

ANNEX

Following the discussions at the National Environmental Protection Agency in Bucharest on 08.25.2014 to clarify some aspects regarding the Appropriate Assessment Study of the above-mentioned project (in Feasibility Study "Development of Arges and Dambovita Rivers for navigation and other uses"), on maintaining and protecting the *Natura 2000 site ROSPA 0038 Danube - Oltenita* we send you the following:

- for impounding the canal, intervention works on the natural ground/ implementation costs were intended to be minimum and its operating expenses low and therefore a canal pound with an environmental impact as low as possible;
- the Arges River arrangement as navigation channel has a protective role in case of floods, by safety transit of high floods to the Danube, avoiding the populated areas. This imposed proper elevations for the maximum level corresponding to the adequate flow of 0.1%. It is also guaranteed the normal level of retention for safe navigation on the channel;
- it was proposed from the beginning the location of NH1 – Oltenita outside the meander that naturally formed in the area, the ground level being lower than the ground around; The location of the hydro node at Oltenita makes the water level for navigation and floods transit upstream to be higher as compared to the actual water level . This requires for the meander to be impounded upstream with a dam;
- for safe functioning of the hydro node downstream on the right bank, a dam shall be constructed, from the material from the excavation works during the execution of the navigable channel, with the crest level + 20,17 mMN. Its length shall be about 250 m as the length of the waiting port, the water surface being untouched;
- downstream, for maintaining the wetland in the Natura 2000 site, the dam on the right bank shall have a breach of about 215 m along the dam with the water surface area of about 95 m. This breach will allow the Danube, to communicate with the natural meander by means of the Danube-Bucharest Canal over time (Annex 1 –NH1 - Oltenita Layout);
- for long-term maintenance of the breach pier heads they will be reinforced with natural materials.

Conclusion

1. To maintain the biodiversity in the meander area (wet area) the direct connection with the Danube shall be maintained downstream, by the created breach in the channel dam so that the water in this area shall be in contact with the variable levels of the Danube (Figure1 – Site Plan Hydro Node 1).
2. The Danube levels vary between 10.0 and 17.0 m which means a level variation of 7.0 m and that seasonally the wetland will be supplied by the high water of the Danube (Figure 2 – Variation of the Danube level from 1990 to 2014).

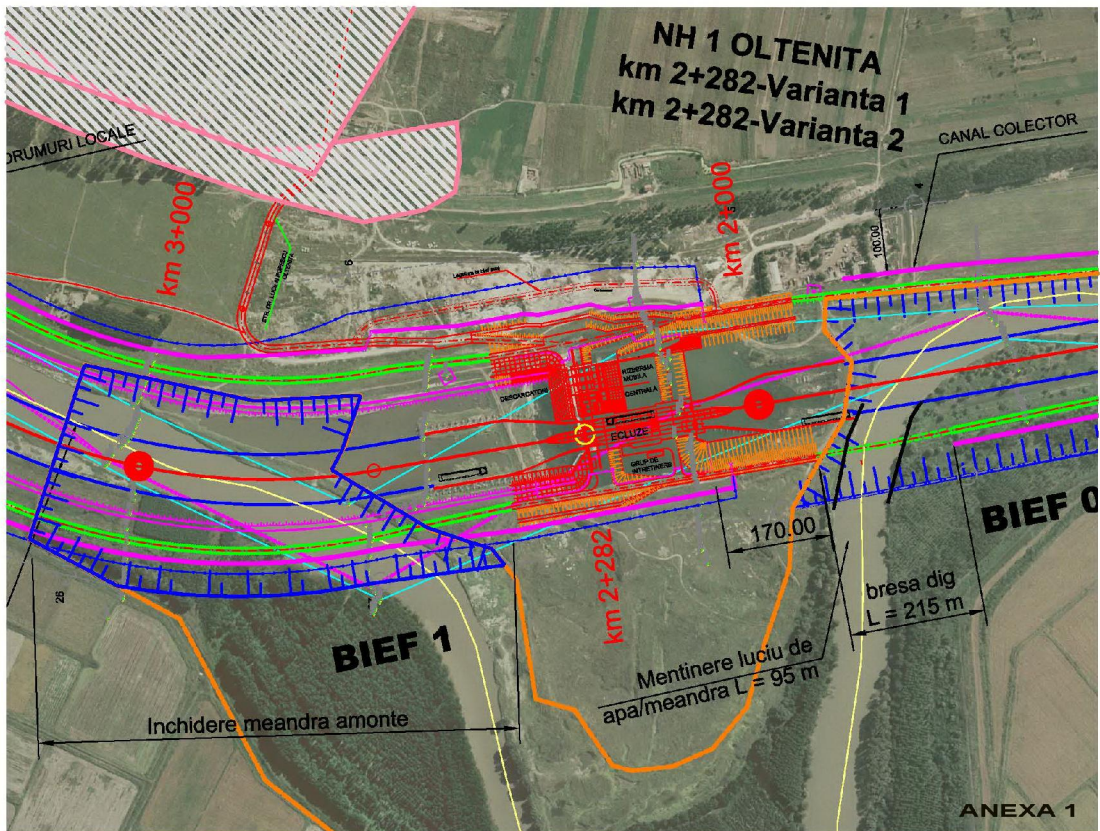
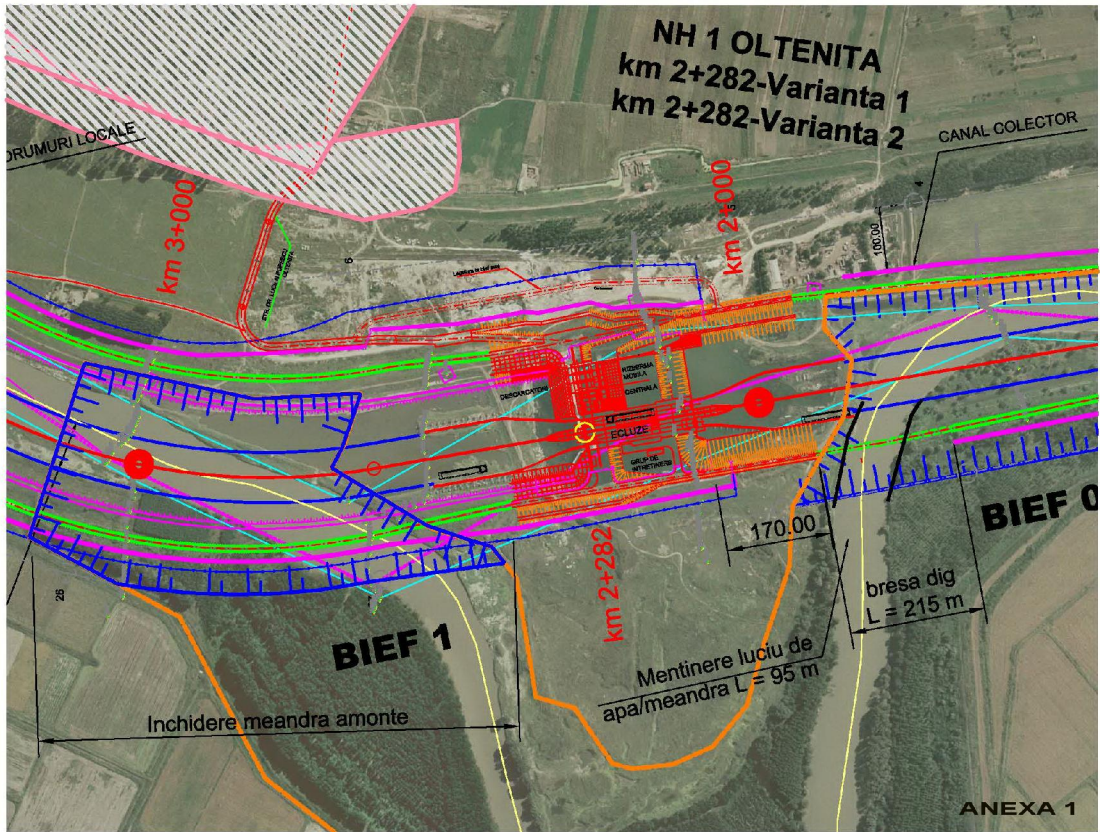


Figure 1 – Site Plan of the Hydro Node of Oltenita

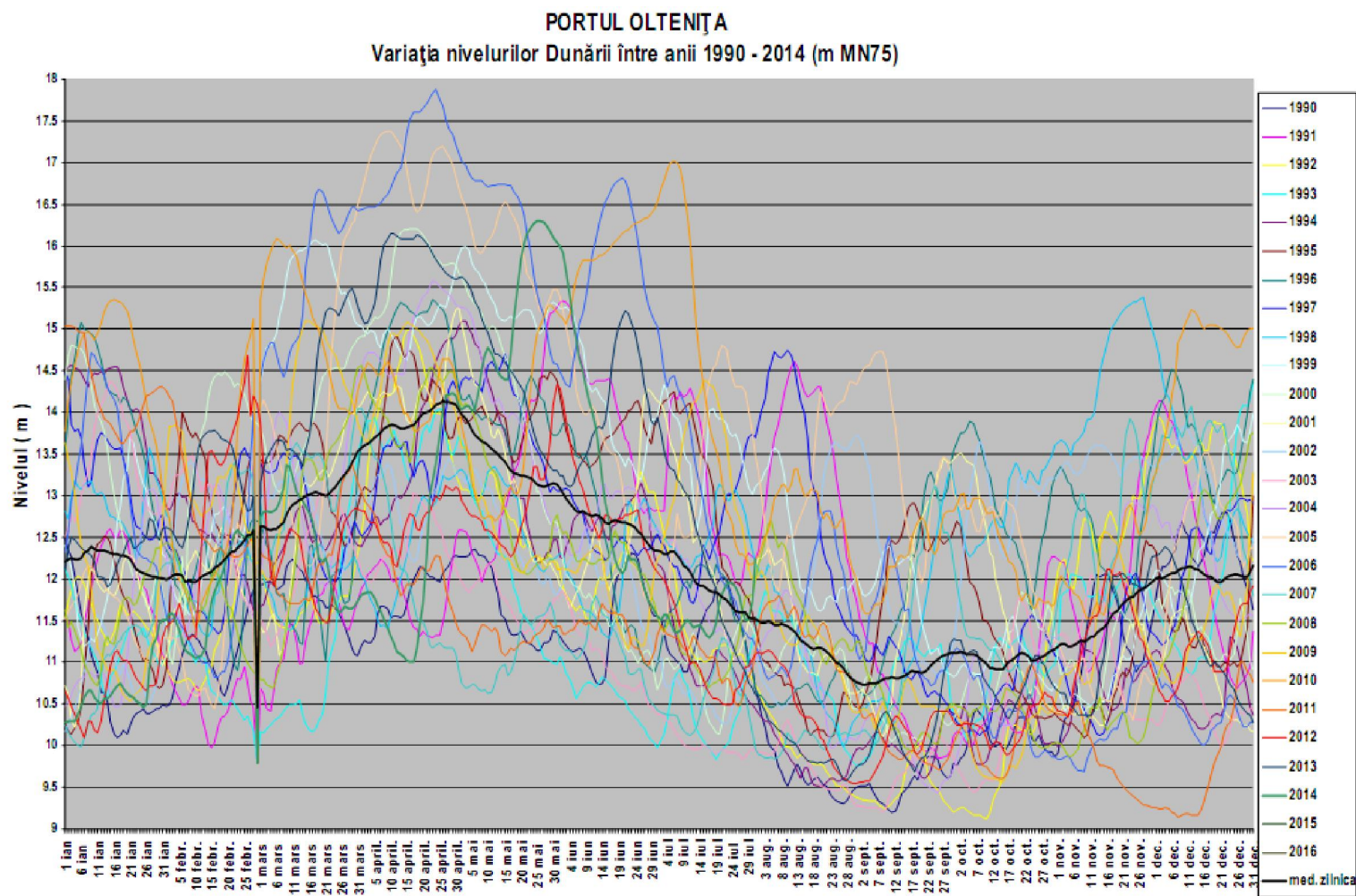


Figure 2. Variation of the Danube water level from 1990 to 2014

As regards the time periods for project implementation so that the impact on the species in Natura 2000 sites should be minimum, the following situations have been identified and the following recommendations are proposed:

- **ROSCI0043 – Comana**

Habitats - no priority habitats listed in the standard data form have been identified.

.. From the flora point of view, the analysed sectors show some degradations. Moreover, the areas have been subject to anthropogenic pressures for the last 20 years, especially due to the suspension of the engineering works to the Arges and Dambovită rivers for navigation. These sectors show unimproved sections on the Arges river bank, especially near Gr di tea, Fala toaca and Gostinari localities.

Invertebrates – no species in annex II of the Council Directive 92/43/CEE listed in the standard data form have been identified. Due to flora degradation the invertebrate species are poorly represented in the surveyed area. No host plants for larvae have been identified; therefore the perimeter is not a wintering and reproduction site for these species. Moreover, the species used as food for larvae have a very low density in the investment area, being eliminated by the invasive plant species.

However, adults of the two invertebrate species of community interest, namely the butterflies *Callimorpha quadripunctaria* and *Euphydryas maturna* may be present during summer months (July-August) in the work zone. Due to the movement in flight, these individuals will not be affected by the engineering works to the Arges river.

Fish – none of the species in annex II of the Council Directive 92/43/CEE listed in the standard data form have been identified. However, given the ecological conditions of the Arges river, individuals are likely to occur in the work zone. In such cases, the maximum impact is anticipated during construction period. Considering the mobility of the individuals subject to this survey (fish species listed in Natura 2000 standard data form), the sensitive period is expected to be the reproduction one, when spawning. The hereinafter proposed impact mitigation measures should be complied with in order to prevent the negative impact of the works (see table 1).

Amphibians and reptiles - none of the species in annex II of the Council Directive 92/43/CEE listed in the standard data form have been identified. As neither the biotopes, nor the ecological conditions correspond to the habitat requirements of the species of community protection described in the data form, due to the fact that the area is highly degraded and polluted, their presence, including the species *Bombina bombina* is less likely. The *Bombina bombina* population is extremely sensitive to the habitat deterioration, to drainage and pollution – a situation specific to the site area.

- **ROSPA022 – Comana**

No bird species in annex I of the Council Directive 79/409/CEE, listed in the standard data form have been identified. The biotic and ecological conditions do not correspond to the requirements of the species of community protection in the data form. They manifest a visible connection to Comana pond and to the surrounding woods for which the site was in fact designated. However, some birds of passage may erratically occur in the work zone for short periods of time, even though it is not suitable for shelter and food. The presence of those species in the area is not influenced by the watercourse, whether natural or regulated. On the other hand, the protected areas near the objective are quite far, so the works impact will be insignificant. They may even have a favourable impact on the habitats of the bird species in the site area by bank-sloping, sanitation of the area, and thus, by ecological reinstatement of the highly altered environment at present. For some species (e.g. *Egretta alba*) the river regulation could provide a new biotope for foraging on the concrete bank slope due to water clarity and favourable depth.

However, the hereinafter proposed impact mitigation measures should be complied with in order to prevent the occurrence of any negative influences of works.

- **ROSPA0038 Dun re-Olteni a**

The bird species in Annex I of the Council Directive 79/409/EEC, listed in the Natura 2000 standard data form of the project area, mainly populate the meander area (located outside the NH1) which is a suitable habitat for such populations. Of the 26 species listed in the form, 16 species were identified in the working area, namely:

A021 *Botaurus stellaris* – in transit
A196 *Chlidonias hybridus* - in transit
A031 *Ciconia ciconia* – nesting, in transit
A027 *Egretta alba* - in transit
A026 *Egretta garzetta* - in transit
A022 *Ixobrychus minutus* – nesting, in transit
A073 *Milvus migrans* – in transit
A393 *Phalacrocorax pygmeus* - in transit
A151 *Philomachus pugnax* - in transit
A034 *Platalea leucorodia* - in transit
A032 *Plegadis falcinellus* - in transit
A119 *Porzana porzana* – nesting
A132 *Recurvirostra avosetta* – nesting, in transit
A193 *Sterna hirundo* - in transit
A166 *Tringa glareola* – in transit
A030 *Ciconia nigra* - in transit

All these species have few individuals in the project area. There may be noticed erratic presence of scattered individuals or flocks during their transit along the river. Flocks that are in autumn or spring migration are varied in size and do not stay long in the area because food resources are limited (*Philomachus pugnax*, *Platalea leucorodia*). The populations present here are those with a high degree of adaptability to environmental anthropization. Individuals, sometimes present throughout the year (*Sterna hirundo*), are usually the immature ones that scavenge the food scraps from the waste thrown by the inhabitants along the river, from the field, or even the dumping grounds. Other species (e.g. *Botaurus stellaris*, *Ciconia nigra*) use concrete embankments as a place for feeding, the prey being more accessible in these areas.

Since the area was subject to human intervention and ecologically degraded, part of the NH1 works being already executed, nesting pairs are extremely rare.

Thus, *Ciconia ciconia* nests in tall old trees, on telegraph poles, rooftops, using the studied area for feeding, though less attractive than the meander with its specific biotope.

Ixobrychus minutus nests in rush-beds. Individuals are rare, found usually in transit, in the fall. For nesting, they prefer the meander area to that of the works.

Porzana Porzana is dependent on the existence of wet rush-beds. The number of breeding pairs is small and they do not breed every year. It is unlikely for them to nest in the project area, given the proximity of the meander.

Recurvirostra avosetta prefers ponds for nesting. The project area is less suited to this population, individuals appearing here sporadically in small flocks or as stray individuals.

We estimate that no species of Community interest will be directly affected, given the strong anthropic character of the investment area.

In view of the above, we recommend a set of impact mitigation measures for the classes of organisms evaluated in the project area:

Table 1 - Impact mitigation measures for the species living on the Natura 2000 sites

Species recorded in the Natura 2000 form	Presence at the time of the appropriate assessment study	Works carried out on site	Restrictions	Impact mitigation measures
ROSCI0043 – Comana				
Fish	None of the listed species have been identified. Nevertheless, the presence of individuals in works' area is possible.	- flow control structures;	No	<ul style="list-style-type: none"> works will be carried out after notifying the administrator / custodian of the site; works done in the bed or on the banks of the watercourse shall be completed within the shortest time possible; prohibiting storage of materials of any kind nearby the watercourse - Arges River
		- bank and slope protection works;	No	<ul style="list-style-type: none"> works will be carried out after notifying the administrator / custodian of the site; implementation of appropriate organizational measures to prevent possible contamination by uncontrolled infiltration or spills in the work areas that are in close proximity to surface waters works done in the bed or on the banks of the watercourse shall be completed within the shortest time possible; prohibiting storage of materials of any kind nearby the watercourse - Arges River
		- channel bottom protection works: excavation and dredging works, dams	March–June (III-VI)	<ul style="list-style-type: none"> works will be carried out after notifying the administrator / custodian of the site; the restriction period shall be observed; avoiding uncontrolled disposal of the material resulted from dredging operations; using the best techniques for carrying out the dredging works and for disposal of the dredged material; works done in the bed or on the banks of the watercourse shall be completed within the shortest time possible; prohibiting storage of materials of any kind nearby the watercourse - Arges River
ROSPA022 – Comana				

Species recorded in the Natura 2000 form	Presence at the time of the appropriate assessment study	Works carried out on site	Restrictions	Impact mitigation measures
Birds	None of the listed species have been identified. Nevertheless, the presence of individuals in works' area is possible.	- flow control structures;	No	<ul style="list-style-type: none"> works will be carried out after notifying the administrator / custodian of the site; works done in the bed or on the banks of the watercourse shall be completed within the shortest time possible; prohibiting storage of materials of any kind nearby the watercourse - Arges River
		- bank and slope protection works;	May-June (V-VI)	<ul style="list-style-type: none"> prohibiting works on banks and on a 100 m wide corridor along the river banks, from May to June (V-VI), to protect any bird species listed in the standard form Natura 2000, according to Annex I of Council Directive 79/409/EEC, that might be nesting in the area works will be carried out after notifying the administrator / custodian of the site; implementation of appropriate organizational measures to prevent possible contamination by uncontrolled infiltration or spills in the work areas that are in close proximity to surface waters works done in the bed or on the banks of the watercourse shall be completed within the shortest time possible; prohibiting storage of materials of any kind nearby the watercourse - Arges River
		- channel bottom protection works: excavation and dredging works, dams	No	<ul style="list-style-type: none"> works will be carried out after notifying the administrator / custodian of the site; avoiding uncontrolled disposal of the material resulted from dredging operations; using the best techniques for carrying out the dredging works and for disposal of the dredged material; works done in the bed or on the banks of the watercourse shall be completed within the shortest time possible; prohibiting storage of materials of any kind nearby the watercourse - Arges River
ROSPA0038 Danube-Olteni a				

Species recorded in the Natura 2000 form	Presence at the time of the appropriate assessment study	Works carried out on site	Restrictions	Impact mitigation measures
Birds	16 species were identified, represented by a small number of individuals, with erratic presence, some in transit and some nesting	<ul style="list-style-type: none"> - mooring structures; - drainage structures 	No	<ul style="list-style-type: none"> • works will be carried out after notifying the administrator / custodian of the site; • verification of the site before starting the works in order to correlate critical periods of birds' biological cycle, so that it will not be irreversibly affected; • compliance with the schedule of works, limiting the working hours and routes, so as to reduce the impact on the bird species specific to the area • to decrease the noise level perceived within the protected area, the material storages and equipment in the working area will be placed so as to create barriers ensuring noise mitigation/reduction; • use of silent equipment and means of transportation to minimize noise due to construction activities that drives away bird species and providing equipment with advanced systems for reduction and retention of air pollutants • monitoring of the bird species listed in the Natura 2000 standard form (according to Annex I of Council Directive 79/409/EEC) both during the execution of the works and during operation of the objective over a period of at least 3 years
		<ul style="list-style-type: none"> - central pier; 	No	<ul style="list-style-type: none"> • works will be carried out after notifying the administrator / custodian of the site; • verification of the site before starting the works in order to correlate critical periods of birds' biological cycle, so that it will not be irreversibly affected; • compliance with the schedule of works, limiting the working hours and routes, so as to reduce the impact on the bird species specific to the area • use of silent equipment and means of transportation to minimize noise due to construction activities that drives away bird species and providing equipment with advanced systems for reduction and retention of air pollutants • to decrease the noise level perceived within the protected area, the

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				<p>material storages and equipment in the working area will be placed so as to create barriers ensuring noise mitigation/reduction;</p> <ul style="list-style-type: none"> • monitoring of the bird species listed in the Natura 2000 standard form (according to Annex I of Council Directive 79/409/EEC) both during the execution of the works and during operation of the objective over a period of at least 3 years
		<ul style="list-style-type: none"> - bank and slope protection works; 	<p>May-June (V-VI) (prohibiting works on banks and on a 100 m wide corridor along the river banks, to protect any bird species listed in the standard form Natura 2000, according to Annex I of Council Directive 79/409/EEC, that might be nesting in the area)</p>	<ul style="list-style-type: none"> • works will be carried out after notifying the administrator / custodian of the site; • verification of the site before starting the works in order to correlate critical periods of birds' biological cycle, so that it will not be irreversibly affected; • compliance with the schedule of works, limiting the working hours and routes, so as to reduce the impact on the bird species specific to the area • use of silent equipment and means of transportation to minimize noise due to construction activities that drives away bird species and providing equipment with advanced systems for reduction and retention of air pollutants • to decrease the noise level perceived within the protected area, the material storages and equipment in the working area will be placed so as to create barriers ensuring noise mitigation/reduction; • monitoring of the bird species listed in the Natura 2000 standard form (according to Annex I of Council Directive 79/409/EEC) both during the execution of the works and during operation of the objective over a period of at least 3 years
		<ul style="list-style-type: none"> - drainage works 	<p>No</p>	<ul style="list-style-type: none"> • works will be carried out after notifying the administrator / custodian of the site;

Species recorded in the Natura 2000 form	Presence at the time of the appropriate assessment study	Works carried out on site	Restrictions	Impact mitigation measures
		- channel bottom protection works: excavation and dredging works, dams	no	<ul style="list-style-type: none"> • works will be carried out after notifying the administrator / custodian of the site; • location of construction camps in anthropogenic areas, outside the Natura 2000 sites; • avoiding uncontrolled disposal of the material resulted from dredging operations;

Conclusion:

- § The negative impact of the project on biodiversity is minimal, given that the habitats and species listed in the Natura 2000 standard data forms are not and will not be affected by this project.
- § The ecological impact of the project will be a positive one considering the sanitation of the area and the ecological reinstatement of the river banks that are currently affected by pollution in some areas. We believe that, following the creation of the navigable channel, vegetation in the area will recover in time and terrestrial and flying animals will find more suitable habitats than before and will repopulate the area.
- § We believe that the benefits of such a project would be higher due to global impact on living organisms, given that such fluvial transport mode of high capacity is less polluting than trains and far less polluting than road transport.