals
The area of the species' habitat	No information available in MP of ROSPA0076. The most intensively used area is generally the coastal area near the shore.
Conservation status	In the site: Good (B) acc. FS 2021 At the level of the bioregion: it has not been evaluated
trend	In site: unknown Within the Natura 2000 network: Short-term population size trend: Stable (0)*; long-term trend in population size: Increasing (+)

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
	Nationwide: population trend is currently unknown**
Ecology of the species	Phenology: In autumn and winter they gather in large groups on water surfaces that do not freeze, the number of specimens is greater, being supplemented by northern ducks that come to spend the winter in Romania. Habitats: In the winter season it gathers in large numbers, on open water surfaces, at first much more dispersed, and then, concentrated on those surfaces that do not freeze (generally large dam lakes). Food: Mallard is omnivorous and opportunistic. It feeds both on the surface of the water, searching with its beak for aquatic plants or invertebrates (insects, molluscs, crustaceans and occasionally small fish) in muddy areas or shallow water, and on land with plant or invertebrate material that it can catch. Reproduction: The breeding period can start early, as early as February, and egg laying takes place from the second part of March to the beginning of April. The female usually lays 9-13 eggs, which the male incubates alone, sometimes defending the territory. Incubation lasts 26-28 days. Chicks become fliers at 50-60 days. Birds nest singly, sometimes in loose groups, placing the nests several meters apart. The nests are located near the water, directly on the ground, hidden in the vegetation; sometimes it can also nest in hollows or on buildings. Does not nest in ROSPA0076. Activity: daytime
Sensitivity to the effects generated by the proposed project	Small - because the risk of collision is low; it does not frequently use offshore marine habitats but mainly the shore area
Climate change perspectives	There are no references to the pressures and threats caused by climate change on the populations of the species*
Species name	***Anas strepera* (syn. *Mareca strepera*)**
Species location	In the site: in the northern unit of the site - acc. database MP ROSPA0076 In the area of influence of the project: 2014-2015- it was not observed; 2018-2019- was observed (Neptun Deep project database); 2023- not observed
Population size	In the site: acc. FS 340-410 individuals (winter) Nationally: during the passage: 20,000-50,000 individuals; in winter: 605-4,796 specimens (acc. SOR&Milvus, 2022)

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
Quantified information on the presence of individuals	Acc. of records from the database of MP ROSPA0076: 0 individuals/in the project area Acc. records from the Neptun Deep project database: 5 records with a no. of 2-108 individuals in 2018-2019; 0 records in 2023
Population dynamics	No data available
The area of the species' habitat	No information available in MP of ROSPA0076. The most intensively used area is generally the coastal area near the shore.
Conservation status	In the site: Good (B) acc. FS 2021 At the level of the bioregion: it has not been evaluated
trend	The lack of trend data for passage populations makes it difficult to assess these populations. For this reason these populations remain unassessed until trend data are available. (acc. Annex to the Order of the Minister of Environment, Water and Forests no. 2.015/2022 regarding the approval of the national red list of bird species in Romania)
Ecology of the species	Phenology: During the cold period of the year, there is a numerical increase based on the influx of northern specimens (migrating or wintering here). Habitats: During the period of migration and wintering, it uses all the wide water basins with stagnant water in the hill and plain areas. Food: The mottled duck feeds mainly on seeds, leaves and roots of aquatic plants and from the proximity of wet habitats, occasionally also on land, in the cold period consuming mostly submerged plants. They also consume aquatic invertebrates, especially in the first weeks after hatching. Reproduction: The reproduction period starts from April-May. The clutch consists of 5 - 15 eggs (usually 8 - 12 eggs) which are incubated by the female for 21 - 27 days. Chicks are capable of flight 48 - 63 days after hatching. It nests in solitary pairs or in groups, the cubes being spread out. The nest is built on land, in dense vegetation, from grass, leaves and down. In the case of this species, both intraspecific and interspecific nidicolous parasitism is proven, a phenomenon that occurs in several species of ducks. Does not nest in ROSPA0076. Activity: in the evening or during the night
Sensitivity to the effects generated by the proposed project	Small - because the risk of collision is low; it does not frequently use offshore marine habitats but mainly the shore area

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
Climate change perspectives	There are no references to the pressures and threats caused by climate change on the populations of the species*
Species name	***Aythya ferina***
Species location	In the site: On the surface of the entire site acc. database MP ROSPA0076 In the area of influence of the project: 2014-2015- was observed (acc. database MP ROSPA0076); 2018-2019- was not observed; 2023- not observed
Population size	In the site: acc. FS 18,000-20,000 individuals (wintering) Nationally: in winter: 14,549-35,738 specimens (acc. SOR&Milvus, 2022)
Quantified information on the presence of individuals	Acc. records from the database of MP ROSPA0076: 2 records with a no. of 12-22 individuals/in the project area
Population dynamics	The European population has suffered a considerable decline in recent years, which led the IUCN (International Union for Conservation of Nature) to classify the species as threatened (Vulnerable category).
The area of the species' habitat	No information available in MP of ROSPA0076. The most intensively used area is generally the coastal area near the shore.
Conservation status	In the site: Good (B) acc. FS 2021 At the level of the bioregion: it has not been evaluated
Tendency	In site: unknown Within the Natura 2000 network: Short-term trend in population size: unknown (X)*; Nationwide: population trend is currently unknown**
Ecology of the species	Phenology: During the cold period of the year, the species is present on most aquatic surfaces (less so on flowing waters), with an influx of individuals from the north of the distribution. Habitats: Outside the nesting period it is a bit picky, being observed on most aquatic surfaces. Food: The chestnut-headed duck is omnivorous, the vegetable food being composed of roots, seeds, various parts of aquatic or swamp plants, and the animal food, from: aquatic insects and their larvae, molluscs, crustaceans, worms, amphibians and small fish.

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
	Reproduction: The breeding season begins in April/ May. It lays an average of 8 - 10 eggs (3 - 22 eggs), which are incubated for 24 - 28 days. Nests containing more than 15 eggs are probably a result of nidicolous parasitism. Chicks are capable of flight after 50 - 55 days. It nests solitary or colonially, sometimes in mixed colonies with the Laughing Gull, its presence conferring a degree of protection against predators (corvids, mustelids, etc.). Activity: daytime
Sensitivity to the effects generated by the proposed project	Small - because the risk of collision is low; it does not frequently use offshore marine habitats but mainly the shore area
Climate change perspectives	Among the main pressures and threats of medium importance to the species are climate change causing droughts and reduced rainfall *
Species name	***Aythya fuligula***
Species location	In the site: On the surface of the entire site acc. database MP ROSPA0076 In the area of influence of the project: 2014-2015- was observed (acc. database MP ROSPA0076); 2018-2019- was not observed; 2023- not observed
Population size	In the site: acc. FS 6,300-7,450 individuals (winter) Nationally: in winter: 9,219-17,800 specimens (acc. SOR&Milvus, 2022)
Quantified information on the presence of individuals	Acc. records from the database of MP ROSPA0076: 1 record with a no. of 1 copy/in the project area
Population dynamics	No data are available regarding the dynamics of the wintering population in the site. In the period 2013-2018, the number of individuals in the wintering period at the national level was estimated at a minimum of 9,219 and a maximum of 17,800 individuals
The area of the species' habitat	No information available in MP of ROSPA0076. The most intensively used area is generally the coastal area near the shore.
Conservation status	In the site: Good (B) acc. FS 2021 At the level of the bioregion: it has not been evaluated
trend	In site: unknown

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
	Within the Natura 2000 network: Short-term trend in population size: Uncertain (U)*; At the national level: the population trend is slightly increasing.**
Ecology of the species	Phenology: In autumn and over winter, gathers in large groups on non-freezing water surfaces. The number of specimens is much higher, being supplemented by northern ducks that come to spend the winter in Romania. It is a very gregarious species, during the winter gathering in flocks of several thousand individuals. Habitats: In the winter season it gathers in large numbers, on open water surfaces, at first much more dispersed, and then, concentrated on those surfaces that do not freeze (generally large dam lakes). Food: The mallard is omnivorous, but most of its diet consists of species of molluscs, crustaceans and aquatic insects, after which it dives to depths of 3 to 14 meters, where it stays for an average of 20 seconds. It also consumes plant matter, especially the fruits, seeds and buds of other aquatic or marsh plants. Reproduction: The breeding season begins in May, and egg laying takes place from the second part of May. The female usually lays 8-11 eggs, which she incubates alone. Incubation lasts 23-28 days. Chicks become fliers at 45-50 days. Birds nest singly, sometimes in loose groups, placing the nests several meters apart. Activity: daytime
Sensitivity to the effects generated by the proposed project	Small - because the risk of collision is low; it does not frequently use offshore marine habitats but mainly the shore area.
Climate change perspectives	Among the main pressures and threats of medium importance to the species are climate change causing droughts and reduced rainfall *
Species name	***Branta ruficollis***
Species location	In the site: On the surface of the entire site acc. database MP ROSPA0076 In the area of influence of the project: 2014-2015- it was not observed; 2018-2019- was observed (Neptun Deep project database); 2023- not observed
Population size	In the site: acc. approved MP 200-300 individuals (in transit) Nationally: during passages: 5,488-10,887 individuals (acc. SOR&Milvus, 2022)

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
Quantified information on the presence of individuals	Acc. of records from the database of MP ROSPA0076: 0 individuals/in the project area Acc. records from the Neptun Deep project database: 1 record with a no. of 21 individuals in flight, on the shoreline, in 2018-2019; 0 records in 2023
Population dynamics	Counts carried out over time (especially in wintering quarters) have given quite fluctuating figures. Compared to the 1990s, estimates in the 2000s showed a possible sharp decline. However, it seems that in recent years the estimates have shown a slight increase in the population in the south-east of Romania. The last estimate of the national, red-necked goose population, for the period 2013-2022, is approximately 9,915-23,641 individuals, which winter in Romania, representing approximately 42% of the global population. (acc. National Action Plan) Overall, however, the global population is in decline. *
The area of the species' habitat	According to the approved MP, the area of the habitat is 31,100 ha.
Conservation status	In the site: Favourable acc. ANANP decision At the level of the bioregion: it has not been evaluated As conservation measures, National Action Plans were developed in Bulgaria and Romania. (acc. SOR&Milvus, 2022) It currently has the worst conservation status among all goose species, being considered vulnerable, acc. the IUCN classification (acc. National Action Plan)
trend	In site: population size and habitat trend in site: Stable (0) acc. approved MP Within the Natura 2000 network: Short-term trend in population size: Unknown (X)*. At the national level: The analysis of the data in the period 1990 - 2022 shows a significant long-term decrease trend of the livestock registered in Romania, with the magnitude between - 13 and - 38 %, probably influenced by the change in climatic conditions and the population decrease at the global level. (acc. National Action Plan)
Ecology of the species	Phenology: The species does not nest in Romania, being present here only for the winter. It arrives starting in October and departs back to the nesting territories in March. Habitats: In wintering areas, it also prefers low, plain areas rich in agricultural crops.

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
	Food: In the nesting territories it feeds on plant species from the Siberian tundra, and in the wintering quarters in South-Eastern Europe especially on plant material from agricultural crops. At first they feed on corn kernels left after harvest (when available) and later on the emerged leaves of winter wheat and canola. Reproduction: The reproduction period begins in June, and egg laying takes place from the second part of the month. The female usually lays 6-7 eggs, which she incubates alone, while the male defends the territory. Incubation lasts 23-25 days. Chicks become fledged at 35-42 days. The birds nest in groups, 5-6 pairs in relative proximity. It does not reproduce in Romania. Activity: daytime
Sensitivity to the effects generated by the proposed project	Small - no risk of collision because specimens of the species fly across the project area at sufficiently high altitudes; does not use the marine area within the ANPIC as a resting habitat, nor its land area as a feeding, resting and/or overnight habitat
Climate change perspectives	Among the main pressures and threats of great importance, both inside and outside the Member States, to the species are climate changes causing droughts and decreases in precipitation * Climate change as the main threat has a degree of intensity assessed as "essential" in the National Action Plan. Climate change has large-scale effects on the population of this species by influencing nesting, migration and wintering. Global warming and the movement of the northern limit of the taiga towards the tundra will lead to a reduction in the nesting habitat of the red-necked goose. Climate change can cause shifts and discrepancies in the phenology of plant species by influencing the overall ecological conditions in different parts of the species' range. The survival of the species will depend on its ability to rapidly adapt to these changes. The climate model for the red-necked goose projects a loss of nesting areas of 67% under moderate global warming by 2077 and up to 85% under extreme warming. (acc. National Action Plan) The significant reduction of precipitation, in the years 2019 and 2020, led to the temporary loss of several key areas, such as Lake Tataru, Gura Ialomiței, Lake Beibugeac, Lake Călărași and Lake Nuntași. Another aspect associated with these climate changes, especially in the autumn period, is represented by the insufficient development of wheat, barley and rape crops and the reduction of feeding areas in the winter period. (acc. National Action Plan)
Species name	***Bucephala clangula***

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
Species location	In the site: On the surface of the entire site acc. database MP ROSPA0076, mainly in the northern sector of the site In the area of influence of the project: 2014-2015- was observed (acc. database MP ROSPA0076); 2018-2019- was not observed; 2023- not observed
Population size	In the site: acc. FS 2021: 1,500-3,000 individuals (wintering) At national level: wintering population: 3,035-13,343 individuals (acc. SOR&Milvus, 2022)
Quantified information on the presence of individuals	Acc. records from the database of MP ROSPA0076: 3 records with a no. of 1-12 individuals in the project area Acc. records from the Neptun Deep project database: 0 records in 2018-2019; 0 records in 2023
Population dynamics	No data are available regarding the dynamics of the wintering population in the site. In the period 2013-2018, the number of individuals in the wintering period at the national level was estimated at a minimum of 3,035 and a maximum of 13,343 individuals
The area of the species' habitat	31,100 ha, the area most intensively used by bird species is the coastal area closest to the shore of the site.
Conservation status	Good (B) acc. FS 2021 At the level of the bioregion: it has not been evaluated
trend	In site: unknown Within the Natura 2000 network: Short-term trend in population size: Decreasing (-)*; Nationally: Decreasing (-)
Ecology of the species	Phenology: Most of the specimens present here are found in the cold period and are northern specimens that winter here. Habitats: During the winter period it can be observed on any thawed body of water. Food: It is an omnivorous species, but most of its diet consists of aquatic invertebrates (molluscs, crustaceans, and aquatic insects) or vertebrates (small fish, including eggs, amphibians). It also consumes plant matter (especially in autumn), especially fruits, seeds and buds of other aquatic or marsh plants. During winter and migrations, they mainly eat molluscs and crustaceans.

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
	Breeding: The breeding season starts in April-May, and egg laying takes place from May onwards. The female usually lays 8-11 eggs, which she incubates alone. Incubation lasts 28-32 days. They leave the nest 24-36 hours after hatching. Chicks become fliers at 45-50 days. Activity: daytime
Sensitivity to the effects generated by the proposed project	Small - because the risk of collision is low; it does not frequently use offshore marine habitats but mainly the shore area; the species prefers sheltered areas
Climate change perspectives	Among the main pressures and threats of medium importance, from within and outside member countries, to the species are climate changes causing droughts and reduced rainfall *
Species name	***Chlidonias hybridus* (syn. *Chlidonias hybrida*)**
Species location	In the site: On the surface of the entire site acc. database MP ROSPA0076 In the area of influence of the project: 2014-2015- was observed (acc. database MP ROSPA0076); 2018-2019- was not observed; 2023- was observed (Neptun Deep project database);
Population size	In the site: acc. approved MP 4,000-5,000 individuals in the passage At national level: 30,000-100,000 individuals in transit (acc. SOR&Milvus, 2022)
Quantified information on the presence of individuals	Acc. records from the database of MP ROSPA0076: 3 records with a no. of 1-8 individuals in the project area Acc. records from the Neptun Deep project database: 0 records in 2018-2019; 7 records with a no. of 2-19 specimens in migration in 2023
Population dynamics	No data are available regarding the dynamics of the wintering population in the site. The dynamics of the size of the population in the passage during 2013-2018: minimum 30,000- maximum 100,000 individuals
The area of the species' habitat	40,500 ha, acc. approved MP
Conservation status	Favourable acc. ANANP decision At the level of the bioregion: it has not been evaluated
trend	In site: Stable (0) acc. approved MP

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
	Within the Natura 2000 network: Short-term trend in population size: Unknown (X)*; Nationally: Unknown (X)*
Ecology of the species	Phenology: It is a migratory species that nests in Romania. It arrives from April and leaves for winter quarters in September - October. It is the most common and most widespread (including as nesting sites) of all the species of woodpeckers in Romania. Habitats: The species prefers wet areas at low altitudes for nesting, especially lakes in the process of siltation, lakes with abundant submerged and floating vegetation, rivers and swamps. During migration it feeds in most aquatic habitats, including marine bays. Food: The species has a varied diet, consuming terrestrial or aquatic insects, crustaceans, amphibians and small fish. Food is usually procured from the surface of the water, less often diving to capture it. Reproduction: The reproduction period, in Europe, takes place between May and June. The brood consists of 2 - 3 eggs, which are incubated for a period of 18 - 20 days. The chick leaves the nest on the first day after hatching and is capable of flight after about 23 days. They form colonies of up to 10 - 100 pairs, divided into sub-colonies, nests being placed 1 - 2 m apart from each other. Activity: daytime
Sensitivity to the effects generated by the proposed project	Small: there are no favourable habitats for the species in the terrestrial area of the project; in the offshore area of the project the species is only in transit
Climate change perspectives	Among the main pressures and threats of medium importance, within member countries, to breeding populations of the species are climate change causing droughts and reduced rainfall *
Species name	***Chlidonias niger***
Species location	In the site: On the surface of the entire site acc. database MP ROSPA0076 In the area of influence of the project: 2014-2015- was observed (acc. database MP ROSPA0076); 2018-2019- was not observed; 2023- was observed (Neptun Deep project database);
Population size	In the site: acc. approved MP 120-140 individuals in passage At national level: 20,000-80,000 individuals in transit (acc. SOR&Milvus, 2022)

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
Quantified information on the presence of individuals	Acc. records from the database of MP ROSPA0076: 1 record with a no. of 1 individual in the project area (2014-2015) Acc. records from the Neptun Deep project database: 0 records in 2018-2019; 30 records with a no. of 1-48 specimens in migration in 2023
Population dynamics	No data are available regarding the dynamics of the wintering population in the site. The dynamics of the size of the population in the passage during 2013-2018: minimum 20,000- maximum 80,000 individuals
The area of the species' habitat	90,500 ha acc. approved MP
Conservation status	Favourable acc. ANANP decision At the level of the bioregion: it has not been evaluated
trend	In site: Stable (0) acc. approved MP Within the Natura 2000 network: Short-term trend in population size: Unknown (X)*; Nationally: Unknown (X)*
Ecology of the species	Phenology: Arrives from wintering quarters in the latter part of April. For breeding, they prefer wetlands with fresh or brackish water, such as small ponds, lakes, marshes, quiet banks of canals or rivers, marshy meadows, or peatlands. It is a very sociable species, forming very large flocks during migrations. Habitats: It is characteristic in winter of coastal areas, bays and saltwater lagoons. Food: It is a species that feeds on insects, small fish and frogs. In winter, the diet consists mainly of small fish. (acc. SOR&Milvus, 2022) Reproduction: Arrives from winter quarters in the latter part of April. The female typically lays 2-3 eggs in the second part of May and the first part of June, with an average size of 35.9 x 25.3 mm. The eggs of this species are resistant when wet. Incubation lasts around 19-23 days and is provided by both partners. The chicks leave the nest a few days after hatching and are cared for by adults. They become fliers at 20-25 days. Activity: daytime
Sensitivity to the effects generated	Small: there are no favourable habitats for the species in the terrestrial area of the project; in the offshore area of the project the species is only in transit

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
by the proposed project	
Climate change perspectives	Among the main pressures and threats of medium importance, from within the member countries, to the populations of the species are climate changes causing droughts and decreases in precipitation *
Species name	***Cygnus cygnus***
Species location	In the site: On the surface of the entire site acc. database MP ROSPA0076 In the area of influence of the project: 2014-2015- it was not observed; 2018-2019- was not observed; 2023- was not observed;
Population size	In the site: acc. approved MP 1,000-1,500 individuals in winter Nationally: 1,021-3,653 individuals in winter, and during passages between 2,000 and 5,000 specimens can be observed. (acc. SOR&Milvus, 2022)
Quantified information on the presence of individuals	Acc. of records from the database of MP ROSPA0076: 0 records in the project area (2014-2015) Acc. records from the Neptun Deep project database: 0 records in 2018-2019; 0 records in 2023
Population dynamics	No data are available regarding the dynamics of the wintering population in the site. The dynamics of the size of the wintering population in the period 2013-2018: minimum 1,021- maximum 3,653 individuals
The area of the species' habitat	62,200 ha acc. approved MP
Conservation status	Favourable acc. ANANP decision At the level of the bioregion: it has not been evaluated
trend	In site: Stable (0) acc. approved MP Within the Natura 2000 network: Short-term trend in population size: Uncertain (U)*; Nationally: Uncertain (U)*
Ecology of the species	Phenology: The species does not nest in Romania, being present here only for the winter. It arrives beginning in late October and departs back to nesting territories in February or early March. Habitats: In the nesting areas they prefer islands or lake shores rich in vegetation, marshes or riverbanks for nesting. In wintering areas, they also

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
	prefer low-lying, lowland areas with open unfrozen bodies of water (for resting) and agricultural areas or open natural habitats (for feeding). Food: It is an almost mostly vegetarian species, feeding on aquatic (including submerged) and marsh plants. In addition, it consumes grass and agricultural plants (including seeds), especially in winter. Young birds, still in breeding areas, frequently consume invertebrates (aquatic insects, clams, worms, snails, tadpoles, etc.). Breeding: The breeding season starts in late April / early May. The female usually lays 4-5 eggs, which she incubates alone, while the male defends the territory. Incubation lasts 31-42 days. Chicks become fledged at approx. 87 days. Pairs nest in isolation, in well-defined and defended territories (including against other species, such as geese). Activity: daytime
Sensitivity to the effects generated by the proposed project	Small: not observed during wintering and passage in the project area
Climate change perspectives	Among the main pressures and threats of great importance, from within and outside member countries, to the populations of the species are climate changes causing droughts and decreases in precipitation *
Species name	***Fulica atra***
Species location	In the site: On the surface of the entire site acc. database MP ROSPA0076 In the area of influence of the project: 2014-2015- it was not observed; 2018-2019- was observed (Neptun Deep project database); 2023- was not observed;
Population size	In the site: acc. FS 2021: 25,000-40,000 individuals (winter) At national level: 78,773-134,561 individuals in winter (acc. SOR&Milvus, 2022)
Quantified information on the presence of individuals	Acc. of records from the database of MP ROSPA0076: 0 records in the project area (2014-2015) Acc. records from the Neptun Deep project database: 6 records with a no. of 2-450 resting/feeding specimens in 2018-2019; 0 records in 2023
Population dynamics	No data are available regarding the dynamics of the wintering population in the site. The dynamics of the size of the wintering population in the period 2013-2018: minimum 78,773- maximum 134,561 individuals*

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
The area of the species' habitat	31,100 ha, the area most intensively used by bird species is the coastal area closest to the shore of the site.
Conservation status	Good (B) acc. FS 2021 At the level of the bioregion: it has not been evaluated
trend	In site: unknown Within the Natura 2000 network: Short-term trend in population size: Stable (S) *; Nationally: Stable (S) *
Ecology of the species	Phenology: During the passage and wintering period, agglomerations of individuals appear within the aquatic surfaces, there is an influx of individuals from the northern populations, the population numbers in the cold periods depending a lot on the degree of ice cover of the aquatic habitats. Habitats: The species is present in most aquatic habitats, preferring those with stagnant or smoothly flowing water, shallow, with abundant submerged vegetation and marsh vegetation. During the nesting period it may also use flooded areas or temporary wet habitats. Food: It is an omnivorous species, preferring mostly aquatic plants and their seeds, as well as other plant material belonging to plants in the vicinity of aquatic habitats. Food of animal origin consists of invertebrates that live in the aquatic environment, but also fish, amphibians, micro mammals, small birds and their eggs. Reproduction: The breeding period takes place between February and September, more concentrated between March and July. The clutch consists of 1 - 14 eggs, hatched by both partners for a period of 21 - 26 days.
Sensitivity to the effects generated by the proposed project	Small: preferentially uses cells of beaches sheltered by breakwaters and harbour enclosures that attenuate the strength of waves and currents
Climate change perspectives	No pressures and threats have been characterized for this species, neither those from natural causes such as climate change nor those of anthropogenic nature.*
Species name	***Gavia arctica***
Species location	In the site: On the surface of the entire site acc. database MP ROSPA0076 In the area of influence of the project: 2014-2015- was observed (acc. MP database); 2018-2019- was observed (Neptun Deep project database); 2023- was observed (Neptun Deep project database);

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
Population size	In the site: acc. approved MP 230-300 individuals (wintering) At national level: 17-219 individuals in winter (acc. SOR&Milvus, 2022)
Quantified information on the presence of individuals	Acc. records from the database of MP ROSPA0076: 3 records of 1 copy each in the project area (2014-2015) Acc. records from the Neptun Deep project database: 2 records of 1 copy each in 2018-2019; 10 records with a no. of 1-2 individuals in 2023
Population dynamics	No data are available regarding the dynamics of the wintering population in the site. The dynamics of the size of the wintering population in the period 2013-2018: minimum 17 - maximum 219 individuals*
The area of the species' habitat	105,100 ha acc. approved MP
Conservation status	Favourable acc. ANANP decision At the level of the bioregion: it has not been evaluated
trend	In site: Stable (0) acc. approved MP Within the Natura 2000 network: Short-term trend in population size: Uncertain (U) *; Nationally: Stable (S) *
Ecology of the species	Phenology: The species does not nest in Romania, being present only in the cold season. It winters singly or in small groups on the remaining thawed inland waters and in the coastal area of the Black Sea. It is the most common diving species that winters here. Habitats: Nests in areas with deep lakes rich in fish, often with islands or peninsulas with rich vegetation, which it uses for nesting. During the winter it can be present on any body of water left thawed, especially reservoirs or the coastal area; occasionally also winters on large slow-flowing river courses. Food: Predominantly ichthyophage species, but also consumes amphibians, invertebrates (crustaceans, molluscs) or eggs. They also occasionally consume plant matter. Reproduction: The breeding season begins in April. The female usually lays 1-3 eggs. Incubation lasts 28-30 days. Chicks become fliers at about 60-65 days. Activity: daytime

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
Sensitivity to the effects generated by the proposed project	Medium: During the construction of the gas pipeline some individuals will avoid the water sheen in the work areas, but after the work is completed the habitat will be used as before the implementation of the project
Climate change perspectives	Among the main pressures and threats of great importance, both inside and outside the member countries, on the populations of the species are climate changes that cause droughts and decreases in precipitation *
Species name	***Gavia stellata***
Species location	In the site: On the surface of the entire site acc. database MP ROSPA0076 In the area of influence of the project: 2014-2015- was observed (acc. MP database); 2018-2019- was not observed; 2023- was not observed;
Population size	In the site: acc. approved MP 100-200 individuals (wintering) At national level: 1-29 individuals in winter (acc. SOR&Milvus, 2022)
Quantified information on the presence of individuals	Acc. records from the database of MP ROSPA0076: 3 records of 1 copy each in the project area (2014-2015) at min. 1 km from the shoreline Acc. records from the Neptun Deep project database: 0 records in 2018-2019; 0 records in 2023
Population dynamics	No data are available regarding the dynamics of the wintering population in the site. The dynamics of the size of the wintering population in the period 2013-2018: minimum 1- maximum 29 individuals*
The area of the species' habitat	113,600 ha acc. approved MP
Conservation status	Favourable acc. ANANP decision At the level of the bioregion: it has not been evaluated
trend	In site: Stable (0) acc. approved MP Within the Natura 2000 network: Short-term trend in population size: Uncertain (U) *; Nationally: Uncertain (U) *
Ecology of the species	Phenology: The species does not nest in Romania, being present only in the cold season. It winters singly or in small groups on the remaining thawed inland waters and in the coastal area of the Black Sea. Habitats: Breeds in taiga and boreal wetlands with running or standing water (including smaller bodies of water), peat bogs or coastal areas with lakes.

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
	During the winter it can be present on any body of water left thawed, especially reservoirs or the coastal area; occasionally also winters on large slow-flowing river courses. Food: Predominantly ichthyophage species, but also consumes amphibians, invertebrates (crustaceans, molluscs) or eggs. Reproduction: The breeding season begins in May. The female usually lays 1-3 eggs. Incubation lasts about 27 days. Chicks become fliers at about 43 days. Pairs nest singly or in small, dispersed colonies. Nests are built from plant materials. The placement of nests usually takes place in more secluded areas, with slightly deep water or even on the shore, hidden in vegetation. Activity: daytime
Sensitivity to the effects generated by the proposed project	Medium: During the construction of the gas pipeline some individuals will avoid the water sheen in the work areas, but after the work is completed the habitat will be used as before the implementation of the project
Climate change perspectives	Among the main pressures and threats of great importance, both inside and outside the member countries, on the populations of the species are climate changes that cause droughts and decreases in precipitation *
Species name	***Gelochelidon nilotica***
Species location	In the site: In the northern sector of the cnf site. database MP ROSPA0076 In the area of influence of the project: 2014-2015- it was not observed; 2018-2019- was not observed; 2023- was observed (Neptun Deep project database);
Population size	In the site: acc. approved MP 320-350 individuals (in transit) At national level: 500-2,000 individuals in passage (acc. SOR&Milvus, 2022)
Quantified information on the presence of individuals	Acc. of records in the database of MP ROSPA0076: 0 records in the project area Acc. records from the Neptun Deep project database: 0 records in 2018-2019; 7 records with a no. of 1-5 individuals in 2023 (Neptun Deep project database)
Population dynamics	No data are available regarding the dynamics of the wintering population in the site. The dynamics of the size of the wintering population in the period 2013-2018: minimum 500- maximum 2000 individuals*
The area of the species' habitat	113,600 ha acc. approved MP

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
Conservation status	Excellent (A) acc. ANANP decision At the level of the bioregion: it has not been evaluated
trend	In site: Stable (0) acc. approved MP Within the Natura 2000 network: Short-term trend in population size: Unknown (X)*; Nationally: Unknown (X) *
Ecology of the species	Phenology: The nesting population in Romania is fluctuating, being estimated at 0-10 pairs; overall the European breeding population is relatively small with an increasing trend. Habitats: It is a characteristic species of brackish water lagoons and sandy shores, but also occurs on freshwater and marshy lakes.** Food: Unlike the other terns, it does not dive into the water, it dives for small fish and feeds by looking for its food on the ground as well. Catch insects in flight. It can fly to a fixed point by flapping its wings. Reproduction: Arrives from winter quarters in the latter part of April. The female typically lays three eggs in the latter part of May and early June, with an average size of 48 x 35.1 mm. Incubation lasts around 22-23 days and is provided by both partners. After hatching, the chicks leave the nest a few days later. Activity: daytime
Sensitivity to the effects generated by the proposed project	Small: very small numbers arrive in the project area, only in the passage; low risk of collision.
Climate change perspectives	There are no references to the pressures and threats caused by climate change on the populations of the species *
Species name	***Larus cachinnans***
Species location	In the site: On the surface of the entire site acc. database MP ROSPA0076 In the area of influence of the project: 2014-2015- was observed (acc. database MP ROSPA0076); 2018-2019- was not observed; 2023- not observed
Population size	In the site: acc. FS 2021: 25,000-30,000 individuals (in transit) At national level: 10,000-50,000 individuals in transit (acc. SOR&Milvus, 2022)

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
Quantified information on the presence of individuals	Acc. records from the database of MP ROSPA0076: the number of individuals observed in the project area in 2014-2015 acc. of the database of MP ROSPA0076 varies within the observations made between 1-40 Acc. records from the Neptun Deep project database: 0 records in 2018-2019; 0 records in 2023
Population dynamics	No data are available regarding the dynamics of the population passing through the site. The dynamics of the size of the wintering population in the period 2013-2018: minimum 10,000- maximum 50,000 individuals*
The area of the species' habitat	31,100 ha, the area most intensively used by bird species is the coastal area closest to the shore of the site
Conservation status	Good (B) acc. ANANP decision At the level of the bioregion: it has not been evaluated
trend	In site: unknown Within the Natura 2000 network: Short-term trend in population size: Unknown (X)*; Nationally: Unknown (X) *
Ecology of the species	Phenology: In addition to the nesting and wintering populations in our country, there are also populations in passage, with a significantly higher number compared to the first two categories. Habitats: Forms colonies both on rocks along the coasts and on islands and rocky, sandy littoral sections, headlands, sand dunes and brackish marshes along the coasts. Out of the breeding season it occurs more often in coastal areas, but also forages in agricultural areas and along large rivers. The species can be frequently observed on large garbage dumps. Food: Consumes fish, molluscs, crustaceans, insects, reptiles, small mammals, waste, even eggs or chicks. Breeding: Nests in monospecies colonies of over 8,000 pairs, or in small groups interspersed in mixed and extensive colonies. The clutch consists of 2-3 eggs and is incubated by both parents in turn for 27-31 days. The chicks leave the nest a few days after hatching, hiding in the vegetation, becoming capable of flight in 35-40 days. Activity: daytime
Sensitivity to the effects generated	Small: species adapted to human presence and anthropogenic activities

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
by the proposed project	
Climate change perspectives	Among the main pressures and threats of great importance, both inside and outside member countries, on populations of the species is climate change, which causes the location, size and/or quality of habitat to change due to climate change.*
Species name	***Larus canus***
Species location	In the site: On the surface of the entire site acc. database MP ROSPA0076 In the area of influence of the project: 2014-2015- was observed (acc. database MP ROSPA0076); 2018-2019- was observed (Neptun Deep project database); 2023- not observed
Population size	In the site: acc. FS 2021: 12,000-15,000 individuals (in transit) At national level: 5,000-15,000 individuals in passage (acc. SOR&Milvus, 2022)
Quantified information on the presence of individuals	Acc. records from the database of MP ROSPA0076: 8 records with a no. of 1-6 individuals in the project area Acc. records from the Neptun Deep project database: 4 records with a no. of 1-4 individuals in 2018-2019 (Neptun Deep project database); 0 records in 2023
Population dynamics	No data are available regarding the dynamics of the population passing through the site. The dynamics of the size of the wintering population in the period 2013-2018: minimum 5,000- maximum 15,000 individuals*
The area of the species' habitat	31,100 ha, the area most intensively used by bird species is the coastal area closest to the shore of the site
Conservation status	Good (B) acc. ANANP decision At the level of the bioregion: it has not been evaluated
trend	In site: unknown Within the Natura 2000 network: Short-term trend in population size: Unknown (X)*; Nationally: Unknown (X) *
Ecology of the species	Phenology: In Romania it occurs only in winter on the coast, in Dobrogea and along the Danube. In winter they occupy coastal habitats. Outside the nesting period it is gregarious, feeding in flocks of 100 or even more individuals.

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
	Habitats: On the coast they occupy nesting territories on rocks, islands, slopes with vegetation or gravel, sand dunes and estuaries. In rivers, they prefer tongues of land, islands and swamps. It is more common on ponds, lakes, and open areas, away from water or even on arable land. Food: Consists of worms, insects, aquatic and terrestrial invertebrates and small fish. During the spring they also consume seeds. Reproduction: Nests from May in solitary pairs or in large colonies of up to 300 pairs, made up of one or more species. It lays a single clutch per year consisting of 2-5 eggs, which are incubated by both parents for 22-28 days. Juveniles are cared for by their parents until they are 30-35 days old, when they become fliers. Activity: daytime
Sensitivity to the effects generated by the proposed project	Small: species adapted to human presence and anthropogenic activities
Climate change perspectives	Among the main pressures and threats of medium importance, both inside and outside the member countries, on the populations of the species are climate changes causing droughts and decreases in precipitation *
Species name	***Larus fuscus***
Species location	In the site: On the surface of the entire site acc. database MP ROSPA0076 In the area of influence of the project: 2014-2015- was observed (acc. database MP ROSPA0076); 2018-2019- was observed (Neptun Deep project database); 2023- was observed (Neptun Deep project database)
Population size	In the site: acc. FS 2021: 200-400 individuals (in transit) At national level: 5,000-15,000 individuals in passage (acc. SOR&Milvus, 2022)
Quantified information on the presence of individuals	Acc. records from the database of MP ROSPA0076: 3 records with a no. of 1-2 individuals in the project area Acc. records from the Neptun Deep project database: 5 records with a no. of 1-12 individuals in 2018-2019 (Neptun Deep project database); 15 records with a no. of 1-13 individuals in 2023 (Neptun Deep project database)
Population dynamics	No data are available regarding the dynamics of the population in the site.
The area of the species' habitat	31,100 ha, the area most intensively used by bird species is the coastal area closest to the shore of the site

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
Conservation status	Good (B) acc. ANANP decision At the level of the bioregion: it has not been evaluated
trend	Unknown
Ecology of the species	Phenology: It is an accidental seagull species here, being a northern species. Habitat: The nesting area is located especially on the north-western coasts of Europe, in Romania it can reach in search of milder wintering places. It winters in Africa and Southeast Asia. The distribution area is extensive including the entire coast of the North Sea, much of the coasts of the Mediterranean Sea, the Black Sea and the Caspian Sea, the north and east coasts of Africa (including inland rivers) and around the Arabian Peninsula to the north -western India (acc. Bird Life International - http://datazone.birdlife.org on 04/10/2023). Food: The species is omnivorous, but still predominantly ichthyophage. It also feeds on insects, crustaceans, worms, molluscs, seeds, fruits, eggs and even small birds. Activity: daytime
Sensitivity to the effects generated by the proposed project	Small: it is a tolerant species to human presence and activities
Climate change perspectives	There are no references to the pressures and threats caused by climate change on the populations of the species*
Species name	***Larus genei* (syn. *Chroicocephalus genei*)**
Species location	In the site: On the surface of the entire site acc. database MP ROSPA0076 In the area of influence of the project: 2014-2015- it was not observed; 2018-2019- was not observed; 2023- was observed (Neptun Deep project database)
Population size	In the site: acc. Approved MP: 1,000-1,500 individuals (in transit) At national level: 500-2,000 individuals in passage (acc. SOR&Milvus, 2022)
Quantified information on the presence of individuals	Acc. of records in the database of MP ROSPA0076: 0 records in the project area Acc. records from the Neptun Deep project database: 0 records in 2018-2019; 2 records with 1 copy each in 2023 (Neptun Deep project database)
Population dynamics	No data are available regarding the dynamics of the population passing through the site.

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
	The dynamics of the size of the wintering population in the period 2013-2018: minimum 500- maximum 2,000 individuals*
The area of the species' habitat	43,100 ha acc. approved MP
Conservation status	Favourable acc. ANANP decision At the level of the bioregion: it has not been evaluated
trend	In site: Stable (0) cnf approved MP Within the Natura 2000 network: Short-term trend in population size: Unknown (X)*; Nationally: Unknown (X) *
Ecology of the species	Phenology: In Romania it appears in migration, almost only on the shore of the Black Sea and in the lagoon area, rarely in inland waters. Habitats: Outside the breeding season, the species is found almost exclusively in coastal areas, frequenting shallow water and salt flats, but generally avoiding harbours. Food: It feeds mainly on fish (about 50% of the diet), as well as on insects and marine invertebrates. Reproduction: The species reproduces in colonies, the nests being 20-50 cm apart; large groups often divide into sub-colonies 10-50 m apart. The nest is a depression in the ground, preferably positioned on land without vegetation, but some pairs can nest in salt plants (*Salsola* or *Salicornia)*. The clutch consists of 2-3 eggs. It does not reproduce in our country. Activity: daytime
Sensitivity to the effects generated by the proposed project	Small: very small number of individuals observed in the project area; the species can only be observed in passage along the shoreline
Climate change perspectives	Among the main pressures and threats of medium importance, both inside and outside the member countries, on the populations of the species are climate changes causing droughts and decreases in precipitation*
Species name	***Larus melanocephalus* (syn. *Ichtyaetus melanocephalus)***
Species location	In the site: On the surface of the entire site acc. database MP ROSPA0076

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
	In the area of influence of the project: 2014-2015- was observed (acc. database of MP ROSPA0076); 2018-2019- was observed (Neptun Deep project database); 2023- was observed (Neptun Deep project database)
Population size	In the site: acc. Approved MP: 12,000-15,000 individuals (in transit) At national level: 20,000-40,000 individuals in transit/migration (acc. SOR&Milvus, 2022)
Quantified information on the presence of individuals	Acc. records from the database of MP ROSPA0076: 13 records with a no. of 1-15 individuals in the project area Acc. records from the Neptun Deep project database: 20 records with a no. of 2-600 individuals in 2018-2019; 69 records with a no. of 1-110 individuals in 2023
Population dynamics	No data are available regarding the dynamics of the population passing through the site. The dynamics of the size of the wintering population in the period 2013-2018: minimum 20,000- maximum 40,000 individuals*
The area of the species' habitat	107,300 ha acc. approved MP
Conservation status	Favourable acc. ANANP decision At the level of the bioregion: it has not been evaluated
trend	In site: Stable (0) acc. approved MP Within the Natura 2000 network: Short-term trend in population size: Unknown (X)*; Nationally: Unknown (X) *
Ecology of the species	Phenology: It is a migratory species in Romania, but few specimens can be observed over the winter. It migrates early, with the first more consistent sightings beginning in March. It returns to its wintering grounds towards the end of October. During the autumn migration, the southeast of Romania is transited by thousands of specimens, which stay for several months for feeding, resting and moulting, especially in the Techirghiol lake area. It easily adapts to different types of habitat; in migration it occurs in wetlands, lakes, lagoon and coastal areas, but also in agricultural areas and pastures. It is very gregarious, especially during migrations and wintering. It is a coastal species, very rarely seen offshore. Habitats: It is an aquatic species, being bound both during the nesting season and outside of it to natural water bodies, with vegetation, standing, rich in aquatic invertebrates and small fish. During the migration period, they stay

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
	in certain areas with large stagnant waters, in flocks of hundreds or thousands of specimens, for longer periods. Food: Feeds predominantly on aquatic invertebrates and small fish. Often, especially in migration, it feeds on agricultural land or meadows near the stopping places, with invertebrates but also with micro mammals or plant matter (seeds left after harvesting). Sometimes they also visit landfills. Breeding: The breeding season starts in April. Egg laying takes place starting in May, with the female usually laying 2-3 eggs, which she incubates for 23-26 days. The chicks leave the nest after 35-40 days. After hatching, the chicks remain in the colony, hidden around the nest, and are intensively fed by both parents until they become fliers, 35-40 days after hatching. Pairs usually nest colonially, with dense colonies, nests sometimes being 10 cm apart. Activity: daytime
Sensitivity to the effects generated by the proposed project	Small: it is a tolerant species to human presence and activities
Climate change perspectives	Among the main pressures and threats of high importance, within member countries, to populations of the species are climate changes causing droughts and reduced rainfall *
Species name	***Larus minutus* (syn. *Hydrocoloeus minutus*)**
Species location	In the site: On the surface of the entire site acc. database MP ROSPA0076 In the area of influence of the project: 2014-2015- was observed (acc. database of MP ROSPA0076); 2018-2019- was observed (Neptun Deep project database); 2023- was observed (Neptun Deep project database)
Population size	In the site: acc. Approved MP: 10,000-12,000 individuals (in transit) Nationally: 20,000-40,000 individuals in transit/migration (acc. SOR&Milvus, 2022)
Quantified information on the presence of individuals	Acc. records from the database of MP ROSPA0076: 5 records with a no. of 1-2 individuals in the project area Acc. records from the Neptun Deep project database: 1 record with a no. by 1 individual in 2018-2019; 1 record with a no. of 1 copy in 2023
Population dynamics	No data are available regarding the dynamics of the population passing through the site. The dynamics of the size of the wintering population in the period 2013-2018: minimum 20,000- maximum 40,000 individuals*

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
The area of the species' habitat	102,900 ha acc. approved MP
Conservation status	Favourable acc. ANANP decision At the level of the bioregion: it has not been evaluated
trend	In site: Stable (0) acc. approved MP Within the Natura 2000 network: Short-term trend in population size: Unknown (X)*; Nationally: Unknown (X) *
Ecology of the species	Phenology: In Romania, the species appears during migration and as a winter guest, especially on the shore of the Black Sea and in the lagoon area, but it can also be observed (in relatively small numbers) in the interior of the country, on lakes, ponds and rivers. Groups of thousands of specimens gather on Lake Techirghiol to moult, before leaving for migration to the wintering grounds. Habitats: Species characteristic of wetlands represented by lakes rich in reeds, marshes or lagoon coasts with brackish or marine water. Food: The species is predominantly insectivorous, consuming dragonflies, beetles, midges, plecopters, etc. During the migration period, the diet is similar to that in the nesting territories, i.e. it is based on insects, but during the winter it changes, being mainly composed of marine invertebrates and small fish. Reproduction: The species nests in colonies or sub-colonies with distances between nests of 1-1.5 m, but also in pairs spread over greater distances. The clutch consists of 2-3 eggs, which are incubated by both parents for 23-25 days. Activity: daytime
Sensitivity to the effects generated by the proposed project	Small: it is a tolerant species to human presence and activities
Climate change perspectives	Among the main pressures and threats of medium importance, within member countries, to populations of the species are climate changes causing droughts and reduced precipitation *
Species name	***Larus ridibundus* (syn. *Chroicocephalus ridibundus*)**
Species location	In the site: On the surface of the entire site acc. database MP ROSPA0076

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
	In the area of influence of the project: 2014-2015- was observed (acc. database of MP ROSPA0076); 2018-2019- was observed (Neptun Deep project database); 2023- was observed (Neptun Deep project database)
Population size	In the site: acc. FS 2021: 20,000-50,000 individuals (in transit) At national level: 100,000-300,000 individuals in transit (acc. SOR&Milvus, 2022)
Quantified information on the presence of individuals	Acc. records from the database of MP ROSPA0076: the number of individuals observed in the project area in 2014-2015 acc. of the database of MP ROSPA0076 varies within the 119 observations made between 1- 42 Acc. records from the Neptun Deep project database: 33 records with a no. of 1-365 individuals in 2018-2019; 15 records with a no. of 2-47 individuals in 2023
Population dynamics	No data are available regarding the dynamics of the population passing through the site. The dynamics of the size of the wintering population in the period 2013-2018: minimum 100,000- maximum 300,000 individuals*
The area of the species' habitat	31,100 ha, the area most intensively used by bird species is the coastal area closest to the shore of the site.
Conservation status	Good (B) acc. ANANP decision At the level of the bioregion: it has not been evaluated
trend	In site: Unknown Within the Natura 2000 network: Short-term trend in population size: Unknown (X)*; Nationally: Unknown (X) *
Ecology of the species	Phenology: It is a sedentary species in Romania. However, it is a very mobile species outside the nesting season, dispersing over very wide areas. In winter, the movements are more extensive, seagulls arriving from other areas to spend the winter in Romania, respectively, the specimens nesting here can spend the winter in other areas. Habitats: It is an aquatic species, being associated both during the nesting season and outside of it with stagnant or slow-flowing waters, rich in aquatic invertebrates and small fish. Outside of the nesting season, specimens have very wide movements, visiting water bodies hundreds of kilometres away, including vast open water bodies (marine or oceanic).

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
	Food: The species mainly consumes insects and other invertebrates, especially related to aquatic (but also terrestrial) environments. To a lesser extent it also feeds on small fish. Like other gull species, it can be opportunistic (especially in winter), feeding at waste disposal ramps. Breeding: The breeding season starts early, sometimes in March. Egg laying takes place from April (or May), with the female usually laying 1-3 eggs, which she incubates for 22-26 days. The chicks leave the nest after 35 days. Pairs usually nest colonially, with dense colonies, nests sometimes being 1 meter apart. Activity: daytime
Sensitivity to the effects generated by the proposed project	Small: It is a widespread species and tolerant of human presence and activities
Climate change perspectives	Among the main pressures and threats of medium importance, within member countries, to populations of the species are climate changes causing droughts and reduced precipitation *
Species name	***Limosa limosa***
Species location	In the site: On the surface of the entire site acc. database MP ROSPA0076 In the area of influence of the project: 2014-2015- it was not observed (acc. database of MP ROSPA0076); 2018-2019- was not observed; 2023- not observed
Population size	In the site: acc. FS 2021: 2,000-5,000 individuals (in transit) At national level: 25,000-50,000 individuals in transit (acc. SOR&Milvus, 2022)
Quantified information on the presence of individuals	Acc. of records in the database of MP ROSPA0076: 0 records in the project area Acc. records from the Neptun Deep project database: 0 records in 2018-2019; 0 records in 2023
Population dynamics	No data are available regarding the dynamics of the population passing through the site. The dynamics of the size of the wintering population in the period 2013-2018: minimum 25,000- maximum 50,000 individuals*
The area of the species' habitat	31,100 ha, the area most intensively used by bird species is the coastal area closest to the shore of the site.

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
Conservation status	Good (B) acc. ANANP decision At the level of the bioregion: it has not been evaluated
trend	In site: Unknown Within the Natura 2000 network: Short-term trend in population size: Unknown (X)*; Nationally: Not assessed
Ecology of the species	Phenology: It is a migratory species, wintering in southern Europe and Asia, coastal and central Africa and Australia. Habitats: Preferred nesting habitats are grasslands with tall grass and soft soil, especially grasslands, hayfields, wet meadows, grassy marshes and lake edges. Outside of nesting periods, the species is found near freshwater aquatic habitats, preferring lake edges, flooded grasslands, rice paddies, marshy lagoons and estuaries, as well as saline habitats (marshes or meadows). Food: Diet is omnivorous, but prefers invertebrates such as insect larvae, annelids, polychaetes, crustaceans, spiders, fish eggs, spawn, and frog tadpoles. During migration, orthopterans predominate in their diet, while during the winter it also feeds on plant matter such as berries, seeds or rice grains. Reproduction: Nests in small colonies. The female lays a clutch of 3-6 eggs. Incubation is carried out by both parents and lasts about 22-24 days. The chicks are nestless and are warmed by their parents on cold nights. After hatching, they are led by their parents to specific feeding habitats, represented by lake edges and marshes. Chicks become fliers at 25-30 days. After the chicks fledge, adults roam foraging, but do not leave the nesting area until late October. Activity: daytime
Sensitivity to the effects generated by the proposed project	Low: very low risk of collision, extremely low numbers in the project area, the species is only in transit
Climate change perspectives	No climate change pressures and threats have been characterized for this species.*
Species name	***Mergus albellus* (syn. *Mergellus albellus*)**
Species location	In the site: In the northern sector of the cnf site. database MP ROSPA0076

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
	In the area of influence of the project: 2014-2015- it was not observed (acc. database of MP ROSPA0076); 2018-2019- was not observed; 2023- not observed
Population size	In the site: acc. Approved MP: 1,000-1,500 individuals (in transit) At national level: 2,000-4,000 individuals in passage (acc. SOR&Milvus, 2022)
Quantified information on the presence of individuals	Acc. of records in the database of MP ROSPA0076: 0 records in the project area Acc. records from the Neptun Deep project database: 0 records in 2018-2019; 0 records in 2023
Population dynamics	No data are available regarding the dynamics of the population passing through the site. The dynamics of the size of the wintering population in the period 2013-2018: minimum 2,000- maximum 4,000 individuals*
The area of the species' habitat	43,100 ha acc. approved MP
Conservation status	Favourable acc. ANANP decision At the level of the bioregion: it has not been evaluated
trend	In site: Stable (0) acc. approved MP Within the Natura 2000 network: Short-term trend in population size: Unknown (X)*; At the national level: not evaluated
Ecology of the species	Phenology: The species nests in Romania, isolated, in the Danube Delta. During the passage and wintering period there is an influx of individuals from the north of the distribution area. Habitats: Prefers freshwater aquatic habitats for nesting, such as lakes, smooth-flowing rivers, as well as backwaters, sometimes with submerged trees and forest habitats nearby. During winter and passage they occur in most aquatic habitats, including saltwater. Food: Consumes mainly invertebrates (mostly insects and their larvae), amphibians, aquatic plants (seeds, leaves and roots), as well as small fish, especially during the wintering period. Breeding: The nesting period begins in April-May in the southern part of the nesting area, but in May-June in the northern part. The clutch consists of 5 - 11 eggs, hatched by the female for 26 - 28 days. The chicks are cared for by the female and are capable of flight 10 weeks after hatching.

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
	Activity: daytime
Sensitivity to the effects generated by the proposed project	Small: presence in the project area has not been reported, it is mainly present in the northern sector of ROSPA0076
Climate change perspectives	No climate change pressures and threats have been characterized for this species.*
Species name	***Mergus merganser***
Species location	In the site: On the surface of the entire site acc. database MP ROSPA0076 In the area of influence of the project: 2014-2015- was observed (acc. database of MP ROSPA0076); 2018-2019- was not observed; 2023- was observed (Neptun Deep project database)
Population size	In the site: acc. FS 2021: 120-180 individuals (winter) At national level: 63-741 individuals in winter (acc. SOR&Milvus, 2022)
Quantified information on the presence of individuals	Acc. records in the database of MP ROSPA0076: 2 entries with a no. of 1-2 individuals observed in the project area in 2014-2015 (MP database reference ROSPA0076) Acc. records from the Neptun Deep project database: 0 records in 2018-2019; 1 record with a no. of 2 individuals observed in 2023
Population dynamics	No data are available regarding the dynamics of the population passing through the site. The dynamics of the size of the wintering population in the period 2013-2018: minimum 63- maximum 741 individuals*
The area of the species' habitat	31,100 ha, the area most intensively used by bird species is the coastal area closest to the shore of the site.
Conservation status	Good (B) acc. ANANP decision At the level of the bioregion: it has not been evaluated
trend	In site: Unknown Within the Natura 2000 network: Short-term trend in population size: Decrease (-)*; Nationally: Short-term population trend: Declining (-), long-term: Uncertain (U)*

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
Ecology of the species	Phenology: The species nests in Romania, being sedentary. In the cold period of the year there is an influx of individuals from the north of the distribution area. Habitats: During the nesting period, in Romania, the great osprey prefers deep (dam) lakes and rivers located at higher altitudes, where there are forest habitats nearby for nesting (secondary cavities in trees). In the north of the range it nests mainly in areas with large lakes, regardless of altitude, rich in fish, surrounded by mature forest habitats. Food: Consumes mainly food of animal origin, mainly small fish, aquatic invertebrates (molluscs, crustaceans, insects and their larvae), amphibians, micro mammals and birds. Consume plants in relatively small amounts. Breeding: The breeding season begins in March-April in most areas of Europe, with spawning sometimes beginning in May in Siberia and the Scandinavian Peninsula. The clutch consists of 8 - 12 eggs and are incubated by the female for 30 - 32 days. Chicks leave the nest within the first 24 hours of hatching and are capable of flight after 60 - 70 days. Activity: daytime
Sensitivity to the effects generated by the proposed project	Low: low risk of collision, only 2 individuals were observed in the project area
Climate change perspectives	No climate change pressures and threats have been characterized for this species.*
Species name	***Sawmill walk***
Species location	In the site: On the surface of the entire site acc. database MP ROSPA0076 In the area of influence of the project: 2014-2015- was observed (acc. database of MP ROSPA0076); 2018-2019- was not observed; 2023- not observed (Neptun Deep project database)
Population size	In the site: acc. FS 2021: 230-340 individuals (in transit) Nationally: 4-195 wintering individuals (acc. SOR&Milvus, 2022)
Quantified information on the presence of individuals	Acc. records from the database of MP ROSPA0076: 8 entries with a no. of 1-5 individuals observed in the project area in 2014-2015 (MP database reference ROSPA0076) Acc. records from the Neptun Deep project database: 0 records in 2018-2019; 0 records in 2023

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
Population dynamics	No data are available regarding the dynamics of the population passing through the site. The dynamics of the size of the wintering population in the period 2013-2018: minimum 4 - maximum 195 individuals*
The area of the species' habitat	31,100 ha, the area most intensively used by bird species is the coastal area closest to the shore of the site.
Conservation status	Good (B) acc. ANANP decision At the level of the bioregion: it has not been evaluated
trend	In site: Unknown Within the Natura 2000 network: Short-term trend of wintering population size: Uncertain (U)*; Nationally: Short-term population trend: Uncertain (U)*
Ecology of the species	Phenology: The species does not nest in Romania, being present during the passage and wintering period. Habitats: For nesting, the species prefers deep lakes and rivers, including estuaries, which have forest habitats nearby. During passage and wintering it also occurs on salt lagoons and in coastal areas. Food: Consumes mainly food of animal origin, mainly small fish, aquatic invertebrates (molluscs, crustaceans, insects and their larvae), amphibians, micro mammals and birds. Consume plants in relatively small quantities. Reproduction: The nesting period starts depending on the latitude, from April to June. The clutch consists of 6 - 14 eggs, incubated by the female for 28 - 35 days. Chicks are capable of flight at 59 - 69 days. Activity: daytime
Sensitivity to the effects generated by the proposed project	Small: very small numbers observed during 2014-2015 in ROSPA0076, in the project area
Climate change perspectives	No climate change pressures and threats have been characterized for this species.*
Species name	***Pelecanus crispus***
Species location	In the site: Predominantly in the northern sector of the cnf site. database MP ROSPA0076

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
	In the area of influence of the project: 2014-2015- it was not observed (acc. database of MP ROSPA0076); 2018-2019- was not observed; 2023- was observed (Neptun Deep project database)
Population size	In the site: acc. Approved MP: 70-120 individuals (in passage) At national level: 900-1,500 in passage (acc. SOR&Milvus, 2022)
Quantified information on the presence of individuals	Acc. records from the database of MP ROSPA0076: 0 entries in the project area in 2014-2015 (acc. database of MP ROSPA0076) Acc. records from the Neptun Deep project database: 0 records in 2018-2019; 4 records with a no. of 1-3 specimens observed in 2023
Population dynamics	No data are available regarding the dynamics of the population passing through the site. The dynamics of the size of the population in the passage during 2013-2018: minimum 900- maximum 1,500 individuals*
The area of the species' habitat	80,400 ha acc. approved MP
Conservation status	Favourable acc. ANANP decision At the level of the bioregion: it has not been evaluated
trend	In site: Stable (0) acc. approved MP Within the Natura 2000 network: Short-term trend in wintering population size: unknown (X)*; Nationally: Not assessed
Ecology of the species	Phenology: The species is migratory or partially migratory, although the European population is more dispersive. Birds in Romania start to leave their nesting territories, generally, starting from September, but sometimes even from mid-August. They return to the nesting area in March at the latest, with the first birds arriving in early February (acc. National Action Plan for the Curly Pelican Pelecanus *crispus)*. Habitats: Prefer for nesting habitats similar to those occupied by the common pelican, rivers, lakes, lagoons, and estuaries, nesting usually in the form of small colonies within islands or in extensive reed beds. Food: It is an ichthyophage species, generally consuming carp, redfish, perch, etc. They hunt alone or in small groups, sometimes together with groups of cormorants. Consumes approximately 1200 g of fish per day. Breeding: The nesting period begins in late March, early April. The brood consists of 1-3 eggs that are incubated for 30-34 days. Chicks are capable of

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
	flight about 85 days after hatching and are independent after 100 - 105 days. The nest is relatively large, in the form of a pile of plant material cemented with excrement. Activity: daytime
Sensitivity to the effects generated by the proposed project	Medium: During the gas pipeline installation activities, some specimens will avoid the area
Climate change perspectives	No climate change pressures and threats have been characterized for this species.*
Species name	***Phalacrocorax carbo***
Species location	In the site: On the surface of the entire site acc. database MP ROSPA0076 In the area of influence of the project: 2014-2015- was observed (acc. database of MP ROSPA0076); 2018-2019- was observed (Neptun Deep project database); 2023- was observed (Neptun Deep project database)
Population size	In the site: acc. FS 2021: 10,000-27,000 individuals (wintering) At national level: 2,815-14,153 specimens in winter (acc. SOR&Milvus, 2022)
Quantified information on the presence of individuals	Acc. records from the database of MP ROSPA0076: the number of individuals observed in the project area in 2014-2015 acc. of the MP database is very large, in the order of hundreds of individuals Acc. records from the Neptun Deep project database: 83 records with a no. of 1-300 individuals in 2018-2019; 64 records with a no. of 1-200 individuals in 2023
Population dynamics	No data are available regarding the dynamics of the wintering population in the site. The dynamics of the size of the population in the passage during 2013-2018: minimum 2,815- maximum 14,153 individuals*
The area of the species' habitat	31,100 ha, the area most intensively used by bird species is the coastal area closest to the shore of the site.
Conservation status	Good (B) acc. ANANP decision At the level of the bioregion: it has not been evaluated
trend	In site: Unknown Within the Natura 2000 network: Short-term trend of wintering population size: Uncertain (U)*;

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
	Nationally: Short-term population trend: Uncertain (U)*, long-term: Increasing (+)*
Ecology of the species	Phenology: The species nests in Romania, being sedentary. Habitats: The species nests in wetlands at low altitudes, usually with a large area, represented by a mosaic of lakes, river courses with smooth waters associated with marshy areas (with reeds), preferring for nesting trees/shrubs embedded in marshy vegetation, as well as reed bed surfaces. Outside of the nesting period, it disperses a lot and can appear in most water bodies in the distribution area (in the winter it congregates mainly on the remaining thawed river sectors). Food: It is a predominantly ichthyophage species. It eats medium-sized fish, usually in the range of 10 - 20 centimetres in length, but will also attack larger fish. Prey size varies with water temperature, with larger fish being consumed in winter. It feeds solitary or in groups, by actively following the prey. They often associate feeding with other species (such as pelicans). In addition, they also consume other types of food, such as crustaceans, amphibians, etc. Reproduction: The breeding season begins in April. The clutch consists of 2 - 6 eggs (usually 3 - 4) which are incubated for 27 - 31 days. Chicks are capable of flight approximately 50 days after hatching. The nest is constructed of twigs and lined with finer plant material, and is usually located near or above water, in trees, bushes, reeds, on the ground (rocky), or artificial structures. It usually nests in single or mixed colonies with other colonial species (mostly herons). Activity: daytime
Sensitivity to the effects generated by the proposed project	Small: common species, with large herds and adapted to human presence and anthropogenic activities
Climate change perspectives	No climate change pressures and threats have been characterized for this species.*
Species name	***Phalaropus lobatus***
Species location	In the site: It was not observed within the site, acc. database MP ROSPA0076 In the area of influence of the project: 2014-2015- it was not observed (acc. database of MP ROSPA0076); 2018-2019- was not observed; 2023- not observed (Neptun Deep project database)
Population size	In the site: acc. Approved MP: 700-1,200 individuals (in transit)

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
	Nationally: 300-500 in passage/migration (acc. SOR&Milvus, 2022)
Quantified information on the presence of individuals	Acc. records from the database of MP ROSPA0076: 0 entries in the project area in 2014-2015 (acc. database of MP ROSPA0076) Acc. records from the Neptun Deep project database: 0 records in 2018-2019; 0 records in 2023
Population dynamics	No data are available regarding the dynamics of the wintering population in the site. The dynamics of the size of the population in the passage during 2013-2018: minimum 300- maximum 500 individuals*
The area of the species' habitat	25,000 ha acc. approved MP
Conservation status	Favourable acc. ANANP decision At the level of the bioregion: it has not been evaluated
trend	In site: Stable (0) acc. approved MP Within the Natura 2000 network: Short-term trend in wintering population size: unknown (X)*; Nationally: unknown (X)*
Ecology of the species	Phenology: The shrike, also known as the thin-billed shrike, is a species characteristic of tundra areas, with shallow lakes and abundant vegetation. In migration occurs in wetlands with brackish or salt lakes.** Habitats: In Romania, the phalarope appears during the migration period, especially in the lagoon areas of Dobrogea, but it is also reported on lakes in the interior of the country, especially in the lowlands. During migration, the species frequents saline and hypersaline lakes in the interior of continents, natural or artificial freshwater lakes, tailings basins, and coastal marshes. (acc. SOR&Milvus, 2022) Food: During migration, on salt lakes, it can feed on larvae of diptera from the genus *Ephydra.* In winter, at sea, it feeds on zooplankton and other floating organic particles.. In winter, the species is predominantly pelagic, feeding at sea in areas rich in plankton. (acc. SOR&Milvus, 2022) Reproduction: The clutch usually consists of 4 eggs, but there can be even fewer. The eggs are incubated only by the male, for a period of about 20 days. The chicks are then also cared for by the male and become capable of flight 20 days after hatching. After laying the egg, not being involved in the process of incubation and feeding the young, the female can try to find another partner or, if it is too late to lay a second egg, she starts migrating.

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
	Activity: daytime
Sensitivity to the effects generated by the proposed project	Small: the species was not observed in the site ROSPA0076, the only reports are from the area of para-marine lakes in the north of the Romanian coast of the Black Sea
Climate change perspectives	Among the main pressures and threats of medium importance, within member countries, to populations of the species are climate changes causing droughts and reduced precipitation *
Species name	***Podiceps cristatus***
Species location	In the site: On the surface of the entire site acc. database MP ROSPA0076 In the area of influence of the project: 2014-2015- was observed (acc. database of MP ROSPA0076); 2018-2019- was observed (Neptun Deep project database); 2023- was observed (Neptun Deep project database)
Population size	In the site: acc. FS 2021: 4,500-6,000 individuals (in transit) At national level: no data
Quantified information on the presence of individuals	Acc. of records from the database of MP ROSPA0076: 52 records with a no. of 1-22 individuals in the project area Acc. records from the Neptun Deep project database: 7 records with a no. of 1-2 individuals in 2018-2019; 2 records with a no. of 1-2 individuals in 2023
Population dynamics	No data are available regarding the dynamics of the wintering population in the site.
The area of the species' habitat	31,100 ha, the area most intensively used by bird species is the coastal area closest to the shore of the site.
Conservation status	Good (B) acc. ANANP decision At the level of the bioregion: it has not been evaluated
trend	In site: Unknown Within the Natura 2000 network: unknown; Nationally: Short- and long-term breeding population trend: Unknown (X) for transient populations: not assessed
Ecology of the species	Phenology: The species nests in Romania, being generally sedentary. However, specimens from the northern half of the country move to southern regions for the winter, when the water bodies freeze. It arrives back at the nesting grounds early, as early as March.

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
	Habitats: the species is associated with natural aquatic habitats with rich vegetation (ponds, marshes, lake edges) where it occupies its territories in the spring when the nesting season begins. In winter, they gather in numerous groups on the surface of the frozen water bodies, especially in the south of the country and Dobrogea. Food: It is a predominantly ichthyophage species, consuming small and medium-sized fish. Additionally, they consume other aquatic, invertebrate organisms such as insects (larvae or adults), crustaceans, molluscs and sometimes amphibian larvae. It can also rarely feed on small water snakes and amphibians. Breeding: the breeding season starts early in March or April. The female usually lays 3-5 eggs. Incubation lasts 25-31 days. Chicks become fledged at 71-79 days. Pairs nest singly or in loose groups. Nest placement usually occurs in areas with vegetation or on the surface of the water.** Activity: daytime
Sensitivity to the effects generated by the proposed project	Low: low risk of collision with ships and built elements in the land area of the project
Climate change perspectives	Pressures and threats due to climate change have not been characterized for this species.
Species name	***Podiceps grisegena***
Species location	In the site: On the surface of the entire site acc. database MP ROSPA0076 In the area of influence of the project: 2014-2015- was observed (acc. database of MP ROSPA0076); 2018-2019- was not observed; 2023- not observed (Neptun Deep project database)
Population size	In the site: acc. FS 2021: 500-1,000 individuals (in transit) At national level: 1-10 specimens in winter (acc. SOR&Milvus, 2022); transit population: not assessed
Quantified information on the presence of individuals	Acc. records from the database of MP ROSPA0076: 1 record with 1 individual observed in the project area Acc. records from the Neptun Deep project database: 0 records in 2018-2019; 0 records in 2023
Population dynamics	No data available

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
The area of the species' habitat	31,100 ha, the area most intensively used by bird species is the coastal area closest to the shore of the site.
Conservation status	Good (B) acc. ANANP decision At the level of the bioregion: it has not been evaluated
trend	In site: Unknown Within the Natura 2000 network: Uncertain (U)* for the wintering population; unknown to the population in transit; National level: Wintering population trend, short and long term: Uncertain (U)*; for populations in transit: not assessed
Ecology of the species	Phenology: The species nests in Romania, being a partially migratory species, with individuals remaining in Romania during the cold season as well. Habitats: Prefers moist, shallow water habitats where submerged vegetation is abundant. It also nests in rivers with still water or dead arms, but also in salt water where there are isolated bays. In marine habitats, offshore areas with depths of up to 15 m and with sand and gravel substrate, solitary rocks and shoals of floating algae are preferred. Food: The red-necked grebe feeds mainly on fish and invertebrates attached by their ecology to the aquatic environment, including dragonflies, carrion fish, molluscs, crustaceans, etc. It also rarely feeds on reptiles and frogs. Reproduction: The reproduction period takes place between April and August. It lays one clutch per year (rarely two clutches), consisting of 2 - 6 eggs that are incubated for a period of 21 - 24 days. Chicks are capable of flight 7 - 9 weeks after hatching but become independent earlier. ** Activity: daytime
Sensitivity to the effects generated by the proposed project	Low: very low collision risk; extremely low presence in the project area
Climate change perspectives	Pressures and threats due to climate change have not been characterized for this species.
Species name	***Podiceps nigricollis***
Species location	In the site: On the surface of the entire site acc. database MP ROSPA0076 In the area of influence of the project: 2014-2015- was observed (acc. database of MP ROSPA0076); 2018-2019- was observed; 2023- was observed (Neptun Deep project database)

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
Population size	In the site: acc. FS 2021: 2,000-20,000 individuals (wintering) At the national level: 283-1,815 specimens during the winter (acc. SOR&Milvus, 2022);
Quantified information on the presence of individuals	Acc. of records from the database of MP ROSPA0076: 61 records with a number of 1-11 individuals observed in the project area Acc. records from the Neptun Deep project database: 25 records with a no. of 1-5 individuals in 2018-2019; 8 records with a no. of 1-9 individuals in 2023
Population dynamics	No data are available regarding the dynamics of the wintering population in the site. The dynamics of the size of the wintering population in the period 2013-2018: minimum 283- maximum 1,815 individuals*
The area of the species' habitat	31,100 ha, the area most intensively used by bird species is the coastal area closest to the shore of the site.
Conservation status	Good (B) acc. ANANP decision At the level of the bioregion: it has not been evaluated
trend	In site: Unknown Within the Natura 2000 network: Increase (+)* for the wintering population; unknown to the population in transit; Nationally: Wintering population trend, short and long term: Increase (+)*
Ecology of the species	Phenology: The species nests in Romania and is also present outside the nesting period, with an influx of individuals from the north and migration of nesting individuals to the south in Romania. Habitats: During the breeding season, the species frequents temporary or permanent, heavily eutrophicated pools with shallow water and abundant vegetation, such as marshes and lakes with scattered submerged vegetation and reed beds. They also prefer ponds and fishponds, irrigation canals, ponds formed along rivers and floodplains. Outside of the nesting season, the species migrates to salt lakes, reservoirs, and even shallow-water coastal estuaries, bays, and marine channels. Food: It feeds mainly on invertebrates attached by their ecology to the aquatic environment, including dragonflies, carrion fish, molluscs, crustaceans, but it also feeds on amphibians, small fish and even small snakes. Reproduction: The reproduction period takes place between April and August. It lays one clutch per year (occasionally two), consisting of 1 - 8 eggs,

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
	incubated for a period of 20 - 24 days. Chicks are independent 20 - 21 days after hatching. The nest is a platform built of plant materials, anchored by vegetation. ** Activity: nocturnal - usually spends the day in thickets of vegetation, and at night comes out on the water surface.
Sensitivity to the effects generated by the proposed project	Low: low risk of collision with ships and built elements in the land area of the project, species that tolerate the presence of ships in their habitat
Climate change perspectives	No climate change pressures and threats have been characterized for this species.*
Species name	***Puffinus yelkouan***
Species location	In the site: In the northern sector of the cnf site. database MP ROSPA0076 In the area of influence of the project: 2014-2015- it was not observed (acc. database of MP ROSPA0076); 2018-2019- was not observed; 2023- was observed (Neptun Deep project database)
Population size	In the site: acc. Approved MP: 10,000-17,000 individuals (in transit) At national level: 15,000-25,000 specimens in passage/migration (acc. SOR&Milvus, 2022);
Quantified information on the presence of individuals	Acc. of records in the database of MP ROSPA0076: 0 records in the project area Acc. records from the Neptun Deep project database: 0 records in 2018-2019; 43 records with a no. of 1-1490 individuals on 10.04.2023
Population dynamics	No data are available regarding the dynamics of the population passing through the site. The dynamics of the size of the population in the passage during 2013-2018: minimum 15,000- maximum 25,000 individuals*
The area of the species' habitat	1,500 ha acc. approved MP
Conservation status	Favourable acc. ANANP decision At the level of the bioregion: it has not been evaluated
trend	In site: Stable (0) acc. approved MP Within the Natura 2000 network: short-term trend: Unknown (X)*

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
	Nationally: Short and long-term trend of population size in passage: Unknown (X)*
Ecology of the species	Phenology: The species does not nest in Romania, being present only during the period outside the nesting season (especially at the end of summer and autumn), when it forms feeding flocks in the western areas of the Black Sea. Habitats: The species nests in rocky littoral areas, inaccessible, on islands or on the mainland. Outside the nesting period, they disperse for feeding in the Mediterranean and Black seas. Food: It is an almost exclusively ichthyophage species. It mainly eats small schooling marine fish. It often follows the fishing vessels for the opportunity to feed. They also consume marine invertebrates. Reproduction: The reproduction period begins in the months of March - April. The brood consists of a single egg, which is incubated for 48 - 52 days. Chicks are capable of flight approximately 60 - 68 days after hatching. The nest is simple, built in rocky areas (on ledges, in crevices, burrows or caves), of some plant materials. It nests colonially, the visit to the nests being strictly nocturnal, to avoid predators. * Activity: daytime
Sensitivity to the effects generated by the proposed project	Small: the possibility of collision with the vessels involved in the project is very low and the main threats to the species during the passage are related to accidental catches in fishing nets and oil pollution of the sea water
Climate change perspectives	No climate change pressures and threats have been characterized for this species.*
Species name	***Sterna albifrons* (syn. *Sternula albifrons*)**
Species location	In the site: On the surface of the entire site acc. database MP ROSPA0076 In the area of influence of the project: 2014-2015- was observed (acc. database of MP ROSPA0076); 2018-2019- was not observed; 2023- was observed (Neptun Deep project database)
Population size	In the site: acc. Approved MP: 300-500 individuals (in passage) At national level: 2,000-10,000 specimens in passage/migration (acc. SOR&Milvus, 2022);
Quantified information on the presence of individuals	Acc. records from the database of MP ROSPA0076: 1 record with 1 individual observed in the project area (2014-2015) Acc. records from the Neptun Deep project database: 0 records in 2018-2019; 1 record with 2 individuals in 2023

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
Population dynamics	No data are available regarding the dynamics of the population passing through the site. The dynamics of the size of the population in the passage during 2013-2018: minimum 2,000- maximum 10,000 individuals*
The area of the species' habitat	26,300 ha acc. approved MP
Conservation status	Favourable acc. ANANP decision At the level of the bioregion: it has not been evaluated
trend	In site: Stable (0) acc. approved MP Within the Natura 2000 network: short-term trend: Unknown (X)* Nationally: Short and long-term trend of population size in passage: Unknown (X)*
Ecology of the species	Phenology: It is a species present on most of the European continent. In the southern parts of its range, it is a sedentary species, while in the northern part of the range it is migratory. Migratory populations winter in Africa and the Arabian Peninsula. Habitats: It is characteristic of coastal wetlands, but also of inland lakes with fresh water located at a distance of a few km from the sea. Food: It feeds mainly on small fish of various species, but its diet also includes small crustaceans, annelids, molluscs, and insects. It has been observed that some terns can specialize in catching insects, flying at water level, and picking up those that float. Reproduction: It is a monogamous and territorial species. Arrives from wintering quarters in late April. The female typically lays 2-3 eggs in the second part of May and the first part of June, with an average size of 31.5 x 23.1 mm. Incubation lasts around 17-22 days and is provided by both partners. The chicks leave the nest a few days after hatching and are cared for by adults. They become fliers at 19-20 days. * Activity: daytime
Sensitivity to the effects generated by the proposed project	Small: the species migrates along the shore and is rarely observed in the marine sector of the project area, very small numbers
Climate change perspectives	Among the main pressures and threats of medium importance, inside and outside member countries, to populations of the species are climate changes causing droughts and decreases in precipitation *

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
Species name	***Caspian tern* (syn. *Hydroprogne caspia)***
Species location	In the site: On the surface of the entire site acc. database MP ROSPA0076 In the area of influence of the project: 2014-2015- was observed (acc. database of MP ROSPA0076); 2018-2019- was not observed; 2023- was observed (Neptun Deep project database)
Population size	In the site: acc. Approved MP: 500-1,000 individuals (in transit) At national level: 1,000-5,000 individuals in circulation (acc. SOR&Milvus, 2022);
Quantified information on the presence of individuals	Acc. records from the database of MP ROSPA0076: 3 records with a no. of 1-5 individuals observed in the project area Acc. records from the Neptun Deep project database: 0 records in 2018-2019; 15 records with a no. of 1-15 individuals in 2023
Population dynamics	No data are available regarding the dynamics of the population passing through the site. The dynamics of the size of the population in the passage during 2013-2018: minimum 1,000- maximum 5,000 individuals*
The area of the species' habitat	92,400 ha acc. approved MP
Conservation status	Favourable acc. ANANP decision At the level of the bioregion: it has not been evaluated
trend	In site: Stable (0) acc. approved MP Within the Natura 2000 network: short-term trend: Unknown (X)* Nationally: Short and long-term trend of population size in passage: Unknown (X)*
Ecology of the species	Phenology: It is a migratory species that does not nest in Romania. It is present in Romania during the passage period, spring, and autumn, but also in the summer months. Habitats: The species prefers both for nesting and during passage coastal areas, lakes, and large and relatively deep-water accumulations, suitable for feeding, nesting on isolated islands and sandbars to protect themselves from predators. Food: The species feeds mainly on small and medium-sized fish, but also consumes the eggs and chicks of other birds, or scavengers. It usually feeds

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
	in small groups and sometimes solitary, catching fish by diving into the water. Sometimes they steal the food caught by other species of herons or gulls. Reproduction: The breeding season begins in April in the Northern Hemisphere and in September in the Southern Hemisphere. It lays 2-3 eggs which it hatches for 26-28 days. The chicks leave the nest 3 days after hatching, being capable of flight after a period of 35 - 45 days. Adults care for the young for a prolonged period, sometimes continuing with less intensity in the wintering quarters. It nests colonially but also solitary.* Activity: daytime
Sensitivity to the effects generated by the proposed project	Small: the species was observed in the coastal area where no work will be carried out and no vessels involved in the activities provided for by the project will be present
Climate change perspectives	There is no information regarding pressures and threats in relation to climate change, although conservation measures specific to this type of pressure/threat are provided, namely "Adopting measures to reduce climate change" (CN01) and "Implementing measures to adapt to changes climate" (CN02)*
Species name	***Sterna hirundo***
Species location	In the site: On the surface of the entire site acc. database MP ROSPA0076 In the area of influence of the project: 2014-2015- was observed (acc. database of MP ROSPA0076); 2018-2019- was observed; 2023- was observed (Neptun Deep project database)
Population size	In the site: acc. Approved MP: 8,000-10,000 individuals (in transit) At the national level: 50,000-200,000 specimens in migration (acc. SOR&Milvus, 2022);
Quantified information on the presence of individuals	Acc. records from the database of MP ROSPA0076: 7 records with a no. of 1-2 individuals observed in the project area Acc. records from the Neptun Deep project database: 1 record with 1 individual observed in 2018-2019; 52 records with a no. of 1-14 individuals in 2023
Population dynamics	No data are available regarding the dynamics of the population passing through the site. The dynamics of the size of the population in the passage during 2013-2018: minimum 50,000- maximum 200,000 individuals*

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
The area of the species' habitat	131,900 acc. approved MP
Conservation status	Favourable acc. ANANP decision At the level of the bioregion: it has not been evaluated
trend	In site: Stable (0) acc. approved MP Within the Natura 2000 network: short- and long-term population trend: Unknown (X)* Nationally: Short and long-term trend of population size in passage: Unknown (X)*
Ecology of the species	Phenology: It is a migratory species that reproduces in Romania. It arrives starting in April and leaves for its wintering grounds in September - October. Habitats: It is an aquatic species, being associated especially during the nesting season with stagnant or slow-flowing waters, rich in fish (including marine littoral areas). It needs low, isolated, vegetation-poor shores (with sandy or rocky areas, land areas with poor aquatic vegetation, etc.) to place its nest. They prefer islands for nesting, to avoid predators. During the migration period it can be seen feeding on any water body rich in food. Food: Predominantly ichthyophagous species, feeds mainly on small fish; however, the trophic spectrum is wider, also consuming other planktonic animals (crustaceans, insects, etc.). The prey is usually caught from the surface of the water or in its immediate vicinity. Breeding: The breeding season starts in April. Egg laying takes place from April (or May), with the female usually laying 2-3 eggs, which she incubates for 22-28 days. The chicks leave the nest after 24-28 days. The pairs nest colonially, with dense colonies, the nests sometimes being 40 cm apart.
Sensitivity to the effects generated by the proposed project	Small: the species can often be observed feeding near ships, with no potential collision risk identified
Climate change perspectives	Among the main pressures and threats of medium importance, inside and outside member countries, to populations of the species are climate changes causing droughts and decreases in precipitation *
Species name	***Sterna sandvicensis* (syn. *Thalasseus sandvicensis*)**
Species location	In the site: On the surface of the entire site acc. database MP ROSPA0076

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
	In the area of influence of the project: 2014-2015- was observed (acc. database of MP ROSPA0076); 2018-2019- was observed; 2023- was observed (Neptun Deep project database)
Population size	In the site: acc. Approved MP: 5,200-6,000 individuals (in transit) At the national level: 5,000-50,000 individuals in circulation (acc. SOR&Milvus, 2022);
Quantified information on the presence of individuals	Acc. records from the database of MP ROSPA0076: 7 records with a no. of 1-3 individuals observed in the project area. Acc. records from the Neptun Deep project database: 1 record with a no. of 4 individuals observed in 2018-2019; 10 records with a no. of 1-16 individuals in 2023
Population dynamics	No data are available regarding the dynamics of the population passing through the site. The dynamics of the size of the population in the passage during 2013-2018: minimum 5,000- maximum 50,000 individuals*
The area of the species' habitat	92,800 ha Cnf. approved MP
Conservation status	Favourable acc. ANANP decision At the level of the bioregion: it has not been evaluated
trend	In site: Stable (0) acc. approved MP Within the Natura 2000 network: short-term population trend: Unknown (X)* Nationally: Short and long-term trend of population size in passage: Unknown (X)*
Ecology of the species	Phenology: It is a migratory species that nests on islands in Romania. It arrives starting in April and is present throughout the nesting and passage period, with specimens also observed during the winter, the species also wintering in the southern part of the Black Sea. Habitats: Species strictly related to coastal areas, preferring relatively warm marine waters. It nests on small non-vegetated islands, isolated sandbars, inundated coastal habitats and abandoned human constructions present in coastal waters. Outside of the nesting season, it is present in coastal waters where it feeds, preferring rocky or sandy shores and isolated rocks to rest.

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
	Food: Feeds almost exclusively on small to medium-sized fish that it catches diving into the water. They also eat crustaceans or sometimes the young of other birds that nest in aquatic habitats. Reproduction: The reproduction period takes place in the months of May - June. The clutch consists of 1 - 3 eggs, hatched for a period of 21 - 29 days. The chicks are capable of flight after 28 - 35 days after hatching, being cared for by their parents for a long period, including their first winter. They form dense colonies, often mixed with other species of gulls or gulls. Activity: daytime
Sensitivity to the effects generated by the proposed project	Small: the species can often be observed feeding near ships, with no potential collision risk identified
Climate change perspectives	No climate change pressures and threats have been characterized for this species.*
Species name	***Tachybaptus ruficollis***
Species location	In the site: On the surface of the entire site acc. database MP ROSPA0076 In the area of influence of the project: 2014-2015- it was not observed (acc. database of MP ROSPA0076); 2018-2019- was not observed; 2023- not observed (Neptun Deep project database)
Population size	In the site: acc. Approved MP: 1,200-1,500 individuals (in transit) At the national level: 5,000-50,000 individuals in circulation (acc. SOR&Milvus, 2022);
Quantified information on the presence of individuals	Acc. of records in the database of MP ROSPA0076: 0 records in the project area Acc. records from the Neptun Deep project database: 0 records in 2018-2019; 0 records in 2023
Population dynamics	No data are available regarding the dynamics of the population passing through the site. The dynamics of the size of the wintering population in the period 2013-2018: minimum 1,086- maximum 2,351 individuals; no data on population in transit*
The area of the species' habitat	31,100 ha, the area most intensively used by bird species is the coastal area closest to the shore of the site.

ROSPA0076 Marea Neagră	Description of the species and habitats of the species possibly affected by the Neptun Deep project
Conservation status	Good (B) acc. ANANP decision
trend	In the site: Good (B) acc. ANANP decision Within the Natura 2000 network: population trend in passage: not assessed; short-term wintering population trend: Unknown (X)* Nationally: Short-term and long-term trend in wintering population size: Increase (+)*
Ecology of the species	Phenology: The species nests in Romania, being at the same time sedentary. In winter they gather in large numbers on the surface of unfrozen bodies of water. Habitats: The species is associated with natural aquatic habitats with rich vegetation (ponds, marshes, lake edges) where it occupies its territories in the spring when the nesting season begins. In the winter, they gather in large groups on the surface of the thawed water bodies. Food: It is a carnivorous species, feeding on a very wide range of aquatic or marshy organisms, especially aquatic insects (larvae or adults), amphibians, molluscs or small fish (especially in winter). Occasionally they also hunt in habitats peripheral to wetlands, insects, leeches, etc. Reproduction: The breeding season begins in April. The female usually lays 3-5 eggs. Incubation lasts 20-25 days. Chicks become fliers at 44-48 days. Pairs nest solitary. Nest placement is usually in more secluded, hidden areas in dense vegetation, the nest being a floating platform fixed to the surrounding plants. Activity: daytime
Sensitivity to the effects generated by the proposed project	Low: low risk of collision with the built elements of the project and with the vessels involved in the activities provided by the project
Climate change perspectives	No climate change pressures and threats have been characterized for this species.*

MP ROSPA0076- Approved Management Plan of the ROSPA0076 Marea Neagră site

FS 2021- Standard form of ROSPA0076 updated in 2021

*Acc. Country report based on the provisions of Art. 12 of the Poultry Directive 2009/147/CE

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B.3. STRUCTURAL AND FUNCTIONAL RELATIONSHIPS THAT CREATE AND MAINTAIN ANPIC INTEGRITY

In nature, including the marine environment, trophic relationships can be generally presented in the form of food webs and food chains. A food chain represents an interaction between organisms and consists of the transfer of energy from food, from the source, namely green plants (i.e. primary producers), through a series of organisms. This transfer occurs through the consumption of some organisms by others that are on a higher trophic level. It should be noted that up to 80-90% of energy is lost as heat during the transfer from one trophic level to another. These losses must be considered in the calculation of biological production. A food web is an interconnection of food chains in a diverse natural community (Zaitsev, 2008).

Pelagic habitats

The water column is an important part of the marine ecosystem and is often defined as a pelagic habitat. Plankton is made up of small and microscopic organisms that move with the water masses of the sea; it includes bacteria, phytoplankton (microscopic algae), zooplankton (unicellular protozoa, copepods), as well as macroscopic organisms, respectively juvenile fish, jellyfish. Planktonic communities form an essential part of the pelagic food web, helping to support the structure of the pelagic community and the marine ecosystem. Plankton, the populations/species that make up its composition, contribute to the fulfilment of the functions of the ecosystem, namely the energy function, the transfer of matter and information. Plankton therefore comprise an integral and vitally essential component of the pelagic food web, i.e. an important part of the marine ecosystem.

Benthic habitats

Benthic macrophyte flora - represented by algae or higher plants (phanerogams) - has a particularly important role in coastal waters, both from an ecological and economic point of view.

One of the most important roles of macroflora in aquatic basins is that of a primary producer contributing, together with the associated microphytobenthos, to the production of oxygen and organic matter in shallow waters. Also, macrophytes represent food for herbivores and, indirectly, for carnivores, thus constituting part of the trophic network, and especially the large ones, provide substrate for the development of other macrophytes, epiphytes, as well as a favourable biotope for feeding and reproduction of numerous species of invertebrates and fish.

Benthic invertebrates are the animal organisms that live on the surface and in the substrate of aquatic ecosystems. The larval stages of many benthic organisms are an essential part of the zooplankton, and the adult forms are an important part of the food chain, especially for benthic fish species, as well as a valuable resource for humans.

They are also important in ecosystem processes. For example, filter feeders and detritivores contribute to the cycle of organic matter.

Zoo benthic populations represent a sensitive tool for assessing the state of the marine environment. Many benthic organisms are sensitive to changes in environmental conditions. This is especially true for sessile forms (attached or immobile species) that cannot avoid adverse effects or species that require very specific environmental conditions. Thus, benthic communities are useful indicators of environmental changes resulting from anthropogenic activities.

We present below a general schematic model (acc. INCDM Grigore Antipa) of the Black Sea food web that includes both pelagic and benthic organisms present in the project area, both inside and outside protected natural areas.

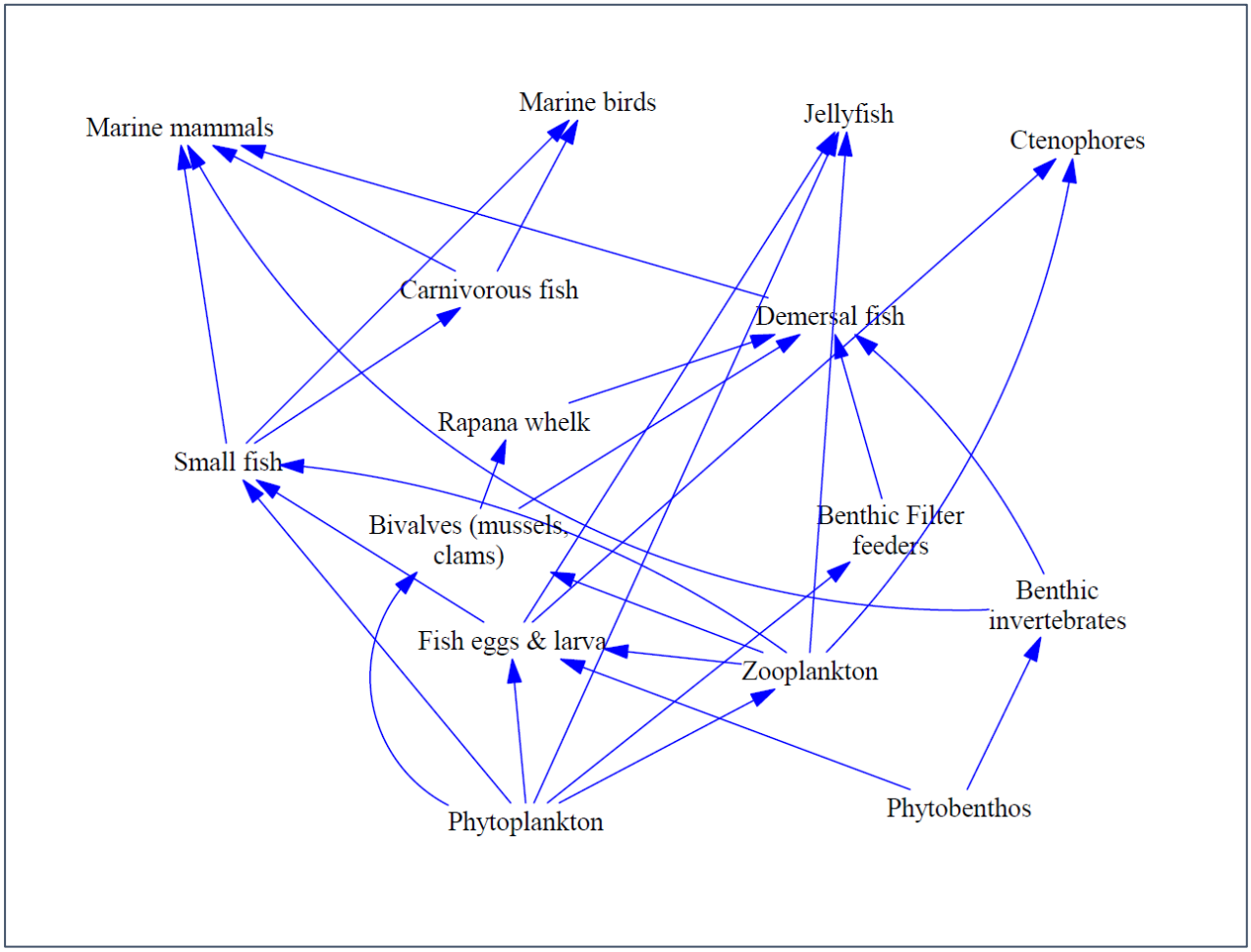

Figure B.13 General model of the Black Sea food web

The schematic illustration of the structural and functional relationships characteristic of the protected natural areas ROSAC0273 Zona Marină de la Capul Tuzla, ROSCI0293 Costinești-23 August, ROSCI0311 Canionul Viteaz, and ROSPA0076 Marea Neagră can be found in Annex I of the Structural and Functional Relationships within ANPIC

Maintaining the integrity of the protected natural areas primarily involves maintaining the relationships between the biocenosis and the biotope and the connectivity between the protected natural areas. The structural and functional relationships that create and maintain the integrity of a protected natural area are mainly related to the conditions of feeding, passage/shelter and reproduction of species of community interest.

Regarding the structural and functional relationships established between environmental, abiotic and biotic factors within marine habitats, they are mainly related to ensuring favourable conditions for feeding, passage or shelter characteristic of migratory species or favourable conditions for reproduction. While the marine sites in the coastal area (ROSAC0273 Zona marină de la Capul Tuzla and ROSCI0293 Costinești- 23 August) are characterized by the presence of a diversity of habitats (1110, 1140, 1170 and 8330) and offer for the feeding and reproduction of fish and mammals of community interest, the protected natural area from the sea - ROSCI0311 Canionul Viteaz, presents a lower faunal diversity as a result of the lower availability of trophic resources and unfavourable abiotic conditions, and as regards algal macrophytes and phanerogams, they are absent in the aphotic zone.

Maintaining integrity is achieved by preventing or minimizing actions that could lead to the alteration or fragmentation of the habitat and the degradation of abiotic conditions that can in turn lead to changes in the established relationships between habitats and species present on the site.

In the case of natural habitats, the maintenance of integrity refers to the maintenance of the state of conservation, given by the totality of the factors that act on the habitats and their characteristic species and that may affect their distribution, structure and functions in the long term, as well as the survival of the characteristic species.

In the case of species, the maintenance of integrity refers to the maintenance of the state of conservation represented by the totality of the factors that act on the species and that can influence in the long term the distribution and abundance of the populations of the respective species.

In the area of influence of the project that overlaps with the protected natural areas ROSAC0273 Zona marină de la Capul Tuzla, ROSCI0293 Costinești- 23 August and ROSCI0311 Canionul Viteaz, the following types of habitats and subtypes of habitats of community interest were identified within which trophic relationships are established important for the marine environment in the studied area:

- **<u>1110 - Shallow permanently submerged sandbanks</u>**

1110-9 Lower infralittoral silty sands and sandy muds bioturbated by *Upogebia pusilla*

The edifying species is the decapod thalassinid crustacean *Upogebia pusilla,* which feeds by filtering plankton and organic suspensions from the current of water it continuously pumps through its galleries. The role of the thalassinid *Upogebia* in biofiltration and ensuring benthic-pelagic coupling in the functioning of the ecosystem is essential.

Upogebia pusilla is in turn food for fish species or even aquatic birds.

Within the habitat, there are populations of species of filtering organisms, represented by bivalves, cirriped crustaceans or bryozoans. The large predatory species are represented by decapods - *Liocarcinus holsatus,* and the microphagous amphipod species *Bathyporeia quilliamsoniana, Perioculodes longimanus, Microdeutopus gryllotalpa, Amphitoe vaillanti, Erichtonius difformis,* or the decapod *Crangon crangon.* Polychaetes fall into the category of microphagous and

detritivorous species, and gastropods *Cyclope neritea, Cyclope donovani, Hinia reticulata* are necrophagous species.

Due to the ecological plasticity of the building species *Upogebia pusilla,* the habitat can develop on any type of sedimentary substrate that is stable enough to ensure the durability of the gallery system built by *Upogebia pusilla:*

- fine, medium or coarse clean sand;
- silty sands;
- mixed sediments composed of sand, silt, shells and banks;
- sandy shores.

The substrate is perforated by the very numerous galleries of the decapod thalassinid crustacean *Upogebia pusilla,* which penetrate to a depth of 0.2-1m, depending on the consistency of the sediment. *Upogebia* populations can be rarer or very dense (100-300 ex/m $^{2)}$ and cover very large surfaces. Biofiltration, bioturbation and sediment resuspension exerted by these decapod crustaceans have a notable influence on the ecosystem.

The density of bivalve molluscs is reduced in this habitat due to competition for food and predation of planktonic larvae and postlarvae by *Upogebia.* Other species, especially commensals that live in the galleries of *Upogebia,* are facilitated.

The habitat forms a continuous belt along the Romanian coast, on the sedimentary substrates arranged between 10-35m deep.

In the area of influence of the project that overlaps with ROSAC0273 Zona marină de la Capul Tuzla and ROSCI0293 Costinești- 23 August, the following facies of this type of habitat were identified:

a. Clean infralittoral fine sand with shells, with numerous galleries and exuviae of *Upogebia pusilla.*
b. Fine clean circumlittoral sand with shells, with numerous galleries of *Upogebia pusilla;*
c. Mixed sediments, a mixture of medium-coarse sand with silt, shells and gravel.
d. Circalittoral silty sand covered by a layer (7 cm) of psammophilous mollusk shells.
e. Fine silty sands of the upper circumlittoral, with *Upogebia pusilla, Mya arenaria* and *Acanthocardia paucicostata.*

- **<u>1140 - Sand and mud flats exposed at low tide</u>**

1140-1 Supralittoral sands, with or without rapidly drying detrital deposits. The habitat occupies the part of the beach that is not washed by waves except during storms. Deposits are made up of materials brought by the sea, of vegetable origin (trunks of trees, pieces of wood, remnants of terrestrial and marsh plants, algae, leaves), animal (carcasses of aquatic animals, insects, drowned terrestrial animals) or anthropogenic (waste solids), as well as dense foam from marine plankton. The fauna consists of isopod crustaceans and mostly insects. The avifauna consists mainly of larids, sternids and cormorants.

1140-2 Supralittoral detrital deposits with slow drying. The habitat is present on the shores formed by boulders or pebble beaches, Agigea, Tuzla (the habitat was completely destroyed), Mangalia, Vama Veche. It occupies the part of the shores formed by boulders or pebble beaches that is not washed by waves except during storms. They accumulate in the spaces between them the debris described above, as well as moisture, so that the deposits are difficult to dry. The fauna consists of detritivores, decomposers, and their predators. The avifauna consists mainly of larids, sternids and cormorants.

- **1170 - Reefs**

1170-2 *Mytilus galloprovincialis* biogenic reefs

They are made up of banks of mussels, whose shells have accumulated over time, forming a hard support raised above the surrounding sediments (mud, sand, fine gravel or gravel), on which the colonies of mussels live. They occur on sedimentary substrate, most frequently between isobaths of 30 and 60 m depth.

Among the habitats that exist at these depths in the Black Sea, mussel reefs have the highest biodiversity, providing a multitude of microhabitats for numerous species of benthic invertebrates and fish. This type of reef is very important due to the crucial ecological role of mussel schools in the self-purification of the ecosystem and the achievement of benthic-pelagic coupling. The biomass of *Mytilus galloprovincialis* can vary between 200 gm^{-2} and 1500 $gm^{-2.}$

Zooplankton organisms - crustaceans, coelenterates, or the larval stages of benthic organisms - are filter feeders or non-selective predators.

The mentioned fish species within the fauna of the habitat are characterized by a varied diet. Acipenserids - *Acipenser gueldenstaedtii, Acipenser stellatus* feed on a diverse range of polychaetes, molluscs, and crustaceans, as well as small benthic fish.

Merlangius merlangus has a predatory diet, feeding on medium to large crustaceans (shrimps, crabs), molluscs, polychaetes, small fish, and in oceanic habitats and cephalopods.

Sparus aurata omnivorous species, feeding on small bivalves, but also on algae remains.

Callionymus pusillus, Callionymus risso, are benthic predatory species that feed on various invertebrates - polychaetes and crustaceans - amphipods, cumaceans - which they capture in the sediment.

Scophthalmus maeoticus, the turbot, is also a predatory species both in juvenile stages when it feeds on crustaceans and molluscs and in the adult stage when it feeds on small fish.

Solea nasuta, a benthic predator, feeds on sediments at the base of cliffs on small molluscs, crustaceans and polychaetes captured in the sediment, as does *Pomatoschistus marmoratus.*

Squalus acanthias, the only shark species in the Black Sea, feeds on fish, being an apex predator within pelagic communities.

Guvid species such as *Mesogobius batrachocephalus, Pomatoschistus marmoratus, Pomatoschistus minutus* feed on invertebrates.

The following facies of this type of habitat were identified in the Cape Tuzla – Costine și perimeter:

a. Upper circumlittoral fine sands on which *Mytilus galloprovincialis reefs also occur.* On the fine sand surfaces that separate the reefs, *Mya arenaria is dominant, with Cerastoderma glaucum, Acanthocardia paucicostata* and *Spisula subtruncata* as accompanying species.

b. Upper circumlittoral sandy banks on which *Mytilus galloprovincialis reefs also occur. Spisula subtruncata, Acanthocardia paucicostata* and *Melinna palmata* are dominant on the shore surfaces separating the reefs.

1170-8 Infralittoral rock with photophilic algae

Infralittoral rock covered with photophilic algae, these being dominant in terms of substrate coverage, to the detriment of sessile fauna. It begins immediately below the lower limit of the rocky mediolittoral and continues in depth to the lower limit of the distribution of photophilic green algae. This depends on the intensity of light penetrating the depth and can vary depending on water clarity and seabed topography. In the Romanian sector of the Black Sea this limit is usually between 10-15m deep, but it can be much reduced if the water is cloudy. Habitat characterized by a consistent vegetal carpet (mostly formed by macroalgae); correspondingly, the fauna is phytophilous (using macroalgae both as a food resource and as shelter).

1170-9 Infralittoral rock with *Mytilus galloprovincialis*

The infralittoral rock dominated by *Mytilus galloprovincialis* and other species of sessile fauna, to the detriment of algae. Because rocky reefs do not stop at the lower limit of the infralittoral, this habitat may continue into the circumlittoral.

Plant biomass is provided in this habitat by various algae, such as red algae - *Ceramium elegans, Ceramium virgatum, Callithamnion corymbosum, Porphyra leucosticta sa* - and green algae - *Ulva intestinalis, Ulva lactuca, Bryopsis plumosa, Bryopsis hypnoides, Cladophora sp.* A number of large decapod crustaceans – crabs, shrimps – as well as isopods and amphipods can be camouflaged in the kelp thickets. Small amphipod crustaceans, such as the amphipods of the genus *Microdeutopus,* inhabit the base of algal thickets where they build protective tubes. Also, these types of crustaceans appear in large numbers among the byssus threads with which the bivalves are attached to the substrate and which form habitat niches for an important number of species.

Among the invertebrates, ecologically dominant are bivalves, the filtering mode of life allowing the development of important populations, especially for *Mytilus galloprovincialis.* The bryozoan species are also filters - *Lepralia pallasiana* - cirriped crustaceans (*Balanus improvisus)*, sponges - *Halichondria panicea, Suberites carnosus, Cliona vastifica* - the latter occupying a characteristic habitat niche - respectively mollusc shells in which they dig canals. Coelenterates - represented by actinians or hydrozoans, are sedentary predators, while the top predators in the association of invertebrate organisms are represented by species of crabs - *Xantho poressa, Pachygrapsus marmoratus* - or shrimps - *Palaemon elegans.* Bacterial film consuming organisms are represented by *Lepidochitona caprearum, Lepidochitona cinerea.*

The polychaetes - *Neanthes succinea, Hediste diversicolor, Nereis rava, Platynereis dumerili, Perinereis cultrifera, Polydora ciliata, Mysta picta, Eulalia viridis, Polynoe scolopendrina* - are mainly represented by detritivorous or omnivorous species but also by predatory or commensal species.

Hediste diversicolor is an omnivorous species, feeding mainly on phytoplankton that it collects with a system of mucous threads, but also on detritus or bacteria or small prey. It hides in tubes of mucous consistency that it secretes onto the substrate.

Nereis zonata is a detritivorous species that feeds on particles on the sediment surface, including macrophyte remains, but also hydrozoa, nematodes, amphipods and harpacticids.

Neanthes succinea, eurytopa species, has an omnivorous regime, feeding mainly on algae remains (*Cladophora, Zostera, Rhizoclonium, Ulva, Enteromorpha, Chaetomorpha)*, but which can also consume phytoplankton, various small invertebrates - isopod or amphipod crustaceans, harpacticids, tintinoid ciliates, gastropods of the genus *Hydrobia,* nematodes, foraminifera, or diatoms.

Perinereis cultrifera has a similar diet, being vegetarian (it feeds on *Enteromorpha, Cladophora* or *Ulva thallus)* but also being able to consume halacarids, harpacticids or foraminifera, swallowed together with the algae.

Platynereis dumerili – a species with a predominantly vegetarian diet (algae such as *Sphacellaria, Cladophora, Laurencia, Polysipohonia, Cysytoseira, Enteromorpha)* that can also consume various diatoms (*Grammatophora marina, Rhabdonema, Navicula)*, but which can consume together with algae and halacarids, ostracods, copepods harpacticids, other polychaetes, foraminifera.

Mysta picta predatory species, consuming molluscs, small crustaceans, other polychaetes.

Eulalia viridis is a predatory species that feeds on molluscs, crustaceans or other polychaetes, but can also feed on the carcasses of marine invertebrates.

Polynoe scolopendrina predatory species, commensal in the tubes of other polychaetes.

Crustaceans are represented in benthic associations by microphagous, phytophagous or detritivorous species.

The amphipods *Melita palmata, Microdeutopus gryllotalpa* are microphages. The isopod *Idotea balthica* is phytophagous, feeding on red, green or brown algae, and *Sphaeroma pulchellum* is detritivorous.

In this habitat, the most important being the gobiids or blenids, which feed on amphipods, cirripedes, polychaetes, and bivalves.

1170-9 Circalitoral rock with *Mytilus galloprovincialis*

It represents the continuation at depth, in the circumlittoral, of the infralittoral rocky outcrops, dominated by *Mytilus galloprovincialis* and other species of sessile fauna.

- **8330 - Submerged or partially submerged sea caves**

Caves located below sea level or open to the sea, at least during periods of high tide, including partially submerged sea caves. The bottom and side walls of these caves harbour communities of marine invertebrates (sponges, hydrozoans, anthozoans, bryozoans, tunicates), and towards the entrance there may also be sciaphilous algae vegetation such as *Hildebrandtia proptotypus* and *Phyllophora crispa.*

The transition from the external environment to the interior of a cave or any cavity translates into significant changes in the physical environment: the variability of the amount of light, the decrease in water circulation that induces thermal and trophic changes. The sudden decrease in light, up to total extinction, limits or eliminates any possibility of plant survival.

The reduction in the circulation of water currents causes a sharp decrease in trophic inputs, a significant thermal stratification and a drastic reduction in the penetration of propagules (eggs, larvae, etc.) that induces an impoverishment of biodiversity. In response to these living conditions, cave organisms and populations have developed unique biological characteristics. Therefore, these areas contain species of high conservation value (rare, endemic, deep).

This class of habitats can be found in the mediolittoral, infralittoral and circumlittoral, where there is fractured rocky substrate. From a morphological point of view, it includes vertical walls, overhangs, isolated microcavities in boulder piles, small cavities (crevices, grottoes, tunnels) and large cavities (marine erosion caves, flooded karst networks).

In the Romanian sector of the Black Sea, these habitats are present in the infralittoral and circumlittoral areas, in the fracture zones of the Sarmatian limestone plate in the Tuzla and Costinești areas. It is therefore about vertical walls, overhangs, small cavities and labyrinthine microcavities inside the chaotic piles of rocks.

- **1180: Underwater structures created by gas emissions**

1180-1 Carbonate structures formed around active methane emissions

These structures are spread throughout the Romanian sector of the Black Sea starting from the 10-15 m isobath and continuing well beyond the edge of the continental shelf. The highest density is near the Danube Delta. They are present in the form of straight or branched ridges and columns extending deep into the anoxic zone.

The size and complexity of these formations increase with depth.

Biomass production within the habitat is ensured by bacteria. Consumers from the other categories have a low weight in achieving the biomass of the habitat.

At depths of up to 120 m, demersal fish species such as: *Merlangius melangus* and *Squalus acanthias can be found.*

Cod (*Merlangius melangus euxinus)* - is a demersal cold-water species, widespread on the continental shelf.

The role of cod in the biological processes of the Black Sea is particularly important in the sense that it makes the connection between the pelagic organisms and those that populate the bottom

of the sea. This role is also determined by the fact that it feeds mainly on pelagic creatures and is in turn consumed by deep-sea predators, mainly sharks. In trawl catches, cod appears as an auxiliary species in fishing as it closely follows the sprat schools on which it feeds.

shark (*Squalus acanthias)* is usually found roosting at depths of 30-90 m (except during the spawning period when it migrates inshore), below the thermocline, feeding on small fish such as sprat and juvenile cod.

Table B.12 Structural and functional relationships

Name of species/ habitat	Dependency relationships between ANPIC and groundwater and surface water bodies	Dependency relationships between species and habitats of community interest	Dependency relationships between species/habitats and other characteristics (relief, geological, altitudinal, others)	Relationships between species of community interest based on trophic or other interspecific relationships	The relationship between species and ecological corridors
1110 Shallow submerged sandbars	Surface water bodies: Coastal waters ROCT02_B2 Eforie Nord – Vama Veche, in the context of the application of the Water Framework Directive and BLK_RO_RG_CT_Coastal waters and BLK_RO_RG_MT01_Marine waters, in the context of the application of the Strategy Framework Directive for the marine environment	There are no species of community interest strictly dependent (specialized characteristics) on this type of habitat.	Zoobenthos characteristic of the sedimentary substrate	Fish of Community interest: *A. immaculata* and *A. tanaica* can feed on fingerlings, anchovies, sprats and crustaceans - *Crangon, Upogebia, Idothea* and gammarids. Acipenserids - *Acipenser gueldenstaedtii, Acipenser stellatus* feed on a varied range of polychaetes, molluscs and crustaceans, Ichthyophage birds and some omnivores of community interest: *Gavia arctica, Gavia stellata, Pelecanus crispus, Podiceps cristatus, Podiceps nigricollis, Phalacrocorax carbo-sinensis, Phalacrocorax pygmaeus, Aythia ferina, Aythia fuligula, Mergus merganser, Mergus serator, Larus sp., Sterna sp.*	-
1140 Sand and mud flats exposed at low tide	Surface water bodies: Coastal waters ROCT02_B2 Eforie Nord – Vama Veche, in the context of the application of the Water Framework Directive	There are no species of community interest strictly dependent (specialized characteristics) on this type of habitat.	Habitat with high humidity. It is exposed to the action of waves and strong winds, especially during storms.	Omnivorous bird species that can feed on wave-borne animal material and aquatic bird species that use this habitat as a resting place and for drying plumage: *Larus spp., Sterna spp., Phalacrocorax carbo,*	-

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	and BLK_RO_RG_CT_Coastal waters, in the context of the application of the Strategy Framework Directive for the marine environment			*Fulica atra, Anas penelope, Anas platyrhynchos.*	
1170 Reefs	Surface water bodies: Coastal waters ROCT02_B2 Eforie Nord – Vama Veche, in the context of the application of the Water Framework Directive and i BLK_RO_RG_CT_Coastal waters and BLK_RO_RG_MT01_Marine waters, in the context of the application of the Strategy Framework Directive for the marine environment	There are no species of community interest strictly dependent (specialized characteristics) on this type of habitat	Zoobenthos characteristic of hard (stony) substrate	Fish of community interest: Acipenserids - *Acipenser gueldenstaedtii, Acipenser stellatus* feed on a wide range of polychaetes, molluscs and crustaceans, as well as small benthic fishes, especially in subtype 1170-2. Ichthyophage birds and some omnivores of community interest: *Gavia arctica, Gavia stellata, Pelecanus crispus, Podiceps cristatus, Podiceps nigricollis, Phalacrocorax carbo-sinensis, Phalacrocorax pygmaeus, Aythia ferina, Aythia fuligula, Mergus merganser, Mergus serator, Larus spp., Sterna spp.*	
8330 Submerged or partially submerged sea caves	Surface water bodies: Coastal waters ROCT02_B2 Eforie Nord – Vama Veche, in the context of the application of the Water Framework Directive	No species of community interest are present, but this habitat is particularly important for the endemic species	Zoobenthos characteristic of hard (stony) substrate. Where fractured bedrock exists. From a morphological point of view, it includes vertical walls, overhangs,	Among vertebrates, gobiids and bleniids, hunted by waterfowl, are especially found in this cave system Ichthyophage birds and some omnivores of community interest:	-

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	and BLK_RO_RG_CT_Coastal waters, in the context of the application of the Strategy Framework Directive for the marine environment	(in the Black Sea) of crustacean. *Hemimysis serrata.*	isolated microcavities in boulder piles, small cavities (crevices, grottoes, tunnels) and large cavities (marine erosion caves, flooded karst networks).	*Gavia arctica, Gavia stellata, Pelecanus crispus, Podiceps cristatus, Podiceps nigricollis, Phalacrocorax carbo-sinensis, Phalacrocorax pygmaeus, Aythia ferina, Aythia fuligula, Mergus merganser, Mergus serator, Mergus albellus, Larus spp., Sterna spp.*	
1180 Underwater structures created by gas emissions	Surface water bodies: BLK_RO_RG_MT01_marine waters and BLK_RO_RG_MT02_Offshore waters, in the context of the application of the Strategy Framework Directive for the marine environment	No species of community interest are present, but these formations support a zonation of different benthic communities specific to hard marine substrates, different from those of the surrounding habitat	Characteristic zoobenthos and complex columnar formations around active methane emissions	-	-
Immaculate aloe	Surface water bodies: Coastal waters ROCT02_B2 Eforie Nord – Vama Veche, in the context of the application of the Water Framework Directive and BLK_RO_RG_CT_Coastal waters and BLK_RO_RG_MT01_Marine waters, in the context of the application of	1110 Shallow submerged sandbars	Thermophilic species that prefers shallow waters	They do not form pure crumbs, but in a mixture with other crumbs.	Anadromous migratory species: The species winters at a great distance from the shore and at depths of up to 90 m, near the Ukrainian coasts. The migration starts in March, reaches its peak in

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	the Strategy Framework Directive for the marine environment				April-May and takes place along the Bulgarian and Romanian coasts, up to the mouths of the Danube, going up the river. After reproduction, adult specimens descend into the sea, a period that can last until July; the return migration to the sea is clustered, retreating into deep water away from shore.
Alosa tanaica	Surface water bodies: Coastal waters ROCT02_B2 Eforie Nord – Vama Veche, in the context of the application of the Water Framework Directive and BLK_RO_RG_CT_Coastal waters and BLK_RO_RG_MT01_Marine waters, in the context of the application of the Strategy Framework Directive for the marine environment	1110 Shallow submerged sandbars	It is a euryhaline species, it winters in the sea and appears in the spring in the littoral zone.	It moves in mixed herds with other related species	Anadromous migratory species: It migrates to breed from the sea to the fresh waters of coastal lakes, ponds and rivers.

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Acipenser gueldenstaedtii	Surface water bodies: Coastal waters ROCT02_B2 Eforie Nord – Vama Veche, in the context of the application of the Water Framework Directive and BLK_RO_RG_CT_Coastal waters and BLK_RO_RG_MT01_Marine waters, in the context of the application of the Strategy Framework Directive for the marine environment	1110 Shallow submerged sandbars 1170 Reefs	It is a marine benthic species	The goby shows a preference for small oligochaete worms. Adults feed on molluscs, crustaceans and less on fish. Juveniles can be food for ichthyophage birds, including those of community interest	Anadromous migratory species: They enter the rivers flowing into the Black, Azov and Caspian seas to reproduce
Acipenser stellatus	Surface water bodies: Coastal waters ROCT02_B2 Eforie Nord – Vama Veche, in the context of the application of the Water Framework Directive and BLK_RO_RG_CT_Coastal waters and BLK_RO_RG_MT01_Marine waters, in the context of the application of the Strategy Framework Directive for the marine environment	1110 Shallow submerged sandbars 1170 Reefs	It leads a pelago-benthic life, regularly rising to the surface at night in search of food. It spends most of its life in the sea, at shallower depths than whiting and whiting, in the mytiloid facies zone, often approaching the shore in summer, and retreating again to deeper waters of 80-100 m in autumn m	The food of the brood in the Danube consists of larvae of chironomids, tricopters, ephemerides, crustaceans. The larger brood also begins to feed on molluscs. Adults feed on molluscs, crustaceans and fish. Juveniles can be food for ichthyophage birds, including those of community interest.	It is a migratory, anadromous species. Reproduction takes place in the Danube.
Huso huso	Surface water bodies: Coastal waters ROCT02_B2 Eforie Nord – Vama Veche, in the context	1110 Shallow submerged sandbars 1170 Reefs	Benthic species	It is a solitary species that congregates in larger groups only during the winter. Morun chicks feed mainly on gammarids, then on other crustaceans and insect larvae.	It is an anadromous species, distributed in the Black, Caspian and Adriatic seas and the rivers flowing into

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	of the application of the Water Framework Directive and BLK_RO_RG_CT_Coastal waters and BLK_RO_RG_MT01_Marine waters, in the context of the application of the Strategy Framework Directive for the marine environment			In front of the mouths of the Danube, mysidaceae and palemonids are dominant in food. Specimens longer than 20 cm begin to feed on fish. The adults feed mainly on fish (80% of the food), in the Danube on cyprinids, and in the sea on guvids, mullets, turbot, sardines, anchovies and crustaceans, molluscs and algae. During the winter, the moray eel feeds very little. Juveniles can be food for ichthyophage birds, including those of community interest.	these seas. It is common in the northwestern part of the Black Sea
Tursiops truncatus	Surface water bodies: Coastal waters ROCT02_B2 Eforie Nord – Vama Veche, in the context of the application of the Water Framework Directive and BLK_RO_RG_CT_Coastal waters, BLK_RO_RG_MT01_Marine waters, BLK_RO_RG_MT02_Offshore waters, in the context of the application of the Marine Environment Strategy Framework Directive, in the context of the application of the Marine	Pelagic habitats	Bottlenose dolphins are found in small, family groups of 4-10 individuals above the continental slope, and groups larger than 25 individuals are common in offshore areas.	Nektonic species, it approaches the shore area especially in early summer. Mature specimens feed on benthic and pelagic fish, shrimp, crabs and molluscs. It can also be fed with large fish (mullet).	Migratory species: In the cold season groups of *Tursiops truncatus* migrate to winter in the south of the Crimean peninsula.

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	Environment Strategy Framework Directive				
Phocoena phocoena	Surface water bodies: Coastal waters ROCT02_B2 Eforie Nord – Vama Veche, in the context of the application of the Water Framework Directive and BLK_RO_RG_CT_Coastal waters and BLK_RO_RG_MT01_Marine waters, in the context of the application of the Strategy Framework Directive for the marine environment	Pelagic and benthic habitats 1110 Shallow submerged sandbars 1170 Reefs	Populations are concentrated near the coast, where food is more abundant and accessible. It can also be observed in the port premises, sometimes near the sea lock gates in the canals that connect to the Danube	It is an ichthyobentophagous species, feeding on fish and invertebrates (flounder, turbot, guvid, aterine, gastropods)	Migratory species: Porpoises migrate annually, leaving the northwestern sector of the Black Sea and the Sea of Azov in late autumn to return in spring. Porpoises from the Black, Azov and Marmara seas winter almost entirely in the southeastern sector of the Black Sea, in the territorial waters of Georgia and Turkey. It reproduces in the summer.
Delphinus delphis	Surface water bodies: Coastal waters ROCT02_B2 Eforie Nord – Vama Veche, in the context of the application of the Water Framework Directive and	Pelagic habitats	It prefers deep water and is rarely seen in shallow water. They are mainly distributed offshore and visit shallow coastal waters following seasonal aggregations and regular migrations of their preferred prey (small pelagic fish).	The basic food is small pelagic fish (sprat, anchovy, ginger) and crustaceans	Migratory species: They perform regular migrations, being linked to the seasonal change of food. In winter, common dolphins stay near the coast of Georgia and

Name of species/ habitat	Dependency relationships between ANPIC and groundwater and surface water bodies	Dependency relationships between species and habitats of community interest	Dependency relationships between species/habitats and other characteristics (relief, geological, altitudinal, others)	Relationships between species of community interest based on trophic or other interspecific relationships	The relationship between species and ecological corridors
	BLK_RO_RG_CT_Coastal waters and BLK_RO_RG_MT01_Marine waters, in the context of the application of the Strategy Framework Directive for the marine environment				the south-western coasts of Crimea, in wintering places of anchovies. In the summer, it moves to the north-western part of the Black Sea, where the schools of sprat are camped (acc. Synthetic monitoring guide for marine species and coastal and marine habitats of community interest in Romania)
Insole ruficollis	Surface water bodies: Coastal waters ROCT02_B2 Eforie Nord – Vama Veche, in the context of the application of the Water Framework Directive and BLK_RO_RG_CT_Coastal waters, in the context of the application of the Strategy Framework Directive for the marine environment	Species in transit in ROSPA0076, there is no relationship with habitats in natural protected areas in the marine environment	It prefers low, plain areas, rich in agricultural crops. In the nesting territories it feeds on plant species from the Siberian tundra, and in the wintering quarters in South-Eastern Europe mainly on plant material from agricultural crops	In the resting or feeding areas they can form clusters together with other anseriformes. It can be food for carnivorous mammals	No requirements special for connectivity
Chlidonias hybridus	Surface water bodies:	Species observed only in passage. It has not been observed feeding in	The species prefers low-elevation wetlands for nesting, especially silting lakes, lakes with abundant floating	It eats terrestrial or aquatic insects, crustaceans, amphibians and small fish	It has no special requirements for connectivity

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	Coastal waters ROCT02_B2 Eforie Nord – Vama Veche, in the context of the application of the Water Framework Directive And BLK_RO_RG_CT_Coastal waters, in the context of the application of the Strategy Framework Directive for the marine environment	marine habitats in the project area. The species is not dependent on marine habitats	and submerged vegetation, rivers and swamps.		
Chlidonias niger	Surface water bodies: Coastal waters ROCT02_B2 Eforie Nord – Vama Veche, in the context of the application of the Water Framework Directive and BLK_RO_RG_CT_Coastal waters, in the context of the application of the Strategy Framework Directive for the marine environment	Species observed only in passage. It has not been observed feeding in marine habitats in the project area. The species is not dependent on marine habitats	Prefers freshwater or brackish water wetlands for breeding, such as small ponds, lakes, marshes, quiet banks of canals or rivers, marshy meadows or peatlands	It is a species that feeds on insects, small fish and frogs	It has no special requirements for connectivity
Cygnus cygnus	Surface water bodies: Coastal waters ROCT02_B2 Eforie Nord – Vama Veche, in the context of the application of the Water Framework Directive and	Species can be observed in the passage The species is not dependent on marine habitats	In wintering areas they prefer low-lying, lowland areas with open bodies of water that do not freeze (for resting) and agricultural areas or open natural habitats (for feeding).	It is an almost mostly vegetarian species, feeding on aquatic (including submerged) and marsh plants. In addition, it consumes grass and agricultural plants (including seeds), especially in winter.	It has no special requirements for connectivity

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	BLK_RO_RG_CT_Coastal waters, in the context of the application of the Strategy Framework Directive for the marine environment				
Arctic marlin	Surface water bodies: Coastal waters ROCT02_B2 Eforie Nord – Vama Veche, in the context of the application of the Water Framework Directive and BLK_RO_RG_CT_Coastal waters, in the context of the application of the Strategy Framework Directive for the marine environment	1110 Shallow submerged sandbars 1170 Reefs It is not strictly dependent on marine habitat	The species does not nest in Romania, being present only in the cold season. Winters singly or in small groups on remaining thawed inland waters and in the coastal area of the Black Sea	Predominantly ichthyophage species	It has no special requirements for connectivity
Gavia starata	Surface water bodies: Coastal waters ROCT02_B2 Eforie Nord – Vama Veche, in the context of the application of the Water Framework Directive and BLK_RO_RG_CT_Coastal waters, in the context of the application of the Strategy Framework Directive for the marine environment	1110 Shallow submerged sandbars 1170 Reefs It is not strictly dependent on marine habitat	The species does not nest in Romania, being present only in the cold season. Winters singly or in small groups, on remaining thawed inland waters and in the coastal area of the Black Sea	Predominantly ichthyophage species	It has no special requirements for connectivity

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Gelochelidon nilotica	Surface water bodies: Coastal waters ROCT02_B2 Eforie Nord – Vama Veche, in the context of the application of the Water Framework Directive and BLK_RO_RG_CT_Coastal waters, in the context of the application of the Strategy Framework Directive for the marine environment	Species observed only in passage. It has not been observed feeding in marine habitats in the project area.	It is a characteristic species of brackish water lagoons and sandy shores, but also occurs on freshwater lakes and marshes	It feeds on small fish and searching for its food on the ground. Catch insects in flight.	It has no special requirements for connectivity
Larus gene	Surface water bodies: Coastal waters ROCT02_B2 Eforie Nord – Vama Veche, in the context of the application of the Water Framework Directive and BLK_RO_RG_CT_Coastal waters, in the context of the application of the Strategy Framework Directive for the marine environment	The species is found almost exclusively in coastal areas, frequenting shallow water and salt flats. 1110 Shallow submerged sandbars 1140 Sand and mud flats exposed at low tide	In Romania it appears in migration, almost only on the shore of the Black Sea and in the lagoon area, rarely in inland waters	The Herring Gull feeds mainly on fish (about 50% of its diet), as well as insects and marine invertebrates.	It has no special requirements for connectivity
Larus melanocephalus	Surface water bodies: Coastal waters ROCT02_B2 Eforie Nord – Vama Veche, in the context of the application of the Water Framework Directive and	It easily adapts to different types of habitat; in migration it occurs in wetlands, lakes, lagoon and coastal areas, but also in	It is a migratory species. During the autumn migration, the southeast of Romania is transited by thousands of specimens, which stay for several months for feeding, resting and molting, especially in the Techirghiol lake area.	It feeds predominantly on aquatic invertebrates and small fish. Often, especially in migration, it feeds on agricultural land or meadows near the stopping places, with invertebrates but also with	It has no special requirements for connectivity

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	BLK_RO_RG_CT_Coastal waters, in the context of the application of the Strategy Framework Directive for the marine environment	agricultural areas and pastures. 1110 Shallow submerged sandbars 1140 Sand and mud flats exposed at low tide 1170 Reefs 8330 Submerged or partially submerged sea caves		micromammals or plant matter (seeds left after harvesting)	
Larus minutus	Surface water bodies: Coastal waters ROCT02_B2 Eforie Nord – Vama Veche, in the context of the application of the Water Framework Directive and BLK_RO_RG_CT_Coastal waters, in the context of the application of the Strategy Framework Directive for the marine environment	1110 Shallow submerged sandbars 1140 Sand and mud flats exposed at low tide. 1170 Reefs 8330 Submerged or partially submerged sea caves	The species occurs during migration and as a winter guest. Species characteristic of wetlands represented by lakes rich in reeds, marshes or lagoonal coasts with brackish or marine water	During the migration period, the diet is similar to that in the nesting territories, i.e. it is based on insects, but during the winter it changes, being mainly composed of marine invertebrates and small fish	It has no special requirements for connectivity
Mergus albellus	Surface water bodies: Coastal waters ROCT02_B2 Eforie Nord – Vama Veche, in the context of the application of the Water Framework Directive and	The species was not observed in marine habitats in the project area	During winter and passage, they occur in most aquatic habitats, including saltwater	It feeds on fish, crustaceans, water insects and their larvae. Food in winter consists mainly of fish, which are caught by rapid dives, performed almost vertically	It has no special requirements for connectivity

Name of species/ habitat	Dependency relationships between ANPIC and groundwater and surface water bodies	Dependency relationships between species and habitats of community interest	Dependency relationships between species/habitats and other characteristics (relief, geological, altitudinal, others)	Relationships between species of community interest based on trophic or other interspecific relationships	The relationship between species and ecological corridors
	BLK_RO_RG_CT_Coastal waters, in the context of the application of the Strategy Framework Directive for the marine environment				
Pelecanus crispus	Surface water bodies: Coastal waters ROCT02_B2 Eforie Nord – Vama Veche, in the context of the application of the Water Framework Directive and BLK_RO_RG_CT_Coastal waters, in the context of the application of the Strategy Framework Directive for the marine environment	1110 Shallow submerged sandbars 1140 Sand and mud flats exposed at low tide 1170 Reefs 8330 Submerged or partially submerged sea caves	They prefer rivers, lakes, lagoons, estuaries for nesting, usually nesting in the form of small colonies within islands or in extensive reed beds.	It is an ichthyophage species	It has no special requirements for connectivity
Phalaropus lobatus	Surface water bodies: Coastal waters ROCT02_B2 Eforie Nord – Vama Veche, in the context of the application of the Water Framework Directive and BLK_RO_RG_CT_Coastal waters, in the context of the application of the Strategy Framework Directive for the marine environment	The species does not use marine habitats in the ANPIC	During migration, the species frequents saline and hypersaline lakes in the interior of continents, natural or artificial freshwater lakes, tailings basins and coastal marshes	sDuring the migration period, on salt lakes, it can feed on dipteran larvae. In winter, the species is predominantly pelagic, feeding at sea in areas rich in plankton	It has no special requirements for connectivity

Name of species/ habitat	Dependency relationships between ANPIC and groundwater and surface water bodies	Dependency relationships between species and habitats of community interest	Dependency relationships between species/habitats and other characteristics (relief, geological, altitudinal, others)	Relationships between species of community interest based on trophic or other interspecific relationships	The relationship between species and ecological corridors
Puffinus yelkouan	Surface water bodies: Coastal waters ROCT02_B2 Eforie Nord – Vama Veche, in the context of the application of the Water Framework Directive and BLK_RO_RG_CT_Coastal waters, in the context of the application of the Strategy Framework Directive for the marine environment	Pelagic habitats	The species does not nest in Romania, being present only during the period outside the nesting season (spring and late summer and autumn), when it forms feeding flocks in the western areas of the Black Sea.	It is an almost exclusively ichthyophage species. It mainly eats small schooling marine fish. It often follows the pescadores for the opportunity to feed.	It has no special requirements for connectivity
Sterna albifrons	Surface water bodies: Coastal waters ROCT02_B2 Eforie Nord – Vama Veche, in the context of the application of the Water Framework Directive and BLK_RO_RG_CT_Coastal waters, in the context of the application of the Strategy Framework Directive for the marine environment	1110 Shallow submerged sandbars 1140 Sand and mud flats exposed at low tide	It is characteristic of coastal wetlands, but also of inland lakes with fresh water located at a distance of several km from the sea	It feeds mainly on small fish of various species, but its diet also includes small crustaceans, annelids, molluscs and insects	It has no special requirements for connectivity
Caspian coat of arms	Surface water bodies: Coastal waters ROCT02_B2 Eforie Nord – Vama Veche, in the context of the application of the Water Framework Directive and	1110 Shallow submerged sandbars 1140 Sand and mud flats exposed at low tide	It is a migratory species that does not nest in Romania. It is present in Romania during the passage period, spring and autumn, but also in the summer months	The species feeds mainly on small and medium-sized fish, but also consumes the eggs and chicks of other birds, or hoots. It usually feeds in small groups and sometimes solitary, catching fish by diving into the water.	It has no special requirements for connectivity

Name of species/ habitat	Dependency relationships between ANPIC and groundwater and surface water bodies	Dependency relationships between species and habitats of community interest	Dependency relationships between species/habitats and other characteristics (relief, geological, altitudinal, others)	Relationships between species of community interest based on trophic or other interspecific relationships	The relationship between species and ecological corridors
	BLK_RO_RG_CT_Coastal waters, in the context of the application of the Strategy Framework Directive for the marine environment				
Sterna hirundo	Surface water bodies: Coastal waters ROCT02_B2 Eforie Nord – Vama Veche, in the context of the application of the Water Framework Directive and BLK_RO_RG_CT_Coastal waters, in the context of the application of the Strategy Framework Directive for the marine environment	1110 Shallow submerged sandbars 1140 Sand and mud flats exposed at low tide 1170 Reefs	It is an aquatic species, being associated especially during the nesting season with stagnant or slow-flowing waters, rich in fish (including marine littoral areas). It needs low, isolated, vegetation-poor shores (with sandy or rocky areas, land areas with poor aquatic vegetation, etc.) to place its nest. They prefer islands for nesting, to avoid predators. During the migration period it can be seen feeding on any water body rich in food	Predominantly ichthyophage species, it feeds mainly on small fish; the trophic spectrum, however, is wider, also consuming other planktonic animals (crustaceans, insects, etc.)	It has no special requirements for connectivity
Sterna sandvicensis	Surface water bodies: Coastal waters ROCT02_B2 Eforie Nord – Vama Veche, in the context of the application of the Water Framework Directive and BLK_RO_RG_CT_Coastal waters, in the context of the application of the Strategy Framework Directive for the marine environment	Species strictly related to coastal areas, preferring relatively warm marine waters 1110 Shallow submerged sandbars 1140 Sand and mud flats exposed at low tide 1170 Reefs	It is a migratory species that nests on islands in Romania. Nests on small unvegetated islands, isolated sandbars, inundated coastal habitats and abandoned human constructions present in coastal waters	It feeds almost exclusively on small to medium-sized fish that it catches diving into the water. They also eat crustaceans or sometimes the young of other birds that nest in aquatic habitats	It has no special requirements for connectivity

Name of species/ habitat	Dependency relationships between ANPIC and groundwater and surface water bodies	Dependency relationships between species and habitats of community interest	Dependency relationships between species/habitats and other characteristics (relief, geological, altitudinal, others)	Relationships between species of community interest based on trophic or other interspecific relationships	The relationship between species and ecological corridors
		8330 Submerged or partially submerged sea caves			
Anas Penelope	Surface water bodies: Coastal waters ROCT02_B2 Eforie Nord – Vama Veche, in the context of the application of the Water Framework Directive and BLK_RO_RG_CT_Coastal waters, in the context of the application of the Strategy Framework Directive for the marine environment	1110 Shallow submerged sandbars 1140 Sand and mud flats exposed at low tide 1170 Reefs	It can be found in the aquatic areas of low altitude, during the winter or passage period, especially near the Black Sea. Preferred feeding sites are shallow water areas, grasslands and farmland adjacent to these areas	The species feeds mainly on plants, consuming leaves, stems, roots, rhizomes and seeds of aquatic plants and those in marshy habitats. It can be food for carnivorous mammals and diurnal birds of prey	It has no special requirements for connectivity
Anas platyrhynchos	Surface water bodies: Coastal waters ROCT02_B2 Eforie Nord – Vama Veche, in the context of the application of the Water Framework Directive and BLK_RO_RG_CT_Coastal waters, in the context of the application of the Strategy Framework Directive for the marine environment	1110 Shallow submerged sandbars 1140 Sand and mud flats exposed at low tide 1170 Reefs	The Mallard is a species that readily adapts to a multitude of habitats comprising slow-flowing or still, relatively sheltered waters, estuaries and deltas, lagoons, shallow seashores, lakes, rivers, ponds and marshes Generally avoids deep or exposed water.	The mallard is an omnivorous and opportunistic species, its diet comprising plant debris, leaves, tubers, rhizomes, roots, seeds, insects and their larvae, snails, crustaceans, tadpoles and even small fish It can be food for carnivorous mammals and diurnal birds of prey	It has no special requirements for connectivity
Anas screamed	Surface water bodies: Coastal waters ROCT02_B2 Eforie Nord – Vama Veche, in the context	Avoids saltwater habitats	Prefers fresh, still or slightly flowing waters, productive, in open, low-altitude areas, especially sheltered	It also eats insects, worms, small fish, amphibians and tadpoles.	It has no special requirements for connectivity

Name of species/ habitat	Dependency relationships between ANPIC and groundwater and surface water bodies	Dependency relationships between species and habitats of community interest	Dependency relationships between species/habitats and other characteristics (relief, geological, altitudinal, others)	Relationships between species of community interest based on trophic or other interspecific relationships	The relationship between species and ecological corridors
	of the application of the Water Framework Directive and BLK_RO_RG_CT_Coastal waters, in the context of the application of the Strategy Framework Directive for the marine environment		ones, rich in emergent vegetation and islands covered with grassy vegetation		
Aythya ferina	Surface water bodies: Coastal waters ROCT02_B2 Eforie Nord – Vama Veche, in the context of the application of the Water Framework Directive and BLK_RO_RG_CT_Coastal waters, in the context of the application of the Strategy Framework Directive for the marine environment	1110 Shallow submerged sandbars 1140 Sand and mud flats exposed at low tide 1170 Reefs 8330 Submerged or partially submerged sea caves	In the cold period of the year, the species is present on most water surfaces (less so on flowing waters)	Omnivorous species, vegetable food being composed of roots, seeds, various parts of aquatic or swamp plants, and animal food, from: aquatic insects and their larvae, molluscs, crustaceans, worms, amphibians and small fish It nests solitary or colonially, sometimes in mixed colonies with *Larus ridibundus,* its presence conferring a degree of protection against predators (corvids, mustelids, etc.)	It has no special requirements for connectivity
Aythya fuligula	Surface water bodies: Coastal waters ROCT02_B2 Eforie Nord – Vama Veche, in the context of the application of the Water Framework Directive and	1110 Shallow submerged sandbars 1140 Sand and mud flats exposed at low tide 1170 Reefs	It is a very gregarious species, during the winter gathering in flocks of several thousand individuals.	Omnivorous species, but most of the diet consists of species of molluscs, crustaceans and aquatic insects. It can be food for carnivorous mammals and diurnal birds of prey	It has no special requirements for connectivity

Name of species/ habitat	Dependency relationships between ANPIC and groundwater and surface water bodies	Dependency relationships between species and habitats of community interest	Dependency relationships between species/habitats and other characteristics (relief, geological, altitudinal, others)	Relationships between species of community interest based on trophic or other interspecific relationships	The relationship between species and ecological corridors
	BLK_RO_RG_CT_Coastal waters, in the context of the application of the Strategy Framework Directive for the marine environment	8330 Submerged or partially submerged sea caves			
Bucephala clangula	Surface water bodies: Coastal waters ROCT02_B2 Eforie Nord – Vama Veche, in the context of the application of the Water Framework Directive and BLK_RO_RG_CT_Coastal waters, in the context of the application of the Strategy Framework Directive for the marine environment	1110 Shallow submerged sandbars 1170 Reefs 8330 Submerged or partially submerged sea caves	During the winter period it can be observed on any thawed body of water.	It is an omnivorous species, but most of its diet consists of aquatic invertebrates (molluscs, crustaceans and aquatic insects) or vertebrates (small fish, including eggs, amphibians)	It has no special requirements for connectivity
The coot attracts	Surface water bodies: Coastal waters ROCT02_B2 Eforie Nord – Vama Veche, in the context of the application of the Water Framework Directive and BLK_RO_RG_CT_Coastal waters, in the context of the application of the Strategy Framework Directive for the marine environment	1110 Shallow submerged sandbars 1140 Sand and mud flats exposed at low tide 1170 Reefs 8330 Submerged or partially submerged sea caves	The species is present in most aquatic habitats, preferring those with stagnant or smoothly flowing, shallow water. During the passage and wintering period, agglomerations of individuals appear within the aquatic surfaces.	It is an omnivorous species, preferring mostly aquatic plants and their seeds, as well as other plant material belonging to plants in the vicinity of aquatic habitats. Food of animal origin consists of invertebrates that live in the aquatic environment, but also fish, amphibians, micromammals, small birds and their eggs.	It has no special requirements for connectivity

Name of species/ habitat	Dependency relationships between ANPIC and groundwater and surface water bodies	Dependency relationships between species and habitats of community interest	Dependency relationships between species/habitats and other characteristics (relief, geological, altitudinal, others)	Relationships between species of community interest based on trophic or other interspecific relationships	The relationship between species and ecological corridors
Larus cachinnans	Surface water bodies: Coastal waters ROCT02_B2 Eforie Nord – Vama Veche, in the context of the application of the Water Framework Directive and BLK_RO_RG_CT_Coastal waters, in the context of the application of the Strategy Framework Directive for the marine environment	1110 Shallow submerged sandbars 1140 Sand and mud flats exposed at low tide 1170 Reefs 8330 Submerged or partially submerged sea caves	Out of the breeding season it occurs more often in coastal areas, but also forages in agricultural areas and along large rivers. The species can be frequently observed on large garbage dumps.	They eat fish, molluscs, crustaceans, insects, reptiles, small mammals, waste, even eggs or chicks. It nests in monospecies colonies or in small groups interspersed in mixed and extensive colonies.	It has no special requirements for connectivity
Larus canus	Surface water bodies: Coastal waters ROCT02_B2 Eforie Nord – Vama Veche, in the context of the application of the Water Framework Directive and BLK_RO_RG_CT_Coastal waters, in the context of the application of the Strategy Framework Directive for the marine environment	1110 Shallow submerged sandbars 1140 Sand and mud flats exposed at low tide 1170 Reefs 8330 Submerged or partially submerged sea caves	Appears only in winter on the coast	It consists of worms, insects, aquatic and terrestrial invertebrates and small fish. During the spring they also consume seeds	It has no special requirements for connectivity
Larus fuscus	Surface water bodies: Coastal waters ROCT02_B2 Eforie Nord – Vama Veche, in the context of the application of the Water Framework Directive and	1110 Shallow submerged sandbars 1140 Sand and mud flats exposed at low tide 1170 Reefs	It is an accidental seagull species here, being a northern species	The species is omnivorous, but still predominantly ichthyophage. It also feeds on insects, crustaceans, worms, mollusks, seeds, fruits, eggs and even small birds	It has no special requirements for connectivity

Name of species/ habitat	Dependency relationships between ANPIC and groundwater and surface water bodies	Dependency relationships between species and habitats of community interest	Dependency relationships between species/habitats and other characteristics (relief, geological, altitudinal, others)	Relationships between species of community interest based on trophic or other interspecific relationships	The relationship between species and ecological corridors
	BLK_RO_RG_CT_Coastal waters, in the context of the application of the Strategy Framework Directive for the marine environment	8330 Submerged or partially submerged sea caves			
Larus ridibundus	Surface water bodies: Coastal waters ROCT02_B2 Eforie Nord – Vama Veche, in the context of the application of the Water Framework Directive and BLK_RO_RG_CT_Coastal waters, in the context of the application of the Strategy Framework Directive for the marine environment	1110 Shallow submerged sandbars 1140 Sand and mud flats exposed at low tide 1170 Reefs 8330 Submerged or partially submerged sea caves	It is a sedentary aquatic species. Outside of the nesting season, specimens have very wide movements, visiting water bodies hundreds of kilometers away, including vast open water bodies (marine or oceanic).	The species mainly consumes insects and other invertebrates, especially related to aquatic (but also terrestrial) environments. To a lesser extent it also feeds on small fish. Like other gull species, it can be opportunistic (especially in winter), feeding at waste disposal ramps	It has no special requirements for connectivity
Limosa limosa	Surface water bodies: Coastal waters ROCT02_B2 Eforie Nord – Vama Veche, in the context of the application of the Water Framework Directive and BLK_RO_RG_CT_Coastal waters, in the context of the application of the Strategy Framework Directive for the marine environment	It can only be seen in the passage. The species does not use marine habitats in the ANPIC	It is a migratory species. Outside of nesting periods, the species is found near freshwater aquatic habitats, preferring lake edges, flooded grasslands, rice paddies, swampy lagoons and estuaries, as well as saline habitats (marshes or meadows)	Omnivorous species, but preferring invertebrates, such as insect larvae, annelids, polychaetes, crustaceans, spiders, fish eggs, hatchlings and frog tadpoles.	It has no special requirements for connectivity

Name of species/ habitat	Dependency relationships between ANPIC and groundwater and surface water bodies	Dependency relationships between species and habitats of community interest	Dependency relationships between species/habitats and other characteristics (relief, geological, altitudinal, others)	Relationships between species of community interest based on trophic or other interspecific relationships	The relationship between species and ecological corridors
Mergus merganser	Surface water bodies: Coastal waters ROCT02_B2 Eforie Nord – Vama Veche, in the context of the application of the Water Framework Directive and BLK_RO_RG_CT_Coastal waters, in the context of the application of the Strategy Framework Directive for the marine environment	1110 Shallow submerged sandbars 1170 Reefs 8330 Submerged or partially submerged sea caves	The species nests in Romania, being sedentary. In migration and in winter, it can be found mainly in freshwater wetlands, such as river courses, natural lakes or reservoirs.	Consumes mainly food of animal origin, mainly small fish, aquatic invertebrates (molluscs, crustaceans, insects and their larvae), amphibians, micromammals and birds	It has no special requirements for connectivity
Sawmill walk	Surface water bodies: Coastal waters ROCT02_B2 Eforie Nord – Vama Veche, in the context of the application of the Water Framework Directive and BLK_RO_RG_CT_Coastal waters, in the context of the application of the Strategy Framework Directive for the marine environment	1110 Shallow submerged sandbars 1170 Reefs 8330 Submerged or partially submerged sea caves	The species does not nest in Romania, being present during the passage and wintering period. The species is mainly concentrated in the marine environment during the winter. During migration it can also be found on inland waters (natural lakes, lakes, reservoirs, river courses), but in winter it is mainly present on the Black Sea coast.	Consumes mainly food of animal origin, mainly small fish, aquatic invertebrates (molluscs, crustaceans, insects and their larvae), amphibians, micromammals and birds	It has no special requirements for connectivity
Phalacrocorax carbo	Surface water bodies: Coastal waters ROCT02_B2 Eforie Nord – Vama Veche, in the context of the application of the Water Framework Directive and	1110 Shallow submerged sandbars 1140 Sand and mud flats exposed at low tide 1170 Reefs	The partially migratory species frequents both coastal habitats and inland wetlands	Ichthyophage species. It often nests in mixed colonies of up to 400 nests, together with other bird species (herons or little cormorants).	It has no special requirements for connectivity

Name of species/ habitat	Dependency relationships between ANPIC and groundwater and surface water bodies	Dependency relationships between species and habitats of community interest	Dependency relationships between species/habitats and other characteristics (relief, geological, altitudinal, others)	Relationships between species of community interest based on trophic or other interspecific relationships	The relationship between species and ecological corridors
	BLK_RO_RG_CT_Coastal waters, in the context of the application of the Strategy Framework Directive for the marine environment	8330 Submerged or partially submerged sea caves			
Podiceps grisegena	Surface water bodies: Coastal waters ROCT02_B2 Eforie Nord – Vama Veche, in the context of the application of the Water Framework Directive and BLK_RO_RG_CT_Coastal waters, in the context of the application of the Strategy Framework Directive for the marine environment	1110 Shallow submerged sandbars 1170 Reefs 8330 Submerged or partially submerged sea caves	Prefers moist habitats with shallow water. In marine habitats offshore areas with depths of up to 15 m and with sand and gravel substrate, solitary rocks and shoals of floating algae are preferred	The red-necked grebe feeds mainly on fish and invertebrates attached by their ecology to the aquatic environment, including dragonflies, carrionfish, molluscs, crustaceans, etc. It also rarely feeds on reptiles and frogs	It has no special requirements for connectivity
Podiceps nigricollis	Surface water bodies: Coastal waters ROCT02_B2 Eforie Nord – Vama Veche, in the context of the application of the Water Framework Directive and BLK_RO_RG_CT_Coastal waters, in the context of the application of the Strategy Framework Directive for the marine environment	1110 Shallow submerged sandbars 1170 Reefs 8330 Submerged or partially submerged sea caves	The species is partially migratory. Outside of the breeding season, the species migrates to salt lakes, reservoirs and even coastal estuaries, bays and shallow water channels	Food generally consists of aquatic invertebrates such as insect larvae and adults, molluscs and crustaceans, to a lesser extent also feeding on worms, snails, small fish, amphibians and even small snakes	It has no special requirements for connectivity

Name of species/ habitat	Dependency relationships between ANPIC and groundwater and surface water bodies	Dependency relationships between species and habitats of community interest	Dependency relationships between species/habitats and other characteristics (relief, geological, altitudinal, others)	Relationships between species of community interest based on trophic or other interspecific relationships	The relationship between species and ecological corridors
Tachybaptus ruficollis	Surface water bodies: Coastal waters ROCT02_B2 Eforie Nord – Vama Veche, in the context of the application of the Water Framework Directive and BLK_RO_RG_CT_Coastal waters, in the context of the application of the Strategy Framework Directive for the marine environment	1110 Shallow submerged sandbars 1170 Reefs 8330 Submerged or partially submerged sea caves	Sedentary species. It is associated with natural aquatic habitats with rich vegetation (ponds, marshes, lake edges) where it occupies its territories in the spring when the nesting season begins. In the winter, they gather in large groups on the surface of the thawed water bodies	It is a carnivorous species, feeding on a very wide range of aquatic or marshy organisms, especially aquatic insects (larvae or adults), amphibians, molluscs or small fish (especially in winter).	It has no special requirements for connectivity

B.4 ANPIC CONSERVATION OBJECTIVES

The conservation objectives of the protected natural areas of community interest were presented acc. the documents developed by the National Agency for Protected Natural Areas, respectively:

- ANANP decision no. 490 of 06.10.2021 regarding the approval of the methodological norms regarding the implementation of conservation objectives from the Annex to Order no. 1433/2016 regarding the elaboration of the Management Plan and the Regulation of the Natura 2000 site ROSCI0273 Zona marină de la Capul Tuzla;
- ANANP note with no. 375/20.01.2022 regarding the approval of the minimum set of special measures for the protection and conservation of biological diversity, as well as the conservation of natural habitats, flora and fauna, safety of the population and investments from ROSCI0293 Costinești-23 August;
- ANANP note with no. 377/20.01.2022 regarding the approval of the minimum set of special measures for the protection and conservation of biological diversity, as well as the conservation of natural habitats, flora and fauna, safety of the population and investments in ROSCI0311 Canionul Viteaz;
- ANANP decision no. 195 of 23.03.2023 regarding the approval of the Methodological Norms regarding the implementation of conservation objectives from Annex no. 1 to OMMAP no. 1197/2016 regarding the elaboration of the Management Plan and the Regulation of the Natura 2000 site ROSPA0076 Marea Neagră. Starting with the effective date of this decision, Decision no. 535/05.11.2020 regarding the approval of the Methodological Norms for the implementation of conservation objectives provided in Annex no. 1 to OMMAP no. 1197/2016 on the development of the Management Plan and the Regulation of the Natura 2000 site ROSPA0076 Marea Neagră, ceases to be valid.
- We note that the use of the most recent versions of the conservation objectives specific to each ANPIC analysed in this Adequate Assessment study was considered.
- The conservation objectives specific to the sites in the area of influence of the project can be found in **the Impact Assessment Tables** (attached to this appropriate assessment study) and as a result, their presentation is in tabular form, for each ANPIC and, respectively, for all species and habitats for the protection of which they were designated, with the indication of each parameter of the conservation objectives.

B.5 ANALYSIS OF THE CONSERVATION MEASURES FROM THE MANAGEMENT PLAN / ANPIC REGULATION WHICH MAY LIMIT / INFLUENCE THE INTERVENTIONS AND ACTIVITIES PROPOSED BY PP

B.5.1. Conservation measures from the approved Management Plan of the Natura 2000 site ROSAC0273 Zona marină de la Capul Tuzla

The main purpose of the Management Plan is to create the most suitable framework for the protection of the specific structures of different types of habitats, to identify the fauna and flora with reference to those in certain stages of endangerment/risk.

The management plan provides the custodian with the directions of action that will be at hand in maintaining the favourable conservation status of the habitats. In this context, action will be taken to limit, or as the case may be, the prohibition of some activities that may have negative influences, or on the contrary, the promotion of some activities (economic, touristic, recreational, scientific, etc.).

In order to fulfil the purpose of the Management Plan, three general objectives (OG) were defined:

- OG1: Biodiversity conservation, monitoring and management in the Natura 2000 site ROSCI0273 Zona marină de la Capul Tuzla;
- OG2: the administration and effective management of the Natura 2000 site ROSCI0273 Zona marină de la Capul Tuzla;
- OG3: Collaboration with stakeholders in the area's economic development and public awareness of the protected natural area.

The priority conservation objectives for ROSCI0273 Zona marină de la Capul Tuzlaare: maintaining good conservation status for habitats 1170 with multiple subtypes and 8330, unique in Romania, including the conservation of the characteristic species: Hemimysis serrata, *Halichondria* panicea *and* Tricolia *pullus.*

Habitat 1110 is present throughout the coastline and is in a good state of conservation, which is why it does not require special protection measures in the Tuzla site. Until recently, the 1140 habitat had a great conservation value here due to the existence of the natural rocky coastline, which is present in Romania only in a few places: Agigea, Tuzla, Costinești, Vama Veche. Unfortunately, it was completely destroyed in the Tuzla area in 2010 and 2011 by hydrotechnical coastal protection works.

The species of fish and mammals from Annex II of the Habitats Directive that are present in the site must also be protected: *Tursiops truncatus, Phocoena phocoena, Alosa immaculata* and *Alosa tanaica.*

The specific objectives and management measures to achieve the general objectives of the Natura 2000 Site Management Plan ROSCI/ROSAC0273 Zona marină de la Capul Tuzla are the following:

Table B.13 The specific objectives and management measures

General objective	Theme	Specific management objectives	Actions (from the Activity Plan/Action Plan)
OG1	biodiversity	Maintaining good conservation status for habitat 1170-9 Infralittoral rock with *Mytilus galloprovincialis*	-
OG1	biodiversity	Maintenance of good conservation status for the habitat 8330 Totally or partially submerged sea caves	-

General objective	Theme	Specific management objectives	Actions (from the Activity Plan/Action Plan)
OG1	biodiversity	Maintaining good conservation status for *Alosa immaculata* and *A. tanaica*	-
OG1	biodiversity	Achieving good conservation status for *Tursiops truncatus*	-
OG1	biodiversity	Achieving good conservation status for *Phocoena phocoena*	-
OG1	A Biodiversity	Maintaining biodiversity by conserving key species and ecosystems, as well as landscapes within the marine protected area	A1- Annual verification of the achievement of conservation objectives by monitoring the values of the indicators provided for in this management plan
OG1			A2- Establishing and implementing a biodiversity monitoring plan, focused on the species and habitats of interest
OG1			A3- Based on the monitoring results, taking specific measures to protect species and habitats of interest including functional zoning
OG1			A4- Specific measures to protect marine mammals
OG1			A5- Sanitization and cleaning of the protected marine area, as well as the areas adjacent to the beach
OG1			A6- Monitoring the physico-chemical parameters of the water in the protected marine area
OG1			A7- Monitoring the major sources of water pollution in the marine protected area and reporting to the competent authorities
OG1			A8- actions to combat poaching in the marine protected area
OG1	B Tourism	Attracting tourists and extending the period of stay in the area by developing ecotourism and promoting the natural, traditional, historical and cultural values of the region	B3- Creation and placement of signs and information panels for visitors
OG1			B6- Creation of a marine protected area own infrastructure
OG1			B9- Training and coordination of field staff in the supervision of tourist activities

General objective	Theme	Specific management objectives	Actions (from the Activity Plan/Action Plan)
OG1	C Communities and local economy	To promote and create opportunities for the sustainable development of the local economy in accordance with the objectives of the reserve	C2- Collaboration of the Custodian of the Reserve with local communities in environmental protection actions: waste collection/storage, infrastructure, etc.
OG1	D Education and public awareness	Engaging the public and communities in preserving the reserve's values through education and awareness programs	D1- Building, equipping and setting up the information centre
OG1	E Marine protected area management	Strengthening the administrative capacity, establishing appropriate mechanisms for carrying out specific activities and promoting a close collaboration with the stakeholders in the area covered by the reservation	E4- Equipping with appropriate equipment and technology
OG1			E5- Creating and updating the database in the geographic information system
OG1			E10- Materialization in the field of the limits of the special management areas of the protected marine area
OG2	A Biodiversity	Maintaining biodiversity by conserving key species and ecosystems, as well as landscapes within the marine protected area	A4- Specific measures to protect marine mammals
OG2			A5- Sanitization and cleaning of the protected marine area, as well as the areas adjacent to the beach
OG2			A6- Monitoring the physio-chemical parameters of the water in the protected marine area
OG2			A7- Monitoring the major sources of water pollution in the marine protected area and reporting to the competent authorities
OG2			A8- Actions to combat poaching in the marine protected area
OG2	B Tourism	Attracting tourists and extending the period of stay in the area by developing ecotourism and promoting the natural, traditional,	B1- Creation of a database and a catalogue of guesthouses in the area
OG2			B2- Creation, elaboration and exploitation of informative materials
OG2			B3- Creation and placement of signs and information panels for visitors

General objective	Theme	Specific management objectives	Actions (from the Activity Plan/Action Plan)
OG2		historical and cultural values of the region	B4- Creation of possibilities to observe the flora and fauna, the underwater landscapes of the marine protected area
OG2			B5- Development of attractive programs for tourists, in collaboration with local entrepreneurs
OG2			B6- Creation of a marine protected area own infrastructure
OG2			B7- Collaboration with tourist agencies for the practice of ecological tourism
OG2			B8- Organization of scientific tourism, through the possibility of conducting studies, researches, on flora, fauna and habitats
OG2			B9- Training and coordination of field staff in the supervision of tourist activities
OG2			B10- Development and implementation of a tourism monitoring program
OG2			B11- Elaboration and implementation of the tourism strategy integrating the tourism offer of the reserve in the local, national and international context
OG2	C Communities and local economy	To promote and create opportunities for the sustainable development of the local economy consistent with the objectives of the reserve	C1- Supporting the development of income-generating activities that take into account the interests of local communities, consistent with the management of the marine protected area
OG2			C2- Collaboration of the Custodian of the Reserve with local communities in environmental protection actions: waste collection/storage, infrastructure, etc.
OG2			C3- Supporting the training activities of guesthouse owners and local tourist guides
OG2			C4- Supporting those local entrepreneurs who stand out through active participation in supporting the actions of the marine protected area and promoting its image
OG2	D Education and public awareness	Engaging the public and communities in preserving the reserve's values through education and awareness programs	D1- Building, equipping and setting up the information centre
OG2			D2- development and implementation of an ecological education program in educational institutions in the area of the site

General objective	Theme	Specific management objectives	Actions (from the Activity Plan/Action Plan)
OG2			D3- Regular updating of the website of the reservation
OG2			D4- Creation and dissemination of educational materials
OG2			D5- Working meetings with the Local Public Administration to obtain support in achieving the Custodian's objectives
OG2			D6- Organization of festivities, local events, inter-/intra-school competitions
OG2			D7- Promotion of the site's image on the occasion of various demonstrations or events
OG2			D8- Editing and dissemination of a periodic newsletter of the marine protected area
OG2			D9- Encouraging the establishment of local ecological clubs
OG2			D10- Actions to involve children in protecting the environment
OG2			D11- Working meetings as interested factors, economic agents of exploitation, of tourism
OG2			D12- mass media involvement in actions to support the objectives of the marine protected area
OG2			D13- Involvement of NGOs in actions to support the objectives of the marine protected area
OG2			D14- Promoting the image of the marine protected area
OG2	E Marine protected area management	Strengthening administrative capacity, establishing appropriate mechanisms for carrying out specific activities and promoting a	E1- Compilation of the organizational chart
OG2			E2- Establish training needs and participate in appropriate training programs
OG2			E3- Elaboration and application of the AMP Regulation
OG2			E4- endowment with appropriate equipment and technology
OG2			E5- creating and updating the database in the geographic information system

General objective	Theme	Specific management objectives	Actions (from the Activity Plan/Action Plan)
OG2			E6- Collaboration with Non-Governmental Organizations to attract funding in the area and carry out joint activities
OG2			E7- Identifying and obtaining sources of funding for activities in the reserve
OG2			E8- Developing and implementing a self-financing strategy
OG2			E9- Permanent promotion of a modern and efficient management
OG2			E10- Materialization in the field of the limits of the special management areas of the marine protected area
OG2			E11- Analysing the database structured by fields of interest
OG2			E12- Elaboration of annual programs in accordance with the provisions of the management plan
OG2			E13- Ensuring the functionality of the equipment and equipment
OG2			E14- Collaboration with local institutions in order to implement the legal provisions within the marine protected area
OG 3	A Biodiversity	Maintaining biodiversity by conserving key species and ecosystems, as well as landscapes within the marine protected area	A4- Specific measures to protect marine mammals
OG 3			A7- Monitoring the major sources of water pollution in the marine protected area and reporting to the competent authorities
OG 3			A8- Actions to combat poaching in the marine protected area
OG 3	B Tourism	Attracting tourists and extending the period of stay in the area by developing ecotourism and promoting the natural, traditional, historical and cultural values of the region	B1- Creation of a database and a catalogue of guesthouses in the area
OG 3			B2- Creation, elaboration and exploitation of informative materials
OG 3			B3- Creation and placement of signs and information panels for visitors
OG 3			B4- Creation of possibilities to observe the flora and fauna, the underwater landscapes of the marine protected area

General objective	Theme	Specific management objectives	Actions (from the Activity Plan/Action Plan)
OG 3			B5- Development of attractive programs for tourists, in collaboration with local entrepreneurs
OG 3			B6- Creation of a marine protected area own infrastructure
OG 3			B7- Collaboration with tourist agencies for the practice of ecological tourism
OG 3			B8- Organization of scientific tourism, through the possibility of conducting studies, researches, on flora, fauna and habitats
OG 3			B9- Training and coordination of field staff in the supervision of tourist activities
OG 3			B10- Development and implementation of a tourism monitoring program
OG 3			B11- Elaboration and implementation of the tourism strategy integrating the tourism offer of the reserve in the local, national and international context
OG 3	C Communities and local economy	To promote and create opportunities for the sustainable development of the local economy in accordance with the objectives of the reserve	C1- Supporting the development of income-generating activities that take into account the interests of local communities, in accordance with the management of the marine protected area
OG 3			C2- Collaboration of the Custodian of the Reserve with local communities in environmental protection actions: waste collection/storage, infrastructure, etc.
OG 3			C3- Supporting the training activities of guesthouse owners and local tourist guides
OG 3			C4- Supporting those local entrepreneurs who stand out through active participation in supporting the actions of the marine protected area and promoting its image
OG 3	D Education and public awareness	Engaging the public and communities in preserving the reserve's values through education and awareness programs	D1- Building, equipping and setting up the information center
OG 3			D2- development and implementation of an ecological education program in educational institutions in the area of the site
OG 3			D3- Regular updating of the website of the reservation

General objective	Theme	Specific management objectives	Actions (from the Activity Plan/Action Plan)
OG 3			D4- Creation and dissemination of educational materials
OG 3			D5- Working meetings with the Local Public Administration to obtain support in achieving the Custodian's objectives
OG 3			D6- Organization of festivities, local events, inter-/intra-school competitions
OG 3			D7- Promotion of the site's image on the occasion of various demonstrations or events
OG 3			D8- Editing and dissemination of a periodic newsletter of the marine protected area
OG 3			D9- Encouraging the establishment of local ecological clubs
OG 3			D10- Actions involving children in protecting the environment
OG 3			D11- Working meetings as interested factors, economic agents of exploitation, of tourism
OG 3			D12- mass media involvement in actions to support the objectives of the marine protected area
OG 3			D13- Involvement of NGOs in actions to support the objectives of the marine protected area
OG 3			D14- Promoting the image of the marine protected area
OG 3	E Marine protected area management	Strengthening administrative capacity, establishing appropriate mechanisms for carrying out specific activities and promoting a	E1- Compilation of the organizational chart
OG 3			E2- Establish training needs and participate in appropriate training programs
OG 3			E3- Elaboration and application of the AMP Regulation
OG 3			E4- endowment with appropriate equipment and technology
OG 3			E5- creating and updating the database in the geographic information system
OG 3			E6- Collaboration with Non-Governmental Organizations to attract funding in the area and carry out joint activities

General objective	Theme	Specific management objectives	Actions (from the Activity Plan/Action Plan)
OG 3			E7- Identifying and obtaining sources of funding for activities in the reserve
OG 3			E8- Developing and implementing a self-financing strategy
OG 3			E9- Permanent promotion of a modern and efficient management
OG 3			E10- Materialization in the field of the limits of the special management areas of the protected marine area
OG 3			E11- Analyzing the database structured by fields of interest
OG 3			E12- Elaboration of annual programs in accordance with the provisions of the management plan
OG 3			E13- Ensuring the functionality of the equipment and equipment
OG 3			E14- Collaboration with local institutions in order to implement the legal provisions within the marine protected area

From the analysis of these actions/management measures for the conservation of habitats and species as well as the management measures for ensuring the sustainable development of the local communities listed above, it can be concluded that they have a general character without particularizations focused on certain types of human activities within or in the vicinity the site.

Instead, conservation and protection measures for Natura 2000 species and habitats were provided for and presented distinctly and individually in the approved Management Plan. In the following table we present these measures and the relationship between the activities and interventions provided by the proposed project with these measures.

Table B.14 Conservation and protection measures established by the Natura 2000 Site Management Plan ROSCI/ROSAC0073 Zona marină de la Capul Tuzla

Species/Habitat of community interest	Conservation and protection measure	Limitation/influence on Neptun Deep project (Yes/No)	Remarks
Tursiops truncatus	In order to ensure the effective conservation and protection of fish resources, including marine mammals from the Romanian coast, adequate financial support for a system of continuous monitoring, control and supervision of the state of fish and marine mammals, of the target species and of those untargeted, catches and fishing effort;	No	The measure is related to fishing activities
	Both at local and regional level, technical measures to regulate fishing (zones, periods, species sizes, gear types, mesh size, etc.), control of fishing effort and total allowable catches must be established and applied;	No	The measure is related to fishing activities
	On the Romanian coast, the fishing industry must comply with the legislation in force;	No	The measure is related to fishing activities
	For the development and use of technologies, materials and operational methods to reduce the losses and effects of "ghost" (lost or abandoned) fishing gear, it is necessary to cooperate at the local and regional level;	No	The measure is related to fishing activities
	Before fishing in an area on a commercial scale, new fishing gear, methods and operations must be assessed for their effects on living marine resources and their specific habitats;	No	The measure is related to fishing activities
	Improving the technical characteristics and selectivity of fishing gear;	No	The measure is related to fishing activities
	To ensure compliance with conservation and management measures adopted by regional and sub-regional organizations or agreements, the central fisheries and aquaculture authority must operate within its	No	The measure is related to fishing and aquaculture activities

Species/Habitat of community interest	Conservation and protection measure	Limitation/influence on Neptun Deep project (Yes/No)	Remarks
	competences and capacities and apply effective tracking, monitoring and control mechanisms;		
	In order to prevent capture of turbot fry and to allow dolphins accidentally entangled in stationary seine gear to free themselves, the nets (a) and the wire diameter (d) from which these nets are made must have the following values: a= 2200 mm, d = 0.50 mm;	No	The measure is related to fishing activities
	Prohibition of using nets without marking them with position identification marks (floating);	No	The measure is related to fishing activities
	Customizing fishing gear brands to establish legal ownership and manufacturing rights;	No	The measure is related to fishing activities
	The number of nets and sieves with herring in a row should not exceed 10 pieces;	No	The measure is related to fishing activities
	The installation of rows of nets and nets with nets must be done at a distance of not less than 0.5 km from each other;	No	The measure is related to fishing activities
	In order to prevent the accidental capture of dolphins in fixed net-type fishing gear, the optimal solution remains to equip them with low-frequency hydroacoustic transmitters, which, through emitted sounds, manage to keep dolphins at a distance;	No	The measure is related to fishing activities
	Purchase of optimal hydroacoustic devices for removing dolphins from fishing gear;	No	The measure is related to fishing activities
	Use of turbot fishing nets impregnated with barium sulfate;	No	The measure is related to fishing activities

Species/Habitat of community interest	Conservation and protection measure	Limitation/influence on Neptun Deep project (Yes/No)	Remarks
	The prevention of overfishing situations, with negative implications on fish and mammal populations, can be achieved by sizing the fishing effort and ensuring the selectivity of fishing, taking into account the total allowable catch;	No	The measure is related to fishing activities
	In order to protect biodiversity and conserve ecosystems and population structure, fishing gear and practices must be developed and generalized regionally in marine fisheries;	No	The measure is related to fishing activities
	Users of aquatic ecosystems must reduce discards of target and non-target species, as well as other species of aquatic organisms, respectively the impact on associated or dependent species;	No	The measure is related to fishing and aquaculture activities
	Promoting the control of fishing areas by the competent authorities;	No	The measure is related to fishing activities and to the supervision and control activities of the competent authorities
	Providing competent authorities with appropriate control techniques and procedures.	No	The measure is related to the supervision and control activities of the competent authorities
Phocoena phocoena	In order to ensure the effective conservation and protection of fish resources, including marine mammals from the Romanian coast, adequate financial support for a system of continuous monitoring, control and supervision of the state of fish and marine mammals, of the target species and of those untargeted, catches and fishing effort;	No	The measure is related to fishing activities

Species/Habitat of community interest	Conservation and protection measure	Limitation/influence on Neptun Deep project (Yes/No)	Remarks
	At the local and regional level, technical measures to regulate fishing (areas, periods, species sizes, gear types, mesh size, etc.), control of fishing effort and total allowable catches must be established and applied;	No	The measure is related to fishing activities
	On the Romanian coast, the fishing industry must comply with the legislation in force;	No	The measure is related to fishing activities
	For the development and use of technologies, materials and operational methods to reduce the losses and effects of "ghost" (lost or abandoned) fishing gear, it is necessary to cooperate at the local and regional level;	No	The measure is related to fishing activities
	Before fishing in an area on a commercial scale, new fishing gear, methods and operations must be assessed for their effects on living marine resources and their specific habitats;	No	The measure is related to fishing activities
	Improving the technical characteristics and selectivity of fishing gear;	No	The measure is related to fishing activities
	To ensure compliance with conservation and management measures adopted by regional and sub-regional organizations or agreements, the central fisheries and aquaculture authority must operate within its competences and capacities and apply effective tracking, monitoring and control mechanisms;	No	The measure is related to fishing and aquaculture activities
	In order to prevent capture of turbot fry and to allow dolphins accidentally entangled in stationary seine gear to free themselves, the nets (a) and the wire diameter (d) from which these nets are made must have the following values: a= 2 200 mm, d = 0.50 mm;	No	The measure is related to fishing activities

Species/Habitat of community interest	Conservation and protection measure	Limitation/influence on Neptun Deep project (Yes/No)	Remarks
	Prohibition of using nets without marking them with position identification marks (floating);	No	The measure is related to fishing activities
	Customizing fishing gear brands to establish legal ownership and manufacturing rights;	No	The measure is related to fishing activities
	The number of nets and sieves with herring in a row should not exceed 10 pieces;	No	The measure is related to fishing activities
	The installation of rows of nets and nets with nets must be done at a distance of not less than 0.5 km from each other;		The measure is related to fishing activities
	In order to prevent the accidental capture of dolphins in fixed net-type fishing gear, the optimal solution remains to equip them with low-frequency hydroacoustic transmitters, which, through emitted sounds, manage to keep dolphins at a distance;	No	The measure is related to fishing activities
	Purchase of optimal hydroacoustic devices for removing dolphins from fishing gear;	No	The measure is related to fishing activities
	Use of turbot fishing nets impregnated with barium sulfate;	No	The measure is related to fishing activities
	The prevention of overfishing situations, with negative implications on fish and mammal populations, can be achieved by sizing the fishing effort and ensuring the selectivity of fishing, taking into account the total allowable catch;	No	The measure is related to fishing activities

Species/Habitat of community interest	Conservation and protection measure	Limitation/influence on Neptun Deep project (Yes/No)	Remarks
	In order to protect biodiversity and conserve ecosystems and population structure, fishing gear and practices must be developed and generalized regionally in marine fisheries;	No	The measure is related to fishing activities
	Users of aquatic ecosystems must reduce discards of target and non-target species, as well as other species of aquatic organisms, respectively the impact on associated or dependent species;	No	The measure is related to fishing and aquaculture activities
	Promoting the control of fishing areas by the competent authorities;	No	The measure is related to fishing activities and to the surveillance and control activities of the competent authorities
	Providing competent authorities with appropriate control techniques and procedures.	No	The measure is related to the supervision and control activities of the competent authorities
Immaculate aloe	Protection of the population during the period of marine breeding migration towards the mouths of the Danube by establishing a period of prohibition in time and space regarding the marine area;	No	The measure concerns the fishing activity
	Reconsidering fishing methods with nets in the Black Sea (nets/fixed nets);	No	The measure concerns the fishing activity
	Establishment of conservation zones in the Black Sea;	No	The measure concerns the fishing activity
	Regulation of effort and catch quotas for sustainable exploitation;	No	The measure concerns the fishing activity
	Monitoring and research of shad fisheries and populations.	No	The measure concerns the fishing activity

Species/Habitat of community interest	Conservation and protection measure	Limitation/influence on Neptun Deep project (Yes/No)	Remarks
Alosa tanaica	Protection of the population during the period of marine breeding migration towards the mouths of the Danube by establishing a period of prohibition in time and space regarding the marine area;	No	The measure concerns the fishing activity
	Reconsidering fishing methods with nets in the Black Sea (nets/fixed nets);	No	The measure concerns the fishing activity
	Establishment of conservation zones in the Black Sea;	No	The measure concerns the fishing activity
	Regulation of effort and catch quotas for sustainable exploitation;	No	The measure concerns the fishing activity
	Monitoring and research of shad fisheries and populations.	No	The measure concerns the fishing activity
Habitat 1110	It is prohibited to hunt, capture, collect, destroy plant and animal species by any means and any other activity that could present a danger to these species, including the introduction of exotic species. It is forbidden to use weapons, explosives and any other destructive means, as well as toxic and polluting substances in the aquatic environment.	No	Measures provided by the specific legislation in force
	Fishing with bottom gears (dredging, trawling) can only be carried out for scientific purposes. Commercial fishing is permitted only with non-destructive gear.	No	The measure concerns the fishing activity
	Aquaculture can have a significant impact on the habitats at the site, and must be strictly prohibited within the perimeter of the marine protected area, as well as around it for a strip 1 nautical mile wide	No	The measure targets the aquaculture activity
	Any kind of aquaculture or fishing activities that may generate destructive effects on biocenoses and benthic habitats are prohibited.	No	The measure concerns fishing and aquaculture

Species/Habitat of community interest	Conservation and protection measure	Limitation/influence on Neptun Deep project (Yes/No)	Remarks
	Trawling of any kind and use of illegal nets/abandonment of nets and fishing gear at sea is strictly prohibited.	No	The measure concerns the fishing activity
	The direct or indirect modification, by any means, of the geophysical characteristics of the environment (collection, extraction and destruction of the substrate of any type) and the biochemical characteristics of the water, as well as the discharge of liquid and solid residues and the introduction of any substances that could change, even temporarily, the characteristics of the marine environment, as a result of industrial or construction activities.	No	The activities and interventions envisaged by the project are classified as industrial activities, but they do not involve the destruction of the substrate, the discharge of liquid and solid residues and the introduction of chemical substances that could change the characteristics of the marine environment in the Natura 2000 site ROSAC0273.
	Hydrotechnical constructions are prohibited in the perimeter of the site, because they can substantially modify habitats and, implicitly, biodiversity.	No	The measure aims at rehabilitation activities, consolidation of coastal areas.
	The agricultural activities carried out in the vicinity of the site must be monitored, so that there are no discharges/leaks of fertilizers/animal droppings, thus minimizing the area of influence on the habitats, in order to maintain a minimum level of impact on biodiversity.	No	The measure targets agricultural activities in the land area adjacent to the project.
	In the entire perimeter of the site, ships and boats are strictly prohibited from unloading or dumping waste of any kind into the sea (households, dredged materials, bilge water, ballast water, etc.), washing tanks and dumping oil residues into the sea, polluting other type of marine waters.	No	The measure concerns navigation. The ships involved in the project activities will comply with the specific legislation in force, including the legal provisions in case of accidents

Species/Habitat of community interest	Conservation and protection measure	Limitation/influence on Neptun Deep project (Yes/No)	Remarks
	It is forbidden to leave waste of any kind on the site. Tourists and users of the buffer zone have the obligation to dispose of the waste they generate during their visit to the site. Waste will be deposited off-site and stored only in places specially arranged for collection. The discharge of untreated household water from the terrestrial perimeter in the vicinity of the site is prohibited.	No	The measure targets tourism activities and waste and wastewater management in the land area adjacent to the site. The activities in the land area envisaged by the project, in all its stages of implementation, will respect the environmental legislation in force.
Habitat 1140	It is prohibited to hunt, capture, collect, destroy plant and animal species by any means and any other activity that could present a danger to these species, including the introduction of exotic species. It is forbidden to use weapons, explosives and any other destructive means, as well as toxic and polluting substances in the aquatic environment.	No	Measures provided by the specific legislation in force
	Fishing with bottom gears (dredging, trawling) can only be carried out for scientific purposes. Commercial fishing is permitted only with non-destructive gear.	No	The measure concerns the fishing activity
	Aquaculture can have a significant impact on the habitats of the site, and must be strictly prohibited within the perimeter of the marine protected area, as well as around it in a 1 nautical mile wide strip.	No	The measure targets the aquaculture activity
	Any kind of aquaculture or fishing activities that may generate destructive effects on biocenoses and benthic habitats are prohibited. Trawling of any kind, the use of illegal nets and the abandonment of nets and fishing gear at sea are strictly prohibited.	No	The measure concerns fishing and aquaculture

Species/Habitat of community interest	Conservation and protection measure	Limitation/influence on Neptun Deep project (Yes/No)	Remarks
	The direct or indirect modification, by any means, of the geophysical characteristics of the environment (collection, extraction and destruction of the substrate of any type) and the biochemical characteristics of the water, as well as the discharge of liquid and solid residues and the introduction of any substances that could change, even temporarily, the characteristics of the marine environment, as a result of industrial or construction activities.	No	The activities and interventions envisaged by the project are classified as industrial activities, but they do not involve the destruction of the substrate, the discharge of liquid and solid residues and the introduction of chemical substances that could change the characteristics of the marine environment in the Natura 2000 site ROSAC0273.
	Hydrotechnical constructions are prohibited in the perimeter of the site, because they can substantially modify habitats and, implicitly, biodiversity.	No	The measure aims at rehabilitation activities, consolidation of coastal areas.
	The agricultural activities carried out in the vicinity of the site must be monitored, so that there are no spills/leaks of fertilizers/animal droppings, thus minimizing the area of influence on the habitats, in order to maintain a minimum level of impact on biodiversity.	No	The measure targets agricultural activities in the land area adjacent to the project.
	In the entire perimeter of the site, ships and boats are strictly prohibited from unloading or dumping waste of any kind into the sea (households, dredged materials, bilge water, ballast water, etc.), washing tanks and dumping oil residues into the sea, polluting other type of marine waters.	No	The measure concerns navigation. The ships involved in the project activities will comply with the specific legislation in force, including the legal provisions in case of accidents.
	It is forbidden to leave waste of any kind on the site. Tourists and users of the buffer zone have the obligation to dispose of the waste they generate during their visit to the site. Waste will be deposited off-site and stored	No	The measure targets tourism activities and waste and wastewater management in the land area adjacent to the site.

Species/Habitat of community interest	Conservation and protection measure	Limitation/influence on Neptun Deep project (Yes/No)	Remarks
	only in places specially arranged for collection. The discharge of untreated household water from the terrestrial perimeter in the vicinity of the site is prohibited.		The activities in the land area envisaged by the project, in all its stages of implementation, will respect the environmental legislation in force.
Habitat 1170	It is prohibited to hunt, capture, collect, destroy plant and animal species by any means and any other activity that could present a danger to these species, including the introduction of exotic species. It is forbidden to use weapons, explosives and any other destructive means, as well as toxic and polluting substances in the aquatic environment.	No	Measures provided by the specific legislation in force
	Fishing with bottom gears (dredging, trawling) can only be carried out for scientific purposes. Commercial fishing is permitted only with non-destructive gear.	No	The measure concerns the fishing activity
	Aquaculture can have a significant impact on the habitats of the site, and must be strictly prohibited within the perimeter of the marine protected area, as well as around it in a 1 nautical mile wide strip.	No	The measure targets the aquaculture activity
	Any kind of aquaculture or fishing activities that may generate destructive effects on biocenoses and benthic habitats are prohibited. Trawling of any kind, the use of illegal nets and the abandonment of nets and fishing gear at sea are strictly prohibited.	No	The measure concerns fishing and aquaculture
	The direct or indirect modification, by any means, of the geophysical characteristics of the environment (collection, extraction and destruction of the substrate of any type) and the biochemical characteristics of the water, as well as the discharge of liquid and solid residues and the	No	The activities and interventions envisaged by the project are classified as industrial activities, but they do not involve the destruction of the substrate, the discharge

Species/Habitat of community interest	Conservation and protection measure	Limitation/influence on Neptun Deep project (Yes/No)	Remarks
	introduction of any substances that could change, even temporarily, the characteristics of the marine environment, as a result of industrial or construction activities.		of liquid and solid residues and the introduction of chemical substances that could change the characteristics of the marine environment in the Natura 2000 site ROSAC0273.
	Hydrotechnical constructions are prohibited in the perimeter of the site, because they can substantially modify habitats and, implicitly, biodiversity.	No	The measure aims at rehabilitation activities, consolidation of coastal areas
	The agricultural activities carried out in the vicinity of the site must be monitored, so that there are no spills/leaks of fertilizers/animal droppings, thus minimizing the area of influence on the habitats, in order to maintain a minimum level of impact on biodiversity.	No	The measure targets agricultural activities in the land area adjacent to the project.
	In the entire perimeter of the site, ships and boats are strictly prohibited from unloading or dumping waste of any kind into the sea (households, dredged materials, bilge water, ballast water, etc.), washing tanks and dumping oil residues into the sea, polluting other type of marine waters.	No	The measure concerns navigation. The ships involved in the project activities will comply with the specific legislation in force (MARPOL), including the provisions of a legal nature in case of accidents.
	It is forbidden to leave waste of any kind on the site. Tourists and users of the buffer zone have the obligation to dispose of the waste they generate during their visit to the site. Waste will be deposited off-site and stored only in places specially arranged for collection. The discharge of untreated household water from the terrestrial perimeter in the vicinity of the site is prohibited.	No	The measure targets tourism activities and waste and wastewater management in the land area adjacent to the site. The activities in the land area envisaged by the project, in all its stages of implementation, will respect the environmental legislation in force.

Species/Habitat of community interest	Conservation and protection measure	Limitation/influence on Neptun Deep project (Yes/No)	Remarks
Habitat 8330	It is prohibited to hunt, capture, collect, destroy plant and animal species by any means and any other activity that could present a danger to these species, including the introduction of exotic species. It is forbidden to use weapons, explosives and any other destructive means, as well as toxic and polluting substances in the aquatic environment.	No	Measures provided by the specific legislation in force
	Fishing with bottom gears (dredging, trawling) can only be carried out for scientific purposes. Commercial fishing is permitted only with non-destructive gear.	No	The measure concerns the fishing activity
	Aquaculture can have a significant impact on the habitats of the site, and must be strictly prohibited within the perimeter of the protected marine area, as well as around it on a strip with a width of 1 nautical mile, acc. the legal provisions; any kind of aquaculture or fishing activities that can generate destructive effects on biocenoses and benthic habitats are prohibited. Trawling of any kind and the use of illegal nets/abandonment of nets and fishing gear at sea are strictly prohibited	No	The measure targets the aquaculture activity
	The direct or indirect modification, by any means, of the geophysical characteristics of the environment (collection, extraction and destruction of the substrate of any type) and the biochemical characteristics of the water, as well as the discharge of liquid and solid residues and the introduction of any substances that could change, even temporarily, the characteristics of the marine environment, as a result of industrial or construction activities.	No	The activities and interventions provided for by the project subscribe to the industrial type activities, but they do not involve the destruction of the substrate (the aim was to avoid the positioning of anchors in habitat 8330, considered to be sensitive to this type of activities), the discharge of liquid and solid residues and the introduction of certain substances chemicals that could change the

Species/Habitat of community interest	Conservation and protection measure	Limitation/influence on Neptun Deep project (Yes/No)	Remarks
			characteristics of the marine environment in the Natura 2000 site ROSAC0273.
	Hydrotechnical constructions are prohibited in the perimeter of the site, because they can substantially modify habitats and, implicitly, biodiversity.	No	The measure aims at rehabilitation activities, consolidation of coastal areas.
	The agricultural activities carried out in the vicinity of the site must be monitored, so that there are no spills/leaks of fertilizers/animal droppings, thus minimizing the area of influence on the habitats, in order to maintain a minimum level of impact on biodiversity.	No	The measure targets agricultural activities in the land area adjacent to the project.
	In the entire perimeter of the site, ships and boats are strictly prohibited from unloading or dumping waste of any kind into the sea (households, dredged materials, bilge water, ballast water, etc.), washing tanks and dumping oil residues into the sea, polluting other type of marine waters.	No	The measure concerns navigation. Vessels involved in project activities will comply with the specific legislation in force (MARPOL), including legal provisions in case of accidents
	It is forbidden to leave waste of any kind on the site. Tourists and users of the buffer zone have the obligation to dispose of the waste they generate during their visit to the site. Waste will be deposited off-site and stored only in places specially arranged for collection. The discharge of untreated household water from the terrestrial perimeter in the vicinity of the site is prohibited.	No	The measure targets tourism activities and waste and wastewater management in the land area adjacent to the site. The activities in the land area envisaged by the project, in all its stages of implementation, will respect the environmental legislation in force.

In the Regulation of the Natura 2000 Site ROSCI0273 Zona marină de la Capul Tuzla, regulations are provided for the activities allowed in the area of the site as well as the obligations related to the performance of these activities.

The activities strictly prohibited in the Natura 2000 site ROSCI/ROSAC0273, acc. the Regulation, are the following:

a. Collecting, harvesting, capturing, killing or destroying protected plant or animal species by any means, as well as any other activity that could present a danger to these species, including the introduction of non-native species;
b. The direct or indirect modification, by any means, of the sedimentological characteristics of the environment (collection and destruction of stony substrate) and of the biochemical characteristics of the water, as well as the discharge of liquid and solid residues and the introduction of any substances that could change, even temporarily, the characteristics the marine environment;
c. Fishing or aquaculture activities that can generate destructive effects on biocenoses and benthic habitats;
d. Trawling and underwater hunting to depths of less than 20 m;
e. Diving of any kind, with the exception of those explicitly stipulated in the safety rules of the Natura 2000 Marine Zone at Capul Tuzla site;
f. Any activity that may harm, inconvenience or disturb the conduct of studies and scientific research programs in the area;
g. The use of weapons, explosives and any other destructive means, as well as toxic and polluted substances in the aquatic environment;
h. Using any chemical substances in the perimeter of the area without the consent of the custodian;
i. Destruction or defacement of signs, markings, plaques or information panels.

It can easily be seen that among these strictly prohibited activities, the activities and interventions of the project foreseen by the Neptun Deep project, in all its implementation phases, are not found.

The only provisions of the Regulation that are relevant to the analysed project are those related to navigation. It is stated that "Anchoring is permitted for boats and ships only in sectors established by the Custodian" (Art. 27). In these conditions, the anchor points provided by the project and which have been analysed from the point of view of the effects that can induce a potential impact on the habitats within ROSAC0273 will require the analysis and subsequent decision by the authority responsible for the management of the site (ANANP).

The other regulations specific to the activities allowed within the Natura 2000 site ROSCI/ROSC0273 Zona marină de la Capul Tuzla are not able to limit or influence the interventions and activities provided for in the analysed project.

B.5.2. Conservation measures from the approved Management Plan of the Natura 2000 site ROSPA0076 Marea Neagră and from the Site Regulations

The declared purpose of the Management Plan of ROSPA0076 is to establish the necessary management measures to be applied to preserve or improve the conservation status of the species that constitute the conservation objectives listed in the standard form of the Natura 2000 Site ROSPA0076 Marea Neagră.

The ROSPA0076 Marea Neagră management plan has 6 main themes, each of which has an associated general objective, as follows:

Table B.15 Main themes Management plan of ROSPA0076 Marea Neagră

No.	Theme	The overall objective
1.	Topic 1. Biodiversity conservation and management	OG1 Ensuring the conservation of bird species for which the Natura 2000 Site ROSPA0076 Marea Neagră has been declared in order to maintain a favourable conservation status.
2.	Topic 2. Inventory/detailed assessment and monitoring of biodiversity	OG2 Ensuring the information/data base on the species for which the natural protected area has been declared, including their conservation status, with the aim of providing the necessary support for the management of biodiversity conservation and the evaluation of management efficiency
3.	Topic 3. Administration and effective management of the protected natural area and ensuring sustainable management	OG3 ensuring the effective management of the protected natural area with the aim of maintaining the favourable conservation status of species of conservation interest
4.	Topic 4. Communication, environmental education and public awareness	OG4 Increasing the level of awareness of public opinion and primarily of local riparian communities with an impact on biodiversity conservation and changing attitudes and behavior towards protected bird species
5.	Topic 5. Sustainable use of natural resources	OG5 Promotion of sustainable use of natural resources that provide the trophic base for protected bird species at site level ROSPA0076 Marea Neagră
6.	Topic 6. Sustainable tourism through natural and cultural values	OG6 Development of facilities for ecological tourism, in order to limit the impact on the environment

Each general objective is characterized by several specific objectives (OS) which in turn provide for several measures aimed at achieving the general and specific objectives:

Table B.16 General objectives Management plan of ROSPA0076 Marea Neagră

Overall Objective (OG)	Specific objective (OS)	Measures (MS)
OG1 Ensuring the conservation of bird species for which the Natura 2000 Site ROSPA0076 Marea Neagră has been declared in order to maintain a favourable conservation status.	OS1.1 Ensuring the conservation of species in the sense of maintaining the favourable conservation status of the bird species for which the Natura 2000 site was declared ROSPA0076 Marea Neagră	MS1.1.1 Monitoring the conservation status of species of community interest from the Natura 2000 site ROSPA0076 Marea Neagră
		MS1.1.2 Implementation of measures to reduce the possibility of by-catch during fishing with nets, longlines or traps
	OS1.2 Monitoring of factors with impact on bird species of conservation interest on the surface ROSPA0076 Marea Neagră	MS1.2.1 Water quality monitoring, pollution and/or eutrophication phenomena on the surface of the Natura 2000 site ROSPA0076 Marea Neagră
		MS1.2.2 Monitoring of fishing activities likely to have an impact on bird populations of conservation interest on the surface ROSPA0076 Marea Neagră
	OS1.3 Ensuring optimal feeding conditions during the implementation of the Management Plan in order to achieve a favourable conservation status for bird species of conservation interest	MS1.3.1 Creating feeding habitats for birds
OG2 Ensuring the information/data base on the species for which the natural protected area has been declared, including their conservation status, with the aim of providing the necessary support for the management of biodiversity conservation and the evaluation of management efficiency	OS2.1 Completing and updating the database regarding the species for which the Natura 2000 site was declared ROSPA0076 Mare Neagră	MS2.1.1 Updating inventories through detailed assessment and monitoring of the conservation status of species in the Black Sea Natura 2000 site
		MS2.1.2 Acquisition of an Application for real-time field data collection using mobile phones
OG3 ensuring the effective management of the protected natural area with the aim of	OS3.1 Monitoring compliance with the regulation and implementation of the	MS3.1.1 Carry out field trips/periodic patrols to monitor the implementation of the measures provided for in the management plan for the ROSPA0076 Marea Neagră site

Overall Objective (OG)	Specific objective (OS)	Measures (MS)
maintaining the favourable conservation status of species of conservation interest	Natura 2000 site management plan ROSPA0076 Marea Neagră	MS3.1.2 Granting favourable/unfavourable approvals for the activities, plans and projects that are carried out on the surfaces on the territory of the Natura 2000 site ROSPA0076 Marea Neagră or on its border
		MS3.1.3 Tracking the achievement of monitoring indicators, qualitative and quantitative, milestones and deliverables of the management plan
	OS3.2 Ensuring the funding of the budget necessary for the implementation of the management plan	MS3.2.1 Elaboration of the annual budget necessary for administration and management activities to achieve the main purpose of the management plan
		MS3.2.2 Identification of sources of financing activities and participation in various projects for the conservation of biodiversity from the Natura 2000 site ROSPA0076 Marea Neagră
		MS3.2.3 Collection of fees for the granting of opinions
		MS3.2.4 Preparation of annual work plans
	OS3.3 Ensuring the necessary logistics for the efficient administration of the Natura 2000 site ROSPA0076 Marea Neagră	MS3.3.1 Procurement of necessary logistics elements
	OS3.4 Capacity development of personnel involved in the administration/management of the Natura 2000 site ROSPA0076 Marea Neagră	MS3.4.1 Evaluation of training needs of personnel involved in site management
		MS3.4.2 Conducting required training courses
OG4 Increasing the level of awareness of public opinion and primarily of local riparian communities with an impact on biodiversity conservation and changing attitudes and behavior towards protected bird species	OS4.1 Implementation of the Action Plan on communication and awareness of public opinion, local communities and stakeholders for ROSPA0076 Marea Neagră	MS4.1.1 Realization of an Action Plan regarding communication and awareness of public opinion, local communities and stakeholders
		MS4.1.2 Creation of informative materials regarding the Natura 2000 Black Sea site
		MS4.1.3 Updating the website of the Natura 2000 site ROSPA0076 Marea Neagră
	OS4.2 Carrying out educational activities and	MS4.2.1 Planning and carrying out campaigns to raise awareness of the natural values of the Natura

Overall Objective (OG)	Specific objective (OS)	Measures (MS)
	raising awareness regarding biodiversity within the ROSPA0076 Marea Neagră site	2000 site ROSPA0076 Marea Neagră, communication and awareness of public opinion, local communities and stakeholders
		MS4.2.2 Carrying out specific educational activities at the level of educational institutions to increase awareness of the natural values of the ROSPA0076 Marea Neagră Site
		MS4.2.3 Making itinerant photo exhibitions that promote the species of conservation interest on the surface of the Natura 2000 site ROSPA0076 Marea Neagră to be placed in different locations both during the tourist season and in the off-season
		MS4.2.4 Production of a documentary film and presentation clips of the Natura 2000 site ROSPA0076 Marea Neagră
		MS4.2.5 Creation of educational panels for the Natura 2000 site ROSPA0076 Marea Neagră
	OS4.3 Arrangement of information distribution spaces regarding ROSPA0076 Marea Neagră	MS4.3.1 Equipping the existing information points of the Natura 2000 site ROSPA0076 Marea Neagră with documentary materials
OG5 Promotion of sustainable use of natural resources that provide the trophic base for protected bird species at site level ROSPA0076 Marea Neagră	OS5.1 Promoting the sustainable use of fishery resources, with minimal impact on species of conservation interest	MS5.1.1 Development of a guide on the sustainable management of fishing activities carried out on the surface of the ROSPA0076 Marea Neagră from the point of view of protecting bird species of conservation interest
	OS5.2 Promotion of sustainable land use in the areas adjacent to the Natura 2000 site ROSPA0076 Marea Neagră	MS5.2.1 Promotion of the sustainable use of agricultural land in the immediate vicinity of the Natura 2000 site ROSPA0076 Marea Neagră
	OS5.3 Promotion of sustainable urban and economic use as well as sustainable military activities in the areas bordering the Natura 2000 site ROSPA0076 Marea Neagră and on its surface	MS5.3.1 Taking into account the provisions of the Management Plan of the Natura 2000 site ROSPA0076 Marea Neagră in the development of general urban planning plans and zonal urban planning plans for the localities bordering the site.
		MS5.3.2 Elaboration of special provisions for all actions involved in the extraction of marine sand in order to rehabilitate beaches in areas located on the surface of the ROSPA0076 Marea Neagră.

Overall Objective (OG)	Specific objective (OS)	Measures (MS)
		MS5.3.3 Monitoring the actions involved in the extraction of marine sand in order to rehabilitate the beaches in areas located on the surface of the Natura 2000 site ROSPA0076 Marea Neagră.
		MS5.3.4 The inclusion of the provisions of the management plan within the conditions imposed associated with the environmental agreement and/or the environmental authorization issued for the activity of extracting marine sand in order to rehabilitate the beaches in areas located on the surface of the Natura 2000 site ROSPA0076 Marea Neagră.
		MS5.3.5 Taking into account the provisions of the Management Plan of the Natura 2000 site ROSPA0076 Marea Neagră within the framework of military activities.
OG6 Development of facilities for ecological tourism, in order to limit the impact on the environment	OS6.1 Develop a visitor management strategy	MS6.1.1 Establishing a working group for the development of a Visitor Management Strategy by conducting ecological tourism on the surface of the Natura 2000 Site ROSPA0076 Marea Neagră.
		MS6.1.2 Meetings of the working group for the development of an Ecological Tourism Development Strategy
	OS6.2 Creating opportunities to promote tourism within the site and birdwatching	MS6.2.1 Elaboration of a set of materials to promote the Natura 2000 site ROSPA0076 Marea Neagră in terms of ecological tourism, which takes into account the requirements of biodiversity conservation.
		MS6.2.2 Development of a guide regarding the sustainable management of tourist and recreational activities carried out on the surface of the Natura 2000 site ROSPA0076 Marea Neagră from the point of view of protecting bird species of conservation interest. The inclusion in the activity of tourism operators of programs to present the natural values of the Natura 2000 site ROSPA0076 Marea Neagră
		MS6.2.3 Drafting of a guide on the sustainable management of tourist and recreational activities carried out on the surface of the Natura 2000 site ROSPA0076 Marea Neagră from the point of view of protecting bird species of conservation interest. The inclusion in the activity of tourism operators of

Overall Objective (OG)	Specific objective (OS)	Measures (MS)
		programs to present the natural values of the Natura 2000 site ROSPA0076 Marea Neagră
		MS6.2.4 Identification of objectives for ecological tourism
		MS6.2.5 Realization of a specific infrastructure for the creation of sea birdwatching routes and underwater tourism.

From the analysis of the measures in the management plan, it emerges that no relations can be established with the proposed project, resulting in limitations between these measures and the activities and/or interventions proposed by the Neptun Deep project.

Regarding the Regulation of the Natura 2000 site ROSPA0076 Marea Neagră, it should be noted that it also covers ROSAC0197 Eforie Nord-Eforie Sud Submerged Beach and aims to ensure the conservation and maintain in a favourable conservation state the existing bird species and their specific habitats.

The activities provided by the project are not directly regulated and as a result are not influenced by the regulation of the Natura 2000 site ROSPA0076 Marea Neagră. The only activity that is subject to regulations is that related to maritime transport, but without bringing limitations to the activities within the project, regardless of the stage of its implementation.

B.5.3. Conservation measures from the approved Management Plan of the Natura 2000 site ROSCI0293 Costinești-23 August

No management plan was developed for ROSCI0293. ANANP note regarding the approval of the minimum set of special measures for the protection and conservation of biological diversity, as well as the conservation of natural habitats, flora and fauna, safety of the population and investments from ROSCI0293 Costinești-23 August (with no. 375/20.01.2022) does not contain measures that influence or limit the activities and interventions proposed by the project analysed in this appropriate assessment study.

B.5.4. Conservation measures from the approved Management Plan of the Natura 2000 site ROSCI0311 Canionul Viteaz

No management plan was developed for ROSCI0311. ANANP note regarding the approval of the minimum set of special measures for the protection and conservation of biological diversity, as well as the conservation of natural habitats, flora and fauna, safety of the population and investments from ROSCI0311 Costinești-23 August (with no. 377/20.01.2022) does not contain measures that influence or limit the activities and interventions proposed by the project analysed in this appropriate assessment study.

B.6 OTHER RELEVANT INFORMATION REGARDING THE CONSERVATION OF ANPIC, INCLUDING POSSIBLE CHANGES IN ITS NATURAL EVOLUTION

For the protected natural areas of community importance as well as for the special conservation area in the area of influence of the project, the protection and conservation regime was established for species and habitats of community interest in the marine area. The marine sites are interconnected through the marine aquatic environment, which is common to all these sites on the Romanian coast of the Black Sea, and as a result the state of the marine environment is important in maintaining the ecological connectivity of fish and mammal species of community interest.

Given the fact that the main types of marine habitats of community interest (1110 and 1170) have a wide, but discontinuous distribution, from the north to the south of the Romanian Black Sea coast, being influenced by the type of substrate, the positioning in littoral levels and the variability of salinity and not by the limits of the protected natural areas, the possibility that these habitats are present and potentially affected also outside the NATURA 2000 sites was taken into account.

Thus, in 2021 and 2023, monitoring of the habitats in the project area was carried out by applying scientific research methods among the main objectives established, also finding and locating the habitats of community interest on the route of the gas pipeline and in its vicinity located outside the areas natural protected areas ROSAC0273 Zona marină de la Capul Tuzla and ROSCI0293 Costinești - 23 August, which may be affected by the project. The results of these monitoring will be presented in chapter *C. Presentation of the results of the field activities.*

Regarding the effects of climate change in the north-western sector of the Black Sea, the extreme weather phenomena that have been felt in the coastal area in recent years are a consequence of the greenhouse effect on the water masses on the surface and the characteristics of the physio-chemical parameters, such as the increase in surface water temperature, decrease in salinity, decrease in water temperature in the cold season, which leads more and more often to the occurrence of freezing of marine waters at the coast, decreases in the oxygen level in deep waters.

Global climate model projections include a range of changes in temperature and precipitation patterns on a general trend of aridity and intensification of extreme events.

For the offshore area, in the context of global warming, in addition to the direct effects on water temperature and sea level rise (negligible values in the Black Sea area), there will be an intensification of atmospheric circulation with secondary effects and risk factors:

1. wind intensification,
2. high wave heights
3. increased speed of surface currents
4. increased speed of bottom currents

For the coastal area, the effects are related to a reduction in the intensity of winter phenomena with a slight increase in the amount of liquid precipitation in the winter season, and in the summer season they are related to an increase in drought periods and the frequency of convective precipitation severe associated with the formation of flash floods on restricted areas with high erosion capacity.

The effects of climate change that will be felt in the coastal area, in the analysed ANPIC areas, the stability of the cliff will be affected due to the intensification of the wind, the increase in the height of the waves and the increase in the speed of the bottom currents with the water depth up to 20 m, the increase in erosion processes.

Damage to the cliff can cause clogging of marine habitats with possible losses in the biomass of zoo- and phytobenthic communities. Thus, the upper links of the trophic chain can also be affected, respectively: consumers of the second order (fish) and III (ichthyophage birds and dolphins).

Regarding these climate changes that are manifesting in the Black Sea, several types of threats and pressures have been described for the habitats and species of community interest in the analysed natural areas of community interest (acc. country reports based on Article 17 of the Habitats Directive and Article 12 of the Birds Directive), as follows:

- habitat 1110 Shallow submerged sandbars- temperature changes (e.g. temperature rise and extremes), pressure and threat medium;
- habitat 1170 Reefs- temperature changes (e.g. increase in average temperature and thermal extremes), medium pressure and threat;
- fish species *Alosa immaculata*- temperature changes (eg increase in average temperature and thermal extremes), pressure and threat of high importance/impact;
- fish species *Alosa tanaica:* temperature changes (e.g. increase in average temperature and thermal extremes), pressure and threat of high importance/impact;
- fish species *Acipenser gueldenstaedtii*- temperature changes (e.g. increase in average temperature and thermal extremes), pressure and threat of medium importance;
- fish species *Acipenser stellatus*- temperature changes (e.g. temperature increase and extremes), pressure and threat of medium importance;
- fish species *Huso huso*- temperature changes (e.g. increase in average temperature and thermal extremes), pressure and threat of medium importance;
- bird species *Aythya ferina*- climate change causing droughts and reduced precipitation, pressure and threat of medium importance;
- the bird species *Aythya fuligula*- climate change causing droughts and decreases in precipitation, pressure and threat of medium importance;
- bird species *Branta ruficollis*- climate change causing droughts and reduced rainfall pressure and threat of great importance;
- bird species *Bucephala clangula*- climate change causing droughts and reduced precipitation, pressure and threat of medium importance;
- bird species *Chlidonias hybridus*- climate change causing droughts and reduced precipitation, pressure and threat of medium importance;
- bird species *Chlidonias niger* - climate change causing droughts and reduced precipitation, medium pressure and threat;
- bird species *Cygnus cygnus* - climate change causing droughts and reduced rainfall, pressure and threat of great importance;

- bird species *Gavia arctica* - climate change causing droughts and reduced precipitation, medium pressure and threat;
- bird species *Gavia arctica* - climate change causing droughts and reduced precipitation, medium pressure and threat;
- bird species *Larus cachinnans* - climate change causing change in habitat location, size and/or quality, pressure and threat of high importance;
- bird species *Larus genei* - climate change causing droughts and reduced precipitation, medium pressure and threat;
- bird species *Larus melanocephalus* - climate change causing droughts and reduced rainfall, pressure and threat of high importance;
- bird species *Larus minutus*- climate change causing droughts and reduced precipitation, pressure and threat of medium importance;
- bird species *Larus ridibundus* - climate change causing droughts and reduced precipitation, medium pressure and threat;
- the bird species *Phalaropus lobatus* - climate change causing droughts and reduced precipitation, medium pressure and threat;
- the bird species *Sterna albifrons* - climate change causing droughts and reduced precipitation, medium pressure and threat;
- bird species *Sterna hirundo* - climate change causing droughts and reduced precipitation, medium pressure and threat.

It can be noted that, in the case of marine habitats and species, the main pressures and threats are those related to temperature changes such as, for example, temperature increase and its extremes. For waterfowl species in the Black Sea avifaunistic special protection area, pressures and threats related to climate change are mainly those that cause droughts and decreases in precipitation on the continental side.

Regarding the existence of risks of major accidents and/or major disasters, we emphasize that the project is designed acc. all relevant codes and standards, presented in the dedicated sections of the Environmental Impact Report for the Neptun Deep project, to withstand seismic events and potential impacts due to climate changes, as well as physical risks (floods, landslides, extreme storms).

The Neptun Deep project team will demonstrate a commitment to risk management by ensuring that risks are reduced to as low a level as possible.

Technological risks are analysed in detail in the Environmental Impact Report for the proposed project, for all environmental components, including sediments, marine biodiversity, bird species as well as the integrity of protected natural areas of community interest.

CHAPTER C) PRESENTATION OF THE RESULTS OF FIELD ACTIVITIES

The main purpose of collecting data from the field was to resolve uncertainties related to the presence and distribution of habitats and species of community interest in the implementation area of the Neptun Deep project and also to respond to the request of the authority responsible for site management regarding the updating of data and information from the field which will be used in the analyzes to identify and quantify the impacts.

Thus, a list of habitats and species for which it is necessary to carry out investigations in the field was established, taking into account two important criteria: habitats in the marine area for which it is necessary to clarify the presence in the ANPIC area of potentially affected and species of birds of community interest, protection and conservation objectives of ROSPA0076 Marea Neagră, for which clarification is needed regarding the presence and activity of individuals of these species in the project area.

For the application of impact quantification methodologies, certain types of field data were collected, depending on the particularities of each proposed methodology.

In the process of analysis and establishment of the data to be collected from the field, the determination of the forms of impact, the methods of quantification and the establishment of the data to be collected during the investigations in the field were the benchmarks.

Thus, in order to respond to the defined purpose, sea expeditions were carried out in and around the marine sites of community interest ROSAC0273 Zona marină de la Capul Tuzla and ROSCI0293 Costinești- 23 August, between March and June 2023, by Blumenfield experts and trips on land in the land area adjacent to ANPIC.

In order to establish the field data necessary to assess the impact on the ANPIC in the project area, firstly, the method of reviewing scientific and technical data and information from the documents, reports and field studies carried out for the Neptun Deep project during 2018 -2021.

For the analysis of the habitats and populations of fauna species of community interest, data and information available in the specialized literature were used, obviously starting from the information from the approved Management Plans of the sites, later completing the analysis with the data and information obtained as a result of the activities of land.

Table C.1 List of habitats and species for which it was considered necessary to carry out investigations in the field

Habitat/species	Inclusion criteria
1170	habitat in the marine area for which clarification is needed regarding its presence and its subtypes at the barge anchorage points
8330	habitat in the marine area for which the distribution is not known, but it shows a high sensitivity to the project activities

Habitat/species	Inclusion criteria
Larus genei (syn. Chroicocephalus genei)	bird species of community interest for which clarification is needed regarding the presence and activity of individuals of this species in the project area
Mergus albellus	bird species of community interest for which clarification is needed regarding the presence and activity of individuals of this species in the project area
Pelecanus crispus	bird species of community interest for which clarification is needed regarding the presence and activity of individuals of this species in the project area
Phalaropus lobatus	bird species of community interest for which clarification is needed regarding the presence and activity of individuals of this species in the project area
Puffinus yelkouan	bird species of community interest for which clarification is needed regarding the presence and activity of individuals of this species in the project area

C.1. DESCRIPTION OF THE PROGRAM OF FIELD ACTIVITIES

- Study periods of the investigated areas

The study periods of the investigated areas within the monitoring programs carried out for the analyzed project are broken down into three time periods, namely:

  - 2018-2019
  - 2021
  - 2023
- Duration of observations:
  - vegetation was analyzed in all appropriate seasons: serotinal - late summer (August - September 2018), autumnal (September - October 2018), prevernal - early spring (March - April 2019), vernal - spring (April - May 2019, May 2023) and summer (June - July 2019);
  - field activities for terrestrial vertebrate species were carried out between August 2018 - July 2019 with a monthly frequency and March - July 2023;
  - field activities for terrestrial invertebrate species were carried out within the monitoring program carried out during 2018-2019;
  - habitat and zoobenthos monitoring activities along the gas pipeline route, in the area of future wells and the Neptun Alpha platform in 2021;
  - the data on the marine biodiversity present in the area proposed for the offshore facilities of the Neptun Deep project, have been collected since 2013 during the various stages of prospecting and exploration of the Neptun concession area (Black Sea). The most recent data were collected during the program carried out between May and June 2023, by Blumenfield® experts.

C.2 RESULTS OBTAINED AFTER FIELD ACTIVITIES

C.2.1 Flora, vegetation and habitats in the terrestrial area of the site

For the taxonomic identification of plant species, the most recent publications on plant identification published in Romania (Ciocârlan, 2009, Sârbu et al., 2013) were used, as well as references on the flora of Romania (Flora României, Săvulescu et al., 1952-1976, vol. I-XIII). The identified phytotaxa

were grouped according to the current systematic classification, included in the synthesis works on the vegetation in Romania (Sanda et al., 2008).

Regarding terrestrial habitats, the only habitat of community interest identified in the area of influence of the project is located in the beach area. In this area, on a narrow strip of approx. 2-5m, psammophilic plants specific to the habitat of community interest 1210 Annual vegetation along the shoreline were observed.

The rest of the terrestrial habitats in the project area are of no conservation importance, the vegetal associations with a ruderal character, being specific to agricultural lands, compacted, along roads, near households and on abandoned lands.

The results of the monitoring of vegetation and associated flora in the land area of the proposed project are grouped into 9 areas corresponding to different land use classes (cf. CLC 2018 Data Set):

1 SH1 (Tree protection curtain 1)

The SH1 zone consists mainly of tree and shrub species such as *Robinia pseudoacacia, Acer negundo, Acer campestre, Acer platanoides, Acer pseudoplatanus, Gleditsia triacanthos, Fraxinus angustifolia, Morus nigra, Quercus robur, Crataegus monogyna, Juglans regia, Ligustrum vulgare* and *Prunus cerasifera* and *Prunus spinosa.*

The herbaceous layer changes according to the season. Observations of the preveral flora therefore led to the identification of ephemeral species such as *Ranunculus ficaria* and *Muscari neglectum.* The vernal aspect of the flora was edified by species such as *Conium maculatum, Veronica hederifolia, Cradaria draba* (observed at the edge of the protective curtain), *Euphorbia* sp., *Asperugo procumbens, Valerianella locusta, Lamium purpureum* and *Allium* sp.. During the summer season, the herbaceous layer was less developed due to the tree crown. The species with the highest frequency of occurrence were *Sambucus ebulus* and *Conium maculatum.*

Near the SH1 zone there is an area with woody vegetation, consisting of species such as *Malus domestica, Prunus cerasifera, Juglans regia, Rosa canina, Crataegus monogyna* and *Elaeagnus angustifolia.*

2 IC (Irrigation Canal)

In the IC zone the most common species identified were *Prunus cerasifera* and *Crataegus monogyna,* with rare occurrences of *Cerasus avium* and *Prunus persica species.* Regarding the herbaceous layer, the species with the highest coverage were *Cardaria draba, Artemisia absinthium, Bromus sterilis, Euphorbia agraria, E. seguieriana, Rumex stenophyllus, Ballota nigra, Conium maculatum, Rubus caesius, Calamagrostis epigejos* and *Sorghum halepense.* The plant association *Lepidietum drabae* (Timár 1950) was identified on the irrigation channel and in its vicinity, being a specific association of leveled lands, along roads, near households and on abandoned lands (Sanda et. al., 2008). Along the irrigation canal, the association *Artemisietum absinthii* (Todor et al. 1971) is well developed, especially near the orchard, indicating a rich organic substrate. The *Setario pumilae-Sorghetum halepensii Ștefan et Oprea 1997* plant community was also identified at the edge of the IC zone, usually found on cultivated land.

Balloto nigrae-Malvetum sylvestris Gutte 1966, a ruderal association growing on soils rich in organic content, was identified at the beginning of the irrigation channel between the railway and the orchard on the northern side of the future NGMS site. The association *Balloto nigarie-Malvetum sylvestris* is characteristic for the habitat R8703 Anthropogenic communities with *Agropyron repens, Arctium lappa, Artemisia annua* and *Ballota nigra* (national classification) corresponding to 87.2. Ruderal communities (palaearctic classification), having a low conservation value, which do not require conservation measures.

3 PO (Orchard)

The herbaceous layer in the peach orchard (PO) consists of ruderal species. In the summer season, the dominance of *sorghum* was observed *halepense* (with a high coverage). Rarely, *Fumaria vaillantii, Tribulus terrestris, Tragopogon dubius* and *Vicia narbonensis* were observed. In the pre-spring season, the species *Ornithogalum refractum* was observed. *Cynanchum acutum* has grown on the orchard fence, with a large cover. The plant community *Setario pumilae - Sorghetum halepensi* Ștefan et Oprea 1997 was identified in the area, along the entire edge of the orchard.

4 STSA (Small Trees and Shrubs Area along Railway Track)

Shrub vegetation along the railway is not continuous, but mainly in the form of fragmented areas, with relatively compact vegetation only in some places. The species recorded with the highest frequency were *Crataegus monogyna, Rosa canina* and *Elaeagnus angustifolia.*

5 AL (Agricultural lands)

Agricultural lands favored the development of segetal plants (associated with agricultural crops) and ruderal plants, typical of arable lands or anthropized lands. Most of the species identified are fast growing and flowering annuals, (eg *Atriplex patula, Fumariavaillantii, Chenopodium album, Polygonum aviculare, Heliotropium europaeus, Xanthium italicum, X. strumarium, Asperugo procumbens)*.

The agricultural lands located in the northern part of the irrigation canal were cultivated with sunflower (*Helianthus annuus)*, corn (Zea mays) and wheat (*Triticum* sp.) At the NGMS/CCR site, the arable land was cultivated with wheat. On the abandoned agricultural land, next to the sunflower cultivated land that will be bypassed by the access road, the *Conietum maculati association was identified.*

The invasive species *Erigeron canadensis* and *Xanthium italicum* were observed at the edge of agricultural fields (as well as in the pipeline corridor area). These species have a great potential for expansion in the area.

6 PCA (Pipe Corridor Area)

In the Pipeline Corridor Area (PCA), agricultural land has not been cultivated for a long period of time. The composition of the vegetation consisted of ruderal and segetal species. Some of them are invasive, such as *Erigeron canadensis* (this species had significant cover). On the future site of the pipeline, close to the terrace area on the seashore, the phytocenosis is changing. The number of individuals of spontaneous species has increased. *Bromus tectorum, Descurainia sophia, Sisymbrium loeselii, Senecio vernalis, Papaver rhoeas, Anagallis arvensis,* Echium vulgare, *Centaurea diffusa,*

Stachys annua, Reseda lutea, Carduus thoermeri, Medicago rigidula, Dactylis glomerata, Sinapis arvensis, Sonchus oleraceus.

The Setario pumilae-Sorghetum halepensi Ștefan et Oprea 1997 plant community identified in this area shows the previously cultivated character of the area. Also *the Setario pumilae-Sorghetum association halepensi* occupied a significant area in this corridor. In the spring of 2023, the largest area on the uncultivated land is covered by the characteristic plant association *Descurainio-Brometum tectori* Burduja et al. 1969 uned. Apud Horeanu 1975.

7 SH2 (Protective Forest curtain 2)

The forest cover is located near the future site of the NGMS, being represented by a plantation of *Robinia pseudoacacia, Laburnum anagyroides, Sambucus nigra, Juglans regia, Prunus cerasus, Elaeagnus angustifolia, Rosa canina, Gleditsia triachantos, Prunus cerasifera* and *Crataegus monogyna.* Species such as *Ajuga chamaepytis, Vicia narbonensis, Poa pratensis, Geum urbanum, Gallium humifusum* and *Sclerochloa dura* were also identified at the edge of the area alongside: *Tragopogon dubius, Conium maculatum, Taraxacum officinale* and *Agrimonia eupatoria.*

8 TA (Seaside terraced area)

In the terraced area (TA) or landscaped cliff, mostly ruderal plant species with low conservation value were observed such as: *Cynodon dactylon, Elymus repens, Artemisia absinthium, Medicago minima, Lycopsis arvensis ssp. orientalis, Cardaria draba, Buglossoides arvensis, Anthemis austriaca, Carthamus lanatus, Bromus tectorum, Bromus hordeaceus, Phragmites australis, Geranium dissectum, Cynanchum acutum, Viola arvensis, Potentilla argentea, Sonchus oleraceus, Plantago lanceolata, Vicia villosa, Galium aparine, Galium humifusum, Centaurea diffusa, Sambucus ebulus, Conium maculatum, Echium italicum, Fumaria vaillantii, Euphorbia helioscopia, Vicia narbonensis, Convolvulus arvensis and Lolium perenne.*

At the base of the cliff and in the coastal defense area, species of conservation interest were identified, such as: *Ecballium elaterium* and *Scolymus hispanicus.*

The habitat has a moderate conservation value. The mentioned species do not form phytocenoses, only a few specimens being observed during the field activities. Other characteristic species of this type of habitat were: *Centaurea diffusa, Echium italicum, Galium humifusum, Convolvulus arvensis* and *Lolium perenne.*

In this regard, *Cardaria draba* recorded a high coverage in this area, forming the association *Lepidietum drabae* Timár 1950 (Syn.: *Capsello-Cardarietum drabae* Resmerita and Roman 1975). Also, another species that had a large cover was *Phragmites australis.* Regarding the shrubs in this area, isolated specimens of the species were observed: *Eleagnus angustifolia, Prunus spinosa* and *Rosa canina.*

9 SA (Sand Area)

CAKILETEA MARITIMAE class, were observed, such as *Cakile maritima* subsp. *euxina, Crambe maritima, Eryngyum maritimum, Argusia (Tourneforntia) sibirica and Polygonum maritimum. Salsola kali* subsp species were also observed. *ruthenica,* which forms plant communities with the previously mentioned species and the subendemic species *Leymus racemosus* subsp. *Sabulosus.* These

communities are specific to the habitat of community interest **1210 Annual vegetation along the shoreline,** which corresponds to habitat **R1601 West Pontic communities with *Cakile maritima* ssp. *euxina* and *Argusia sibirica*** (national classification). The identified plant communities do not have a high degree of coverage, being subject to the action of limiting natural factors (coastal erosion) and anthropogenic factors (especially tourism and grazing).

These important taxa have great potential for expansion. For example, the species *Argusia sibirica* was observed at the base of the cliff, near the access road, between the stones of the shore defense and on the sand, occupying small areas. Also, other important species such as *Eryngium maritimum, Salsola kali* subsp. *ruthenica* and *Crambe maritima* were frequent on the seashore, forming with *Argusia sibirica* the association *Argusietum* (*Tournefortietum) sibiricae* Popescu et Sanda 1975, characteristic of the Natura 2000 habitat type 1210.

Leymus racemosus subsp. *sabulosus* was observed only in two locations on the seashore. In the first location (28.655278 N, 43.974098 E) most of the characteristic species of habitat 1210 were found, including *Polygonum maritimum.* In the second location (28.657363 N, 43.979278 E), which is further from the project site, in addition to the species characteristic of habitat 1210, the subspontaneous species *Bassia scoparia (Kochia scoparia)* was also identified.

Only 3 individuals of *Cakile maritima* were observed on the seashore in October 2018. According to *Sârbu et al. (2013) and Ciocârlan (2009),* the optimal period for this species is June - September. During fieldwork in June and July 2019, this species was not observed again.

In this area, only one association was observed, consisting of taxa important from a conservative point of view (*Eryngium maritimum, Argusia sibirica, Crambe maritima, Salsola kal* i subsp. *ruthenica, Leymus racemosus* subsp. *sabulosus, Polygonum maritimum)*.

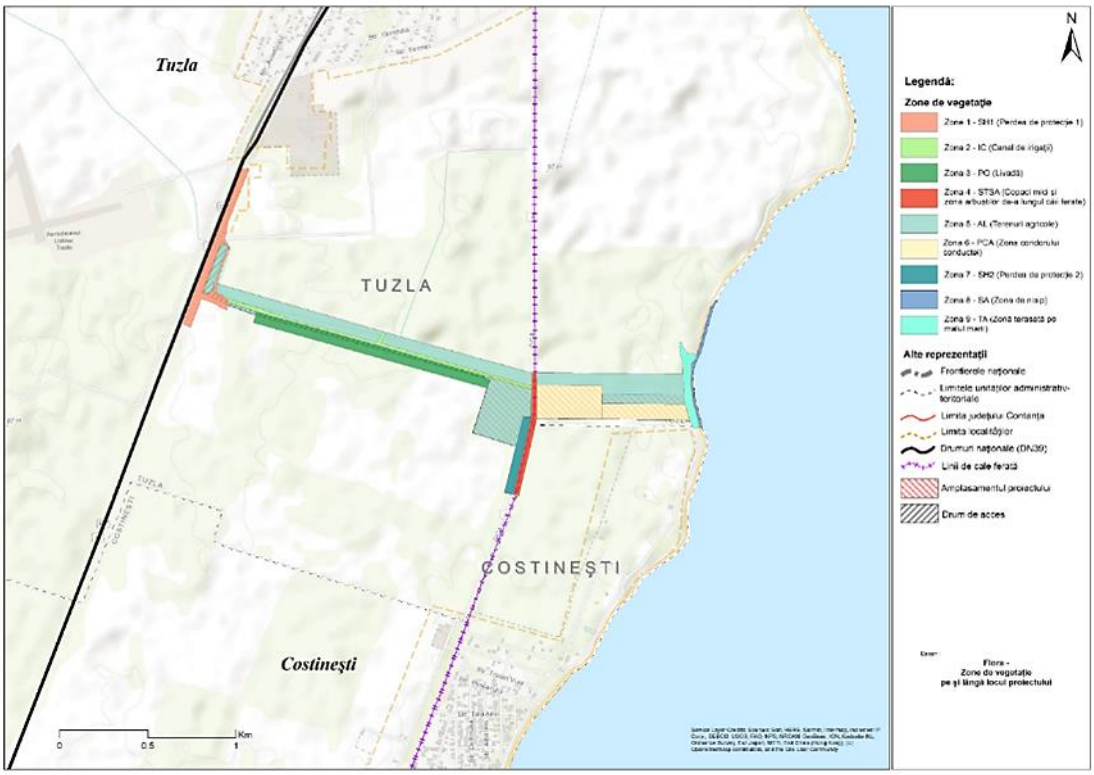


Figure C.1 Vegetation areas on and near the onshore project site analyzed in the field survey

In the terrestrial area of the project, at the base of the cliff and in the beach area, 9 plant species listed in the Red Book of Vascular Plants of Romania (Dihoru and Negrean, 2009) were identified and listed below:

Table C.2 Red Book plant species identified in the area project and sociological category

No.	Scientific name	Red Book of vascular plants from Romania
1	*Siberian Argusia*	-R
2	*Polygonum maritimum*	VU
5	*Cakile maritima subsp. euxina*	EN
6	*Crambe maritime*	EN
7	*Eryngium maritimum*	VU
8	*Scolymus hispanicus*	VU
9	*Vicia narbonensis**	VU

IUCN category: **VU** – vulnerable; **LC** – with low risk; **EN** – endangered; **CR** – critically endangered

* *Vicia narbonensis* was observed in several types of habitats: on the cliff, in the orchard area, in the forest canopy

Leymus sabulosus is a species of national interest, being mentioned in Annex 4b to GEO 57/2007 with subsequent amendments and additions, being the only plant taxon with protection status in the terrestrial area of the project.

C.2.2 Terrestrial invertebrates

The review of the relevant literature led to the conclusion that none of the species listed in the annexes of the Habitats Directive occurring in Dobrogea were identified in the land area of the project.

Active and passive field monitoring methods were used in the field studies. Active methods consisted of choosing and delineating visual transects that were checked periodically during the study period. Passive methods consisted of trapping the animals alive, followed by identification and release. The field research methods used were according to the "Guide for monitoring invertebrate species of community interest in Romania" (Iorgu, 2015).

In total, 123 species of invertebrates were observed during the field studies: two species of praying mantises, twenty-one species of orthopterans, two species of dragonflies, twelve species of ants, forty-four species of coleopterans, twenty-one butterflies, twenty moths and a scolopendra. The complete list of species identified during the field surveys is presented in Table 4.75.

Table C.3 List of invertebrate species identified during field studies

Class	The order	The family	Species
	Mantodea	Mantidae	*Ameles heldreichi* *Mantis religiosa*
	Orthoptera	Tettigoniidae	*Tylopsis lilifolia*

Class	The order	The family	Species
Insect			*Dwarf Phaneroptera* *Conocephalus fuscus* *Tettigonia viridissima* *Decticus albifrons* *Decticus verrucivorus* *Platycleis affinis* *Platycleis veyseli* *Rhacocleis germanica*
	Odonata	Libellulidae	*Sympecma fusca* *Sympetrum meridionale*
	Hymenoptera	Formicidae	*Camponotus aethiops* *Camponotus vagus* *Cataglyphis aenescens* *Formica cunicularia* *Lasius (Chtonolasius) sp.* *Lasius (Lasius) sp.* *Lasius alienus* *Messer sp.* *Myrmica sp.* *Plagiolepis pygmaea* *Solenopsis cf fugax* *Tetramorium cf caespitum*
	Coleoptera	Carabidae	*Amara sp.* *Brachinus sp.* *Calathus sp.* *Calomera littoralis* *Carabus auronitens* *Carabus coriaceus* *Carterus sp.* *Ditomus clypeatus* *Harpalus sp.* *Ophonus sp.* *Pseudoophonus cf. rufipes* *Stenolophus discophorus*
Insect		Scarabidae	*Anomaly sp.* *Aphodius sp.* *Monthly cover* *Onthophagus amyntas* *Oxythyrea funesta* *Stupid pentodon* *Rhizotrogus aequinoctialis*
		Coccinellidae	*Coccinella septempunctata* *Harmonia axyridis* *Psyllobora vigintiduopunctata*
		Chrysomelidae	*Chrysolina sanguinolenta* *Crepidodera sp.* *Cryptocephalus cf. sericeus* *Donacia sp.*
		Tenebrionidae	*Omophlus sp.*

Class	The order	The family	Species
Insect			*Opatrum sabulosum* *Pedinus sp.* *Podonta sp.*
		Staphylinidae	*Paederus sp.* *Quedius sp.*
		Brentidae	*Apion sp.*
		Elateridae	*Ampedus sp.*
		Mordellidae	*Mordella sp.*
		Cerambycidae	*Chlorophorus varius*
		Hysteridae	*Hyster quadrimaculatus*
		Curculionidae	*Larinus sp.* *Lixus sp.* *Sphenophorus sp.* *Tanymecus sp.*
		Meloidae	*Mylabris variabilis*
		Silphidae	*Nicrophorus sp.*
		Cantharidae	*Rhagonycha fulva*
	Lepidoptera	Nymphalidae	*I agreed* *Aglais urticae* *Coenonympha pamphilus* *Lasiommata magera* *Vanessa atalanta* *Vanessa carded* *Melitaea cinxia* *Melitaea phoebe*
		Papilionidae	*Papilio machaon*
		Pieridae	*Anthocharis cardamines* *Colias cf croceus* *Gonepteryx rhamni* *Perished turnips* *Dies rapae* *Eduatic Pontia*
		Lycaenidae	*Lampides boeticus* *Lycaena phlaeas* *Lycaena thersamon* *Plebejus argus* *Polyommatus icarus*
		Geometridae	*Charissa sp.* *Chlorissa viridata* *Crocallis linguaria* *Atomic hematurge* *Lythria purpuraria* *Phaiogramma etruscaria* *Timandra comae*
		Noctuidae	*Acontia trabealis* *Heliothis nubigera* *Maestra brassicae* *Noctua pronuba*

Class	The order	The family	Species
			Prodotis stolid *Protoschinia scutosa*
		Sphingidae	*Macroglossum stellatarum*
		Crambidae	*Nomophila noctuella* *Golden Pyrausta*
		Erebidae	*Aedia funesta* *Glyphic Euclid*
		Tortricidae	*Epiblema scutulana*
		Notodontidae	*Dicranura elms*
Chilopoda	Scolopendromorpha	Scolopendridae	*Scolopendra cingulata*

C.2.3 Amphibians and reptiles in the terrestrial area of the project

Among the 12 species of amphibians in the Dobrogea region (Cogălniceanu et al. 2013), only one species was identified in the area of direct influence of the project: *Bufotes viridis* (Annex 4A of GEO 57/2007).

Either through direct observations of individuals or through traces, the results of field activities showed the presence of reptile species: *Lacerta viridis, Dolichophis caspius* and *Testudo Greek* in the project area.

For the *Testudo graeca species,* only one shell was identified in the project area, in the forested area next to the national road. Although there are areas of favorable habitat for the species in the vicinity of the project site, no live individuals were identified during fieldwork. The shell may have been dropped by a bird of prey or brought from another site by humans, but caution is advised during construction as the species may find areas of favorable habitat in the project area.

Table C.4 Sozological status and protection status of the reptile species identified on the site and in the vicinity

species	Habitats Directive	GEO 57/2007	European Red List (IUCN)
Testudo graeca	Annex II, IV	Annex 3, 4A	VU
Dolichophis (Coluber) caspius	Appendix IV	Annex 4A, 4B	LC
Lacerta viridis	Appendix IV	Appendix 4A	LC
Bufotes (Bufo) viridis	Appendix IV	Appendix 4A	LC

Note:

IUCN category: **VU** – vulnerable; **LC** – low risk;

GEO 57/2007: **ANNEX 3** - Species of plants and animals whose conservation requires the designation of special conservation areas and areas of special avifaunistic protection; **ANNEX 4 A** - SPECIES OF COMMUNITY INTEREST - Animal and plant species that require strict protection; **ANNEX 4 B** - SPECIES OF NATIONAL INTEREST - Animal and plant species that require strict protection

Directive 92/43/EEC: **Annex II** - Animal and plant species of community importance whose conservation requires the designation of special conservation areas; **Annex IV** - Animal and plant species of community importance that need strict protection; **Annex V** - Animal and plant species of community importance whose sampling and exploitation may be subject to administrative measures.

C.2.4 Bird fauna in the project area

On and in the vicinity of the project site, the bird community is represented by terrestrial species (diurnal and nocturnal) and aquatic species, including sedentary and migratory species (summer guests, winter guests, passing species), and some are of community interest and/or national.

Field observations for each typology involve specific, dedicated methods that can provide the appropriate information to characterize the degree of presence and land use, distribution, population size and understand the availability of the project area as a feeding / breeding / nesting / migration area for each group.

Three methods were used to carry out the field activities: *the longitudinal transect method,* to obtain data on the species using the project area (resident species, summer guests, winter guests), the fixed *point method,* mainly for migratory species and *the transect method with the use of boats* applied to the species in passage at the site level ROSPA0076 Marea Neagră.

During the avifauna monitoring activities on and in the vicinity of the project site, carried out between August 2018 and July 2019, 117 bird species were identified, and between March and June 2023, 113 bird species were inventoried, of which 36 species were not mentioned in previous monitoring reports.

In contrast to the initial monitoring period (August 2018-July 2019) in which the observations were mostly aimed at bird species in the terrestrial area of the project, in March-June 2023, the observations were mainly focused on the natural protected area ROSPA0076 Marea Black.

The following table also contains information on the protection status (EOG 57/2007 and the Birds Directive) and the categories of endangerment of bird species observed on and near the project site, according to Ord. MMAP no. 2.015/2022 regarding the approval of the National Red List of bird species in Romania, using the IUCN criteria.

Table C.5 List of bird species identified during field activities (August 2018 - July 2023) on the project site and in its vicinity and information on conservation status

No. Crt.	Scientific name	Phenology	Danger categories (Ord. no. 2.015/2022)	Protection status Annexes to GEO 57/2007)	Birds Directive
1.	*Accipiter nisus*	N	LC		
2.	*Actitis hypoleucos*	N	LC	4B	
3.	*Acrocephalus palustris*	N	LC		
4.	*Lauda arvensis*	N	NT	5C	IIB
		P	LC		
5.	*Alcedo atthis*	N	LC	3	I
6.	*Acute anas*	W	NE	5C, 5E	IIA; IIIB
7.	*Anas platyrhynchos*	N	LC	5C, 5D	IIA; IIIA
		W	NE		
8.	*Anser albifrons*	P	NE	5C, 5E	IIB
		W	NE		
9.	*Anthus campestris*	N	LC	3	I
10.	*Anthus pratensis*	N	NE		
11.	*Anthus trivialis*	N	NT		
12.	*sunset sunset*	N	LC		
13.	*Apus pallidus*	N	NT		

No. Crt.	Scientific name	Phenology	Danger categories (Ord. no. 2.015/2022)	Protection status Annexes to GEO 57/2007)	Birds Directive
14.	*It was burning white*	N	LC	3	I
		P	NE		
		W	NE		
15.	*The censer was burning*	N	LC		
16.	*It was burning purple*	N	LC	3	I
		P	NE		
17.	*Ardeola ralloides*	N	LC	3	I
		P	NE		
18.	*Asio otus*	N	LC		
19.	*Athena noctua*	N	LC	4B	
20.	*Insole ruficollis*	P	NE	3	I
		W	VU		
21.	*Buteo buteo*	N	LC		
22.	*Buteo rufinus*	N	LC	3	I
23.	*Calidris alpina*	P	NE	3	
24.	*Calidris ferruginea*	P	NE		
25.	*Calidris minuta*	P	NE		
26.	*Calidris pugnax*	P	NE		I; IIB
27.	*Carduelis carduelis*	N	LC	4B	
28.	*Cecropis daurica*	N	LC		
29.	*Charadrius dubius*	N	LC		
30.	*Chlidonias hybrida*	N	LC	3	I
		P	NE		
31.	*Chlidonias leucopterus*	N	VU		
32.	*Chlidonias niger*	N	VU	3	I
		P	NE		
33.	*Chloris chloris*	N	LC	4B	
34.	*Chroicocephalus genei*	N	RE	3	I
		P	NE		
35.	*Chroicocephalus ridibundus*	N	LC		IIB
		P	NE		
36.	*Stork stork*	N	LC	3	I
		P	NE		
37.	*Circus aeruginosus*	N	LC	3	I
38.	*Circus macrourus*	N	RE	3	I
		P	NE		
39.	*Circus pygargus*	N	VU	3	I
40.	*The pomarin clan*	B	NT	3	I
41.	*Coloeus monedula*	N	LC	5C	IIB
42.	*Columba palumbus*	N	LC	5C, 5D	IIA; IIIA
43.	*Coracias garrulus*	N	LC	3	I
44.	*Corvus cornix*	-	-	5C	IIB
45.	*Corvus frugilegus*	N	LC	5C	IIB
46.	*Coturnix coturnix*	N	LC	5C	IIB
47.	*Cuculus canorus*	N	LC		
48.	*Cyanistes caeruleus*	N	LC		

No. Crt.	Scientific name	Phenology	Danger categories (Ord. no. 2.015/2022)	Protection status Annexes to GEO 57/2007)	Birds Directive
49.	*Cygnus olor*	N	LC		IIB
		P	NE		
50.	*Delichon urbicum*	N	LC		
51.	*Dendrocopos syriacus*	N	LC	3	I
52.	*Egretta garzetta*	N	LC	3	I
		P	NE		
53.	*Emberize the calender*	N	LC	4	
54.	*Emberiza citrinella*	N	LC		
55.	*Emberiza hortulana*	N	LC	3	I
56.	*Emberiza melanocephala*	N	LC	4B	
57.	*Emberiza schoeniclus*	N	LC		
58.	*Erithacus rubecula*	N	LC	4B	
59.	*Falco subbuteo*	N	LC	4B	
60.	*Falco tinnunculus*	N	LC	4B	
61.	*Falco vespertinus*	N	VU	3	I
		P	NE		
62.	*Ficedula albicollis*	N	LC	3	I
63.	*Ficedula parva*	N	LC	3	I
64.	*Fringilla coelebs*	N	LC		
65.	*Fringilla montifringilla*	-	-		
66.	*The coot attracts*	N	NT	5C, 5E	IIA; IIIB
		W	LC		
67.	*Galerida cristata*	B	LC		
68.	*Gallinago gallinago*	N	VU	5C, 5E	IIA; IIIB
		P	NE		
69.	*Arctic marlin*	N	NE	3	I
70.	*Gelochelidon nilotica*	N	CR	3	I
		P	NE		
71.	*Haematopus ostralegus*	N	VU		IIB
72.	*Hymantopus hymantopus*	B	LC	3	I
		P	NE		
73.	*Hirundo rustica*	N	NT		
74.	*Caspian Hydroprogne*	N	RE	3	I
		P	NE		
75.	*Hydrocoloeus minutus*	N	NE	3	I
76.	*Ichthyaetus melanocephalus*	N	CR	3	I
		P	NE		
77.	*Iduna pallida*	N	LC		
78.	*Jynx torquilla*	N	LC	4B	
79.	*Lanius collurio*	N	LC	3	I
80.	*Lanius minor*	N	VU	3	I
81.	*Senator Lanius*	N	LC		
82.	*Larus canus*	N	NE		IIB
		P	NE		
83.	*Larus fuscus fuscus*		-		IIB
84.	*Larus michaelis*	N	LC		

No. Crt.	Scientific name	Phenology	Danger categories (Ord. no. 2.015/2022)	Protection status Annexes to GEO 57/2007)	Birds Directive
85.	*Linaria cannabina*	N	VU	4B	
86.	*Luscinia Luscinia*	N	LC		
87.	*Luscinia megarhynchos*	N	LC		
88.	*Great Penelope*	P	NE	5C, 5E	IIA; IIIB
		W	NE		
89.	*Mareca Strepera*	N	LC	5C	IIA
		P	NE		
		W	NE		
90.	*Melanocorypha calandra*	N	EN	3	I
91.	*Mergus merganser*	B	LC		IIB
		W	NE		
92.	*Merops apiaster*	N	LC	4B	
93.	*Microcarbo pygmaeus*	N	LC	3	I
		P	NE		
		W	NE		
94.	*Milvus migrans*	N	CR	3	I
95.	*Motacilla alba*	N	LC	4B	
96.	*Motacilla flava*	N	LC	4B	
97.	*Striated flycatcher*	N	LC	4B	
98.	*Netta rufina*	N	LC		IIB
		W	NE		
99.	*Nycticorax nycticorax*	N	LC	3	I
100.	*Oenanthe isabellina*	N	LC		
101.	*Oenanthe oenanthe*	N	LC		
102.	*Oenanthe pleschanka*	N	LC	3	I
103.	*Oriolus oriolus*	N	LC	4B	
104.	*Pandion haliaetus*	P	NE	3	I
105.	*Parus major*	N	LC		
106.	*Passer domesticus*	N	LC		
107.	*Passer hispaniolensis*	N	LC	4B	
108.	*Passer montanus*	N	LC		
109.	*Pelecanus crispus*	B	VU	3	I
		P	NE		
110.	*Pelecanus onocrotalus*	N	VU	3	I
		P	NE		
		W	NE		
111.	*Partridge partridge*	N	LC	5C, 5D	IIA; IIIA
112.	*Phalacrocorax (Gulosus) aristotelis*	N	NE		
113.	*Phalacrocorax carbo*	N	LC		
		P	NE		
		W	NE		
114.	*Phasianus colchicus*	N	NA	5C, 5D	IIA; IIIA
115.	*Phoenicurus ochruros*	N	LC	4B	
116.	*Phoenicurus phoenicurus*	N	LC	4B	
117.	*Phylloscopus collybita*	N	LC	4B	

No. Crt.	Scientific name	Phenology	Danger categories (Ord. no. 2.015/2022)	Protection status Annexes to GEO 57/2007)	Birds Directive
118.	*Phylloscopus sibilatrix*	N	LC	4B	
119.	*Phylloscopus trochilus*	N	LC	4B	
120.	*Pica pica*	N	LC	5C	IIB
121.	*Payment leukorodia*	N	NT	3	I
		P	NE		
		W	NE		
122.	*Plegadis falcinellus*	N	NT	3	I
		P	NE		
123.	*Pluvialis apricaria*	P	NE	3, 5E	I, IIB, IIIB
124.	*Pluvialis squatarola*	-	-		II
125.	*Podiceps cristatus*	N	LC		
126.	*Podiceps nigricollis*	N	NT		
		P	NE		
		W	NE		
127.	*Puffinus yelkouan*	P	NE		I
128.	*Recurvirostra avosetta*	N	LC	3	I
		P	NE		
129.	*Riparian riparian*	N	LC		
130.	*Saxicola rubetra*	N	NT		
131.	*Spatula querquedula*	N	LC		
132.	*Sterna hirundo*	N	LC	3	I
		P	NE		
133.	*Sternula albifrons*	N	NT	3	I
		P	NE		
134.	*Streptopelia decaocto*	N	LC	5C	IIB
135.	*Streptopelia turtur*	N	LC	5C	IIB
136.	*Sturnus vulgaris*	N	LC	5C	IIB
137.	*Sylvia atricapilla*	N	LC		
138.	*Sylvia Borin*	N	LC		
139.	*Sylvia communis*	N	LC		
140.	*Sylvia cooed*	N	LC		
141.	*Tadorna ferruginea*	N	LC	3	I
142.	*Tadorna tadorna*	N	LC		
		W	NE		
143.	*Thalasseus sandvicensis*	N	VU	3	I
		P	NE		
144.	*Tringa erythropus*	P	NE		IIB
145.	*Tringa ochropus*	-	-		
146.	*Tringa totanus*	N	NT		IIB
		P	NE		
147.	*Troglodytes troglodytes*	N	LC		
148.	*Turdus merula*	N	LC		IIB
149.	*Turdus philomelos*	N	LC	5C	IIB
150.	*Turdus pilaris*	N	LC	5C	IIB
151.	*Turdus viscivorus*	N	LC	5C	IIB
152.	*Epic hoopoe*	N	LC	4B	

No. Crt.	Scientific name	Phenology	Danger categories (Ord. no. 2.015/2022)	Protection status Annexes to GEO 57/2007)	Birds Directive
153.	*Vanellus vanellus*	N	VU		IIB

Note:

Phenological status: Phenology (official, according to reporting for Art. 12 of the Birds Directive) for which the assessment was made: N- nesting, W- wintering, P - passage;

Final LR category (Red List of bird species from Romania): RE- regionally extinct / disappeared from the region; CR/PE- Critically Endangered / Possible extinct; CR - Critically Endangered EN – Endangered VU – Vulnerable; NT - Near Threatened LC - Least Concern NE – Not Evaluated; NA – Not Applicable;

GEO no. 57/2007 with subsequent amendments and additions: 3- Annex 3 Species of plants and animals whose conservation requires the designation of special conservation areas and special avifaunistic protection areas, 4A- Annex 4A- Species of community interest, Animal species and of plants that require strict protection, 4B- Annex 4B- Species of national interest, Animal and plant species that require strict protection, 5A- Annex 5A- Species of community interest, Plant and animal species of community interest, with the exception of bird species, whose sampling from nature and exploitation are the subject of management measures, 5B- Annex 5B- Animal species of national interest whose sampling from nature and exploitation are the subject of management measures, 5C- Annex 5C- Species of interest community whose hunting is permitted, 5D- annex 5D- Species of birds of community interest whose trade is permitted, 5E- Annex 5E- Species of birds of community interest whose trade is permitted under special conditions

Birds Directive (Directive 2009/147 / EC on the conservation of wild birds): I - Annex I Species subject to special conservation measures; IIA - Annex IIA Species that can be hunted in the maritime and terrestrial geographical area where the directive applies; IIB - Annex IIB Species that can be hunted only in the Member States for which they are indicated.

C.2.5 Mammals in the terrestrial area of the project

Monthly field activities for the mammal species were carried out between August 2018 - July 2019 and March - July 2023. Directly observed individuals and any signs of presence, consisting of droppings, tracks or galleries used, were photographed and the coordinates them recorded with a GPS receiver. Another method used during field investigations was filming with *photo trapping cameras.* An additional method applied in a limited number of trips in 2019 was the trap method.

Fifteen species of terrestrial mammals were identified by direct and/or indirect observation, according to signs of presence on the site and in its vicinity. Two of the identified species (*Spermophilus citellus* and *Lutra lutra)* are species of Community interest.

The otter was not visually identified, but tracks were observed on the beach. *Lutra lutra* (otter) is a species with high mobility and a feeding territory that extends beyond its characteristic lake habitat, being often observed foraging and sheltering in natural or anthropogenic coastal habitats (harbour areas, seawalls). There are reports of dead otter specimens north of Cape Tuzla and on the beaches of Costinești and Eforie resorts.

The puffin uses the slope of the cliff for shelter, feeding and reproduction, where no work is planned in the case of the project. In the study area, the species has a limited distribution only to the mentioned habitat, having an unfavorable conservation status.

The best habitats for mammals are the patches of natural vegetation in the vicinity of the project, but also the project area and the agricultural fields around it, especially for rodents. Shelters of *Meles meles, Vulpes vulpes* and *Canis aureus* were identified on the irrigation canals located along the

project site and in the orchard area. Also, numerous galleries of rodents and species belonging to the order Eulipotyphla have been identified on foot in the vicinity of the project site.

Table C.6 List of mammal species identified during field investigations in the area of influence of the project

No.	Order	Scientific name	Popular name	Habitats Directive	GEO 57/2007	European Red List (IUCN)
1.	Eulipotyphla	*Erinaceus roumanicus*	Hedgehog			LC
2.		*Crocidura leucodon*	Bicolored shrew			LC
3.		*Sorex araneus*	Common shrew			LC
4.		*Talpa europaea*	European Mole			LC
5.	The rodent	*Mus musculus*	Mouse			LC
6.		*Mus spicilegus*	Steppe mouse			LC
7.		*Rattus norvegicus*	Brown rat			LC*
8.		*Apodemus sylvaticus*	Wood mouse			LC
9.		*Microtus arvalis*	Common vol			LC
10.		*Spermophilus citellus*	European ground squirrel	Annex II, IV	Appendix 3.4A	EN
11.	Lagomorpha	*Lepus europaeus*	European hare		Appendix 5B	LC
12.	carnivorous	*Vulpes vulpes*	Fox		Appendix 5B	LC
13.		*Meles meles*	Badger		Appendix 5B	LC
14.		*Canis aureus*	Jackal	Appendix V	Appendix 5A	LC
15.		*Lutra lutra*	Otter	Annex II, IV	Appendix 3.4A	NT

Note:
IUCN category: **LC** – low risk; **EN** - endangered; **NT-** near threatened;
GEO 57/2007: **ANNEX 3** - Species of plants and animals whose conservation requires the designation of special conservation areas and areas of special avifaunistic protection; **ANNEX 4 A** - SPECIES OF COMMUNITY INTEREST - Animal and plant species that require strict protection; **ANNEX 4 B** - SPECIES OF NATIONAL INTEREST - Animal and plant species that require strict protection; **ANNEX 5 A** - SPECIES OF COMMUNITY INTEREST - Plant and animal species of community interest, with the exception of bird species, whose taking from nature and exploitation are subject to management measures; **ANNEX 5 B** - ANIMAL SPECIES OF NATIONAL INTEREST whose taking from nature and exploitation are subject to management measures.
Directive 92/43/EEC: **Annex II** - Animal and plant species of community importance whose conservation requires the designation of special conservation areas; **Annex IV** - Animal and plant species of community importance that need strict protection; **Annex V** - Animal and plant species of community importance whose sampling and exploitation may be subject to administrative measures.
*In the absence of a European regional IUCN assessment, for the species *Rattus norvegicus* the global IUCN assessment was applied

C.2.6 Chiropterofauna

Regarding the chiropterofauna, it can be stated that the habitats on the site and in the immediate vicinity do not offer a variety of suitable locations for the establishment of maternity colonies. Nearby forested areas do not provide favorable habitats for the establishment of bat colonies because mature trees are absent or present in very small numbers.

No bats were identified in the forests in the area. Human roosts are the closest potential locations for migratory bat colonies that hunt in the open spaces of the site. The ranges of the bats extend up

to 15 - 20 km^2/ night, but this area is measured as optimal potential habitats for the species around roosts. The closest distance from the project to a bat roost of national importance is 20.8 km (Limanu cave, located near Limanu village). This may represent a distance large enough so that rare species, such as *Miniopterus scheribersii,* do not reach the project area during feeding, movement or migration. The species shows a regional migratory behavior, but the colonies in the southern area of Dobrogea are present here only during the summer and usually move to the Bulgarian karst for hibernation.

Bat species are generally difficult to observe by traditional methods. Fieldwork focused on identifying bats in and around the site through ultrasonic transects (using ultrasonic detectors and active searches in areas with potential roosts. Transects were conducted during the spring, maternity, feeding and breeding periods, at nights with clear skies, starting 30 minutes before sunset and continuing until 1 AM, when bat activity drops significantly due to their feeding behavior.

The species identified at the site were mostly represented by *Pipistrellus nathusii/kuhlii.* Differentiation between *P. nathusii* and *P. kuhlii* cannot be clearly achieved using ultrasound alone, therefore the two species are treated as a group. There is a higher probability that the identified species is *P. nathusii,* given that the species' ecology and habitat preferences align more closely with the habitat requirements present in the site area. Individuals of the genus *Nyctalus* were more abundant in August and September, indicating potential migration activities in the study area.

Table C.7 List of species in the study area and their protection status and zoological category

No.	Scientific name	Popular name	No. of bioacoustic observations – project area *	Habitats Directive	GEO 57/ 2007	European Red List (IUCN)
1	*Nyctalus leisleri*	Lesser noctule	3	Appendix IV	Appendix 4A	LC
2	*Nyctalus noctula*	Common noctule	19	Appendix IV	Appendix 4A	LC
3	*Pipistrellus nathusii/ kuhlii*	Nathusius's/ Kuhl's pipistrelle	282	Appendix IV	Appendix 4A	LC
4	*Pipistrellus pipistrellus*	Common pipistrelle	1	Appendix IV	Appendix 4A	LC**

Note:

IUCN Category: **LC** – low risk;

GEO 57/2007: **ANNEX 3** - Species of plants and animals whose conservation requires the designation of special conservation areas and areas of special avifaunistic protection; **ANNEX 4 A** - SPECIES OF COMMUNITY INTEREST - Animal and plant species that require strict protection; **ANNEX 4 B** - SPECIES OF NATIONAL INTEREST - Animal and plant species that require strict protection; **ANNEX 5 A** - SPECIES OF COMMUNITY INTEREST - Plant and animal species of community interest, with the exception of bird species, whose taking from nature and exploitation are subject to management measures; **ANNEX 5 B** - ANIMAL SPECIES OF NATIONAL INTEREST whose taking from nature and exploitation are subject to management measures.

Directive 92/43/EEC: **Annex II** - Animal and plant species of community importance whose conservation requires the designation of special conservation areas; **Annex IV** - Animal and plant species of community importance that need strict protection; **Annex V** - Animal and plant species of community importance whose sampling and exploitation may be subject to administrative measures.

Directive 92/43/EEC: **Annex IV** - Animal and plant species of community importance that need strict protection;

*Bioacoustics observations cannot be treated as number of individuals and are generically marked as 1 individual per record. The number of bioacoustic observations on and near the site were made specifically for this project, while the other

observations in the study area were collected from previous projects and other databases and do not contain information about the project site.

**In the absence of a European regional IUCN assessment, for the species *Pipistrellus pipistrellus* the global IUCN assessment was applied

C.2.7 Phytoplankton

In order to update the data and information regarding the phytoplankton communities in the project area, sea water samples were taken filtered with a net, for the qualitative and quantitative study of the phytoplankton.

A number of 10 samples were taken from the area established for the study, the estimations and reporting of the results, in terms of quantitative analysis, were done per liter (1000 ml). For some taxonomic groups, the identification was made down to the species; in other cases, only up to gender.

For the analyzed samples, the qualitative structure of the phytoplankton community corresponds to the existing data in the specialized literature, as being typical for the time intervals (warm season/ cold season) and for the surface horizon of the sea.

Diatoms are dominant in number of species, and dinophytes, also an important component of the marine phytoplankton, also had a high frequency in the analyzed samples; they are more numerous in warm waters but can also be numerous in temperate and cold seas, especially in summer and autumn.

The characterization of phytoplankton in a certain region can be difficult, because they can show a very large variation in abundance, as it depends on several factors such as: light radiation, nutrient salt content and consumption by phytoplanktonophages.

During the annual cycle, phytoplankton can undergo periodic changes in its composition, characterized by a succession of species, depending on several factors (season, depth, etc.). Physico-chemical factors have a major influence on phytoplankton species, in some situations they are even limiting factors.

Following the observations made, 18 phytoplankton taxa were identified, distributed among the clades as follows: 14 taxa from the Bacillariophyte group (Diatomeae), 3 taxa from the Dinophyte group (Peridineae) and one species from the golden algae group (Chrysophyta).

Following the analysis of the qualitative structure of the phytoplankton in the samples analyzed from the current samplings, the qualitative structure of the phytoplankton community corresponds to the existing data in the specialized literature, as being typical for the time interval (May, cold season) and for the surface horizon of the sea.

Diatoms are dominant in number of species, the largest number of individuals being the centric diatoms: *Rhizosolenia* (present in all samples), *Chaetoceros, Diyillum;* next to which the feathered diatoms appear: *Diatoma, Navicula, Pinnularia* (present in most samples), *Nitzschia.*

Dinophytes, also an important component of marine phytoplankton, were frequent in numerous samples: *Ceratium fusus, Ceratium tripos, Peridinium;* in general their biodiversity is greater in warm waters, but they can also be numerous in temperate and cold seas, especially in summer and autumn.

Among the golden algae, only one species, *Dictyocha speculum*, has been identified as belonging to the marine silicoflagellate group, characterized by the presence of an internal siliceous skeleton. They are stenohaline algae, very small in size, falling into the category of nanoplankton.

Table C.8 Qualitative structure of phytoplankton samples

No.	taxa	Sample PM1 FPK 2.05.2023	Sample P7 FPK 2.05.2023	Sample P8 FPK 3.05.2023	P21 FPK 3.05.2023	Sample PM1 FPK 3.05.2023	Sample T 5.1 FPK 10.05.2023	Sample T 3.1 FPK 10.05.2023	Sample T 4.1 FPK 10.05.2023	Sample T 3.5 FPK 10.05.2023	Sample T 6.5 FPK 10.05.2023	Sample T 7.4 FPK 11.05.2023	Sample T 1.1 FPK 11.05.2023
	The Bacillariophyta phylum (Diatomeae)												
1	*Achnantes longipes*					+				+	+		
2	*Chaetoceros compressus*			+			+	+		+	+	+	+
3	*Cocconeis pediculus*	+	+									+	
4	*Coscinodiscus*						+			+		+	+
5	*Cymbella* sp.	+	+	+			+	+	+				
6	*Diatoma* sp.	+	+										
7	*Diploneis* sp.	+	+										
8	*Dityllum brighwellii*			+			+			+	+		+
9	*Licmophora* sp.	+				+						+	
10	*Melosira moniliformis*					+					+	+	+
11	*Navicula* sp.	+	+				+	+					
12	*Nitzschia* sp.			+									
13	*Pinnularia* sp.	+	+	+		+	+	+	+	+			+
14	*Rhizosolenia*	+	+	+	+	+	+	+	+	+	+	+	+
	The Dinophyta phylum (Peridineae)												
1	*Peridinium granii*	+		+	+	+			+	+	+	+	+
2	*Ceratium fusus*	-					+				+		
3	*Ceratium tripos*	-	-		+	+		+	+		+	+	
	The Chrysophyta phylum.												
1	*Dictyoha speculum*		+										

In the report published by **INCDM Grigore Antipa** (Marine Flora – Phytoplankton Technical Summary Report- 2019), based on samples collected during monitoring expeditions from 2015-2016, regarding the qualitative structure of the phytoplankton community in the Neptun Deep project area and based on data available at that time, a list of 150 species was presented. Then, a review was conducted based on the relevant scientific literature, resulting in 27 dominant species in the phytoplankton community in the project area.

Thus, overall, in the project area, dinoflagellates were dominant in terms of diversity. Many dinoflagellates are cosmopolitan, adapted to a variety of pelagic and benthic habitats, as well as freshwater or hypersaline. Some species produce neurotoxins. Although dinoflagellates were dominant in the project area in terms of diversity, the recorded densities were low and therefore did not adversely affect the marine ecosystem.

INCDM Grigore Antipa's report aimed to identify and describe the phytoplankton species expected to be present in the Project area.

In order to identify all the key phytoplankton species that could be located in the project area, this area was divided into:

- Coastal waters (between 5 and 20 meters deep);
- Marine waters (between 20 and 100 meters deep);
- Deep waters (from 100 to 1000 meters deep).

According to the results of the analysis of phytoplankton samples collected from 2015-2016, a total of 150 species of phytoplankton were identified in the project area.

The highest diversity was found in open sea waters (136 species), and the lowest in coastal waters (40 species). In marine waters, 84 species have been found.

Dinoflagellates were the dominant group, representing 44-47.6% of the total number of species identified throughout the project area. Diatoms were the second largest group, constituting 25-28.6% of the total number of species found in the Project area. Chlorophytes ranked third in the structure of the phytoplankton community, comprising a maximum of 10.6% of the species in open waters. The other groups (such as cyanobacteria, chrysophytes, cryptophytes and euglenophytes) had lower diversity, representing between one and seven percent of the species, with a maximum of 10–15 species in offshore waters.

Table C.9 Inventory of phytoplankton species in the project area

Class	Order	Family	Scientific name
Bacillariophyceae	Achnanthales	Achnanthaceae	*Achnanthes brevipes*
			Achnanthes longipes
	Aulacoseirales	Aulacoseiraceae	*Aulacoseira granulata*
	Bacillariales	Bacillariaceae	*Nitzschia acicularis*
			Nitzschia longissima
			Nitzschia pungens var. atlantica
			Nitzschia tenuirostris
			Pseudo-nitzschia delicatissima

Class	Order	Family	Scientific name
			Pyxidicula compressa var. compressa
	Chaetocerotanae incertae sedis	Chaetocerotaceae	*Attheya septentrionalis*
			Chaetoceros sp.
			Chaetoceros affinis
			Chaetoceros compressus
			Chaetoceros curvisetus
			Chaetoceros danicus
			Chaetoceros muelleri
			Chaetoceros peruvianus
			Chaetoceros similis f. solitarus
			Chaetoceros simplex
			Chaetoceros socialis
			Chaetoceros subtilis
			Chaetoceros wighamii
	Coscinodiscales	Coscinodiscaceae	*Coscinodiscus radiatus*
	Fragilariales	Fragilariaceae	*Diatoma tenuis*
			Synedra acus
			Synedra nitzschioides f. nitzschioides
	Hemiaulales	Hemiaulaceae	*Cerataulina bergonii*
	Leptocylindrales	Leptocylindraceae	*Leptocylindrus danicus*
			Leptocylindrus minimus
	Lithodesmiales	Lithodesmiaceae	*Ditylum brightwellii*
	Naviculales	Naviculaceae	*Navicula*
		Pleurosigmataceae	*Pleurosigma elongatum*
	Rhizosoleniales	Rhizosoleniaceae	*Proboscia alata*
			Pseudosolenia calcar-avis
	Thalassiosirales	Skeletonemaceae	*Skeletonema costatum*
		Stephanodiscaceae	*Cyclotella caspia*
			Cyclotella meneghiniana
		Thalassiosiraceae	*Thalassiosira parva*
			Thalassiosira gravida
			Thalassiosira nordenskioldii
			Thalassiosira parva
			Thalassiosira rotula
			Thalassiosira subsalina
	Paraliales	Paraliaceea	*Paralia sulcata*
Chlorodendrophyceae	Chlorodendrales	Halosphaeraceae	*Pachysphaera* sp.
Chlorophyceae	Sphaeropleales	Characiaceae	*Schroederia* sp.
	Chlamydomonadales	Chlamydomonadaceae	*Carteria* sp.
			Chlamydomonas sp.
	Sphaeropleales	Hydrodictyaceae	*Tetraëdron caudatum*
			Tetraëdron trigonum
		Scenedesmaceae	*Tetradesmus lagerheimii*
			Desmodesmus communis
		Selenastraceae	*Monoraphidium arcuatum*
			Monoraphidium contortum
			Monoraphidium griffithii
			Monoraphidium irregulare

Class	Order	Family	Scientific name
	Chlamydomonadales	Treubariaceae	*Treubaria triappendiculata*
	Chromulinales	Dinobryaceae	*Dinobryon balticum*
			Dinobryon balticum
Conjugatophyceae	Desmidiales	Desmidiaceae	*Cosmarium* sp.
Cryptophyceae	Pyrenomonadales	Chroomonadaceae	*Chroomonas acuta*
			Chroomonas caudata
	Cryptomonadales	Cryptomonadaceae	*Cryptomonas*
		Hilleaceae	*Hillea fusiformis*
			Small flagellates
Cyanophyceae	Chroococcales	Chroococcaceae	*Chroococcus minutus*
	Synechococcales	Leptolyngbyaceae	*Planktolyngbya circumcreta*
		Merismopediaceae	*Merismopedia minima*
	Chroococcales	Microcystaceae	*Microcystis aeruginosa*
	Nostocales	Nostocaceae	*Anabaena* sp.
			Aphanizomenon flosaquae
	Oscillatoriales	Oscillatoriaceae	*Oscillatoria* sp.
			Phormidium hormoides
	Synechococcales	Pseudanabaenaceae	*Pseudanabaena limnetica*
			Pseudanabaena limnetica
	Spirulinales	Spirulinaceae	*Spirulina* sp.
Dictyochophyceae	Dictyochales	Dictyochaceae	*Dictyocha speculum*
			Octactis octonaria
	Pedinellales	Pedinellaceae	*Apedinella radians*
Dinophyceae	Amphidiniales	Amphidiniaceae	*Amphidinium crassum*
			Amphidinium extensum
			Amphidinium sp.
	Gonyaulacales	Ceratiaceae	*Ceratium inflatum*
			Tripos furca
			Tripos fusus
			Tripos muelleri
		Cladopyxidaceae	*Peridiniella danica*
	Dinophysiales	Dinophysiaceae	*Dinophysis acuminata*
			Dinophysis caudata
			Dinophysis sacculus
	Gonyaulacales	Gonyaulacaceae	*Gonyaulax ceratocoroides*
			Lingulodinium polyedra
			Protoceratium reticulatum
	Gymnodiniales	Gymnodiniaceae	*Akashiwo sanguinea*
			Akashiwo sanguinea
			Gymnodinium agiliforme
			Gymnodinium najadeum
			Gymnodinium simplex
			Gymnodinium sp.
			Gymnodinium sp. (20-40 microns)
			Gymnodinium sp. (5-20 microns)
			Gymnodinium wulffii
			Gyrodinium helveticum
			Gyrodinium fusiforme
			Gyrodinium lachryma

Class	Order	Family	Scientific name
			Gyrodinium pingue
			Margalefidinium citron
			Torodinium robustum
	Peridiniales	Heterocapsaceae	*Heterocapsa rotundata*
			Heterocapsa triquetra
		Kryptoperidiniaceae	*Durinskia agilis*
		Lessardiaceae	*Lessardia elongata*
	Gonyaulacales	Ostreopsidaceae	*Alexandrium minutum*
			Alexandrium
	Dinophysiales	Oxyphysaceae	*Phalacroma rotundatum*
	Peridiniales	Peridiniaceae	*Glenodinium paululum*
			Palatinus apiculatus
			Peridinium quadridentatum
			Scrippsiella trochoidea
	Gymnodiniales	Polykrikaceae	*Polykrikos schwartzii*
		Ptychodiscaceae	*Herdmania litoralis*
	Prorocentrales	Prorocentraceae	*Mesoporos perforatus*
			Prorocentrum micans
			Prorocentrum cordatum
			Prorocentrum scutellum
	Peridiniales	Protoperidiniaceae	*Diplopsalis lenticula*
			Oblea rotunda
			Peridinium cysts
			Peridinium (20-40 µm)
			Peridinium (5-20 µm)
			Preperidinium meunieri
			Protoperidinium bipes
			Protoperidinium brevipes
			Protoperidinium brevipes
			Protoperidinium depressum
			Protoperidinium divergens
			Protoperidinium granii
			Protoperidinium mite
			Protoperidinium solidicorne
			Protoperidinium steinii
Ebriophyceae	Ebriales	Ebriaceae	*Ebria tripartita*
Euglenoidea	Eutreptiida	Eutreptiaceae	*Eutreptia lanowii*
Prasinophyceae	Halosphaerales	Pterospermataceae	*Pterosperma cristatum*
Prymnesiophyceae	Coccolithales	Calyptrosphaeraceae	*Calyptrosphaera oblonga*
	Isochrysidales	Noelaerhabdaceae	*Emiliania huxleyi*
	Syracosphaerales	Rhabdosphaeraceae	*Acanthoica quattrospina*
Trebouxiophyceae	Chlorellales	Chlorellaceae	*Dictyosphaerium ehrenbergianum*
			Micractinium pusillum
	Trebouxiophyceae incertae sedis	Trebouxiophyceae incertae sedis	*Crucigenia fenestrata*

C.2.8 Zooplankton

As part of the monitoring study of marine habitats and planktonic and benthic communities in the area of influence of the Neptun Deep project carried out by Blumenfield® experts, 10 samples of zooplankton were collected from the neritic pelagic waters of the Black Sea, in the area of influence of the Neptun project Deep-section microtunnel exit + pipe route, and interpreted based on the monitoring sheets.

For each of the 10 samples, densities and biomasses, reported per cubic meter, were calculated.

Following the qualitative and quantitative analysis of the zooplankton, individuals were identified belonging to 6 species corresponding to the holoplankton and 9 categories of meroplankton forms - represented by different larval stages of scyphozoan jellyfish, polychaetes, bivalves and cirriped and copepod crustaceans.

Table C.10 Qualitative structure of zooplankton in May, 2023, from the neritic pelagic waters of the Black Sea, from the Neptun Deep project area

No. crt.	Overspecific	Specific
Holoplankton		
1.	Cystoflagellata (Dinoflagellata)	*Noctiluca miliaris (scintilans)*
2.	Coelenterata, Scyphozoa	*Aurelia aurita*
3.	Rotifera	*Asplanchna herricki*
4.	Crustacea, Cladocera	*Pleopis polyphemoides*
5.	Copepoda, Calanoida	*Acartia clausi*
6.	Copepoda, Calanoida	*Calanus helgolandicus*
Meroplankton		
1.	Coelenterata, Scyphozoa	Efirula de *Aurelia gilded*
2.	Polychaeta	Trochophora larvae
3.	Polychaeta	Larvae - nectochaeta
4.	bivalve	Veligere larvae
5.	Cirripedia	*Balanus* nauplius larvae
6.	Cirripedia	*Balanus* metanauplius larvae
7.	Copepoda	Nauplius – *Calanus helgolandicus, Acartia clausi*
8.	Copepoda	Copepodites
9.	Decapoda	Larvae nauplius/ zoea

The holoplanktonic forms *Noctiluca miliaris* (*scintilans)*, *Asplanchna herricki, Pleopis polyphemoides* and *Acartia clausi* had, in their great majority, a frequency of 100% in the analyzed samples, which leads us to conclude that they are euconstant in the neritic waters of the respective area.

The report produced by **INCDM Grigore Antipa** (Black Sea Marine Fauna – Zooplankton Summary Report, 2019) provides an analysis of the Black Sea zooplankton species that are present in the project area and a species inventory.

Zooplankton includes small and microscopic animals, representatives of almost all major taxonomic groups and especially invertebrates, which float passively in the water column. Zooplankton are the main link in the marine food web, connecting primary producers with consumers at higher levels. Zooplankton play an important role in controlling phytoplankton while serving as food for a variety of larger pelagic organisms, including fish.

In general, there is uniformity in the zooplankton community structure, with seasonal changes in species associations. The taxonomic composition of the zooplankton consists mainly of copepods, cladocerae, meroplanktonic larvae of benthic organisms, *Noctiluca scintillans* a non-pigmented dinoflagellate alga, and gelatinous organisms.

Based on the collected data, 31 species were identified in the project area.

Table C.11 List of zooplankton species identified in the project area

No.	species
1	*Noctiluca scintillans* (Macart.) Kof. & Sw.
2	Polychaeta (larvae)
3	*Bosmina (Bosmina) longirostris (O. F. Müller, 1785)*
4	*Chydorus sphaericus* (O.F. Müller, 1785)
5	*Daphnia longispina* O.F. Müller, 1785
6	*Evadne spinifera* O.F. Müller, 1867
7	*Penilia avirostris* Dana, 1849
8	*Pleopis polyphemoides* (Leucart, 1859)
9	*Pseudevadne tergestina* (Claus, 1877)
10	*Acartia (Acartiura) clausi* Giesbrecht, 1889
11	*Anomalocera patersoni* Templeton, 1837
12	*Calanus euxinus* Hulsemann, 1991
13	*Centropages ponticus* Karavaev, 1895
14	*Paracalanus parvus* (Claus, 1863)
15	*Pontella mediterranea* (Claus, 1863)
16	*Pseudocalanus elongatus* (Boeck, 1872)
17	*Oithona similis* Claus, 1863
18	*Oithona davisae* Ferrari F.D. and Orsi, 1984
19	*Harpacticoida sp.*
20	Cirripedia (larvae: nauplia, cypris)
21	Decapoda (larvae: zoea, megalopa)
22	*Mesopodopsis slabberi* van Beneden,1861
23	Gastropoda (larvae)
24	Bivalvia (larvae)
25	*Parasagitta setosa* (Müller, 1847)
26	*Oikopleura (Vexillaria) dioica* Fol, 1872
27	*Aurelia aurita* (Linnaeus, 1758)
28	*Rhizostoma pulmo* (Macri, 1778)
29	*Beroe ovata* (Bruguière, 1789)
30	*Mnemiopsis leidyi* (A. Agassiz, 1865)
31	*Pleurobrachia pileus* (O. F. Müller, 1776)

C.2.9 Macrophytobenthos

As part of the monitoring study of marine habitats in the area of influence of the Neptun Deep project carried out by Blumenfield®, samples were collected in order to determine the quality of macrophyte species. The determination of the species was made both on the basis of macroscopic characters and on the basis of microscopic characters (where it was the case).

Following the observations made, four species of macrophyte algae were identified, distributed among the clades as follows: three species of green algae (Chlorophyta), and one species of red algae (Rhodophyta).

The number of species of macrophyte algae identified in the samples was four, distributed by gills as follows:

- three species of green algae (Chlorophyta): *Ulva lactuca, Ulva intestinalis* (syn. *Enteromorpha intestinalis)* and *Cladophora vagabunda*
- a species of the group of red algae (Rhodophyta): *Ceramium virgatum* (syn. *Ceramium rubrum)*.

In the report prepared by **INCDM Grigore Antipa** (Rare (Endangered) and Threatened Species – Marine/ Coastal Flora Technical Report- 2019) the phytobenthic species identified within a radius of 10 km from the Project area, from a qualitative perspective, were identified and described the purpose of establishing the dominant type of species in the study area (perennial species or opportunistic species) and their degree of sensitivity to human activities.

In recent decades, along the coast of the Black Sea in Romania, phytobenthic communities have suffered a significant decrease as a result of the cumulative action of unfavorable natural factors (sea frosts in the winter of 1971-1972, strong storms) and anthropogenic (hydrotechnical constructions, etc.) (Vasiliu and Müller, 1973). Anthropogenic impacts can change the state of an ecosystem and transform an area in which opportunistic species such as *Ulva* and *Cladophora* dominate at the expense of sensitive ones such as *Cystoseira* and *Phyllophora* (Litter and Litter, 1980). Submerged vegetation is a major component of primary producers, which form the basis for the existence and development of life in the marine environment, driving the marine ecosystem. Considering these aspects, it can be said that phytobenthic communities have a special ecological importance for the marine environment.

Macrophytes are organisms attached to the substrate, they are present in coastal biotopes, and the vast majority are adapted and resist anthropogenic impacts in the coastal zone. Some species have long life cycles (perennials) and others grow relatively quickly (opportunistic species). In addition to opportunistic species, there are also large dominant species that form an indicator community for the quality of the marine environment, such as those belonging to the genera *Cystoseira, Zostera* and *Phyllophora.*

The benthic flora in the project area is dominated by opportunistic, fast-growing macroalgae species, but historically, perennial species (marine macroalgae and phanerogams) were also present, which have now disappeared. The nearest presence of *Cystoseira species* is 17 km south of the project area, *Zostera* 18 km south and *Phyllophora* 25 km north.

In the project area, the dominant macrophyte species are opportunistic macroalgal species. The dominant species are green algae, especially the photophilous association *Ulva - Cladophora.* The species identified in recent years in the project area are presented in the table below. The areas were characterized by the exclusive presence of macroalgae species with a fast development cycle and a high reproductive capacity.

Table C.12 Species of macrophytes identified in the Eforie Sud - Tuzla - Costinești area in the period 2015 - 2018

Phylum	Macrophyte species	Ephoria South	Tuzla	Costineşti
Chlorophyta	*Cladophora albida*			*
	Cladophora sericea	*	*	
	Cladophora vagabunda	*	*	*
	Ulva intestinalis	*	*	*
	Ulva flexuosa	*		
	Ulva rigida	*	*	*
Rhodophyta	*Callithamnion corymbosum*		*	
	Ceramium diaphanum var. *elegans*	*	*	*
	Ceramium virgatum	*	*	*
	Polysiphonia denudata	*		

C.2.10 Marine habitats and benthic communities

In order to update the data and information related to the benthic communities in the project area, a monitoring activity was carried out in 2023 (May-June) by Blumenfield®.

Collection methods were applied for qualitative samples and for quantitative samples (from the known surface), using dredges, direct collection devices by divers, cameras and ROV (Remotely Operated Underwater Vehicle).

The approach to the study of benthic zoocenoses in the area of interest of the project was dictated on the one hand by the purpose of this study and on the other hand, by the way of structuring the zoocenoses according to bathymetry, the nature and type of substrate/sediments. Thus, the analysis within the study followed two types of approaches:

a) The approach from the perspective of following the structure of the coenoses from the shallow area to the sea, along three transects (performed according to the pipeline route), and

b) The approach from the perspective of structuring coenoses based on bathymetric and substrate structuring criteria.

It were identified 86 specific taxa from 10 superspecifics (at Phyllum level), of which Annelida, Arthropoda-Crustacea and Mollusca were dominant.

A relatively constant presence in the samples from the three transects of the group of macrobenthic species is that of *Leucocephalonemertes aurantiaca* (Rhynchocoela), *Rapana venosa* (Mollusca), *Mysta picta, Harmothoe reticulata, Polynoe scolopendrina, Aricidea jeffreysii, Scolelepis squamata, Spio filicornis, Oligochaeta (Annelida), Apohyale perieri, Corophium volutator* and species of Gammaridae (Crustacea); from the macrobenthic forms we also note: *Mytilus galloprovincialis, Anadara kagoshimensis* (Mollusca), *Alitta succinea, Namanereis pontica, Platynereis dumerilii, Perinereis cultrifera, Pterocirrus limbatus, Nephtys hombergii, Ophelia limacina, Euclymene collaris* (Annelida-Polychaeta), *Phoronis sp., Upogebia pusilla, Pallemon elegans, Eriphia verrucosa, Pilumnus hirtellus, Clibanarius erythropus, Diogenes pugilator* (Crustacea – Decapoda), *Leptosynapta inhae-*

rens, Amphiura stepanovi (Echinodermata) and among the chordates *Branchiostoma lanceolatum* syn *Amphioxus lanceolatus.*

From the study of animal communities, the type of substrate (sedimentary and biological samples), video and photo materials collected from the area of interest we can conclude:

86 specific taxa from 10 superspecifics (at Phyllum level) were identified, of which representatives of the groups Annelida, Arthropoda-Crustacea and Mollusca and Rhynchocoela were dominant in the macrofauna; among the meiobenthic forms (which, although they are very small in size, are of great importance in that they represent a rich food resource for benthic fish fry and juveniles of macrobenthic forms), we point out the representatives of turbellariats (Platyhelminthes), nematodes (with the highest frequency grown up), of the small Nemertians (Rhynchocoela), of the polychaetes of the *Syllida group* and *Nerilla antenata, Protodrilus* and *Saccocirrus papilocercus* (Polychaeta), mites and last but not least the harpacticoid and cyclopoid crustaceans.

Table C.13 Taxonomic list with frequency and abundance indices from the studied perimeter

CRT NO	SUPERSPECIFIC TAXONA	SPECIFIC TAXONA	INDICATORS	
			F%	AB (INDV/M2)
1	**Cnidaria**/ Ceriantharia	*Cerianthus membranaceus* (Gmelin, 1791)	3.22	5
2	**Cnidaria**/Hydrozoa	*Obelia* (Pallas, 1766)	25.80	34
3	**Cnidaria**/Actiniaria	*Sagartia undata* (Müller, 1778)	12.90	28
4		*Actinia equina* (Linnaeus, 1758)	6.45	9
5	**Platyhelminthes**/ Turbellaria	Varia	51,61	535
6		Polycladida	6.45	8
7	**Nemathoda**	Varia	80.64	1302
8	**Rhynchocoela**-Nemertinea	*Leucocephalonemertes aurantiaca* (Grube, 1855)	22.58	57
9		Varia	67.74	435
10	**Mollusca**/Bivalvia-Arcidae	*Anadara kagoshimensis* (Tokunaga, 1906)	3.22	5
11	- Mytilidae	*Mytilus galloprovincialis* (Lamarck, 1819)	22.58	35
12		*Mytilaster lineatus* (Gmelin, 1791)	3.22	4
13	- Cardiidae	*Cerastoderma glaucum* (Bruguière, 1789)	6.45	10
14	- Venerida	*Spisula subtruncata* (da Costa, 1778)	9.67	21
15		*Pitar rudis* (Poli, 1795)	3.22	5
16	Gastropoda-Muricidae	*Rapana venosa* (Valenciennes, 1846)	16,12	26
17	**Annelida**/Polychaeta-Nereidinae	*Hediste diversicolor* (O.F. Müller, 1776)	6.45	30
18		*Alitta succinea* (Leuckart, 1847)	12.90	20
19		*Namanereis pontica* (Bobretzky, 1872)	3.22	5
20		*Platynereis dumerilii* (Audouin & Milne Edwards, 1833)	12.90	24
21		*Perinereis cultrifera* (Grube, 1840)	22.58	68
22	/Polychaeta-Syllida	*Salvatoria clavata* (Claparède, 1863)	29.03	110
2. 3		*Syllis sp.* (Grube, 1840)	3.22	6
24		*Syllis gracilis* (Grube, 1840)	3.22	9
25		*Sphaerosyllis bulbosa* (Southern, 1914)	64.51	688
26	/Polychaeta- Phyllodocida	*Mysta picta* (Quatrefages, 1866)	32.25	220
27		*Harmothoe reticulata* (Claparede, 1870)	29.03	66
28		*Phyllodoce* sp (Lamarck, 1818)	6.45	18
29		*Glycera alba* (O.F. Müller, 1776)	3.22	5
30		*Pterocirrus limbatus* (Claparède, 1868)	19.35	133

CRT NO	SUPERSPECIFIC TAXONA	SPECIFIC TAXONA	INDICATORS	
			F%	AB (INDV/M2)
31		*Nephtys hombergii* (Savigny în Lamarck, 1818)	19.35	56
32		*Pseudomystides limbata* (Saint-Joseph, 1888)	19.35	75
33		*Polynoe scolopendrina* (Savigny, 1822)	32.25	68
34	/Polychaeta-Scolecida	*Paraonis sp.*(Grube, 1873)	32.25	541
35		*Capitella capitata* (Fabricius, 1780)	51,61	421
36		*Capitella minima* (Langerhans, 1880)	25.80	89
37		*Euclymene collaris* (Claparède, 1869)	29.03	123
38		*Aricidea jeffreysii* [Auctt. (Non McIntosh, 1879)]accepted as *Aricidea (Acmira) cerrutii* (Laubier, 1966)	32.25	556
39		*Heteromastus filiformis* (Claparède, 1864)	12.90	44
40		*Ophelia incertae sedis* (Savigny, 1822)	22.58	129
41	Polychaeta-Spionidae	*Pygospio elegans* (Claparède, 1863)	3.22	6
42		*Spio filicornis* (Müller, 1776)	32.25	182
43		*Scolelepis squamata* (Müller, 1806)	25.80	389
44		*Scolelepis (Parascolelepis) tridentata* (Southern, 1914)	22.58	71
45		*Aonides paucibranchiata* (Southern, 1914)	19.35	119
46		*Polydora sp* (Bosc, 1802)	3.22	20
47	Polychaeta-Sabellida	*Sabellida sp.* (Latreille, 1825)	9.67	16
48		*Fabricia stellaris* (Müller, 1774)	3.22	6
49	Polychaeta-Terebellida	*Melinna palmata* (Grube, 1870)	3.22	5
50		*Terebellides stroemii (Sars, 1835)*	9.67	2. 3
51	*Polychaeta incertae sedis*	*Nerilla antennata* (Schmidt, 1848)	19.35	206
52		*Lindrilus flavocapitatus* (Uljanina, 1877)	29.03	687
53		*Saccocirrus papillocercus* (Bobretzky, 1872)	22.58	205
54	**Annelida** /Oligochaeta	Varia	51,61	740
55	**Phoronidae**	*Phoronis* sp. (Wright, 1856)	9.67	28
56	**Acari**	*Halacarellus sp.* (Viets, 1927)	3.22	4
57		Varia	12.90	48
58	**Crustacea** /Cirripedia	Varia	12.90	17
59	/Ostracoda	Varia	6.45	8
60	/Harpacticoida	Varia	29.03	958
61	/Cyclopoida	Varia	6.45	8
62	/Amphipoda	*Ampelisca diadema* (Costa, 1853)	16,12	35
63		*Ampithoe ramondi* (Audouin, 1826)	3.22	4
64		*Apohyale perieri* (Lucas, 1846)	12.90	28
65		*Corophium volutator* (Pallas, 1766)	35,48	129
66		*Dexamine spinosa* (Montagu, 1813)	6.45	10
67		*Gammaridea*	19.35	40
68		*Nototropis sp.*(A. Costa, 1853)	3.22	5
69		*Melita palmata* (Montagu, 1804)	9.67	17
70		*Microdeutopus gryllotalpa* (Costa, 1853)	12.90	30
71		*Microdeutopus* sp. (Costa, 1853)	19.35	51
72	/Cumacea	*Pseudocuma longicorne (*Bate, 1858)	6.45	10
73	/Mysidae	*Varia*	3.22	6
74	/Isopoda	*Idotea balthica* (Pallas, 1772)	12.90	27
75		*Eurydice sp.* (Leach, 1816)	6.45	8

CRT NO	SUPERSPECIFIC TAXONA	SPECIFIC TAXONA	INDICATORS	
			F%	AB (INDV/M2)
76	/Tanaidacea	*Tanais dulongii* (Audouin, 1826)	9.67	17
77	Decapoda/Upogebiidae	*Upogebia pusilla* (Petagna, 1792)	3.22	5
78	Decapoda/Palaemonoidea	*Palaemon elegans* (Rathke, 1836)	6.45	8
79	Decapoda/Brachiura	*Eriphia verrucosa* (Forskål, 1775)	9.67	16
80		*Pachygrapsus marmoratus (*Fabricius, 1787)	6.45	19
81		*Pilumnus hirtellus* (Linnaeus, 1761)	3.22	5
82	Decapoda/Anomura	*Diogenes pugilator* (P. Roux, 1829)	3.22	8
83		*Clibanarius erythropus* ((Latreille, 1818)	3.22	4
84	**Echinodermata** /Holothuroidea	*Leptosynapta inhaerens* (O.F. Müller, 1776)	3.22	5
85	/Ophiuroidea	*Amphiura stepanovi* (Djakonov, 1954)	3.22	5
86	**Chordata /**Branchiostomatidae	*Branchiostoma lanceolatum* (Pallas, 1774) syn *Amphioxus lanceolatus* (Pallas, 1774)	9.67	16

From the total of 86 specific benthic taxa identified in the project area, 5 species of conservation interest and protection in the Black Sea can be highlighted:

- *Clibanarius erythropus*- from the list Ord. no. 488 of March 24, 2020 regarding the approval of the List of endangered marine species from the Romanian coast of the Black Sea for protection and conservation;
- *Eriphia verrucosa* - threatened with extinction (EN) from the Provisional List of Species of Importance for the Black Sea from the Greening and Development Program of the Black Sea Basin - Global Environmental Fund Regional Project (BSEC_BBSEA_ESMF_WB_RO, 2021);
- *Upogebia pusilla* - threatened with extinction (EN) from the Provisional List of Species of Importance for the Black Sea from the Greening and Development Program of the Black Sea Basin - Regional Project of the Global Environmental Fund (BSEC_BBSEA_ESMF_WB_RO, 2021);
- *Branchiostoma lanceolatum* - rare species (R) from the Provisional List of Species of Importance for the Black Sea from the Greening and Development Program of the Black Sea Basin - Regional Project of the Global Environment Fund (BSEC_BBSEA_ESMF_WB_RO, 2021);
- *Pitar rudis* - from the list Ord. no. 488 of March 24, 2020 regarding the approval of the List of endangered marine species from the Romanian coast of the Black Sea for protection and conservation.

The following macrozoobenthic species were identified from the analysis of footage and image captures:

Dysidea fragilis (Montagu, 1814), *Clathria (Microciona) cleistochela* Topsent, 1925, *Aglaophenia pluma* (Linnaeus, 1758), *Podocoryna carnea* M. Sars, 1846, *Bougainvillia muscus* (Allman, 1863), *Pleurobrachia pileus* (OF Müller, 1776), *Mnemiopsis leidyi* A. Agassiz, 1865, *Beroe ovata* Bruguière, 1789, *Flexopecten glaber* (Linnaeus, 1758), *Acanthocardia paucicostata* (GB Sowerby II, 1834), *Chamelea gallina* (Linnaeus, 1758), *Petricola lithophaga* (Retzius, 1788), *Macomangulus tenuis* (da Costa, 1778), *Lentidium mediterraneum* (OG Costa, 1830), *Mya arenaria* Linnaeus, 1758, *Calyptraea chinensis* (Linnaeus, 1758), *Bittium reticulatum* (da Costa, 1778), *Nassarius reticulatus* (Linnaeus,

1758), *Nassarius nitidus* (Jeffreys, 1867), *Cyclope neritea* (Linnaeus, 1758), *Aricidea (Strelzovia) claudiae* Laubier, 1967, *Ophelia limacina* (Rathke, 1843), *Spirobranchus triqueter* (Linnaeus, 1758), *Janua heterostropha* (Montagu, 1803), *Amphibalanus improvisus* (Darwin, 1854), *Carcinus aestuarii* Nardo, 1847, *Liocarcinus vernalis* (Risso, 1827), *Liocarcinus navigator* (Herbst, 1794), *Xantho poressa* (Olivi, 1792), *Brachynotus sexdentatus* (Risso, 1827), *Crangon crangon* (Linnaeus, 1758), *Ascidiella aspersa* (Müller, 1776), *Ciona intestinalis* (Linnaeus, 1767), *Botryllus schlosseri* (Pallas, 1766).

Benthic habitats and associated communities were also the subject of a study **carried out by INCDM Grigore Antipa,** in 2021, in order to investigate these habitats in the southern part of the Romanian sector of the Black Sea, where the location of the pipeline, the production platform and of the wells within the Neptun Deep project.

A total of 15 stations were selected, and 45 samples (three replicates per station) were taken for the macrofaunistic analyses.

As a result of this study, it was found that there are no habitats of community interest (Natura 2000) on the route of the gas pipeline and in the offshore area of the Neptun Deep project.

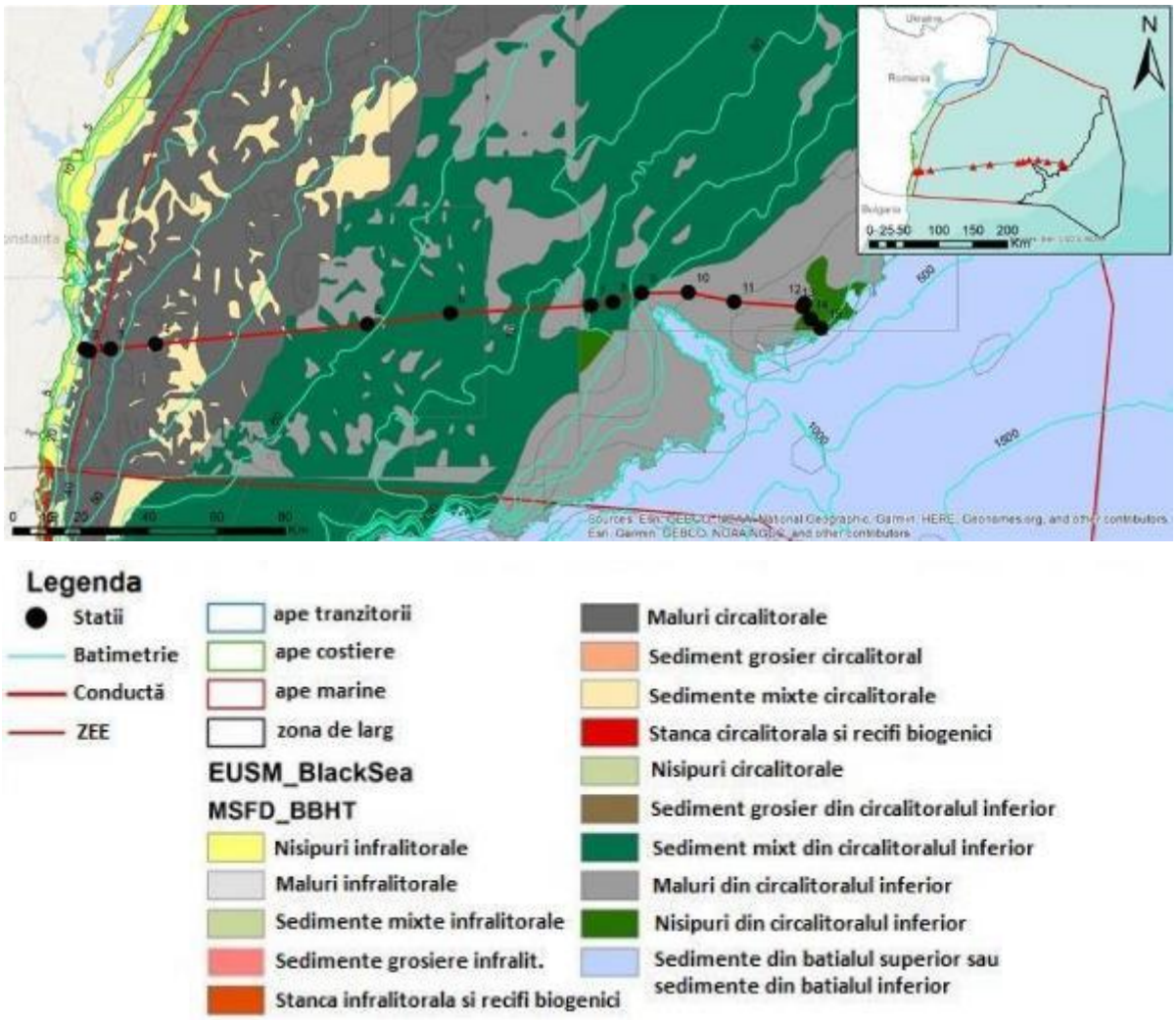


Figure C.2 The study area with the 15 benthos sampling stations (source INCDM Grigore Antipa 2021)

In the 45 samples collected, 79 species belonging to 17 different classes were identified. One of them, *Pitar rudis,* is considered vulnerable according to the IUCN (VU). Three major taxonomic groups of macrofauna dominated in terms of number of species: Polychaeta - 32 species, Malacostraca (Crustacea) - 17 species and Bivalvia - 9 species.

Annelids (eg: polychaete worms) and molluscs (eg: bivalves) were the dominant benthic groups in terms of abundance and biomass.

Table C.14 Marine habitat types identified in the offshore pipeline route, production platform (Neptun Alpha) area and wells

Date of sampling	Test station	Location	Lat.	Long.	Depth (m)	Identified habitat type (EUNIS)	Correspondence with the Natura 2000 classification system
20/03/2021	Station 01	Pipeline route	43,965	28,688	26	MC44- Mixed circumlittoral sediments from the Black Sea	No correspondent
20/03/2021	Station 02	Pipeline route	43,961	28,709	30	MC643- Sandy mud from the upper circumlittoral of the Black Sea	No correspondent
20/03/2021	Station 03	Pipeline route	43,967	28,796	40	MC641- Black Sea circumlittoral terrigenous mullets	No correspondent
20/03/2021	Station 04	Pipeline route	43,989	29,098	50	MC641- Black Sea circumlittoral terrigenous mullets	No correspondent
20/03/2021	Station 05	Pipeline route	44,014	29,476	60	MD44- Mixed sediments from the lower circumlittoral of the Black Sea	No correspondent
20/03/2021	Station 06	Pipeline route	44,040	29,865	70	MD44- Mixed sediments from offshore circumlittoral	No correspondent
21/03/2021	Station 07	Pipeline route	44,047	30,032	80	MD44- Mixed sediments from the lower circumlittoral of the Black Sea	No correspondent
21/03/2021	Station 08	Pipeline route	44,066	30,140	90	MD44- Mixed sediments from the lower circumlittoral of the Black Sea	No correspondent
21/03/2021	Station 09	Pipeline route	44,074	30,176	100	MD64- Muds from the lower circumlittoral of the Black Sea	No correspondent
21/03/2021	Station 10	Pipeline route	44,074	30,308	110	MD64- Mâluri diin the lower circumlittoral of the Black Sea	No correspondent
21/03/2021	Station 11	Pipeline route	44,056	30,499	120	MD64- Muds from the lower circumlittoral of the Black Sea	No correspondent
21/03/2021	Station 12	Pelican Drilling Center	44,048	30,589	130	MD64- Muds from the lower circumlittoral of the Black Sea	No correspondent
24/03/2021	Station 13	Neptun Alpha platform	44,054	30,602	128	MD64- Muds from the lower circumlittoral of the Black Sea	No correspondent
24/03/2021	Station 14	Domino Drilling Center	44,024	30,610	135	MD54- Sands from the lower circumlittoral of the Black Sea	No correspondent
24/03/2021	Station 15	Pipeline route	44,008	30,626	150	MD54-Sands from the lower circumlittoral of the Black Sea	No correspondent

The ecological status of benthic habitats and associated communities in the project area has been assessed according to relevant EU norms. Except for Station 01, Stations 02 through 10 have achieved Good Environmental Status. The results of the analyzes for Stations 11 to 15 were excluded at this stage due to the lack of reference values. The benthic communities at these stations are strongly influenced by the low oxygen conditions found at depths greater than 100 meters of water.

Table C.15 List of benthic species (INCDM Grigore Antipa-2021)

Species	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	S15
Anthozoa															
Cerianthus membranaceus (Gmelin, 1791)									+	+					
Diadumene linear (Verrill, 1869)		+	+	+											
Arachnid															
Thalassarachna basteri (Johnston, 1836)					+	+	+								
Ascidiacea															
Eugyra adriatica Drasche, 1884					+	+	+	+	+	+					
bivalve															
Abra alba (W. Wood, 1802)				+											
Abra prismatica (Montagu, 1808)															
Acanthocardia paucicostata (GB Sowerby II, 1834)			+	+											
Modiolula phaseolina (Philippi, 1844)					+	+	+	+	+	+					
Mytilus galloprovincialis Lamarck, 1819		+						+							
Cerastoderma glaucum (Bruguière, 1789)						+									
Pitar rudis (Poli, 1795)			+	+											
Polititapes aureus (Gmelin, 1791)			+	+											
Spisula subtruncata (da Costa, 1778)		+	+	+											
Calcarea															
Sycon ciliatum (Fabricius, 1780)					+	+									
Clitellate															
Oligochaeta Grube, 1850							+					+	+	+	+
Demospongiae															
Haliclona sp. Grant, 1841							+								
Suberites carnosus (Johnston, 1842)							+		+	+					
Gastropoda															
Calyptraea chinensis (Linnaeus, 1758)				+											
Hoplonemerta															

Species	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	S15
Amphiporus bioculatus McIntosh, 1874	+		+												
Tetrastemma sp. Ehrenberg, 1831					+	+	+								
Malacostraca															
Ampelisca diadem (Costa, 1853)		+			+	+	+	+	+						
Apherusa bispinosa (Spence Bate, 1857)					+	+									
Apseudopsis ostroumovi Bacescu & Carausu, 1947				+	+	+	+								
Cumella (Cumella) pygmaea euxinica Bacescu, 1950			+												
Diogenes the boxer (P. Roux, 1829)		+													
Eudorella truncatula (Bate, 1856)					+	+	+								
Iphinoe elisae Băcescu, 1950		+	+	+											
Iphinoe tenella Sars, 1878						+									
Medicorophium runcicorne (Della Valle, 1893)		+	+												
Microdeutopus damnoniensis (Spence Bate, 1856)		+			+										
Microdeutopus gryllotalpa Costa, 1853	+														
Nototropis guttatus Costa, 1853				+	+	+									
Orchomene humilis (Costa, 1853)						+									
Phtisica marina Slabber, 1769		+	+	+	+										
Stenosoma capito (Rathke, 1836)					+										
Synchelidium maculatum Stebbing, 1906			+	+											
Upogebia pusilla (Petagna, 1792)		+													
Ophiuroidea															
Amphiura stepanovi Djakonov, 1954			+	+	+	+	+		+	+					
Palaeonemertia															
Carinin heterosome Müller, 1965				+	+		+								
Pilidiophora															
Leucocephalonemertes aurantiaca (Grube, 1855)			+	+											
Micrura fasciolata Ehrenberg, 1828					+	+	+								
Polychaeta															
Alitta succinea (Leuckart, 1847)	+	+			+										

Species	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	S15
Aonides paucibranchiata Southern, 1914					+		+	+	+						
Capitella capitata (Fabricius, 1780)	+	+	+	+		+									
Capitella minima Langerhans, 1880	+														
Eulalia viridis (Linnaeus, 1767)						+									
Exogone naidina Örsted, 1845	+				+	+	+		+						
Fabricia stellaris (Müller, 1774)			+												
Glycera tridactyla Schmarda, 1861					+										
Harmothoe reticulata (Claparède, 1870)	+	+	+	+	+			+		+					
Heteromastus filiformis (Claparède, 1864)	+	+	+	+	+	+									
Lagis koreni Malmgren, 1866		+													
Leiochone leiopygos (Grube, 1860)					+										
Lindrilus flavocapitatus (Uljanina, 1877)								+							
Melinna palmata Grube, 1870									+	+					
Micronephthys longicornis (Perejaslavtseva, 1891)	+	+	+	+	+										
Mysta picta (Quatrefages, 1866)	+														
Nephtys cirrhose Ehlers, 1868		+	+	+		+	+	+							
Nephtys hombergii Savigny in Lamarck, 1818		+	+	+		+				+					
Nephthys sp. Cuvier, 1817									+						
Nereiphylla rubiginosa (de Saint-Joseph, 1888)			+		+	+									
Notomastus profundus Eisig, 1887					+		+								
Oriopsis armandi (Claparède, 1864)									+						
Phyllodoce maculate (Linnaeus, 1767)					+	+	+								
Polychaeta sp. Grube, 1850										+					
Polydora ciliate (Johnston, 1838)		+													
Prionospio cirrifera Wirén, 1883	+	+			+	+									
Pygospio elegans Claparède, 1863	+														
Salvatoria clavate (Claparède, 1863)	+														
Scolelepis (Scolelepis) squamata (OF Muller, 1806)	+	+			+										
Sphaerosyllis bulbosa Southern, 1914					+	+				+					

Species	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	S15
Spio filicornis (Müller, 1776)	+														
Terebellides stroemii Sars, 1835				+	+	+	+		+	+					
Pycnogonida															
Callipallene phantoma (Dohrn, 1881)					+										
Thecostraca															
Amphibalanus improvises (Darwin, 1854)		+	+												
Phoronida															
Phoronis euxinicola Selys-Longchamps, 1907		+	+	+											
Chironomida larvae													+	+	
Nematode					+		+	+			+	+		+	+
It's not worth it					+										

Where: S- station

The most common species found in the project area belong to 3 large taxonomic groups: Polychaeta, Mollusca and Crustacea. In addition to these, there is also a species of echinoderm, *Amphiura stepanovi,* quite common species in the project area.

The most common polychaete species identified in the project area are *Nephtys hombergii* and *Melinna palmata.*

All species of molluscs in the Black Sea are benthic, with a selective behavior related to the type of substrate (for example, species of the class Polyplacophora live exclusively on hard substrates), gastropods live on all types of substrate, and bivalves are sedentary on different substrates in epi- or endobenthos (living on or within the substrate).

The most common mollusk species in the project area are *Rapana venosa, Mytilus galloprovincialis, Modiolula phaseolina, Steromphala divaricate, Donax trunculus* and *Polititapes aureus.*

Crustaceans are the most diverse group and include crabs, crabs, shrimps, ostracods, cirriped crustaceans and isopods. This group has an essential role in the food chain, mainly being primary consumers (filterers and detritivores) and mediates the transfer of energy and matter to higher trophic levels in marine food chains.

The most common species found in the project area are *Ampelisca diadema, Upogebia pusilla, Diogenes pugilator, Carcinus aestuarii, Eriphia verrucose* and *Pachygrapsus marmoratus.*

<u>In order to eliminate uncertainties related to the presence of habitats in the area of direct influence</u> (within a radius of 3 km around the project-marine area), a monitoring activity was carried out in 2023 (May-June) by Blumenfield ®.

The following aspects were taken into account to establish the zoobenthos sampling points that were later inspected on the belt transects using the ROV:

- The coordinates of the barge anchor points involved in the construction activities of the microtunnel that undercuts the ROSAC0273 Zona marină de la Capul Tuzla were initially determined and included in the monitoring program.
- The locations with the name "Biogenic Structure" from the Archaeological Diagnostic Report carried out by the Constanța National History and Archeology Museum were included in the monitoring program
- Additional ROV sampling and inspection points have been established in the infralittoral (north and south of the microtunnel position) and circumlittoral (within ROSAC0273 Zona marină de la Capul Tuzla)

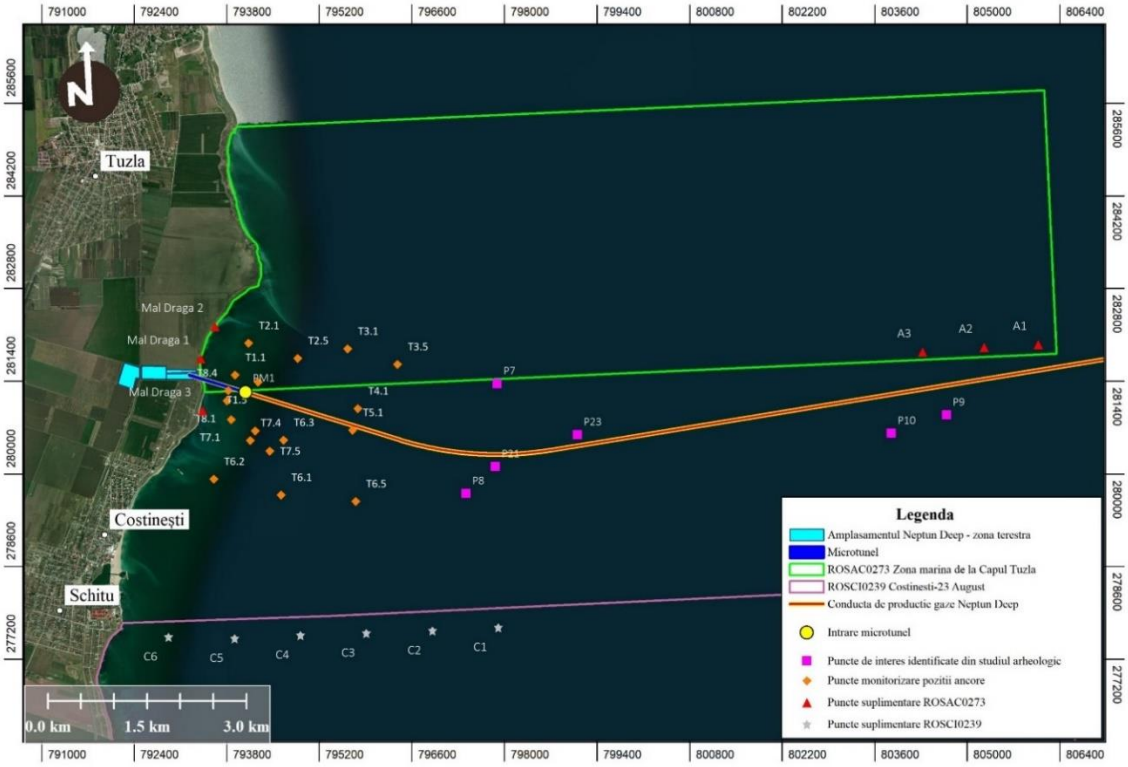


Figure C.3 Sediment Sampling Points and ROV Inspections (Blumenfield, 2023)

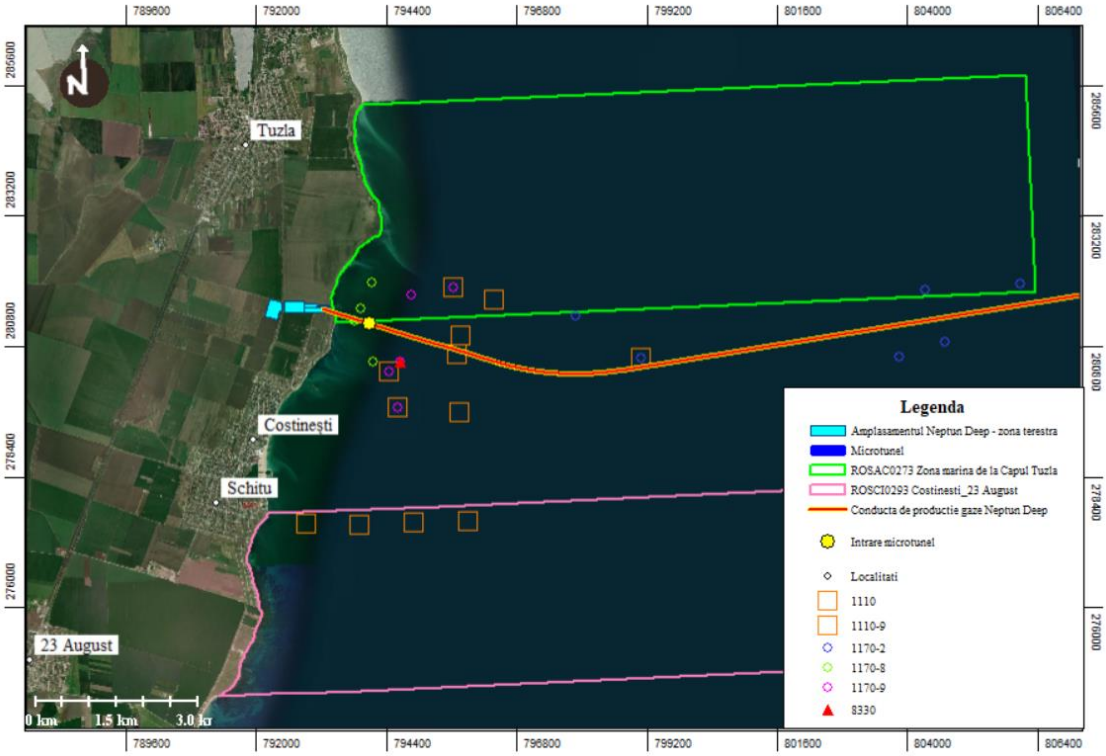


Figure C.4 Habitats of community interest identified through sediment sampling and ROV inspections (Blumenfield, 2023)

Table C.16 Types of marine habitats identified in the project area (Blumenfield, 2023)

Date of sampling	Test station	Location	X	Y	Depth (m)	EUNIS identified habitat type	Correspondence with the Natura 2000 classification system*
02/05/2023	**Q7**	north of the pipeline/approx. 1.07 km Except ROSAC0273 and ROSCI0293	797892.711	281363.524	32	MC241- Mytilus galloprovincialis biogenic reefs on circumlittoral terrigenous banks in the Sea MC54 Circolittoral sands of the Black Sea	*Mytilus galloprovincialis* biogenic reefs
05/03/2023	**P8**	south of the pipeline/approx. 600m Outside of ROSAC0273 and ROSCI0293	797417.811	279705.604	30	MC541- Silty sand from the Black Sea coast	No correspondent
05/03/2023	**Q9**	south of the pipeline/approx. 445m Except ROSAC0273 and ROSCI0293	804686.477	280890.871	40	MC241- Biogenic reefs of *Mytilus galloprovincialis* on circumlittoral terrigenous banks in the Black Sea	*Mytilus galloprovincialis* biogenic reefs
05/03/2023	**P10**	south of the pipeline/approx. 550m Outside of ROSAC0273 and ROSCI0293	803853.723	280612.727	40	MC241- Biogenic reefs of *Mytilus galloprovincialis* on circumlittoral terrigenous banks in the Black Sea MC44-Mixed sediments from the circumlittoral of the Black Sea	*Mytilus galloprovincialis* biogenic reefs
05/03/2023	**P21**	south of the pipeline/approx. 182m	797860.906	280110.636	32	MC541- Silty sand from the Black Sea coast	No correspondent
05/03/2023	**P23**	north of the pipeline/approx. 162m Except ROSAC0273 and ROSCI0293	799103.732	280589.567	35	MC241- Biogenic reefs of *Mytilus galloprovincialis* on circumlittoral terrigenous banks in the Black Sea	*Mytilus galloprovincialis* biogenic reefs
						MC541- Silty sand from the Black Sea coast	From inspections ROV-1110-9 Silty sands and sandy mires bioturbated by *Upogebia pusilla*
10/05/2023	**T3.1**	barge anchor point Inside ROSAC0273	795625.573	281892.106	19	MB542- Infralittoral sands and silty sands, without vegetation, from the Black Sea	1110-9 Silty sands and sandy muds bioturbated by *Upogebia pusilla*
						MB141- Lower infralittoral rock dominated by invertebrates, from the Black Sea	1170-9 Infralittoral rock with *Mytilus galloprovincialis*

Date of sampling	Test station	Location	X	Y	Depth (m)	EUNIS identified habitat type	Correspondence with the Natura 2000 classification system*
10/05/2023	**T3.5**	barge anchor point Inside ROSAC0273	796382.003	281657.859	24	MC541- Silty sand from the Black Sea circumlittoral	From inspections ROV- 1110-9 Silty sands and sandy muds bioturbated by *Upogebia pusilla*
10/05/2023	**T4.1**	barge anchor point Except ROSAC0273 and ROSCI0293	795781.371	280989.199	20	MC541- Silty sand from the Black Sea circumlittoral	From inspections ROV- 1110-9 Silty sands and sandy muds bioturbated by *Upogebia pusilla*
10/05/2023	**T5.1**	barge anchor point Except ROSAC0273 and ROSCI0293	795701.131	280663.39	20	MC541- Silty sand from the Black Sea circumlittoral	From inspections ROV- 1110-9 Silty sands and sandy muds bioturbated by *Upogebia pusilla*
10/05/2023	**T6.5**	barge anchor point Outside of ROSAC0273 and ROSCI0293	795747.489	279583.284	21	MC541- Silty sand from the Black Sea circumlittoral	From inspections ROV- 1110-9 Silty sands and sandy muds bioturbated by *Upogebia pusilla*
11/05/2023	**T1.1**	barge anchor point Inside ROSAC0273	793925.193	281496.752	4	MB143- Upper infralittoral rock with photophilous algae, other than Fucales, from the Black Sea	1170-8 Infralittoral rock with photophilous algae other than Fucales
11/05/2023	**T6.1**	barge anchor point Outside of ROSAC0273 and ROSCI0293	794618.214	279684.318	14	MB542- Infralittoral sands and silty sands, without vegetation, from the Black Sea	1110-9 Silty sands and sandy muds bioturbated by *Upogebia pusilla*
						MB141- Lower infralittoral rock dominated by invertebrates, from the Black Sea	1170-9 Infralittoral rock with *Mytilus galloprovincialis*
11/05/2023	**T6.3**	barge anchor point Outside of ROSAC0273 and ROSCI0293	794657.756	280508.988	12	MB141-Lower infralittoral rock dominated by invertebrates, from the Black Sea	1170-9 Infralittoral rock with *Mytilus galloprovincialis*
						MB14E-Caves, overhangs and channels in the infralittoral rock of the Black Sea	8330 Totally or partially submerged sea caves
						MB542-Infralittoral sands and silty sands, without vegetation, from the Black Sea	1110 Shallow submerged sandbars

Date of sampling	Test station	Location	X	Y	Depth (m)	EUNIS identified habitat type	Correspondence with the Natura 2000 classification system*
11/05/2023	**T7.4**	barge anchor point Outside of ROSAC0273 and ROSCI0293	794156.438	280508.246	8	MB143- Upper infralittoral rock with photophilous algae, other than Fucales, from the Black Sea	1170-8 Infralittoral rock with photophilous algae, other than Fucales
11/05/2023	**T7.5**	barge anchor point Outside of ROSAC0273 and ROSCI0293	794447.2	280345.633	12	MB542- Infralittoral sands and silty sands, without vegetation, from the Black Sea	1110 Shallow submerged sandbars
						MB141- Lower infralittoral rock dominated by invertebrates, from the Black Sea	1170-9 Infralittoral rock with *Mytilus galloprovincialis*
24/05/2023	**T2.1**	barge anchor point Inside ROSAC0273	794126.080	281980.385	4	MB143- Upper infralittoral rock with photophilous algae, other than Fucales, from the Black Sea	1170-8 Infralittoral rock with photophilous algae other than Fucales
24/05/2023	**T8.4**	barge anchor point Inside ROSAC0273	793819.448	281259.624	3	MB143- Upper infralittoral rock with photophilous algae, other than Fucales, from the Black Sea	1170-8 Infralittoral rock with photophilous algae other than Fucales
25/05/2023	**T1.5**	barge anchor point Inside ROSAC0273	794272.821	281387.774	7	MB14D- Exposed infralittoral rock, from the Black Sea	No correspondent
25/05/2023	**T2.5**	barge anchor point Inside ROSAC0273	794872.512	281745.523	13	MB141- Lower infralittoral rock dominated by invertebrates, from the Black Sea	1170-9 Infralittoral rock with *Mytilus galloprovincialis*
22/06/2023	**A1**	additional points from ROSAC0273	806077.182	281957.695	42	MC241- Biogenic reefs of *Mytilus galloprovincialis* on circumlittoral terrigenous banks in the Black Sea	*Mytilus galloprovincialis* biogenic reefs
22/06/2023	**A2**	additional points from ROSAC0273	805255.993	281915.893	41	MC641- Terrigenous banks of the Black Sea circumcoast	No correspondent
22/06/2023	**A3**	additional points from ROSAC0273	804324.828	281846.129	40	MC241- Biogenic reefs of *Mytilus galloprovincialis* on circumlittoral terrigenous banks in the Black Sea	*Mytilus galloprovincialis* biogenic reefs
22/06/2023	**M3/PM1**	microtunnel entrance	794082.071	281233.367	5	MB14D- Exposed infralittoral rock, from the Black Sea	No correspondent

Date of sampling	Test station	Location	X	Y	Depth (m)	EUNIS identified habitat type	Correspondence with the Natura 2000 classification system*
22/06/2023	**M4**	point in ROSAC0273 located in the immediate vicinity of the microtunnel entrance	794084.402	281274.735	5	MB14D- Exposed infralittoral rock, from the Black Sea	No correspondent
21/07/2023	**C1**	additional point in ROSCI0293 At approx. 2.7 km from the trench for the gas production pipeline	797908.141	277672.145	31	MC541- Silty sand from the Black Sea circumlittoral MC144 - The bare circumcoastal rock of the Black Sea	No correspondent The presence of habitats of community interest resulted from the ROV-nu inspections
21/07/2023	**C2**	additional point in ROSCI0293 At approx. 2.72 km from the trench for the gas production pipeline	796908.578	277626.535	28	MC541- Silty sand from the Black Sea circumlittoral MC144 - The bare circumcoastal rock of the Black Sea	No correspondent The presence of habitats of community interest resulted from the ROV-nu inspections
28/07/2023	**C3**	additional point in ROSCI0293 At approx. 2.95 km from the trench for the gas production pipeline	795911.178	277587.080	22	MC541-Loamy sand from the Black Sea circumlittoral MC54-Circlittoral sand from the Black Sea	From inspections ROV- 1110-9 Silty sands and sandy muds bioturbated by *Upogebia pusilla*
28/07/2023	**C4**	additional point in ROSCI0293 At approx. 3.27 km from the trench for the gas production pipeline	794913.408	277555.848	17	MC541-Loamy sand from the Black Sea circumlittoral MC54-Circlittoral sand from the Black Sea	From inspections ROV- 1110-9 Silty sands and sandy muds bioturbated by *Upogebia pusilla*
28/07/2023	**C5**	additional point in ROSCI0293 At approx. 3.6 km from the trench for the gas production pipeline	793916.380	277508.376	15	MC541-Loamy sand from the Black Sea circumlittoral MC54-Circlittoral sand from the Black Sea	From inspections ROV- 1110-9 Silty sands and sandy muds bioturbated by *Upogebia pusilla*
28/07/2023	**C6**	additional point in ROSCI0293 At approx. 3.9 km from the trench for the gas production pipeline	792916.333	277527.817	10	MB542-Infralittoral sands and silty sands, without vegetation, from the Black Sea	From inspections ROV- 1110-9 Silty sands and sandy muds bioturbated by *Upogebia pusilla*

Note: The correspondence between EUNIS (2022) and NATURA 2000 habitat classification systems can be total or partial. It should be taken into account that these correspondences are made only for NATURA 2000 habitat types, not sub-types of habitats being mentioned.

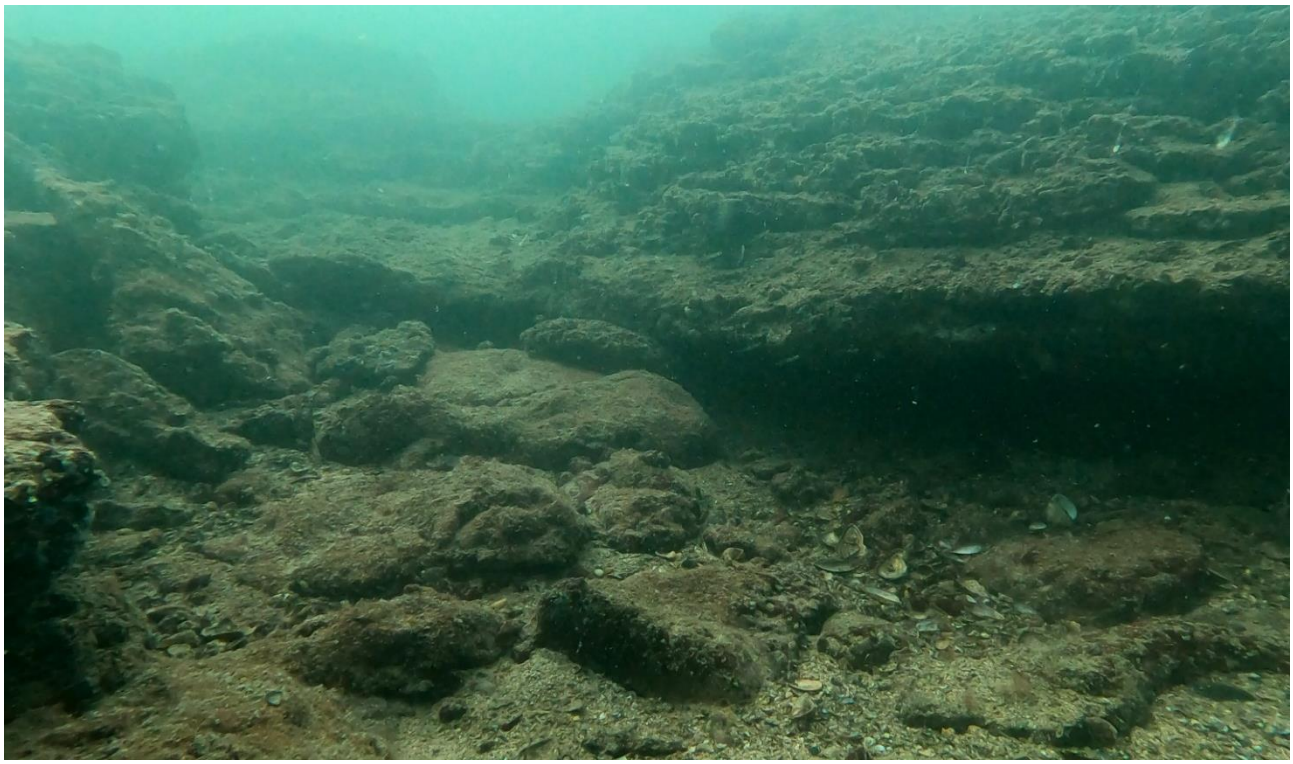


Figure C.5 ROV Video Capture, Pct. 6.3 – Appearance of Habitat 8330 (Blumenfield, 2023)

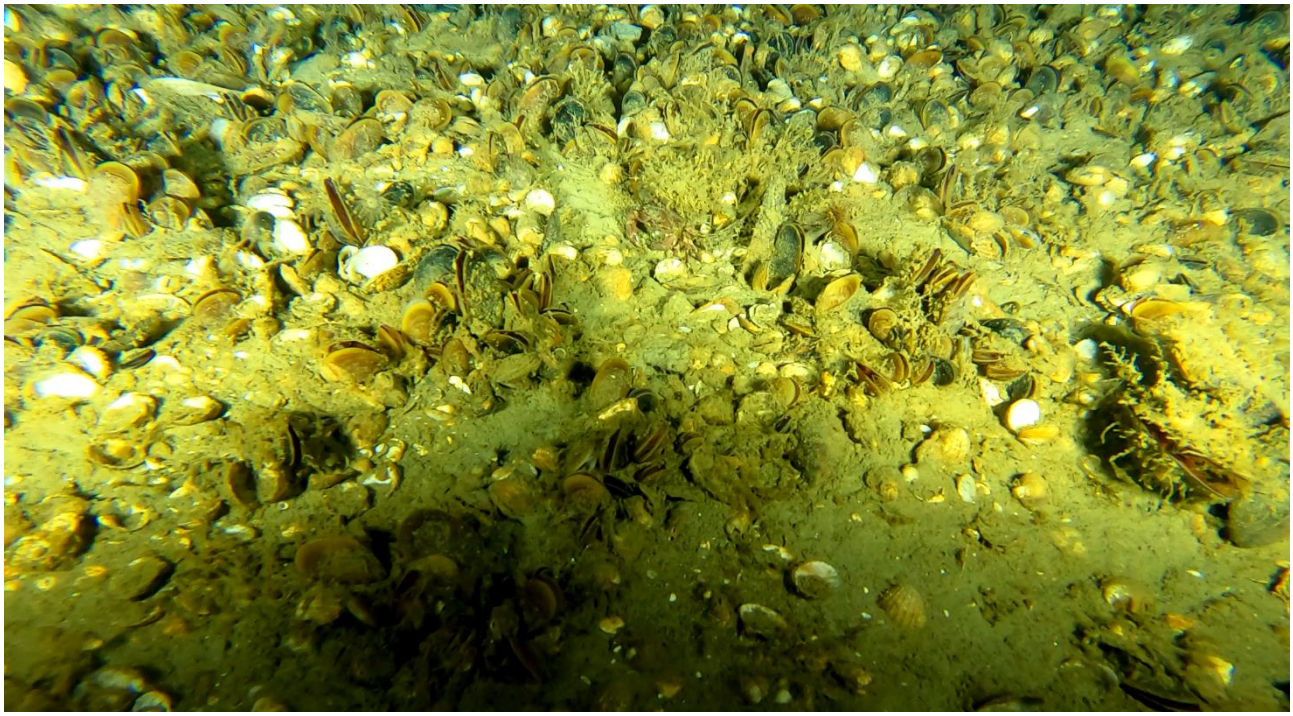


Figure C.6 ROV video capture, point P9 - *Mytilus biogenic reef,* with *Aphia minuta* and *Diogenes pugilator* (Blumenfield, 2023)

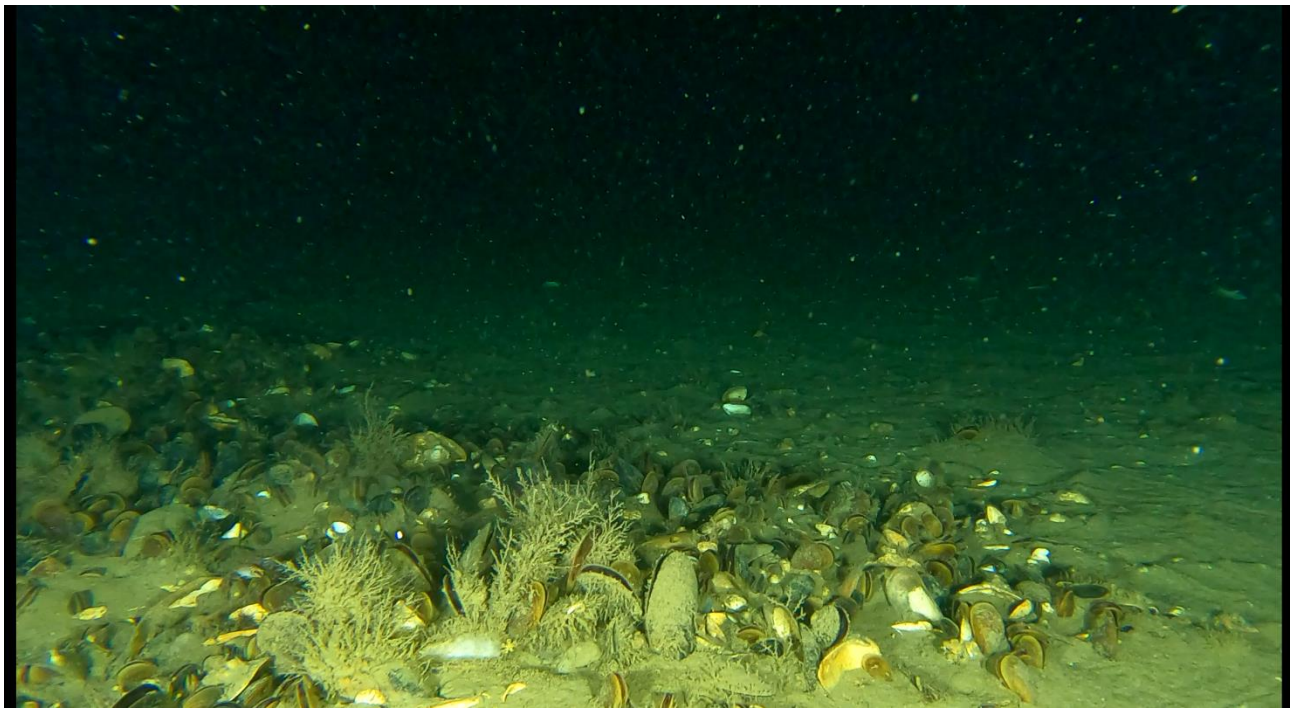


Figure C.7 ROV video capture, Point P7 - *Mytilus galloprovincialis* reef with *Eriphia verrucosa* and *Obelia sp.* (Blumenfield, 2023)

C.2.11 Ichthyofauna in the project area

The INCDM Grigore Antipa report (Marine / Coastal Fauna – Fish and Shellfish Technical Summary Report- 2019) describes the fish species in the Neptun Deep project area.

The fish species found in the project area, including those present according to the Natura 2000 protected marine natural area Management Plan: ROSAC0273 Zona marină de la Capul Tuzla, have been classified into three main categories for easy interpretation.

The first category refers to species listed in the IUCN categories, i.e. vulnerable, threatened or critically endangered.

Second, to provide support in assessing future socio-economic impact, species of economic importance were presented, either as commercially exploited species or as the target of traditional subsistence activity of local fishermen.

The third category studied includes the rest of the species, which do not fit into any of the two previous categories.

Table C.17 List of fish species found in the project area (list made according to INCDM Grigore Antipa-2019)

No. crt.	Species	Species that fall into the IUCN Vulnerable-VU, Endangered-EN or Critically Endangered-CR categories.	Fish species of economic importance (commercially or as a target for traditional activities)	Other fish species found in the project area and their IUCN category	Species from the list Order MMAP no. 488 of March 24, 2020	Species from the GEO annexes no. 57/2007
1.	Chondrychthyes Order Squaliformes Family Squalidae ***Squalus acanthias*** Linnaeus, 1758,	VU			NT	
2.	Family Rajidae ***Raja clavata*** Linnaeus, 1758			NT	NT	
3.	***Acipenser stellatus*** Pallas, 1771	CR			CR	Anexa 5A
4.	Order Clupeiformes Family Clupeidae ***Sprattus sprattus*** Linnaeus, 1758 LC, secondary consumer		LC			
5.	***Alosa tanaica*** Grimm, 1901		LC			Anexa 3, 5A
6.	***Alosa immaculata (Alosa pontica)*** Bennett, 1835	VU				Anexa 3, 5A
7.	Family Engraulidae ***Engraulis encrasicolus*** Linnaeus, 1758		LC			
8.	Family Salmonidae ***Salmo labrax*** Pallas, 1814			LC	VU	
9.	Order Scombriformes Family Scombridae ***Scomber scombrus*** Linnaeus, 1758		LC			
10.	Order Anguilliformes Family Anguillidae ***Anguilla anguilla*** Linnaeus, 1758	CR			CR	

No. crt.	Species	Species that fall into the IUCN Vulnerable-VU, Endangered-EN or Critically Endangered-CR categories.	Fish species of economic importance (commercially or as a target for traditional activities)	Other fish species found in the project area and their IUCN category	Species from the list Order MMAP no. 488 of March 24, 2020	Species from the GEO annexes no. 57/2007
11.	Order Beloniformes Family Belonidae ***Belone belone*** Linnaeus, 1761		LC			
12.	Order Gadiformes Family Gadiidae ***Gaidropsarus mediterraneus*** Linnaeus, 1758, tertiary consumer			LC	NE	
13.	***Merlangius merlangus*** Linnaeus, 1758			LC		
14.	Order Syngnathiformes Family Syngnathidae ***Syngnathus tenuirostris*** Rathke, 1837			DD	DD	
15.	***Syngnathus typhle*** Linnaeus, 1758 LC, tertiary consumer			LC	DD	
16.	***Syngnathus variegatus*** Pallas, 1811			DD	DD	
17.	***Nerophis ophidion*** Linnaeus, 1758			LC		
18.	***Hippocampus guttulatus*** Leach, 1814			DD	VU	
19.	Order Mugiliformes Family Mugilidae ***The golden lick*** Risso, 1810		LC			
20.	***Mugil cephalus*** *Linnaeus,* 1758		LC			
21.	Family Atherinidae ***Atherina boyeri*** Linnaeus, 1758			LC		
22.	Order Perciformes Family Sciaenidae ***Umbrina cirrosa*** Linnaeus, 1758,			DD		
23.	Family Mullidae ***Mullus barbatus*** *ponticus* Essipov, 1927		LC			

No. crt.	Species	Species that fall into the IUCN Vulnerable-VU, Endangered-EN or Critically Endangered-CR categories.	Fish species of economic importance (commercially or as a target for traditional activities)	Other fish species found in the project area and their IUCN category	Species from the list Order MMAP no. 488 of March 24, 2020	Species from the GEO annexes no. 57/2007
24.	***Mullus surmuletus*** Linnaeus, 1758 LC, secondary consumer		LC			
25.	Family Pomatidae ***Pomatomus saltatrix*** Linnaeus, 1766	VU				
26.	Family Carangidae ***Trachurus mediterraneus*** (Steindachner, 1868)		LC			
27.	Family Labridae ***Symphodus cinereus*** Nordmann, 1848 LC, secondary consumer			LC		
28.	***Symphodus ocellatus*** Forsskal, 1775			LC		
29.	***Symphodus roissali*** Risso, 1810			LC		
30.	***Symphodus rostratus*** Bloch, 1797			LC		
31.	***Symphodus tinca*** Linnaeus, 1758			LC		
32.	***Ctenolabrus rupestris*** Linnaeus, 1758			LC		
33.	***Coris julis*** Linnaeus, 1758			LC		
34.	Family Trachinidae ***Trachinus draco*** Linnaeus, 1758			LC		
35.	Family Uranoscopidae ***Uranoscopus scaber*** Linnaeus, 1758			LC		
36.	Family Blenniidae ***Blennius sphynx*** Valenciennes, 1837			LC		
37.	***Parablennius sanguinolentus*** Pallas, 1811			LC		
38.	***Parablennius tentacularis*** Brunnich, 1768			LC		
39.	Family Ammodytidae ***Gymnammodites cicerellus*** Rafinesque, 1810			LC		

No. crt.	Species	Species that fall into the IUCN Vulnerable-VU, Endangered-EN or Critically Endangered-CR categories.	Fish species of economic importance (commercially or as a target for traditional activities)	Other fish species found in the project area and their IUCN category	Species from the list Order MMAP no. 488 of March 24, 2020	Species from the GEO annexes no. 57/2007
40.	Family Gobiidae ***Gobius niger*** Linnaeus, 1758		LC		NE	
41.	***Mesogobius batrachocephalus*** Pallas, 1811		LC			5B
42.	***Neogobius melanostomus*** Pallas, 1811		LC			
43.	***Ponticola platyrostris*** Pallas, 1811			LC		
44.	***Proterorhinus marmoratus*** Pallas, 1811			LC		4B
45.	***Aphia minuta*** Risso, 1810			LC		
46.	Family Scorpaenidae ***Scorpaena porcus*** Linnaeus, 1758			LC		
47.	Family Triglidae ***Chelidonichthys alfalfa*** Linnaeus, 1758			LC	VU	
48.	Family Gasterosteidae ***Gasterosteus aculeatus*** Linnaeus, 1758			LC		
49.	Order Pleuronectiformes Family Bothidae ***Scophthalmus maximus*** Linnaeus, 1758 ***(Psetta maeotica*** Pallas, 1811)		NT			
50.	Soleidae Family ***Pegusa lascaris*** Risso, 1810 LC, tertiary consumer			LC		

The legend:

IUCN - International Union for Conservation of Nature: EX – Extinct, EW - Extinct in the wild, CR - Critically Endangered, EN- Endangered, VU – Vulnerable, NT - Near Threatened, LC - Least Concern, DD - Insufficient data, NE – Not evaluated;

GEO no. 57/2007: **ANNEX 3** - Plant and animal species whose conservation requires the designation of special conservation areas and areas of special avifaunistic protection; **ANNEX 4 B** - SPECIES OF NATIONAL INTEREST - Animal and plant species that require strict protection; **ANNEX 5 A** - SPECIES OF COMMUNITY INTEREST - Plant and animal species of community interest, with the exception of bird species, whose taking from nature and exploitation are subject to management measures; **ANNEX 5 B** - ANIMAL SPECIES OF NATIONAL INTEREST whose taking from nature and exploitation are subject to management measures.

C.2.12 Marine mammals

Marine mammals in the Black Sea are represented by three species: the Harbour porpoise (*Phocoena phocoena* ssp. *relicta)*, the Short-beaked common dolphin (*Delphinus delphis* ssp. *ponticus)* and the Common bottlenose dolphin (*Tursiops truncatus* ssp. *ponticus)*.

All three species are protected by various conventions and are included in Annex IV to the Habitats Directive and therefore require strict protection by the member states of the European Union. Based on specialized and occasional observations made in the project area (INCDM Grigore Antipa), the most frequently observed species were the porpoise (*Phocoena phocoena)* and the bottlenose dolphin (*Tursiops truncatus)* especially in the coastal area of the project, and the common dolphin (*Delphinus delphis)* may be present in the project area, especially in the offshore area.

The presence of these species in the project area is primarily dependent on the season and the availability of food.

In the 2023 monitoring program carried out by Blumenfield®, observations on marine mammals were also taken into account both on land, from a fixed point, on the cliff in the area adjacent to the project site, as well as through the transect method using the boat with which sea expeditions were carried out.

Following the process of analyzing the results obtained from the field, combined with the bibliographic study of the information available in the specialized literature, the following conclusions were reached, according to the table below:

Table C.18 Results of field activities (2023)

Uncertainty identified	Proposed approach	Aspects analyzed	Clarification of uncertainties	Uncertainty clarified (Yes/No/Partially)
The distribution of habitat 1170 and its subtypes in the project area is not known	Shipping by sea	Distribution of habitat	The habitat is present in the project area, but its distribution does not fully correspond to the information identified in the specialized literature. Several locations of subtype 1170-2 have been identified, outside the ANPIC, but in the immediate vicinity of the project.	Yes
The distribution of habitat 8330 in the project area is not known	Shipping by sea	Distribution of habitat	The habitat is present in the project area, even outside the ANPIC. Anchor point T 6.3 overlaps with this habitat type.	Yes
Larus genei individuals in the project area is not confirmed	Observations from a fixed point	The presence of the species The activity of the species	The species was observed following field activities in 2023	Yes Individuals use specific habitats within the ROSPA0076 site within the project area, preferring the shoreline
The presence and activity of the *Limosa limosa species in the project area is not confirmed*	Observations from a fixed point Traveling itinerant routes Shipping by sea	The presence of the species The activity of the species	The species was not observed in any of the monitoring programs dedicated to avifauna in the project area	Yes The absence of individuals of the species in this area is justified by the fact that this area does not constitute a favorable habitat for the species. As a wading species it prefers freshwater aquatic habitats, lake margins, flooded meadows, rice paddies, swampy lagoons and estuaries, as well as saline habitats (marshes or grasslands).
The presence and activity of the *Mergus albellus*	Observations from a fixed point Traveling itinerant routes Shipping by sea	The presence of the species	The species was not observed in any of the monitoring	Yes The absence of individuals of the species in this area is justified by the fact that this area does not

Uncertainty identified	Proposed approach	Aspects analyzed	Clarification of uncertainties	Uncertainty clarified (Yes/No/Partially)
species in the project area is not confirmed		The activity of the species	programs dedicated to avifauna in the project area	constitute a favorable habitat for the species, it retreats to the shores of the sea only in case of freezing of the inland waters
and activity in the project area of individuals belonging to the *Pelecanus crispus species* is not confirmed	Observations from a fixed point Traveling itinerant routes Shipping by sea	The presence of the species The activity of the species	The species was observed following field activities in 2023	Yes Individuals use the specific habitats within the ROSPA0076 site within the project area (resting and feeding)
The presence and activity in the project area of individuals belonging to the species *Phalaropus lobatus is not confirmed*	Observations from a fixed point Traveling itinerant routes Shipping by sea	The presence of the species The activity of the species	The species was not observed in any of the monitoring programs dedicated to avifauna in the project area	Yes The absence of individuals of the species in this area is justified by the fact that this area does not constitute a favorable habitat for the species, the habitats favorable to the species are in the deltaic and predeltaic areas
The presence and activity in the project area of individuals belonging to the species *Puffinus yelkouan is not confirmed*	Observations from a fixed point Traveling itinerant routes Shipping by sea	The presence of the species The activity of the species	The species was observed following field activities in 2023	Yes Individuals use the specific habitats within the ROSPA0076 site within the project area (in migration)
Tachybaptus ruficollis species in the project area is not confirmed	Observations from a fixed point Traveling itinerant routes Shipping by sea	The presence of the species The activity of the species	The species was not observed in any of the monitoring programs dedicated to avifauna in the project area	Yes the absence of individuals of the species in this area is justified by the fact that this area does not constitute a favorable habitat for the species, the favorable habitats for the species are in areas with inland, unfrozen stagnant waters or near the sea

CHAPTER D) ANALYSIS OF PRESSURES AND THREATS

Within this chapter, an analysis of the pressures and threats identified in the approved management plans of ROSAC0273 Zona marină de la Capul Tuzla and ROSPA0076 Marea Neagră and in the updated standard forms (2021) of the other ANPIC considered potentially affected and which do not have a management plan developed and approved, respectively: ROSCI0293 Costinești-23 August and ROSCI0311 Canionul Viteaz. This analysis is correlated with the forms of impact associated with the Neptun Deep project and includes other PPs with which the analyzed project may generate cumulative impact because they can be considered threats to ANPIC. These existing, proposed PPs in the approval were presented in section A.3 (Other PPs with which the analyzed project may generate cumulative impact) of the appropriate assessment study.

From the point of view of temporal nature, the impacts are classified into two categories: current pressures and future threats. The definitions of these two categories are as follows:

- Current pressure - **P** - that activity with a negative impact on the state of conservation of species or types of habitats of conservation interest, which is currently carried out, or which took place in the past, but whose negative effects still persist;
- Future threat - **A** - that activity with potential negative impact on the conservation status of species or habitat types of conservation interest, which is expected to take place in the future. A current pressure cannot be considered a future threat unless a significant increase in intensity or a change in the location of the current pressure is expected.

D.1. ROSAC0273 - PRESSURES AND THREATS IDENTIFIED WITHIN THE APPROVED MANAGEMENT PLAN

Pressures

Within the management plan, a series of human activities that can affect the Natura 2000 site ROSCI/ROSAC0273 Zona marină de la Capul Tuzla have been listed.

Human activities:

- Construction: Coastal and marine, including pipelines, oil infrastructure and wind farms
- Exploration and extraction of mineral resources: oil and gas, sand, gravel
- Transport, navigation, transport infrastructures
- Pollution: pollution by liquid substances – chemical, nuclear, biological, organic and mineral waste
- Fishing, aquaculture
- Military activities: maneuvers, research, waste
- Tourism, pleasure boating and sea sports

The effects of human activities have been classified within the management plan in the following main categories:

- Physical:
    - Destruction or fragmentation of habitats.

  - Substrate removal and modification, turbidity, etc.;
  - Waste disposal;
  - Noise pollution;
  - Visual pollution;
  - Changes in water characteristics, temperature, salinity, currents;
- Chemical:
  - Contamination with organic compounds, pesticides, heavy metals, hydrocarbons, nuclear waste;
  - Increase in organic matter, changes in nutrients, waste from urban coastal waters, waste from polluted rivers, runoff from agricultural activities, eutrophication, etc.;
- Biological:
  - Extermination of targeted and non-targeted species;
  - Injury to organisms, which may subsequently cause death or inability to reproduce;
  - Moving, burying, exuding species that are not mobile;
  - The introduction of pathogens;
  - Population changes, structure and/or dynamics;
  - Introduction of genetically modified organisms.

Related pressures include commercial fishing, oil and gas exploitation, transport, atmospheric and wet deposition of hazardous pollutants and nutrients, waste dumping, including the dumping of contaminated dredged sediments, underwater noise pollution and physical degradation of habitats as a result of dredging and sand and gravel extraction activities.

- Pollution including noise pollution

Marine water pollution can also be a significant threat at the local level.

Consequently, through the management plan, it is recommended that the authority responsible for the conservation status of the Natura 2000 site, based on the inventories and the determination of the conservation status, will establish and institute the necessary conservation measures for that site.

- Marine fisheries

Fishing activities, including aquaculture, interact with the marine environment in various ways, both directly (removal of target species to extinction, trawling the seabed), indirectly (alteration of energy flow through the food web, sediments or waste from some fishing facilities aquaculture) as well as ecological changes

- Tourism, pleasure boating, water sports, diving

The overexploitation of well-preserved natural sites by tourists is a real problem in the coastal area, which can generate a state of increased wear and tear of the natural environment. This ultimately leads to the destruction of those natural features that made the site attractive for tourism.

Threats

Threat	Vulnerable habitats and/or species
Coastal protection works	1170, 8830 - destruction of habitats by clogging with clay thrown into the sea by hydrotechnical coastal protection works 1140- the habitat was already destroyed
Motorized boats on site	1170, 8330, 1110, *Halichondria panic, Hemimysis serrata, Eriphia verrucosa* - heavy hydrocarbon pollution of coastal waters *Tursiops truncatus, Phocoena phocoena,* seabirds - noise pollution *Tursiops truncatus, Phocoena phocoena,* seabirds - risk of collision
Illegal fishing	1170, 1110 - harvesting of marine plants and invertebrates by any method *Tursiops truncatus, Phocoena phocoena,* seabirds - mortalities due to fishing nets
Diving	1170, 8330, 1110, *Halichondria panic, Hemimsys serrata, Eriphia verrucosa* - destruction or wear and tear of habitats through intensive and careless underwater tourism 1170, 8330, 1110, *Halichondria panic, Hemimysis serrata, Eriphia verrucosa* - harvesting of marine invertebrates by divers for any purpose *Halichondria panic, Hemimysis serrata* - the scientific research by destructive methods of the habitats of these species
Pollution	All habitats and species - Eforie Sud sewage discharge
Trash generated by tourists thrown haphazardly	*Tursiops truncatus, Phocoena phocoena,* seabirds- and non-degradable hazardous waste, plastic bags that can be ingested by animals

D.2. ROSPA0076 - ACTIVITIES WITH POTENTIAL IMPACT (PRESSURES AND THREATS) IDENTIFIED WITHIN THE APPROVED MANAGEMENT PLAN

The main pressures and threats for the Natura 2000 site ROSPA0076 Marea Neagră, according to the approved management plan, are part of the following major categories:

1. The development of renewable energy projects - code C03.03 - Wind energy production - in the next 3-5 years, up to a distance of approximately 6 km offshore and on compact surfaces that may reach over 60 km [2.]

   Direct effects: collisions, barrier effect during passage, disturbing and decreasing the number of birds during the construction period of the facilities but also during the exploitation period.

2. Development of gas and oil exploitations - C02.03- Drilling platforms, C02.05- Mining platforms

   Direct effects: disturbing and decreasing the number of birds during the construction period of the facilities but also during the exploitation period, the decrease of the habitat area, for example of the feeding areas, pollution - resulting in mortality but also other long-term effects due to pollution.

3. Dredging and aggregate extraction - J02.02.02- estuarine or coastal dredging

   Direct effects: disturbing and decreasing the number of birds during the dredging period, loss of habitat, for example the feeding areas of seabird species that feed including species of bivalve molluscs;

Indirect effect: changes in turbidity - increase in turbidity, which reduces the possibility of direct location of the prey and thus affects the ability to feed, contamination of marine waters with toxic substances in the case of dredging carried out in ports, where toxic substances from sediments affecting bird populations.

4. Commercial fishing- F02.01- Passive professional fishing; F02.02- Active professional fishing
   Direct effects: Mortality due to bycatch of birds in fishing nets.
   Indirect effects: Fishing activity may compete with some of the ichthyophage bird species. Selective harvesting of certain fish species can have negative effects on food webs with indirect effects and on bird species.
5. Tourist activities - G01.01.01 – motorized water sports

   Direct effects: Tourist activities and especially those carried out in the coastal area can cause disturbance to bird species especially in feeding and roosting areas.

6. Naval transport- D03 – Naval transport, ports, marine constructions

   Direct effects: Disturbance of bird species especially related to noise and light pollution at night. The impact of accidental oil pollution can have catastrophic effects on seabird species and marine life in general. In case of unfavorable weather conditions, storm, fog, there is the possibility of birds colliding with ships and with the built elements within the port areas.

7. Military activities - G04.01- Military maneuvers

   Direct effects: Disturbance of bird species especially related to noise pollution in feeding and roosting areas.

8. Pollution- H03 – marine pollution, H03.03- marine pollution macro-pollution – ex. plastic bags, polystyrene, H06.01 – noise pollution and as a threat, H03.01—oil spills at sea;

   Direct effects: ingestion of plastics, polystyrene, immobilization of birds with plastic bags and other packaging waste. Noise pollution leads to the disturbance of bird populations. Spills of oil and other petroleum products can impregnate birds' plumage with these residues.

   Indirect effects: eutrophication - large-scale effects on marine animal and plant populations.

9. Invasive species I01- invasive species

   Direct effects: the introduction of invasive species can lead to damage to native species of fish and molluscs that represent the trophic resource for bird populations.

In addition to those presented above, and which constitute pressures and/or threats located inside the protected area, there are a number of pressures and threats located in the immediate vicinity of the site boundaries in the coastal area and which have an impact on conservation status of species in ROSPA0076 Marea Neagră.

D.2.1. List of current pressures with impact at the level of the protected natural area ROSPA0076

Pressure	Description
Removing material from the beaches	***C01.01.02***
Details	Location: Punctually in the Corbu - Vadu sand extraction area and in the Vama Veche - 2 Mai calcareous material area. It consists of unauthorized activities of extracting the material from the beaches, by the locals. Small amounts are mined for construction activities.
Dredging of coastal areas and estuaries	***J02.02.02***
Details	Location: activity carried out especially in port areas. Direct effects: disturbance and decrease in the number of birds during the dredging period, loss of habitat for example feeding areas - especially of molluscs and other species on which seabird species feed, changes in turbidity increasing turbidity which reduces the possibility of direct location of the prey and thus affect feeding ability. Direct toxic pollution, especially in the case of ports, can release toxic substances that were previously sedimented.
PIPES	***D02.02***
Details	Location: Wastewater treatment plant discharge pipes are located near major urban areas. Oil and gas transport pipelines are located underwater. The presence of sewerage networks and treatment plants in coastal towns significantly reduce pollution with domestic wastewater and industrial water. Oil and gas pipelines are submerged and have a low impact on the Natura 2000 site ROSPA0076 Marea Neagră. Problems can arise in the event of accidents, in which oil pipelines break or crack. In this case discussed at threats, the pressure intensity will become high.
Motorized water sports	***G01.01.01***
Details	Location: In the areas corresponding to the resorts on the Black Sea coast. Direct effects: Tourism activities and especially those carried out in the coastal zone and in the marine environment can cause disturbance to bird species especially during certain sensitive periods of the development cycle, during the breeding season and in feeding and/or resting areas. The action is negative during the summer season, when the activity is carried out with intensity.
Fishing areas	***D03.01.03***
Details	Location: in the protected natural area; they stretch along the coast, with an uneven distribution, predominating in the north - in the marine area next to the delta.

Pressure	Description
	Fishing activity has shown a decline in recent years, especially in the fishing areas south of Cape Midia.
Longline fishing in the coastal area	***F02.01.03***
Details	Location: in the protected natural area; located mainly in the north of the Romanian coastal area; Longline fishing is not of great scale - commercial fishing has decreased in intensity in recent years, it is currently a traditional, subsistence activity. The focus is on longlines and set nets, which are known to be responsible for most seabird bycatch, but other fishing gear such as trawls and purse seines are also covered.
Fishing with traps, peaks, wind etc.	***F02.01.01***
Details	Location: in the protected natural area; in the north of the coast, next to the sea shores; next to residential areas; Italian systems in the south – from Eforie to Vama Veche – May 2. It limits the access to prey of ichthyophage birds.
Net fishing	***F02.01.02***
Details	Location: areas with nets are located on navigation charts, except for poachers' nets. It limits the access to prey of ichthyophage birds.
Navigation	***D03.02***
Details	Location: takes place over the entire surface of the Natura 2000 Site ROSPA0076 Marea Neagră. There are a number of no-navigation areas marked on navigational charts. Direct effects: Disturbance of bird species especially related to noise and light pollution at night. The impact of accidental oil pollution can have catastrophic effects on seabird species and marine life in general. In case of unfavorable weather conditions, storm, fog, there is a possibility of birds colliding with ships and with the built elements within the port areas.
Coastal sand deposits/ beach growth	***E03.04.01***
Details	Location: south of Cape Midia there are both natural accretion phenomena and sand deposits due to the change in the direction of the currents after the construction of the protective dykes, plus the rehabilitation of the beaches. The impact is indirectly given by the coastal rehabilitation works.
Suspended crops	***F01.02***
Details	*Mytilus galloprovincialis* marine-culture farm from the Agigea-Eforie area on an area of 18 hectares.

Pressure	Description
Estuary and/or coastal dredging	***J02.02.02***
Details	Location: in the protected natural area; Dredging, especially in port areas and adjacent to them for the unclogging of access waterways to ports.
Surface water pollution by industrial plants	***H01.01***
Details	Location: the rivers that flow into the Danube, from the territory of the country, including the industrial platform Midia - Năvodari. The largest industrial complex on the Romanian Black Sea coast is the Petromidia Oil Complex including Rompetrol Rafinare and Rompetrol Petrochemicals.
Marine macro-pollution (e.g. plastic bags, polystyrene)	***H03.03***
Details	Location: in residential areas, ports. It can cause eutrophication of marine waters by affecting trophic relationships as a result of algal blooms.
Air pollution, airborne pollutants	***H04***
Details	Location: Localized impact, in port areas, shipyards, industrial platforms and residential areas
Noise pollution caused by an irregular source	***H06.01.01***
Details	Location: not located; noise produced by ships, aircraft, other noises.
Diffuse surface water pollution due to other sources not mentioned	***H01.09***
Details	Location: especially in the bordering area of the Danube Delta, caused by changes in the concentration of nutrients in the Danube water. Eutrophication is a major problem for the coastal regions in the vicinity of the Natura 2000 site ROSPA0076 Marea Neagră and especially for its north-western part. There are changes in the structure of the phytoplankton, which cause chain changes in the structure of the zooplankton and the benthic fauna, ultimately causing changes in the structure of the fish populations. The impact on bird species is indirect by affecting food resources.
Non-native invasive species (allogenic)	***I01***
Details	Location: Invasive pelagic and marine benthic species; effect in trophic relationships, such as *Mnemiopsis leydyi, Beroe ovata* ; food source after storms for some bird species - *Mya* sp., *Rapana* sp.

Pressure	Description
	The cumulative impact of this pressure with intensive fishing and eutrophication led to major changes in the Black Sea.
Pressures and threats from outside Romania	***XO***
Details	Location: in the protected natural area; Transboundary pollution – the rivers that flow into the Danube
Non-intensive cow grazing	***A04.02.01***
Details	Location: pressure occurring at the edge of the Natura 2000 Site ROSPA0076 Marea Neagră. On the gravels of the Danube Delta Biosphere Reserve, from Sulina to Corbu - grindul Chituc.
Non-intensive sheep grazing	***A04.02.02***
Details	Location: pressure occurring at the edge of the Natura 2000 Site ROSPA0076 Marea Neagră. On the gravels of the Danube Delta Biosphere Reserve, Săcele and Chituc, and in general in the rural areas in the vicinity of the ROSPA0076 Marea Neagră site.
Restructuring of agricultural land ownership	***A10***
Details	Location: in the vicinity of the Natura 2000 site ROSPA0076 Marea Neagră in the area of Vama Veche - 2 Mai, Schitu Costinești in the part inserted in the urban area.
Mining and extraction of oil and gas	***C02***
Details	Location: pressure occurring in the vicinity of the Natura 2000 site ROSPA0076 Marea Neagră. Oil platforms are engaged in extraction activities at great distances from the boundaries of the Natura 2000 site ROSPA0076 Marea Neagră.
Production drilling	***C02.02***
Details	Location: pressure occurring in the vicinity of the Natura 2000 site ROSPA0076 Marea Neagră. Oil rigs are engaged in drilling and extraction activities at great distances from the Natura 2000 site ROSPA0076 Marea Neagră.
Port area	***D03.01***
Details	Location: in the vicinity of the Natura 2000 Site ROSPA0076 Marea Neagră; where large port areas are located.
housing (scattered, scattered dwellings)	***E01.03***
Details	Location: in the vicinity of the Natura 2000 Site ROSPA0076 Marea Neagră. In new residential areas, on the edge of some localities - in the area

Pressure	Description
	Vama Veche - 2 Mai, Costinești-Schitu and in the north of the Corbu - Vadu coast, fishermen's huts in the coastal area of the Danube Delta Biosphere Reserve, Gura Portiței. Also, on the sea shores of Constanța County – guesthouses, Vadu and Corbu resorts.
Storage of industrial waste	***E03.02***
Details	Location: in the vicinity of the Natura 2000 Site ROSPA0076 Marea Neagră, in the port of Constanța. Non-compliant storage, the impact is reduced under the conditions of compliance with the specific legislation on waste management. Due to the specific conditions, the intensity of the pressure can change up to high in the conditions of some accidents in the port of Constanța.
Other types of storage	***E03.04***
Details	Location: in the vicinity of the Natura 2000 Site ROSPA0076 Marea Neagră. There are illegal storages of household and inert waste in the area near the Natura 2000 site ROSPA0076 Marea Neagră. Different categories of household waste and inert construction waste are stored over a relatively large area, affecting the bird populations that nest in the area.
Fishing with longlines, in the pelagic zone	***F02.01.04***
Details	Location: in the vicinity of the Natura 2000 Site ROSPA0076 Marea Neagră; located mainly in the northern area of offshore waters. Longline fishing in the pelagic zone is currently not very extensive.
Pelagic fishing in a fixed seine/purse fishery in the pelagic zone	***F02.02.04***
Details	Location: in the vicinity of the Natura 2000 Site ROSPA0076 Marea Neagră; temporarily, especially in the northern area of Romanian offshore waters. Fishing activity has declined in recent years.
Hunting	***F03.01***
Details	Location: in the vicinity of the Natura 2000 Site ROSPA0076 Marea Neagră; on the cliffs, in the southern area in hunting grounds.
Poaching	***F05.04***
Details	Location: in the vicinity of the Natura 2000 Site ROSPA0076 Marea Neagră. Occasional poaching, both north and south of the coast. No scope.
Reclaiming land from the sea, estuaries or marshes	***J02.01.02***
Details	Location: in the vicinity of the Natura 2000 Site ROSPA0076 Marea Neagră. Current coastal management; the historical development of the Midia, Constanța, Mangalia port premises.

D.2.2. List of future threats with potential impact on the protected natural area ROSPA0076 Marea Neagră

Threat	Description
Removing material from the beaches	***C01.01.02***
Details	Location of the future threat: Punctual in the area Corbu - Vadu sand removal and in the area Vama Veche - 2 Mai calcareous material. It consists of unauthorized activities of extracting the material from the beaches by the locals. Small amounts are mined for construction activities.
Dredging of coastal and/or estuarine areas	***J02.02.02***
Details	Location of the future threat: dredging, especially in and adjacent to port areas to unclog access waterways to ports, dredging to relocate sediments.
PIPES	***D02.02***
Details	Due to the plans and projects for connection to the sewage network and respectively the construction of treatment plants in areas where they have not yet been completed. The oil and gas pipelines are submerged and can constitute a high pressure on the Natura 2000 site in the event of accidents, in which the oil pipelines break or crack. In this case, the threat intensity will become high.
Motorized water sports	***G01.01.01***
Details	Location of the future threat: With high intensity in the area of tourist resorts bordering the Natura 2000 Site ROSPA0076 Marea Neagră
Fishing areas	***D03.01.03***
Details	Location of the future threat: Fishing areas are spread along the coast, with an uneven distribution, predominating in the north in the marine area near the delta, with the possibility of fishing rehabilitation also in the southern areas of the littoral.
Longline fishing in the coastal area	***F02.01.03***
Details	Location of the future threat: with intensity in the northern area of the Romanian coastal waters.
Fishing with traps, lines, winches, etc.	***F02.01.01***

Threat	Description
Details	Location of the future threat: in the north of the coast, next to the sea shingles; next to residential areas; Italian systems in the south – from Eforie to Vama Veche – May 2. There is the possibility of expanding these areas.
Net fishing	***F02.01.02***
Details	Locating Upcoming Threat: Meshed areas appear on navigation charts.
Navigation	***D03.02***
Details	Location of the future threat: on the entire surface of the Natura 2000 Site ROSPA0076 Marea Neagră.
Coastal sand deposits/beach growth	***E03.04.01***
Details	Location of the future threat: south of Eforie the sand deposits will be mainly due to the change in the direction of the currents after the construction of the protective dykes, plus the beach rehabilitation works
Suspended crops	***F01.02***
Details	Location of the future threat: 4 large marine culture farms are designated with potential for mollusc suspended cultures.
Surface water pollution by industrial plants	***H01.01***
Details	Locating the future threat: Pollution brought by the Danube Delta from the country's territory. Midia-Năvodari industrial platform.
Marine macro-pollution e.g. plastic bags, polystyrene	***H03.03***
Details	Location of future threat: Localized impact, in port areas, residential and industrial platforms.
Air pollution, airborne pollutants	***H04***
Details	Location of future threat: Localized impact, in port areas, shipyards, industrial platforms and residential areas.
Noise pollution caused by an irregular source	***H06.01.01***

Threat	Description
Details	Locating the future threat: Noise produced by ships, aircraft, military manoeuvres.
Non-native invasive species (allogenic)	***I01***
Details	The introduction of invasive species can lead to damage to native species of fish and molluscs that represent the trophic resource for bird populations.
Pressures and threats from outside Romania	***X0***
Details	Transboundary pollution The Danube and the rivers flowing into the north-west of the Black Sea. The threat level may change in case of accidental pollution and other incidents.
Non-intensive cow grazing	***A04.02.01***
Details	Location: in the vicinity of the Natura 2000 site ROSPA0076 Marea Neagră; threat that appears on the gravels of the Danube Delta Biosphere Reserve, from Sulina to Corbu-grindul Chituc.
Non-intensive sheep grazing	***A04.02.02***
Details	Location: in the vicinity of the Natura 2000 site ROSPA0076 Marea Neagră. On the gravels of the Danube Delta Biosphere Reserve - Săcele and Chituc and in general in the rural areas in the vicinity of the site. The threat manifests itself in the nesting areas within the Danube Delta Biosphere Reserve. There is the prospect of a decrease in numbers under the conditions of the application of the appropriate management measures from the Integrated Management Plan of the Danube Delta Biosphere Reserve.
Restructuring of agricultural land ownership	***A10***
Details	Location: in the vicinity of the Natura 2000 Site ROSPA0076 Marea Neagră in the area of Vama Veche-2 Mai, Schitu - Costinești in the part inserted into the urban area.

Threat	Description
Mining and extraction of oil and gas	***C02***
Details	Location: in the vicinity of the Natura 2000 site ROSPA0076 Marea Neagră. Oil platforms are engaged in extraction activities at great distances from the boundaries of the Natura 2000 site ROSPA0076 Marea Neagră. A significant impact can occur in the event of an accident and serious damage to the extraction platform with spills of crude oil into the water mass with the possibility of oil slick migration to coastal areas.
Production drilling	***C02.02***
Details	Location: in the vicinity of the Natura 2000 site ROSPA0076 Marea Neagră. Oil rigs are engaged in drilling and extraction activities at long distances from the ROSPA0076 Marea Neagră. A significant impact can occur in the event of an accident and serious damage to the extraction platform with spills of crude oil into the water mass with the possibility of oil slick migration to coastal areas.
Port area	***D03.01***
Details	Location: in the vicinity of the Natura 2000 site ROSPA0076 Marea Neagră there are large port areas. Port waters are often shelter areas for waterfowl species in winter and especially in adverse weather conditions.
Dispersed housing dispersed, scattered housing	***E01.03***
Details	Location: in the vicinity of the Natura 2000 site ROSPA0076 Marea Neagră, in new residential areas, on the border of some localities - in the area of Vama Veche - 2 Mai, Costinești-Schitu and in the north of the coast - Corbu - Vadu, fishermen's huts in the coastal area within Danube Delta Biosphere Reserve, Gura Portiței on the sea shores of Constanța county, guesthouses, fisheries (*"cherhana" rom.*) in Vadu and Corbu.
Storage of industrial waste	**E03.02**
Details	Location: in the vicinity of the Natura 2000 site ROSPA0076 Marea Neagră, in the port of Constanța. Non-compliant storage, the impact is reduced under the conditions of compliance with the specific legislation on waste management. Due to the specific conditions, the intensity of the pressure can change up to high in the conditions of some accidents in the port of Constanța.

Threat	Description
Other types of storage	***E03.04***
Details	Location: in the vicinity of the Natura 2000 site ROSPA0076 Marea Neagră. Different categories of household and inert waste - construction waste are stored on relatively large areas in the vicinity of residential areas, affecting the habitats of nesting bird populations.
Fishing with longlines, in the pelagic zone	***F02.01.04***
Details	Location: in the vicinity of the Natura 2000 site ROSPA0076 Marea Neagră, located mainly in the northern area of the offshore waters.
Pelagic fishing in a fixed seine/purse fishery in the pelagic zone	***F02.02.04***
Details	Location: in the vicinity of the Natura 2000 site ROSPA0076 Marea Neagră; temporary activities especially in the northern area of Romanian offshore waters.
Hunting	***F03.01***
Details	Location: in the vicinity of the Natura 2000 site ROSPA0076 Marea Neagră; in the southern area in hunting funds.
Poaching	***F05.04***
Details	Location: in the vicinity of the Natura 2000 site ROSPA0076 Marea Neagră. Poaching, occasional, without scale, both in the north and south of the coast.
Land recovery from the sea, estuaries or swamps	***J02.01.02***
Details	Location: in the vicinity of the Natura 2000 site ROSPA0076 Marea Neagră. Current Coastal Development Works; the historical development of the Midia, Constanța, Mangalia port premises.
Jetties/ tourist and recreational areas	***D03.01.02***
Details	Location of the future threat: coastal rehabilitation works will be carried out in the south of the coast, tourist and leisure areas will be developed both in the north of the coast and in the south.

Threat	Description
	The threat level will be kept low in compliance with environmental legislation specific to the coastal zone and natural protected areas.
Death or injury from collision	***G05.11***
Details	Locating the future threat: Development of offshore wind renewable energy investments. Other anthropogenic structures. There are projects for the development of offshore wind farms with an estimated area of 65 hectares.
Drilling rigs	***C02.03***
Details	Location: in the vicinity of the Natura 2000 site ROSPA0076 Marea Neagră. Oil rigs are engaged in exploratory and/or extraction drilling activities at long distances from the ROSPA0076 Marea Neagră. A significant impact can occur in the event of an accident and serious damage of machinery and/or installations, with spills of crude oil into the water mass with the possibility of oil slick migration to coastal areas.

D.2.3. Assessment of the impacts caused by the current pressures and future threats on the species of the Natura 2000 site ROSPA0076 Marea Neagră within the Site Management Plan

Assessment of the impacts caused by current pressures and future threats on species in the Natura 2000 Site ROSPA0076 Marea Neagră: *Branta ruficollis, Chlidonias niger, Chlidonias hybridus, Cygnus cygnus, Gelochelidon nilotica, Gavia arctica, Gavia stellata, Larus minutus, Larus Genei, Larus melanocephalus, Mergus albellus, Puffinus yelkouan, Pelecanus crispus, Phalaropus lobatus, Sterna sandvicensis, Sterna albifrons, Sterna Caspian, Sterna hirundo,* results in the classification of all types of impacts in the intensity category: Weak.

Parameter	Description	Parameter	Description
Current pressure	J02.02.02 Dredging of coastal areas and estuaries D02.02 Pipes G01.01.01 Motorized water sports D03.01.03 Fishing areas F02.01.03 Fishing with longlines, in the coastal area F02.01.01 Fishing with traps, lines, winches, etc. F02.01.02 Net fishing D03.02 Navigation H01.01 Surface water pollution by industrial plants H01.03 Other sources of surface water pollution	Future threat	D02.02 Pipelines D03.01.02 Piers/tourist and recreational areas D03.01.03 Fishing areas D03.02 Navigation F02.01.03 Fishing with longlines, in the coastal area F02.01.01 Fishing with traps, lines, winches, etc. F02.01.02 Net fishing G01.01.01 Motorized water sports J02.02.02 Dredging of coastal areas and estuaries G05.11 Death or injury by collision

Parameter	Description	Parameter	Description
	H04 Air pollution, airborne pollutants H06.01.01 Noise pollution from an irregular source		H01.01 Surface water pollution by industrial plants H04 Air pollution, airborne pollutants H06.01.01 Noise pollution from an irregular source
Locating the impacts caused by current pressures on the species	J02.02.02 Located near the towns of Tuzla and Mangalia D02.02 North of the municipality of Constanța and next to the town of Techirghiol G01.01.01 Especially in areas developed from a tourist point of view such as Mamaia, Eforie, Techirghiol, Neptun, Mangalia, Vama Veche-2Mai D03.01.03 Especially at the mouths of the Danube (Sulina and Sf. Gheorghe), Năvodari, Constanța, Agigea, Tuzla, Techirghiol areas F02.01.03 The predeltaic area in front of the mouths of the Danube F02.01.01 Especially in the areas south of Sulina and near the towns of Techirghiol, Tuzla F02.01.02 Especially in the areas south of Sulina and near the towns of Techirghiol, Tuzla D03.02 The entire surface of the protected area H01.01 Sulina, Sf. Gheorghe, Năvodari H01.03 All urban developed areas discharging piped water into the Black Sea H04 Economically developed areas of the Black Sea coast H06.01.01 The entire area of the Romanian coast in the vicinity of the Natura 2000 site ROSPA0076 Marea Neagră	Locating the impacts caused by current pressures on the species	D02.02 North of the municipality of Constanța and next to the town of Techirghiol D03.01.02 All tourist areas containing facilities such as jetties, pontoons, seawalls and others D03.01.03 Especially at the mouths of the Danube (Sulina and Sf. Gheorghe), Năvodari, Constanța, Agigea, Tuzla, Techirghiol areas D03.02 The entire surface of the protected area Predeltaic area in front of the mouths of the Danube F02.01.01 Especially in the areas south of Sulina and near the towns of Techirghiol, Tuzla F02.01.02 Especially in the areas south of Sulina and near the towns of Techirghiol, Tuzla G01.01.01 Especially in areas developed from a tourist point of view such as Mamaia, Eforie, Techirghiol, Neptun, Mangalia, Vama Veche-2Mai J02.02.02 Located near the towns of Tuzla and Mangalia G05.11 Especially in areas with intense naval traffic such as the large commercial ports, the areas north and south of Constanța Port H01.01 Sulina, Sf. Gheorghe, Năvodari H04 Economically developed areas of the Black Sea coast H06.01.01 The entire area of the Romanian coast in the vicinity of the Natura 2000 site ROSPA0076 Marea Neagră
The localized intensity of impacts caused by	Weak (S) J02.02.02 Dredging of coastal areas and estuaries - S D02.02 Pipes - S G01.01.01 Motorized water sports - S	The localized intensity of impacts caused by	Weak (S) D02.02 Pipes - S D03.01.02 Piers/tourist and leisure areas - S D03.01.03 Fishing areas - S

Parameter	Description	Parameter	Description
current pressures on the species	D03.01.03 Fishing areas - S F02.01.03 Longline fishing, in the coastal area - S F02.01.01 Fishing with traps, lines, winches, etc. - S F02.01.02 Net fishing - S D03.02 Navigation - S H01.01 Surface water pollution by industrial plants - S H01.03 Other sources of surface water pollution - S H04 Air pollution, airborne pollutants - S H06.01.01 Noise pollution caused by an irregular source - S	current pressures on the species	D03.02 Navigation - S F02.01.03 Longline fishing, in the coastal area - S F02.01.01 Fishing with traps, lines, winches, etc. - S F02.01.02 Net fishing - S G01.01.01 Motorized water sports - S J02.02.02 Dredging of coastal areas and estuaries - S G05.11 Death or injury by collision - S H01.01 Surface water pollution by industrial plants - S H04 Air pollution, airborne pollutants - S H06.01.01 Noise pollution caused by an irregular source - S

D.3. ROSCI0293 COSTINEȘTI-23 AUGUST - ACTIVITIES WITH POTENTIAL IMPACT (PRESSURES AND THREATS) IDENTIFIED IN THE UPDATED STANDARD FORM (2021)

Threats, pressures or activities impacting the site

The most important impacts and activities with a high effect on the site

Negative Impacts				
Intensity	**Code**	**Threats and pressures**	**Pollution (Code)**	**On site/off site**
H	J02.12.01	Sea or coast protection works, tidal dams	N	I

The most important impacts and activities with a medium/low effect on the site

Negative Impacts				
Intensity	**Code**	**Threats and pressures**	**Pollution (Code)**	**On site/off site**
L	C01.01	Sand and gravel extraction	N	O
M	D05	Improving access to the area	N	O
M	E01	Urbanized areas, human habitation (human dwellings)	N	O
L	E03	Downloads	N	O
L	F02.01.01	With traps, peaks, windings, etc.	N	O
L	F02.03	Recreational fishing	N	I
L	F03.02	Taking / sampling of fauna (terrestrial)	N	I
M	G01.01	Water sports	N	O
M	G02	Sports and leisure complexes	N	O
M	H01	Surface water pollution (limnic, terrestrial, marine and brackish)	N	I
L	J02.12	Dams, dykes, artificial beaches, general	N	O
M	K01.02	warping	N	O
M	L	Geological events, natural disasters	N	I

D.4. ROSCI0311 CANIONUL VITEAZ - ACTIVITIES WITH POTENTIAL IMPACT (PRESSURES AND THREATS) IDENTIFIED IN THE UPDATED STANDARD FORM (2021)

For the Natura 2000 site ROSCI0311 Canionul Viteaz, no threats, pressures or activities with an impact on the site have been presented until this date.

From the analysis of all this information it emerges that the pressures and threats, defined in the two approved management plans and the updated standard forms and which are common to ANPIC analysed are:

- Construction: Coastal and marine, including pipelines, oil infrastructure and wind farms
- Exploration and extraction of mineral resources: oil and gas, sand, gravel
- Transport, navigation, transport infrastructures
- Pollution: pollution by liquid substances – chemical, nuclear, biological, organic and mineral waste
- Fishing, aquaculture
- Military activities: manoeuvres, research, waste
- Tourism, pleasure boating and sea sports.

Pressures and threats caused by climate change were not characterized in the management plans nor in the updated standard forms of the ANPIC studied. Information regarding these types of pressures and threats is available on the website cdr.eionet.europa.eu (*The European Environment Information and Observation Network)*, managed by the European Environment Agency *(EEA),* where the reports can be found of the country based on Article 17 of the Habitats Directive 92/43/EEC and Article 12 of the Birds Directive 2009/147/EC. In the appropriate assessment study, this information is presented in detail for habitats and species in section **B.2.4. Data on species and habitats of community interest possibly affected by the implementation of the analysed project.**

Starting from the identification of all the pressures and threats at the level of the four protected natural areas of community interest in the area of influence of the project, their location inside or outside the ANPIC (for those that have such a location) and their characterization within the plans of management, this information was integrated and presented synthetically in tabular form, as follows:

Table D.1 Analysis of pressures/threats from management plans, standard forms and other PPs

ANPIC	Species/habitat	Affected Parameter/ Target	Pressure/threat according to PM/FS of ANPIC	Level of pressure/threat according to PM/FS of ANPIC	PP contributing to pressure/ threat	Remarks
ROSAC0273 Zona marină de la Capul Tuzla	Pressures					
	1110	Habitat area	Pressure Construction: Coastal and marine, including pipelines, oil infrastructure and wind farms	Unrated	Works to strengthen the seafront in the area of Tuzla, Constanța county	Habitat 1110 was affected. The project Works to consolidate the seafront in the area of Tuzla, Constanța county is suspended indefinitely.
			Pressure Exploration and extraction of mineral resources: oil and gas, sand, gravel	Unrated	It's not necessary	It's not necessary
		Characteristic invertebrate species	Pressure Construction: Coastal and marine, including pipelines, oil infrastructure and wind farms	Unrated	Works to strengthen the seafront in the area of Tuzla, Constanța county	Habitat 1110 was affected. The project Works to consolidate the seafront in the area of Tuzla, Constanța county is suspended indefinitely.
			Pressure Pollution: pollution by liquid substances – chemical, nuclear, biological, organic and mineral waste	Unrated	It's not necessary	It's not necessary
			Pressure Fishing, aquaculture	Unrated	It's not necessary	It's not necessary

ANPIC	Species/habitat	Affected Parameter/ Target	Pressure/threat according to PM/FS of ANPIC	Level of pressure/threat according to PM/FS of ANPIC	PP contributing to pressure/ threat	Remarks
		The ecological status of water based on physio-chemical indicators	Pressure Construction: Coastal and marine, including pipelines, oil infrastructure and wind farms	Unrated	Works to strengthen the seafront in the area of Tuzla, Constanța county	Habitat 1110 was affected. The project Works to consolidate the seafront in the area of Tuzla, Constanța county is suspended for an unknown period.
			Pressure Pollution: pollution by liquid substances – chemical, nuclear, biological, organic and mineral waste	Unrated	It's not necessary	It's not necessary
			Pressure Transport, navigation, transport infrastructures	Unrated	It's not necessary	It's not necessary
	1170	Habitat area	Pressure Fishing, aquaculture	Unrated	It's not necessary	It's not necessary
			Pressure/threat Construction: Coastal and marine, including pipelines, oil infrastructure and wind farms	Unrated	Works to strengthen the seafront in the area of Tuzla, Constanța county	1170 habitats were affected. The project Works to consolidate the seafront in the area of Tuzla, Constanța county is suspended for an unknown period.
			Pressure/threat	Unrated	It's not necessary	It's not necessary

ANPIC	Species/habitat	Affected Parameter/ Target	Pressure/threat according to PM/FS of ANPIC	Level of pressure/threat according to PM/FS of ANPIC	PP contributing to pressure/ threat	Remarks
		Characteristic invertebrate species	Pollution: pollution by liquid substances – chemical, nuclear, biological, organic and mineral waste			
			Pressure Fishing, aquaculture	Unrated	It's not necessary	It's not necessary
		The ecological status of water based on physio-chemical indicators	Pressure/threat Construction: Coastal and marine, including pipelines, oil infrastructure and wind farms	Unrated	Works to strengthen the seafront in the area of Tuzla, Constanța county	1170 habitats were affected. The project Works to consolidate the seafront in the area of Tuzla, Constanța county is suspended for an unknown period.
			Pressure/threat Pollution: pollution by liquid substances – chemical, nuclear, biological, organic and mineral waste	Unrated	It's not necessary	It's not necessary
			Pressure Transport, navigation, transport infrastructures	Unrated	It's not necessary	It's not necessary
	8330	Habitat surface	Pressure/threat Construction: Coastal and marine, including pipelines,	Unrated	It's not necessary	It's not necessary

ANPIC	Species/habitat	Affected Parameter/ Target	Pressure/threat according to PM/FS of ANPIC	Level of pressure/threat according to PM/FS of ANPIC	PP contributing to pressure/ threat	Remarks
			oil infrastructure and wind farms			
			Pressure Transport, navigation, transport infrastructures	Unrated	It's not necessary	It's not necessary
		Characteristic invertebrate species	Pressure/threat Construction: Coastal and marine, including pipelines, oil infrastructure and wind farms	Unrated	It's not necessary	It's not necessary
			Pressure/threat Pollution: pollution by liquid substances – chemical, nuclear, biological, organic and mineral waste	Unrated	It's not necessary	It's not necessary
		The ecological status of water based on physio-chemical indicators	Pressure/threat Pollution: pollution by liquid substances – chemical, nuclear, biological, organic and mineral waste	Unrated	It's not necessary	It's not necessary
			Pressure Transport, navigation, transport infrastructures	Unrated	It's not necessary	It's not necessary
	Alosa tanica *Alosa immaculate*	The ecological status of water based on physio-	Pressure Pollution: pollution by liquid substances – chemical,	Unrated	It's not necessary	It's not necessary

ANPIC	Species/habitat	Affected Parameter/ Target	Pressure/threat according to PM/FS of ANPIC	Level of pressure/threat according to PM/FS of ANPIC	PP contributing to pressure/ threat	Remarks
		chemical indicators	nuclear, biological, organic and mineral waste			
			Pressure Construction: Coastal and marine, including pipelines, oil infrastructure and wind farms	Unrated	Works to strengthen the seafront in the area of Tuzla, Constanța county	The project Works to consolidate the seafront in the area of Tuzla, Constanța county is suspended for an unknown period.
	Tursiops truncatus *Phocoena phocoena*	The ecological status of water based on physio-chemical indicators	Pressure Pollution: pollution by liquid substances – chemical, nuclear, biological, organic and mineral waste	Unrated	It's not necessary	It's not necessary
			Pressure Construction: Coastal and marine, including pipelines, oil infrastructure and wind farms	Unrated	Works to strengthen the seafront in the area of Tuzla, Constanța county	The project Works to consolidate the seafront in the area of Tuzla, Constanța county is suspended for an unknown period.
	Threats					
	1110	Habitat surface	Coastal protection works	Unrated	Works to strengthen the seafront in the area of Tuzla, Constanța county	The project Works to consolidate the seafront in the area of Tuzla, Constanța county is suspended for an unknown period. If this project is

ANPIC	Species/habitat	Affected Parameter/ Target	Pressure/threat according to PM/FS of ANPIC	Level of pressure/threat according to PM/FS of ANPIC	PP contributing to pressure/ threat	Remarks
						resumed, in the Tuzla-Costinești area, it will constitute a threat to the habitats of community interest in the ANPIC.
		Characteristic invertebrate species	Motorized boats on site	Unrated	It's not necessary	It's not necessary
			Illegal fishing	Unrated	It's not necessary	It's not necessary
			ducking	Unrated	It's not necessary	
			Pollution	Unrated	It's not necessary	It's not necessary
		The ecological status of water based on physio-chemical indicators	Coastal protection works	Unrated	Works to strengthen the seafront in the area of Tuzla, Constanța county	The project Works to consolidate the seafront in the area of Tuzla, Constanța county is suspended for an unknown period. If this project is resumed, in the Tuzla-Costinești area, it will constitute a threat to the habitats of community interest in the ANPIC.
			Pollution	Unrated	It's not necessary	It's not necessary
	1170	Habitat surface	Coastal protection works	Unrated	Works to strengthen the seafront in the area of Tuzla, Constanța county	The project Works to consolidate the seafront in the area of Tuzla, Constanța county is suspended for an unknown

ANPIC	Species/habitat	Affected Parameter/ Target	Pressure/threat according to PM/FS of ANPIC	Level of pressure/threat according to PM/FS of ANPIC	PP contributing to pressure/ threat	Remarks
						period. If this project is resumed, in the Tuzla-Costinești area, it will constitute a threat to the habitats of community interest in the ANPIC.
			Illegal fishing	Unrated	It's not necessary	It's not necessary
		Characteristic invertebrate species	Coastal protection works	Unrated	Works to strengthen the seafront in the area of Tuzla, Constanța county	The project Works to consolidate the seafront in the area of Tuzla, Constanța county is suspended for an unknown period. If this project is resumed, in the Tuzla-Costinești area, it will constitute a threat to the habitats of community interest in the ANPIC.
			Illegal fishing	Unrated	It's not necessary	It's not necessary
			ducking	Unrated	It's not necessary	It's not necessary
			Pollution	Unrated	It's not necessary	It's not necessary
		The ecological status of water based on physio-chemical indicators	Pollution	Unrated		It's not necessary
			Motorized boats on site	Unrated		It's not necessary
			Coastal protection works	Unrated	Works to strengthen the seafront in the	The project Works to consolidate the seafront in the area of Tuzla,

ANPIC	Species/habitat	Affected Parameter/ Target	Pressure/threat according to PM/FS of ANPIC	Level of pressure/threat according to PM/FS of ANPIC	PP contributing to pressure/ threat	Remarks
					area of Tuzla, Constanța county	Constanța county is suspended for an unknown period. If this project is resumed, in the Tuzla-Costinești area, it will constitute a threat to the habitats of community interest in the ANPIC.
	8330	Habitat surface	Coastal protection works	Unrated	Works to strengthen the seafront in the area of Tuzla, Constanța county	The project Works to consolidate the seafront in the area of Tuzla, Constanța county is suspended for an unknown period. If this project is resumed, in the Tuzla-Costinești area, it will constitute a threat to the habitats of community interest in the ANPIC.
			Motorized boats on site	Unrated	It's not necessary	It's not necessary
		Characteristic invertebrate species	Coastal protection works	Unrated	It's not necessary	It's not necessary
			Pollution	Unrated	It's not necessary	It's not necessary
			ducking	Unrated	It's not necessary	It's not necessary
		The ecological status of water based on physio-	Coastal protection works	Unrated	It's not necessary	It's not necessary
			Pollution	Unrated	It's not necessary	It's not necessary
			Motorized boats on site	Unrated	It's not necessary	It's not necessary

ANPIC	Species/habitat	Affected Parameter/ Target	Pressure/threat according to PM/FS of ANPIC	Level of pressure/threat according to PM/FS of ANPIC	PP contributing to pressure/ threat	Remarks
		chemical indicators				
	Alosa tanica *Alosa immaculate*	The ecological status of water based on physio-chemical indicators	Coastal protection works	Unrated	Works to strengthen the seafront in the area of Tuzla, Constanța county	The project Works to consolidate the seafront in the area of Tuzla, Constanța county is suspended for an unknown period.
			Pollution	Unrated	It's not necessary	It's not necessary
			Motorized boats on site	Unrated	It's not necessary	It's not necessary
	Tursiops truncatus *Phocoena phocoena*	The ecological status of water based on physio-chemical indicators	Coastal protection works	Unrated	Works to strengthen the seafront in the area of Tuzla, Constanța county	The project Works to consolidate the seafront in the area of Tuzla, Constanța county is suspended for an unknown period.
			Pollution	Unrated	It's not necessary	It's not necessary
			Motorized boats on site	Unrated	It's not necessary	It's not necessary
ROSCI0293 Costinesti-23 August	Pressures/threats					
	1110	The ecological status of water based on physio-chemical indicators	J02.12.01 Sea or coast protection works, tidal dams	Large- inside the site	Reduction of coastal erosion Phase II (2014-2020)	Temporary indirect damage to habitat 1110 from the site ROSCI0293 Costinești-23 August.
			H01 Surface water pollution	Medium - within the site	It's not necessary	It's not necessary

ANPIC	Species/habitat	Affected Parameter/ Target	Pressure/threat according to PM/FS of ANPIC	Level of pressure/threat according to PM/FS of ANPIC	PP contributing to pressure/ threat	Remarks
			J02.12 Dams, dykes, artificial beaches, generalities	Low - off site	Reduction of coastal erosion Phase II (2014-2020)	Temporary indirect damage to habit 1110 from the site ROSCI0293 Costinești-23 August.
	1170	The ecological status of water based on physio-chemical indicators	J02.12.01 Sea or coast protection works, tidal dams	Large- inside the site	Reduction of coastal erosion Phase II (2014-2020)	Temporary indirect damage to habit 1170 from the site ROSCI0293 Costinești-23 August.
			H01 Surface water pollution	Medium - within the site		It's not necessary
			J02.12 Dams, dykes, artificial beaches, generalities	Low - off site	Reduction of coastal erosion Phase II (2014-2020)	Temporary indirect damage to habit 1170 from the site ROSCI0293 Costinești-23 August.
	1140	The ecological status of water based on physio-chemical indicators	J02.12.01 Sea or coast protection works, tidal dams	Large- inside the site	It's not necessary	It's not necessary
			H01 Surface water pollution	Medium - within the site	It's not necessary	It's not necessary
			J02.12 Dams, dykes, artificial beaches, generalities	Low - off site	It's not necessary	It's not necessary
	8330	The ecological status of water based on physio-chemical indicators	J02.12.01 Sea or coast protection works, tidal dams	Large- inside the site	It's not necessary	It's not necessary
			H01 Surface water pollution	Medium - within the site	It's not necessary	It's not necessary
			J02.12 Dams, dykes, artificial beaches, generalities	Low - off site	It's not necessary	It's not necessary

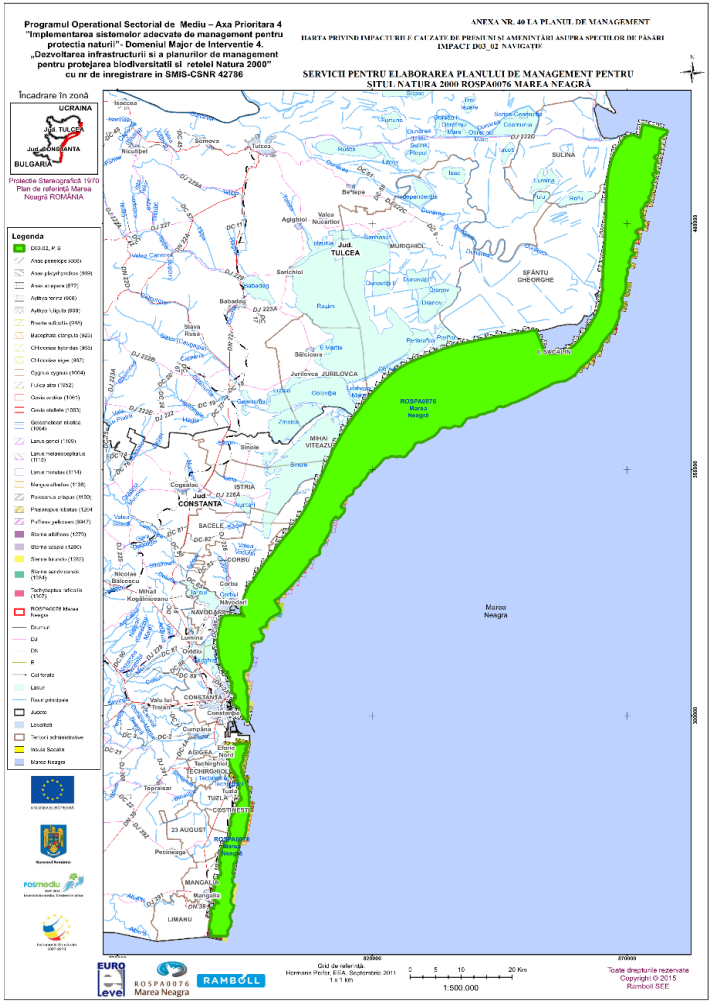
ANPIC	Species/habitat	Affected Parameter/ Target	Pressure/threat according to PM/FS of ANPIC	Level of pressure/threat according to PM/FS of ANPIC	PP contributing to pressure/ threat	Remarks
	Alosa tanica *Alosa immaculate*	The ecological status of water based on physio-chemical indicators	J02.12.01 Sea or coast protection works, tidal dams	Large- inside the site	Reduction of coastal erosion Phase II (2014-2020)	Temporary damage to some perimeters where fish feed from the site ROSCI0293 Costinești-23 August.
			H01 Surface water pollution	Medium - within the site	It's not necessary	It's not necessary
			J02.12 Dams, dykes, artificial beaches, generalities	Low - off site	Reduction of coastal erosion Phase II (2014-2020)	Temporary damage to some perimeters where fish feed.
	Tursiops truncatus, *Phocoena phocoena,*	The ecological status of water based on physio-chemical indicators	J02.12.01 Sea or coast protection works, tidal dams	Large- inside the site	Reduction of coastal erosion Phase II (2014-2020)	Temporary damage to some perimeters where marine mammals feed from the site ROSCI0293 Costinești-23 August.
			H01 Surface water pollution	Medium - within the site	It's not necessary	It's not necessary
			J02.12 Dams, dykes, artificial beaches, generalities	Low - off site	Reduction of coastal erosion Phase II (2014-2020)	Temporary damage to some perimeters where marine mammals feed
ROSCI0311 Canionul Viteaz	Pressures/threats					
	1180	The ecological status of water based on physio-	No pressure and threats were described	-	It's not necessary	It's not necessary

ANPIC	Species/habitat	Affected Parameter/ Target	Pressure/threat according to PM/FS of ANPIC	Level of pressure/threat according to PM/FS of ANPIC	PP contributing to pressure/ threat	Remarks
		chemical indicators				
		Ecological status of water based on ecological indicators	No pressure and threats were described	-	It's not necessary	It's not necessary
	1170	The ecological status of water based on physio-chemical indicators	No pressure and threats were described	-	It's not necessary	It's not necessary
		Ecological status of water based on ecological indicators	No pressure and threats were described	-	It's not necessary	It's not necessary
	Tursiops truncatus	The ecological status of water based on physio-chemical indicators	No pressure and threats were described	-	It's not necessary	It's not necessary
		Ecological status of water based on ecological indicators	No pressure and threats were described	-	It's not necessary	It's not necessary
		Population size	No pressure and threats were described	-	It's not necessary	It's not necessary

ANPIC	Species/habitat	Affected Parameter/ Target	Pressure/threat according to PM/FS of ANPIC	Level of pressure/threat according to PM/FS of ANPIC	PP contributing to pressure/ threat	Remarks
ROSPA 0076	Pressures					
	Branta ruficollis, Chlidonias hybridus, Chlidonias niger, Cygnus cygnus, Gavia arctica, Gavia stellata, Gelochelidon nilotica, Larus genei, Larus melanocephalus, Larus minutus, Mergus albellus, Pelecanus crispus, Phalaropus lobatus, Puffinus yelkouau, Sterna albifrons, Stema caspia, Sterna Hirundo, Sterna sandvicensis	The ecological status of water based on physio-chemical indicators	D03.02 Navigation	Low	It's not necessary	It's not necessary
			H01.03 Other sources of surface water pollution	Low	It's not necessary	It's not necessary
	Pelecanus crispus, Gavia arctica, Gavia starry	Distribution pattern	D03.02 Navigation	Low	It's not necessary	It's not necessary
			H01.03 Other sources of surface water pollution	Low	It's not necessary	It's not necessary
			H06.01.01 Noise pollution from an irregular source	Low	It's not necessary	It's not necessary
	Threats					
			D03.02 Navigation	Low	It's not necessary	It's not necessary

ANPIC	Species/habitat	Affected Parameter/ Target	Pressure/threat according to PM/FS of ANPIC	Level of pressure/threat according to PM/FS of ANPIC	PP contributing to pressure/ threat	Remarks
	Branta ruficollis, Chlidonias hybridus, Chlidonias niger, Cygnus cygnus, Gavia arctica, Gavia stellata, Gelochelidon nilotica, Larus genei, Larus melanocephalus, Larus minutus, Mergus albellus, Pelecanus crispus, Phalaropus lobatus, Puffinus yelkouau, Sterna albifrons, Stema caspia, Sterna Hirundo, Sterna sandvicensis	The ecological status of water based on physio-chemical indicators	H01.03 Other sources of surface water pollution	Low	It's not necessary	It's not necessary
	Pelecanus crispus, Gavia arctica, Gavia starry	Distribution pattern	D03.02 Navigation	Low	It's not necessary	It's not necessary
			G01.01.01 Motorized water sports	Low	It's not necessary	It's not necessary
			H01.03 Other sources of surface water pollution	Low	It's not necessary	It's not necessary
			H06.01.01 Noise pollution from an irregular source	Low	It's not necessary	It's not necessary

Regarding the spatial localization of the identified pressures and threats, we mention the fact that their localization on paper was done only within the approved Management Plan of the Natura 2000 site ROSPA0076 Marea Neagră. In the case of the other ANPICs, mentions were made in the standard forms and in the management plan, of the type: " inside " or " outside " the Natura 2000 site, without representation graphic maps of their location. _



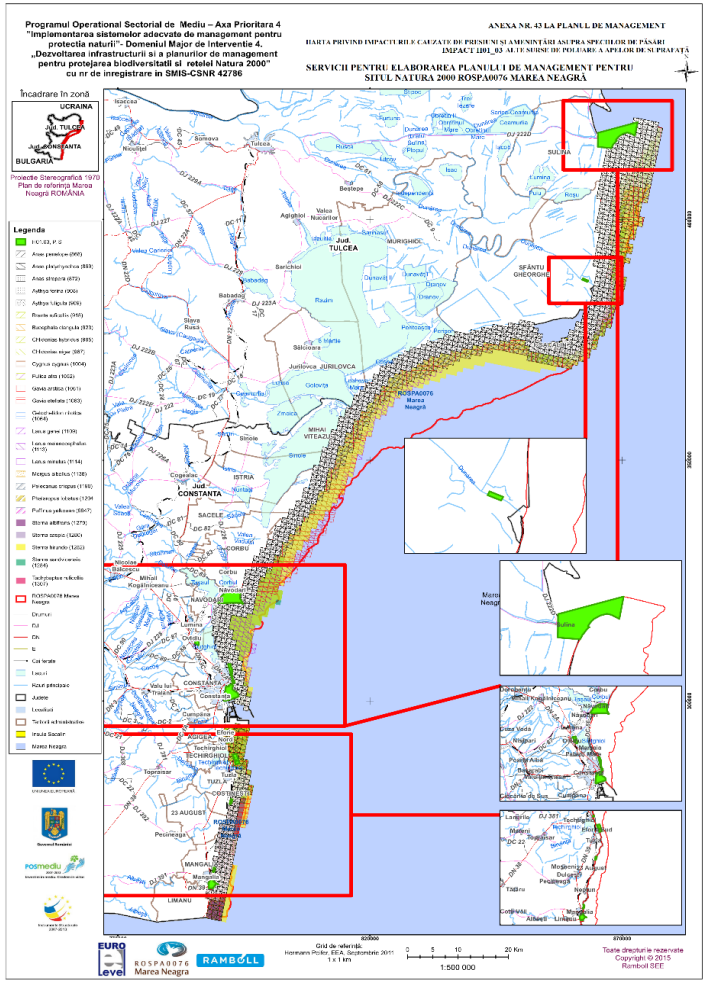


Figure D.1 Maps of bird species distribution in ROSPA0076 in relation to pressures and threats D03.02 (left) and H01.03 (right)

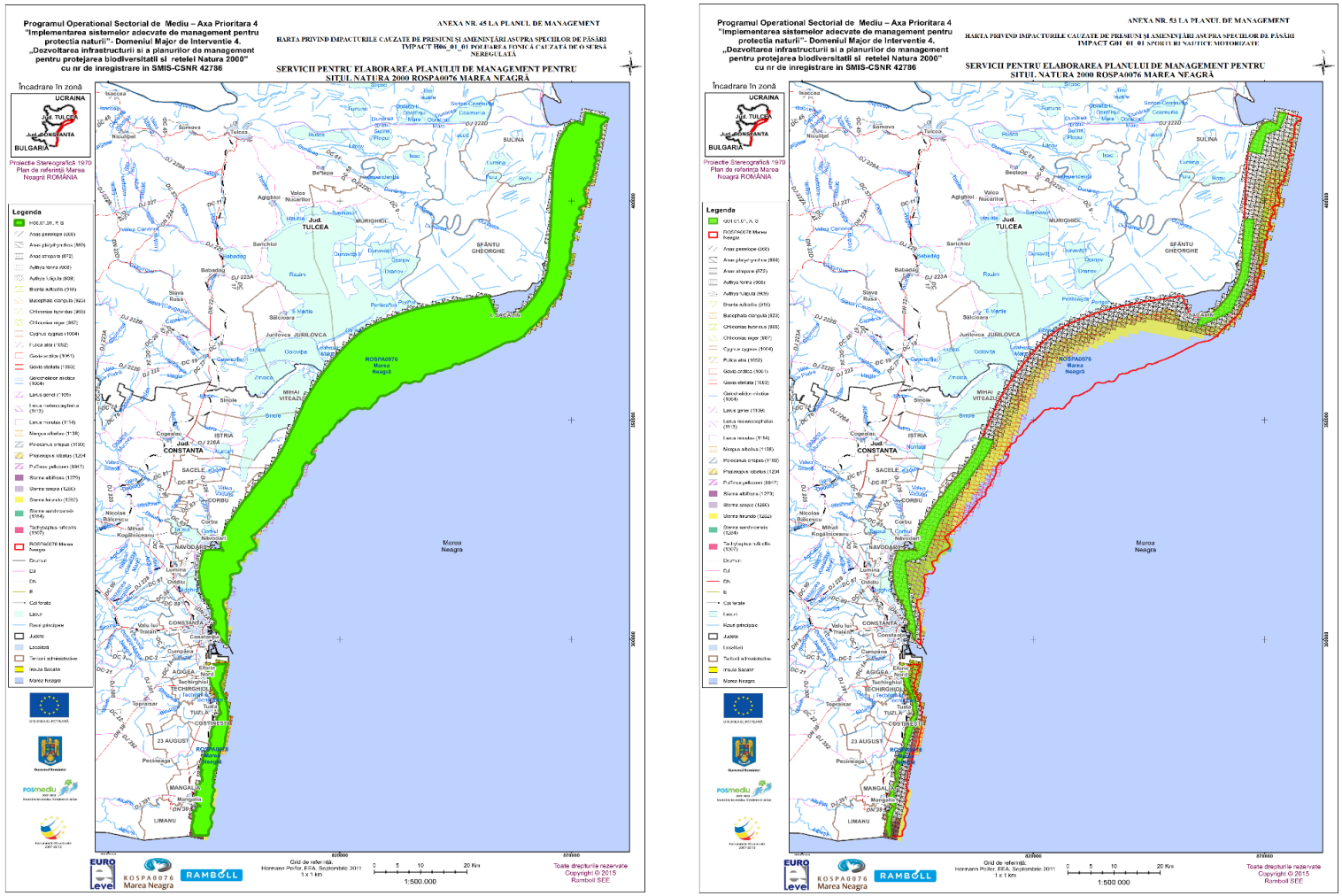


Figure D.2 Maps of bird species distribution in ROSPA0076 in relation to pressure-threat H06.01.01 (left) and threat G01.01.01 (right)

CHAPTER E) IMPACT ASSESSMENT

E.1. IDENTIFICATION AND QUANTIFICATION OF IMPACT

E.1.1. The impact during the construction period

From the beginning of the design process and the preliminary analysis of the potential effects on biodiversity, implicitly on the species and habitats within the protected natural areas of community interest, it was known that the main forms of impact that can manifest themselves during the construction period are related to the activities carried out in the marine environment. Thus, at the planning stage of the natural gas transport infrastructure from the wells and the production platform to the Regulation and Measurement Station (SRM), located between the towns of Tuzla and Costinești, it was found that the route of the gas pipeline and the cable with optical fiber for communication and control, intersected, on a short portion of approx. 600 m, with the special conservation area Zona marină de la Capul Tuzla. Following the analysis, it was concluded that the option of digging a trench for the laying of the pipeline and fiber optic cable inside the natural protected area will lead to the permanent loss of some areas of the habitats of community interest 1110 and 1170, the project being susceptible to the occurrence of an impact significantly without the possibility of establishing effective measures to reduce the impact level. To eliminate the possibility of permanent damage to the protected marine habitats within the NATURA 2000 ROSAC0273 site, a technical solution was chosen that would not affect the integrity of the protected natural area, despite the additional costs involved. The technical solution involves under-crossing the pipeline and the communication cable to the shore area by building a microtunnel over a length of approx. 890 m which completely avoids direct interventions on the habitats in the marine and coastal area (beach).

However, part of the activities/interventions provided by the project during the construction stage, carried out inside or in the vicinity of the protected natural areas (ROSAC0273, ROSCI0293, ROSPA0076 and ROSCI0311) designated for the protection and conservation of some species of fish, cetaceans, birds and marine habitats of community interest, including microtunnel construction activities may still generate different forms of potential impact on the conservation objectives of these protected natural areas. Among them, from the analysis of potential significant effects and impacts, the following activities/interventions stand out:

- Anchoring the barge used to build the microtunnel,
- Excavation/dredging and subsequent covering of the trench for the gas production pipeline,
- Construction of the exit port of the microtunnel in the sea,
- Fastening the piers to the jacket of the Neptun Alpha platform by hammering

These interventions also involve the use of boats which in turn can generate additional negative effects on the conservation objectives of ANPIC.

The main identified effects resulting from the previously listed intervention are the following:

- Crushing and/or denudation of the substrate populated with marine organisms as a result of the placement of the ship's anchors used in the construction of the microtunnel
- Substrate relocation with living organisms,
- Increasing turbidity,

- Increasing the level of noise in the aquatic and air environment,
- Temporary and local increase in nutrients and possibly some pollutants present in sediments due to sediment resuspension.

The established effects were analysed from the perspective of the occurrence of potentially significant impacts such as:
- Loss of habitat area
- Alteration of habitats
- Fragmentation of habitats
- Disruption of species activity
- Population reduction

The detailed results obtained from the analysis of the effects and impacts generated by the project during the construction period are contained in tables E-1, E-2, E-3, E-4, and the impact analysis for each objective/parameter within the four natural protected areas located in the area of influence of the project is presented in the **Annex J** to the appropriate assessment study: **Impact assessment tables** (According to Annex 3C to Ord. 1682/2023).

Summarizing the data and information presented in tabular form regarding the forms and types of impact for the construction period of the project, we present the following relevant aspects:
- No significant impacts of the project on conservation objectives within protected natural areas were identified ROSAC0273 Zona marină de la Capul Tuzla, ROSCI0293 Costinești-23 August, ROSPA0076 Marea Neagră and ROSCI0311 Canionul Viteaz.
- For the species of community interest (fish and cetaceans) within ROSAC0273 Zona marină de la Capul Tuzla and ROSCI0293 Costinești- 23 August, direct, indirect and secondary impacts were identified during the construction period, only in the short term and reversible, without the possibility of affecting the long-term or permanent of the characteristic parameters.
- In the case of bird species of community interest for which the site of special avifaunistic protection ROSPA0076 Marea Neagră has been designated, the impacts generated by the project activities are temporary and reversible without producing changes in the size of the populations or the long-term availability of feeding habitats and/ or rest.
- Regarding the turbidity-generating activities, it should be mentioned that the dredging/excavation of the trench will be carried out outside the ANPIC. Most suspended sediment particles will resediment near the trench (500-700 m). A large part of the surface where the concentration of suspended solid particles in the protected natural area will increase is represented by bare rock (without organisms characteristic of habitat 1170), and the low concentrations of suspended particles (1-5 mg/l) are not in extent to affect biofiltering organisms because it falls within the normal limits of water turbidity in coastal areas. During storms on the Romanian coast, TSS values of 75 mg/l can also be recorded (Pantea, 2020), while the appearance of negative effects as a result of the high concentration of particles in suspension can be anticipated, for example, in the case of the characteristic species Mytilus *galloprovincialis,* from TSS values higher than 80 mg/l (Buhbe, 2005). The concentration of solid particles in the mass of water generated by the works within the project will not exceed values of 1-5 mg/l inside the protected natural area ROSAC0273 The Zona marină de la Capul Tuzla while inside ROSCI0293 Costinești- 23 August values of 0.1-1

mg/l are anticipated, which does not represent an exceeding of the normal values of turbidity in coastal waters.

- Although from the analysis of the impact on the species and habitats of community interest inside ROSAC0273 Zona marină de la Capul Tuzla, ROSCI0293 Costinești -23 August no significant impacts resulted, there is the possibility of significant damage to the habitats of community interest outside ANPIC, identified in the area of influence of the project following the monitoring program carried out in 2023. In the case of habitat 8330, not previously mentioned in the specialized literature of this area, it can be stated that it may be permanently affected as a result of the placement of the barge anchor in anchor point T6.3, due to the fragility of characteristic cavernous underwater structures. In the case of this habitat, the measure of changing the position of the anchor was proposed. Another case is represented by habitat subtype 1170-2 Biogenic reefs of *Mytilus galloprovincialis,* with an insular presence, north and south of the gas pipeline route (points: P7, P9, P10, P23) which presents a high vulnerability to trenching/dredging activities due to short distances (160 m – 550 m) to the work area. Given the crucial ecological role in the marine ecosystem of habitat subtype 1170-2, to avoid the potential significant impact due to the high level of turbidity in the vicinity of the transition trench, specific avoidance measures have been proposed (eg: the use at work points of turbidity curtains). This measure to avoid the impact given by high turbidity was also foreseen in the case of habitat 8330.
- Even if a potential impact was identified, as a result of some noise modelling scenarios in the aquatic environment, that can affect the population size parameter in the case of the species Tursiops truncatus, *namely,* the reduction of population numbers (1-5 individuals) resulting from the level raised by the noise generated by the activity of fixing the jacket of the Neptun Alpha platform, this potential impact will not materialize. Prior to the piling activities, other interventions will be carried out such as the operation of the platform carrier vessel in the anchoring area, the operation of the support vessel, the assembly of the jacket and piers with the use of the crane, all of which have the effect of removing the wrecks in a radius of at least 400 m, beyond the area of significant impact (100 m) of individuals.

It should be emphasized that there are other cetacean species present on the offshore project site, one of which is much more sensitive to noise and vibration, namely *Phocoena phocoena* (the porpoise). In the case of this species, piling activities can affect porpoises over a much larger area (approx. 12 km) than in the case of the other two dolphin species (T. truncatus, D. delphis). In the case of the community interest species *Phocoena phocoena,* the impact without the application of reduction/prevention/avoidance measures is considered to be significant.

- Following the evaluation of the cumulative impact with other existing, planned and or anticipated PPs, as well as considering the pressures and threats from the approved management plans and standard forms, it resulted that the effects of the analysed project can only be cumulated with the effects resulting from implementation of the COASTAL EROSION REDUCTION project. PHASE II (2014-2020), and only in the case of habitats of community interest within the site ROSCI0293 Costinești- 23 August. The effect will be represented by the temporary increase in turbidity and will be cumulative only if the two projects will be carried out simultaneously, and even in this case the contribution of the analysed project to the increase in turbidity in the site would be negligible.

E.1.2. The impact during the operating period

The main activities/interventions foreseen in the project in the operation stage are carried out outside the natural protected areas (ROSAC0273, ROSCI0293, ROSPA0076 and ROSCI0311) and target the SRM and CCR enclosures in the land area of the project and the Neptun Alpha platform. From the analysis of the potential significant effects and impacts, it was found that the only activities that can affect the conservation objectives of the protected natural areas are related to the production activity on the Neptun Alpha Platform, 115 km from the coast.

The only activity that can be considered in terms of the appearance of a potential significant impact on protected natural areas is the discharge of technological water carried out at the level of the Neptun Alpha platform. The technological water resulting from the degasification vessel, the water collected at the open drain system and the water recovered from the flare separators, will be directed to the vertical discharge caisson into the sea. The sea discharge head of the caisson is located at a depth of 90m.

The main anticipated impacts on marine biodiversity as a result of the discharge of the effluent are based on the introduction into the aquatic environment of some substances that are known for their toxicity on aquatic organisms.

It should be mentioned that the discharge of the effluent will be carried out in the offshore area of the Black Sea (approx. 115 km from the shoreline) at great distances from the natural protected marine areas (SCIs, SPAs). The closest (approx. 13.2 km) protected natural area to the technological water discharge area and the production platform is ROSCI0311 Canionul Viteaz.

They are not found in the composition of the chemical products in the effluent heavy metals, hydrocarbons or priority substances listed in the Water Law no. 107/1996 and in Directive 2013/39/EU amending Directives 2000/60/EC and 2008/105/EC.

In order to determine the maximum concentration of the chemical products used, so that the effluent discharged into the sea complies with the maximum admissible values, according to NTPA 001, analyses were carried out on synthetic samples at an accredited laboratory according to SR EN ISO 17025:2018. Based on the results obtained, the laboratory determined by calculation, the maximum admissible concentration recommended to be used for each chemical product so as not to exceed the maximum admissible limits, provided in NTPA001 and which the beneficiary is obliged to respect.

In the case of chemicals for which limits were not provided in NTPA001, ecotoxicity tests were performed. The laboratory tests were carried out at INCDM "Grigore Antipa". The purpose of the ecotoxicity tests was to evaluate, in laboratory conditions, the toxicity of the products and the associated effects on potentially affected marine organisms.

The toxicity tests were performed on three native species from the Black Sea, respectively: *Skeletonema costatum, Acartia tonsa, Chelon auratus.* The test species and conditions were selected to best reflect the trophic levels of the Black Sea communities (primary producer – first order consumer – second order consumer) and the likely conditions of the effluent discharge area.

It should be noted that toxicity tests showed that the products or their mixture "did not have acute toxicity at the concentrations proposed for discharge". Toxicity tests for *Skeletonema costatum* showed a low effect for the antifoam AFMR20400A and the scale inhibitor SCAL13370A (15% and

18% growth inhibition, respectively) and a high effect for the corrosion inhibitor CORR12452A and their mixture (79% growth inhibition %, respectively 92%).

The conclusion of the toxicity study of the concentrations at the discharge of the substances is as follows: "The antifoam AFMR20400A and the deposit inhibitor SCAL13370A had an insignificant effect, while the corrosion inhibitor CORR12452A and the mixture of the three products had a significant effect on the first trophic level (phytoplankton). However, it should be noted that the discharge of industrial water into the sea occurs at a depth of 90 meters, and according to the DREAM simulation, the effluent with the highest concentration of toxic substances does not affect the upper layer (euphotic zone) of the water column, which serves as a living environment for phytoplankton. No acute effects on higher trophic levels (zooplankton and fish) were observed, both when the products were tested separately and in the mixture. The 5% mortality recorded for the corrosion inhibitor CORR12452A and the mixture of the three products in the *Acartia tonsa test* is within the accepted mortality range, as is the test control group, and is not considered an effect. These results indicate that the tested production chemicals and their mixture had no significant effects on marine organisms at the three trophic levels evaluated.

In addition, for the modelling of the potential risk to the marine environment of the discharge of the effluent into the Black Sea, a licensed software program - DREAM, provided by SINTEF, was used. The Environmental Impact Factor (EIF) was analysed. From the simulations carried out (attached to this study) it follows that the plume of effluent with the potential to affect (EIF >5%) macrozoobenthos and zooplankton will extend over a distance of approx. 7 km in the south-west direction and/or approx. 2 km around the platform in the other directions. Given the distance of approx. 13.2 km from the Neptun Alpha platform to the protected natural area ROSCI0311 Canionul Viteaz, we consider that the risk of affecting habitats 1170 and 1180 is insignificant. At the same time, following the observations made along the pipeline route and in the area of the Neptun Alpha platform, the presence of habitats 1170 or 1180 was not reported.

E.1.3. During the decommissioning period of the project

The decommissioning activities will target the Neptun Alpha platform as well as the constructions and equipment in the land area of the project. These activities will have the main effect of temporarily increasing the noise level in the aquatic and air environment, without the possibility of significant impacts on the protected natural areas ROSAC0273 Zona marină de la Capul Tuzla, ROSCI0293 Costinești- 23 August, ROSPA0076 The Black Sea and ROSCI0311 Canionul Viteaz.

E.1.4. Identification and quantification of cumulative impact

Maintaining or reaching a target value associated with the parameters of conservation objectives can be prevented by the contribution of: existing pressures (in the Natura 2000 site and its vicinity), identified threats (including other plans and projects) and the plan/project analysed.

The impacts generated by other plans and projects were identified and quantified alongside the impact of the analysed project in order to obtain a more complete picture of the extent to which the target of the conservation objective parameter can be reached/maintained. Also included in the cumulative impact analysis were the pressures and threats identified and assessed within the approved management plans and those stipulated in the standard forms of Natura 2000 sites.

Table E.1 Cumulative impact analysis for Natura 2000 site ROSAC0273 Zona marină de la Capul Tuzla

ROSAC0273 Zona marină de la Capul Tuzla		
Existing, planned PPs	**Habitat/species**	**Impact**
Neptun Deep Project	1110	Insignificant impact. The area temporarily occupied by the anchors is very small (50 m $^{2)}$ and will be restored shortly (1 year) after the completion of the works. The temporary increase in turbidity and nutrient concentration will not change the physio-chemical indicators.
	1170	Insignificant impact. Temporary impairment through temporary increase in turbidity and temporary occupation of only 225 m^2.
	8330	Insignificant impact. The sediment wedge will not clog the habitat due to the large distance (approx. 2km) from the work areas.
	Immaculate aloe	Insignificant impact. The activities/interventions provided by the project are not able to affect the populations of the species and will not contribute to the degradation of the habitat of the species.
	Alosa tanaica	Insignificant impact. The activities/interventions provided by the project are not able to affect the populations of the species and will not contribute to the degradation of the habitat of the species.
	Tursiops trucatus	Insignificant impact. Individuals will avoid the work area during the construction period due to noise and vibration from the tunnel boring and excavation activities, but will return after the disruptive activities cease.
	Phocoena phocoena	Insignificant impact. Individuals will avoid the work area during the construction period due to noise and vibration from the tunnel boring and excavation activities, but will return after the disruptive activities cease.
Reduction of coastal erosion Phase II (2014-2020)	1110	Insignificant impact. According to the project assessment, the ROSAC0273 Zona marină de la Capul Tuzla site will not be affected/impacted.
	1170	Insignificant impact. According to the project assessment, the ROSAC0273 Zona marină de la Capul Tuzla site will not be affected/impacted.
	8330	Insignificant impact. The habitat will not be affected by the project works.
	Immaculate aloe	Insignificant impact. Temporary disturbance due to turbidity. The works will also be carried out during the period of fish migration.
	Alosa tanaica	Insignificant impact. Temporary disturbance due to turbidity. The works will also be carried out during the period of fish migration.
	Tursiops trucatus	Insignificant impact. Temporary disturbance due to turbidity and noise generated by excavation works. Temporary loss of some feeding areas covered by project works.

ROSAC0273 Zona marină de la Capul Tuzla		
Existing, planned PPs	**Habitat/species**	**Impact**
	Phocoena phocoena	Insignificant impact. Temporary disturbance due to turbidity and noise generated by excavation works. Temporary loss of some feeding areas covered by project works.
Works to strengthen the seafront in the area of Tuzla, Constanța county	1110	Insignificant impact. Temporary habitat disturbance 1110. Recovery interval 1 year. The project is partially completed in 2009. The works in the area of the site ROSAC0273 Marine area at Capul Tuzla are completed. The habitat affected by this project has been restored.
	1170	Insignificant impact. Temporary habitat disturbance 1170. Recovery interval 1 year. The project is partially completed in 2009. The works in the area of the site ROSAC0273 Zona marină de la Capul Tuzla are completed. The habitat affected by this project has been restored.
	8330	Insignificant impact. The habitat was not affected by the project works.
	Immaculate aloe	Insignificant impact. The population of the species at the site level was not affected by the project works.
	Alosa tanaica	Insignificant impact. The population of the species at the site level was not affected by the project works.
	Tursiops trucatus	Insignificant impact. The population of the species at the site level was not affected by the project works.
	Phocoena phocoena	Insignificant impact. The population of the species at the site level was not affected by the project works.
The regional project for the development of water and wastewater infrastructure in the area of operation of SC RAJA SA Constanța	1110	Insignificant impact. It does not affect the habitat within the ANPIC.
	1170	Insignificant impact. It does not affect the habitat within the ANPIC.
	8330	Insignificant impact. It does not affect the habitat within the ANPIC.
	Immaculate aloe	Insignificant impact. It does not affect the species within the ANPIC.
	Alosa tanaica	Insignificant impact. It does not affect the species within the ANPIC.
	Tursiops trucatus	Insignificant impact. It does not affect the species within the ANPIC.
	Phocoena phocoena	Insignificant impact. It does not affect the species within the ANPIC.
	1110	Insignificant impact. Completed project.

ROSAC0273 Zona marină de la Capul Tuzla		
Existing, planned PPs	**Habitat/species**	**Impact**
Midia Natural Gas Development Project	1170	Insignificant impact. Completed project.
	8330	Insignificant impact. Completed project.
	Immaculate aloe	Insignificant impact. Completed project. The population of the species was not affected by the project works.
	Alosa tanaica	Insignificant impact. Completed project. The population of the species was not affected by the project works.
	Tursiops trucatus	Insignificant impact. Completed project. The population of the species was not affected by the project works.
	Phocoena phocoena	Insignificant impact. Completed project. The population of the species was not affected by the project works.
Electrification and rehabilitation of the Constanța Mangalia railway line	1110	Insignificant impact. The project will not alter habitats of community interest or favourable habitats of species of community interest in ROSAC0273 and ROSCI0293, neither during the construction phase nor during the operation phase.
	1170	Insignificant impact. The project will not alter the habitats of community interest either during the construction stage or during the operation stage.
	8330	Insignificant impact. The project will not alter the habitats of community interest either during the construction stage or during the operation stage.
	Immaculate aloe	Insignificant impact. The project will not alter the favourable habitats of species of community interest in ROSAC0273, neither during the construction phase nor during the operation phase.
	Alosa tanaica	Insignificant impact. The project will not alter the favourable habitats of species of community interest in ROSAC0273, neither during the construction phase nor during the operation phase.
	Tursiops trucatus	Insignificant impact. The project will not alter the favourable habitats of species of community interest in ROSAC0273, neither during the construction phase nor during the operation phase.
	Phocoena phocoena	Insignificant impact. The project will not alter the favourable habitats of species of community interest in ROSAC0273, neither during the construction phase nor during the operation phase.
	1110	Insignificant impact. Long distance from the boundaries of the ROSAC0273 site - over 7 km

ROSAC0273 Zona marină de la Capul Tuzla		
Existing, planned PPs	**Habitat/species**	**Impact**
Black Sea sand exploitation projects	1170	Insignificant impact. Long distance from the boundaries of the ROSAC0273 site - over 7 km
	8330	Insignificant impact. Long distance from the boundaries of the ROSAC0273 site - over 7 km
	Immaculate aloe	Insignificant impact. Temporary disturbance of fish species populations due to noise generated by dredging works. Temporarily affecting some perimeters where populations of the species feed.
	Alosa tanaica	Insignificant impact. Temporary disturbance of fish species populations due to noise generated by dredging works. Temporarily affecting some perimeters where populations of the species feed.
	Tursiops trucatus	Insignificant impact. Temporary disturbance to populations of mammal species due to noise generated by dredging operations. Temporarily affecting some perimeters where populations of the species feed.
	Phocoena phocoena	Insignificant impact. Temporary disturbance to populations of mammal species due to noise generated by dredging operations. Temporarily affecting some perimeters where populations of the species feed.
Neptun Deep - Creation of access road, site organization, securing and connection to utilities, access roads to them, related to SRM and CCR.	1110	Insignificant impact. The project does not intersect with the ROSAC0273 site and is not likely to impact marine habitats within the ANPIC.
	1170	Insignificant impact. The project does not intersect with the ROSAC0273 site and is not likely to impact marine habitats within the ANPIC.
	8330	Insignificant impact. The project does not intersect with the ROSAC0273 site and is not likely to impact marine habitats within the ANPIC.
	Immaculate aloe	Insignificant impact. The project does not intersect with the ROSAC0273 site and is not in a position to generate impacts on the populations of the species within the ANPIC.
	Alosa tanaica	Insignificant impact. The project does not intersect with the ROSAC0273 site and is not in a position to generate impacts on the populations of the species within the ANPIC.
	Tursiops trucatus	Insignificant impact. The project does not intersect with the ROSAC0273 site and is not in a position to generate impacts on the populations of the species within the ANPIC.
	Phocoena phocoena	Insignificant impact. The project does not intersect with the ROSAC0273 site and is not in a position to generate impacts on the populations of the species within the ANPIC.

ROSAC0273 Zona marină de la Capul Tuzla		
Existing, planned PPs	**Habitat/species**	**Impact**
Development of a roundabout intersection in the area of the national road DN39 (E87) - km 23 + 190	1110	Insignificant impact. The project does not intersect with the ROSAC0273 site and is not likely to impact marine habitats within the ANPIC.
	1170	Insignificant impact. The project does not intersect with the ROSAC0273 site and is not likely to impact marine habitats within the ANPIC.
	8330	Insignificant impact. The project does not intersect with the ROSAC0273 site and is not likely to impact marine habitats within the ANPIC.
	Immaculate aloe	Insignificant impact. The project does not intersect with the ROSAC0273 site and is not in a position to generate impacts on the populations of the species within the ANPIC.
	Alosa tanaica	Insignificant impact. The project does not intersect with the ROSAC0273 site and is not in a position to generate impacts on the populations of the species within the ANPIC.
	Tursiops trucatus	Insignificant impact. The project does not intersect with the ROSAC0273 site and is not in a position to generate impacts on the populations of the species within the ANPIC.
	Phocoena phocoena	Insignificant impact. The project does not intersect with the ROSAC0273 site and is not in a position to generate impacts on the populations of the species within the ANPIC.
Neptun Deep – Electricity supply site organization natural gas measuring station and control centre	1110	Insignificant impact. The project does not intersect with the ROSAC0273 site and is not likely to impact marine habitats within the ANPIC.
	1170	Insignificant impact. The project does not intersect with the ROSAC0273 site and is not likely to impact marine habitats within the ANPIC.
	8330	Insignificant impact. The project does not intersect with the ROSAC0273 site and is not likely to impact marine habitats within the ANPIC.
	Immaculate aloe	Insignificant impact. The project does not intersect with the ROSAC0273 site and is not in a position to generate impacts on the populations of the species within the ANPIC.
	Alosa tanaica	Insignificant impact. The project does not intersect with the ROSAC0273 site and is not in a position to generate impacts on the populations of the species within the ANPIC.
	Tursiops trucatus	Insignificant impact. The project does not intersect with the ROSAC0273 site and is not in a position to generate impacts on the populations of the species within the ANPIC.

ROSAC0273 Zona marină de la Capul Tuzla		
Existing, planned PPs	**Habitat/species**	**Impact**
	Phocoena phocoena	Insignificant impact. The project does not intersect with the ROSAC0273 site and is not in a position to generate impacts on the populations of the species within the ANPIC.
The Black Sea Coast - Podișor (RO) pipeline for the collection of gas from the Black Sea	1110	Insignificant impact. The project does not intersect with the ROSAC0273 site and is not likely to impact marine habitats within the ANPIC.
	1140	Insignificant impact. The project does not intersect with the ROSAC0273 site and is not likely to impact marine habitats within the ANPIC.
	1170	Insignificant impact. The project does not intersect with the ROSAC0273 site and is not likely to impact marine habitats within the ANPIC.
	8330	Insignificant impact. The project does not intersect with the ROSAC0273 site and is not in a position to generate impacts on the populations of the species within the ANPIC.
	Immaculate aloe	Insignificant impact. The project does not intersect with the ROSAC0273 site and is not in a position to generate impacts on the populations of the species within the ANPIC.
	Alosa tanaica	Insignificant impact. The project does not intersect with the ROSAC0273 site and is not in a position to generate impacts on the populations of the species within the ANPIC.
	Tursiops trucatus	Insignificant impact. The project does not intersect with the ROSAC0273 site and is not in a position to generate impacts on the populations of the species within the ANPIC.
	Phocoena phocoena	Insignificant impact. The project does not intersect with the ROSAC0273 site and is not likely to impact marine habitats within the ANPIC.
Pressures and threats acc. PM approved	**Habitat/species**	**Impact pressure/threat**
Construction: Coastal and marine, including pipelines, oil infrastructure and wind farms. Coastal protection works	1110	Insignificant impact. Temporary impairment or loss of habitat
	1170	Insignificant impact. Temporary impairment or loss of habitat
	8330	Insignificant impact. No impact
	Immaculate aloe	Insignificant impact. Temporary disturbance of the activity of the species.
	Alosa tanaica	Insignificant impact. Temporary disturbance of the activity of the species.

ROSAC0273 Zona marină de la Capul Tuzla		
Existing, planned PPs	**Habitat/species**	**Impact**
	Tursiops trucatus	Insignificant impact. Temporary disturbance of the activity of the species.
	Phocoena phocoena	Insignificant impact. Temporary disturbance of the activity of the species.
Exploration and extraction of mineral resources: oil and gas, sand, gravel	1110	Insignificant impact. Temporary habitat impairment. It is not allowed to extract mineral resources (sand) from the site.
	1170	Insignificant impact. Temporary habitat impairment. It is not allowed to extract mineral resources (sand) from the site.
	8330	Insignificant impact. No impact
	Immaculate aloe	Insignificant impact. Temporary disturbance of the activity of the species.
	Alosa tanaica	Insignificant impact. Temporary disturbance of the activity of the species.
	Tursiops trucatus	Insignificant impact. Temporary disturbance of the activity of the species.
	Phocoena phocoena	Insignificant impact. Temporary disturbance of the activity of the species.
Pollution	1110	Insignificant impact
	1170	Insignificant impact
	8330	Insignificant impact
	Immaculate aloe	Insignificant impact. Temporary disturbance of the activity of the species.
	Alosa tanaica	Insignificant impact. Temporary disturbance of the activity of the species.
	Tursiops trucatus	Insignificant impact. Temporary disturbance of the activity of the species.
	Phocoena phocoena	Insignificant impact. Temporary disturbance of the activity of the species.
Tourism, Recreational sailing and water sports,	1110	Insignificant impact. No impact
	1170	Insignificant impact. No impact
	8330	Insignificant impact. No impact

ROSAC0273 Zona marină de la Capul Tuzla		
Existing, planned PPs	**Habitat/species**	**Impact**
Motorized boats on site	*Immaculate aloe*	Insignificant impact. Temporary disturbance of the activity of the species.
	Alosa tanaica	Insignificant impact. Temporary disturbance of the activity of the species.
	Tursiops trucatus	Insignificant impact. Temporary disturbance of the activity of the species. Possible accidental injury to individuals from high-speed craft
	Phocoena phocoena	Insignificant impact. Temporary disturbance of the activity of the species. Possible accidental injury to individuals from high-speed craft
Trash generated by tourists thrown haphazardly	1110	Insignificant impact
	1170	Insignificant impact
	8330	Insignificant impact
	Immaculate aloe	Insignificant impact. Temporary disturbance of the activity of the species.
	Alosa tanaica	Insignificant impact. Temporary disturbance of the activity of the species.
	Tursiops trucatus	Insignificant impact. Temporary disturbance of the species. Ingestion hazard of non-degradable hazardous waste, plastic bags.
	Phocoena phocoena	Insignificant impact. Temporary disturbance of the species. Ingestion hazard of non-degradable hazardous waste, plastic bags.
CUMULATIVE IMPACT		**Insignificant**

Table E.2 Cumulative impact analysis for the Natura 2000 site ROSCI0293 Costinești-23 August

ROSCI0293 Costinești- August 23		
Existing, planned PPs	**Habitat/ species**	**Impact**
Neptun Deep Project	1110	Insignificant impact. The temporary and insignificant increase of sediments in the water and nutrients will not change the physico-chemical indicators
	1140	Insignificant impact. The temporary and insignificant increase of sediments in the water and nutrients will not change the physico-chemical indicators
	1170	Insignificant impact. The temporary and insignificant increase of sediments in the water and nutrients will not change the physico-chemical indicators

	8330	Insignificant impact. The temporary and insignificant increase in nutrient concentration will not change the physical-chemical indicators
	Immaculate aloe	Insignificant impact. The activities/interventions envisaged by the project are not able to affect the populations of the species and will not contribute to the degradation of the species' habitat
	Alosa tanaica	Insignificant impact. The activities/interventions envisaged by the project are not able to affect the populations of the species and will not contribute to the degradation of the species' habitat
	Tursiops trucatus	Insignificant impact. The activities/interventions envisaged by the project are not able to affect the populations of the species and will not contribute to the degradation of the species' habitat
	Phocoena phocoena	Insignificant impact. The activities/interventions envisaged by the project are not able to affect the populations of the species and will not contribute to the degradation of the species' habitat
Reduction of coastal erosion Phase II (2014-2020)	1110	Insignificant impact. Indirect temporary disturbance due to insignificant increase in turbidity.
	1140	Insignificant impact. Indirect temporary disturbance due to insignificant increase in turbidity.
	1170	Insignificant impact. Indirect temporary disturbance due to insignificant increase in turbidity.
	8330	Insignificant impact. Indirect temporary disturbance due to insignificant increase in turbidity.
	Immaculate aloe	Insignificant impact. Temporary disturbance due to turbidity.
	Alosa tanaica	Insignificant impact. Temporary disturbance due to turbidity.
	Tursiops trucatus	Insignificant impact. Temporary disturbance due to turbidity and noise generated by the works. Temporary loss of some feeding areas covered by project works.
	Phocoena phocoena	Insignificant impact. Temporary disturbance due to turbidity and noise generated by the works. Temporary loss of some feeding areas covered by project works.
Works to strengthen the seafront in the area of Tuzla, Constanța county	1110	Insignificant impact. Temporary habitat disturbance 1110. Recovery interval 1-2 years. The project is partially completed in 2009.
	1140	Insignificant impact. Temporary habitat disturbance 1110. Recovery interval 1-2 years. The project is partially completed in 2009.
	1170	Insignificant impact. Temporary habitat disturbance 1170. Recovery interval 1-2 years. The project is partially completed in 2009.

	8330	Insignificant impact. The habitat was not affected by the project works.
	Immaculate aloe	Insignificant impact. The population of the species was not affected by the project works.
	Alosa tanaica	Insignificant impact. The population of the species was not affected by the project works.
	Tursiops trucatus	Insignificant impact. The population of the species was not affected by the project works.
	Phocoena phocoena	Insignificant impact. The population of the species was not affected by the project works.
The regional project for the development of water and wastewater infrastructure in the area of operation of SC RAJA SA Constanța	1110	Insignificant impact. It does not affect the habitat within the ANPIC.
	1140	Insignificant impact. It does not affect the habitat within the ANPIC.
	1170	Insignificant impact. It does not affect the habitat within the ANPIC.
	8330	Insignificant impact. It does not affect the habitat within the ANPIC.
	Immaculate aloe	Insignificant impact. It does not affect the species within the ANPIC.
	Alosa tanaica	Insignificant impact. It does not affect the species within the ANPIC.
	Tursiops trucatus	Insignificant impact. It does not affect the species within the ANPIC.
	Phocoena phocoena	Insignificant impact. It does not affect the species within the ANPIC.
Midia Natural Gas Development Project	1110	Insignificant impact. Completed project.
	1170	Insignificant impact. Completed project.
	8330	Insignificant impact. Completed project.
	Immaculate aloe	Insignificant impact. Completed project. The population of the species in ANPIC was not affected by the project works.
	Alosa tanaica	Insignificant impact. Completed project. The population of the species in ANPIC was not affected by the project works.
	Tursiops trucatus	Insignificant impact. Completed project. The population of the species in ANPIC was not affected by the project works.
	Phocoena phocoena	Insignificant impact. Completed project. The population of the species in ANPIC was not affected by the project works.

Electrification and rehabilitation of the Constanța Mangalia railway line	1110	Insignificant impact. The project will not alter habitats of community interest or favourable habitats of species of community interest in ROSCI0293, neither during the construction phase nor during the operation phase.
	1170	Insignificant impact. The project will not alter habitats of community interest either during the construction stage or during the operation stage.
	8330	Insignificant impact. The project will not alter habitats of community interest either during the construction stage or during the operation stage.
	Immaculate aloe	Insignificant impact. The project will not alter the favourable habitats of species of community interest in ROSCI0923, neither during the construction phase nor during the operation phase.
	Alosa tanaica	Insignificant impact. The project will not alter the favourable habitats of species of community interest in ROSCI0923, neither during the construction phase nor during the operation phase.
	Tursiops trucatus	Insignificant impact. The project will not alter the favourable habitats of species of community interest in ROSCI0923, neither during the construction phase nor during the operation phase.
	Phocoena phocoena	Insignificant impact. The project will not alter the favourable habitats of species of community interest in ROSCI0923, neither during the construction phase nor during the operation phase.
Black Sea sand exploitation projects	1110	Insignificant impact. Long distance from the boundaries of the ROSCI0923 site - over 7 km
	1170	Insignificant impact. Long distance from the boundaries of the ROSCI0923 site - over 7 km
	8330	Insignificant impact. Long distance from the boundaries of the ROSCI0923 site - over 7 km
	Immaculate aloe	Insignificant impact. Temporary disturbance of fish species due to noise generated by dredging works. Temporarily affecting some perimeters where populations of the species feed.
	Alosa tanaica	Insignificant impact. Temporary disturbance of fish species due to noise generated by dredging works. Temporarily affecting some perimeters where populations of the species feed.
	Tursiops trucatus	Insignificant impact. Temporary disturbance of mammal species due to noise generated by dredging works. Temporarily affecting some perimeters where populations of the species feed.
	Phocoena phocoena	Insignificant impact. Temporary disturbance of mammal species due to noise generated by dredging works. Temporarily affecting some perimeters where populations of the species feed.

Neptun Deep - Creation of access road, site organization, securing and connection to utilities, access roads to them, related to SRM and CCR.	1110	Insignificant impact. The project does not intersect with the ROSCI0923 site and is not in a position to generate impacts on marine habitats within the ANPIC.
	1170	Insignificant impact. The project does not intersect with the ROSCI0923 site and is not in a position to generate impacts on marine habitats within the ANPIC.
	8330	Insignificant impact. The project does not intersect with the ROSCI0923 site and is not in a position to generate impacts on marine habitats within the ANPIC.
	Immaculate aloe	Insignificant impact. The project does not intersect with the ROSCI0923 site and is not in a position to generate impacts on the populations of the species within the ANPIC.
	Alosa tanaica	Insignificant impact. The project does not intersect with the ROSCI0923 site and is not in a position to generate impacts on the populations of the species within the ANPIC.
	Tursiops trucatus	Insignificant impact. The project does not intersect with the ROSCI0923 site and is not in a position to generate impacts on the populations of the species within the ANPIC.
	Phocoena phocoena	Insignificant impact. The project does not intersect with the ROSCI0923 site and is not in a position to generate impacts on the populations of the species within the ANPIC.
Development of a roundabout intersection in the area of the national road DN39 (E87) - km 23 + 190	1110	Insignificant impact. The project does not intersect with the ROSCI0923 site and is not in a position to generate impacts on marine habitats within the ANPIC.
	1170	Insignificant impact. The project does not intersect with the ROSCI0923 site and is not in a position to generate impacts on marine habitats within the ANPIC.
	8330	Insignificant impact. The project does not intersect with the ROSCI0923 site and is not in a position to generate impacts on marine habitats within the ANPIC.
	Immaculate aloe	Insignificant impact. The project does not intersect with the ROSCI0923 site and is not in a position to generate impacts on the populations of the species within the ANPIC.
	Alosa tanaica	Insignificant impact. The project does not intersect with the ROSCI0923 site and is not in a position to generate impacts on the populations of the species within the ANPIC.
	Tursiops trucatus	Insignificant impact. The project does not intersect with the ROSCI0923 site and is not in a position to generate impacts on the populations of the species within the ANPIC.

	Phocoena phocoena	Insignificant impact. The project does not intersect with the ROSCI0923 site and is not in a position to generate impacts on the populations of the species within the ANPIC.
Neptun Deep – Electricity supply site organization natural gas measuring station and control center	1110	Insignificant impact. The project does not intersect with the ROSCI0923 site and is not in a position to generate impacts on marine habitats within the ANPIC.
	1170	Insignificant impact. The project does not intersect with the ROSCI0923 site and is not in a position to generate impacts on marine habitats within the ANPIC.
	8330	Insignificant impact. The project does not intersect with the ROSCI0923 site and is not in a position to generate impacts on marine habitats within the ANPIC.
	Immaculate aloe	Insignificant impact. The project does not intersect with the ROSCI0923 site and is not in a position to generate impacts on the populations of the species within the ANPIC.
	Alosa tanaica	Insignificant impact. The project does not intersect with the ROSCI0923 site and is not in a position to generate impacts on the populations of the species within the ANPIC.
	Tursiops trucatus	Insignificant impact. The project does not intersect with the ROSCI0923 site and is not in a position to generate impacts on the populations of the species within the ANPIC.
	Phocoena phocoena	Insignificant impact. The project does not intersect with the ROSCI0923 site and is not in a position to generate impacts on the populations of the species within the ANPIC.
The Black Sea Coast - Podișor (RO) pipeline for the collection of gas from the Black Sea	1110	Insignificant impact. The project does not intersect with the ROSCI0923 site and is not in a position to generate impacts on marine habitats within the ANPIC.
	1140	Insignificant impact. The project does not intersect with the ROSCI0923 site and is not in a position to generate impacts on marine habitats within the ANPIC.
	1170	Insignificant impact. The project does not intersect with the ROSCI0923 site and is not in a position to generate impacts on marine habitats within the ANPIC.
	8330	Insignificant impact. The project does not intersect with the ROSCI0923 site and is not in a position to generate impacts on the populations of the species within the ANPIC.
	Immaculate aloe	Insignificant impact. The project does not intersect with the ROSCI0923 site and is not in a position to generate impacts on the populations of the species within the ANPIC.

	Alosa tanaica	Insignificant impact. The project does not intersect with the ROSCI0923 site and is not in a position to generate impacts on the populations of the species within the ANPIC.
	Tursiops trucatus	Insignificant impact. The project does not intersect with the ROSCI0923 site and is not in a position to generate impacts on the populations of the species within the ANPIC.
	Phocoena phocoena	Insignificant impact. The project does not intersect with the ROSCI0923 site and is not in a position to generate impacts on marine habitats within the ANPIC.
Pressures and threats acc. Approved MP	**Habitat/ species**	**Impact pressure/threat**
Sea or coast protection works, tidal barriers (impact code J02.12.01), Dams, dykes, artificial beaches (impact code J02.12), Damping (K01.02)	1110	Medium off-site effect for J02.12 and K01.02 High on-site effect for J02.12.01, with temporary impairment or loss of habitat
	1140	Medium off-site effect for J02.12 and K01.02 High on-site effect for J02.12.01, with temporary impairment or loss of habitat
	1170	Medium off-site effect for J02.12 and K01.02 High on-site effect for J02.12.01, with temporary impairment or loss of habitat
	8330	Medium off-site effect for J02.12 and K01.02 High on-site effect for J02.12.01, with temporary impairment or loss of habitat
	Immaculate aloe	Medium off-site effect for J02.12 and K01.02 High on-site effect for J02.12.01, with temporary disturbance of the species.
	Alosa tanaica	Medium off-site effect for J02.12 and K01.02 High on-site effect for J02.12.01, with temporary disruption of species activity.
	Tursiops trucatus	Medium off-site effect for J02.12 and K01.02 High on-site effect for J02.12.01, with temporary disruption of species activity.
	Phocoena phocoena	Medium off-site effect for J02.12 and K01.02 High on-site effect for J02.12.01, with temporary disruption of species activity.
Extraction of sand and gravel (impact code C01.01)	1110	Insignificant impact. Medium off-site effect with temporary habitat impairment.
	1140	Insignificant impact. Medium off-site effect with temporary habitat impairment.
	1170	Insignificant impact. Medium off-site effect with temporary habitat impairment.
	8330	Insignificant impact. Medium off-site effect with temporary habitat impairment.

	Immaculate aloe	Insignificant impact. Medium off-site effect with temporary disruption of species activity.
	Alosa tanaica	Insignificant impact. Medium off-site effect with temporary disruption of species activity.
	Tursiops trucatus	Insignificant impact. Medium off-site effect with temporary disruption of species activity.
	Phocoena phocoena	Insignificant impact. Medium off-site effect with temporary disruption of species activity.
Surface water pollution (code H01)	1110	Insignificant impact. Effect of medium intensity inside the site, with the modification of the ecological state of the water based on the physical-chemical indicators.
	1140	Insignificant impact. Effect of medium intensity inside the site, with the modification of the ecological state of the water based on the physical-chemical indicators.
	1170	Insignificant impact. Effect of medium intensity inside the site, with the modification of the ecological state of the water based on the physical-chemical indicators.
	8330	Insignificant impact. Effect of medium intensity inside the site, with the modification of the ecological state of the water based on the physical-chemical indicators.
	Immaculate aloe	Insignificant impact. Effect of medium intensity within the site with temporary disturbance of the activity of the species.
	Alosa tanaica	Insignificant impact. Effect of medium intensity within the site with temporary disturbance of the activity of the species.
	Tursiops trucatus	Insignificant impact. Effect of medium intensity within the site with temporary disturbance of the activity of the species.
	Phocoena phocoena	Insignificant impact. Effect of medium intensity within the site with temporary disturbance of the activity of the species.
Water sports (code G01.01), Sports and recreation complexes (code G02), Urbanized areas, human habitation (housing) (code E01)	1110	Insignificant impact. Moderate off-site effects.
	1140	Insignificant impact. Moderate off-site effects.
	1170	Insignificant impact. Medium off-site effects.
	8330	Insignificant impact. Medium off-site effects.
	Immaculate aloe	Insignificant impact. Average off-site effects with possible temporary disturbance of individuals of the species.

	Alosa tanaica	Insignificant impact. Average off-site effects with possible temporary disturbance of individuals of the species.
	Tursiops trucatus	Insignificant impact. Average off-site effects with possible temporary disturbance of individuals of the species. Possible accidental injury to individuals from high-speed craft.
	Phocoena phocoena	Insignificant impact. Average off-site effects with possible temporary disturbance of individuals of the species. Possible accidental injury to individuals from high-speed craft.
Taking/sampling of fauna (code F03.02)	1110	Insignificant impact. Low intensity effects within the site.
	1140	Insignificant impact. Low intensity effects within the site.
	1170	Insignificant impact. Low intensity effects within the site.
	8330	Insignificant impact. Low intensity effects within the site.
	Immaculate aloe	Insignificant impact. Low intensity effects within the site.
	Alosa tanaica	Insignificant impact. Low intensity effects within the site.
	Tursiops trucatus	Insignificant impact. Low intensity effects within the site.
	Phocoena phocoena	Insignificant impact. Low intensity effects within the site.
CUMULATIVE IMPACT		**Insignificant**

Table E.3 Cumulative impact analysis for the Natura site ROSCI0311 Canionul Viteaz

ROSCI0311 CANIONUL VITEAZ		
Existing, planned PPs	**Habitat/ species**	**Impact**
Neptun Deep Project	1170	Insignificant impact. Emissions into offshore marine waters of some chemical compounds that have the potential to affect the aquatic environment are carried out at a distance of approx. 13.2 km from the ANPIC boundary. The plume of effluent has the potential to affect marine organisms outside ANAPIC at a distance of 7 km from the source.
	1180	Insignificant impact. Emissions into offshore marine waters of some chemical compounds that have the potential to affect the aquatic environment are carried out at a distance of approx. 13.2 km from the ANPIC boundary. The plume of effluent has the potential to affect marine organisms outside ANAPIC at a distance of 7 km from the source.

	Tursiops trucatus	Insignificant impact. Individuals will leave the work area quickly, as soon as the unloading and positioning of the jacket begins, and will not approach the sources of noise and strong vibrations until after the disturbance activities have ceased. The works are of short duration (2-3 days), and the specimens will return to the waters near the platform after the completion of the underwater works.
Reduction of coastal erosion Phase II (2014-2020)	1170	Insignificant impact. The project areas are located very far from ANPIC (approx. 120km).
	1180	Insignificant impact. The project areas are located very far from ANPIC (approx. 120km).
	Tursiops trucatus	Insignificant impact. The project areas are located very far from ANPIC (approx. 120km).
Works to strengthen the seafront in the area of Tuzla, Constanța county	1170	Insignificant impact. Distances of over 120 km from ANPIC.
	1180	Insignificant impact. Distances of over 120 km from ANPIC.
	Tursiops trucatus	Insignificant impact. Distances of over 120 km from ANPIC.
The regional project for the development of water and wastewater infrastructure in the area of operation of SC RAJA SA Constanța	1170	Insignificant impact.
	1180	Insignificant impact.
	Tursiops trucatus	Insignificant impact.
Midia Natural Gas Development Project	1170	Insignificant impact. Completed project. The long distance from ANPIC approx. 12.7 km.
	1180	Insignificant impact. Completed project. The long distance from ANPIC approx. 12.7 km.
	Tursiops trucatus	Insignificant impact. Completed project. The long distance from ANPIC approx. 12.7 km.
Electrification and rehabilitation of the Constanța - Mangalia railway line	1180	Insignificant impact.
	1180	Insignificant impact.
	Tursiops trucatus	Insignificant impact.
Black Sea sand exploitation projects	1170	Insignificant impact. Distances of over 100 km from ANPIC.
	1180	Insignificant impact. Distances of over 100 km from ANPIC.

	Tursiops trucatus	Insignificant impact. Distances of over 100 km from ANPIC.
Neptun Deep - Creation of access road, site organization, securing and connection to utilities, access roads to them, related to SRM and CCR.	1170	Insignificant impact.
	1180	Insignificant impact.
	Tursiops trucatus	Insignificant impact.
Development of a roundabout intersection in the area of the national road DN39 (E87) - km 23 + 190	1170	Insignificant impact.
	1180	Insignificant impact.
	Tursiops trucatus	Insignificant impact.
Neptun Deep – Electricity supply site organization natural gas measuring station and control center	1170	Insignificant impact.
	1180	Insignificant impact.
	Tursiops trucatus	Insignificant impact.
The Black Sea Coast - Podișor (RO) pipeline for the collection of gas from the Black Sea	1170	Insignificant impact.
	1180	Insignificant impact.
	Tursiops trucatus	Insignificant impact.
Pressures and threats acc. Approved MP	**Habitat/species**	**Impact pressure/threat**
Pressures and threats are not described	It's not necessary	It's not necessary

Table E.4 Cumulative impact analysis for Natura site ROSPA0076 Marea Neagră

ROSPA0076 MAREA NEAGRĂ
Bird species listed in Annex I to the Birds Directive: *Branta ruficollis, Chlidonias hybridus, Chlidonias niger, Cygnus cygnus, Gavia arctica, Gavia stellata, Gelochelidon nilotica, Larus genei, Larus melanocephalus, Larus minutus,*

Mergus albellus, Pelecanus crispus, Phalaropus lobatus, Puffinus yelkouau, Sterna albifrons, Stema caspia, Sterna hirundo, Sterna sandvicensis Regularly migratory bird species not listed in Annex I of the Birds Directive: *Anas penelope, Anas platyrhyuchos, Anas strepera, Aythya ferina, Aythya fuligula, Bucephala clangula, Fulica atra, Fulica atra, Limosa limosa, Mergus merganser, Mergus serrator, Phalacrocorax carbo,* Podiceps cristatus, Podiceps grisegena, Podiceps nigricollis, Tachybaptus ruficollis.	
Existing, planned PPs	**Impact**
Neptun Deep Project	Insignificant impact. In the case of bird species of community interest for which the site of special avifaunistic protection ROSPA0076 Marea Neagră has been designated, the impacts generated by the project activities are temporary and reversible without producing changes in the size of the populations or the long-term availability of feeding habitats and/ or rest.
Reduction of coastal erosion Phase II (2014-2020)	Insignificant impact. Temporary damage to some perimeters where waterfowl feed.
Works to strengthen the seafront in the area of Tuzla, Constanța county	Insignificant impact. Disturbance of waterfowl in the resting area (Tuzla beach)
The regional project for the development of water and wastewater infrastructure in the area of operation of SC RAJA SA Constanța	Insignificant impact. It does not affect the Natura 2000 site ROSPA0076
Midia Natural Gas Development Project	Insignificant impact. Completed project. The work in the coastal area of the installation of the gas pipeline has been completed. The disturbance of the species was temporary, during the construction period.
Electrification and rehabilitation of the Constanța Mangalia railway line	Insignificant impact. The project is not considered to be likely to lead to the disturbance of the activity of bird species on the site (ROSPA0076). It is located at a distance from the site boundary, in a heavily populated area. The project may generate an impact on the size of the populations of bird species present in ROSPA0076, caused by the existence of the risk of collision.
Black Sea sand mining projects	Insignificant impact. Temporary damage to some perimeters where waterfowl feed. The species and their habitats within the protected natural areas will not be affected.
Neptun Deep - Creation of access road, site organization, securing and connection to utilities, access roads to them, related to SRM and CCR.	Insignificant impact. The project does not intersect with the ROSPA0076 site. Temporary disturbance of waterfowl in ROSPA0076 resting on arable land.
Development of a roundabout intersection in the area of the national road DN39 (E87) - km 23 + 190	Insignificant impact. Given the location of the project and the great distance from ANPIC, there will be no impact on the conservation objectives of the protected natural areas.

Neptun Deep – Electricity supply site organization natural gas measuring station and control centre	Insignificant impact. The impact on the size of bird populations is negligible.
The Black Sea Coast - Podișor (RO) pipeline for the collection of gas from the Black Sea	Insignificant impact. The works are not carried out inside the ANPIC, distance of more than 1 km from the boundary of the Natura 2000 site ROSPA0076
Pressures and threats acc. PM approved	**Impact pressure/threat**
Dredging of coastal areas and estuaries (code J02.02.02)	Low intensity pressure/threat with insignificant impact. Temporary disturbance of bird species.
Pipes (D02.02)	Low intensity pressure/threat with insignificant impact. Temporary disturbance of bird species.
Motorized water sports (G01.01.01)	Low intensity pressure/threat with insignificant impact. Temporary disturbance of the activity of bird species. Accidents and even fatalities are possible with high-speed craft.
Navigation (D03.02)	Low intensity pressure/threat with insignificant impact. Temporary disturbance of the activity of bird species.
Other sources of surface water pollution (H01.03), Air pollution, airborne pollutants (H04), Noise pollution from an irregular source (H06.01.01)	Low intensity pressures/threats with insignificant impact. Temporary disturbance of the activity of bird species.
Piers/tourist and leisure areas (D03.01.02)	Low Intensity Threat with Insignificant Impact. Temporary disturbance of the activity of bird species.
Death or injury by collision (G05.11)	Threatened of low intensity with insignificant impact. Temporary disturbance of bird species. Possible accidents and even deaths in the case of offshore wind farm projects.
CUMULATIVE IMPACT	**Insignificant**

Table E.5 Identification and quantification of impacts on species and habitats of community interest for which the protected natural area was designated ROSAC0273 Zona marină de la Capul Tuzla

Intervention	Effects	Direct impacts	Indirect impacts	Secondary impacts	Cumulative impacts	Short and long term impacts	Species/habitat	Affected parameter	Impact quantification	Quantification mode
In the construction phase										
Anchoring of the barge used for the construction of the microtunnel and the operation of the vessels	Crushing and/or denudation of the hard substrate populated by marine organisms as a result of the placement of barge anchors	Habitat alteration	No	No	No	Short term impact	1110 Shallow submerged sandbars	Habitat area	Insignificant 50m² (0.005 ha)/ 0.001% - Temporary occupation of the habitat.	Calculation of the surface of the anchors Consultations with marine habitat experts
		Habitat alteration	No	No	No	Short term impact	1170 Reefs	Habitat area Area of habitat subtypes	Insignificant 225 m² (0.0225 ha)/ 0.0017% - habitat damage 1170 as a result of mechanical action on benthic sessile organisms and those with reduced mobility. Approx. 75 m²=0.0075 ha/ 0.013%-affecting subtype 1170-9.	Calculation of the surface of the anchors Consultations with marine habitat experts
	Underwater noise emissions	Disruption of species activity	No	No	No	Short term impact	*Tursiops truncatus, Phocoena phocoena*	Spatial and temporal pattern, intensity of habitat use	Insignificant	Underwater noise modelling

Intervention	Effects	Direct impacts	Indirect impacts	Secondary impacts	Cumulative impacts	Short and long term impacts	Species/habitat	Affected parameter	Impact quantification	Quantification mode
Digging a trench for the gas pipeline	Increasing turbidity	No	Habitat alteration	No	No	Short term impact	1110 Shallow submerged sandbars	Habitat area Characteristic invertebrate species The ecological status of water based on physico-chemical indicators	Insignificant Turbidity increase - approx. 5 ha	Sediment plume modelling. Calculation of the occupied surface Scientific studies
	Increasing turbidity	No	Habitat alteration	No	No	Short term impact	1170 Reefs	Habitat area Area of habitat subtypes The ecological status of water based on physico-chemical indicators	Insignificant Turbidity increase - approx. 70 ha	Sediment plume modelling. Calculation of the occupied surface Scientific studies
	Increasing turbidity	No	Habitat alteration	No	No	Short term impact	8330	The ecological status of water based on physico-chemical indicators	Insignificant	Sediment plume modelling. Calculation of the occupied surface
	Increasing turbidity	No	Habitat alteration	Disruption of species activity	No	Short term impact	*Alosa tanaica,* *Immaculate aloe*	The ecological status of water based on physico-chemical indicators	Insignificant	Sediment plume modelling. Scientific studies

Intervention	Effects	Direct impacts	Indirect impacts	Secondary impacts	Cumulative impacts	Short and long term impacts	Species/habitat	Affected parameter	Impact quantification	Quantification mode
	Increasing turbidity	No	Habitat alteration	Disruption of species activity	No	Short term impact	*Tursiops truncatus, Phocoena phocoena*	Size and diversity of prey species The ecological status of water based on physico-chemical indicators	Insignificant	Sediment plume modelling. Scientific studies
	Temporary and local increase in nutrients and possibly some pollutants present in sediments due to sediment resuspension	No	Habitat alteration	No	No	Short term impact	1170, 1110, 8330, *Alosa tanaica,* *Alosa immaculate, Tursiops truncatus, Phocoena phocoena*	The ecological status of water based on physico-chemical indicators	Insignificant	Analyses of the concentration of pollutants in water and sediments in the project area.
	Underwater noise emissions	Disruption of species activity	No	No	No	Short term impact	*Tursiops truncatus, Phocoena phocoena*	Spatial and temporal pattern, intensity of habitat use	Insignificant	Underwater noise modelling
In the operating phase										
No activities have been identified that can generate an impact on ANPIC										
In the decommissioning phase										
No activities have been identified that can generate an impact on ANPIC										

Table E.6 Identification and quantification of impacts on species and habitats of community interest for which the protected natural area was designated ROSCI0293 Costinești - August 23

Intervention	Effects	Direct impacts	Indirect impacts	Secondary impacts	Cumulative impacts	Short and long term impacts	Species/habitat	Affected parameter	Impact quantification	Quantification mode
In the construction phase										
Digging/dredging the trench for the gas production pipeline	Increasing turbidity	No	Habitat alteration	No	Habitat alteration (Cumulative with *Coastal Erosion Reduction, Phase II)*	Short term impact	1170, 1110, 1140, 8330, *Alosa tanaica, Alosa immaculate, Tursiops truncatus, Phocoena phocoena*	The ecological status of water based on physico-chemical indicators	Insignificant	Sediment plume modelling. Scientific studies.
	Temporary and local increase in nutrients and possibly some pollutants present in sediments due to sediment resuspension	No	Habitat alteration	No	Habitat alteration (Cumulative with *Coastal Erosion Reduction, Phase II)*	Short term impact	1170, 1110, 1140 8330, *Alosa tanaica, Alosa immaculate, Tursiops truncatus, Phocoena phocoena*	The ecological status of water based on physico-chemical indicators	Insignificant	Analyses of the concentration of pollutants in water and sediments in the project area.
In the operating phase										
No activities have been identified that can generate an impact on ANPIC										
In the decommissioning phase										
No activities have been identified that can generate an impact on ANPIC										

Table E.7 Identification and quantification of impacts on species and habitats of community interest for which the protected natural area ROSCI0311 Canionul Viteaz was designated

Intervention	Effects	Direct impacts	Indirect impacts	Secondary impacts	Cumulative impacts	Short and long term impacts	Species/habitat	Affected parameter	Impact quantification	Quantification mode
In the construction phase										
Neptun Alpha platform installation	Underwater noise emissions	Reduction of population numbers through accidental injury or killing	No	No	No	Short term impact	*Tursiops truncatus*	Population size	Insignificant The affected area (R= 100 m) in the case of the *T. truncatus species* does not overlap with the ROSCI0311 limits. Potentially affect 1-5 individuals.	Underwater noise modelling
		Disruption of the species to the activity of the species	No	No	No	Short term impact	*Tursiops truncatus*	Distribution pattern	Insignificant The affected area (R= 3.5 km) in the case of the *T. truncatus species* does not overlap with the limits of ROSCI0311. Potentially affect 8-10 individuals.	Underwater noise modelling Related studies and scientific literature
Vessel operation	Underwater noise emissions	Disruption of species activity	No	No	No	Short term impact	*Tursiops truncatus*	Distribution pattern	Insignificant	Underwater noise modelling

Intervention	Effects	Direct impacts	Indirect impacts	Secondary impacts	Cumulative impacts	Short and long term impacts	Species/habitat	Affected parameter	Impact quantification	Quantification mode
In the operating phase										
Carrying out the production activity on the Neptun Alpha Platform	Emissions in offshore marine waters of some chemical compounds that have the potential to affect the aquatic environment	No	Habitat alteration	Disruption of species activity	No	Long-term impact	1170, 1180, *Tursiops truncatus*	Ecological status of water based on ecological indicators	Insignificant	Effluent plume modelling. Acute toxicity study Assessment of potential risk to the marine environment (DREAM modelling)
In the decommissioning phase										
Decommissioning the Neptun Alpha Platform and underwater facilities	Underwater noise emissions	Disruption of species activity	No	No	No	Short term impact	*Tursiops truncatus*	Distribution pattern	Insignificant Estimated affected area (R=700 m) < 5 ind. Potentially affected	Appraisal Analysis of the proposed works

Table E.8 Identification and quantification of impacts on species of community interest for which the protected natural area ROSPA0076 Marea Neagră was designated

Intervention	Effects	Direct impacts	Impacts indirect	Secondary impacts	Cumulative impacts	Short and long term impacts	Species/habitat	Affected parameter	Impact quantification	Quantification mode
In the construction phase										
Digging trench for gas production pipeline	Increase in turbidity and temporary and local increase in nutrients and	No	Habitat alteration	Disruption of species activity	No	Short term impact	*Chlidonias hybridus, Chlidonias niger, Gavia arctica, Gavia stellata, Gelochelidon nilotica, Larus genei, Larus*	Qualifying ecological state from the point of view of	Insignificant	Sediment plume modelling. Scientific studies

Intervention	Effects	Direct impacts	Impacts indirect	Secondary impacts	Cumulative impacts	Short and long term impacts	Species/habitat	Affected parameter	Impact quantification	Quantification mode
	possibly some pollutants present in sediments due to sediment resuspension						*melanocephalus, Larus minutus, Mergus albellus, Pelecanus crispus, Phalaropus lobatus, Puffinus yelkouan, Sterna albifrons, Stema caspia, Sterna hirundo, Sterna sandvicensis, Anas penelope, Anas platyrhynchos, Anas streper,a Aythya ferina, Aythya fuligula, Bucephala clangula, Fulica atra, Larus cachinnans, Larus canus, Larus fuscus, Larus ridibundus, Limosa limosa, Mergus merganser, Mergus serrator, Phalacrocorax carbo, Podiceps cristatus, Podiceps grisegena, Podiceps nigricollis, Tachybaptus ruficollis.*	physico-chemical quality elements		
Vessel and barge operation	Noise emissions, the presence of ships in the site	Disruption of species activity	No	No	No	Short term impact	*Arctic marlin,* *Gavia starata,* *Pelecanus crispus*	Distribution pattern	Insignificant	Calculation of the affected area Analysis of the proposed works

Intervention	Effects	Direct impacts	Impacts indirect	Secondary impacts	Cumulative impacts	Short and long term impacts	Species/habitat	Affected parameter	Impact quantification	Quantification mode
In the operating phase										
Carrying out maintenance at the SRM station, once every 4 years	Noise emissions during depressurization	Disruption of species activity	No	No	No	Short term impact	*Larus spp., Sterna spp. Phalacrocorax carbo.*	-	Insignificant	Area calculation Analysis of the proposed works
In the decommissioning phase										
Decommissioning SRM and CCR installations	Noise emissions	Disruption of species activity	No	No	No	Short term impact	*Larus spp., Sterna spp. Phalacrocorax carbo.*	-	Insignificant	Calculations from other studies with similar activities

E.2. ASSESSMENT OF SIGNIFICANCE OF IMPACTS

The impact analysis for each objective/parameter within the protected natural areas ROSAC0273 The Zona marină de la Capul Tuzla, ROSCI0293 Costinești- 23 August, ROSPA0076 Marea Neagră and ROSCI0311 Canionul Viteaz located in the area of influence of the project is presented in the **Annex J** to the appropriate assessment study: **Impact assessment tables** (According to Annex 3C to Ord. 1682/2023).

To evaluate the significance of the project analysed in the appropriate assessment study, the categories significant negative impact or significant impact were exclusively used.

CHAPTER F) PREVENTION, AVOIDANCE AND IMPACT REDUCTION MEASURES

For the identified impacts, likely to affect ANPIC, prevention, avoidance/reduction measures have been established which are included in the table below:

Table F.1 Measures to prevent (P), avoid (E) and reduce (R) the impact

Measure-description	Measure type (P/E/R)	Affected habitat species	Parameter to which the measure is addressed	The impact to which the measure is addressed	The period of implementation of the measure	The location of the implementation of the measure
ROSAC0273 Zona marină de la Capul Tuzla						
MS 1. The anchor plan will be followed which minimizes (7 positions) the use of anchors in ROSAC0273. Any change to the planning of anchorages in ROSAC0273 will be made only after informing and with the consent of the authorities for environmental protection (APM and ANANP).	E/P	1170(E) and 8330(P)	Habitat area	Habitat alteration	Construction stage	Barge anchor points in ROSAC0273: T1.1, T1.5, T2.1, T2.5, T3.1, T3.5, T8.4
MS 2. For the anchor that overlaps with the charted area of habitat 8330 (outside ANPIC), a new position will be identified in the vicinity that will not intersect habitats on hard substrate.	p	8330	Habitat area	Losses from the habitat area outside the ANPIC	Construction stage	Barge mooring point outside ROSAC0273: T6.3
MS 3. Anchor drop work will be assisted by biodiversity conservation specialists and anchor placement areas will be inspected prior to commencing work using ROV equipment.	p	8330	Habitat area	Losses from the habitat area outside the ANPIC	Construction stage	Barge anchor points
MS 4. In order to limit the expansion of the sediment plume inside and outside the ANPIC, turbidity curtains will be installed around the work areas, which will retain most of the sediments in suspension.	E	1110, 1170, 8330	Habitat area Characteristic invertebrate species	Habitat alteration Losses from the habitat area outside the ANPIC	Construction stage	Gas pipeline trench
MS 5. Carrying out excavation works in the shore area only during periods of calm sea.	E	*Alosa tanaica, Alosa immaculata, Tursiops truncatus,*	The ecological status of water based on	Disruption of species activity	Construction stage	Gas pipeline trench

Measure-description	Measure type (P/E/R)	Affected habitat species	Parameter to which the measure is addressed	The impact to which the measure is addressed	The period of implementation of the measure	The location of the implementation of the measure
		Phocoena phocoena, 1110, 1170, 8330	physico-chemical indicators	Habitat alteration		Pct. M3/PM1 microtunnel entrance from the marine side of the project
MS 6. Realization of intervention plans in case of accidental pollution. The presence on board barges and ships of intervention equipment in case of accidental pollution.	P/E	*Alosa tanaica, Alosa immaculata, Tursiops truncatus, Phocoena phocoena,* 1110, 1170, 8330	The ecological status of water based on physico-chemical indicators	Disruption of species activity Habitat alteration	Construction stage	Gas pipeline trench Pct. M3/PM1 microtunnel entrance from the marine side of the project
ROSCI0311 Canionul Viteaz						
MS 6. Realization of intervention plans in case of accidental pollution. The presence on board barges and ships of intervention equipment in case of accidental pollution.	P/E	*Tursiops truncatus,* 1180, 1170	The ecological status of water based on physico-chemical indicators	Disturbance of species Habitat alteration	Construction stage and Operation stage	Platform Neptun Alpha (offshore)
MS 7. Imposing a marine mammal exclusion zone. The work of fixing the platform will only start if there are no dolphins present in the exclusion zone of 500 m around the work after a 30-minute observation period.	p	*Tursiops truncatus, Phocoena phocoena* (not a conservation objective of ROSCI0311)	Population size	Reduction of population numbers through accidental injury or killing	Construction stage	Platform Neptun Alpha (offshore)
MS 8. To avoid potential injury or accidental killing of cetaceans, as a result of noise and vibration emissions, at the	p	*Tursiops truncatus, Phocoena*	Population size	Reduction of population	Construction stage	Neptun Alpha platform

Measure-description	Measure type (P/E/R)	Affected habitat species	Parameter to which the measure is addressed	The impact to which the measure is addressed	The period of implementation of the measure	The location of the implementation of the measure
beginning of the work of fixing the piers to the platform jacket, only 20% of the power of the installation of driving these piers will be used during of 120 minutes (*soft start* procedure), so that the individuals in the affected area (3.5 km in the case of *T. truncatus* and *D. delphis;* 19-20 km in the case of the *P. phocoena species)* can safely leave the area affected by project. The *soft start* procedure will be applied every time the piling fixing works will be interrupted for more than 60 minutes.		*phocoena* (not a conservation objective of ROSCI0311)		numbers through accidental injury or killing		(offshore)
MS 9. Carrying out the eco-toxicity study by performing chronic toxicity tests, for all chemical substances that will be discharged into the sea, including biocide and methanol, through which to validate/demonstrate that the maximum permissible limit values established for discharge into the marine environment, at the level of each chemical substance, ensures the protection of the marine environment, has a low impact on the marine aquatic ecosystem and does not lead to the non-achievement of the environmental objectives established by the Marine Environment Strategy Framework Directive (2008/56/EC). In the situation where the chronic toxicity study will highlight negative effects on the biological components of the marine environment, the beneficiary will have the obligation to adapt/reconsider the substances used (Measure in correlation with the requirements of the Water Management Notice)	E	1170, 1180, *Tursiops truncatus*	Ecological status of water based on ecological indicators	Disruption of species activity Habitat alteration	Before starting the works and during the construction stage	Neptun Alpha platform (offshore)

Measure-description	Measure type (P/E/R)	Affected habitat species	Parameter to which the measure is addressed	The impact to which the measure is addressed	The period of implementation of the measure	The location of the implementation of the measure
ROSCI0293 Costinești- August 23						
MS 5. Carrying out excavation works in the shore area only during periods of calm sea.	E	*Alosa tanaica, Alosa immaculata, Tursiops truncatus, Phocoena phocoena,* 1110, 1170, 1140, 8330	The ecological status of water based on physico-chemical indicators	Disruption of species activity Habitat alteration	Construction stage	Gas pipeline trench Pct. M3/PM1 microtunnel entrance from the marine side of the project
MS 6. Realization of intervention plans in case of accidental pollution. The presence on board barges and ships of intervention equipment in case of accidental pollution	P/E	*Alosa tanaica, Alosa immaculata, Tursiops truncatus, Phocoena phocoena,* 1110, 1170, 1140, 8330	The ecological status of water based on physico-chemical indicators	Disruption of species activity Habitat alteration	Construction stage	Gas pipeline trench Pct. M3/PM1 microtunnel entrance from the marine side of the project
ROSPA0076 Marea Neagră						
MS 5. Carrying out excavation works in the shore area only during periods of calm sea.	E	All species of waterfowl	The ecological status of water based on physico-chemical indicators	Disruption of species activity Habitat alteration	Construction stage	Gas pipeline trench Pct. M3/PM1 microtunnel entrance from the marine side of the project

Measure-description	Measure type (P/E/R)	Affected habitat species	Parameter to which the measure is addressed	The impact to which the measure is addressed	The period of implementation of the measure	The location of the implementation of the measure
MS 6. Realization of intervention plans in case of accidental pollution. The presence on board barges and ships of intervention equipment in case of accidental pollution	P/E	All species of waterfowl	The ecological status of water based on physico-chemical indicators	Disruption of species activity Habitat alteration	Construction stage	Gas pipeline trench Pct. M3/PM1 microtunnel entrance from the marine side of the project

The legend:

P – Impact prevention

E – Avoiding impact

R – Reduction of the impact level

Table F.2 The schedule regarding the implementation and monitoring of the impact reduction measures.

Measure	Affected species/habitat	The parameter to which the measure is addressed	The impact to which the measure is addressed	The calendar for the implementation of the measures																														Responsible	Estimated budget EUR
				2024							2025												2026										2027-		
				1-6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	2047		
MS 1	1170, 8330	Habitat area	Habitat alteration																															Project owner	-
MS 2, MS 3	8330	Habitat area	Losses from the habitat area outside the ANPIC																															Project owner	**660,000**
MS 4	1110, 1170, 8330	Habitat area Characteristic invertebrate species	Habitat alteration																															Project owner	**350,000**
MS 5	*A. tanaica, A. immaculata, T. truncatus, P. phocoena, 1110, 1140, 1170, 8330, waterfowl from ROSPA0076*	The ecological status of water based on physico-chemical indicators	Disruption of species activity Habitat alteration																															Project owner	-
MS 6	*A. tanaica, A. immaculata, T. truncatus, P. phocoena, 1110, 1140, 1170, 1180, 8330, waterfowl from ROSPA0076*	The ecological status of water based on physico-chemical indicators	Disruption of species activity Habitat alteration																															Project owner	-
MS 7	*T. truncatus, P. phocoena*	Population size	Reduction of population numbers through accidental injury or killing																															Project owner	-
MS 8	*T. truncatus,* *P. phocoena*	Population size	Reduction of population numbers through accidental injury or killing																															Project owner	-
MS 9	1170, 1180, *T. truncatus*	Ecological status of water based on ecological indicators	Disruption of species activity Habitat alteration																															Project owner	**1,500,000**

CHAPTER G) MONITORING OF PREVENTION, AVOIDANCE AND IMPACT REDUCTION MEASURES

The monitoring program aims to highlight the effectiveness of the proposed measures to prevent, avoid and reduce impacts and is carried out by completing the following table:

Table G.1 Program for monitoring measures

ANPIC affected	Affected species/habitat	Form of impact	Reduction measure	The period of implementation of the measure	The location of the measure	Monitoring indicators	Measurement units	Frequency of monitoring	Monitoring locations	Duration of monitoring	Degree of measure effectiveness	Estimated budget EUR	Responsible for monitoring
ROSAC 0273 Zona marină de la Capul Tuzla	1170, 8330	Habitat alteration	MS 1	Construction stage	Barge anchor points in ROSAC0273: T1.1, T1.5, T2.1, T2.5, T3.1, T3.5, T8.4	Real-time location of barge anchorage areas with GPS receivers.	m^2 (affected surfaces) Stereo 70 coordinates	Throughout the barge's mooring period	Barge anchor points in ROSAC0273: T1.1, T1.5, T2.1, T2.5, T3.1, T3.5, T8.4	Throughout the barge's mooring period	High	-	Project owner
Outside ANPIC	8330	Losses from the habitat area outside the ANPIC	MS 2, MS 3	Construction stage	Barge mooring point outside ROSAC0273: T6.3	Presence/absence of habitat types and subtypes of high sensitivity community interest (1170-2, 8330)	m^2	Throughout the barge's mooring period	Barge mooring points outside ROSAC0273	Throughout the barge's mooring period	High	**660,000**	Project owner

ANPIC affected	Affected species/habitat	Form of impact	Reduction measure	The period of implementation of the measure	The location of the measure	Monitoring indicators	Measurement units	Frequency of monitoring	Monitoring locations	Duration of monitoring	Degree of measure effectiveness	Estimated budget EUR	Responsible for monitoring
ROSAC 0273 Zona marină de la Capul Tuzla	1110, 1170, 8330	Habitat alteration	MS 4	Construction stage	Gas pipeline trench	Confirmation of the use of turbidity curtains around work areas. Turbidity measurement with a multiparameter probe.	TSS/MTS (mg/dm $^{3)}$	Weekly	8 locations on the likely direction of the sediment plume The points will be established, for each movement, depending on the likely direction of the sediment plume and the area where the works are carried out, at the following distances from the excavation/dredging/covering of the transition trench and construction of the microtunnel activities: 50 m, 500m, 1000m, 2000m.	5 months (which includes the entire period of digging and covering the transition trench as well as one month before the start of work and one month after the completion of work in the pipeline area)	High	**350,000**	Project owner
ROSCI 0311 Canionul Viteaz	*Tursiops truncatus* and other cetacean species	Accidental injury or death	MS 7	Construction stage	Platform Neptun Alpha (offshore)	Number of Affected Individuals (all cetacean species)	Individuals belonging to the 3 species of marine mammals	Monitoring during the installation and fixation of the jacket	500 m around the location	During piles hammering and minimum 2 days after	High	**50,000**	Project owner

ANPIC affected	Affected species/habitat	Form of impact	Reduction measure	The period of implementation of the measure	The location of the measure	Monitoring indicators	Measurement units	Frequency of monitoring	Monitoring locations	Duration of monitoring	Degree of measure effectiveness	Estimated budget EUR	Responsible for monitoring
ROSCI 0311 Canionul Viteaz	*Tursiops truncatus* and other cetacean species	Accidental injury or death	MS 8	Construction stage	Platform Neptun Alpha (offshore)	Number of Affected Individuals (all cetacean species)	Individuals belonging to the 3 species of marine mammals	Permanent monitoring during the installation and fixing of the jacket	3 km around the Neptun Alpha platform	the end of activity	High		Project owner
ROSCI 0311 Canionul Viteaz	*1170, 1180, Tursiops truncatus*	Disruption of species activity Habitat alteration	MS 9	Before starting work and during the construction stage	Platform Neptun Alpha (offshore)	-	-	-	Laboratory tests	Approx. 2 year and 2 months	High	-	Project owner

CHAPTER H) ASSESSMENT OF THE RESIDUAL IMPACT

The evaluation of the residual impact was carried out taking into account the effectiveness of the proposed reduction measures. The evaluation of the significance of the residual impact is carried out, based on the conservation objectives, by completing the table below:

Table H.1 Residual impact assessment

Name ANPIC	Impact	Affected species/habitat	Affected parameter	Prevention, avoidance, reduction measure	The residual impact
ROSAC0273 Zona marină de la Capul Tuzla	Habitat alteration	1110 Shallow submerged sandbars	Habitat area	MS 4	Insignificant
			Characteristic invertebrate species	MS 4	Insignificant
			The ecological status of water based on physico-chemical indicators	MS 5, MS 6	Insignificant
ROSAC0273 Zona marină de la Capul Tuzla	Habitat alteration	1170 Reefs	Habitat area	MS 1, MS 4	Insignificant
			Area of habitat subtypes	MS 1, MS 4	Insignificant
			The ecological status of water based on physico-chemical indicators	MS 5, MS 6	Insignificant
ROSAC0273 Zona marină de la Capul Tuzla	Habitat alteration	8330 Fully or partially submerged caves	The ecological status of water based on physico-chemical indicators	MS 5, MS 6	Insignificant
ROSAC0273 Zona marină de la Capul Tuzla	Disruption of species activity Habitat alteration	*Alosa tanaica*	The ecological status of water based on physico-chemical indicators	MS 5, MS 6	Insignificant
ROSAC0273 Zona marină de la Capul Tuzla	Disruption of species activity Habitat alteration	*Immaculate aloe*	The ecological status of water based on physico-chemical indicators	MS 5, MS 6	Insignificant

Name ANPIC	Impact	Affected species/habitat	Affected parameter	Prevention, avoidance, reduction measure	The residual impact
ROSAC0273 Zona marină de la Capul Tuzla	Disruption of species activity Habitat alteration	*Tursiops truncatus*	Spatial and temporal pattern, intensity of habitat use	It's not necessary	Insignificant
			Size and diversity of prey species	It's not necessary	Insignificant
			The ecological status of water based on physico-chemical indicators	MS 5, MS 6	Insignificant
ROSAC0273 Zona marină de la Capul Tuzla	Disruption of species activity Habitat alteration	*Phocoena phocoena*	Spatial and temporal pattern, intensity of habitat use	It's not necessary	Insignificant
			Size and diversity of prey species	It's not necessary	Insignificant
			The ecological status of water based on physico-chemical indicators	MS 5, MS 6	Insignificant
ROSCI0293 Costinesti - August 23	Habitat alteration	1110 Shallow submerged sandbars	The ecological status of water based on physico-chemical indicators	MS 5, MS 6	Insignificant
ROSCI0293 Costinesti - August 23	Habitat alteration	1170 Reefs	The ecological status of water based on physico-chemical indicators	MS 5, MS 6	Insignificant
ROSCI0293 Costinesti - August 23	Habitat alteration	1140 Sand and mud flats exposed at low tide	The ecological status of water based on physico-chemical indicators	MS 5, MS 6	Insignificant
ROSCI0293 Costinesti - August 23	Habitat alteration	8330 Fully or partially submerged caves	The ecological status of water based on physico-chemical indicators	MS 5, MS 6	Insignificant
ROSCI0293 Costinesti - August 23	Habitat alteration	*Alosa tanaica*	The ecological status of water based on physico-chemical indicators	MS 5, MS 6	Insignificant

Name ANPIC	Impact	Affected species/habitat	Affected parameter	Prevention, avoidance, reduction measure	The residual impact
ROSCI0293 Costinesti - August 23	Habitat alteration	*Immaculate aloe*	The ecological status of water based on physico-chemical indicators	MS 5, MS 6	Insignificant
ROSCI0293 Costinesti - August 23	Habitat alteration	*Tursiops truncatus*	The ecological status of water based on physico-chemical indicators	MS 5, MS 6	Insignificant
ROSCI0293 Costinesti - August 23	Habitat alteration	*Phocoena phocoena*	The ecological status of water based on physico-chemical indicators	MS 5, MS 6	Insignificant
ROSCI0311 Canionul Viteaz	Reduction of population numbers through accidental injury or killing	*Tursiops truncatus*	Population size	MS 7, MS 8	Insignificant
	Disruption of the species to the activity of the species		Distribution pattern	It's not necessary	Insignificant
			Ecological status of water based on ecological indicators	MS 6, MS 9	
ROSCI0311 Canionul Viteaz	Habitat alteration	1170	Ecological status of water based on ecological indicators	MS 6, MS 9	Insignificant
ROSCI0311 Canionul Viteaz	Habitat alteration	1180	Ecological status of water based on ecological indicators	MS 6, MS 9	Insignificant
ROSPA0076 Marea Neagră	Disruption of species activity Habitat alteration	*Chlidonias hybridus, Chlidonias niger, Gavia arctica, Gavia stellata, Gelochelidon nilotica, Larus genei, Larus melanocephalus, Larus minutus, Mergus albellus, Pelecanus crispus, Phalaropus lobatus, Puffinus yelkouan, Sterna albifrons, Stema caspia, Sterna hirundo, Sterna sandvicensis, Anas penelope, Anas*	Qualifying ecological state from the point of view of physico-chemical quality elements	MS 5, MS 6	Insignificant

Name ANPIC	Impact	Affected species/habitat	Affected parameter	Prevention, avoidance, reduction measure	The residual impact
		platyrhynchos, Anas streper,a, Aythya ferina, Aythya fuligula, Bucephala clangula, Fulica atra, Larus cachinnans, Larus canus, Larus fuscus, Larus ridibundus, Limosa limosa, Mergus merganser, Mergus serrator, Phalacrocorax carbo, Podiceps cristatus, Podiceps grisegena, Podiceps nigricollis, Tachybaptus ruficollis.			
ROSPA0076 Marea Neagră	Disruption of species activity	*Gavia arctica, Gavia stellata, Pelecanus crispus*	Distribution pattern	It's not necessary	Insignificant
Outside ANPIC	Losses from the habitat area outside the ANPIC	8330 Fully or partially submerged caves	Habitat area	MS 2, MS 3, MS 4	Insignificant
Outside ANPIC	Losses from the habitat area outside the ANPIC	*Mytilus galloprovincialis* biogenic reefs	Area subtype habitat	MS 4	Insignificant
No mentioned in ROSCI0311 Valiant Canyon	Reduction of population numbers through accidental injury or killing	*Phocoena phocoena*	Population size	MS 7, MS 8	Insignificant

SECTION II. ALTERNATIVE SOLUTIONS

Not required.

Considering the fact that after taking into account the prevention and avoidance measures, an insignificant impact of the analyzed project resulted and consequently in the absence of a significant residual impact, it was not necessary to consider alternative solutions, which would ensure a residual impact insignificant on the habitats and species of community interest, as well as on the integrity of the Natura 2000 sites affected by the implementation of the project.

SECTION III. COMPENSATORY MEASURES

Not required.

SECTION IV. METHODS USED TO COLLECT INFORMATION ON SPECIES AND/OR HABITATS OF COMMUNITY INTEREST AFFECTED

The activities necessary to fulfill the objectives proposed for the collection of field information were carried out in the following stages:

1) The documentation stage during which all available information and data, held by the project owner from previous regulatory procedures regarding the technical characteristics of the project, information on the presence or absence of species and habitats of community interest in the project area, were analyzed. the distribution of species and habitats at the project level and at the ANPIC level, data on the nature and intensity of environmental factors, data on the action of anthropogenic factors - the category of land use in the project area and the type of property. The data and public information available on the official pages of the national and European authorities in the field of environmental protection (MMAP, ANPM, ANANP, EUNIS, EIONET) were also consulted.

2) Planning and preparation stage.

After identifying the information and data necessary to substantiate the impact assessment chapters of the appropriate assessment study, and verifying their availability, the appropriate level of detail for the monitoring program was established and the appropriate methodologies were selected to achieve the objectives. Thus, a planning of actions was carried out for the identification in the field of the target species and the delimitation of the habitats of interest. The study area and the optimal period of field data collection were established, the work protocol was established.

3) The field stage (data collection) is one of the most important stages because the results of the studies and implicitly the achievement of the proposed objectives depend on the nature and correctness of the data collected in the field. During this stage, the data collection was carried out using methods also used during the implementation of other projects and recognized from a scientific point of view, which resulted in sufficient qualitative and quantitative data for the analysis of the impact of the proposed project on the objectives of the protected natural areas.

4) Data processing and analysis stage

This stage aims to extract from the raw data collected on the field all the existing information through statistical and multivariate analysis methods. Depending on the nature of the data, a series of methods specific to ecological studies can be used for data analysis, including population indices and synthetic biocenotics, etc. The role of the analyzes is to identify the main environmental factors that condition the structure, dynamics and functioning of biocenoses, as well as to identify the attributes that define the favorable state for conservation and their values. For example, basic parameters in the study of benthic communities include lists of species, as well as the abundance and biomass of each species. Abundance can be converted to frequency, cover (especially in the case of plant organisms) or density, for comparisons.

5) Synthesis and decision stage

The obtained results will make possible the early identification of some dynamic trends having an important role in the prediction of structural and functional changes, a fact that allows measures to be taken, in due time, for their conservation. The knowledge based on the information obtained during these stages provides the scientific arguments necessary to make decisions regarding the quantification of impacts and the possibility of affecting the conservation status of species and habitats of community interest.

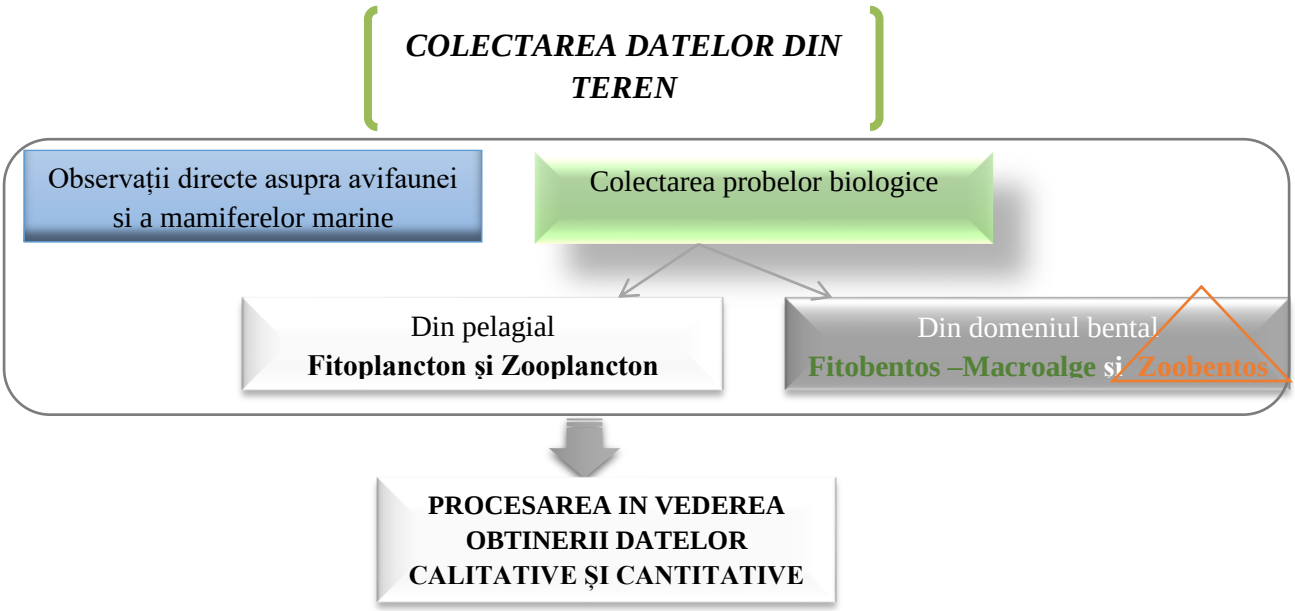


Figure IV.1 The main stages of the field activity (Paraschiv, 2023)

4.1. PHYTOPLANKTON MONITORING

The method of collecting phytoplankton samples and subsequently processing and preserving them, are relatively difficult, due to the very varied characteristics of the organisms that form it, on the one hand in terms of size (starting from below 1 µm) and on the other on the other hand due to their different biochemical composition.

4.1.1. Method of collection

The data obtained from the samples are qualitative and quantitative, as a result, the method of collection also differs.

Qualitative phytoplankton samples are collected using nets phytoplankton, which are of different types that can vary: size (diameter, length), material they are made of, mesh size, etc.

Samples **quantities** of phytoplankton are collected by sampling a precise volume of water from established stations and depths.

Each sample must be accompanied by a sheet in which the sample identification data will be recorded: method of collection, date and time of collection, geographic coordinates, depth from which the sample was collected, weather conditions, sea conditions, water temperature.

4.1.2. Evidence fixation

Depending on the objectives of the study, samples can be analyzed after collection and in this case, for immediate analysis, in the laboratory, samples can be kept alive for 10-12 hours, if kept cool (but not frozen) and in the dark

Most often, however, samples must be fixed immediately after collection in the field to avoid degradation of the algal cells or colonies in the sample, and in this case, a number of solutions can be used for fixation, each with their own advantages and disadvantages (solution Lugol, formaldehyde solution, absolute ethyl alcohol).

The methods and solutions used must be chosen in such a way that the living organisms are killed as quickly as possible, in order to preserve all their characteristics (similar to their appearance and peculiarities in the living state).

4.1.3. Concentration of samples

Since most of the time, the number of algal cells in a volume of water is very small, to facilitate their examination it is recommended to concentrate phytoplankton samples, which can be done by: sedimentation, filtration or centrifugation.

In the case of the present study, the sedimentation method was used.

Concentration by sedimentation - the phytoplankton samples are placed in a flat-bottomed cylindrical vessel and left for two to three days in a place protected from light and at a constant temperature. After this time interval, the algal cells are deposited, so that it is possible to proceed to siphoning the sample, i.e. removing the supernatant with the help of a Pasteur pipette or a glass tube that is continued with a flexible rubber tube. Siphoning starts from the surface of the sample towards the bottom of the bottle and is done carefully and slowly, without moving the bottle with the sample; the operation stops when the liquid level in the sample has reached about 2 cm. above the bottom of the glass vessel Before and after siphoning, accurately measure and record the volume of the sample.

4.1.4. Qualitative analysis

The sample thus prepared is homogenized and a drop is taken from it with the help of a pipette and placed on the slide. A slide is carefully applied, and analyzed under a microscope. Each taxon (genus, species) observed is noted.

OBS. The blades and blades used should be washed and degreased after each use, after which they should be wiped with gauze or a piece of soft cloth.

4.1.5. Quantitative analysis

Calculation of population parameters: average density and average biomass

a) determination of numerical abundance – consists in assessing the number of individuals of each species and reporting them to the volume unit. For this, a counting chamber is used, consisting of a thick blade with a recess on the bottom of which is engraved a grid of straight lines, outlining a series of squares with known areas. Knowing the area and height of the room, the volume of water examined can be accurately determined. Any counting chamber has the type, height of the chamber, the area of the small square and that of the large square inscribed.

It is most frequently used Burker-Turk chamber. It features two checkered fields separated from each other by a ditch. Each field is composed of a grid of squares that add up to a total area of 9 mm 2, which means that it contains 9 squares of 1 mm 2 each, each delimited by triple lines. The central square with the surface of 1 mm 2 is divided by triple lines into 16 large squares with the surface of 1/25 mm 2. Each large square is divided in turn, by simple lines, into 16 small squares, with an area of 1/400mm 2. The four squares with an area of 1 mm 2, located in the corners of the network, are also divided into 16 squares with an area of 1/25 mm 2, separated from each other by double lines. The depth of the counting chamber is 0.1 mm, therefore the volume of liquid at the level of each square is 1/400 x 1/10 = 1/4000 mm 3.

How it works: with the help of a pipette a drop of the sample to be analyzed on the grid of the counting chamber; the slide is covered with a slide, and examined under a microscope, at first with the small objective (10x), and then gradually moving to the large ones (20x, 40x). Walk the slide across the microscope field in a specific order and count all organisms observed. Then a calculation is made according to the formula:

$$\boldsymbol{A = \frac{a \times n}{N \times v}}$$

where:

A – numerical density of phytoplankton expressed as number of cells/l;
a – the number of organisms counted using the counting chamber;
n – volume of water after concentration;
N – the volume of the sample taken, in liters;
phytoplankton organisms were counted, in ml.

b) determination of phytoplankton biomass – i.e. quantitative estimation of the total mass of pelagic microphytes in a certain volume of water. The total biomass can be determined starting from the values of its numerical abundance and taking into account the average cell volume, specific to each component population. It is considered that the overall density of the protoplasm of the algal cell is approximately equal to 1. So, by determining the total volume of each algal population, and on this basis, the total volume of phytoplankton, its biomass can be calculated.

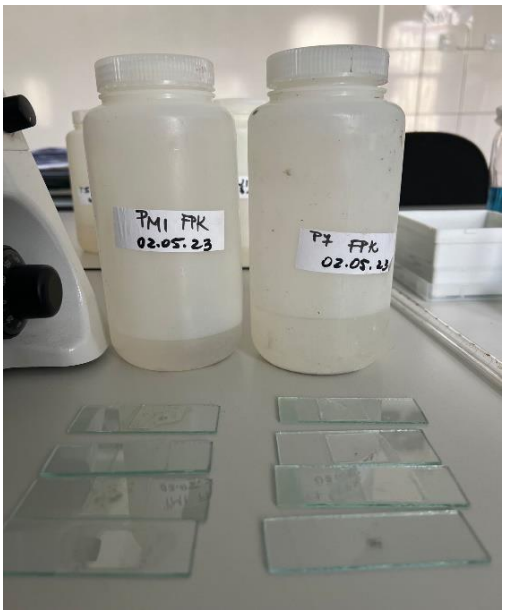
How it works: to determine the cell volume achieved by each population, the average cell volume is determined, and that value is multiplied by the numerical abundance of the respective population. The average cell volume is determined by microscopic measurements on the cells, comparing their shape with various geometric shapes (cylinder, sphere, cone, etc.) or using certain **lists, already drawn up** that include the average weights of the most common phytoplankton algae.
The total cell volume of each species is calculated by multiplying the average cell volume (expressed in µm $^{3)}$ by the numerical abundance value of the respective population (no. of specimens/l).

4.1.6. Equipment and devices used

For collection: planktonic nets of different types, glass or plastic containers of different sizes, field book, writing instrument (pencil, pen) labels, cooler bag;
For fixation and concentration: cylindrical sedimentation vessels, glass vials, Pasteur pipettes, glass tubes, flexible rubber tubes, filter membranes, devices for fixing filter membranes, centrifuge, various substances necessary for fixation.
For the qualitative and quantitative study: slides, slides, gauze, detergent, distilled water, counting chamber, volumetric pipettes, microscope with at least 100x magnification Phytoplankton samples were collected following the procedure presented; concentration by sedimentation was used, preservation was carried out in 20% formaldehyde solution; samples were siphoned in the laboratory and subsequently concentrated to 10 ml.
Estimates and reporting of results, in terms of quantitative analysis, were done per liter (1000ml). For some taxonomic groups, the identification was made down to the species; in other cases, only up to gender (Figure IV.2 a, b, c, d, e, f).

a

b



c

d

e

f

Figure IV.2 Preparation and microscopic identification of species from phytoplankton samples

4.1.7. Qualitative data

The results regarding the qualitative structure of the samples are presented in the following (Table 1). Following the observations made, 18 taxa were identified phytoplanktons distributed on clades as follows: 14 taxa from the Bacillariophyte group (Diatomeae), 3 taxa from the Dinophyte group (Peridineae) and one species from the golden algae group (Chrysophyta).

Following the analysis of the qualitative structure of the phytoplankton in the samples analyzed from the current samplings, the qualitative structure of the phytoplankton community

corresponds to the existing data in the specialized literature, as being typical for the time interval (May, cold season) and for the surface horizon of the sea

Diatoms are dominant in number of species, the largest number of individuals being the centric diatoms: *Rhizosolenia* (present in all samples)*, Chaetoceros, Diyillum;* next to which the feathered diatoms appear: *Diatoma, Navicula, Pinnularia* (present in most samples), *Nitzschia.*

Dinophytes, also an important component of marine phytoplankton, were common in numerous samples: *Ceratium fusus, Ceratium tripos, Peridinium;* in general their biodiversity is greater in warm waters, but they can also be numerous in temperate and cold seas, especially in summer and autumn.

Among the golden algae, only one species was identified *Dictyocha speculum* which is part of the group of marine silicoflagellates, characterized by the presence of an internal siliceous skeleton. They are stenohaline algae, of very small size, entering the category of nanoplankton.

4.2. ZOOPLANKTON MONITORING

Sampling was carried out according to the typical procedures for the collection of zooplankton samples, also exposed on other occasions in previous reports. The samples were taken by the team of the Blumenfield company, from aboard the research vessel with which it went out to sea.

vertical trawl zooplankton net was used, composed of:

- Filter cone, equipped with mesh/sieve and collector container.
    - The net has the following dimensions:
        - The mouth of the opening of the filter cone has Ø = 50 cm; r = 25 cm.
        - The mesh diameter of the filter net is 500 µm.
        - The length of the fillet = 140 cm.
    - Plankton collector CP3-75:
        - opening Ø = 75mm;
        - capacity: 290 ml.

To fill the final sample container of 1 liter, the fillet was immersed 3 times and, by pulling it vertically, the corresponding concentrated filtrate was obtained; 2 kg ballast was used to maintain the vertical position of the fillet (fig. 2 and 3).

The filtered water volume, on a column height of 1.4 m, corresponding to each immersion was 274,750 l; in total, 824.25 L of filtered seawater/per zooplankton sample.

Figure IV.3, Figure IV.4 Aspects of the zooplankton sampling method, by a member of the Blumenfield team (*photo Blumenfield)*

After conditioning, in the field, with formaldehyde solution, the containers (with a volume of 1 liter) with samples were brought to the laboratory, where they were left to settle, according to the procedures.

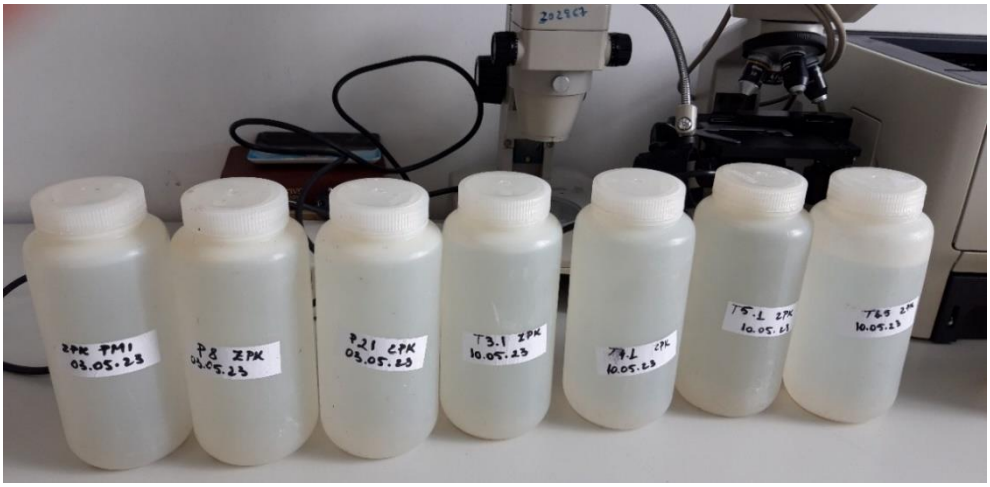


Figure IV.5, Figure IV.6 Containers with sedimented zooplankton samples, to be siphoned

Then, as they were processed, each sample was siphoned, concentrated and analyzed.

The sorting of each of the 10 samples was done with the stereomicroscope (binocular magnifier) and the Nikon microscope – for certain details of the individuals of some species.

The obtained data were entered in triage sheets, calculated and reported per m ^{3} (attached).

For each of the 10 points, densities and biomasses were calculated, reported per cubic meter.

4.3. MONITORING OF ZOOBENTOS AND MARINE HABITATS

4.3.1. The methodology used

The structure of benthic communities is strictly dependent on the nature and characteristics of the substrate; the way in which these sediments are arranged, under the influence of coastal currents, determines the appearance of characteristic biotopes (with specific peculiarities) within the sedimentary habitats; water column depth, transparency, degree of coverage of limestone platforms with macroalgae, select organisms and structure benthic communities. Among the most significant natural environmental variables, which significantly influence the specific composition of benthic associations, we can mention: the location in relation to the depth, the configuration of the submarine relief, the type and nature of the substrate.

Depending on what was presented, for the initial assessment of the state of the environment in the area of interest, the approach to the research topic, the sampling methodology and the devices used for the sampling, processing and analysis of the samples were selected.

In order to capture the complexity of ecological systems, the occupation of sedimentary or calcareous habitats by populations of benthic organisms, a planning of the sample/data collection program according to meteorological conditions is required, and an adaptation of the collection methodology from the perspective of working hypotheses formulated, the tools and equipment used in this regard, and not least of the expected results; such a process can be briefly presented through the following steps:

- defining the purpose and objectives of the study;

- choosing/combining the most appropriate methods to achieve the goal and objectives, as well as identifying alternative options for completing the data series;
- methodology for examination of evidence, processing and obtaining primary data; creation of the database in electronic format;
- valorization of data through statistical study of data and formulation of information through analysis of results.

In order to validate the results, it is necessary to comply with some statistical methodological requirements that refer primarily to the size of the sample unit.

Sample unit means a unit of area/volume taken from the environment by a single actuation of a sampling device, and the notion of sample size will be used to denote the number of sample units that are taken at a given time.

Sample units must:

- to be chosen so that all points of the investigated habitat have an equal chance of being selected (randomized collection);
- to be consistent with the sizes of the individuals of the analyzed populations;
- to take into account the working effort of the samples (oversizing will be avoided);
- to have stability, so that during the sampling it remains of constant value;
- can be easily converted into surface or volume units;
- to be easily delimited in the field

The most important benefit of random sampling is that it provides the possibility to estimate sampling error based on probability theory; the degree of precision depends on the possibility to compare the studied populations, as well as the application of a large number of statistical tests (Gomoiu and Skolka, 2001). Simple random sampling ensures equal chances for all elements of the system to be found in the sample units and is applied when the structure of the biotope is relatively homogeneous, with no obvious heterogeneity between the organisms/populations located at different points of the ecosystem.

4.3.2. Collection of sample samples from marine benthic areas

The samples are represented by samples whose size is conveniently chosen according to a series of criteria and which are analyzed, and based on the results obtained assessments are made regarding the qualitative and quantitative structure of the populations of organisms. For the actual collections, the sample square method (or the core, anyway with known area) is most frequently used at equal distances along a transect (Gomoiu and Skolka, 2001). In the present case, the sample was obtained several methods that complemented each other and different devices that allowed the study of zoocenoses associated with each type of substrate and different faunal groups (macro- and meiobenthal, epi- and infauna sedimentophiles, Table 4-1)

Table 4-1 Applied zoobenthos sample/data collection methods and devices (Paraschiv, 2023)

No. crt.	Qualitative evidence		Quantitative samples (from the known surface)		Remarks
	Collection method	equipment	Collection method	equipment	
1	Dredging without measuring the length of the dredged transect *	Drag (Fig. 2.b)	On the transect measured and depth in constant sediment*	Dear	*For macro- and meiobenthos in the shallow area
2.	Sampling directly by diving/self-contained diver**	Direct collection devices: scraper, collection bag	Sampling directly by diving/self-contained diver**	Direct collection devices: frame delimiting the "sample square", scraper, collection cup	Especially for the zoobenthos samples associated with the hard substrate (macro- and meio)
3.	/	/	Sediment sample capture	Bodengreifer or known surface corer Van Veen (Fig. 2.c, 6, 7)	For samples on sedimentary substrate (macro- and meio)
4.	Benthic macrofauna inventory	Camera (Fig.3)	/	/	In particular, molluscs and crustaceans among the invertebrates, fish among the vertebrates
5.	Scanning the benthic substrate in an area of interest	ROV (Fig. 4)	Benthic substrate scanning from an area of interest/ surface transect /known length	ROV	Especially for macro-epizoofauna

For the quantitative determinations of the zoobenthos (macro-, meio -) the reporting is done per surface unit (m $^{2)}$; in the case of in-fauna (faunistic segment that carries out its life cycle in the sediment column, it is related to the volume of sediment (generally macrobenthal annelids, some molluscs and crustaceans).

In taking sediment samples, it is sufficient to obtain a sample as small as possible, but with the sediment structure undisturbed; and in the case of taking a larger benthos biological sample, it will also be necessary to obtain an "undamaged" sample.

a b c

Figure IV.7 7. Boat for sailing to the sample collection points; b. Dredge, c. Van Veen (Source: Blumenfield 2023)

Figure IV.8 Remotely operated underwater vehicle - ROV Falcon Survey (Source: Blumenfield 2023)

Investigations on marine habitats were also carried out using ROVs (Remote Operated vehicle). ROVs have been widely introduced as an alternative to traditional methods involving the use of professional divers. ROVs provide clear, high-fidelity images often used to map habitat distribution. The advantage of using ROVs in conducting an underwater visual census is to eliminate the elements of risk associated with scientific diving with the use of divers.

ROV equipment, equipped with photo-video cameras, have the advantage of being able to operate in locations that could be dangerous for divers and can remain underwater for a long time, unlike divers whose autonomy and range is strictly conditioned by oxygen reserves from the bottle. Underwater video footage can be used to signal the presence of key species and provide valuable habitat information.

4.4. MONITORING OF BIRD SPECIES IN THE PROJECT AREA

4.4.1. Methods of monitoring bird species of community interest

The location of the proposed project intersects with the Natura 2000 site ROSPA0076 Marea Neagră, designated for the protection of 37 aquatic species.

In the two bird monitoring programs carried out in 2018-2019 and May-June 2023, three methods were used to fulfil the objectives of the study: the transect method to obtain data on the species using the terrestrial area of the project, the fixed point method, in particular for migratory species and the transect method with the use of boats applied to bird species in passage at the site level ROSPA0076 Marea Neagră.

4.4.2. The method of transects

The method was used for resident species, nesting species and those that winter in the project area, mainly in the periods of December - February and May - July (2018-2019).

This method contains the most widely used field survey techniques for determining the composition, diversity and density of avifauna in an area of interest. In this method, the observer/expert ornithologist walked transects through the project land area and recorded each bird or group of birds. The sum of the transects was called the monitoring route. The average length of the transects was about 6.5 km/day of monitoring, while the entire monitoring route was about 32 km. Transects along the project area and along the shoreline were mostly travelled (with slight variations depending on weather conditions/soil moisture), while routes around the project land area site were travelled/ traversed depending on the season and the specific conditions at the time of each survey (for example, weather conditions and activities carried out on neighbouring lands). Field observations were mainly conducted during the day (between 7:00 - 9:00 in the morning and 5:00 - 7:00 in the evening, depending on the season). In June and July 2019, field surveys were extended to also cover nocturnal birds, until around 23:00 on one day and on several days until around 21:00. Occasional sightings of nocturnal bird species were also recorded during night-time research activities for bats and amphibians.

Monitoring was done both visually and aurally, and the observer collected the following information using an application dedicated to field observations: the name of the species, the number of individuals observed, the direction and height of the flight, the distance and direction from the location of the observer, and the activity of the bird at the time of observation. Also, where possible, information was collected on individuals' age and gender, or any other information deemed relevant by the observer.

The fixed point method has wide applicability to bird species, and its use allows observations of a large number of species. This method has been applied mainly to migratory birds, but also to birds of prey. Given the schedule of field activities of the project, the fixed point method was applied for autumn migration (until 5 November) and spring migration (15 February to 5 April), as well as for raptor species during summer and winter. This method was also applied in the case of the monitoring carried out in 2023, through which the completion of the data obtained in the previous monitoring program was sought.

4.4.3. Fixed point method

Fixed points from which observations were made according to the methodology were selected at a maximum distance of 2 km from each other. Given the dimensions of the project area and its predominantly linear shape, three monitoring locations were used as shown in the table below, equally distributed to cover the entire project area and surroundings. In general, fixed point

observations were conducted for three hours at each location between 9:00 AM and 6:00 PM. Sightings were entered into field records and the location where birds were first observed was marked on a map. Special care was taken to avoid double counting of individuals.

Table IV.2 Monitoring points used in the method of fixed observation points (Vantage points):

No.	Favourable point of observation	GPS coordinates	
		North	East
1	VP-east	43.9733	28.6550
2	VP-centre	43.9776	28.6339
3	VP-west	43.9808	28.6221

Field equipment included: binoculars, spotting scopes, stopwatches, maps and details of each observation point, GPS, field sheets and personal protective equipment.

In 2023, only one fixed point (VP-east) was used in the period (March 2023 - June 2023), but the observations were made especially towards the Black Sea ROSPA0076, and mostly targeted the species in the spring migration from the area of the Romanian coast, and to a lesser extent the sedentary species, potentially nesting on the site.

4.4.4. Method of transects using boats

The main techniques for inventorying birds from boats, presuppose the performance of linear transects (within the perimeter of the Natura 2000 site ROSPA0076 Marea Neagră), in which data will be obtained regarding the numbers of identified species, their behaviour and distribution within the studied areas.

Monitoring involves making direct observations, with the help of optical devices (binoculars) with noting the data obtained in the field sheets, and to confirm the identification of the species observed, their photographs are also taken.

Generally, the count is taken from the bow and side of the vessel at an angle of 90 degrees. In some cases an angle of 180 degrees is used, which corresponds to the entire field of vision from the bow of the boat.

4.5. MARINE MAMMALS

4.5.1. The method of linear transects

The method (Buckland, 1993; 2001) involves recording aquatic mammals along predetermined transects using a motor boat as an observation platform, including the species, distance and angle to each animal or group detected, as well as group size. The boat/vessel will move at a constant speed of 6-10 knots/h.

On board the boat the experts/observers will monitor the sea surface at an angle of 180° in the direction of travel of the boat. For the observations collected by the observer/ s, a member of the monitoring team will write down the information sent by the observers in the observation sheets.

Monitoring at sea is an activity carried out from boats/vessels to detect the presence of dolphins in their natural habitat, both in the coastal area, in the case of *Tursiops truncatus* and *Phocoena phocoena,* as well as offshore when it comes to *Delphinus delphis.*

Observations from a boat/vessel are best suited for individual or group study of dolphins. With the help of the boat, the dolphins can be observed, followed and finally brought into close proximity and in a favourable position to take quality photos for further analysis.

During the observations, an attempt will be made to choose a position as favourable as possible for the boat, after which it will be expected that the dolphins will appear on the surface of the water. During the observations, dolphin counts will be repeated to see if changes in group size and composition have occurred during this time. Observations will also be made on all groups of dolphins encountered in the surveyed sectors, in order to accurately determine the arrivals and departures of individuals in these groups.

The size and composition of a group of dolphins can change during observation, so a group of dolphins should be considered a dynamic group.

6 trips were made in the study area (on May 2, 3, 10, 11 and 8, 22 June 2023), including sectors of the gas pipeline that is proposed for placement in the Costinești-Tuzla area to the exploitation area of the Neptun Deep perimeter. Protected natural areas such as ROSAC0273 Zona marină de la Capul Tuzla, ROSCI0197 Plaja submersă Eforie Nord-Eforie Sud, ROSCI0293 Costinești - 23 August (at a distance of 1.5 km), and ROSPA0076 Marea Neagră were crossed. Simultaneously with the ornithological observations, marine mammal observations were carried out on the boat.

Figure IV.9 Tursiops truncatus ponticus in ROSCI0273

Fixed-point monitoring of marine cetaceans

This type of monitoring involves regular activities along the coast on foot or with means of locomotion (car, scooter, bicycle, etc.) and is subdivided, depending on the object of observations, into:

- Dolphin monitoring in the immediate vicinity of the shore;
- Monitoring stranded dolphins.

In the analysed project, only the monitoring of dolphins in the immediate vicinity of the shore was applied.

An advantage for studying dolphins on shore is provided by coastal protective structures (e.g. seawalls). Dolphins often approach these areas in search of food, which in these places is represented by benthic fish (gobiidae), or by pelagic fish, which sometimes form groups in the immediate vicinity of the shore.

A big advantage of shore monitoring is that the dolphins are undisturbed. In general, shore surveys are not expensive and can be carried out when a camera with a long telephoto lens is available. Only occasionally can a few dolphins be spotted with very obvious markings from such high points. In principle, it has been shown that the best photos are taken from a height of up to 15 m above sea level and from a maximum distance of 500 m (approximately the maximum distance from which quality images can be taken with a telephoto lens).

The steps of the photo-identification method in the case of monitoring dolphins observed in the immediate vicinity of the shore are the same as in the case of aquatic monitoring.

The amount of information obtained from research on shore is less than that obtained from a boat at sea, because in the first case we are dealing with a static surveillance, which depends on the movement of dolphins to the optimal points for making observations.

Table IV.3 Information on the specialists involved in the development of the appropriate assessment study

Names of organizations/institutions/specialists	Other PPs for which the EA study was developed*	EA study development period	The type of expertise	Experience description
SC BLUMENFIELD SRL	DRILLING AND EQUIPMENT OF THE ALBOTESTI 2200 EXPLORATION WELL	2022	Certified expert – EA studies – main level	Legal entity with professional activity in the field of environmental consultancy and development of environmental studies since 2009. 2010 – Certification as a drafter of environmental studies registered in the National Register of drafters of studies for environmental protection, for the following types of studies: RM, RIM, EA, BM, RA. 2022- Environmental Expert certification, principal level, registration in the "Register of certified experts for the development of environmental studies" (https://regexp.ro), based on the provisions of MMAP Order no. 1134/2020. Blumenfield Science – scientific division of Blumenfield, Research Center for Environmental Protection, has laboratories for physical-chemical, microbiological analyzes and marine and terrestrial biology determinations. Environmental studies carried out as a developer, in the field of **<u>the oil and gas industry:</u>** • 10 MB offshore field studies for projects in the oil and gas industry • 6 terrestrial MB field studies for projects in the oil and gas industry • 4 RIM offshore oil and gas extraction industry • 1 RIM onshore natural gas distribution industry • 1 EA oil and gas extraction industry
	UPDATE OF PUG OF THE CITY OF TECHIRGHIOL AND LOCAL PLANNING REGULATION REGARDING IT, CITY OF TECHIRGHIOL, CONSTANTA COUNTY	2021	Certified expert – EA studies – main level	
Ecologist CUGUT ARTUR	"COASTAL EROSION REDUCTION PHASE II (2014 - 2020)"	2016-2018	Specialized staff Biodiversity key expert	Uninterrupted professional activity in the field of environmental consulting since 2010. 2018 - registered in the "National Register of drafters of studies for environmental protection" for the following types of environmental studies: RM, RIM, EA. 2022 - registered in the "Register of certified experts for the development of environmental studies" (https://regexp.ro), based on the provisions of MMAP Order no. 1134/2020.
	"REHABILITATION OF THE SPR SIVITA, SPE STOICANI AND SPE DRACULESTI DRYING STATIONS FROM THE BRATSEL DE SUS DRYING FACILITY"	2020-2023	Certified expert - EA studies - main level	

Names of organizations/institutions/specialists	Other PPs for which the EA study was developed*	EA study development period	The type of expertise	Experience description
				2014-2015 Expert Ornithologist - within the project *"Elaboration of the management plan for the Natura 2000 site ROSPA0076 Marea Neagră"* during November. Expert biodiversity of terrestrial ecosystems in the project *"Coastal erosion reduction - phase II (2014 - 2020)"* - pre-construction stage, Project co-financed by the Cohesion Fund - POIM 2014-2020. Certified expert in environmental studies and Fauna Expert in the project: *"REHABILITATION OF THE SPR SIVIȚA, SPE STOICANI AND SPE DRĂCULEȚI DRYING STATIONS FROM THE BRATEȚUL DE SUS DRYING LAYOUT"* Environmental studies carried out in collaboration or as a developer: • 33 Environmental Reports (RM) • 34 Appropriate Assessment (EA) Studies • 57 Environmental Impact Reports (ERM).
Dr. Biologist JIANU LORELEY-DANA	"COASTAL EROSION REDUCTION PHASE II (2014 - 2020)"	2016-2018	Specialized staff Biodiversity key expert	Key expert Coastal habitats and characteristic flora in the project *"Coastal erosion reduction - phase II (2014 - 2020)"* - pre-construction stage, Project co-financed by the Cohesion Fund - POIM 2014-2020. Participant in the capacity of Expert evaluator of environmental studies and Expert Habitats and Flora in the project *"REHABILITATION OF THE SPR SIVIȚA, SPE STOICANI AND SPE DRĂCULEȚI DRYING STATIONS FROM THE BRATEȚUL DE SUS DRYING LAYOUT".* Elaborator of environmental studies - cnf certificate. Ord. 1134/2020, registered in the "Register of certified experts for the preparation of environmental studies" (www.regexp.ro). Experience in analyzing, preparing or participating as a collaborator in the preparation of Environmental Studies: • RM- 7 studies, • RIM- 26 studies • EA- 18 studies
	"REHABILITATION OF THE SPR SIVITA, SPE STOICANI AND SPE DRACULESTI DRYING STATIONS FROM THE BRATSEL DE SUS DRYING FACILITY"	2020-2023	Certified expert - EA studies - main level	

Names of organizations/institutions/specialists	Other PPs for which the EA study was developed*	EA study development period	The type of expertise	Experience description
Univ. Prof. skilled dr. MARIUS M.FAGARAț	"ADEQUATE ASSESSMENT STUDY FOR THE PUZ PORT CONSTANțA-MIDIA AREA PROJECT"	2023-ongoing	Environmental expert	Doctoral supervisor at the Doctoral School of Applied Sciences, Biology field, CSUD Ovidius Constanța University (qualification certificate obtained by OM no. 5134/28.09.2017); doctorate office contact: doctorat@univ-ovidius.ro; goal. 0241511512; ARACIS evaluator, field of Biology (through HC ARACIS no. 54/ 27.07.2017 (http://pfe.aracis.ro/inscriere/registru/lista_c_d/1/5/); Member of the Ethics Commission of Ovidius Constanța University, appointed by HS no. 533/22 June 2017; Member of the Scientific Council of the Publishing House "Ovidius University Press" Constanța, appointed by HS no. 719/11 July 2016; Member of the Scientific Council of the ISD (Institute of Doctoral Studies) within the Ovidius Constanța University (from March 2022); Member of the Academic Audit Commission of Ovidius Constanța University (from 2022); 21.12.2021: Attestation certificate - main level, RGX series no. 102/21.12.2021, for the development of environmental studies in the fields of EA, MB, RIM-3, RIM-11C, RM-1 attestation (Report on the impact on the environment-RIM, Environmental Report-RM, Adequate assessment-EA, Biodiversity monitoring-MB), valid until 21.12.2024; 2012-2021: Drafter of studies for environmental protection (EA, RIM, RM) certified by the Ministry of the Environment, registered in the National Register of drafters of studies for environmental protection at position 464; 20.05-25.05.2019 : Erasmus+ teaching internship at the University of Pisa, Italy, Faculty of Agricultural, Food and Environmental Sciences;
	``ADEQUACY ASSESSMENT STUDY "NEPTUN DEEP"	2023	Habitats, flora and terrestrial vegetation	
	``ADEQUATE ASSESSMENT STUDY FOR THE UPDATE OF THE DEVELOPMENT PLAN OF THE TULCEA COUNTY TERRITORY'', CARRIED OUT IN COLLABORATION WITH F&R WORLDWIDE SRL AND WITH THE UNIVERSITY OF ARCHITECTURE AND URBANISM "ION MINCU" BUCHAREST	2022-2023	Environmental expert	
	``ADEQUATE ASSESSMENT STUDY - GIURGENI PROJECT (IALOMIțA DISTRICT)``	2022	Environmental expert	
	"ADEQUATE ASSESSMENT STUDY OF THE POTENTIAL EFFECTS ON THE NATURAL AREAS OF COMMUNITY INTEREST WITHIN THE FRAMEWORK OF THE NICULIțEL FORESTRY, TULCEA FORESTRY DIRECTORATE, TULCEA COUNTY"	2022	Environmental expert	
	"ADEQUATE ASSESSMENT STUDY OF THE POTENTIAL EFFECTS ON THE NATURAL AREAS OF COMMUNITY INTEREST WITHIN THE CERNA FORESTRY ENVIRONMENT, TULCEA	2022	Environmental expert	

Names of organizations/institutions/specialists	Other PPs for which the EA study was developed*	EA study development period	The type of expertise	Experience description
	FORESTRY DIRECTORATE, TULCEA COUNTY"			
	"ADEQUATE ASSESSMENT STUDY OF THE POTENTIAL EFFECTS ON THE NATURAL AREAS OF COMMUNITY INTEREST WITHIN THE FRAMEWORK OF THE TULCEA FOREST ENVIRONMENT, TULCEA FORESTRY DIRECTORATE, TULCEA COUNTY"	2020	Environmental expert	
	"ADEQUATE ASSESSMENT STUDY OF THE POTENTIAL EFFECTS ON THE NATURAL AREAS OF COMMUNITY INTEREST WITHIN THE FRAMEWORK OF THE RUSCA FOREST ENVIRONMENT, TULCEA FORESTRY DIRECTORATE, TULCEA COUNTY"	2020	Environmental expert	
	"ADEQUATE ASSESSMENT STUDY OF THE POTENTIAL EFFECTS ON THE NATURAL AREAS OF COMMUNITY INTEREST WITHIN THE FRAMEWORK OF THE STEJARU FOREST ENVIRONMENT (CASIMCEA), TULCEA FORESTRY DIRECTORATE, TULCEA COUNTY"	2019	Environmental expert	
	Adequate evaluation study "Establishment of natural gas distribution in the city of Techirghiol"	2018	Environmental expert	22.05-25.05.2017 : Erasmus+ teaching internship at the University of Sassari, Italy, Faculty of Natural Sciences and Environmental Resources; 09.05-13.05.2016 : Erasmus+ teaching internship at the University of Pisa, Italy, Faculty of Agricultural, Food and Environmental Sciences; 04.05-08.05.2015 : Erasmus+ teaching internship at the University of Vigo, Spain, Faculty of Biology;
	"Adequate Assessment Study of the potential effects on the natural areas of community interest within the	2017-2018	Environmental expert	

Names of organizations/institutions/specialists	Other PPs for which the EA study was developed*	EA study development period	The type of expertise	Experience description
	Ciucurova Forestry Circle, Tulcea Forestry Directorate, Tulcea County"			22.06-24.06.2015: Participation in the Summer School organized by the Cosmomar Competence Center Applications of satellite remote sensing in the field of the marine and coastal environment, organized by the COSMOMAR/INCDM center Grigore Antipa Constanța (with obtaining a certificate); President of the CEAC Commission of the Faculty of Natural Sciences and Agricultural Sciences (2012-2016); 2007-2012: 15 collaborations as a habitats, flora and vegetation expert with SC Medexpert SRL Constanța, for the realization of EA, RIM and RM; 2007-2012: 23 collaborations as a habitats, flora and vegetation expert with SC Biosys Group SRL Constanța, for the realization of SEA and RIM 15.06.-16.06.2007: Training courses (in Bucharest) within the seminar of national experts on species and habitats regarding the Implementation of the Natura 2000 network in Romania; training experts - Dr. Paul Goriup (IUCN) and Dr. Dan Gafta (Babeș-Bolyai University in Cluj Napoca). 03.06-23.06.2000: University of Bucharest: refresher course on the subject of the European Concept of Botanical Garden (module I) carried out within the TEMPUS-PHARE IB-JEP 14030/1999 European Policies and Plant Conservation project (with the attestation certificate issued by the University of Bucharest); 27.09-04.10.2000: Field application at the Conservatoire Botanique National Mediterraneen, Porquerolles, France and at the University and Botanical Garden of Montpellier, within the TEMPUS-PHARE IB-JEP 14030/1999 project
	"Adequate Assessment Study of the potential effects on the natural areas of community interest within the Babadag Forestry Circle, Tulcea Forestry Directorate, Tulcea County"	2017-2018	Environmental expert	
	Realization of Adequate Evaluation Study within the project "LEA 400 kV dc Cernavoda-Stalpu and connection in Gura Ialomitei station"	2013	Environmental expert	
Dr. Biologist STANCIU CĂTĂLIN-RĂZVAN	EA PERIMETER HOCOR – PERIMETER ADJUD SUD, HUNTOIL, JUD. VN, GL, BR	August 2019 – March 2020	Ornithologist	Ornithological research using specific methodologies – monitoring bird migration from a fixed point, monitoring water birds, monitoring common nesting birds
	NEPTUN DEEP EIA PROJECT	August 2018 – April 2019	Ornithologist	Ornithological research using specific methodologies – monitoring bird migration from a fixed point, monitoring water birds, monitoring common nesting birds

Names of organizations/institutions/specialists	Other PPs for which the EA study was developed*	EA study development period	The type of expertise	Experience description
	EA HOCOR PERIMETER – URZICENI VIII EAST PERIMETER, HUNTOIL, JUD. Braila	October 2018 – June 2019	Ornithologist	Ornithological research using specific methodologies – monitoring bird migration from a fixed point, monitoring water birds, monitoring common nesting birds
	IT MODERNIZATION OF FISH FARM LOC. M. KOGĂLNICEANU, JUD. CONSTANT	July 2014 – September 2014	Ornithologist	Ornithological research using specific methodologies – monitoring bird migration from a fixed point, monitoring water birds, monitoring common nesting birds
	SHE FARM FOR BREEDING LOCAL BROILER CHICKEN. CORBU, JUD. CONSTANT	March 2014 – February 2015	Ornithologist	Ornithological research using specific methodologies – monitoring bird migration from a fixed point, monitoring water birds, monitoring common nesting birds
	IT FOR WIND ENERGY DEVELOPMENT PROJECTS IN THE AREAS OF SACELE, ISTRIA, COGEALAC, BAIA, CASIMCEA, JUD. CT AND TL	March 2010 – December 2012	Biologist	Ornithological research using specific methodologies – bird migration monitoring from a fixed point, waterfowl monitoring, common nesting bird monitoring and various faunal research (invertebrates, amphibians and reptiles, mammals).
Dr. Biologist MĂNTOIU DRAGOȘ ȘTEFAN	INTEGRATED ENVIRONMENTAL PROGRAM (BIODIVERSITY MONITORING, STRATEGIC ENVIRONMENTAL ASSESSMENT, ENVIRONMENTAL IMPACT ASSESSMENT, ADEQUATE ASSESSMENT, AIR QUALITY MEASUREMENTS ETC) FOR A WIND FARM IN CONSTANȚA COUNTY - PNE WIND ROMANIA -	November 2011 – November 2012	Biodiversity specialist - GIS	Identification of chiroptera activity in the field, description of animal activity, development of part of the biodiversity from the EA study and creation of GIS databases
	INTEGRATED ENVIRONMENTAL PROGRAM (BIODIVERSITY MONITORING, STRATEGIC ENVIRONMENTAL ASSESSMENT, ENVIRONMENTAL IMPACT ASSESSMENT, ADEQUATE ASSESSMENT, AIR QUALITY	October 2012 – October 2013	Biodiversity specialist - GIS	Identification of chiroptera activity in the field, description of animal activity, development of part of the biodiversity from the EA study and creation of GIS databases

Names of organizations/institutions/specialists	Other PPs for which the EA study was developed*	EA study development period	The type of expertise	Experience description
	MEASUREMENTS ETC) FOR A WIND FARM IN CONSTANȚA COUNTY - PNE WIND ROMANIA -			
	ADEQUATE ASSESSMENT STUDY FOR THE "2D SEISMIC SURVEYING PROJECT, EX-19 ADAMCLISI PERIMETER, CONSTANTA COUNTY, AECOM DESIGN BUILD SRL - FINAL BENEFICIARY CHEVRON	August 2013 – December 2013	GIS and database expert	Creation of databases for biodiversity and part of EA analysis
	ADEQUATE EVALUATION OF THE GENERAL TRANSPORT MASTER PLAN OF ROMANIA, AECOM BUILD DESIGN SRL	February 2014 – June 2014	GIS and database expert	Creation of databases for biodiversity and part of EA analysis
	DEVELOPMENT OF SPECIALTY STUDIES FOR THE PROJECT "REVIEW / UPDATE OF FEASIBILITY STUDY FOR THE SIBIU - PITEȘTI HIGHWAY": REPORT ON THE IMPACT ON THE ENVIRONMENT, ADEQUATE ASSESSMENT STUDY, ENVIRONMENTAL MANAGEMENT PLAN, OTHER SPECIALTY STUDIES, CNAIR - TEHNIC ENGINEERING SRL	September 2015 – August 2017 / November 2017 – April 2018	GIS Expert and Database Expert	Creation of databases for biodiversity and part of EA analysis
	INTEGRATED ENVIRONMENTAL PROGRAM (BIODIVERSITY MONITORING, STRATEGIC ENVIRONMENTAL ASSESSMENT, ENVIRONMENTAL IMPACT ASSESSMENT, ADEQUATE ASSESSMENT, AIR QUALITY	November 2011 – November 2012	Biodiversity specialist - GIS	Identification of chiroptera activity in the field, description of animal activity, development of part of the biodiversity from the EA study and creation of GIS databases

Names of organizations/institutions/specialists	Other PPs for which the EA study was developed*	EA study development period	The type of expertise	Experience description
	MEASUREMENTS ETC) FOR A WIND FARM IN CONSTANȚA COUNTY - PNE WIND ROMANIA			
	ADEQUATE ASSESSMENT STUDY FOR 6 WIND PARKS WITHIN TULCEA COUNTY	August 2023 – present	Chiroptere Expert - GIS Expert and Database Expert	Identification of chiroptera activity in the field, description of animal activity, development of part of the biodiversity from the EA study and creation of GIS databases
University lecturer Dr. PARASCHIV GABRIELA-MIHAELA Aquatic biology-ecology expert (benthos) "Ovidius" University of Constanța Faculty of Natural Sciences and Agricultural Sciences	Uninterrupted professional research activity since 1997			1997-200 Expert in the analysis, evaluation and monitoring of aquatic ecological systems through zoobenthos within the Marine Biology and Ecology Laboratory of INCD Marine Geology-Geoecology 2000-present, in research projects carried out within the "Ovidius" University of Constanța, as a zoobenthic expert, environmental management (protected areas, resources)
	RELOCATION OF SEDIMENTAL DEPOSIT (SAND) BOSKALIS 1 PERIMETER, BLACK SEA	2020-2021	Expert in the assessment of protected biodiversity	Analysis and assessment of animal communities from the point of view of the state of conservation in the Boskalis 1 perimeter; identification of populations of protected species and the habitat occupied by them
	THE COMPLEX VALUATION OF BIORESOURCES IN THE BLACK SEA AREA THROUGH THE DEVELOPMENT AND APPLICATION OF SOME INNOVATIVE AND EMERGING BIOTECHNOLOGIES;	2018-2022	Expert in the assessment of marine bioresources and their exploitation potential	Analysis of benthic flora and fauna from the perspective of identifying the bio-pharmaceutical potential of marine bioresources; evaluation of exploitation potential without generating significant environmental aspects (potential impact through overexploitation) 4 annual reports
	IMPLEMENTATION OF A COMPLEX GIS SYSTEM FOR ECOSYSTEM MANAGEMENT, THROUGH INTEGRATED MONITORING AND ASSESSMENT OF THE STATE OF BIOCENOSES AND THEIR EVOLUTION	2012-2016	Expert assessment of biodiversity zoobental communities	Zoobenthic expert: identification of benthic communities, analysis and assessment of habitats, their conservation status, identification of potential sources of anthropogenic risk 8 annual reports

Names of organizations/institutions/specialists	Other PPs for which the EA study was developed*	EA study development period	The type of expertise	Experience description
	TRENDS IN THE ENVIRONMENT SUBJECT TO RAPID CHANGE IN THE ROMANIAN COASTAL AREA OF THE BLACK SEA (ACRONYM ECOMAGIS))			Zoobenthic expert: identification of benthic communities, analysis and assessment of habitats, their conservation status, identification of potential sources of anthropogenic risk
	MANAGEMENT OF NATURAL PROTECTED AREAS IN THE BLACK SEA REGION (INTERTRAILS)" - FUNDED BY THE EUROPEAN UNION THROUGH THE JOINT OPERATIONAL PROGRAM "BLACK SEA BASIN 2007 - 2013"	2011-2013		
	COMPLETING THE INVENTORY AND MAPPING OF THE SPECIES OF INVERTEBRATES, AMPHIBIANS - REPTILES, BIRDS AND MAMMALS" FROM THE LUNCA MUREȘULUI NATURAL PARK	2011-2013		
	THE DEVELOPMENT OF BIOLOGICAL INDICATORS OF ENVIRONMENTAL STRESS AND SUSTAINABLE DEVELOPMENT IN LAKE SIUTGHIOL"	2009-2010	Expert benthic fauna - invertebrates; potential bioindicators of the functional state of the benthos	Expert in studies on the use of animal fauna as bioindicators of stress induced by anthropogenic impact; 5 reports
	INOE-2000, LIDAR APPLICATIONS FOR THE REMOTE DIAGNOSIS OF ACCIDENTAL OIL POLLUTION FROM THE BLACK SEA COAST	2005-2008		Zoobenthic expert: identification of benthic communities, analysis and assessment of habitats, their conservation status, identification of potential sources of anthropogenic risk 14 reports: 10 intermediate (sectoral approach to issues depending on the objectives of the intermediate phases) 4 final reports, with an integrative approach to analysis methods and forecasting the evolution of zoobental ecological systems
	THE CERES PROJECT CALLS FOR THE INTEGRATED GEOLOGICAL AND GEO-ECOLOGICAL INVESTIGATION OF THE SF AREA. GHEORGHE (BRANCH OF THE DANUBE)-FORD OF THE ROMANIAN COAST"	2004-2006		

Names of organizations/institutions/specialists	Other PPs for which the EA study was developed*	EA study development period	The type of expertise	Experience description
University lecturer Dr. PARASCHIV GABRIELA-MIHAELA INCD GeoEcoMar, Bucharest-Constanța	GEF PROJECT EU.: BLACK SEA BENTHOS ASSESSMENT AND RESTORATION/REHABILITATION PROJECT - NORTH-WEST COAST	2005-2006	Expert assessment of biodiversity zoobental communities	
University lecturer, dr. SAVA DACIANA Biology-Aquatic Ecology expert (phytoplancon, phytobenthos), "Ovidius" University of Constanța Faculty of Natural Sciences and Agricultural Sciences	2000-present, project manager or member in various national or international research projects as phytoplankton, phytobenthos, flora, biodiversity expert, biologist/ecologist expert.			
	CONTRIBUTIONS TO THE FOUNDATION OF THE BIODIVERSITY STRATEGY IN THE ROMANIAN SECTOR OF THE BLACK SEA (PROJECT DIRECTOR DR. N. BODEANU)	2003	Phytobenthos expert	Determination of the qualitative structure of the algal macroflora and its changes in recent years. Contributions to the development of strategic directions for the conservation of biodiversity.
	DEVELOPMENT OF THE INTEGRATED MONITORING SYSTEM OF PARAMARINE LAKES TAȘAUL, SIUTGHIOL, TECHIRGHIOL, SPRIJIN IN ECOLOGICAL REHABILITATION AND SUSTAINABLE MANAGEMENT OF THE COASTAL AREA (CONTRACT DIRECTOR: DR. LAURA ALEXANDROV)	2004	Biodiversity expert	Collaboration in Stage II "Designing the integrated monitoring system of paramarine lakes".
	ASSESSMENT OF THE MACROPHYTE COMMUNITIES IN THE STONEY INFRALITTORAL, OF THE ASSOCIATED FLORA AND FAUNA AND POSSIBILITIES OF CONSERVATION OF SOME KEY SPECIES FROM THE ROMANIAN BLACK SEA COAST	2005	Phytobenthos expert	Responsible for the phase : "Research activity in the field of biodiversity conservation of macrophyte communities -Phaeophyta, Rhodophyta, Chlorophyta - from the stony infralittoral"

Names of organizations/institutions/specialists	Other PPs for which the EA study was developed*	EA study development period	The type of expertise	Experience description
	ASSESSMENT OF MACROPHYTE COMMUNITIES FROM THE ROMANIAN COAST AND POSSIBILITIES OF VALUATION OF MACROALGAE DEPOSITS ON THE BEACHES. (PROJECT DIRECTOR DR. ALEXANDRU BOLOGA),	2008-2011	Phytobenthos expert	Phytobenthic expert for carrying out an extensive monitoring of macrophyte algal vegetation from the Romanian Black Sea coast and an evaluation of the state of macrophytes from the respective period as well as their spatial and temporal distribution, in the context of changes in environmental and climatic conditions and the intensification of anthropogenic influences
	IMPLEMENTATION OF A COMPLEX GIS SYSTEM FOR ECOSYSTEM MANAGEMENT, THROUGH INTEGRATED MONITORING AND ASSESSMENT OF THE STATE OF BIOCENOSES AND THEIR EVOLUTION TRENDS IN THE RAPIDLY CHANGING ENVIRONMENT OF THE ROMANIAN COASTAL AREA OF THE BLACK SEA (ACRONYM ECOMAGIS)	2012-2016	Expert evaluation of the biodiversity of phytobenthos communities	Phytobenthic expert: identification of phytobenthic communities, analysis and assessment of habitats, their conservation status, identification of potential sources of anthropogenic risk Phase/stage reports and final report
	PROJECT/CONTRACT " MONITORING THE STATUS OF CONSERVATION OF MARINE SPECIES AND COASTAL AND MARINE HABITATS OF COMMUNITY INTEREST IN ROMANIA, WITHIN THE PROJECT "MONITORING THE STATUS OF CONSERVATION OF SPECIES AND HABITATS IN ROMANIA UNDER ARTICLE 17 OF THE HABITAT DIRECTIVE"	2011	Biodiversity/phytobenthos expert	Phytobenthic expert: identification of phytobenthic communities, analysis and evaluation of habitats, their status from the point of view of conservation status Phase/stage reports and final report
	DEVELOPMENT SERVICES RELATED TO THE WET HABITAT OF COMMUNITY INTEREST 3270 -	2018-2019	Biodiversity expert wetland habitats	Biodiversity studies of wet habitats, necessary for the realization of the project "Biodiversity conservation management planning in protected natural areas ROSPA0012 Brațul Borcea, together with ROSCI0319 Mlastina

Names of organizations/institutions/specialists	Other PPs for which the EA study was developed*	EA study development period	The type of expertise	Experience description
	RIVERS WITH MUDDY MARSHES WITH CHENOPODION RUBRI AND BIDENTION VEGETATION, FROM THE NATURE SITE 2000ROSCI0278 BORDUȚANI - BORCEA (WITHOUT THE PART THAT OVERLAPS WITH ROSPA0017 HĀRSOVA CANALS) AND THE NATURE RESERVE IV. 34. HATIȘ CANTON FOREST,			de la Fetești, IV.34. Hâtisi Canton Forest ROSCI0278 Bordușani - Borcea (without the part that overlaps with ROSPA0017 Canaralele de la Hârșova)". Phase/stage reports and final report
	COMPLETING THE LEVEL OF KNOWLEDGE OF BIODIVERSITY THROUGH THE IMPLEMENTATION OF THE MONITORING SYSTEM OF THE CONSERVATION STATUS OF SPECIES AND HABITATS OF COMMUNITY INTEREST IN ROMANIA AND REPORTING UNDER ARTICLE 17 OF THE HABITAT DIRECTIVE	2019	Expert monitoring of plant species	Monitoring of plant species in habitats of community interest in Romania Phase/stage reports and final report
Head of works dr. SAMARGIU MANUELA	THE CONTRACT HAS THE PURPOSE OF "THE GRANT OF SERVICES FOR THE PERFORMANCE OF A TEMPORARY RELOCATION EXPERIMENT OF DONACILLA CORNEA AND DONAX TRUNCULUS BIVALVES, IN THE EFORIE AREA (EFORIE NORD AND EFORIE SUD)"	02.05.2022 – June 2022	Specialist consultant.	Participation in field studies and in carrying out the experiment collecting/relocating the bivalves under study; making stage reports; participation in the realization of the evaluation studies and the creation of the final report
	BIODIVERSITY AND WATER QUALITY MONITORING SERVICES FOR THE " COASTAL EROSION REDUCTION - PHASE II (2014-2020)" PROJECT IN	August, 2020 – June, 2021	Marine biodiversity specialist consultant	Participation in field studies, observations of coastal marine ecosystems; making stage reports; participation in making the final report.

Names of organizations/institutions/specialists	Other PPs for which the EA study was developed*	EA study development period	The type of expertise	Experience description
	THE PRE-CONSTRUCTION STAGE. (CONTRACT DURATION AUGUST, 2020 – JUNE, 2021,			
	COPYRIGHT ASSIGNMENT AGREEMENT, NO. 02/03/01/2019, BETWEEN SC BLUMENFIELD SRL AND MANUELA-DIANA	03. 01. 2019 (with a duration of 12 months)	Zooplankton expert	SAMARGIU and The object of this contract is the preparation by the author-assignor of the work on the Zooplankton Section within the Biodiversity Chapter of the Environmental Impact Assessment Study regarding the Execution of natural gas exploration drilling in the exclusive economic zone of the Black Sea, Block EX-30 Trident, LUKOIL project holder;
	"BIODIVERSITY CONSERVATION MANAGEMENT PLANNING IN NATURAL PROTECTED AREAS ROSPA0012 BORCEA ARM, TOGETHER WITH ROSCI0319 FETEȘTI SWAMP, IV.34. THE FOREST OF HATIȘ AND ROSCI CANTON 0278 BORDUȚANI -BORCEA (WITHOUT THE PART THAT OVERLAPS WITH ROSPA0017 HĀRȚOVA CANALS)".	05.06.2018 SERVICES CONTRACT no. 89 of 06/05/2018	Aquatic habitats expert.	Participation in field trips, monitoring, sampling Analysis of samples and interpretation of results Creation of intermediate/stage and final reports
	ENVIRONMENTAL MONITORING, OTHER THAN FOR BUILDINGS. BENEFICIARIES: SC INTEGRA TRADING SRL AND THE BUCHAREST BIOLOGY INSTITUTE – ROMANIAN ACADEMY (IBB);	2012 – 2015	Expert - benthic fauna, epifauna, invasive species	Participating in field trips to monitor benthic fauna; analysis of the samples taken Making interim reports Participation in the creation of the final report Co-author of the Monitoring Guide
	COMPLETING THE INVENTORY AND MAPPING OF THE SPECIES OF INVERTEBRATES, AMPHIBIANS - REPTILES, BIRDS AND MAMMALS" FROM THE LUNCA MUREȘULUI NATURAL PARK (PNLM), AGREED	10. 08.2011 - 30.06.2013	Scientific researcher - member of the team of experts.	Analysis and study of benthic and planktonic invertebrates

Names of organizations/institutions/specialists	Other PPs for which the EA study was developed*	EA study development period	The type of expertise	Experience description
	BETWEEN THE UNIV. OVIDIUS FROM CONSTANTA AND RNP ROMSILVA ADMINISTRATION OF LUNCA MURESULUI NATURAL PARK.			
	"ASSESSMENT OF THE MACROPHYTE COMMUNITIES FROM THE ROMANIAN COASTAL AND OF THE POSSIBILITIES OF VALUATION OF THE MACROALGAE DEPOSITS ON THE BEACHES"	01.10.2008 – 2012	researcher, specialist	The study of the algal communities and the invertebrate fauna associated with the hard substrate, in order to evaluate the biodiversity of these types of ecosystems. The identification of some possibilities of valorization of the discarded and stored algae on the shore
	"ASSESSMENT OF THE IMPACT OF PETROLEUM POLLUTANTS AND THE NATURAL DEGRADATION OF HYDROCARBONS ON AQUATIC ECOSYSTEMS - IDEA",	01.10.2008 – 30.09.2011	researcher, specialist	The study of benthic and pelagic fauna from different aquatic ecosystems. Elaboration of strategies for monitoring and reducing the impact of petroleum hydrocarbon spills on aquatic ecosystems.
	"STUDY OF THE AQUATIC ECOSYSTEMS FORMED AMONG THE STERILE DUMPS IN THE COUNTY. HUNEDOARA, PETROSANI AREA AND ASSESSMENT OF THE IMPACT OF THESE LANDFILLS ON THE SURROUNDING ECOSYSTEMS"	Apple. 2007 – Oct. 2008	Member - fauna research, aquatic ecology	evaluations of the physico-chemical characteristics of water, quantitative and qualitative analysis of the fauna, assessment of biodiversity elements preparation of final report
	PARTICIPATION IN THE REALIZATION OF THE TECHNICAL ASSISTANCE PROJECT, PHARE 2004 "EX-ANTE EVALUATION OF ROMANIA" - (STRATEGIC ENVIRONMENTAL EVALUATION) FOR SECTORAL OPERATIONAL PROGRAMS -	Septum. 2006 – Nov. 2006	Environmental expert	Participation in the analysis and drafting of interim reports and the final report of the project.

Names of organizations/institutions/specialists	Other PPs for which the EA study was developed*	EA study development period	The type of expertise	Experience description
	TRANSPORT, ENVIRONMENT, ECONOMIC COMPETITIVENESS			
	"MONITORING THE STRUCTURAL CHARACTERISTICS OF THE BIOCENOSES FROM THE VADU ADVANCED TREATMENT SYSTEM AND ESTABLISHING THE METHODS OF RECONDITIONING IT FOR EFFICIENT FUNCTIONING"	Apple. 2003 – Oct. 2005	Project Manager from the Univ. "Ovidius", Cta.	Analysis of some physical and chemical parameters of waste water, as well as water from the different basins of the treatment system, in order to compare their quality Analysis of the pelagic and benthic fauna from the advanced biological purification system from Vadu; evaluation of the impact of the different spilled compounds on the benthic, pelagic and fish populations of the studied basins Identification of the methodology and the appropriate technical means for the reconditioning process of the system - mainly in the reed pool. Participation in the creation of the final report.
	BIODIVERSITY ASSESSMENT FOR VAMA VECHE – 2 MAI MARINE RESERVE", PROJECT FUNDED BY, ROYAL NETHERLANDS EMBASSY THROUGH KNIP FUND PROGRAM	August – December 2003	Research member - marine biodiversity	Pelagic and benthic fauna analysis Participation in the creation of the final report
Dr. Biologist LITTLE SWEETHEART	WITHIN THE EUROPEAN PROJECT BG16M1OP002 - 3.005 - 0001 "NATURA 2000 IN THE BLACK SEA - RESEARCH AND MAPPING OF THE DISTRIBUTION OF TYPES OF NATURAL HABITATS, HABITATS OF SPECIES AND THEIR POPULATIONS, AND DETERMINATION OF THEIR CONSERVATION STATUS IN THE MARINE AREAS OF THE REPUBLIC OF BULGARIA“, DG ENVIRONMENT PREPARATORY ACTION – ENVIRONMENTAL MONITORING OF	2022-present	Environmental management, Biodiversity conservation, Marine research	Project leader

Names of organizations/institutions/specialists	Other PPs for which the EA study was developed*	EA study development period	The type of expertise	Experience description
	THE BLACK SEA BASIN & A COMMON EUROPEAN FRAMEWORK PROGRAM FOR DEVELOPMENT OF THE BLACK SEA REGION			
	"Protection and rehabilitation of the Romanian Costing area of the Black Sea (2014-2020)" from the Operational Program for Large Infrastructure (POIM), Priority Axis 5- Promoting the adaptation to climatic changes, prevention and management of environment	2018-2022	Environmental management, Biodiversity conservation	Coordination of environmental protection activities, prevention and management of environmental risks
	EUROPEAN PROJECT "ESTABLISHMENT OF A EUROPEAN IUCN RED LIST OF HABITATS" (ENV. B.3 / SER / 2013 / 0025)	2015-2017	Environmental management, Conservation of marine biodiversity, Research marine	Leader of the "Black Sea Working Group of National Experts"
	EUROPEAN PROJECT FP7-OCEAN-2011-4 COCONET "TOWARDS COAST TO COAST NETWORKS OF MARINE PROTECTED AREAS (FROM THE SHORE TO THE HIGH AND DEEP SEA), COUPLED WITH SEA-BASED WIND ENERGY POTENTIAL"	2012-2016	Environmental management, Conservation of marine biodiversity, Research marine	Coordinator of the INCDM partner
	EUROPEAN PROJECT FP7-OCEAN-2011-4 COCONET "TOWARDS COAST TO COAST NETWORKS OF MARINE PROTECTED AREAS (FROM THE	2012-2016	Environmental management, Conservation of marine	Leader of the work package WP10 “Black Sea Pilot Project”

Names of organizations/institutions/specialists	Other PPs for which the EA study was developed*	EA study development period	The type of expertise	Experience description
	SHORE TO THE HIGH AND DEEP SEA), COUPLED WITH SEA-BASED WIND ENERGY POTENTIAL"		biodiversity, Research	
	WITHIN THE PROJECT FP7-OCEAN-2011-3 PERSEUS "POLICY-ORIENTED MARINE ENVIRONMENTAL RESEARCH IN THE SOUTHERN EUROPEAN SEAS"	2011-2015	Environmental Management, Marine Biodiversity Conservation, Marine Research	Section coordinator 2.3.2
	EUROPEAN MISIS PROJECT "MSFD GUIDING IMPROVEMENTS IN THE BLACK SEA INTEGRATED MONITORING SYSTEM", DG ENVIRONMENT PREPARATORY ACTION – ENVIRONMENTAL MONITORING OF THE BLACK SEA BASIN & A COMMON EUROPEAN FRAMEWORK PROGRAM FOR DEVELOPMENT OF THE BLACK SEA REGION	2011-2015	Environmental management, Conservation of marine biodiversity, Research marine	Habitat section coordinator
	THE PROJECT "ANALYSIS OF THE SUFFICIENCE OF DESIGNATION OF SCI SITES IN THE BLACK SEA MARINE BIOGEOGRAPHIC REGION AND ENSURING SCIENTIFIC EXPERTISE AND DECISIONAL SUPPORT FOR THE DELEGATION OF THE MINISTRY OF THE ENVIRONMENT IN THE NEGOTIATIONS WITH THE EUROPEAN	2010	Environmental Management, Marine Biodiversity Conservation, Marine Research	Project Leader, Government Expert for Marine Habitats

Names of organizations/institutions/specialists	Other PPs for which the EA study was developed*	EA study development period	The type of expertise	Experience description
	COMMISSION" AT THE MARINE BIOGEOGRAPHIC SEMINAR IN BRINDISI.			

* Representative projects

SECTION V. CONCLUSIONS ADEQUATE ASSESSMENT

Given the fact that in the process of assessing the impact on species and habitats within the ANPIC, no components of the PP were identified that would generate significant impacts, the following table will include the species and habitats negatively affected insignificantly.

Table V.1 Conclusions of appropriate assessment

Description of PP components	ANPIC affected	Affected species/habitats	Conservation objectives/affected parameters	Types of impact, including cumulative	Mitigation measures	Residual impact	The alternative solution	Imperative reasons of major public interest	Compensatory measures	Other aspects
Anchoring the barge Digging trench for gas pipeline	ROSAC0273 Zona marină de la Capul Tuzla	1110 Shallow submerged sandbars	Habitat area	Short-term direct and indirect impact. Insignificant	MS 4	Insignificant	It's not necessary	It's not necessary	It's not necessary	It's not necessary
Digging trench for gas pipeline			Characteristic invertebrate species	Short-term indirect impact Insignificant	MS 4	Insignificant	It's not necessary	It's not necessary	It's not necessary	It's not necessary
Digging trench for gas pipeline			The ecological status of water based on physico-chemical indicators	Short-term indirect impact Insignificant	MS 5, MS 6	Insignificant	It's not necessary	It's not necessary	It's not necessary	It's not necessary
Anchoring the barge Digging trench for gas pipeline	ROSAC0273 Zona marină de la Capul Tuzla	1170 Reefs	Habitat area	Short-term direct and indirect impact. Insignificant	MS 1, MS 4	Insignificant	It's not necessary	It's not necessary	It's not necessary	The habitat is also present outside the ANPIC

Description of PP components	ANPIC affected	Affected species/habitats	Conservation objectives/affected parameters	Types of impact, including cumulative	Mitigation measures	Residual impact	The alternative solution	Imperative reasons of major public interest	Compensatory measures	Other aspects
Anchoring the barge Digging trench for gas pipeline			Area of habitat subtypes	Short-term direct and indirect impact. Insignificant	MS 1, MS 4	Insignificant	It's not necessary	It's not necessary	It's not necessary	It's not necessary
Digging trench for gas pipeline			The ecological status of water based on physico-chemical indicators	Short-term indirect impact Insignificant	MS 5, MS 6	Insignificant	It's not necessary	It's not necessary	It's not necessary	It's not necessary
Digging trench for gas pipeline	ROSAC0273 Zona marină de la Capul Tuzla	8330 Fully or partially submerged caves	The ecological status of water based on physico-chemical indicators	Short-term indirect impact Insignificant	MS 5, MS 6	Insignificant	It's not necessary	It's not necessary	It's not necessary	The habitat is also present outside the ANPIC
Digging trench for gas pipeline	ROSAC0273 Zona marină de la Capul Tuzla	*Alosa tanica*	The ecological status of water based on physico-chemical indicators	Short-term indirect and secondary impact Insignificant	MS 5, MS 6	Insignificant	It's not necessary	It's not necessary	It's not necessary	It's not necessary
Digging/dredging trench for gas pipeline	ROSAC0273 Zona marină de la Capul Tuzla	*Alosa immaculate*	The ecological status of water based on physico-chemical indicators	Short-term indirect and secondary impact Insignificant	MS 5, MS 6	Insignificant	It's not necessary	It's not necessary	It's not necessary	It's not necessary
Vessel operation	ROSAC0273 Zona	*Tursiops truncatus*	Spatial and temporal pattern,	Short-term direct impact	It's not necessary	Insignificant	It's not necessary	It's not necessary	It's not necessary	It's not necessary

Description of PP components	ANPIC affected	Affected species/habitats	Conservation objectives/affected parameters	Types of impact, including cumulative	Mitigation measures	Residual impact	The alternative solution	Imperative reasons of major public interest	Compensatory measures	Other aspects
	marină de la Capul Tuzla		intensity of habitat use	Insignificant						
Digging/dredging trench for gas pipeline			Size and diversity of prey species	Short-term secondary impact Insignificant	It's not necessary	Insignificant	It's not necessary	It's not necessary	It's not necessary	It's not necessary
Digging/dredging trench for gas pipeline			The ecological status of water based on physico-chemical indicators	Short-term indirect and secondary impact Insignificant	MS 5, MS 6	Insignificant	It's not necessary	It's not necessary	It's not necessary	It's not necessary
Vessel operation	ROSAC0273 Zona marină de la Capul Tuzla	*Phocoena phocoena*	Spatial and temporal pattern, intensity of habitat use	Short-term direct impact Insignificant	It's not necessary	Insignificant	It's not necessary	It's not necessary	It's not necessary	It's not necessary
Digging/dredging trench for gas pipeline			Size and diversity of prey species	Short-term secondary impact Insignificant	It's not necessary	Insignificant	It's not necessary	It's not necessary	It's not necessary	It's not necessary
Digging/dredging trench for gas pipeline			The ecological status of water based on physico-chemical indicators	Short-term indirect and secondary impact Insignificant	MS 5, MS 6	Insignificant	It's not necessary	It's not necessary	It's not necessary	It's not necessary

Description of PP components	ANPIC affected	Affected species/habitats	Conservation objectives/affected parameters	Types of impact, including cumulative	Mitigation measures	Residual impact	The alternative solution	Imperative reasons of major public interest	Compensatory measures	Other aspects
Digging/dredging trench for gas pipeline	ROSCI0293 Costinești - August 23	1110 Shallow submerged sandbars	The ecological status of water based on physico-chemical indicators	Short-term indirect and cumulative impact Insignificant	MS 5, MS 6	Insignificant	It's not necessary	It's not necessary	It's not necessary	It's not necessary
Digging/dredging trench for gas pipeline	ROSCI0293 Costinești - August 23	1170 Reefs	The ecological status of water based on physico-chemical indicators	Short-term indirect and cumulative impact Insignificant	MS 5, MS 6	Insignificant	It's not necessary	It's not necessary	It's not necessary	It's not necessary
Digging/dredging trench for gas pipeline	ROSCI0293 Costinești - August 23	1140 Sand and mud flats exposed at low tide	The ecological status of water based on physico-chemical indicators	Short-term indirect and cumulative impact Insignificant	MS 5, MS 6	Insignificant	It's not necessary	It's not necessary	It's not necessary	It's not necessary
Digging/dredging trench for gas pipeline	ROSCI0293 Costinești - August 23	8330 Fully or partially submerged caves	The ecological status of water based on physico-chemical indicators	Short-term indirect and cumulative impact Insignificant	MS 5, MS 6	Insignificant	It's not necessary	It's not necessary	It's not necessary	It's not necessary
Digging/dredging trench for gas pipeline	ROSCI0293 Costinești - August 23	*Alosa tanica*	The ecological status of water based on physico-chemical indicators	Short-term indirect and cumulative impact	MS 5, MS 6	Insignificant	It's not necessary	It's not necessary	It's not necessary	It's not necessary

Description of PP components	ANPIC affected	Affected species/habitats	Conservation objectives/affected parameters	Types of impact, including cumulative	Mitigation measures	Residual impact	The alternative solution	Imperative reasons of major public interest	Compensatory measures	Other aspects
				Insignificant						
Digging/dredging trench for gas pipeline	ROSCI0293 Costinești - August 23	*Alosa immaculate*	The ecological status of water based on physico-chemical indicators	Short-term indirect and cumulative impact Insignificant	MS 5, MS 6	Insignificant	It's not necessary	It's not necessary	It's not necessary	It's not necessary
Digging/dredging trench for gas pipeline	ROSCI0293 Costinești - August 23	*Tursiops truncatus*	The ecological status of water based on physico-chemical indicators	Short-term indirect and cumulative impact Insignificant	MS 5, MS 6	Insignificant	It's not necessary	It's not necessary	It's not necessary	It's not necessary
Digging/dredging trench for gas pipeline	ROSCI0293 Costinești - August 23	*Phocoena phocoena*	The ecological status of water based on physico-chemical indicators	Short-term indirect and cumulative impact Insignificant	MS 5, MS 6	Insignificant	It's not necessary	It's not necessary	It's not necessary	It's not necessary
Neptun Alpha platform installation	ROSCI0311 Canionul Viteaz	*Tursiops truncatus*	Population size	Short-term direct impact Insignificant	MS 7, MS 8	Insignificant	It's not necessary	It's not necessary	It's not necessary	It's not necessary
Neptun Alpha platform installation Vessel operation			Distribution pattern	Short-term direct impact Insignificant	It's not necessary	Insignificant	It's not necessary	It's not necessary	It's not necessary	It's not necessary

Description of PP components	ANPIC affected	Affected species/habitats	Conservation objectives/affected parameters	Types of impact, including cumulative	Mitigation measures	Residual impact	The alternative solution	Imperative reasons of major public interest	Compensatory measures	Other aspects
Process water from the Neptun Alpha platform			Ecological status of water based on ecological indicators	Long-term indirect and secondary impact Insignificant	MS 6, MS 9	Insignificant	It's not necessary	It's not necessary	It's not necessary	It's not necessary
Process water from the Neptun Alpha platform	ROSCI0311 Canionul Viteaz	1170	Ecological status of water based on ecological indicators	Long-term indirect impact Insignificant	MS 6, MS 9	Insignificant	It's not necessary	It's not necessary	It's not necessary	It's not necessary
Process water from the Neptun Alpha platform		1180	Ecological status of water based on ecological indicators	Long-term indirect impact Insignificant	MS 6, MS 9	Insignificant	It's not necessary	It's not necessary	It's not necessary	It's not necessary
Digging/dredging trench for gas pipeline	ROSPA0076 Marea Neagră	*Chlidonias hybridus, , Chlidonias niger, Gavia arctica, Gavia stellata, , Gelochelidon nilotica, Larus genei, , Larus melanocephalus, , Larus minutus, , Mergus albellus,, Pelecanus crispus, Phalaropus lobatus, Puffinus yelkouan, Sterna albifrons, Stema caspia, Sterna hirundo, Sterna sandvicensis, Anas*	Qualifying ecological state from the point of view of physico-chemical quality elements	Short-term indirect and secondary impact Insignificant	MS 5, MS 6	Insignificant	It's not necessary	It's not necessary	It's not necessary	It's not necessary

Description of PP components	ANPIC affected	Affected species/habitats	Conservation objectives/affected parameters	Types of impact, including cumulative	Mitigation measures	Residual impact	The alternative solution	Imperative reasons of major public interest	Compensatory measures	Other aspects
		penelope,, Anas platyrhynchos,, Anas strepera,, Aythya ferina,, Aythya fuligula,, Bucephala clangula,, Fulica atra, , Larus cachinnans,, Larus canus,, Larus fuscus,, Larus ridibundus,, Limosa limosa, , Mergus merganser, , Mergus serrator,, Phalacrocorax carbo, , Podiceps cristatus,, Podiceps grisegena,, Podiceps nigricollis, , Tachybaptus ruficollis.								
Vessel operation	ROSPA0076 Marea Neagră	*Gavia arctica, , Gavia stellata, , Pelecanus crispus*	Distribution pattern	Short-term direct impact Insignificant	MS 5, MS 6	Insignificant	It's not necessary	It's not necessary	It's not necessary	It's not necessary

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Legislation:

- Comunicarea Comisiei- Orientări tehnice referitoare la imunizarea infrastructurii la schimbările climatice în perioada 2021-2027,(2021/C 373/01);
- Decizia (UE) 2017/848 de stabilire a unor criterii și standarde metodologice privind starea ecologică bună a apelor marine și a specificațiilor și metodelor standardizate de monitorizare și evaluare, precum și de abrogare a Deciziei 2010/477/UE;

- Directiva 2009/147/CE A PARLAMENTULUI EUROPEAN ȘI A CONSILIULUI din 30 noiembrie 2009 privind conservarea păsărilor sălbatice (Directiva Păsări);
- Directiva 92/43/CEE A CONSILIULUI din 21 mai 1992 privind conservarea habitatelor naturale și a speciilor de faună și floră sălbatică (Directiva Habitate);
- Rezoluția Parlamentului European din 13 septembrie 2011 referitoare la confruntarea cu provocarea reprezentată de siguranța activităților petroliere și gaziere offshore (2011/2072(INI));
- Directiva 2008/56/CE a Parlamentului European și a Consiliului din 17 iunie 2008 de instituire a unui cadru de acțiune comunitară în domeniul politicii privind mediul marin (Directiva-cadru Strategia pentru mediul marin);
- Legea nr. 292/2018, privind evaluarea impactului anumitor proiecte publice si private asupra mediului;
- Legea nr.104/15.06.2011 (M.O. nr. 452/28.06.2011), privind calitatea aerului înconjurător;
- Legea nr. 279 din 26 noiembrie 2018 pentru modificarea anexei nr. 3 la Ordonanţa de urgenţă a Guvernului nr. 71/2010 privind stabilirea strategiei pentru mediul marin;
- LEGE nr.22 din 2001 pentru ratificarea Convenţiei privind evaluarea impactului asupra mediului în context transfrontieră, adoptată la Espoo la 25 februarie 1991
- Hotărâre de guvern nr. 1061/01.09.2008 (M.O.672/30.09.2008), privind transportul deșeurilor periculoase și nepericuloase pe teritoriul României;
- Hotărâre de guvern nr. 188/28.02.2002 (M.O. 187/20.03.2002) privind aprobarea unor norme privind condiţiile de descărcare în mediul acvatic a apelor uzate, cu modificările ulterioare;
- Hotărâre de guvern nr. 351/21.04.2005 (MO 428/20.05.2005), privind aprobarea Programului de eliminare treptată a evacuărilor, emisiilor si pierderilor de substanţe prioritar periculoase, cu modificările ulterioare;
- Hotărâre de guvern nr. 685 din 25 mai 2022 privind instituirea regimului de arie naturală protejată şi declararea ariilor speciale de conservare ca parte integrantă a reţelei ecologice europene Natura 2000 în România;
- Hotărâre de guvern nr. 856/16.08.2002 (M.O. nr. 659/05.09.2002) privind evidența gestiunii deșeurilor şi pentru aprobarea listei cuprinzând deşeurile, inclusiv deşeurile periculoase;
- Ordonanţă de Urgenţă a Guvernului nr. 71 din 2010 privind stabilirea strategiei pentru mediul marin;
- Ordonanţă de Urgenţă a Guvernului nr. 92 din 2021 privind regimul deșeurilor;
- Ordonanţă de Urgenţă a Guvernului nr. 57/2007 privind regimul ariilor naturale protejate, conservarea habitatelor naturale, a florei si faunei sălbatice, aprobata cu modificări și completări prin Legea nr. 49/2011 (2011);

- Ordinul nr. 119 din 2014 pentru aprobarea Normelor de igienă și sănătate publică privind mediul de viață al populației;
- Ordinul M.A.P.P.M. 462/1993 (M.O. nr. 190/10.08.1993), pentru aprobarea Condiţiilor tehnice privind protecţia atmosferică si Normelor metodologice privind determinarea emisiilor de poluanţi atmosferici produși de surse staţionare, cu modificările ulterioare;
- Ordinul M.A.P.P.M. nr. 756/03.11.1997 (M.O. nr. 303 bis/06.11.1997), pentru aprobarea Reglementării privind evaluarea poluării mediului, cu modificările ulterioare;
- Ordinul nr. 269/2020 privind aprobarea ghidului general aplicabil etapelor procedurii de evaluare a impactului asupra mediului, a ghidului pentru evaluarea impactului asupra mediului în context transfrontieră și a altor ghiduri specifice pentru diferite domenii și categorii de proiecte;
- Ordinul M.M.A.P. nr. 2.015/2022 privind aprobarea Listei roșii naționale a speciilor de păsări din România, folosind criteriile IUCN, în cadrul Proiectului „Completarea nivelului de cunoaștere a biodiversității prin implementarea sistemului de monitorizare a stării de conservare a speciilor de păsări de interes comunitar din România și raportarea în baza articolului 12 al Directivei Păsări 2009/147/CE”, finanțat prin Programul operațional Infrastructura mare 2014—2020;
- Ordinul M.M.A.P. nr. 1.679/2023 pentru aprobarea Ghidului metodologic specific privind evaluarea adecvată a efectelor potențiale ale planurilor/proiectelor din domeniile de interes;
- Ordinul M.M.A.P. nr. 1.682/2023 pentru aprobarea Ghidului metodologic privind evaluarea adecvată a efectelor potențiale ale planurilor sau proiectelor asupra ariilor naturale protejate de interes comunitar;
- Ordinul M.M.A.P. nr. 1.433/2016 privind aprobarea Planului de management și a Regulamentului sitului Natura 2000 ROSCI0273 Zona marină de la Capul Tuzla. Anexele nr. 1 și 2.;
- Ordinul M.M.A.P. nr. 1.197/2016 privind aprobarea Planului de management și a Regulamentului sitului Natura 2000 ROSPA0076 Marea Neagră. Anexele nr. 1 și 2.;
- SR 10009:2017 – Acustica în construcţii. Acustica urbană. – Limitele admisibile asupra nivelului de zgomot;