

ANNEX 04: SPECIAL ECOLOGICAL STUDY (SES)

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March 2016



PRINOS OFFSHORE DEVELOPMENT PROJECT

Special Ecological Assessment Study

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PRINOS OFFSHORE DEVELOPMENT PROJECT	
SPECIAL ECOLOGICAL ASSESSMENT STUDY	
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ABBREVIATIONS

CMD	Common Ministerial Decision
EC	European Community
EEC	European Economic Community
EIA	Environmental Impact Assessment
EU	European Union
GPS	Global Positioning System
IBA	Important Bird Area
IUCN	International Union for Conservation of Nature
JMD	Joint Ministerial Decision
SAC	Special Areas of Conservation
SDF	Standard Data Form
SpEA	Special Ecological Assessment
SPA	Special Protected Areas

1 INTRODUCTION

1.1 LEGISLATIVE FRAMEWORK AND REQUIREMENTS

Law 4014/2011 on the environmental licensing of works and activities establishes the Special Ecological Assessment (SpEA) study which follows the Environmental Impact Assessment (EIA) study. SpEA is based primarily on the examination of the "appropriate assessment" of the impact of a project in an area of the Natura 2000 network (Article 6 of Directive 92/43/EEC). Specifically, it takes into account the conservation objectives of the protected area, focuses on the consequences of the project under licensing in the area, and examines whether the integrity of this region is compromised. The requirements and the contents of the SpEA study are set out in the Joint Ministerial Decision (JMD) 170225/2014.

Natura 2000 network aims to assure the long-term survival of Europe's most valuable and threatened species and habitats. It is comprised of Special Areas of Conservation (SAC) designated under the Habitats Directive (92/43/EEC) and Special Protection Areas (SPAs) designated under the EU Birds Directive (2009/147/EC). Law 3937/2011, which replaced Law 1650/1986, constitutes the main legal framework for the protection and management of Natura 2000 sites. The so far prevalent management/ administration scheme of Natura 2000 sites is based on the establishment of Management Bodies whose operation has, however, been marked by the absence of a stable operational and funding framework.

The EU Habitats Directive and the relative national legislation contain lists of habitats (Annex I) and species (Annex II) for which Special Areas of Conservation must be established by Member States. These are referred to as 'Qualifying Interests'. Similarly, Birds Directive contains a list of important birds' species (Annex I) and other migratory birds' species for which Special Protection Zones need to be established. The provisions of the Habitats Directive have been incorporated into the national legislation through the Law 3937/2011.

1.2 SPECIAL ECOLOGICAL ASSESSMENT STUDY

The existing sour gas pipeline reaches land in the vicinity of Vasova Lagoon (the closest distance to the lagoon 50m), before it continues its route parallel to the coastline towards the refinery.

A part of the existing sour gas pipeline (approximately 550 m offshore and 350 m onshore) is

within the following Natura areas (see also the below figures):

- GR1150001, “Delta of Nestos River, lagoons of Keramoti and Thasopoula island”, Special Protected Area (SPA) designated under the EU Birds Directive 2009/147/EC; and
- GR1150010, “Delta of Nestos River, lagoons of Keramoti,, broader area and coastal zone”, Special Area of Conservation (SAC) designated under the Habitats Directive 92/43/EEC.

Moreover, a part of the existing sour gas pipeline is within the National Park of East Macedonia and Thrace designated with the Joint Ministerial Decision 44549/2008.

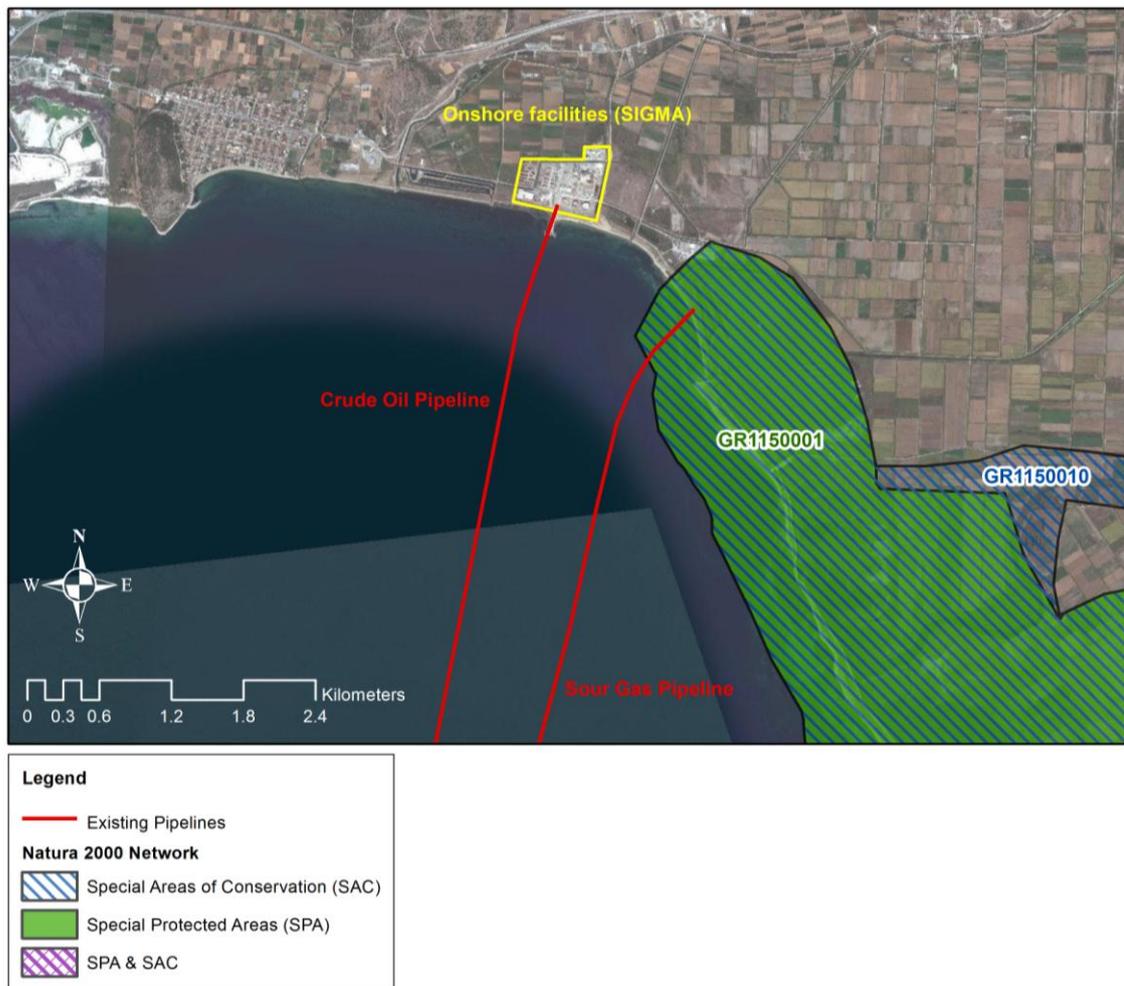


Figure 1: Natura Areas GR1150001, GR1150010

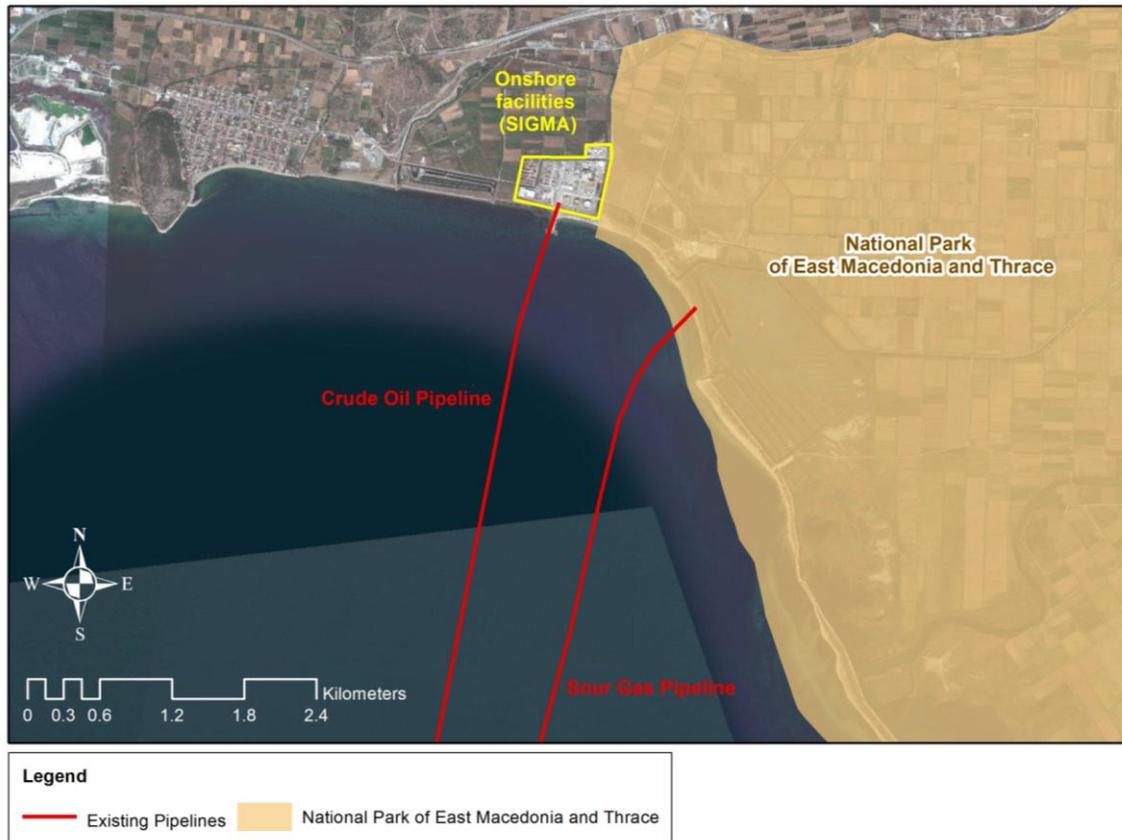


Figure2: National Park of East Macedonia and Thrace

Due to the fact that a part of the existing sour gas pipeline is located within Natura areas and in regards to the environmental licensing of the project, the submission of a Special Ecological Assessment study is obligatory according to the Law 4014/2011.

As already mentioned, the contents of the SpEA study are specified in the JMD 170225/2014. According to the same law, in case that in the study area, there are sufficient, verifiable and reliable information and records on the biogeographical and ecological features of the area and on the condition that the available data is detailed, recent (last decade) and considered adequate by the researcher (taking into account the size and type of the project), then the SpEA follows the requirements of Annex 3.2.2 of the JMD 170225/2014. This means that, the SpEA study is based mainly on the literature review and subsidiary, brief field surveys are conducted as confirmatory action.

Concerning this SpEA study, there are special conditions in the study area defined by the following report and forms:

- Management Plan for the National Park of East Macedonia and Thrace, Management Body of Nestos Delta - Vistonida – Ismarida, (2010); and

- Monitoring of Protected Areas in Nestos River Basin, Prefecture of Eastern Macedonia – Thrace, Directorate of Water (2008).

These above studies include sufficient, verifiable, reliable and recent information and records concerning the study area and for that reason the contents of this SpEA study is compatible with the specifications set out in Annex 3.2.2 of the JMD 170225/2014.

In addition, general information is given in the following reports and studies:

- Natura 2000 Standard Data Forms;
- Identification and description of habitat types in SAC areas, Ministry of Environment (2001)
- The Greek Habitat Project Natura 2000, Ministry of Agriculture , Ministry of Environment, Commission of European Communities (1996);
- Data on the Important Bird Areas (IBAs) (Portolou et al. 2009. Fric et al. 2012);
- National Report on the implementation of Directive 92/43/EC; and
- National Report on the implementation of Directive 2009/147/EC

The specifications set out in Annex 3.2.2 of JMD 170225/2014 for the Special Ecological Assessment study are described in brief below:

- Baseline conditions of the natural environment
Description, recording and analysis of the natural environment (fauna, flora, habitats, avifauna) in the study area. Description of the natural environment in terms of the Natura areas, conservation status and targets.
- Impact assessment on the natural environment
Assessment, description and analysis of the potential environmental impacts that the project may cause in terms of the maintenance of the ecological integrity of the area.
- Mitigation measures
Proposal and description of mitigation measures which aim at preventing - avoiding environmental impacts, reducing tension and area of impacts, restoration.
- Countervailing measures
In case that despite the mitigation measures, it is estimated that the integrity of Natura area is compromised then countervailing measures are proposed.
- Monitoring program
Proposal of monitoring program of the environmental impacts on the structure and functions of the Natura area or it is documented that no monitoring program is required.

1.3 ASSESSMENT SCOPE AND ISSUES

This report aims to provide a detailed ecological description of the GR1150001 SPA (Delta of Nestos River, lagoons of Keramoti and Thasopoula island) and GR1150010 SAC (Delta of Nestos River, lagoons of Keramoti, broader area and coastal zone) sites which are traversed by the existing sour gas pipeline, and to assess the potential effects in terms of the maintenance of the ecological integrity of the site.

The SpEA study focuses on the consequences of the project on the conservation objectives of the Natura areas. The importance of the environmental impacts is determined in relation to the special characteristics and special environmental conditions in the protected Natura areas. Mitigation measures and alternatives are proposed for the protection of the area's ecological function integrity (Article 10 of the Law 4014/2011).

1.4 STUDY AREA AND FIELD SURVEY AREA

According to the JMD 170225/2014, the **study area** includes the entire Natura area in which lies the concerned project or activity. The **field survey area** for linear projects is set at a minimum of 500 meters on either side of the axis of the project. The extents of the study area and the field survey area may be expanded if there special reasons related to the protected areas.

1.4.1 Study Area

In this Study, the study area includes the Natura areas GR1150001 SPA (Delta of Nestos River, lagoons of Keramoti and Thasopoula island) and GR1150010 SAC (Delta of Nestos River, lagoons of Keramoti, broader area and coastal zone) which are traversed by the existing sour gas pipeline.

1.4.2 Marine Natural Environment Field Survey Area

The marine natural environment field survey area covers a buffer zone of 500 meters around the linear natural gas underwater pipeline and up to the limits of the Natura 2000 site in the marine environment.

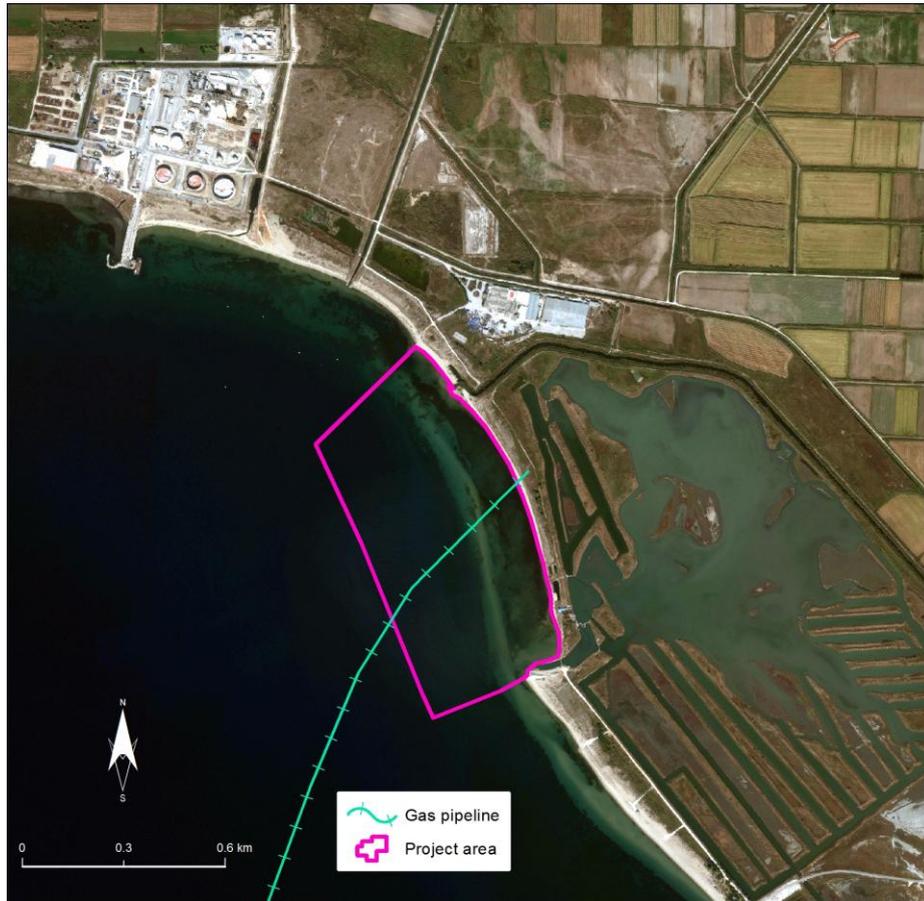


Figure3: Field survey area of marine natural environment

1.4.3 Terrestrial Natural Environment Field Survey Area

The terrestrial natural environment field survey area covers a buffer zone of 500 m around the linear natural gas pipelines infrastructure in the terrestrial environment and is expanded in the area of lagoon because of the complex wetland system on the land and the importance of the protected areas.

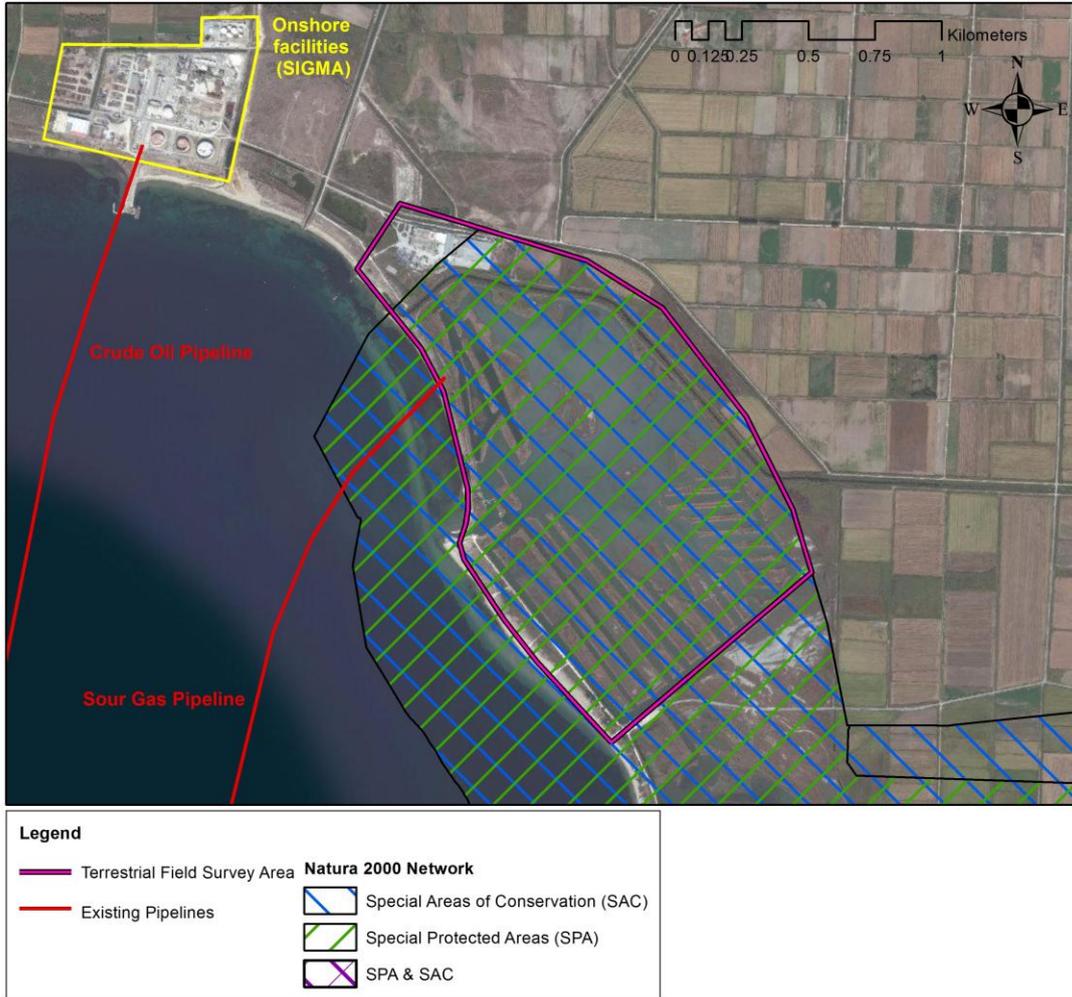


Figure4: Field survey area of terrestrial natural environment

1.4.4 Avifauna Field Survey Area

The avifauna field survey area was set along the 500 m zone around the existing natural sour gas pipelines infrastructure (Zone A) and 500 m from the coast, with special emphasis on the area located within or in the vicinity of the GR1150001 and GR1150010 Natura 2000 sites as well as the National Park of East Macedonia and Thrace. The Study Area included the terrestrial and marine environment where the surveys on birds and their habitats were executed. Furthermore, due to high mobility of the seabirds at sea, an additional marine 1 km buffer zone (Zone B) around the existing crude oil pipeline infrastructures and 1 km from the coast was included in the Study Area. Therefore, the Study Area overlaps with the following National Park protection zones: Nature reserve zone (A2), Protected landscapes (B3), Ecodevelopment zone (Γ1) and National Park Peripheral Zone (Δ1).

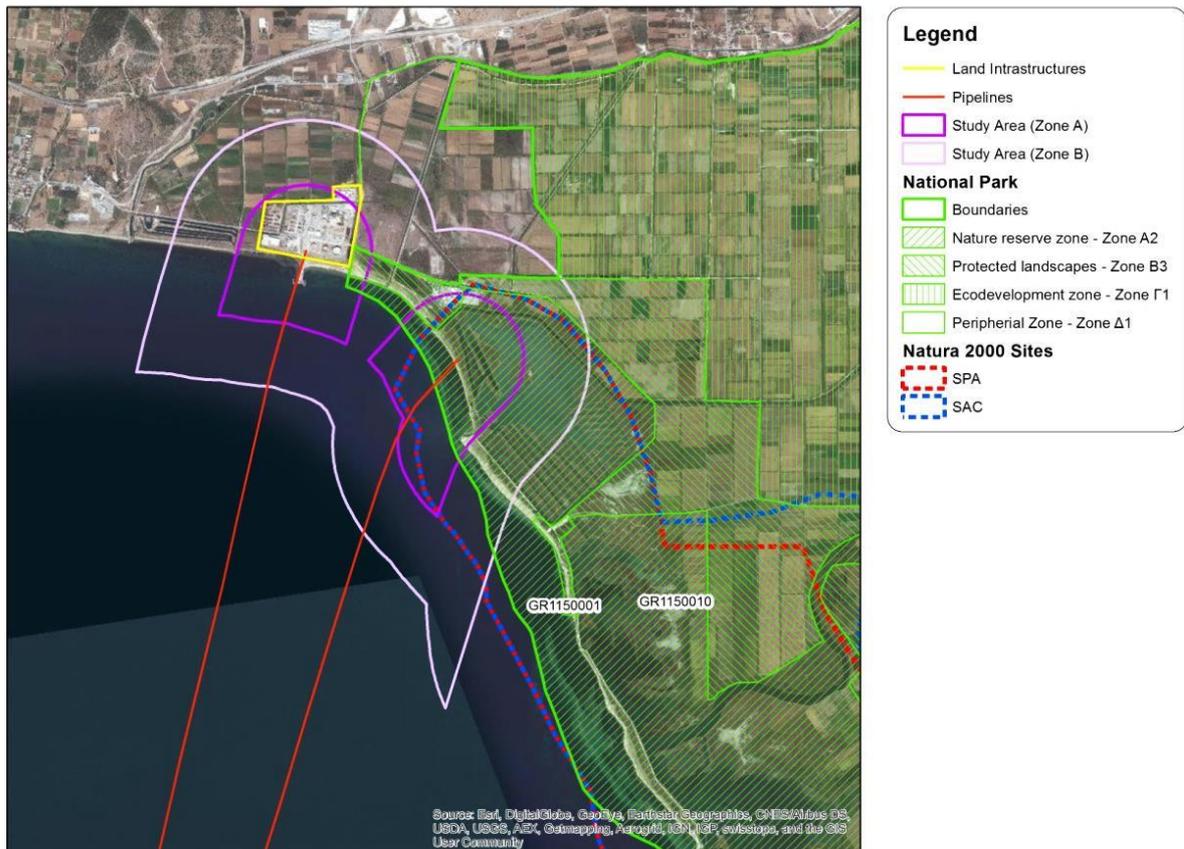


Figure5: Field survey area of bird survey

1.5 SURVEY TECHNIQUE

As already mentioned, this SpEA study is based mainly on the literature review because there are sufficient, verifiable, reliable and recent information and records on the biogeographical and ecological features of the area. However, brief field surveys were executed as verification actions. Prior to the design and planning of field surveys, an extensive review of the existing data mentioned in Chapter 1.2 was conducted.

The marine and terrestrial natural environment survey and avifauna survey focus on the:

- Identification and documentation of fauna, flora and avifauna species; and
- Mapping of habitat types (as defined in the Directive 92/43/EEC).

The combination of the desktop investigation plus the field surveys is considered sufficient for the purpose of identifying the main habitat types and the most relevant species present in the survey area; thus serving the purpose of identifying key species and habitats of interest for the EIA Report.

1.5.1 Marine Natural Environment survey

The marine natural environment survey was conducted between 11th and 19th of October by two scientists.

Habitats survey

The survey techniques used for marine habitat survey are:

- Snorkeling across transects;
- Use of underwater camera and underwater scooter; and
- Satellite images interpretation.

Transects in parallel to the underwater gas pipeline have been tracked and recorded by SCUBA diving, underwater scooter and high definition video cameras. In case that a denser cover has been required, new routes in parallel to the coastline have been examined. The use of underwater scooter was useful due to the long distances the scientists have to travel in order to record the seabed cover and the biodiversity. In the shallow waters (depth < 2 meters), snorkeling transects have been implemented for the recording of seabed cover and the biodiversity. On each transect, the bed cover, the biodiversity and the threats have been recorded as well as the minimum and maximum depth.

The final habitat mapping has been prepared by analyzing the collected information and by combining high resolution satellite images for the study area. As a result, a shapefile related to the habitat type and the bedcover has been designed by using Geographic Information System application (ArcGIS Desktop ver 10.2.2. and QGIS ver 10) in UTM Zone 35N projection.

Biodiversity survey

Biodiversity data (megaf flora and megafauna) has been recorded and identified in situ by applying mostly visual census method which is a non-destructive method for the assessment of the biodiversity without removing living organisms from their habitat. Biological material has been collected only in cases that laboratory analysis is needed for species identification. Moreover, beached material has been identified.

The biodiversity data for the project area have been identified in the lowest taxonomic level; the taxonomy of each has been checked by using the World Register of Marine Species - WORMS (<http://www.marinespecies.org/>).

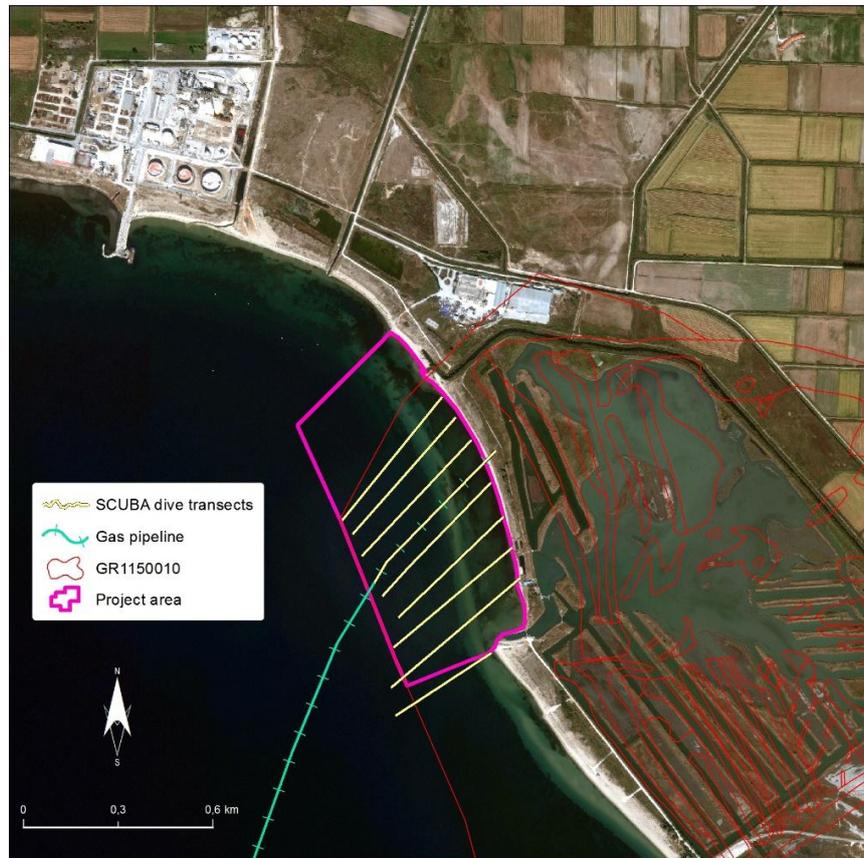


Figure6: Field survey of marine natural environment

1.5.2 Terrestrial Natural Environment survey

The terrestrial natural environment survey was conducted on 15th and 16th of October by one scientist.

Habitats survey

The terrestrial natural environment survey techniques used are:

- Satellite images interpretation; and
- Ground truthing.

Satellite images provide useful basic information on habitat type/land use of the study area. Through interpretation of an updated satellite image, the general conditions (e.g., vegetation cover, land use) of the study area and its vicinity are readily visualized and translated into a preliminary habitat map.

Ground Truthing refers to surveying the study area on ground with a systematic routing and recording all ecological resources that the surveyor comes across and is applicable to small and accessible sites.

The final habitat mapping has been prepared by analyzing the collected information and by combining high resolution satellite images for the study area. As a result, a shapefile related to the habitat type designed by using Geographic Information System application (ArcGIS Desktop ver 10.2.2. and QGIS ver 10) in UTM Zone 35N projection.

Vegetation, plant and fauna species survey

Vegetation surveys focus on vegetation types in the study area while plant and fauna species surveys aim to provide information on plant and fauna species diversity and identify plant and fauna species of conservation concern. The vegetation, plant and fauna species survey approach is to produce a plant and fauna species list by direct observation while surveying representative parts of the study area. In regards to fauna survey, searching for traits is also a survey technique. For these purposes, information obtained from vegetation maps, habitat maps, satellite images, and orthophotomaps was also elaborated.

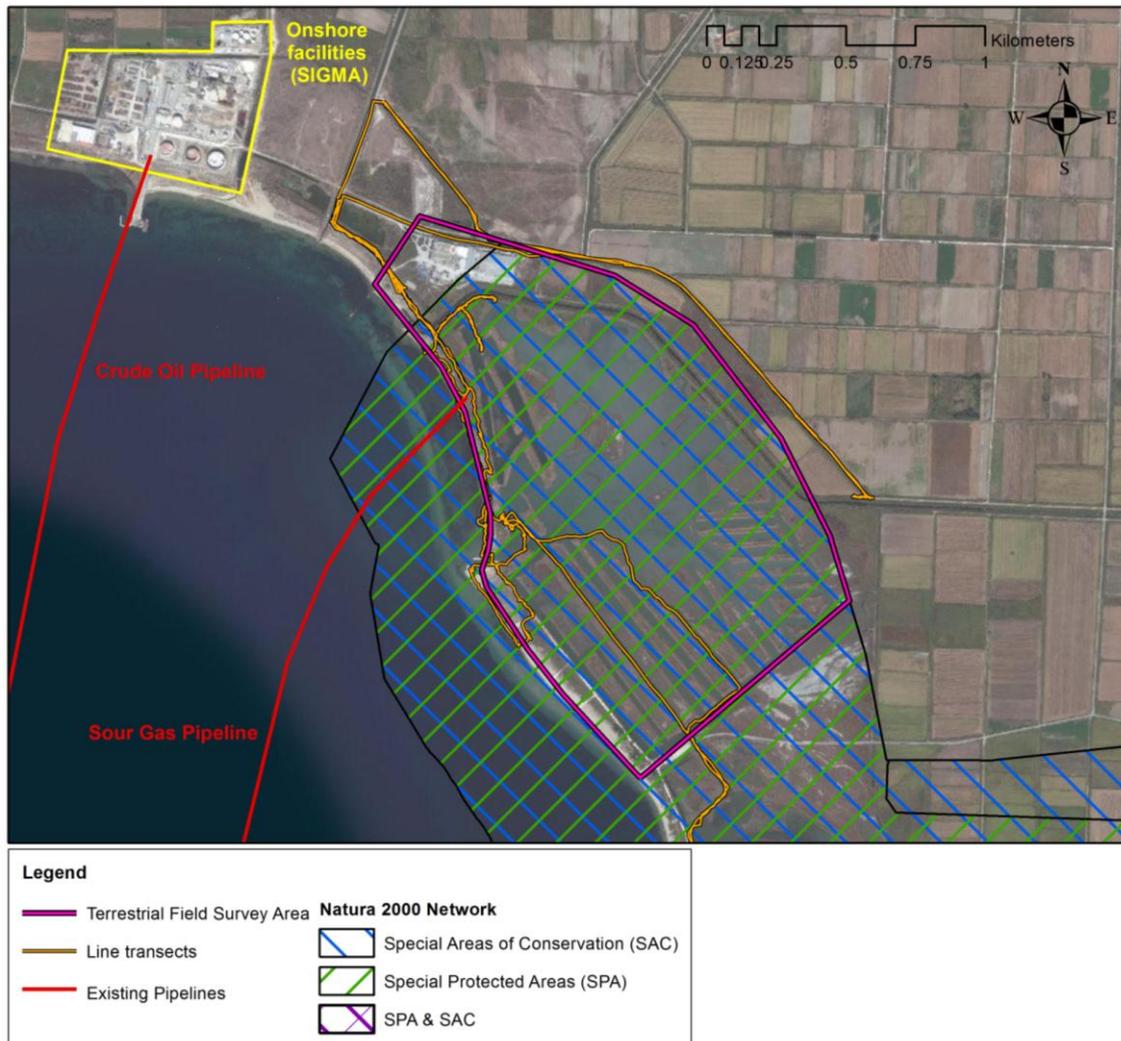


Figure7: Field survey of terrestrial natural environment

1.5.3 Avifauna survey

The two field surveys were executed on the 15/10/2015 and 16/10/2015. More specifically, on the 15/10/2015 the field surveys including the recording of birds in the marine environment, in the coastal area and within the Vasova Lagoon. On the 16/10/2015 the field surveys focused primarily on the northern and western part of the Vasova Lagoon, as well as on repetitive vantage point counts for seabirds for seabirds at sea. The equipment used included a 20x-60x telescope, an 8Xbinoculars, a GPS and an tablet computer in association with digital field maps previously prepared for the purpose of the surveys.

The field survey method applied was selected among the conventional and standardized survey methods, suitable for the assessment of birds in the terrestrial and marine environment with the characteristics of the Study Area. More specifically, the survey methods applied included point count method, line transect method and vantage point method (Bibby et al. 1992 and Gilbert et al. 1998):

- Point counts method. Point count method considered to be the most suitable method for rapid ornithological surveys, allowing rapid bird identification in a particular area while utilizing to the maximum extent the existing knowledge for this area. The method applies to ornithological records (species heard or seen) from selected spots (or routes). The researcher selects in advance the most suitable points (or routes) (such as known nesting sites, suitable habitats according to vegetation maps), at his/ her discretion and based on bibliographic information on habitat use by the priority species. This method can be applied to points or routes which: a) have been confirmed by previous studies in the area, and b) are considered to be the most suitable for the species expected in the area, based on vegetation or/and habitat maps. The method can be applied to any area for priority breeding species census and is considered to be the most effective method for bird species with small populations, such as predators.
- Line Transect method. The line transect method involves the observer continuously moving (either on foot, with a boat or by cars) and recording all birds on either side of the track. Instead of continuous moving, the observer may stop at regular intervals and apply point count method. The line transect method is more suitable for bird species in lower density and higher mobility in fairly even habitats. It is an appropriate method in exploratory surveys or where the scope of the survey is to cover large distances in short time and provided satisfactory estimation of relative abundance. The line transect method in association with the point count method was applied for surveying birds in vegetated parts of the Study Area.
- Vantage Point method. This method involves recording birds from particular spots (e.g. mainly hilltops) or areas with panoramic view (e.g. edge of a wetland). This method can be used for all bird groups and is particularly sufficient for large sized soaring

species like raptors, gulls etc. It can be applied both in open or densely vegetated (forest ecosystems) habitats with appropriate adjustments. This method mainly applies to non-cryptic species. Within the scope of the present study, vantage point counts were applied for the recording of birds at sea, as well as area on open water in Vasova Lagoon.

The avifauna survey was executed during the post-breeding period, both in the marine/coastal environment, as well as, in the Vasova Lagoon.

The study sites for birds included 17 points, where Point Counts method and Vantage Point method were applied from points along the seacoast and along the Vasova Lagoon. A total of 20.4 km of line transect were conducted along the seacoast, along the coast of Vasova Lagoon and in the Vasova Lagoon ,including line transects on foot (8.8 km), by boat (4.5 km) and by car (7.1 km).

Table 1: Table of waypoints for Point Counts and Vantage Point Counts – avifauna survey

Waypoint	Location	Habitat type	Shortest distance to pipelines [m]
WPT001	W of GR1150001 & GR1150010	Coastal dunes	470
WPT002	In GR1150001 & GR1150010	Coastal dunes at emergency shutdown valve	20
WPT003	In GR1150001 & GR1150010	Coastal dunes	340
WPT004	In GR1150001 & GR1150010	Channel connecting Vasova lagoon with the sea	490
WPT005	In GR1150001 & GR1150010	Coastal dunes	450
WPT006	In GR1150001 & GR1150010	Coastal dunes	750
WPT007	In GR1150001 & GR1150010	Coast of Vasova Lagoon	730
WPT008	In GR1150001 & GR1150010	Coast of Vasova Lagoon	540
WPT009	In GR1150001 & GR1150010	Islet within Vasova Lagoon	490
WPT010	In GR1150001 & GR1150010	Fishing infrastructure and barrier	430
WPT011	In GR1150001 & GR1150010	Coast of Vasova Lagoon	350
WPT012	NW of GR1150001 & GR1150010	Drainage channel W of Vasova Lagoon	690
WPT013	NE of GR1150001 & GR1150010	NE of Vasova Lagoon	1500
WPT014	In GR1150001 & GR1150010	Drainage channel W of Vasova Lagoon	260
WPT015	In GR1150001 & GR1150010	W Coast of Vasova Lagoon	260
WPT016	In GR1150001 & GR1150010	W Coast of Vasova Lagoon	190
WPT017	In GR1150001 & GR1150010	W Coast of Vasova Lagoon	360

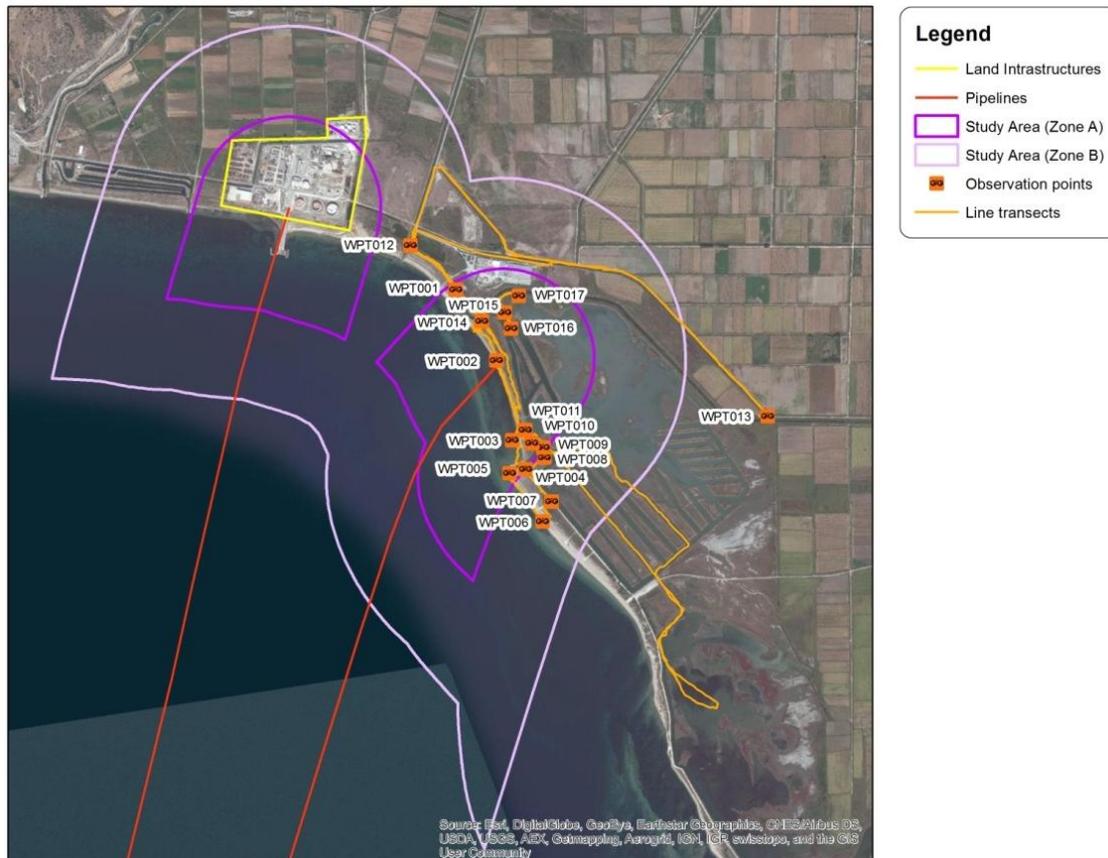


Figure8: Map of bird survey recording points and line transects within the Study Area

2 BASELINE CONDITIONS OF THE NATURAL ENVIRONMENT

2.1 DATA RECORDING AND ANALYSIS OF THE NATURAL ENVIRONMENT IN THE STUDY AREA

The study area is located in the westernmost part of the complex of wetlands in the Northern Greece including Nestos Delta, Lakes Vistonis and Ismaris and nearby lagoons.

The importance of the area has been recognized on the (I) global level, by inclusion as a Ramsar Site "Nestos Delta and Adjoining Lagoons" (designated in 1975), (II) EU level by inclusion in the network of Natura 2000 sites, as SPA GR1150001 and SAC GR1150010 areas, and (III) national level by inclusion in the National Park of Eastern Macedonia and Thrace with the Management Body of Nestos Delta - Vistonis and Ismaris. The complex of wetlands, including lakes and lagoon consisting the National Park of Eastern Macedonia and Thrace is considered to be one of the most important in Europe.

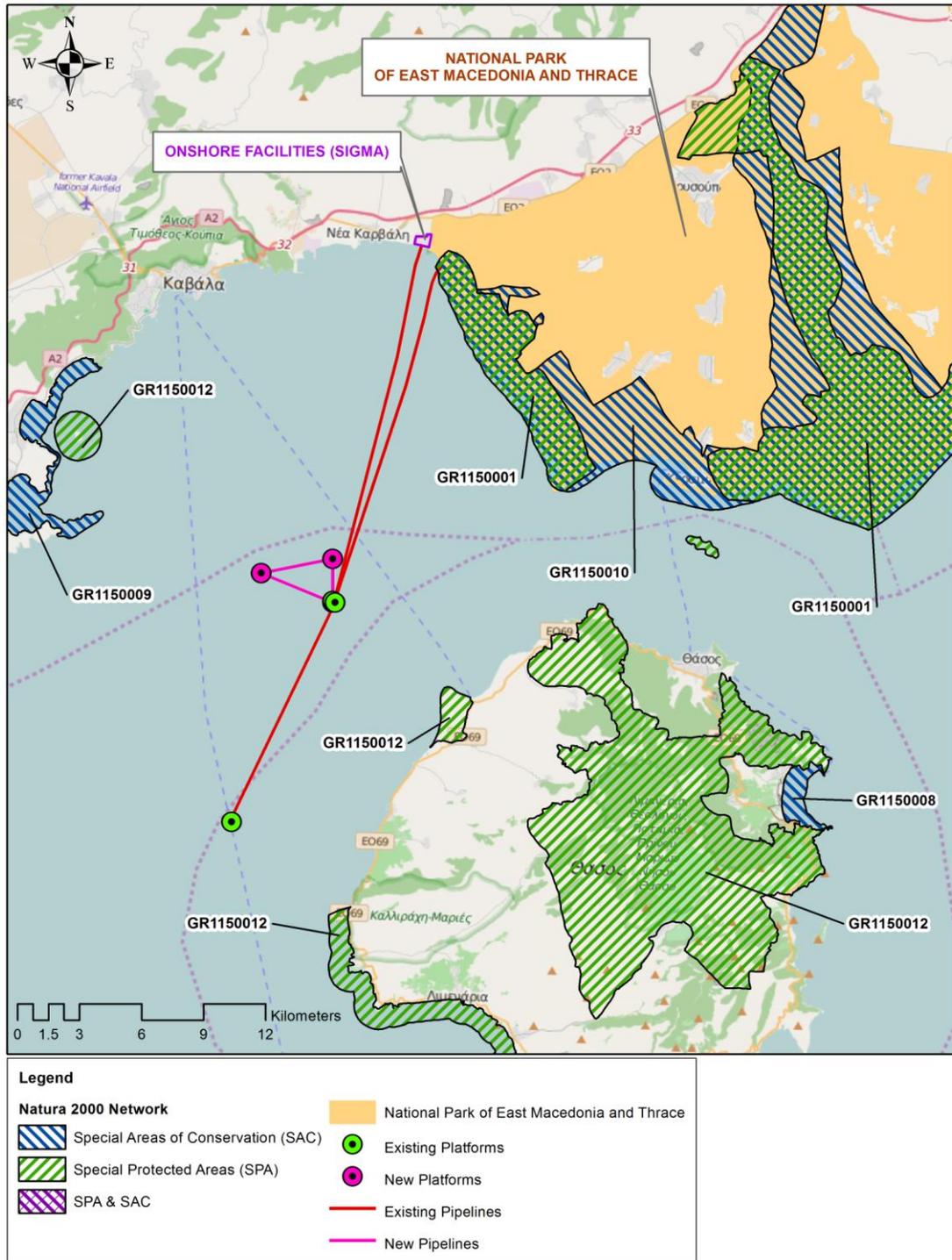


Figure9: Natura 2000 areas and National Park in relation to the Study Area.

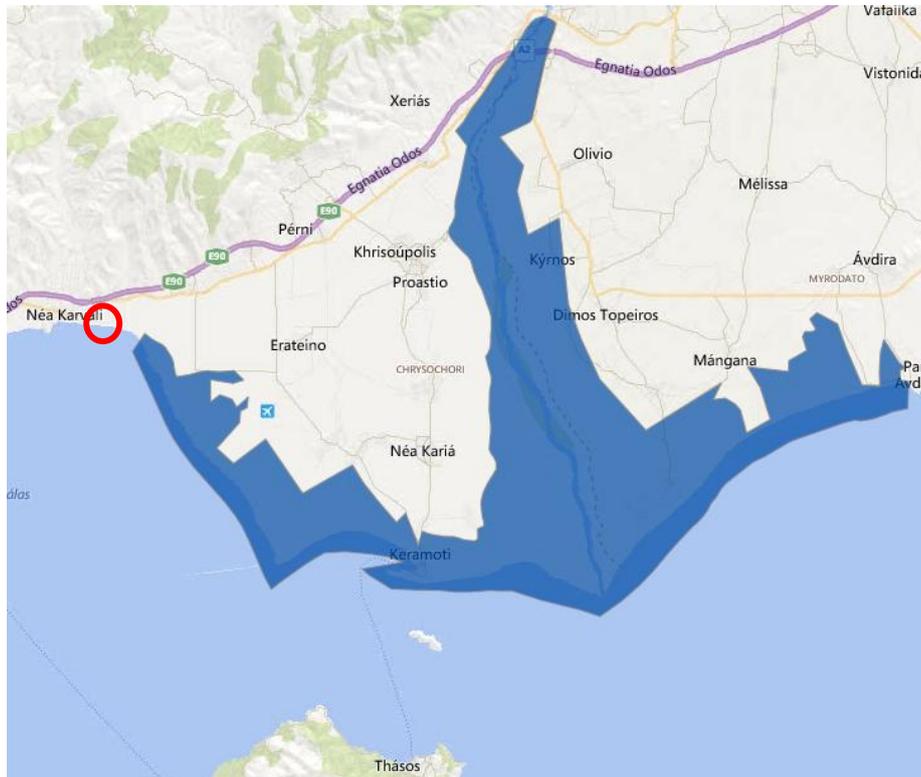


Figure10: Area of the Ramsar Site "Nestos Delta and Adjoining Lagoons" in relation to the Study Site (red circle)

2.1.1 Brief description of the Natura Areas in the study area

2.1.1.1 NATURA AREA, GR1150010, "Delta of Nestos River, lagoons of Keramoti, broader area and coastal zone", Special Area of Conservation (SAC) designated under the Habitats Directive 92/43/EEC

According to the relevant Natura 2000 SDF, this site consists of Nestos Delta and Keramoti lagoons. The nearest to the wetland towns and villages are Keramoti and Chrysoupolis while Kavala is situated 25 km and Xanthi 16 km away from the wetland. River banks are sandy with extended softwood and riparian forests. Moreover, a mosaic of habitats at the mouth of the river, composed by reedbeds, Tamarix scrubs, inland as well as large coastal dunes. There are several greater lagoons with salt marshes around, where in the area of Chrysoupolis there are freshwater lakes with reedbeds and water lilies. There is also found a rocky islet (island of Thassopoula). At the adjacent gorge of Nestos, rich vegetation grows on the steep cliffs and diverse fauna is provided with shelter. The responsible Body for the site management is the Management Body Nestos Delta Vistonidas- Ismarida.

Quality and Importance

According to the relevant Natura 2000 SDF, the wetland is important from ornithological point of view because of the big extent it occupies and because of its rich habitat types. Moreover, it is a valuable part of a wetland chain included between Axios river and Delta Evrou in northern Greece.

The riparian forest and the coastal area are important for breeding, the lagoons for migrating and the river for the wintering of many species as grebes, ducks, herons, cormorants, pygnies, raptors, geese, flamingos, waterfowl and others. The reference on *Leuciscus cephalus* is about the subspecies *macedonicus*. Concerning the fauna the quality of the site is indicated by the invertebrate *Araschnia levana* which is the southern edge of extension, the invertebrate *Lycaeides argyrygnomon* which is referred to "Koomen P., van Helsdingen P.J. 1993, Listing of biotopes in Europe according to their significance for invertebrates, Council of Europe" and the invertebrate *Maculinea alcon* which is referred to IUCN Conservation Monitoring Centre 1988, IUCN Red List of Threatened Animals. In the present site *Salvinia natans*, a plant species included in WCMC as well as *Leymus racemosus ssp. sabulosus*, a plant taxon which reaches its extreme distribution limit in Northern Greece, are growing wild.

Additional information for this Natura site is given in the Natura 2000 SDF which is attached in Appendix 10.1.

2.1.1.2 NATURA AREA, GR1150001, "Delta of Nestos River, lagoons of Keramoti and Thasopoula island", Special Protected Area (SPA) designated under the EU Birds Directive 2009/147/EC

According to the relevant Natura 2000 Standard Data Form (SDF), this site is a large Delta and consists of agricultural land with few freshwater lagoons separated from the sea by narrow sandy strips. Only a relict area of the previously extended riverine forest (Kotza Orman wood) remains along the river course near the river mouth and the poplar plantation. Another important habitat type is reeds along the river beds and especially those along the canals. There is also a rocky, islet (island of Thassopoula). In the area of Chrysoupolis, there are freshwater lakes with reedbeds and water lilies. In the northern part of the river on the steep cliffs, rich vegetation and diverse fauna are found. Most of the area of Nestos river is embanked by retaining dykes so that to be separated from the cultivated land. The Keramoti lagoons are a complex of coastal saltwater lagoons, situated at the western extreme of Nestos Delta in the west of Keramoti town. The most important habitat types are large coastal dunes, saltmarshes, reedbeds, and especially beds of marine vegetation-communities of vascular plants (*Zostera*, *Posidonia* e.t.c.). Fish-stations exist in each lagoon. The responsible Body for the site management is the Management Body Nestos Delta Vistonidas- Ismarida.

Quality and Importance

Ornithologically is still important breeding site for spur-winged plover (*Hoplopterus spinosus*) (largest breeding population in Europe), purple heron, (*Ardea purpurea*) etc. It is also important for migratory waterfowl and Lesser spotted Eagles which winter. However, its importance has declined due to the lack of protection. From ichthyological point of view especially the wider part of the river mouth is important spawning and nursery ground for several commercially, intensively used species (Seabream, Seabass, Mullet, Eel, e.t.c.).

Additional information for this Natura site is given in the Natura 2000 SDF which is attached in Appendix 10.1.

2.1.2 Brief description of the National Park in the study area

The National Park of East Macedonia and Thrace, as defined in 2008 by the Common Ministerial Decision (CMD) 44549/2008 (Government Gazette 497 / D / 17-10-2008), includes the protected areas of the wetland Delta Nestos, lakes Vistonida, Ismarida and the region, with the total land and water area of 930,000 acres.

The institutionalized management of the National Park of Eastern Macedonia and Thrace is the Management Body Nestos Delta Vistonidas- Ismarida which is a private legal entity, non-profit and was founded in April 2003 by the Ministry of Environment and Energy. The management of the National Park should be compatible with the requirement of the relevant Management Plan.

The wetland complex of the National Park is one of the most important in Greece, due to the large surface area and high biological, aesthetic, scientific, educational and geomorphological value. The purpose of the National Park is the effective protection of habitats and rare species of flora and fauna that inhabit and breed in the area. In the National Park, more than 326 bird species have been observed nesting, overwintering or simply passing through the area. Moreover there is a great variety of, fish, amphibian and reptilian species. The wetland also provides an important habitat to otters, wolves, roe deer and many other mammals. The main habitats are the following:

Sandy areas: only plants adapted to the harsh conditions live here such as the sea daffodil, in addition to birds which prefer sandy barren sites.

Salt marshes and salt pans: These areas are periodically flooded by brackish or salt water. Salt tolerant plants can be found here.

Meadows with rushes: these are important feeding grounds for storks, birds of prey and many other bird species.

Reeds: Reed stands are ideal nesting sites for a remarkable number and variety of bird species.

Tamarisk shrubs hills, riverine forests: protected areas in the forests provide ideal conditions in which many birds of prey can breed and find sufficient food.

The man's presence in the region is related to the agricultural productive activity. Other activities include fishing, with the larger lagoons being utilized as fisheries and summer tourism. Currently the major threats to the wetland include artificial alteration of the hydrology, habitat destruction, pollution and exploitation of the natural resources.

Within the area of the National Park, specific Protected Zones are specified and their boundaries follow the physical characteristics or artificial elements of the area. In these Protected Zones, specific uses and activities are allowed which are defined in CMD 44549/2008. During the Environmental Permit Procedure of new or existing projects within the National Park, consultation with the Management Body Nestos Delta Vistonidas- Ismarida is necessary.

The Protected Zones are presented below in order of decreasing severity of uses and activities.

- Zone A: Nature Reserve Zone
- Zone B: Protected Landscapes
- Zone Γ: Eco development Zone
- Zone Δ: National Park Peripheral Zone

As shown in the following figure, a part of the existing sour gas pipeline (approximately) is within the Zone A: Nature Reserve Zone.

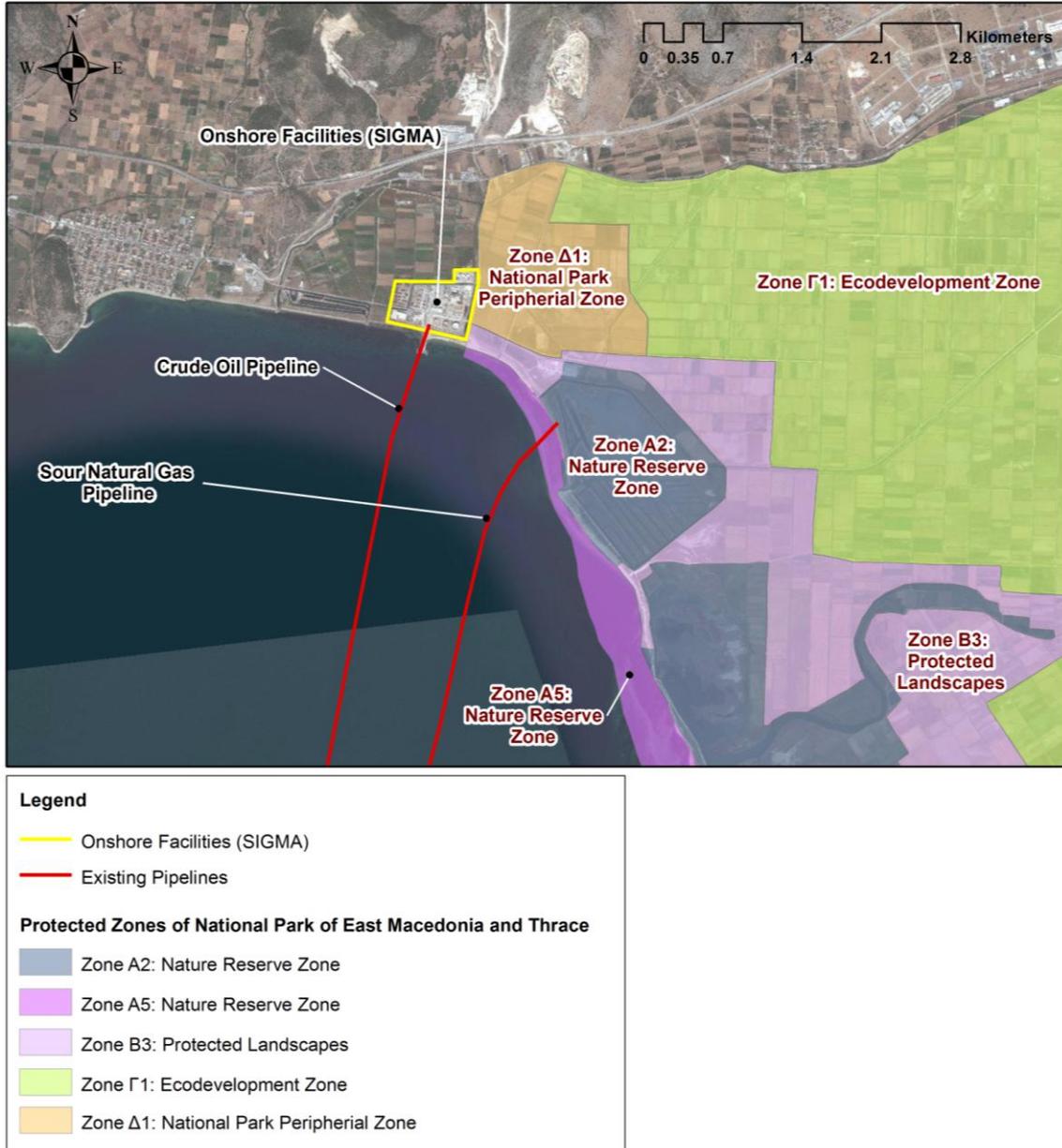


Figure11: Protected Zones of National Park of East Macedonia and Thrace

2.1.3 Brief description of the Ramsar site in the study area

Ramsar site “Delta Nestos and adjoining lagoons” is a large delta with a variety of habitats, part of a wetland complex of 100 km of continuous coastline, which includes the adjoining Ramsar site of Vistonis – Porto Lagos – Ismaris. It consists of lagoons separated from the sea by narrow sandy strips, remnants of a riverine forest, reeds along the river beds and the canals, freshwater lakes with reedbeds and water lilies, agricultural land and poplar plantations. The remarkable habitats are the existing riparian forest – mainly softwood; the river bed with sand banks, forested islands, dry river branches, and standing waters; the freshwater lakes with reed beds and water lilies; the mosaic of habitats at the river mouth with reedbeds, tamarix scrubs and inland dunes; and several lagoons with surrounding salt marshes. The remaining lowland forest “Kotza Orman” (3,000 ha), despite its considerable devastation, is the largest and most intact lowland forest in Greece. The existing sand dunes are the largest and the most undisturbed in NE Greece, dominated by an endemic plant association *ephedra distachya – silene subconica*. The system of lagoons and sand dunes presents a smooth transition from saline to fresh water which plays a key role in the international flyways of migratory birds.

2.1.4 Detailed description of the natural environment in the study area

In this section, a detailed register of the natural environment data is given with emphasis on the protected species of NATURA network which may be significantly affected by the project and the activity.

For the abovementioned register, the following collection of data is considered:

- Management Plan for the National Park of East Macedonia and Thrace, Management Body of Nestos Delta - Vistonida – Ismarida, (2010);
- Monitoring of Protected Areas in Nestos River Basin, Prefecture of Eastern Macedonia – Thrace, Directorate of Water (2008);
- Identification and description of habitat types in SAC areas, Ministry of Environment (2001);
- The Greek Habitat Project Natura 2000, Ministry of Agriculture , Ministry of Environment, Commission of European Communities (1996);
- Data on the Important Bird Areas (IBAs) (Portolou et al. 2009. Fric et al. 2012);
- National Report on the implementation of Directive 92/43/EC (JMD 14849/853/04.04.2008);
- National Report on the implementation of Directive 2009/147/EC (JMD

37338/1807/01.09.2012);

- The Red Data Book of the Threatened Animals of Greece;
- Red Data Book of Rare and Threatened Plants of Greece;
- National list of important flora, fauna and natural habitats;
- Natura 2000 Standard Data Forms.

Moreover brief field surveys are executed as verification action of the above mentioned data.

Based on the above, the following recordings are included in this study:

- Recording the main characteristics of the habitat types of Annex I and flora and fauna species of Annex II of Directive 92/34/EC (JMD 14849/853/04.04.2008) and avifauna species of Annex I of Directive 2009/147/EC (JMD 37338/1807/01.09.2012); and
- Recording of the main characteristics of the endemic endangered and protected species.

2.1.4.1 Marine Natural Environment

According to the Project "Identification and description of habitat types in SAC areas", Ministry of Environment (2001), the habitats present in the survey area are shown in the following figure. It is important to mention that this habitat mapping is a general approach and corresponds to small scale analysis (1:20,000 – 1:50,000).

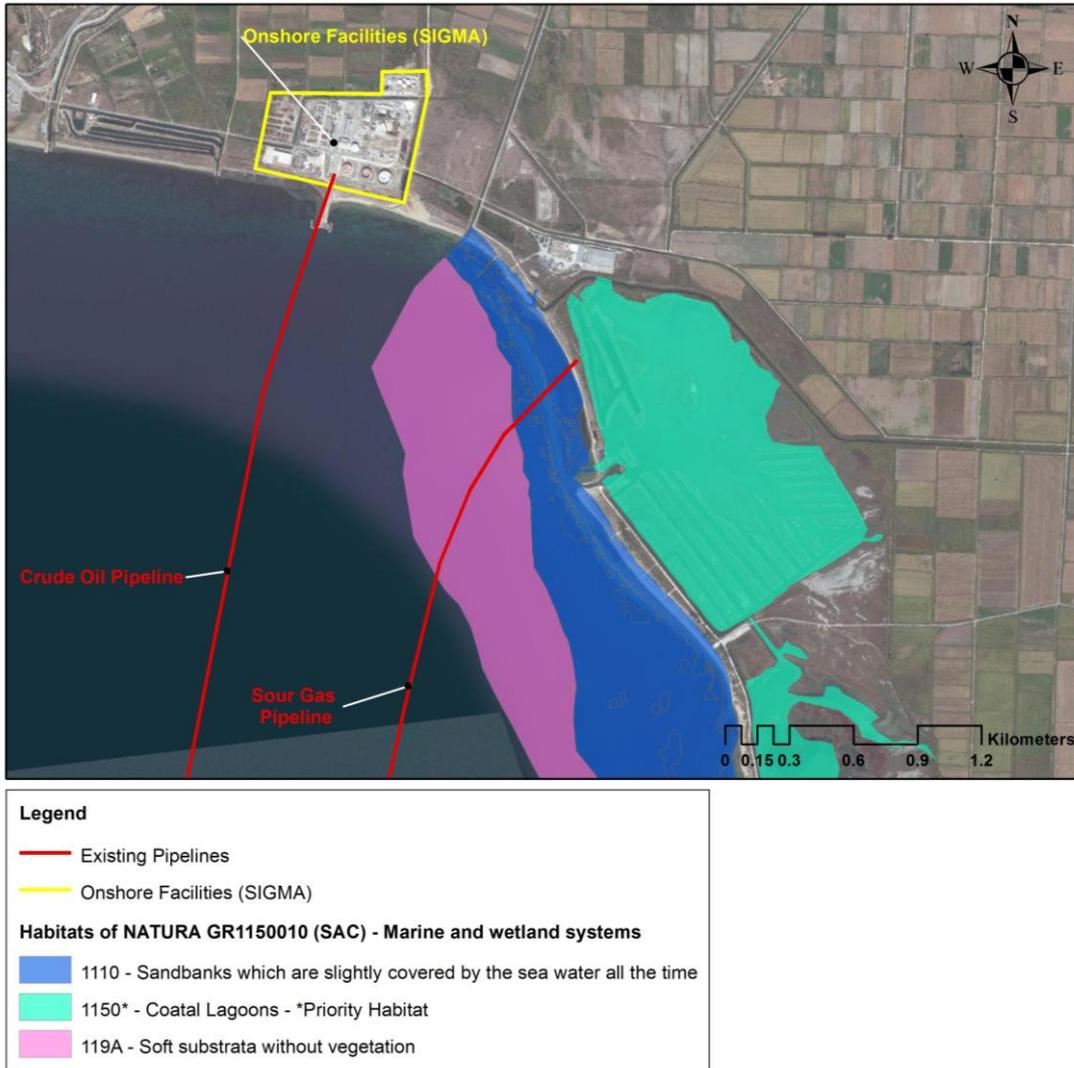


Figure12: Habitats of marine and wetland systems according to the mapping of the Project “Identification and description of habitat types in SAC areas”, Ministry of Environment (2001)

As shown in the above figure, the habitats in the study area are 1110 “Sandbanks which are slightly covered by the sea water all the time”, 1150 “Coastal lagoons” – PRIORITY HABITAT, 119A “Soft substrata without vegetation”.

According to the field surveys, the maximum depth in the marine survey area is less than 7 meters while approaching the limits of the protected area and the mean depth is 4 meters. The majority of the survey area has less than 3 meters depth. The bathymetry is under a continuous change due to the sediment loads from the small rivers as well as from the main formation river which is Nestos River and estuary.

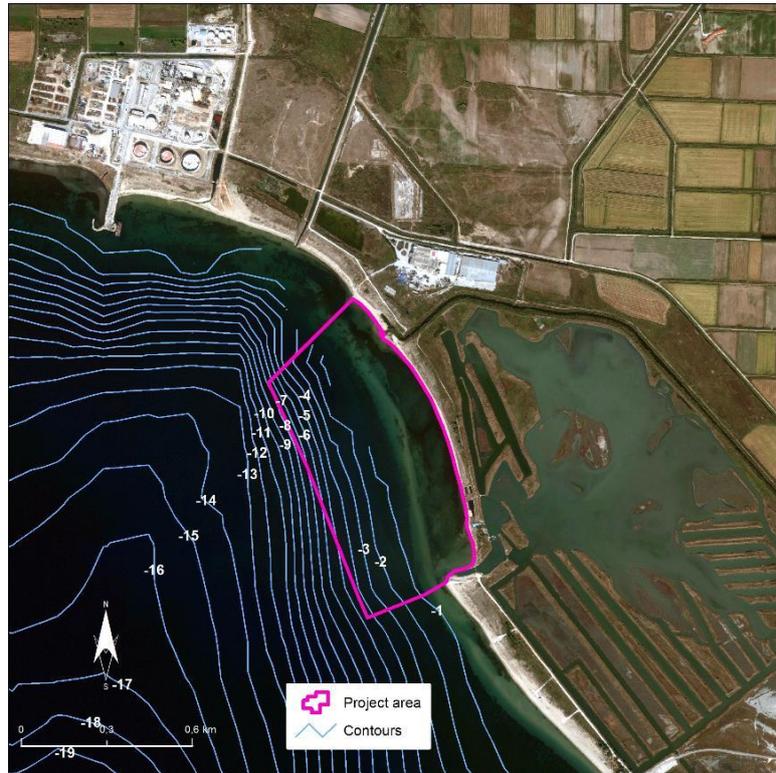


Figure13: Bathymetry map

During the winter, sediment loads are transferred to the marine environment, the depths continuously change and the ecosystem is within a continuous change as well. No information about the marine biodiversity of the marine area is available either from the Standard Data form of the NATURA 2000 or from other sources (scientific publication, Management Plan of East Macedonia and Thrace).

The marine survey area consists of the habitat “1110 - Sandbanks which are slightly covered by sea water all the time”. Sandbanks are elevated, elongated, rounded or irregular topographic features, permanently submerged and predominantly surrounded by deeper water. They consist mainly of sandy sediments, but larger grain sizes, including boulders and cobbles, or smaller grain sizes including mud may also be present on a sandbank. Banks where sandy sediments occur in a layer over hard substrata are classed as sandbanks if the associated biota are dependent on the sand rather than on the underlying hard substrata. “Slightly covered by sea water all the time” means that above a sandbank the water depth is seldom more than 20 m below chart datum. Sandbanks can, however, extend beneath 20 m below chart datum. It can, therefore, be appropriate to include in designations such areas where they are part of the feature and host its biological assemblages.

The sandbank in the study area are covered by the Lesser Neptune grass or seahorse grass *Cymodocea nodosa*. *Cymodocea nodosa* is a marine plant with thin leaves of length approximately 20-30 cm, with sparse shoot density and a compact root network that can create

thick banks (Short et al., 2010 and references therein, Cancemi et al., 2002, Poursanidis unpublished data). It creates large meadows in shallow waters (<5 m) but can resist also in deeper waters, depending on the water clarity (e.g. South Greece - Crete in waters of 30m deep). Sandbanks are of commercial importance due to the shellfish production (Clams, Scallops and other species) as well as fishing grounds and feeding ground for bird species, especially when these occur close to wetland ecosystems. Sandbanks also act as nursery ground for several fish species of commercial importance (Boudouresque et al., 2012)

In the study area, at the shallow part (depth < 3 m), a dense meadow with elongated leaves dominate the seascape. Deeper, the same aquatic plant exists but forms a sparse meadow with short leaves. The area is influenced by the two river mounts that transfer sediment loads. Close to the river mouths no vegetation exists. This is due to the continuous transfer of sediment loads that prevent the penetration of the sun and thus the photosynthetic activity of the plants. Also, the salinity close to the mouths is usually lower that what *Cymodocea nodosa* can stand.

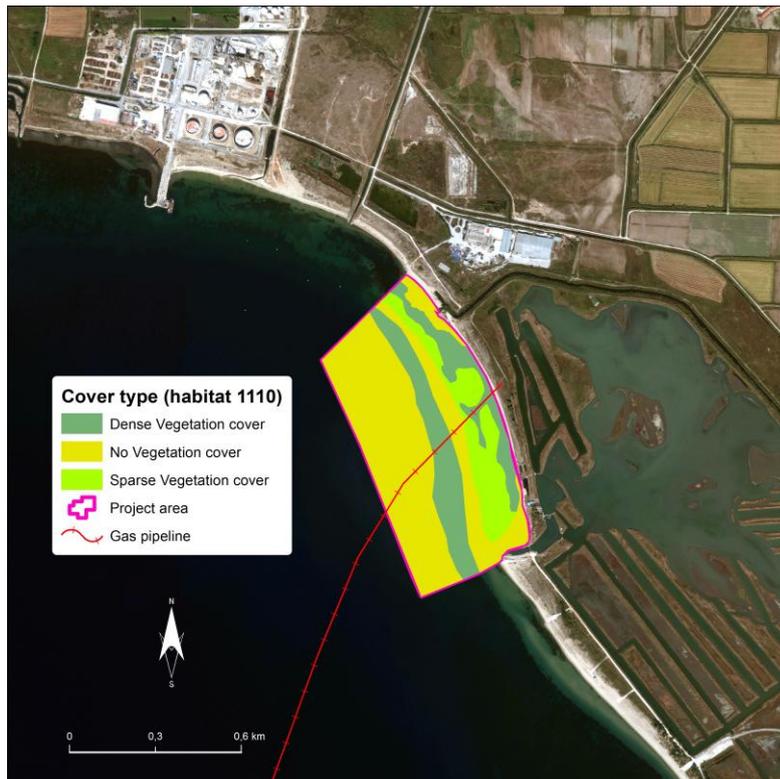


Figure14: Marine Habitat map

The area is a typical soft bottom assemblage which is a living habitat for fish, molluscs, decapods (mainly crabs) and Echinodermata (sea urchins and sea cucumbers). Among the findings (see table below – the protection status of the species, if any, has been assigned), important is the existence of the endemic bivalve, the Noble Pen shell *Pinna nobilis* Linnaeus, 1758 and the gastropod *Tonna galea* (Linnaeus, 1758). The bivalve *Pinna nobilis* is a strictly protected species under international and national conventions (Protocol for Specially, Protected Areas and Biological Diversity in the Mediterranean of the Barcelona Convention, Habitats Directive 92/43/EC, Annex IV – Strictly protection, Presidential Decree 67/1981, 109/2002 and 227/2003). The gastropod *Tonna galea* is also protected species (Bern Convention, Protocol for Specially, Protected Areas and Biological Diversity in the Mediterranean of the Barcelona Convention, Presidential Decree 67/1981, 109/2002 and 227/2003).

Table 2: List of marine species and their conservation status

Scientific Name	Phylum	Class	Order	Family	Genus	Conservation Status
<i>Sabella spallanzanii</i>	Annelida	Polychaeta	Sabellida	Sabellidae	Sabella	
<i>Callinectes sapidus</i>	Arthropoda	Malacostraca	Decapoda	Portunidae	Callinectes	
<i>Pachygrapsus marmoratus</i>	Arthropoda	Malacostraca	Decapoda	Grapsidae	Pachygrapsus	
<i>Eriphia verrucosa</i>	Arthropoda	Malacostraca	Decapoda	Eriphiidae	Eriphia	
<i>Mullus barbatus barbatus</i>	Chordata	Actinopteri	Perciformes	Mullidae	Mullus	
<i>Echinaster (Echinaster) sepositus</i>	Echinodermata	Asteroidea	Spinulosida	Echinasteridae	Echinaster	
<i>Arbacia lixula</i>	Echinodermata	Echinoidea	Arbacioida	Arbaciidae	Arbacia	
<i>Pinna nobilis</i>	Mollusca	Bivalvia	Pterioida	Pinnidae	Pinna	HD, PBC, PD 67/1981, PD 109/2002, PD 227/2003
<i>Donax trunculus</i>	Mollusca	Bivalvia	Veneroida	Donacidae	Donax	
<i>Octopus vulgaris</i>	Mollusca	Cephalopoda	Octopoda	Octopodidae	Octopus	
<i>Sepia officinalis</i>	Mollusca	Cephalopoda	Sepiida	Sepiidae	Sepia	
<i>Hexaplex trunculus</i>	Mollusca	Gastropoda	Neogastropoda	Muricidae	Murex	PD 227/2003
<i>Bolinus brandaris</i>	Mollusca	Gastropoda	Neogastropoda	Muricidae	Bolinus	PD 227/2003
<i>Ostrea edulis</i>	Mollusca	Bivalvia	Ostreoida	Ostreidae	Ostrea	
<i>Tonna galea</i>	Mollusca	Gastropoda	Littorinimorpha	Tonnidae	Tonna	BC, PBC, PD 67/1981, PD 109/2002, PD 227/2003

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Scientific Name	Phylum	Class	Order	Family	Genus	Conservation Status
<i>Solen marginatus</i>	Mollusca	Bivalvia	[unassigned] Euheterodonta	Solenidae	Solen	
<i>Mytilus edulis</i>	Mollusca	Bivalvia	Mytiloida	Mytilidae	Mytilus	PD 227/2003
<i>Acanthocardia echinata</i>	Mollusca	Bivalvia	Veneroida	Cardiidae	Acanthocardia	
<i>Acanthocardia aculeata</i>	Mollusca	Bivalvia	Veneroida	Cardiidae	Acanthocardia	
<i>Donax semistriatus</i>	Mollusca	Bivalvia	Veneroida	Donacidae	Donax	
<i>Cerithium vulgatum</i>	Mollusca	Gastropoda	[unassigned] Caenogastropoda	Cerithiidae	Cerithium	
<i>Nucula sulcata</i>	Mollusca	Bivalvia	Nuculida	Nuculidae	Nucula	
<i>Pecten jacobaeus</i>	Mollusca	Bivalvia	Pectinoida	Pectinidae	Pecten	PD 109/2002, PD 227/2003
<i>Flexopecten flexuosus</i>	Mollusca	Bivalvia	Pectinoida	Pectinidae	Flexopecten	PD 227/2003
<i>Palliolium</i>	Mollusca	Bivalvia	Pectinoida	Pectinidae	Palliolium	
<i>Chamelea gallina</i>	Mollusca	Bivalvia	Veneroida	Veneridae	Chamelea	
<i>Politapes aureus</i>	Mollusca	Bivalvia	Veneroida	Veneridae	Venerupis	
<i>Venus verrucosa</i>	Mollusca	Bivalvia	Veneroida	Veneridae	Venus	PD 227/2003
<i>Dosinia exoleta</i>	Mollusca	Bivalvia	Veneroida	Veneridae	Dosinia	
<i>Mactra stultorum</i>	Mollusca	Bivalvia	Veneroida	Mactridae	Mactra	
<i>Lutraria lutraria</i>	Mollusca	Bivalvia	Veneroida	Mactridae	Lutraria	
<i>Ensis minor</i>	Mollusca	Bivalvia	[unassigned] Euheterodonta	Pharidae	Ensis	
<i>Abra longicallus</i>	Mollusca	Bivalvia	Veneroida	Semelidae	Abra	
<i>Scrobicularia plana</i>	Mollusca	Bivalvia	Veneroida	Semelidae	Scrobicularia	
<i>Solecurtus strigilatus</i>	Mollusca	Bivalvia	Veneroida	Solecurtidae	Solecurtus	
<i>Anomia</i>	Mollusca	Bivalvia	Pectinoida	Anomiidae	Anomia	
<i>Cymodocea nodosa</i>	Tracheophyta		Alismatales	Cymodoceaceae	Cymodocea	

BC = Bern Convention, PBC = Protocol for Specially Protected Areas and Biological Diversity in the Mediterranean of the Barcelona Convention, HD = Habitats Directive (92/43/EC), PD = Presidential Decree

In the area, a large population of the Noble Pen *Pinna nobilis* shell has been found and recorded. Medium sized shells exist in clusters in the middle part of the project area only, among the seagrass meadow. The river mounths due to sediment loads and the colder waters prohibit the sprawl of the population. The noble pen shell is covered by symbiotic organisms (crustacean, annelid tubes) and is a host of the common octopus (*Octopus vulgaris*). The latter

creates small chambers at the basis of the noble pen shell; small chambers are also built by using small pebbles or other empty shells. More than 10 individuals have been recorded during the field expedition in the area.

The existence of the endemic and protected invertebrate, the Noble Pen Shell *Pinna nobilis*, is of major importance and priority for the conservation of the population. According to the Red Data Book of Greece, *Pinna nobilis* has been classified as Vulnerable.

2.1.4.2 Terrestrial Natural Environment

Habitats

According to the Project “Management Plan for the National Park of East Macedonia and Thrace, Management Body of Nestos Delta - Vistonida – Ismarida, (2010)” and the field surveys, the habitats in the survey area are shown in the following figure.



Figure15: Habitats of terrestrial systems according to the mapping of the Project “Identification and description of habitat types in SAC areas”, Ministry of Environment (2001)

As shown in the map and according to the field survey, the habitats that occur in the study and field survey area are:

- 1420 Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*)
Annex I Habitat type, Directive 92/43/EC – Priority: no
Perennial vegetation of marine saline muds (schorre) mainly composed of scrub, essentially with a Mediterranean-Atlantic distribution (Salicornia, Limonium vulgare,

Suaeda and Atriplex communities) and belonging to the Sarcocornetea fruticosi class.

- 1410 Mediterranean salt meadows (*Juncetalia maritimi*)

Annex I Habitat type, Directive 92/43/EC – Priority: no

Various Mediterranean and western Pontic (Black Sea) communities of the Juncetalia maritimi.

- 1210 Annual vegetation of drift lines

Annex I Habitat type, Directive 92/43/EC – Priority: no

*Formations of annuals or representatives of annuals and perennials, occupying accumulations of drift material and gravel rich in nitrogenous organic matter (*Cakiletea maritimae* p.).*

- 72A0 Reed thickets (*Phragmites australis*) – non Annex I Habitat type, Directive 92/43/EC
- 1061 Sandy land without vegetation - non Annex I Habitat type, Directive 92/43/EC
- 2190 Humid dune slacks

Humid depressions of the dunal systems. Humid dune-slacks are extremely rich and specialised habitats very threatened by the lowering of water tables.

Vegetation

The plant communities classified in vegetation unit are the followings:

Vegetation in Mediterranean salt meadows

Plant text: *Juncus maritimus*, *Juncus acutus*, *Carex extensa*, *Aster tripolium*, *Plantago cornuti*, *Scorzonera parviflora*, *Hordeum nodosum*, *Hordeum maritimum*, *Trifolium squamosum*, *Trifolium michelianum*, *Alopecurus bulbosus*, *Carex divisa*, *Ranunculus ophioglossifolius*, *Linum maritimum* (Protected by EU Habitats Directive); *Plantago crassifolia*, *Blackstonia imperfoliata*, *Centaureum tenuiflorum*, *Orchis coriophora* ssp. *Fragans*, *Puccinellia fasciculata*, *Aeluropus littoralis*, *Juncus gerardi*, *Puccinellia festuciformis*, *Artemisia coerulescens*, *Eleocharis palustris*, *Puccinellia gigantea*, *Arthrocnemum macrostachyum*, *Aeluropus littoralis*, *Centaureum spicatum*, *Cressa cretica*, *Crypsis factorofskyi*, *Crypsis schoenoides*, *Glinus lotoides*, *Limonium echioides*, *Parapholis marginata*, *Schoenoplectus littoralis*, *Spergularia marina*, *Sphenopus divaricatus*.

Vegetation of drift lines

Plant text: *Cakile maritima*, *Salsola kali*, *Atriplex* spp. (particularly *Atriplex glabriuscula*), *Polygonum* spp., *Euphorbia peplis*, *Mertensia maritima*, *Elymus repens*, *Potentilla anserina*, and, particularly in Mediterranean formations, *Glaucium flavum*, *Matthiola sinuata*, *Matthiola tricuspidata*, *Euphorbia paralias*, *Eryngium maritimum*.

Vegetation in Mediterranean and thermo-Atlantic halophilous scrubs

Plant text: *Halimione portulacoides*, *Inula crithmoides*, *Suaeda vera* and shrubby *Sarcocornia*.

Vegetation of low topographic level (*Sarcocornetea*): *Sarcocornia perennis*, *Sarcocornia alpini*, *Sarcocornia fruticosa*, *Arthrocnemum macrostachyum* (= *Arthrocnemum glaucum*), *Halocnemum strobilaceum*.

Vegetation in reeds

The reeds grow in stagnant water in clay soils. This vegetation type occurs mainly around the lagoons. The vegetation consists mainly of pure stands of reed (*Phragmites australis*).

Indicative plants in the survey area are given in the following table.

Table 3: Indicative plants in the survey area

Scientific name	Family	Genus	Protection status
<i>Salsola kali</i>	Amaranthaceae	Salsola	Not included in Annexes II, IV, V of Directive 92/43
<i>Salicornia europaea</i>	Amaranthaceae	Salicornia	Not included in Annexes II, IV, V of Directive 92/43
<i>Eryngium maritimum</i>	Apiaceae	Eryngium	Not included in Annexes II, IV, V of Directive 92/43
<i>Polygonum maritimum</i>	Polygonaceae	Polygonum	Not included in Annexes II, IV, V of Directive 92/43
<i>Juncus acutus</i>	Juncaceae	Juncus	Not included in Annexes II, IV, V of Directive 92/43
<i>Juncus maritimus</i>	Juncaceae	Juncus	Not included in Annexes II, IV, V of Directive 92/43
<i>Rubus fruticosus</i>	Rosaceae	Rubus	Not included in Annexes II, IV, V of Directive 92/43
<i>Medicago sativa</i>	Fabaceae	Medicago	Not included in Annexes II, IV, V of Directive 92/43
<i>Phragmites australis</i>	Poaceae	Phragmites	Not included in Annexes II, IV, V of Directive 92/43
<i>Ceratonia siliqua</i>	Fabaceae	Ceratonia	Not included in Annexes II, IV, V of Directive 92/43
<i>Tamarix</i>	Tamaricaceae	Tamarix	Not included in Annexes II, IV, V of Directive 92/43
<i>Pinus Halepensis</i>	Pinaceae	Pinus	Not included in Annexes II, IV, V of Directive 92/43
<i>Conyza canadensis</i>	Asteraceae	Conyza	Not included in Annexes II, IV, V of Directive 92/43
<i>Atriplex latifolia</i>	Amaranthaceae	Atriplex	Not included in Annexes II, IV, V of Directive 92/43
<i>Chondrilla juncea</i>	Asteraceae	Chondrilla	Not included in Annexes II, IV, V of Directive 92/43
<i>Centaurea sp.</i>	Asteraceae	Centaurea	Not included in Annexes II, IV, V of Directive 92/43
<i>Carum multiflorum</i>	Apiaceae	Carum	Not included in Annexes II, IV, V of Directive 92/43
<i>Solanum elaeagnifolium</i>	Solanaceae	Solanum	Not included in Annexes II, IV, V of Directive 92/43

Scientific name	Family	Genus	Protection status
<i>Satureja montana</i>	Lamiaceae	Satureja	Not included in Annexes II, IV, V of Directive 92/43
<i>Lactuca perennis</i>	Asteraceae	Lactuca	Not included in Annexes II, IV, V of Directive 92/43
<i>Phytolacca americana</i>	Phytolaccaceae	Phytolacca	Not included in Annexes II, IV, V of Directive 92/43
<i>Xanthium strumarium</i>	Asteraceae	Xanthium	Not included in Annexes II, IV, V of Directive 92/43
<i>Arundo donax</i>	Poaceae	Arundo	Not included in Annexes II, IV, V of Directive 92/43
<i>Halimione portulacoides</i>	Amaranthaceae	Halimione	Not included in Annexes II, IV, V of Directive 92/43
<i>Cichorium intybus</i>	Asteraceae	Cichorium	Not included in Annexes II, IV, V of Directive 92/43

Fauna

Mammals

According to the Management Plan of the National Park East Macedonia and Thrace (2010), in the wetlands of the national park there is a remarkable variety of mammals. It has been observed 54 species of mammals, of which 15 are rodents, 17 are bats, 10 are carnivores and 3 cetaceans. A list of them and their conservation status is given in Appendix 10.2. The most important species are:

Mehely Rhinolophus mehelyi

Rhinolophus Euryale

Rhinolophus blassii

Myotis capaccinii

Miniopterus schreibersii

Nyctalus lasiopterus

Spermophilus citellus

Arvicola amphibious

Neomys anomalus

Micromys minutus

Canis aureus

Lutra lutra

Monachus monachus

Delphinus delphis

Phocoena phocoena

Tursiops truncates

Reptiles

According to the Management Plan of the National Park East Macedonia and Thrace (2010), 28 species of reptiles have been observed in the National Park. The most important species are:

Caretta caretta

Chelonia mydas

Dermochelis coriacea

Emys orbicularis

Testudo graeca

Eurotestudo hermanni

Elaphe quatuorlineata

Elaphe sauromates

Zamenis situlus

Amphibia

According to the Management Plan of the National Park East Macedonia and Thrace (2010), 9 species of amphibia have been observed in the National Park. A list of them and their conservation status is given in Appendix 10.2. The most important species are:

Triturus karelinii

Bombina variegata

Hyla arborea

Rana graeca

Pelobates syriacus

Pseudepidalea viridis

2.1.4.3 Bird Environment

Based on the available data, the National Park hosts 321 bird species which is equivalent to 75% of the total number of bird species recorded in Greece (Management Body of Nestos Delta - Vistonida – Ismarida, 2010). Similarly, the Gulf of Kavala is considered to be one of the most Important Areas for seabirds in Greece (Fric et al. 2012). The main reason for this high ornithological value is high primary productivity associated with a large extend of the area which lead to the creation of high quality habitats that can support the ecological requirements of numerous bird species and their large populations, both in terrestrial and marine environment (Management Body of Nestos Delta - Vistonida – Ismarida, 2010, Fric et al. 2012).

The Ramsar wetland "Nestos Delta and Adjoining Lagoons" is particularly important for waterbirds with the Nestos River estuary being the most important part of it. The site is important for breeding, migrating and wintering waterbirds (e.g. *Anser albifrons*, *Anser anser*, *Anas penelope*, *Tachybaptus ruficollis*, *Ardeola ralloides*, *Fulica atra*, *Recurvirostra avosetta* and *Larus melanocephalus*), raptors (e.g. *Aquila pomarina*, *Aquila clanga* and *Haliaeetus albicilla*), herons, waders and passerines. It is the only breeding site of *Phasianus colchicus* in Greece. (Portolou et al. 2009, SDF GR1150001).

Six Keramoti lagoons are located west of the Nestos River estuary (Monastiraki, Keramoti, Kokkala-Piges, Agiasma, Erateino kai Vasova) the westernmost among which, Vasova Lagoon, partly overlaps with the Study Area. The main habitat types in this area include sandy coastline, salt and freshwater marshes.

The Natura 2000 site SPA GR1150001 has been designated for its importance for the species listed in Annex I of the Birds Directive and for migratory species which are regularly visiting the area. The site includes habitats which are important for the fulfilment of ecological requirement (i.e. mating and breeding, foraging, roosting, maintenance (e.g. moulting) and wintering). The SPA GR1150001 qualifying species include (Dimalaxis 2010):

Table 4: List of SPA GR1150001 qualifying bird species

Species	Common Name
<i>Anser erythropus</i>	Lesser White-fronted Goose
<i>Cygnus olor</i>	Mute Swan
<i>Aythya nyroca</i>	Ferruginous Duck
<i>Puffinus yelkouan</i>	Yelkouan Shearwater
<i>Ciconia ciconia</i>	White Stork
<i>Ixobrychus minutus</i>	Little Bittern
<i>Casmerodius albus</i>	Great Egret
<i>Pelecanus crispus</i>	Dalmatian Pelican
<i>Phalacrocorax pygmeus</i>	Pygmy Cormorant
<i>Phalacrocorax carbo</i>	Great Cormorant
<i>Phalacrocorax aristotelis</i>	European Shag
<i>Falco naumanni</i>	Lesser Kestrel
<i>Aquila clanga</i>	Greater Spotted Eagle
<i>Burhinus oedicephalus</i>	Eurasian Thick-knee
<i>Vanellus spinosus</i>	Spur-winged Lapwing
<i>Numenius tenuirostris</i>	Slender-billed Curlew
<i>Glareola pratincola</i>	Collared Pratincole
<i>Larus melanocephalus</i>	Mediterranean Gull

Species	Common Name
<i>Sterna albifrons</i>	Little Tern
<i>Dendrocopos syriacus</i>	Syrian Woodpecker
<i>Lanius minor</i>	Lesser Grey Shrike
<i>Calandrella brachydactyla</i>	Greater Short-toed Lark

The total list of species present in the SPA GR1150001 and SAC GR1150010, listed in Annex I of the Birds Directive, as well as migratory species not listed in the Annex I of the Birds Directive are presented in Appendix 10.3 of the present Study. In summary, based on the data available in the Standard Data Forms for the two sites there are 106 species listed in the Annex I of the Birds Directive and 118 migratory species which are not listed in the Annex I of the Birds Directive.

As described above the field surveys have assessed the presence and relative abundance of birds in the Study Area during the post-breeding season. In total 29 bird species were recorded in the Study Area. The main bird groups recorded include resident seabirds and herons, migratory passerines, as well as post-breeding concentrations of particular species e.g. Mediterranean Shag (*Phalacrocorax aristotelis*) and Dalmatian Pelican (*Pelecanus crispus*) which disperse after the breeding season.

The highest species richness was recorded in the Vasova Lagoon, while the largest congregations were recorded in the coastal waters of the Survey area.

Table 5: Bird species and their abundance recorded during the breeding the post-breeding season in the Study Area

#	Scientific Name ¹	Common Name ¹	Num. Ind. ²	Location ³
1	<i>Anas platyrhynchos</i>	Mallard	20	western part of Vasova Lagoon
2	<i>Ardea cinerea</i>	Grey Heron	21	WPT001, WPT003,WPT009, western part of Vasova Lagoon, eastern part of Vasova Lagoon, WPT011, WPT012, WPT015, Vasova Lagoon islet opposite to WPT017
3	<i>Casmerodius albus</i>	Great Egret	34	WPT009, western part of Vasova Lagoon, eastern part of Vasova Lagoon, Vasova Lagoon islet opposite to WPT017, Vasova Lagoon islet opposite to WPT017
4	<i>Egretta garzetta</i>	Little Egret	31	WPT001,WPT007, western part of Vasova Lagoon, eastern part of Vasova Lagoon,WPT012,WPT015, Vasova Lagoon islet opposite to WPT017
5	<i>Pelecanus crispus</i>	Dalmatian Pelican	12	eastern part of Vasova Lagoon
6	<i>Phalacrocorax pygmeus</i>	Pygmy Cormorant	1	WPT015

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#	Scientific Name ¹	Common Name ¹	Num. Ind. ²	Location ³
7	<i>Phalacrocorax carbo</i>	Great Cormorant	18	WPT007, western part of Vasova Lagoon, between WPT011 & WPT002, between WPT002 & WPT012, WPT015, Vasova Lagoon islet opposite to WPT017
8	<i>Phalacrocorax aristotelis</i>	European Shag	46	on rocks south of WPT001 (4 juv, 6 adult), southwest of WPT005, at and towards mussle farms southeast of WPT005, WPT006, buoy west of WPT001
9	<i>Circus aeruginosus</i>	Western Marsh-Harrier	4	WPT009, western part of Vasova Lagoon, between WPT002 & WPT012, WPT013, WPT015
10	<i>Accipiter nisus</i>	Eurasian Sparrowhawk	1	WPT012
11	<i>Buteo buteo</i>	Common Buzzard	4	western part of Vasova Lagoon, between WPT011 & WPT002, WPT013
12	<i>Fulica atra</i>	Common Coot	2	WPT013
13	<i>Tringa totanus</i>	Common Redshank	1	western part of Vasova Lagoon
14	<i>Actitis hypoleucos</i>	Common Sandpiper	3	WPT004, eastern part of Vasova Lagoon
15	<i>Larus cachinans</i>	Yellow-legged Gull	219	WPT001, southeast of WPT005, WPT006, WPT009, western part of Vasova Lagoon, eastern part of Vasova Lagoon, WPT011, between WPT002 & WPT012, WPT012, buoy west of WPT001
16	<i>Larus ridibundus</i>	Black-headed Gull	177	WPT001, southeast of WPT005, western part of Vasova Lagoon, eastern part of Vasova Lagoon, between WPT002 & WPT012, WPT012, WPT015
17	<i>Alcedo atthis</i>	Common Kingfisher	5	WPT001, WPT003, WPT009, WPT015
18	<i>Lanius senator</i>	Woodchat Shrike	1	WPT014
19	<i>Pica pica</i>	Black-billed Magpie	5	between WPT002 & WPT003, WPT003, western part of Vasova Lagoon, WPT013
20	<i>Galerida cristata</i>	Crested Lark	5	WPT001, WPT002, WPT006
21	<i>Cettia cetti</i>	Cetti's Warbler	7	WPT001, WPT006, WPT008, WPT015
22	<i>Sylvia borin</i>	Garden Warbler	1	between WPT002 & WPT012
23	<i>Turdus philomelos</i>	Song Thrush	1	between WPT011 & WPT002
24	<i>Passer hispaniolensis</i>	Spanish Sparrow	96	WPT001, between WPT002 & WPT003, WPT004, WPT006, WPT013
25	<i>Motacilla alba</i>	White Wagtail	2	WPT003
26	<i>Carduelis chloris</i>	European Greenfinch	11	WPT004
27	<i>Carduelis carduelis</i>	European Goldfinch	3	WPT006
28	<i>Emberiza sp.</i>		5	WPT008
29	<i>Acrocephalus sp.</i>		1	WPT013, WPT015

¹Scientific Name and Common Name based on the BirdLife ChackList Version 1 - May 2008
<http://www.birdlife.org/datazone/info/taxonomy>

²Number of individuals recorded in the Study Area

³Description of locations within the Study Area where the species was recorded (please see Table 1.1 above).

The largest part of the pipelines is submerged at sea, therefore their main potential influence could be expected to on the marine environment including the bird species which regularly use the sea and the coast. The main bird groups regularly present in these habitats include seabirds and among them species of conservation concern e.g. Mediterranean Shags (*Phalacrocorax aristotelis*) and Yelkouan Shearwater (*Puffinus yelkouan*). Migratory waterfowl, gulls (e.g. *Larus ridibundus* and *Larus melanocephalus*) and waders that regularly use the marine areas and/or coastal areas during breeding, on migration or during wintering are also included among the species of conservation concern.

Based on the available published literature and reports, there are 22 species of conservation concern which are expected to be present in the Study Area and could be potentially affected by the Project, 7 of which were recorded during the field surveys (Table 2.3 below and Table 2.4 below). These include species listed in the Annex I of the Directive 2009/147/EC on the Conservation of Wild Birds (Birds Directive), which are the subject of special protection even in areas outside Natura 2000 network as well as migratory species.

Table 6: Species of conservation concern recorded or expected to be present in the Study Area including qualifying species for SPA GR1150001 and SAC GR1150010, species included in Annex I of the Birds Directive and regularly occurring migratory species

Code	Species	Conservation status ¹	Population in Natura 2000 sites ²			
			Resident	Migratory		
				Breed	Stage	Winter
A293	<i>Acrocephalus melanopogon</i>	2009/147/EC: Annex I; Bern Convention Appendix II; Bonn Convention Appendix II; RDB-Greece: VU IUCN: LC			P	
A229	<i>Alcedo atthis</i>	2009/147/EC: Annex I; Bern Convention Appendix II; Bonn Convention Appendix II; RDB-Greece: DD IUCN: LC		P		P
A090	<i>Aquila clanga</i>	2009/147/EC: Annex I; Bern Convention Appendix II; Bonn Convention Appendix I, II; International Species Action Plan RDB-Greece: EN IUCN: VU				1-5i
A133	<i>Burhinus oedicephalus</i>	2009/147/EC: Annex I; Bern Convention Appendix II; Bonn Convention Appendix II; RDB-Greece: NT IUCN: LC		P		
A027	<i>Casmerodius albus</i>	2009/147/EC: Annex I; Bern Convention Appendix II; Bonn Convention Appendix II; AWEA RDB-Greece: VU IUCN: LC				51-100i
A138	<i>Charadrius alexandrinus</i>	2009/147/EC: Annex I; Bern Convention Appendix II; Bonn Convention Appendix II; AWEA RDB-Greece: LC IUCN: LC		P		P

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Code	Species	Conservation status ¹	Population in Natura 2000 sites ²			
			Resident	Migratory		
				Breed	Stage	Winter
A081	<i>Circus aeruginosus</i>	2009/147/EC: Annex I; Bern Convention Appendix II; Bonn Convention Appendix II; CITES II/A RDB-Greece: LC IUCN: LC		P		
A026	<i>Egretta garzetta</i>	2009/147/EC: Annex I; Bern Convention Appendix II; AEWA RDB-Greece: LC IUCN: LC		101-250i		11-50i
A135	<i>Glareola pratincola</i>	2009/147/EC: Annex I; Bern Convention Appendix II; Bonn Convention Appendix II; AEWA RDB-Greece: VU IUCN: LC		20-20i		
A131	<i>Himantopus himantopus</i>	2009/147/EC: Annex I; Bern Convention Appendix II; Bonn Convention Appendix II; AEWA RDB-Greece: LC IUCN: LC			P	
A176	<i>Larus melanocephalus</i>	2009/147/EC: Annex I; Bern Convention Appendix II; Bonn Convention Appendix II; AEWA RDB-Greece: EN IUCN: LC			P	P
A020	<i>Pelecanus crispus</i>	2009/147/EC: Annex I; Bern Convention Appendix II; Bonn Convention Appendix I, II; CITES I/A; AEWA; International Species Action Plan; RDB-Greece: VU IUCN: VU				6-10i
A392	<i>Phalacrocorax aristotelis</i>	2009/147/EC: Annex I; Bern Convention Appendix II; International Species Action Plan RDB-Greece: NT IUCN: LC	P			
A391	<i>Phalacrocorax carbo</i>	Bern Convention Appendix III; AEWA RDB-Greece: NE IUCN: LC				101-250i
A393	<i>Phalacrocorax pygmeus</i>	2009/147/EC: Annex I; Bern Convention Appendix II; Bonn Convention Appendix II; AEWA RDB-Greece: LC IUCN: LC				51-100i
A035	<i>Phoenicopterus roseus</i>	2009/147/EC: Annex I; Bern Convention Appendix II; Bonn Convention Appendix II; CITES II/A; AEWA RDB-Greece: LC IUCN: LC				51-100i
A034	<i>Platalea leucorodia</i>	2009/147/EC: Annex I; Bern Convention Appendix II; Bonn Convention Appendix II; CITES II/A; AEWA RDB-Greece: VU IUCN: LC			P	
A013	<i>Puffinus yelkouan</i>	2009/147/EC: Annex I; Bern Convention Appendix II; RDB-Greece: NT IUCN: VU			V	

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Code	Species	Conservation status ¹	Population in Natura 2000 sites ²			
			Resident	Migratory		
				Breed	Stage	Winter
A132	<i>Recurvirostra avosetta</i>	2009/147/EC: Annex I; Bern Convention Appendix II; Bonn Convention Appendix II; AWEA RDB-Greece: VU IUCN: LC			P	
A195	<i>Sterna albifrons</i>	2009/147/EC: Annex I; Bern Convention Appendix II; Bonn Convention Appendix II; AWEA RDB-Greece: NT IUCN: LC		51-100i		
A193	<i>Sterna hirundo</i>	2009/147/EC: Annex I; Bern Convention Appendix II; Bonn Convention Appendix II; AWEA RDB-Greece: LC IUCN: LC			P	
A418	<i>Vanellus spinosus</i>	2009/147/EC: Annex I; Bern Convention Appendix II; Bonn Convention Appendix II; AWEA RDB-Greece: VU IUCN: LC		35-35i		

Code: Natura 2000 species code

Species: Scientific species name

¹Conservation Status:

Birds directive: Directive 2009/147/EC of the European Parliament and the Council on the conservation of wild birds (http://ec.europa.eu/environment/nature/legislation/birdsdirective/index_en.htm):

Annex I: Species being a subject of special conservation measures concerning their habitat in order to ensure their survival and reproduction in their area of distribution

Annex II/A: Species that may be hunted in the geographical sea and land area where the Directive applies

Annex II/B: Species that may be hunted only in the Member States in respect of which they are indicated

Bern Convention: Convention on the Conservation of European Wildlife and Natural Habitats

(<http://www.coe.int/web/bern-convention/home>):

Appendix II: Strictly protected fauna species

Appendix III: Protected fauna species

Bonn Convention: CMS Convention on the Conservation of Migratory Species of Wild Animals (<http://www.cms.int/>)

Appendix I: Endanger Migratory Species

Appendix II: Migratory Species in unfavourable conservation status to be the Subject of Agreements where these should benefit the species and should give priority to those species in an unfavourable conservation status

AWEA: Agreement on the Conservation of African-Eurasian Migratory Waterbirds (<http://www.unep-aewa.org/en/legalinstrument/aewa>)

CITES: Hellenic Wild Fauna Species and Native Flora of CITES Convention

(<http://www.ypeka.gr/Default.aspx?tabid=596&language=el-GR>)

RDB-Greece: Red Data Book of the Threatened Animals of Greece (2009)

(<http://www.ypeka.gr/LinkClick.aspx?fileticket=TPsw%2b3PNVX8%3d&tabid=518&language=el-GR>)

Categories: **CR:** Critically Endangered; **EN:** Endangered; **VU:** Vulnerable; **NT:** Near Threatened; **LC:** Least Concern;

DD: Data deficient; **NE:** Not Evaluated

IUCN: IUCN Red List of Threatened Species (<http://www.iucnredlist.org/>)

Categories: **CR:** Critically Endangered; **EN:** Endangered; **VU:** Vulnerable; **NT:** Near Threatened; **LC:** Least Concern;

DD: Data deficient; **NE:** Not Evaluated

²**Population in Natura 2000 sites:** Population and presence data based on the GR1150001 and GR1150010 Standard Data Forms (SDF).

2.2 OTHER EXISTING OR APPROVED PROJECTS IN THE STUDY AREA

In the broader study area, there is the HELLENIC FERTILIZERS SA facility which is located on the coast of Nea Karvali. The installation produces ammonia, acids and fertilizers. Specifically,

the production includes anhydrous ammonia, sulphuric acid, nitric acid, phosphoric acid, compound fertilizers NP/NPK and nitric fertilizers AN/CAN. The recipient of industrial wastewater is the sea and the main pollutants of the facility are due to the N and P. The distance of this facility from the onshore facilities of the study project is approximately 1,5 km.

Moreover, in the broader study area (1km distance from the onshore facilities), there is a closed swordfish facility which produced salted fish ten years ago.

It is important also to mention that there are four fisheries in the locations shown in the following figure.

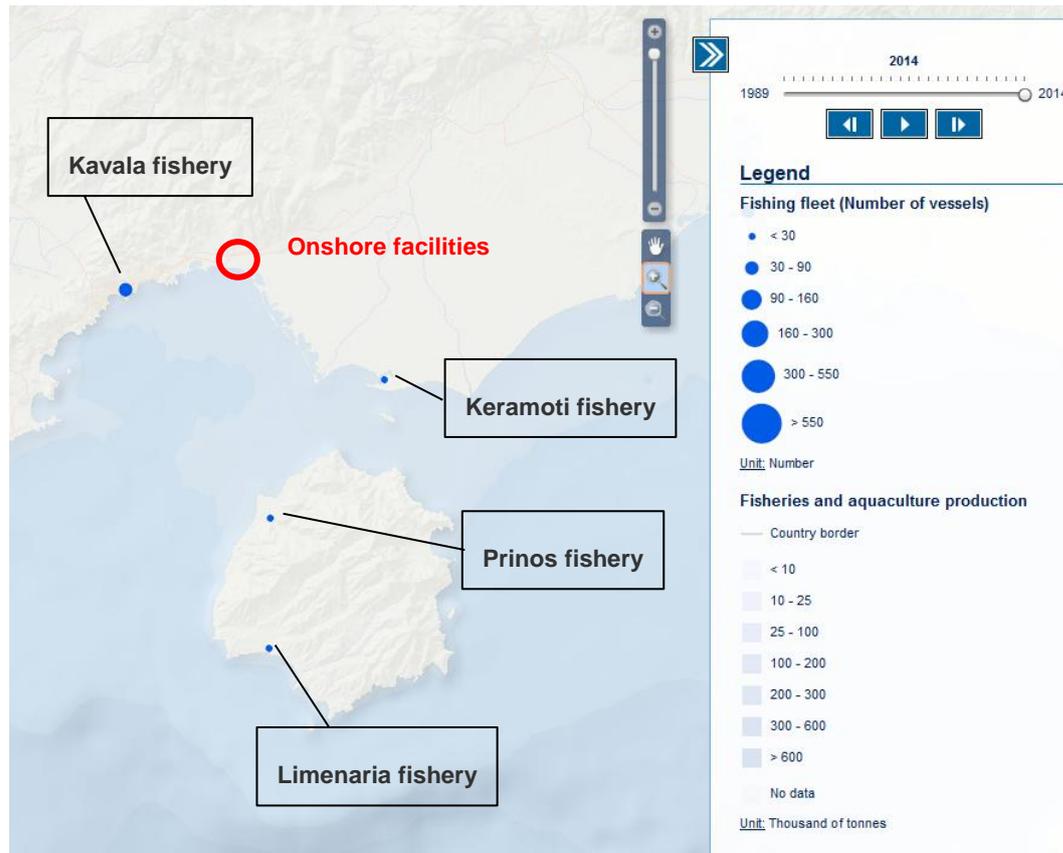


Figure16: Fisheries

2.3 ADDITIONAL INFORMATION RELATED TO THE STUDY AREA

The international importance of the area is further supported by its inclusion in the network of Important Bird Areas (IBAs) identified by the BirdLife International i.e. the study area is part of the IBAs GR12 "Nestos Delta and coastal lagoons" and GR 250 "Gulf of Kavala and marine area of Thasos Island". Based on the decision of the European Court of Justice the IBAs

constitute baseline reference information of the determination of SPAs therefore the marine areas covered by the IBA GR250 (part of it or as a whole), currently not included in the Natura 2000 network, could be included in the future in the Natura 2000 network.



Figure17: Important Bird Areas (IBAs) relevant to the Study Area (red circle) (adopted from BirdLife International, Important Bird and Biodiversity Areas (IBAs) <http://www.birdlife.org/datazone/site>).

The IBA12 qualifying species include *Anser erythropus*, *Branta ruficollis*, *Aythya nyroca*, *Puffinus yelkouan*, *Ixobrychus minutus*, *Ciconia ciconia*, *Casmerodius albus*, *Pelecanus crispus*, *Phalacrocorax pygmeus*, *Phalacrocorax carbo*, *Phalacrocorax aristotelis*, *Falco naumanni*, *Accipiter brevipes*, *Aquila clanga*, *Burhinus oedicephalus*, *Vanellus spinosus*, *Charadrius alexandrinus*, *Numenius tenuirostris*, *Glareola pratincola*, *Larus melanocephalus*, *Sterna albifrons*, *Dendrocopos syriacus*, *Lanius minor*, *Lanius nubicus* and *Calandrella brachydactyla*.

The qualifying species for the IBA250 GR250 "Gulf of Kavala and marine area of Thasos island" include *Phalacrocorax aristotelis* and *Puffinus yelkouan*. This Marine IBA includes the entire Gulf of Kavala, the Straits of Thasos, coastal waters along southern Thasos Island and along the mainland up till Drakopetra in the west. This IBA has been designated for its importance for the Mediterranean Shag (*Phalacrocorax aristotelis desmarestii*) and for the Yelkouan Shearwater (*Puffinus yelkouan*). More specifically, the area includes the foraging and maintenance marine areas of the largest breeding population of the Mediterranean Shag in Greece which breeds in the SPAs GR1150001 "Delta Nestou kai limno thalasses Keramotis

kai nisos Thasopolula" and GR1150012 "Thasos (Oros Ypsario kai parakatia zoni)" and consists 10% of the national breeding population of the species. After the end of the breeding season, Mediterranean Shags from other areas migrate to the area, due to abundant food sources present in the area, resulting in the 17% of the national wintering population of the species spending its post-breeding period in the area. Due to shallow waters (<50m) of the Gulf of Kavala, the Mediterranean Shags use the entire area of the Gulf for foraging. Additionally, the area also host large foraging concentrations (up to 2000 individuals) of the Yelkouan Shearwater (*Puffinus yelkouan*) which regularly feed in the area in both coastal and pelagic waters (Fric et al. 2012). The marine part of the Study Area partly overlaps with the Marine IBA GR250.

2.4 PHOTOGRAPHIC DOCUMENTATION

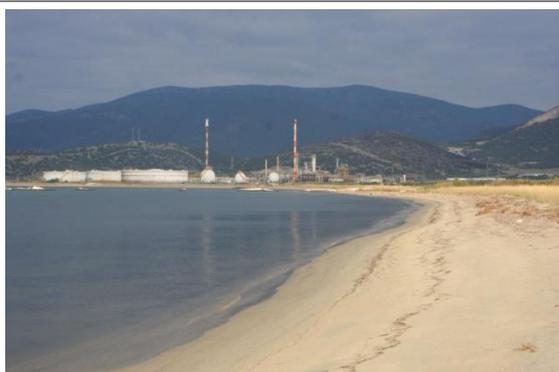
2.4.1.1 General



Prinos facilities as seen from the Study Area



Emergency shutdown valve of the natural gas pipeline



Coastline NW of the emergency shutdown valve



Coastline NW of the emergency shutdown valve



Aquaculture SE of the Study Area



Vegetated islet in Vasova Lagoon



Vasova lagoon covered with halophytic vegetation

2.4.1.2 Marine natural environment



Cymodocea nodosa meadow – in the centre attached are colonies of composite ascidians



Cymodocea nodosa meadow – in the center a holothurian (*Holothuria tubulosa*).



The Noble Pen shell (*Pinna nobilis*). Attached are anemones (*Anemonia viridis*)



In the meadow a sea fan worm (*Sabella spallanzani*). The black items on the leaves of the meadow are eggs of the cuttlefish (*Sepia officinalis*).



Pinna nobilis and sea urchin (*Paracentrotus lividus*)



Pinna nobilis and sea urchin (*Paracentrotus lividus*). The shell is covered by barnacles.



The green algae *Codium fragile* in between the meadow.



In the middle of the area the depth does not exceed the depth of 4 meters.



Long leaves of the meadow in the middle of the area



Colonies of the mussel *Mytilus edulis*.



Artificial submerged structures for the collection of octopus.

2.4.1.3 Terrestrial natural environment



Salicornia europaea



Polygonum maritimum



Rubus fruticosus



Medicago sativa



Phragmites australis



Ceratonion siliqua



Tamarix parviflora



Pinus Halepensis



Conyza canadensis



Atriplex latifolia



Juncus maritimus
Juncus acutus



Eryngium maritimum



Chondrilla juncea



Centaurea sp.



Carum multiflorum



Solanum elaeagnifolium



Lactuca perennis



Satureja montana



Phytolacca americana



Xanthium strumarium



Salsola kali



Arundo donax
Atriplex latifolia



Cichorium intybus

2.4.1.4 Avifauna environment



Little Egret on the coast of the Study Area



Great Cormorant (*P. carbo*) above Vasova lagoon



Dalmatian pelicans (*Pelecanus crispus*) at Vasova lagoon



Little Egrets (*Egretta garzetta*) and Great Egrets (*Casmerodius albus*) at Vasova lagoon



Grey Heron (*Adrea cinerea*) at Vasova Lagoon



Marsh-Harrier (*Circus aeruginosusi*) at Vasova lagoon



Pygmy Cormorant (*P. pygmeus*) at Vasova lagoon



Mediterranean Shags (*P. aristotelis*) and Yellow-legged Gulls (*L. cachinnans*) off coast of Study Area

2.5 ECOLOGICAL EVALUATION OF NATURA AREAS IN THE STUDY AREA

Conservation status for natural habitat types is defined in Article 1 (e) as “the sum of the influences acting on a natural habitat and its typical species that may affect its long-term natural distribution, structure and functions as well as the long-term survival of its typical species”. The conservation status is taken as favorable when, (a) its natural range and the areas it covers within that range are stable or increasing; (b) the specific structure and function which are necessary for its long-term maintenance are present and are likely to continue to exist in the foreseeable future; and (c) the conservation status of typical species that live in these habitat types is favorable as well.

Conservation status for species is defined in Article 1(i) “as the sum of influences acting on the species concerned that may affect the long-term distribution and abundance of its populations...” It is taken as favorable when (a) populations are maintaining themselves over the long term and are no longer showing signs of continuing decline; (b) their natural range is not being reduced; and (c) there is and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

The **conservation objectives** for a Natura 2000 site are determined under the Habitats Directive and intend to ensure that the relevant Annex I habitats and Annex II species present on a site are maintained in a favorable condition. Article 1 states that for the purpose of the Directive “Conservation means a series of measures required to maintain or restore the natural habitats and the populations of species of wild fauna and flora at a favorable status...” As stated in Article 2 the overall aim of the Habitats Directive is to contribute towards ensuring biodiversity through the conservation of natural habitats and of wild fauna and flora. The measures taken under the Directive are with a view to ensuring that the species and habitat types covered achieve “favorable conservation status” and that their long-term survival is secured across their entire natural range within the EU. The conservation objectives for any Natura 2000 site must be determined at a member state level. However they have not been established yet by the National competent authorities. As there is no reference range, and for the purposes of this assessment, the conservation objectives provided are based on a working assumption that the current condition is favorable for most qualifying features. Additionally, during conservation objectives’ determination for the sites GR1150001 and GR1150010 all directions – obligations deriving from the 44549/17.10.2008 Joint Ministerial Decision (JMD), which characterizes the wider area as National Park of East Macedonia and Thrace, were incorporated. According to the JMD’s objectives, the nature and landscape has to be protected conserved and managed as natural heritage and valuable natural resources, with great biological, ecological, aesthetic, scientific, geomorphological and educational value in both

terrestrial and aquatic parts of the region "Nestos Delta wetlands, Lake Vistonida, Lake Ismarida and the wider region".

The spatial planning system of the country affects considerably the management of protected areas to the extent that it determines the wider conditions/ prospects for their development through the specification of guidelines and/or regulations provided by statutory national, and regional spatial plans. At the level of goal setting, these plans seem to be promoting the establishment of a spatial development model in accordance with sustainability principles with an emphasis in the conservation of biodiversity.

The conservation status of Natura areas is incorporated in the Natura 2000 Standard Form (see Appendix I) and in the Management Plan of the National Park of East Macedonia and Thrace which is under consultation. The conservation status of habitats and species found in the Survey Area is described in Chapter 2 of this study.

The conservation objectives in the Natura areas and the National Park area (mentioned in the Management Plan) are the followings:

- immediate protection, conservation and restoration of particularly important habitats (priority habitat) which in this case are (a) sifting dunes (b) lagoons, (c) mediterranean temporary ponds, (d) Semi-natural dry grasslands and scrubland facies on calcareous substrates, (e) residual alluvial forests;
- immediate protection and conservation of rare, threatened, endemic and protected fauna and flora and their habitats;
- immediate protection and conservation of migratory bird species and their habitats with an emphasis on rare endangered and protected species;
- protection, restoration highlighting particularly remarkable landscapes;
- immediate protection of biological diversity, troubleshooting and artificial or natural processes that adversely impact on the wider structure and function of ecosystem (e.g. coastal erosion, salinization, poverty or pollution of aquifers)
- promotion of management practices in exploitations with a view to sustainable use of resources in the region as:
 - further harmonization of tourism development with the sensitivity and the particular interests of the region. Promotion and support of ecotourism development with proper "integration" of environmental interests in the overall tourist appeal of the area
 - support and promotion of the primary sector in the directions of environmentally friendly practices (organic farming and animal husbandry, "ecological farms", by priority, related subsidies for the study area)
 - protection of natural resources by conflicting land uses and activities which could downgrade the biological diversity of the region

- contribution to local, regional and national development
- public access in such a way that the ecological values of the area are preserved.

Critical factors for the feasibility of the above mentioned conservation objectives are:

- time availability;
- available financial resources, technical and human resources;
- the sufficiency of scientific knowledge; and
- the effects of natural processes and the socio - economic environment.

3 IMPACT ASSESSMENT ON THE NATURAL ENVIRONMENT

Due to the fact that the Project involves the operation of existing pipelines, the activities that may result on potential impacts on the natural environment will include existing regular pipelines maintenance, which are spatially and temporarily very limited. The terrestrial sections of the pipelines is buried in ground, while their marine sections are submerged therefore the maintenance activities are limited only to accessible areas, primarily to the area of the emergency shut-down valve located on the coast.

Table 7: Potential Impacts on natural environment due to pipeline operation

Receptor	Project phase	Activity	Impacts
Marine natural environment	Operation and maintenance	Regular maintenance of pipelines	Disturbance
Terrestrial natural environment	Safety and non-routine events	Repair activities in case of leakage or damage by third party activities	Disturbance (human presence, noise, light) Habitats loss and loss of individuals, Displacement Fragmentation
Avifauna			

Disturbance

Maintenance and repair activities of the existing pipeline may cause disturbance to the natural environment due to the noise originated from the equipment and machinery used, traffic, general repair noise and human vocalization and due to the light pollution caused by the use of artificial lighting during the repair period.

In any case, the level of disturbance by the repair and safety activities is significantly larger in respect to the maintenance activities. The level of disturbance also depends on the type of damage and could vary from simple replacement of a failed pipeline component to replacement of a damaged section of a pipeline.

The impacts of these disturbances could potentially lead to loss of habitats and individuals, and behaviour change of individuals. The distance to the source of disturbance additionally has an affect on the level of disturbance.

In regards to avifauna, the impact of disturbance on the birds also depends on the seasons. The probability of impact is increased during the breeding seasons, particularly if the nesting

sites are located in a close vicinity to the repair activities. During non-breeding and wintering seasons and due to the high mobility of birds the impacts are expected to be significantly lower.

Considering the (1) species presence and abundance in the Study Area, (2) the location of the Study Area at the western most edge of the protected areas and the Keramoti Lagoons complex on one hand and at the edge of the Kavala Bay on the other hand, (3) the level and duration of the disturbance due to repair activities, the disturbance caused by the repair activities due to damage or leakage are estimated to be (A) unlikely, (B) short in duration, (C) localized and (D) causing low to medium disturbance. Therefore the significance of disturbance due to potential repair activities are estimated to be of minor significance.

Habitat loss/degradation - Loss of individuals and displacement

Habitat loss could potentially be resulted from a leakage or damage and associated repair activities. An unlikely leakage of either natural gas or crude oil could lead to the degradation or loss of habitats and individuals.

The natural gas produced at the Prinos oil field contains approximately 50% hydrogen sulphide (H₂S), which is a highly toxic gas. It has been identified as toxic in all vertebrate classes of mammals, birds, reptiles, amphibians and fish. Apart from direct loss of fauna and avifauna individuals due to poisoning with the hydrogen sulphide, other vertebrate classes could be affected leading to the loss of their individuals. This would cause the disruption of the ecosystem food web, affecting the prey availability for particular birds species (e.g. seabirds, herons, raptors) causing the degradation of their habitats. The concentration of the hydrogen sulphide quickly dissipates with the distance from the source of leakage. If the leakage is underwater, the hydrogen sulphide is soluble both in water and oil and as a result can move great distances before it emerges as a vapour. Because it has greater density than air it can travel long distances along the ground before it is neutralized by chemical reactions or ingited.

Hydrogen sulphide in concentrations lower than 2 ppm (parts-per-million) does not seem to pose a risk to mammal species at rest. The concentrations greater than 5ppm pose a risk to wildlife. Hydrogen sulphide at concentrations lower than 1ppm does not seem to pose a risk to birds when they are active or flying (Lusk & Kraft 2010). Therefore the impact of hydrogen sulphide on the vertebrates depends on its concentration, which in turn depends on the amount of gas leaked, the distance from the leakage source and pathway depending on environmental and meteorological conditions. On the other hand hydrogen sulphide possesses unpleasant odour which in medium concentrations can be detected by vertebrates, leading to avoidance and displacement from contaminated areas, however the degree of avoidance/displacement remains unknown. In the extreme case the ignition of natural gas could lead to fires which could degrade or destroy terrestrial habitats, particularly those in coastal wetlands and surrounding areas.

Leakage of crude oil from the from the pipeline could lead to oil spill, which could affect the marine and coastal environment, which is also important for the seabirds (i.e. *Puffinus yelkouan*, *Phalacrocorax aristotelis*, *Larus cachinnans*) as well as other wetland species which use the marine environment (i.e. gulls and pelicans). Oils spill could lead to the degradation of marine fauna and flora, which would result in the limited food availability. It would also temporarily reduce the foraging habitats at sea, as well as roosting and maintenance sites along the coast. Due to the high degree of isolation of the coastal lagoons from the sea (e.g. Vasova Lagoon is connected with the sea via a single narrow channel) the potential oil spills are not expected to effect coastal wetlands in the Study Area. The impact of oil spill depend of the amount of oil leaked and its route of dispersal.

However unlikely but potential gas or oil leakage could have negative impact on habitats and individuals and lead to the loss of some individuals and habitats. Individuals might be lost either due to mortality or temporary displacement to other areas. Both hydrogen sulphide and crude oil are toxic to fauna and may lead severe damage to internal organs and mortality. Additionally, bird contact with oil causes feather oiling. If oil sticks to bird's feathers it caused them to mat and compromised waterproofing leading to exposure of skin to surrounding temperature and hypothermia. Feather oiling may lead to loss of buoyancy and ability to flight. As described above, all bird species could potentially be at risk of poisonous impacts gas leak, while primarily seabirds and pelicans are expected to be most vulnerable to oil spills.

Oil spill or gas leakage could make the habitats temporarily unsuitable for birds. This would lead to temporary displacement of bird populations residing in the affected habitats to other area until these habitats are restored. As described above the habitat loss is considered unlikely, temporary and localized. In addition in the wider area of the Study Area there are similar habitats which could support the temporarily displaced populations before they return to their original habitats. This phenomenon has been observed in the past in the case of *Phalacrocorax aristotelis* which have temporarily left from the Gulf of Kavala due to intense alga blooms but returned 1-2 years later after the recovery of the coastal marine ecosystems. Therefore the significance of displacement due to gas or crude oil leakage is minor. In case of pipeline damage or leakage, in the mid- and long-term no significant impact on the bird populations is expected.

Due to the fact that the natural gas pipeline crosses the protected areas, there is a potential threat of fauna and flora to be exposed to the hydrogen sulphide due to leakage from the pipelines. However, due to no previous history of gas leakage from the pipeline (with over 30 years of operation), continuous monitoring of the H₂S at the on shore plant and of the cumulative sulfation of the atmosphere at 13 stations in the region of Kavala and Thasos, maintenance and mitigation measures which minimize the risk of H₂S leakage, the leakage of natural gas containing H₂S is estimated to be (A) unlikely, (B) of very short duration (due to activation of emergency shut-down valves, (C) of limited amount of gas discharged.

Due to the location of the oil pipeline west and south of the Study Area as well as prevailing westerly sea currents in the northern part of Kavala Gulf (also identified by very small amounts of sea debris being washed ashore at the Study Area), it is unlikely that oil spill caused by leakage at any part of the oil pipeline could reach the Study Area. Additionally, company's emergency response procedures ensure immediate restriction of the oil slick and treatment of affected marine and/or coastal areas. Therefore the significance of habitat degradation due to the natural gas and crude oil leakage is minor.

Fragmentation

As described above the repair activities could lead to temporary loss of habitat which would be localized to the close vicinity of the site where the repair activities take place. Due to the localized loss of these interventions, no significant habitat fragmentation is estimated due to repair activities.

4 MITIGATION MEASURES

Based on the Impact Assessment provided above, the Project is not expected to cause any significant impacts on the integrity of the Natura 2000 sites in terms of marine and terrestrial habitats, fauna and flora and avifauna. However the present chapter provides a list of proposed mitigation measures in order to minimize, mitigate or eliminate potential impacts of the operational and repair phase of the project.

- Litter and other waste material have to be stored and disposed of appropriately in order to minimize a potential risk of damaging or polluting habitats and species;
- Any environmentally hazardous material used during maintenance or repair works have to be carefully stored;
- Prior to any working (maintenance or repair) activities marking tape has to be placed in order to define the working area and ensure the restriction of impacts;
- Close collaboration with all statutory stakeholders (especially the Management Body of the National Park); and
- No water discharges will be conducted on any of the water bodies, without appropriate authorization from the competent public authorities.
- The existing emergency plan for incidents of oil pollution should include staff training for handling of oiled or injured birds in cooperation with the competent authorities and wildlife rehabilitations centres.
-

5 COMPENSATORY MEASURES

No compensatory measures have been foreseen because as discussed in Chapter 4 “Mitigation Measures”, the integrity of Natura areas will not be compromised by the routine operation of the project.

6 MONITORING PROGRAM

Monitoring is generally defined as the repetitive measurement of a specified set of variables at one or more locations over an extended period of time according to prearranged schedules in space and time.

In an early stage, information from the monitoring program can detect changes in the environment which might need remedial action, and identify (possible or likely) cause of those changes to indicate the kind of remedial action needed. The benefits aimed at are the prevention of possible future damage and costs required for the restoration can be saved. Moreover the monitoring program can be used to check whether remedial action is successful or not and to evaluate the predicted or expected consequences of specific measures or activities.

Ecological monitoring (marine and terrestrial habitats, fauna, flora and avifauna) in the wider area of the pipelines and the platforms should be performed during the operation of the project in order to ensure effective conservation of the area and its species. Such monitoring program should be repeated regularly e.g. every 3 years to determine qualitatively and quantitatively the conservation status of the habitats, flora, fauna and avifauna in the area. It is important that periodic monitoring of the pipelines and platforms status for any leakages is performed constantly. Such monitoring can be done by using remote controlled tools for internal and external monitoring (ROV external monitoring to the deep waters, Remote driven tools for internal monitoring);

The Ecological Monitoring Program for this project should include the followings:

- Analysis of benthic communities as indication of the ecological status of marine environment (ecological indices BENTIX, AMBI, BIPO);
- Measurement of hydrocarbons concentration in the marine sediments, seawater and in the tissues of the living animals;
- Monitoring of the extent and the status of marine and terrestrial habitats (via satellite images and fieldwork surveys);
- Monitoring of major bird groups present in the area and on all ecologicals annual season for which the area is important i.e. breeding, post-breeding, migration and wintering seasons.

7 CONCLUSIONS

In conclusion, the normal operation of the pipelines is expected to cause no significant impacts on the species and habitats present in the study and the survey area. The implementation of mitigation measures will further ensure any significant disturbance, habitats loss or fragmentation and loss of individuals is avoided or minimized.

The impacts of non-routine events e.g. pipeline damage, gas and/or oil leakage will be minimized through the existing design and operation of the project in association with the implementation of detailed emergency plan.

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(<http://natura2000.eea.europa.eu/Natura2000/SDF.aspx?site=GR1150001>)
 - SDF GR1150010. Natura 2000 Standard Data Form GR115010 " DELTA NESTOU KAI LIMNOTHALASSES KERAMOTIS - EVRYTERI PERIOCHI KAI PARAKTIA ZONI"
(<http://natura2000.eea.europa.eu/Natura2000/SDF.aspx?site=GR1150010>)

9 STUDY TEAM

The study team is composed of the following scientists:



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Environmental Engineer, GIS Analyst

10 APPENDICES

10.1 NATURA 2000 DATA FORMS FOR GR1150001, GR1150010 NATURA SITES



NATURA 2000 - STANDARD DATA FORM

For Special Protection Areas (SPA),
Proposed Sites for Community Importance (pSCI),
Sites of Community Importance (SCI) and
for Special Areas of Conservation (SAC)

SITE **GR1150001**
SITENAME **DELTA NESTOU KAI LIMNOTHALASSES KERAMOTIS KAI NISOS THASOPOULA**

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- [6. SITE MANAGEMENT](#)
- [7. MAP OF THE SITE](#)

[Print Standard Data Form](#)

1. SITE IDENTIFICATION

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1.1 Type	1.2 Site code
A	GR1150001

1.3 Site name

DELTA NESTOU KAI LIMNOTHALASSES KERAMOTIS KAI NISOS THASOPOULA

1.4 First Compilation date	1.5 Update date
1994-10	2009-05

1.6 Respondent:

Name/Organisation:	
Address:	
Email:	

1.7 Site indication and designation / classification dates

Date site classified as SPA:	1988-02
National legal reference of SPA designation	JMD HP 37338/1807/E103/1-9-2012 (OJ 1495 B)

2. SITE LOCATION

2.1 Site-centre location [decimal degrees]:

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Longitude 24.815278	Latitude 40.879167
------------------------	-----------------------

2.2 Area [ha]:	2.3 Marine area [%]
14624.7600	0.0000
2.4 Sitelength [km]:	
0.00	

2.5 Administrative region code and name

NUTS level 2 code	Region Name
GR11	Anatoliki Makedonia, Thraki
GR11	Anatoliki Makedonia, Thraki

2.6 Biogeographical Region(s)

Mediterranean	(0.00 %)
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3. ECOLOGICAL INFORMATION

3.2 Species referred to in Article 4 of Directive 2009/147/EC and listed in Annex II of Directive 92/43/EEC and site evaluation for them [Back to top](#)

Species			Population in the site							Site assessment			
G	Code	Scientific Name	S	NP	T	Size	Unit	Cat.	D.qual.	A B C D	A B C		
						Min	Max			Pop.	Con.	Iso.	Glo.
A	1171	Triturus karolinii			p			V		D			
R	1217	Testudo hermanni			p			P		B	C	C	C
R	1219	Testudo graeca			p			R		C	C	C	C
A	1193	Bombina variegata			p			C		D			
R	1220	Emys orbicularis			p			C		B	C	C	C
R	1222	Mauremys caspica			p			C		B	C	C	C
R	1279	Elaphe quatuorlineata			p			P		B	C	A	C
R	1293	Elaphe situla			p			P		D			
R	1224	Caretta caretta			p			P		D			
B	A103	Falco peregrinus			c			P		C	B	C	B
B	A035	Phoenicopterus ruber			c			P		B	B	C	B
B	A365	Carduelis spinus			w			P		C	B	C	B
B	A125	Fulica atra			w			P		C	B	C	B
B	A439	Himantopus olivaceus			r			P		C	B	C	B
B	A391	Phalacrocorax carbo			w	150	3300	i		B	B	C	B
B	A125	Fulica atra			r			P		C	B	C	B
B	A231	Coracias garrulus			r			P		C	B	C	B
B	A026	Egretta garzetta			r	100	130	i		B	B	C	B

SPECIAL ECOLOGICAL ASSESSMENT STUDY

B	A269	Erithacus rubecula			w				P		C	B	C	B
B	A351	Sturnus vulgaris			w				P		C	B	C	B
B	A182	Larus canus			w				P		C	B	B	B
B	A181	Larus audouinii			c				R		B	B	B	B
B	A055	Anas querquedula			c				P		C	B	C	B
B	A051	Anas strepera			w				P		C	B	C	B
B	A316	Phylloscopus trochilus			c				P		C	B	C	B
B	A255	Anthus campestris			r				P		C	B	C	B
B	A097	Falco vespertinus			c	200	200	i			C	B	C	B
B	A138	Charadrius alexandrinus			r	40	70	i			C	B	C	B
B	A091	Aquila chrysaetos			c				P		C	B	C	B
B	A039	Anser fabalis			w				R		A	B	B	B
B	A151	Philomachus pugnax			c				P		C	B	C	B
B	A222	Asio flammeus			w				P		C	B	C	B
B	A074	Mibvus mibvus			c	2	2	i			A	B	B	B
B	A373	Coccothraustes coccothraustes			r				P		C	B	C	B
B	A094	Pandion haliaetus			c	3	3	i			B	B	C	B
B	A010	Calonectris diomedea			c				P		C	B	C	B
B	A176	Larus melanocephalus			c	3000	3000	i			A	B	C	B
B	A083	Circus macrourus			w	3	3	i			B	B	B	B
B	A078	Gyps fulvus			c	16	16	i			B	B	C	B
B	A089	Aquila pomarina			r	5	5	i			B	B	B	B
B	A402	Accipiter brevipes			r	10	10	i			C	B	B	B
B	A359	Fringilla coelebs			r				P		C	B	C	B
B	A032	Plegadis falcinellus			c	300	300	i			B	B	C	B
B	A435	Oenanthe isabellina			r				P		B	B	B	B
B	A274	Phoenicurus phoenicurus			c				P		C	B	C	B
B	A167	Xenus cinereus			c				R		B	B	B	B
B	A429	Dendrocoptes syriacus			p				P		C	B	B	B
B	A290	Locustella naevia			c				P		C	B	C	B
B	A036	Cygnus olor			w	200	1300	i			C	B	C	B
B	A080	Circaetus gallicus			c				P		C	B	C	B
B	A087	Buteo buteo			r				P		C	B	C	B
B	A099	Falco subbuteo			r	30	30	i			C	B	C	B
B	A214	Otus scops			p				P		C	B	C	B
B	A341	Lanius senator			r				P		C	B	C	B
B	A292	Locustella luscinioides			r				P		C	B	C	B

SPECIAL ECOLOGICAL ASSESSMENT STUDY

B	A004	Tachybaptus ruficollis	w	450	450	i			C	B	C	B
B	A297	Acrocephalus scirpaceus	r				P		C	B	C	B
B	A013	Puffinus yalowskian	w	400	400	i			C	B	B	B
B	A095	Falco naumanni	c				P		C	B	C	B
B	A418	Hoplonterus spinosus	r	2	2	i			A	B	B	B
B	A059	Aythya ferina	w				P		C	B	C	B
B	A081	Circus aeruginosus	c	80	80	i			A	B	C	B
B	A193	Sterna hirundo	r	100	500	i			B	B	C	B
B	A337	Oriolus oriolus	r				P		C	B	C	B
B	A438	Hippoboscus pallida	r				P		C	B	C	B
B	A183	Larus fuscus	w				P		C	B	C	B
B	A103	Falco peregrinus	w				P		C	B	C	B
B	A164	Tringa nebularia	w	11	11	i			C	B	C	B
B	A063	Somateria mollissima	w	2	2	i			A	B	B	B
B	A131	Himantopus himantopus	r				P		C	B	C	B
B	A028	Ardea cinerea	c	300	300	i			C	B	C	B
B	A075	Haliaeetus albicilla	p	1	1	i			A	B	B	B
B	A137	Charadrius hiaticula	c				P		C	B	B	B
B	A271	Luscinia megarhynchos	r				P		C	B	C	B
B	A340	Lanius excubitor	w				P		C	B	B	B
B	A077	Neophron percnopterus	c	6	6	i			B	B	C	B
B	A023	Nycticorax nycticorax	r				P		C	B	C	B
B	A168	Actitis hypoleucos	w				P		C	B	C	B
B	A085	Accipiter gentilis	r				P		C	B	C	B
B	A113	Coturnix coturnix	c				P		C	B	C	B
B	A034	Platalea leucorodia	c				P		C	B	C	B
B	A157	Limosa lapponica	c				R		B	B	B	B
B	A224	Caprimulgus europaeus	r				P		C	B	C	B
B	A162	Tringa totanus	r				P		C	B	C	B
B	A034	Platalea leucorodia	w				P		C	B	C	B
B	A176	Larus melanocephalus	r	300	700	i			A	B	C	B
B	A081	Circus aeruginosus	r	15	25	i			A	B	C	B
B	A238	Dendrocygna media	p				P		C	B	C	B
B	A311	Sylvia atricapilla	r				P		C	B	C	B
B	A442	Ficedula semitorquata	c				P		C	B	C	B
B	A382	Emberiza melanocapala	r				P		C	B	C	B

SPECIAL ECOLOGICAL ASSESSMENT STUDY

B	A060	Aythya nyroca		w				P		B	B	C	B
B	A170	Phalaropus lobatus		c				P		B	B	B	B
B	A196	Chlidonias hybridus		c	300	300	i			C	B	C	B
B	A393	Phalacrocorax pygmaeus		w	250	1800	i			A	B	B	B
B	A207	Columba oenas		w				P		C	B	B	B
B	A002	Gavia arctica		w	5	5	i			B	B	B	B
B	A162	Tringa totanus		w				P		C	B	C	B
B	A291	Locustella fluviatilis		c				P		C	B	B	B
B	A322	Ficedula hypoleuca		c				P		C	B	C	B
B	A177	Larus minutus		c				P		C	B	C	B
B	A144	Calidris alba		c				P		C	B	C	B
B	A403	Buteo rufinus		c				P		C	B	B	B
B	A026	Egretta garzetta		w	20	50	i			B	B	C	B
B	A273	Phoenicurus ochruros		w				P		C	B	C	B
B	A233	Jynx torquilla		c				P		C	B	C	B
B	A072	Pernis apivorus		r				P		C	B	C	B
B	A159	Numenius tenuirostris		c				P		A	B	B	B
B	A376	Emberiza citrinella		w				P		C	B	C	B
B	A252	Hirundo daurica		r				P		C	B	C	B
B	A266	Prunella modularis		w				P		C	B	C	B
B	A029	Ardea purpurea		r	15	15	i			A	B	C	B
B	A293	Acrocephalus melanopogon		c				P		C	B	C	B
B	A139	Charadrius morinellus		c				P		A	B	B	B
B	A156	Limosa limosa		w				P		C	B	C	B
B	A323	Panurus biarmicus		r				P		C	B	C	B
B	A007	Podiceps auritus		w				P		A	B	B	B
B	A119	Porzana porzana		c				P		C	B	B	B
B	A082	Circus cyaneus		w	40	40	i			B	B	C	B
B	A098	Falco columbarius		w	16	16	i			C	B	C	B
B	A179	Larus ridibundus		w	2500	2500	i			C	B	C	B
B	A308	Sylvia curruca		c				P		C	B	C	B
B	A064	Clangula hyemalis		w	1	1	i			A	B	B	B
B	A042	Anser erythropus		w	26	26	i			A	B	B	B
B	A230	Merops apiaster		r				P		C	B	C	B
B	A142	Vanellus vanellus		w	150	150	i			C	B	C	B
B	A285	Turdus philomelos		c				P		C	B	C	B
B	A392	Phalacrocorax aristotelis d.		p	50	50	i			A	B	C	B
B	A304	Sylvia cantillans		r				P		C	B	C	B

SPECIAL ECOLOGICAL ASSESSMENT STUDY

B	A130	Haematopus ostralegus		r				P		C	B	C	B
B	A141	Pluvialis squatarola		w				P		C	B	C	B
B	A127	Syrus grus		c				P		B	B	B	B
B	A113	Coturnix coturnix		r				P		C	B	C	B
B	A277	Oenanthe oenanthe		r				P		C	B	C	B
B	A275	Saxicola rubetra		c				P		C	B	C	B
B	A166	Tringa glareola		w				P		C	B	C	B
B	A243	Calandrella brachydactyla		r				P		C	B	C	B
B	A050	Anas penelope		w				P		C	B	C	B
B	A447	Emberiza caesia		c				P		C	B	C	B
B	A197	Chlidonias niger		c	300	300	i			C	B	C	B
B	A053	Anas platyrhynchos		w				P		C	B	C	B
B	A043	Anser anser		w	120	120	i			C	B	B	B
B	A232	Upupa epops		r				P		C	B	C	B
B	A021	Botaurus stellaris		w	1	1	i			B	B	B	B
B	A270	Luscinia luscinia		c				P		C	B	B	B
B	A132	Recurvirostra avosetta		w				P		C	B	C	B
B	A191	Sterna sandvicensis		r	10	10	i			C	B	C	B
B	A066	Melanitta fusca		w	1	1	i			A	B	B	B
B	A100	Falco eleonora		c	60	60	i			C	B	B	B
B	A299	Hippoboscus icterina		c				P		C	B	C	B
B	A072	Pernis ptilorhynchus		c				P		C	B	C	B
B	A165	Tringa ochropus		w				P		C	B	C	B
B	A150	Limicola falcinellus		c				P		C	B	C	B
B	A092	Hieraetus pennatus		c	4	4	i			C	B	C	B
B	A067	Bucephala clangula		w				P		C	B	B	B
B	A031	Ciconia ciconia		c				P		C	B	C	B
B	A041	Anser albifrons		w	800	2300	i			B	B	C	B
B	A187	Larus marinus		w				P		C	B	B	B
B	A048	Tadorna tadorna		r				P		C	B	C	B
B	A298	Acrocephalus arundinaceus		r				P		C	B	C	B
B	A149	Calidris alpina		c				P		C	B	C	B
B	A152	Lymnocyptes minimus		c				P		C	B	B	B
B	A088	Buteo lagopus		w				R		A	B	B	B
B	A136	Charadrius dubius		r	20	40	i			C	B	C	B
B	A261	Motacilla cinerea		w				P		C	B	C	B
B	A153	Gallinago gallinago		w	80	80	i			C	B	C	B
B	A253	Delichon urbica		r				P		C	B	C	B
B	A038	Cyanus cyanus		w	28	28	i			B	B	B	B

SPECIAL ECOLOGICAL ASSESSMENT STUDY

B	A024	Ardeola ralloides		r				P		C	B	C	B
B	A229	Alcedo atthis		w				P		C	B	C	B
B	A161	Tringa erythropus		w	11	11	i			C	B	C	B
B	A250	Ptyonoprogne rupestris		w				P		C	B	C	B
B	A019	Pelecanus onocrotalus		c	30	30	i			C	B	B	B
B	A247	Alauda arvensis		r				P		C	B	C	B
B	A396	Branta ruficollis		w				P		A	B	B	B
B	A140	Pluvialis apricaria		c				P		C	B	C	B
B	A211	Clamator glandarius		r				P		C	B	B	B
B	A069	Mergus serrator		w	150	150	i			C	B	C	B
B	A086	Accipiter nisus		w	20	20	i			C	B	C	B
B	A051	Anas strepera		r				P		C	B	C	B
B	A259	Anthus spinoletta		w				P		C	B	C	B
B	A247	Alauda arvensis		w				P		C	B	C	B
B	A005	Podiceps cristatus		r				P		C	B	B	B
B	A180	Larus ganai		c	300	300	i			A	B	C	B
B	A030	Ciconia nigra		c	36	36	i			B	B	B	B
B	A155	Scolopax rusticola		w				P		C	B	C	B
B	A381	Emberiza schoeniclus		r				P		C	B	C	B
B	A087	Buteo buteo		w	110	110	i			C	B	C	B
B	A272	Luscinia svecica		c				P		A	B	B	B
B	A310	Sylvia borin		c				P		C	B	C	B
B	A135	Glareola pratincola		r	20	100	i			C	B	C	B
B	A145	Calidris minuta		w				P		C	B	C	B
B	A160	Numenius arquata		w	180	180	i			C	B	C	B
B	A278	Oenanthe hispanica		r				P		C	B	C	B
B	A404	Aquila haliaea		w	2	2	i			A	B	B	B
B	A295	Acrocephalus schoenobaenus		r				P		C	B	C	B
B	A249	Riparia riparia		r				P		C	B	C	B
B	A146	Calidris temminckii		c				P		C	B	C	B
B	A284	Turdus pilaris		w				P		C	B	C	B
B	A020	Pelecanus crispus		c				P		C	B	B	B
B	A319	Muscicapa striata		r				P		C	B	C	B
B	A355	Passer hispaniolensis		r				P		C	B	C	B
B	A215	Bubo bubo		p				R		B	B	C	B
B	A121	Porzana pusilla		c				P		C	B	B	B
B	A053	Anas platyrhynchos		r				P		C	B	C	B
B	A314	Phylloscopus sibilatrix		c				P		C	B	C	B
B	A195	Sterna albifrons		r	80	450	i			B	B	C	B

SPECIAL ECOLOGICAL ASSESSMENT STUDY

B	A309	Sylvia communis	r				P		C	B	C	B
B	A317	Regulus regulus	c				P		C	B	C	B
B	A173	Stercorarius parasiticus	c				P		C	B	B	B
B	A226	Apus apus	r				P		C	B	C	B
B	A296	Acrocephalus palustris	c				P		C	B	C	B
B	A143	Calidris canutus	w				P		C	B	B	B
B	A229	Alcedo atthis	r				P		C	B	C	B
B	A260	Motacilla flava	r				P		C	B	C	B
B	A154	Gallinago media	w	25	25	i			C	B	C	B
B	A228	Apus melba	c				P		C	B	C	B
B	A227	Apus pallidus	r				P		C	B	C	B
B	A068	Mergus albellus	w	11	11	i			B	B	B	B
B	A035	Phoenicopterus ruber	w	700	700	i			B	B	C	B
B	A054	Anas acuta	w				P		C	B	C	B
B	A048	Tadorna tadorna	w				P		C	B	C	B
B	A319	Muscicapa striata	c				P		C	B	C	B
B	A062	Aythya marila	w	1	1	i			A	B	B	B
B	A061	Aythya fuligula	w				P		C	B	C	B
B	A006	Podiceps grisegana	w	2	2	i			A	B	B	B
B	A433	Lanius nubicus	r				P		C	B	B	B
B	A208	Columba palumbus	w	22000	22000	i			B	B	C	B
B	A236	Dryocopus martius	p				P		C	B	B	B
B	A149	Calidris alpina	w				P		C	B	C	B
B	A189	Gelocheilidon nilotica	r	2	2	i			C	B	C	B
B	A198	Chlidonias leucopterus	c	600	600	i			C	B	C	B
B	A169	Arenaria interpres	c				P		C	B	C	B
B	A020	Pelecanus crispus	w	10	10	i			C	B	B	B
B	A353	Sturnus roseus	c				P		C	B	B	B
B	A031	Ciconia ciconia	r				P		C	B	C	B
B	A133	Burhinus oedicephalus	r	20	40	i			C	B	C	B
B	A056	Anas clypeata	w				P		C	B	C	B
B	A190	Sterna caspia	w	18	18	i			C	B	C	B
B	A101	Falco biarmicus	w	4	4	i			B	B	C	B
B	A147	Calidris ferruginea	c				P		C	B	C	B
B	A338	Lanius collurio	r				P		C	B	C	B
B	A065	Melanitta nigra	w	1	1	i			A	B	B	B
B	A004	Tachybaptus ruficollis	r				P		C	B	C	B
B	A397	Tadorna ferruginea	w	72	72	i			A	B	B	B
B	A256	Anthus trivialis	w				P		C	B	C	B
B	A313	Phylloscopus bonelli	c				P		C	B	C	B

SPECIAL ECOLOGICAL ASSESSMENT STUDY

B	A060	Avthya nyroca		c					P			B	B	C	B
B	A381	Emberiza schoeniclus		w					P			C	B	C	B
B	A005	Podiceps cristatus		w					P			C	B	B	B
B	A052	Anas crecca		w					P			C	B	C	B
B	A120	Porzana parva		c					P			C	B	B	B
B	A027	Egretta alba		w	120	500	i					A	B	B	B
B	A210	Streptopelia turtur		r					P			C	B	C	B
B	A286	Turdus iliacus		c					P			C	B	C	B
B	A321	Ficedula albicollis		c					P			C	B	C	B
B	A234	Picus canus		p					P			C	B	B	B
B	A315	Phylloscopus collybita		w					P			C	B	C	B
B	A058	Netta rufina		w	28	28	i					B	B	C	B
B	A262	Motacilla alba		r					P			C	B	C	B
B	A090	Aquila clanga		w	4	4	i					C	B	B	B
B	A084	Circus pygargus		c					P			C	B	C	B
B	A008	Podiceps nigricollis		w	300	300	i					C	B	C	B
B	A403	Buteo rufinus		w					P			C	B	B	B
B	A258	Anthus cervinus		c					P			C	B	C	B
B	A251	Hirundo rustica		r					P			C	B	C	B
B	A348	Corvus frugilegus		w					P			C	B	C	B
B	A257	Anthus pratensis		c					P			C	B	C	B
B	A022	Irobrychus minutus		r					P			C	B	C	B
B	A351	Sturnus vulgaris		r					P			C	B	C	B
B	A158	Numenius phaeopus		c					P			C	B	B	B
B	A212	Cuculus canorus		r					P			C	B	C	B
B	A073	Milvus migrans		w					P			B	B	C	B
B	A246	Lullula arborea		w					P			C	B	C	B
B	A242	Melanocorypha calandria		r					P			C	B	C	B
B	A360	Fringilla montifringilla		w					P			C	B	C	B
B	A306	Sylvia hortensis		c					P			C	B	C	B
B	A132	Recurvirostra avosetta		r	20	50	i					C	B	C	B
B	A339	Lanius minor		r					P			C	B	C	B
B	A163	Tringa stagnatilis		c					P			C	B	C	B
B	A093	Hieraetus fasciatus		c	1	1	i					C	B	B	B
F	1103	Alosa fallax		p					P			B	B	C	B
F	1152	Aphanius fasciatus		p					C			B	B	C	B
F	1134	Rhodeus sericeus amarus		p					C			B	B	C	B
I	1037	Ophiogomphus cecilia		p					P			D			
I	1060	Lycaena dispar		p					R			C	C	A	C

M	1355	Lutra lutra			p					B	C	A	B
M	1355	Lutra lutra			p					B	C	A	B

Group: A = Amphibians, B = Birds, F = Fish, I = Invertebrates, M = Mammals, P = Plants, R = Reptiles

S: in case that the data on species are sensitive and therefore have to be blocked for any public access enter: yes

NP: in case that a species is no longer present in the site enter: x (optional)

Type: p = permanent, r = reproducing, c = concentration, w = wintering (for plant and non-migratory species use permanent)

Unit: i = individuals, p = pairs or other units according to the Standard list of population units and codes in accordance with Article 12 and 17 reporting (see [reference portal](#))

Abundance categories (Cat.): C = common, R = rare, V = very rare, P = present - to fill if data are deficient (DD) or in addition to population size information

Data quality: G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation); VP = 'Very poor' (use this category only, if not even a rough estimation of the population size can be made, in this case the fields for population size can remain empty, but the field "Abundance categories" has to be filled in)

3.3 Other important species of flora and fauna (optional)

Species			Population in the site						Motivation					
Group	CODE	Scientific Name	S	NP	Size		Unit	Cat.	Species Annex		Other categories			
					Min	Max			IV	V	A	B	C	D
A	1212	Rana ridibunda						C					X	
I		Maculinea alcon						R					X	
A	1201	Bufo viridis						C					X	
R		Malpolon monspessulanus						R					X	
R	1263	Lacerta viridis						C					X	
F		Leuciscus cephalus						P		X				
R	1248	Podarcis taurica						C					X	
R	1292	Natrix tessellata						C					X	
I		Lycaeides argyrognomon						R						X
R	1283	Coronella austriaca						P					X	
A		Triturus vulgaris						C					X	
M		Martes foina						P					X	
R	1281	Elapha longissima						V					X	
A	1200	Pelobates syriacus						C					X	
M	1353	Canis aureus						P			X			
M		Meles meles						P					X	
A	1203	Hyla arborea						C					X	
A		Bufo bufo						R					X	
A		Salamandra salamandra						P					X	
M	1352	Canis lupus						P		X				
P		Panicum maritimum						P						X
R		Natrix natrix						C					X	
M		Sus scrofa						C						X
R		Cyrtodactylus kotschyi						V					X	

types. Nowadays, it still is a valuable part of a wetland chain included between Axios river and Delta of Evros of north Greece. Ornithologically is still important breeding site for spur-winged plover (*Hoplopterus spinosus*) (largest breeding population in Europe), purple heron, (*Ardea purpurea*) etc. It is also important for migratory waterfowl and Lesser spotted Eagles which winter. However, its importance has declined due to the lack of protection. From ichthyological point of view especially the wider part of the river mouth is important spawning and nursery ground for several commercially, intensively used species (Seabream, Seabass, Mullet, Eel, e.t.c.). The reference on *Leuciscus cephalus* is about the subspecies *macedonicus*. Concerning the fauna the quality of the site is indicated by the occurrence of the invertebrate *Araschnia levana* which is the southern edge of extension, the invertebrate *Maculinea alcon* which is referred to IUCN Conservation Monitoring Centre 1988. 1988 IUCN Red List of Threatened Animals, and the invertebrate *Lycaeides argyrognomon* which is referred to Koomen P., van Helsdingen P.J. 1993. Listing of biotopes in Europe according to their significance for invertebrates. Council of Europe. In the present site *Salvinia natans*, a plant species included in WCMC, as well as *Pancreatium maritimum*, a plant seriously endangered by the human activities on the coast are growing wild. Keramotis lagoons is an important site from ornithological and ichthyological point of view. Some heronries are also found here. An important site for breeding, passage and wintering waterbirds, raptors and passerines associated with reedbeds. Species of concern include: *Puffinus yelkouan*, *Phalacrocorax aristotelis*, *Phalacrocorax pygmeus*, *Pelecanus crispus*, *Ixobrychus minutus*, *Egretta alba*, *Ciconia ciconia*, *Cygnus olor*, *Anser erythropus*, *Branta ruficollis*, *Aythya nyroca*, *Haliaeetus albicilla*, *Accipiter brevipes*, *Aquila clanga*, *Aquila heliaca*, *Falco naumanni*, *Burhinus oedicnemus*, *Glaucola pratincola*, *Hoplopterus spinosus*, *Gallinago media*, *Numenius tenuirostris*, *Larus melanocephalus*, *Sterna albifrons*, *Dendrocopos syriacus*, *Calandrella brachydactyla* and *Lanius minor*. In the present site *Leymus racemosus* ssp. *sabulosus*, a plant taxon which reaches its extreme distribution limit in Northern Greece is growing wild.

4.3 Threats, pressures and activities with impacts on the site

The most important impacts and activities with high effect on the site

Negative Impacts			
Rank	Threats and pressures [code]	Pollution (optional) [code]	inside/outside [i o b]
M	F03.01		i
M	G02.08		i
M	F03.01		o
M	E03.02		o
L	E03.01		o
H	A01		o
M	A04		o
M	B01.02		i
M	G05		i
L	E03.01		i
L	J01		i
H	A08		o
M	A04		i
M	A09		o
H	A07		o
L	C01.01		o
M	E02		o
L	E01		i
L	A09		i
M	D01.01		o
M	J01		o

Positive Impacts			
Rank	Activities, management [code]	Pollution (optional) [code]	inside/outside [i o b]
M	B01.02		i
M	B		i

Rank: H = high, M = medium, L = low
 Pollution: N = Nitrogen input, P = Phosphor/Phosphate input, A = Acid input/acidification,
 T = toxic inorganic chemicals, O = toxic organic chemicals, X = Mixed pollutions
 i = inside, o = outside, b = both

4.5 Documentation

Heath, M. F. and Evans, M. I., eds. 2000. Important Bird Areas in Europe: Priority sites for conservation. 2:

Southern Europe. Cambridge, UK: BirdLife International. BirdLife Conservation Series No. 8, p. 791.

5. SITE PROTECTION STATUS

5.1 Designation types at national and regional level:

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Code	Cover [%]	Code	Cover [%]	Code	Cover [%]
IN00	92.17	GR08	56.63	GR95	41.17
GR96	90.89	GR99	34.26		

5.2 Relation of the described site with other sites:

designated at national or regional level:

Type code	Site name	Type	Cover [%]
GR08	Ethniko Parko Anatolikis Makedonias kai Thrakis - Periochi p	*	56.62
GR95	Kotza Orman Nestou Dimou Topeirou	*	41.16
IN00	Delta Nestou kai parakeimenes limnothalasses	*	92.17
GR96	Ethniko Parko Anatolikis Makedonias kai Thrakis	*	90.89
GR99	Prostatevomena topia Ethnikou Parkou Anatolikis Makedonias k	*	32.62
IN06	Delta Nestou & Limnothalasses (n. Thasopoula)	-	100.00
GR99	Periochi oikoanaptixis Ethnikou Parkou Anatolikis Makedonias	*	1.65

designated at international level:

Type	Site name	Type	Cover [%]
Other	Ethniko Parko Anatolikis Makedonias kai Thrakis - Periochi p	*	56.62
	Kotza Orman Nestou Dimou Topeirou	*	41.16
	Delta Nestou kai parakeimenes limnothalasses	*	92.17
	Ethniko Parko Anatolikis Makedonias kai Thrakis	*	90.89
	Prostatevomena topia Ethnikou Parkou Anatolikis Makedonias k	*	32.62
	Delta Nestou & Limnothalasses (n. Thasopoula)	-	100.00
	Periochi oikoanaptixis Ethnikou Parkou Anatolikis Makedonias	*	1.65

6. SITE MANAGEMENT

6.1 Body(ies) responsible for the site management:

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Organisation:	MANAGEMENT BODY OF DELTA NESTOU-VISTONIDAS-ISMARIDAS
Address:	
Email:	

6.2 Management Plan(s):

An actual management plan does exist:

<input type="checkbox"/>	Yes
<input type="checkbox"/>	No, but in preparation
<input checked="" type="checkbox"/>	No

7. MAP OF THE SITE

No data

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SITE DISPLAY





NATURA 2000 - STANDARD DATA FORM

For Special Protection Areas (SPA),
Proposed Sites for Community Importance (pSCI),
Sites of Community Importance (SCI) and
for Special Areas of Conservation (SAC)

SITE **GR1150010**
SITENAME **DELTA NESTOU KAI LIMNOTHALASSES KERAMOTIS - EVRYTERI PERIOCHI KAI PARAKTIA ZONI**

TABLE OF CONTENTS

- [1. SITE IDENTIFICATION](#)
- [2. SITE LOCATION](#)
- [3. ECOLOGICAL INFORMATION](#)
- [4. SITE DESCRIPTION](#)
- [5. SITE PROTECTION STATUS](#)
- [6. SITE MANAGEMENT](#)
- [7. MAP OF THE SITE](#)

Print Standard Data Form

1. SITE IDENTIFICATION

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1.1 Type	1.2 Site code
B	GR1150010

1.3 Site name

DELTA NESTOU KAI LIMNOTHALASSES KERAMOTIS - EVRYTERI PERIOCHI KAI PARAKTIA ZONI

1.4 First Compilation date	1.5 Update date
1995-03	2009-05

1.6 Respondent:

Name/Organisation:	
Address:	
Email:	
Date site proposed as SCI:	1996-08
Date site confirmed as SCI:	2006-09
Date site designated as SAC:	2011-03
National legal reference of SAC designation:	Law 3937/29-3-11 (OJ 60 A)

2. SITE LOCATION

2.1 Site-centre location [decimal degrees]:

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Longitude 24.760000	Latitude 40.924722
2.2 Area [ha]: 22484.6300	2.3 Marine area [%] 0.0000
2.4 Sitelength [km]: 0.00	

2.5 Administrative region code and name

NUTS level 2 code	Region Name
GR11	Anatoliki Makedonia, Thraki
GR11	Anatoliki Makedonia, Thraki

2.6 Biogeographical Region(s)

Mediterranean	(0.00 %)
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3. ECOLOGICAL INFORMATION

3.1 Habitat types present on the site and assessment for them

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Annex I Habitat types						Site assessment			
Code	PF	NP	Cover [ha]	Cave [number]	Data quality	A B C D	A B C		
						Representativity	Relative Surface	Conservation	Global
1110 B			0	0.00		A	A	B	A
1130 B			0	0.00		A	B	B	B
1150 B			0	0.00		A	B	C	B
1210 B			0	0.00		A	B	A	A
1310 B			0	0.00		A	C	A	B
1410 B			0	0.00		B	A	C	B
1420 B			0	0.00		A	B	B	B
2110 B			0	0.00		C	C	B	C
2120 B			0	0.00		A	C	B	B
2190 B			0	0.00		B	A	B	B
2220 B			0	0.00		A	A	B	A
3150 B			0	0.00		A	B	B	B

3170 B		0	0.00		A		C	B	B
3280 B		0	0.00		B		A	B	B
62A0 B		0	0.00		B		C	C	C
6420 B		0	0.00		B		A	B	B
91E0 B		0	0.00		B		A	B	B
91F0 B		0	0.00		B		A	C	B
92A0 B		0	0.00		A		B	B	B
92D0 B		0	0.00		B		B	B	B

PF: for the habitat types that can have a non-priority as well as a priority form (6210, 7130, 9430) enter "X" in the column PF to indicate the priority form.

NP: in case that a habitat type no longer exists in the site enter: x (optional)

Cover: decimal values can be entered

Caves: for habitat types 8310, 8330 (caves) enter the number of caves if estimated surface is not available.

Data quality: G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation)

3.2 Species referred to in Article 4 of Directive 2009/147/EC and listed in Annex II of Directive 92/43/EEC and site evaluation for them

Species			Population in the site							Site assessment				
G	Code	Scientific Name	S	NP	T	Size		Unit	Cat.	D.qual.	A B C D	A B C		
						Min	Max				Pop.	Con.	Iso.	Glo.
R	1279	Elaphe quatuorlineata			p				P		A	C	A	A
R	1219	Testudo graeca			p				R		C	C	C	C
A	1193	Bombina variegata			p				C		D			
R	1222	Mauremys caspica			p				C		B	C	C	C
A	1171	Triturus karelinii			p				V		D			
R	1293	Elaphe situla			p				P		D			
R	1217	Testudo hermanni			p				P		B	C	C	C
R	1220	Emys orbicularis			p				C		B	C	C	C
R	1224	Caretta caretta			p				P		D			
B	A228	Apus melba			r				P		C	B	C	C
B	A285	Turdus philomelos			w				P		C	B	C	C
B	A053	Anas platyrhynchos			r				P		C	B	C	C
B	A101	Falco biarmicus			c				R		C	B	C	C
B	A034	Platalea leucorodia			c				P		C	B	C	C
B	A179	Larus ridibundus			w	501	1000	i			C	B	C	C
B	A035	Phoenicopus ruber			w	51	100	i			C	B	B	B

SPECIAL ECOLOGICAL ASSESSMENT STUDY

B	A189	Gelocheidon nilotica			c					P		C	B	C	C
B	A161	Tringa erythropus			c					P		C	B	C	C
B	A125	Fulica atra			r					P		C	B	C	C
B	A136	Charadrius dubius			r					P		C	B	C	C
B	A087	Buteo buteo			w	6	10	i				C	B	C	C
B	A131	Himantopus himantopus			c					P		C	B	C	C
B	A314	Phylloscopus sibilatrix			c					P		C	B	C	C
B	A098	Falco columbarius			w					R		C	B	C	C
B	A163	Tringa stagnatilis			c					P		C	B	B	B
B	A026	Egretta garzetta			r	101	250	i				A	B	C	B
B	A207	Columba oenas			c					P		C	B	B	B
B	A160	Numenius arquata			w	51	100	i				C	B	C	C
B	A055	Anas querquedula			r					P		A	B	C	B
B	A292	Locustella luscinoides			r					P		C	B	C	C
B	A355	Passer hispaniolensis			w					P		C	B	C	C
B	A091	Aquila chrysaetos			p					R		C	B	C	C
B	A158	Numenius phaeopus			c					P		C	B	B	B
B	A230	Merops apiaster			r					P		C	B	C	C
B	A229	Alcedo atthis			w					P		C	B	C	C
B	A224	Caprimulgus europaeus			r					P		C	B	C	C
B	A243	Calandrella brachydactyla			r					P		C	B	C	C
B	A418	Hoplopterus spinosus			r	35	35	i				A	B	B	B
B	A275	Saxicola rubetra			c					P		C	B	B	B
B	A359	Fringilla coelebs			r					P		C	B	C	C
B	A008	Podiceps nigricollis			w					P		C	B	C	C
B	A154	Gallinago media			c					P		C	B	C	C
B	A295	Acrocephalus schoenobaenus			r					P		C	B	C	C
B	A190	Sterna caspia			c					P		C	B	C	C
B	A056	Anas clypeata			w	101	250	i				C	B	C	C
B	A155	Scolopax rusticola			w					P		C	B	C	C
B	A214	Otus scops			r					P		C	B	C	C
B	A258	Anthus cervinus			w					P		C	B	C	C
B	A156	Limosa limosa			c					P		C	B	C	C
B	A024	Ardeola ralloides			c					P		C	B	C	C
B	A089	Aquila pomarina			r					P		C	B	B	B
B	A429	Dendrocoptes syriacus			p					P		C	B	B	B
B	A007	Podiceps auritus			c					V		D			

SPECIAL ECOLOGICAL ASSESSMENT STUDY

B	A132	Recurvirostra avosetta				c						P			C	B	C	C
B	A138	Charadrius alexandrinus				w						P			C	B	C	C
B	A055	Anas querquedula				c						P			A	B	C	B
B	A261	Motacilla cinerea				w						P			C	B	C	C
B	A052	Anas crecca				w						R			C	B	C	C
B	A211	Clamator glandarius				r						V			C	B	B	B
B	A077	Neophron percnopterus				c						R			C	B	C	C
B	A392	Phalacrocorax aristotelis desmarestii				p						P			C	B	A	B
B	A144	Calidris alba				c						P			C	B	C	C
B	A125	Fulica atra				w	2000								C	B	C	C
B	A036	Cygnus olor				w	1100	1100	i						B	B	C	B
B	A403	Buteo rufinus				c						P			C	B	B	B
B	A078	Gyps fulvus				c						R			C	B	C	C
B	A321	Ficedula albicollis				c						P			C	B	C	C
B	A013	Puffinus puffinus				c						V			C	B	C	C
B	A165	Tringa ochropus				c						P			C	B	C	C
B	A226	Apus apus				r						P			C	B	C	C
B	A053	Anas platyrhynchos				w	101	250	i						C	B	C	C
B	A032	Plegadis falcinellus				c						P			C	B	C	C
B	A260	Motacilla flava				r						P			C	B	C	C
B	A059	Aythya ferina				w	51	100	i						C	B	C	C
B	A348	Corvus frugilegus				w						P			C	B	C	C
B	A030	Ciconia nigra				c						P			C	B	B	B
B	A317	Regulus regulus				c						P			C	B	C	C
B	A029	Ardea purpurea				r	30	30	i						A	B	C	B
B	A286	Turdus iliacus				w						P			C	B	C	C
B	A097	Falco vespertinus				c						P			C	B	C	C
B	A360	Fringilla montifringilla				w						P			C	B	C	C
B	A255	Anthus campestris				r						P			C	B	C	C
B	A296	Acrocephalus palustris				c						P			C	B	C	C
B	A262	Motacilla alba				r						P			C	B	C	C
B	A232	Upupa epops				r						P			C	B	C	C
B	A067	Bucephala clangula				w						R			B	B	B	B
B	A304	Sylvia cantillans				c						P			C	B	C	C
B	A180	Larus genei				w	11	50	i						C	B	C	C
B	A146	Calidris temminckii				c						P			C	B	C	C
B	A099	Falco subbuteo				r						P			C	B	C	C
B	A266	Prunella modularis				c						P			C	B	C	C

SPECIAL ECOLOGICAL ASSESSMENT STUDY

B	A338	Lanius colurio		r				P		C	B	C	C
B	A002	Gavia arctica		w	6	10	i			B	B	B	C
B	A256	Anthus trivialis		w				P		C	B	C	C
B	A351	Sturnus vulgaris		r				P		C	B	C	C
B	A284	Turdus pilaris		w				P		C	B	C	C
B	A257	Anthus pratensis		w				P		C	B	C	C
B	A316	Phylloscopus trochilus		c				P		C	B	C	C
B	A159	Numenius tenuirostris		c				V		A	B	B	B
B	A251	Hirundo rustica		r				P		C	B	C	C
B	A051	Anas strepera		w	6	10	i			A	B	C	B
B	A133	Burhinus oedicnemus		r				P		C	B	C	C
B	A149	Calidris alpina		w	51	100	i			C	B	C	C
B	A323	Panurus biarmicus		r				P		C	B	C	C
B	A268	Cercotrichas galactotes		r				P		C	B	B	B
B	A020	Pelecanus crispus		w	6	10	i			C	B	B	B
B	A306	Sylvia hortensis		c				P		C	B	C	C
B	A208	Columba palumbus		w				P		C	B	C	C
B	A140	Pluvialis apricaria		c				P		C	B	C	C
B	A381	Emberiza schoeniclus		w				P		C	B	C	C
B	A355	Passer hispaniolensis		r				P		C	B	C	C
B	A094	Pandion haliaetus		c				R		B	B	C	B
B	A243	Calandrella brachydactyla		w				P		C	B	C	C
B	A191	Sterna sandvicensis		w	11	50	i			C	B	C	C
B	A142	Vanellus vanellus		r				P		C	B	C	C
B	A048	Tadorna tadorna		w				P		B	B	C	B
B	A073	Milvus migrans		c				R		C	B	C	C
B	A242	Melanocorypha calandra		p	6	10	p			C	B	C	C
B	A177	Larus minutus		c				P		C	B	C	C
B	A393	Phalacrocorax pygmaeus		w	51	100	i			C	B	B	B
B	A095	Falco naumanni		c				P		C	B	C	C
B	A004	Tachybaptus ruficollis		w	101	250	i			B	B	C	B
B	A435	Oenanthe isabellina		r				V		C	B	B	B
B	A039	Anser fabalis		w				R		A	B	B	B
B	A050	Anas penelope		w	251	500	i			C	B	C	C
B	A001	Gavia stellata		w	1	1	i			B	B	B	C
B	A319	Muscicapa striata		r				P		C	B	C	C
B	A127	Grus grus		w				V		A	B	B	B
B	A433	Lanius nubicus		r	6	10	i			C	B	B	B
B	A249	Riparia riparia		r				P		C	B	C	C

SPECIAL ECOLOGICAL ASSESSMENT STUDY

B	A022	Troxobrychus minutus		r	15	15	i			C	B	C	C
B	A169	Arenaria interpres		w				P		C	B	C	C
B	A048	Tadorna tadorna		r				P		B	B	C	B
B	A402	Accipiter brevipes		r				P		C	B	B	B
B	A027	Egretta alba		w	51	100	i			B	B	B	B
B	A176	Larus melanocephalus		c				P		C	B	C	C
B	A353	Sturnus roseus		c				P		C	B	B	B
B	A147	Calidris ferruginea		c				P		C	B	C	C
B	A004	Tachybaptus ruficollis		r				R		B	B	C	B
B	A031	Ciconia ciconia		r				P		C	B	C	C
B	A397	Tadorna ferruginea		r				R		A	B	B	B
B	A359	Fringilla coelebs		w				P		C	B	C	C
B	A247	Alauda arvensis		r				P		C	B	C	C
B	A058	Netta rufina		w	1	5	i			C	B	C	C
B	A061	Aythya fuligula		w	1	5	i			C	B	C	C
B	A442	Ficedula semitorquata		r				P		C	B	C	C
B	A195	Sterna albifrons		r	51	100	i			B	B	C	B
B	A138	Charadrius alexandrinus		r				P		C	B	C	C
B	A229	Alcedo atthis		r				P		C	B	C	C
B	A168	Actitis hypoleucos		c				P		C	B	C	C
B	A339	Lanius minor		r	6	10	i			C	B	C	C
B	A197	Chlidonias niger		c				P		C	B	B	B
B	A028	Ardea cinerea		r	20	20	i			C	B	C	C
B	A130	Haematopus ostralegus		w				P		B	B	C	B
B	A396	Branta ruficollis		w				R		A	B	A	B
B	A081	Circus aeruginosus		r				P		C	B	C	C
B	A277	Oenanthe oenanthe		r				P		C	B	C	C
B	A196	Chlidonias hybridus		c				P		C	B	C	C
B	A043	Anser anser		w				R		C	B	B	B
B	A113	Coturnix coturnix		r				P		C	B	C	C
B	A273	Phoenicurus ochruros		c				P		C	B	C	C
B	A068	Mergus albellus		w				V		C	B	C	C
B	A069	Mergus serrator		w	11	50	i			B	B	C	B
B	A006	Podiceps grisegena		w				V		A	B	B	B
B	A297	Acrocephalus scirpaceus		r				P		C	B	C	C
B	A269	Erithacus rubecula		w				P		C	B	C	C
B	A438	Hippolais pallida		r				P		C	B	C	C
B	A088	Buteo lagopus		c				R		D			

SPECIAL ECOLOGICAL ASSESSMENT STUDY

B	A005	Podiceps cristatus			w				P		C	B	C	C
B	A337	Oriolus oriolus			r				P		C	B	C	C
B	A152	Lymnocyptes minimus			c				R		C	B	B	B
B	A259	Anthus spinoletta			w				P		C	B	C	C
B	A135	Glareola pratincola			r	20	20	i			C	B	C	C
B	A212	Cuculus canorus			r				P		C	B	C	C
B	A261	Motacilla cinerea			c				P		C	B	C	C
B	A051	Anas strepera			r				R		A	B	C	B
B	A365	Carduelis spinus			w				P		C	B	C	C
B	A183	Larus fuscus			c				R		C	B	C	C
B	A253	Delichon urbica			r				P		C	B	C	C
B	A198	Chlidonias leucopterus			c				P		C	B	B	B
B	A373	Coccothraustes coccothraustes			c				P		C	B	C	C
B	A210	Streptopelia turtur			r				P		C	B	C	C
B	A082	Circus cyaneus			w	1	5	i			C	B	C	C
B	A311	Sylvia atricapilla			r				P		C	B	C	C
B	A026	Egretta garzetta			w	11	50	i			A	B	C	B
B	A038	Cygnus cygnus			w				R		B	B	B	B
B	A193	Sterna hirundo			r				P		C	B	C	C
B	A391	Phalacrocorax carbo sinensis			w	101	250	i			C	B	C	C
B	A164	Tringa nebularia			c				P		C	B	C	C
B	A028	Ardea cinerea			w				P		C	B	C	C
B	A075	Haliaeetus albicilla			w	2	2	i			B	B	B	B
B	A145	Calidris minuta			c				P		C	B	C	C
B	A090	Aquila clanga			w	1	5	i			C	B	B	B
B	A308	Sylvia curruca			c				P		C	B	C	C
B	A381	Emberiza schoeniclus			r				P		C	B	C	C
B	A351	Sturnus vulgaris			w				C		C	B	C	C
B	A252	Hirundo daurica			r				P		C	B	C	C
B	A153	Gallinago gallinago			w	11	50	i			C	B	C	C
B	A150	Limicola falcinellus			c				P		C	B	C	C
B	A166	Tringa glareola			w				P		C	B	C	C
B	A142	Vanellus vanellus			w				P		C	B	C	C
B	A137	Charadrius hiaticula			c				P		C	B	B	B
B	A054	Anas acuta			w	251	500	i			C	B	C	C
B	A231	Coracias garrulus			r				P		C	B	C	C
B	A341	Lanius senator			r				P		C	B	C	C
B	A086	Accipiter nisus			r				P		C	B	C	C

B	A023	Nycticorax nycticorax			c				P		C	B	C	C
B	A080	Circus gallicus			c				P		C	B	C	C
B	A322	Ficedula hypoleuca			c				P		C	B	C	C
B	A162	Tringa totanus			w				P		C	B	C	C
B	A382	Emberiza melanocephala			r				P		C	B	C	C
B	A298	Acrocephalus arundinaceus			r				P		C	B	C	C
B	A130	Haematopus ostralegus			r	30	30	i			B	B	C	B
B	A074	Milvus milvus			c				R		A	B	B	B
B	A189	Galocheilidon nilotica			r				R		C	B	C	C
B	A151	Philomachus pugnax			c				P		C	B	C	C
B	A092	Hieraetus pennatus			c				P		C	B	C	C
B	A309	Sylvia communis			r				P		C	B	C	C
B	A162	Tringa totanus			r				P		C	B	C	C
B	A103	Falco peregrinus			w				R		C	B	C	C
B	A310	Sylvia borin			c				P		C	B	C	C
B	A271	Luscinia megarhynchos			r				P		C	B	C	C
B	A176	Larus melanocephalus			w				P		C	B	C	C
B	A141	Pluvialis squatarola			w				P		C	B	C	C
B	A274	Phoenicurus phoenicurus			c				P		C	B	C	C
F	1103	Alopius fallax			p				P		B	B	C	B
F	1134	Rhodeus sericeus amarus			p				C		B	B	C	B
F	1152	Aphanius fasciatus			p				C		B	B	C	B
I	1060	Lycaena dispar			p				R		C	C	A	C
I	1037	Ophiogomphus cecilia			p				P		B	C	C	C
I	1043	Lindenia tetraphylla			p				P		C	B	C	B
M	1355	Lutra lutra			p						B	C	A	B

Group: A = Amphibians, B = Birds, F = Fish, I = Invertebrates, M = Mammals, P = Plants, R = Reptiles

S: in case that the data on species are sensitive and therefore have to be blocked for any public access enter: yes

NP: in case that a species is no longer present in the site enter: x (optional)

Type: p = permanent, r = reproducing, c = concentration, w = wintering (for plant and non-migratory species use permanent)

Unit: i = individuals, p = pairs or other units according to the Standard list of population units and codes in accordance with Article 12 and 17 reporting (see [reference portal](#))

Abundance categories (Cat.): C = common, R = rare, V = very rare, P = present - to fill if data are deficient (DD) or in addition to population size information

Data quality: G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation); VP = 'Very poor' (use this category only, if not even a rough estimation of the population size can be made, in this case the fields for population size can remain empty, but the field "Abundance categories" has to be filled in)

3.3 Other important species of flora and fauna (optional)

Species	Population in the site	Motivation
---------	------------------------	------------

SPECIAL ECOLOGICAL ASSESSMENT STUDY

Group	CODE	Scientific Name	S	NP	Size		Unit	Cat.	Species Annex			Other categories			
					Min	Max			C R V P	IV	V	A	B	C	D
B	A289	Cisticola juncidis						P				X			
R		Malpolon monspessulanus						R						X	
F		Leuciscus cephalus						P				X			
R	1269	Ophisaurus apodus						P						X	
M	1352	Canis lupus						P				X			
M		Martes foina						P						X	
A	1200	Pelobates syriacus						C						X	
A		Salamandra salamandra						P						X	
R	1295	Vipera ammodytes						P						X	
R		Natrix natrix						C						X	
R		Cyrtodactylus kotschyi						V						X	
M		Sus scrofa						C							X
R	1283	Coronella austriaca						P						X	
P		Pancratium maritimum						P							X
A	1203	Hyla arborea						C						X	
I		Maculinea alcon						R						X	
R	1248	Podarcis taurica						C						X	
A	1212	Rana ridibunda						C						X	
R	1281	Elaphe longissima						V						X	
A		Bufo bufo						R						X	
A	1209	Rana dalmatina						P						X	
A		Triturus vulgaris						C						X	
P		Salvinia natans						P							X
R	1263	Lacerta viridis						C						X	
M	1363	Felis silvestris						R						X	
A	1201	Bufo viridis						C						X	
M	1317	Pipistrellus nathusii						P				X			
F		Syngnathus abaster						P						X	
R	1278	Coluber caspius						P						X	
M		Meles meles						P						X	
R	1292	Natrix tessellata						C						X	
B	A115	Phasianus colchicus						P				X			
I		Lycaeides argyrognomon						R							X
M	1353	Canis aureus						P				X			
A	1208	Rana graeca						P						X	

Group: A = Amphibians, B = Birds, F = Fish, Fu = Fungi, I = Invertebrates, L = Lichens, M = Mammals, P = Plants, R = Reptiles

CODE: for Birds, Annex IV and V species the code as provided in the reference portal should be used in addition to the scientific name

S: in case that the data on species are sensitive and therefore have to be blocked for any public access enter: yes
NP: in case that a species is no longer present in the site enter: x (optional)
Unit: i = individuals, p = pairs or other units according to the standard list of population units and codes in accordance with Article 12 and 17 reporting, (see [reference portal](#))
Cat.: Abundance categories: C = common, R = rare, V = very rare, P = present
Motivation categories: **IV, V:** Annex Species (Habitats Directive), **A:** National Red List data; **B:** Endemics; **C:** International Conventions; **D:** other reasons

4. SITE DESCRIPTION

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4.1 General site character

Habitat class	% Cover
N01	18.35
N02	4.22
N03	11.09
N04	1.17
N05	0.18
N06	5.30
N08	0.01
N09	0.35
N10	3.82
N15	44.20
N16	5.88
N20	4.79
N23	0.64
Total Habitat Cover	100.00000000000003

Other Site Characteristics

The site consists of Nestos Delta and Keramoti lagoons. The nearest to the wetland towns and villages are Keramoti and Chrysoupolis while Kavala is situated 25 km and Xanthi 16 km away from the wetland. River banks are sandy with extended softwood and riparian forests. Moreover, a mosaic of habitats at the mouth of the river, composed by reedbeds, Tamarix scrubs, inland as well as large coastal dunes. There are several greater lagoons with salt marshes around, where in the area of Chrysoupolis there are freshwater lakes with reedbeds and water lilies. There, is also found a rocky islet (island of Thassopoula). At the adjacent gorge of Nestos, rich vegetation grows on the steep cliffs and diverse fauna is provided with shelter.

4.2 Quality and importance

The wetland is important from ornithological point of view because of the big extense it occupies and because of its rich habitat types. Moreover, it is a valuable part of a wetland chain included between Axios river and Delta Evrou in northern Greece. The riparian forest and the coastal area are important for breeding, the lagoons for migrating and the river for the wintering of many species as grebes, ducks, herons, cormorants, pygnies, raptors, geese, flamingos, waterfowl and others. The reference on *Leuciscus cephalus* is about the subspecies *macedonicus*. Concerning the fauna the quality of the site is indicated by the invertebrate *Araschnia levana* which is the southern edge of extension, the invertebrate *Lycaeides argyriognomon* which is referred to Koomen P., van Helsdingen P.J. 1993. Listing of biotopes in Europe according to their significance for invertebrates. Council of Europe and the invertebrate *Maculinea alcon* which is referred to IUCN Conservation Monitoring Centre 1988. IUCN Red List of Threatened Animals. In the present site *Salvinia natans*, a plant species included in WCMC as well as *Leymus racemosus* ssp. *sabulosus*, a plant taxon which reaches its extreme distribution limit in Northern Greece, are growing wild.

4.3 Threats, pressures and activities with impacts on the site

The most important impacts and activities with high effect on the site

Negative Impacts			
Rank	Threats and pressures	Pollution (optional) [code]	inside/outside [i o b]

Positive Impacts			
Rank	Activities, management [code]	Pollution (optional) [code]	inside/outside [i o b]

	[code]	
M	J02.03	i
M	A09	i
H	A08	o
M	A04	o
L	F03.01	i
M	H06.01	o
M	H	o
M	A07	i
M	A04	i
M	G05	i
H	E02	o
L	E01	i
M	A08	i
M	A09	o
M	F03.01	o
H	A01	o
H	A07	o
H	D04.01	o
L	E03.01	i
M	A01	i
M	E03.02	o
L	C01.01	i

Rank: H = high, M = medium, L = low

Pollution: N = Nitrogen input, P = Phosphor/Phosphate input, A = Acid input/acidification,
T = toxic inorganic chemicals, O = toxic organic chemicals, X = Mixed pollutions

i = inside, o = outside, b = both

4.5 Documentation

-Lopau W. & Wendler A. 1995. Arbeitsatlas zur Verbreitung der Libellen in Griechenland und den umliegenden Gebieten. Naturk. Reiseber. 5: 1-108. -Adamakopoulos P., Tr. Adamakopoulos, D. Bousbouras, G. Giannatos, V. Harzivarssanis, Y. Ioannidis, D.H. Papaioannou & A. Sfougaris. 1991. Les grands mammifères de Grèce (Carnivores et Artiodactyles): situation actuelle, repartition, habitat-les espèces menacées, perspectives de protection. Biologia Gallo-Hellenica 18(1): 107-121.(3.3) -Adamakopoulos-Matsoukas P. 1991. Inventaire de Grèce: état des populations d'espèces menacées. 5. La distribution du chat sauvage (*Felis sylvestris*) en Grèce. Biologia Gallo-Hellenica 18(1): 45-52. (3.3) -Asimakopoulos B. Personal observations on Amphibia in Northern Greece. (3.2.d, 3.3)

5. SITE PROTECTION STATUS

5.1 Designation types at national and regional level:

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Code	Cover [%]	Code	Cover [%]	Code	Cover [%]
IN00	95.04	GR99	49.08	GR21	0.01
GR08	41.51	GR95	36.42	GR96	90.59

5.2 Relation of the described site with other sites:

designated at national or regional level:

Type code	Site name	Type	Cover [%]
GR99	Prostatevomena topia Ethnikou Parkou Anatolikis Makedonias k	*	44.97
GR95	Kotza Orman Nestou Dimou Topeirou	*	36.41
GR99	Periochi oikoanaptixis Ethnikou Parkou Anatolikis Makedonias	*	4.10
IN06	Delta Nestou kai Parakties Limnothalasses	=	100.00

GR08	Ethniko Parko Anatolikis Makedonias kai Thrakis - Periochi p	*	41.50
GR21	Chrysoupoli Kavalas	+	0.00
GR96	Ethniko Parko Anatolikis Makedonias kai Thrakis	*	90.58
IN00	Delta Nestou kai parakeimenes limnothalasses	*	95.04

designated at international level:

Type	Site name	Type	Cover [%]
Other	Prostatevomena topia Ethnikou Parkou Anatolikis Makedonias k	*	44.97
	Kotza Orman Nestou Dimou Topeirou	*	36.41
	Periochi oikoanaptixis Ethnikou Parkou Anatolikis Makedonias	*	4.10
	Delta Nestou kai Parakties Limnothalasses	=	100.00
	Ethniko Parko Anatolikis Makedonias kai Thrakis - Periochi p	*	41.50
	Chrysoupoli Kavalas	+	0.00
	Ethniko Parko Anatolikis Makedonias kai Thrakis	*	90.58
	Delta Nestou kai parakeimenes limnothalasses	*	95.04

6. SITE MANAGEMENT

6.1 Body(ies) responsible for the site management:

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Organisation:	MANAGEMENT BODY OF DELTA NESTOU-VISTONIDAS-ISMARIDAS
Address:	
Email:	

6.2 Management Plan(s):

An actual management plan does exist:

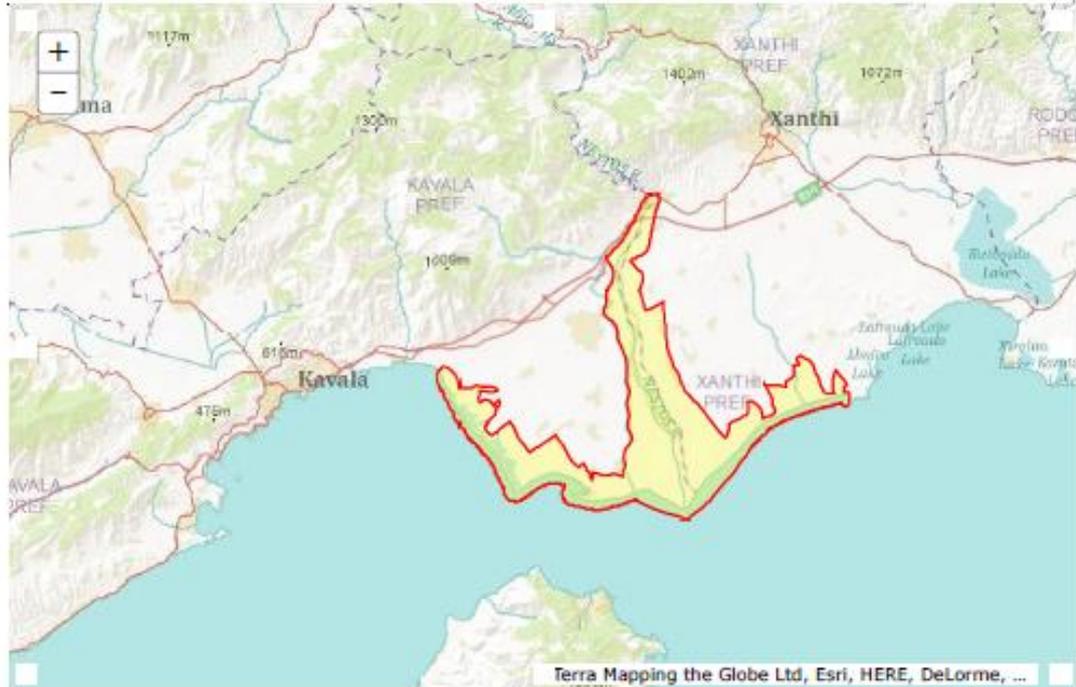
<input type="checkbox"/>	Yes
<input type="checkbox"/>	No, but in preparation
<input checked="" type="checkbox"/>	No

7. MAP OF THE SITE

No data

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SITE DISPLAY



10.2 LIST OF MAMMALS AND AMPHIBIANS IN THE NATIONAL PARK OF EAST MACEDONIA AND THRACE AND THEIR CONSERVATION STATUS

Table 01: List of mammals in the National Park of East Macedonia and Thrace and their conservation status

FAMILY	SCIENTIFIC NAME	POPULATION	DISTRUBUTION	IUCN	RED BOOK	DIRECTIVE 92/43			BERN CONVENTION	BONN CONVENTION	PRESIDENTIAL DECREE 67/81
						PRIOTRITY	ANNEX II	ANNEX IV			
Erinaceidae	<i>Erinaceus concolor</i>	+	NBI	LC	NE						*
Talpidae	<i>Talpa europaea</i>	+	NBI	LC	DD						
Soricidae	<i>Crocidura leucodon</i>		NBI	LC	NE						*
Soricidae	<i>Crocidura suaveolens</i>	+	NBI	LC	NE						*
Soricidae	<i>Neomys anomalus</i>		NBI	LC	NT						*
Soricidae	<i>Suncus etruscus</i>	?	NBI	LC	NE						*
Molossidae	<i>Tadarida teniotis</i>	-	NBI	LC	LC						*
Rhinolophidae	<i>Rhinolophus ferrumequinum</i>	-	NBI	LC	LC		+	+			*
Rhinolophidae	<i>Rhinolophus blasii</i>	?	NBI	LC	NT		+	+			*
Rhinolophidae	<i>Rhinolophus euryale</i>	?	NBI	NT	NT		+	+			*
Rhinolophidae	<i>Rhinolophus mehelyi</i>	?	NBI	VU	VU		+	+			*
Vespertilionidae	<i>Myotis capaccinii</i>	-	NBI	VU	NT		+	+			*
Vespertilionidae	<i>Miniopterus schreibersii</i>		NBI	NT	NT		+	+		II	*
Vespertilionidae	<i>Myotis mystacinus</i>	-	NBI	LC	DD			+			*
Vespertilionidae	<i>Nyctalus lasiopterus</i>	+/-	?	NT	VU			+			*
Vespertilionidae	<i>Nyctalus leisleri</i>	+/-	NBI	LC	LC			+			*
Vespertilionidae	<i>Nyctalus noctula</i>	+/-	NBI	LC	DD			+			*
Vespertilionidae	<i>Pipistrellus kuhlii</i>	-	NBI	LC	LC			+			*
Vespertilionidae	<i>Pipistrellus nathusii</i>		NBI	LC	DD			+			*
Vespertilionidae	<i>Pipistrellus pipistrellus</i>	+/-	?	LC	DD			+			*
Vespertilionidae	<i>Hypsugo savii</i> (Συνώνυμο <i>Pipistrellus savii</i>)	+/-	NBI	LC	LC			+			*
Vespertilionidae	<i>Plecotus austriacus</i>	+/-	NBI	LC	DD			+			*
Vespertilionidae	<i>Vespertilio murinus</i>	+/-	NBI	LC	DD			+		II	*
Leporidae	<i>Lepus europaeus</i>		NBI	LC	NE						
Sciuridae	<i>Sciurus vulgaris</i>	+/-	NBI	LC	NE						*
Sciuridae	<i>Spermophilus citellus</i>	+/-	N	VU	VU		+	+		* II	*
Gliridae	<i>Dryomys nitedula</i>	+/-	N	LC	DD			+			*

FAMILY	SCIENTIFIC NAME	POPULATION	DISTRUBUTION	IUCN	RED BOOK	DIRECTIVE 92/43			BERN CONVENTION	BONN CONVENTION	PRESIDENTIAL DECREE 67/81	
						PRIOTRITY	ANNEX II	ANNEX IV				ANNEX V
Spalacidae	<i>Spalax leucodon</i>	+/-	NBI	DD	NE							
Arvicolidae	<i>Arvicola amphibius</i> (Συνώνυμο <i>Arvicola terrestris</i>)	+/-	NBI	LC	NT							
Arvicolidae	<i>Microtus guentheri</i>		NBI	LC	NE							
Arvicolidae	<i>Microtus rossiaemeridionalis</i> (Συνώνυμο <i>M. epiroticus</i>)	+/-	NBI									
Muridae	<i>Micromys minutus</i>		NBI	LC	VU						*	
Muridae	<i>Apodemus agrarius</i>	+	NBI	LC	NE							
Muridae	<i>Apodemus mystacinus</i>	+/-	NBI	LC	NE							
Muridae	<i>Apodemus sylvaticus</i>	+/-	NBI	LC	NE							
Muridae	<i>Rattus norvegicus</i>	+/-	NBI	LC	NE							
Muridae	<i>Rattus rattus</i>	+	NBI	LC	NE							
Muridae	<i>Mus domesticus</i>		NBI	LC	NE							
Muridae	<i>Mus macedonicus</i>	+	NBI	LC	NE							
Canidae	<i>Canis lupus</i>		NBI	LC	VU	*	+	+	+	II		
Canidae	<i>Canis aureus</i>	53 groups	NBI	LC	EN				+			
Canidae	<i>Vulpes vulpes</i>	+	NBI	LC	NE							
Mustelidae	<i>Mustela nivalis</i>	-	NBI	LC	NE						*	
Mustelidae	<i>Martes foina</i>	+	NBI	LC	NE							
Mustelidae	<i>Vormela peregusna</i>		NBI	VU	DD		+	+		II		
Mustelidae	<i>Meles meles</i>	+	NBI	LC	NE							
Mustelidae	<i>Lutra lutra</i>	>30 individuals	NBI	NT	EN		+	+		II		
Felidae	<i>Felis silvestris</i>	+	NBI	LC	NE			+		II		
Phocidae	<i>Monachus monachus</i>		NBI	CR	CR	+	+	+		II		
Suidae	<i>Sus scrofa</i>	+	NBI	LC	NE							
Cervidae	<i>Capreolus capreolus</i>		NBI	LC	VU							
Phocaenidae	<i>Phocoena phocoena</i>			EN	EN		+	+		II	*	
Delphinidae	<i>Delphinus delphis</i>	+		EN	EN			+		II	I & II	*
Delphinidae	<i>Tursiops truncatus</i>			LC	VU		+	+		II		*

FAMILY	SCIENTIFIC NAME	POPULATION	DISTRUBUTION	IUCN	RED BOOK	DIRECTIVE 92/43 PRIOTRITY	ANNEX II	ANNEX IV	ANNEX V	BERN CONVENTION	BONN CONVENTION	PRESIDENTIAL DECREE 67/81
<p>Legend: Population: + wide distribution and good populations, +/- small population or occasional presence</p> <p>Distribution: N = Nestos area B = Vistonioda area I = Ismarida area</p> <p>IUCN: CR Critically Endangered, EN Endangered, VU Vulnerable, NT Near Threatened, LC Least Concern</p> <p>Red Book: EN Endangered, VU Vulnerable, NT Near Threatened, LC Least Concern, DD Insufficiently Known, NE No Estimated</p> <p>Directive 92/43: Annex II species requiring designation of Special Areas of Conservation Annex IV species in need of strict protection Annex V species whose taking from the wild can be restricted by European law</p> <p>BERN Convention Annex II Strictly Protected Fauna Species</p> <p>BONN CONVENTION Annex I Threatened Migratory Species Annex II Migratory Species requiring international cooperation</p> <p>Presidential Decree 67/81, National Legislative framework for fauna and flora protection</p>												

Table 02: List of amphibians in the National Park of East Macedonia and Thrace and their conservation status

FAMILY	SCIENTIFIC NAME	POPULATION TREND	DISTRUBUTION	IUCN	RED BOOK	DIRECTIVE 92/43			BERN CONVENTION	PRESIDENTIAL DECREE 67/81
						PRIOTRITY	ANNEX II	ANNEX IV		
Salamandridae	<i>Lissotriton vulgaris</i>	Σ	N	LC	NE					
Salamandridae	<i>Triturus karelinii</i>	O	N	LC	NT		+	+		
Bufo	<i>Bufo bufo</i>	Σ	NBI	LC	LC					
Bufo	<i>Pseudepidalea viridis</i>	Σ	NBI	LC	LC			+		
Bombinatoridae	<i>Bombina variegata</i>	-	N	LC	LC		+	+		
Hylidae	<i>Hyla arborea</i>	Σ	NBI	LC	LC			+		
Ranidae	<i>Pelophylax ridibundus</i>	Σ	NBI	LC	LC				+	
Ranidae	<i>Rana dalmatina</i>	-	NBI	LC	NE			+		
Pelobatidae	<i>Pelobates syriacus</i>	O	NBI	LC	NE			+		

Legend:

Population trend: "A" Unknown, "Σ" Stable, "+" Growth (or quite growth), "-" Decline (or quite decline), "o" Rare (few individuals)

IUCN: CR Critically Endangered, EN Endangered, VU Vulnerable, NT Near Threatened, LC Least Concern

Red Book: EN Endangered, VU Vulnerable, NT Near Threatened, LC Least Concern, DD Insufficiently Known, NE No Estimated

Directive 92/43:

Annex II species requiring designation of Special Areas of Conservation

Annex IV species in need of strict protection

Annex V species whose taking from the wild can be restricted by European law

BERN Convention

Annex II Strictly Protected Fauna Species

Presidential Decree 67/81, National Legislative framework for fauna and flora protection

10.3 LIST OF SPECIES PRESENT IN THE SPA GR1150001 AND SAC GR1150010, LISTED IN ANNEX I OF THE BIRDS DIRECTIVE, AS WELL AS MIGRATORY SPECIES NOT LISTED IN THE ANNEX I OF THE BIRDS

Table 01: Bird species of SPA GR1150001 and SAC GR1150010 listed in Annex I of the Birds Directive (prepared from SDFs GR1150001 and SAC GR1150010)

Code	Species	POPULATION				SITE ASSESSMENT			
		Resident	Breed	Migratory Stage	Winter	Pop	Con	Iso	Glo
A402	<i>Accipiter brevipes</i>		P			C	B	B	B
A293	<i>Acrocephalus melanopogon</i>			P		C	B	C	B
A229	<i>Alcedo atthis</i>		P		P	C	B	C	C
A041	<i>Anser albifrons</i>				800-2300i	B	B	C	B
A042	<i>Anser erythropus</i>				26-26i	A	B	B	B
A255	<i>Anthus campestris</i>		P			C	B	C	C
A091	<i>Aquila chrysaetos</i>	R				C	B	C	C
A090	<i>Aquila clanga</i>				1-5i	C	B	B	B
A404	<i>Aquila heliaca</i>				2-2i	A	B	B	B
A089	<i>Aquila pomarina</i>		P			C	B	B	B
A029	<i>Ardea purpurea</i>		30-30i			A	B	C	B
A024	<i>Ardeola ralloides</i>			P		C	B	C	C
A222	<i>Asio flammeus</i>				P	C	B	C	B
A060	<i>Aythya nyroca</i>			P	P	B	B	C	B
A021	<i>Botaurus stellaris</i>				1-1i	B	B	B	B
A396	<i>Branta ruficollis</i>				R	A	B	A	B
A215	<i>Bubo bubo</i>	R				B	B	C	B
A133	<i>Burhinus oedicephalus</i>		P			C	B	C	C
A403	<i>Buteo rufinus</i>			P		C	B	B	B
A243	<i>Calandrella brachydactyla</i>		P		P	C	B	C	C
A010	<i>Calonectris diomedea</i>			P		C	B	C	B
A224	<i>Caprimulgus europaeus</i>		P			C	B	C	C
A027	<i>Casmerodius albus</i>				51-100i	B	B	B	B
A138	<i>Charadrius alexandrinus</i>		P		P	C	B	C	C
A196	<i>Chlidonias hybrida</i>			P		C	B	C	C
A197	<i>Chlidonias niger</i>			P		C	B	B	B
A031	<i>Ciconia ciconia</i>		P			C	B	C	C
A030	<i>Ciconia nigra</i>			P		C	B	B	B
A080	<i>Circaetus gallicus</i>			P		C	B	C	C
A081	<i>Circus aeruginosus</i>		P			C	B	C	C
A082	<i>Circus cyaneus</i>				1-5i	C	B	C	C
A083	<i>Circus macrourus</i>				3-3i	B	B	B	B
A084	<i>Circus pygargus</i>			P		C	B	C	B
A231	<i>Coracias garrulus</i>		P			C	B	C	C
A038	<i>Cygnus cygnus</i>				R	B	B	B	B
A238	<i>Dendrocopos medius</i>	P				C	B	C	B
A429	<i>Dendrocopos syriacus</i>	P				C	B	B	B
A236	<i>Dryocopus martius</i>	P				C	B	B	B

SPECIAL ECOLOGICAL ASSESSMENT STUDY

Code	Species	POPULATION			SITE ASSESSMENT				
		Resident	Breed	Migratory Stage	Winter	Pop	Con	Iso	Glo
A026	<i>Egretta garzetta</i>		101-250i		11-50i	A	B	C	B
A447	<i>Emberiza caesia</i>			P		C	B	C	B
A139	<i>Eudromias morinellus</i>					A	B	B	B
A101	<i>Falco biarmicus</i>			R		C	B	C	C
A098	<i>Falco columbarius</i>				R	C	B	C	C
A100	<i>Falco eleonora</i>			60-60i		C	B	B	B
A095	<i>Falco naumanni</i>			P		C	B	C	C
A103	<i>Falco peregrinus</i>				R	C	B	C	C
A097	<i>Falco vespertinus</i>			P		C	B	C	C
A321	<i>Ficedula albicollis</i>			P		C	B	C	C
A442	<i>Ficedula semitorquata</i>		P			C	B	C	C
A154	<i>Gallinago media</i>			P		C	B	C	C
A002	<i>Gavia arctica</i>				6-10i	B	B	B	C
A001	<i>Gavia stellata</i>				1-1i	B	B	B	C
A135	<i>Glareola pratincta</i>		20-20i			C	B	C	C
A127	<i>Grus grus</i>				V	A	B	B	B
A078	<i>Gyps fulvus</i>			R		C	B	C	C
A075	<i>Haliaeetus albicilla</i>				2-2i	B	B	B	B
A093	<i>Hieraaetus fasciatus</i>			1-1i		C	B	B	B
A092	<i>Hieraaetus pennatus</i>			P		C	B	C	C
A131	<i>Himantopus himantopus</i>			P		C	B	C	C
A439	<i>Hippolais olivetorum</i>		P			C	B	C	B
A022	<i>Ixobrychus minutus</i>		15-15i			C	B	C	C
A338	<i>Lanius collurio</i>		P			C	B	C	C
A339	<i>Lanius minor</i>		6-10i			C	B	C	C
A433	<i>Lanius nubicus</i>		6-10i			C	B	B	B
A181	<i>Larus audouinii</i>			R		B	B	B	B
A180	<i>Larus genei</i>				11-50i	C	B	C	C
A176	<i>Larus melanocephalus</i>			P	P	C	B	C	C
A177	<i>Larus minutus</i>			P		C	B	C	C
A157	<i>Limosa lapponica</i>			R		B	B	B	B
A246	<i>Lullula arborea</i>				P	C	B	C	B
A272	<i>Luscinia svecica</i>			P		A	B	B	B
A242	<i>Melanocorypha calandra</i>		6-10p			C	B	C	C
A068	<i>Mergellus albellus</i>				V	C	B	C	C
A073	<i>Milvus migrans</i>			R		C	B	C	C
A074	<i>Milvus milvus</i>			R		A	B	B	B
A077	<i>Neophron percnopterus</i>			R		C	B	C	C
A159	<i>Numenius tenuirostris</i>			V		A	B	B	B
A023	<i>Nycticorax nycticorax</i>			P		C	B	C	C
A094	<i>Pandion haliaetus</i>			R		B	B	C	B
A020	<i>Pelecanus crispus</i>				6-10i	C	B	B	B
A019	<i>Pelecanus onocrotalus</i>				30-30i	C	B	B	B
A072	<i>Pernis apivorus</i>		P	P		C	B	C	B
A392	<i>Phalacrocorax aristotelis</i>	P				C	B	A	B
A393	<i>Phalacrocorax pygmeus</i>				51-100i	C	B	B	B
A170	<i>Phalaropus lobatus</i>			P		B	B	B	B
A151	<i>Philomachus pugnax</i>			P		C	B	C	C
A035	<i>Phoenicopus roseus</i>				51-100i	C	B	B	B
A234	<i>Picus canus</i>	P				C	B	B	B
A034	<i>Platalea leucorodia</i>			P		C	B	C	C
A032	<i>Plegadis falcinellus</i>			P		C	B	C	C
A140	<i>Pluvialis apricaria</i>			P		C	B	C	C
A007	<i>Podiceps auritus</i>			V		D			
A120	<i>Porzana parva</i>			P		C	B	B	B
A119	<i>Porzana porzana</i>			P		C	B	B	B
A121	<i>Porzana pusilla</i>			P		C	B	B	B
A013	<i>Puffinus yelkouan</i>			V		C	B	C	C

SPECIAL ECOLOGICAL ASSESSMENT STUDY

Code	Species	POPULATION				SITE ASSESSMENT			
		Resident	Breed	Migratory Stage	Winter	Pop	Con	Iso	Glo
A132	<i>Recurvirostra avosetta</i>			P		C	B	C	C
A195	<i>Sterna albifrons</i>		51-100i			B	B	C	B
A190	<i>Sterna caspia</i>			P		C	B	C	C
A193	<i>Sterna hirundo</i>		P			C	B	C	C
A189	<i>Sterna nilotica</i>		R	P		C	B	C	C
A191	<i>Sterna sandvicensis</i>				11-50i	C	B	C	C
A397	<i>Tadorna ferruginea</i>		R			A	B	B	B
A166	<i>Tringa glareola</i>				P	C	B	C	C
A418	<i>Vanellus spinosus</i>		35-35i			A	B	B	B
A167	<i>Xenus cinereus</i>			R		B	B	B	B

Legend:

Code: Natura 2000 species code

Species: Species scientific name

Resident: Permanent presence of the species in the Natura 2000 site. P = Present or population size in individuals (i) or pairs (p)

Breed: Species reproducing in the Natura 2000 site. C = common, R = rare, V = very rare, P = present

Stage: Species staging in the Natura 2000 site. C = common, R = rare, V = very rare, P = present

Winter: Species wintering in the Natura 2000 site. C = common, R = rare, V = very rare, P = present

Site assessment:

Pop: Size and density of the population in relation to the national population: A:100%>=p>15%, B: 15%>=p>2%, C: 2%>=p>0%, D: non-significant population

Con: Degree of conservation: A: conservation excellent, B: good conservation, C: average or reduce conservation

Iso: Degree of isolation of the population present in relation to the natural range of the species: A: population (almost) isolated, B: population not-isolated, but on margins of area of distribution, C: population not-isolated within extended distribution range

Glo: Global assessment of the value of the site for conservation of the species concerned: A : excellent value, B : good value, C : significant value

Table 02: Migratory bird species regularly occurring in the SPA GR1150001 and SAC GR1150010 not listed in Annex I of the Birds Directive (prepared from SDFs GR1150001 and SAC GR1150010)

Code	Species	POPULATION				SITE ASSESSMENT			
		Resident	Breed	Migratory Stage	Winter	Pop	Con	Iso	Glo
A086	<i>Accipiter nisus</i>		P			C	B	C	C
A298	<i>Acrocephalus arundinaceus</i>		P			C	B	C	C
A296	<i>Acrocephalus palustris</i>			P		C	B	C	C
A295	<i>Acrocephalus schoenobaenus</i>		P			C	B	C	C
A297	<i>Acrocephalus scirpaceus</i>		P			C	B	C	C
A168	<i>Actitis hypoleucos</i>			P		C	B	C	C
A247	<i>Alauda arvensis</i>		P			C	B	C	C
A054	<i>Anas acuta</i>				251-500i	C	B	C	C
A056	<i>Anas clypeata</i>				101-250i	C	B	C	C
A052	<i>Anas crecca</i>				R	C	B	C	C
A050	<i>Anas penelope</i>				251-500i	C	B	C	C
A053	<i>Anas platyrhynchos</i>		P		101-250i	C	B	C	C
A055	<i>Anas querquedula</i>		P	P		A	B	C	B
A051	<i>Anas strepera</i>		R		6-10i	A	B	C	B
A043	<i>Anser anser</i>				R	C	B	B	B
A039	<i>Anser fabalis</i>				R	A	B	B	B
A258	<i>Anthus cervinus</i>				P	C	B	C	C
A257	<i>Anthus pratensis</i>				P	C	B	C	C
A259	<i>Anthus spinoletta</i>				P	C	B	C	C
A256	<i>Anthus trivialis</i>				P	C	B	C	C
A226	<i>Apus apus</i>		P			C	B	C	C
A028	<i>Ardea cinerea</i>		20-20i		P	C	B	C	C
A169	<i>Arenaria interpres</i>				P	C	B	C	C
A059	<i>Aythya ferina</i>				51-100i	C	B	C	C
A061	<i>Aythya fuligula</i>				1-5i	C	B	C	C
A067	<i>Bucephala clangula</i>				R	B	B	B	B
A087	<i>Buteo buteo</i>				6-10i	C	B	C	C
A088	<i>Buteo lagopus</i>			R		D			
A144	<i>Calidris alba</i>			P		C	B	C	C
A149	<i>Calidris alpina</i>				51-100i	C	B	C	C
A147	<i>Calidris ferruginea</i>			P		C	B	C	C
A145	<i>Calidris minuta</i>			P		C	B	C	C
A146	<i>Calidris temminckii</i>			P		C	B	C	C
A365	<i>Carduelis spinus</i>				P	C	B	C	C
A136	<i>Charadrius dubius</i>		P			C	B	C	C
A137	<i>Charadrius hiaticula</i>			P		C	B	B	B
A198	<i>Chlidonias leucopterus</i>			P		C	B	B	B
A211	<i>Clamator glandarius</i>		V			C	B	B	B
A373	<i>Coccothraustes coccothraustes</i>			P		C	B	C	C
A207	<i>Columba oenas</i>			P		C	B	B	B
A208	<i>Columba palumbus</i>				P	C	B	C	C
A348	<i>Corvus frugilegus</i>				P	C	B	C	C
A113	<i>Coturnix coturnix</i>		P			C	B	C	C
A212	<i>Cuculus canorus</i>		P			C	B	C	C
A036	<i>Cygnus olor</i>				1100-1100i	B	B	C	B
A253	<i>Delichon urbicum</i>		P			C	B	C	C
A382	<i>Emberiza melanocephala</i>		P			C	B	C	C
A381	<i>Emberiza schoeniclus</i>		P		P	C	B	C	C
A269	<i>Erithacus rubecula</i>				P	C	B	C	C
A268	<i>Erythropygia galactotes</i>		P			C	B	B	B
A099	<i>Falco subbuteo</i>		P			C	B	C	C
A322	<i>Ficedula hypoleuca</i>			P		C	B	C	C
A359	<i>Fringilla coelebs</i>		P		P	C	B	C	C

SPECIAL ECOLOGICAL ASSESSMENT STUDY

Code	Species	POPULATION				SITE ASSESSMENT			
		Resident	Breed	Migratory Stage	Winter	Pop	Con	Iso	Glo
A360	<i>Fringilla montifringilla</i>				P	C	B	C	C
A125	<i>Fulica atra</i>		P		2000-	C	B	C	C
A153	<i>Gallinago gallinago</i>				11-50i	C	B	C	C
A130	<i>Haematopus ostralegus</i>		30-30i		P	B	B	C	B
A438	<i>Hippolais pallida</i>		P			C	B	C	C
A252	<i>Hirundo daurica</i>		P			C	B	C	C
A251	<i>Hirundo rustica</i>		P			C	B	C	C
A341	<i>Lanius senator</i>		P			C	B	C	C
A179	<i>Larus ridibundus</i>				501-1000i	C	B	C	C
A150	<i>Limicola falcinellus</i>			P		C	B	C	C
A156	<i>Limosa limosa</i>			P		C	B	C	C
A292	<i>Locustella luscinioides</i>		P			C	B	C	C
A271	<i>Luscinia megarhynchos</i>		P			C	B	C	C
A152	<i>Lymnocyptes minimus</i>			R		C	B	B	B
A069	<i>Mergus serrator</i>				11-50i	B	B	C	B
A230	<i>Merops apiaster</i>		P			C	B	C	C
A262	<i>Motacilla alba</i>		P			C	B	C	C
A261	<i>Motacilla cinerea</i>			P	P	C	B	C	C
A260	<i>Motacilla flava</i>		P			C	B	C	C
A319	<i>Muscicapa striata</i>		P			C	B	C	C
A058	<i>Netta rufina</i>				1-5i	C	B	C	C
A160	<i>Numenius arquata</i>				51-100i	C	B	C	C
A158	<i>Numenius phaeopus</i>			P		C	B	B	B
A435	<i>Oenanthe isabellina</i>		V			C	B	B	B
A277	<i>Oenanthe oenanthe</i>		P			C	B	C	C
A337	<i>Oriolus oriolus</i>		P			C	B	C	C
A214	<i>Otus scops</i>		P			C	B	C	C
A323	<i>Panurus biarmicus</i>		P			C	B	C	C
A355	<i>Passer hispaniolensis</i>		P		P	C	B	C	C
A391	<i>Phalacrocorax carbo</i>				101-250i	C	B	C	C
A273	<i>Phoenicurus ochruros</i>			P		C	B	C	C
A274	<i>Phoenicurus phoenicurus</i>			P		C	B	C	C
A314	<i>Phylloscopus sibilatrix</i>			P		C	B	C	C
A316	<i>Phylloscopus trochilus</i>			P		C	B	C	C
A141	<i>Pluvialis squatarola</i>				P	C	B	C	C
A005	<i>Podiceps cristatus</i>				P	C	B	C	C
A006	<i>Podiceps griseigena</i>				V	A	B	B	B
A008	<i>Podiceps nigricollis</i>				P	C	B	C	C
A266	<i>Prunella modularis</i>			P		C	B	C	C
A317	<i>Regulus regulus</i>			P		C	B	C	C
A249	<i>Riparia riparia</i>		P			C	B	C	C
A275	<i>Saxicola rubetra</i>			P		C	B	B	B
A155	<i>Scolopax rusticola</i>				P	C	B	C	C
A210	<i>Streptopelia turtur</i>		P			C	B	C	C
A353	<i>Sturnus roseus</i>			P		C	B	B	B
A351	<i>Sturnus vulgaris</i>		P		C	C	B	C	C
A311	<i>Sylvia atricapilla</i>		P			C	B	C	C
A310	<i>Sylvia borin</i>			P		C	B	C	C
A304	<i>Sylvia cantillans</i>			P		C	B	C	C
A309	<i>Sylvia communis</i>		P			C	B	C	C
A308	<i>Sylvia curruca</i>			P		C	B	C	C
A306	<i>Sylvia hortensis</i>			P		C	B	C	C
A004	<i>Tachybaptus ruficollis</i>		R		101-250i	B	B	C	B
A228	<i>Tachymartus melba</i>		P			C	B	C	C
A048	<i>Tadorna tadorna</i>		P		P	B	B	C	B
A161	<i>Tringa erythropus</i>			P		C	B	C	C
A164	<i>Tringa nebularia</i>			P		C	B	C	C
A165	<i>Tringa ochropus</i>			P		C	B	C	C

SPECIAL ECOLOGICAL ASSESSMENT STUDY

Code	Species	POPULATION				SITE ASSESSMENT			
		Resident	Breed	Migratory Stage	Winter	Pop	Con	Iso	Glo
A163	<i>Tringa stagnatilis</i>			P		C	B	B	B
A162	<i>Tringa totanus</i>		P		P	C	B	C	C
A286	<i>Turdus iliacus</i>				P	C	B	C	C
A285	<i>Turdus philomelos</i>				P	C	B	C	C
A284	<i>Turdus pilaris</i>				P	C	B	C	C
A232	<i>Upupa epops</i>		P			C	B	C	C
A142	<i>Vanellus vanellus</i>		P		P	C	B	C	C

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Stage: Species staging in the Natura 2000 site. C = common, R = rare, V = very rare, P = present

Winter: Species wintering in the Natura 2000 site. C = common, R = rare, V = very rare, P = present

Site assessment:

Pop: Size and density of the population in relation to the national population: A: 100% >= p > 15%, B: 15% >= p > 2%, C: 2% >= p > 0%, D: non-significant population

Con: Degree of conservation: A: conservation excellent, B: good conservation, C: average or reduce conservation

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