

Action A2: « Management plan of the priority habitat type *1120 "Posidonia beds (Posidonium oceanicae)" and of other marine habitat types of the project marine zone»

The study area of the present Visitor Management Plan is delimited within the wider area of the protected areas of Epanomi and Aggelochori coastal lagoons (C/L). The two study areas include: a) the Special Area of Conservation (SAC) under the code and name **«GR1220005 Limnothalassa Aggelochoriou»**, which has also been designated as a Special Protection Area (SPA) within the same area limits and β) the Special Area of Conservation (SAC) under the code and name **«GR1220012 Limnothalassa Epanomis kai Thalassia Paraktia Zoni»**. The latter area includes the Special Protection Area (SPA) under the code and name **«GR1220011 Limnothalassa Epanomis»** having different area limits. The whole study area is located in the southern part of Thessaloniki city, and is part of the wider administrative area of Thermaikos Municipality (Regional Union of Thessaloniki). Each of the two study areas consists of a coastal lagoon, salt marshes and the coastal zone, while in the area of Aggelochori there is also a salt work area. The main habitats include coastal areas (coastal moorages and other coastal formations), as well as wetlands (coastal lagoons with salt marshes, dunes and sandy beaches, stagnant brackish or sea water areas and riparian vegetation).

For the planning of Action Plan the following work has been preceded:

- Recording and description of the current condition in the study area (existing data on the structure of targeted habitats of the study, on the current state of management, on human activities that potentially affect the conservation status of the habitats)
- creation of baseline data regarding the presence, the range and the spatial distribution of the targeted habitats, through the detailed mapping of the sea bed and the creation of baseline maps
- assessment of the conservation status of the priority habitat type 1120

The techniques that were used for the mapping of the marine habitat types at both the study areas are:

- the Sea-Bed Discrimination System RoxAnn GD-X of Sonavision Ltd, for mapping the marine habitats for depths >3m, which was connected to the board sounding sensor, the GPS (Humminbird-Matrix 97) and a laptop

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- remote sensing for mapping the habitats, especially in shallow waters
- direct, *in situ*, observations by experts (SCUBA divers – biologists) in combination with the obtained data from a sliding underwater camera JW Fishers TOV-1 for the verification (ground truthing) of the results from the previously mentioned techniques and for the record of specific characteristics of the marine habitat types.

The results of the mapping are presented at the following tables:

Table 1: Area of habitat types that were mapped in the wider area and the Special Area of Conservation GR1220005 'Limnothalassa Aggelochoriou'

Habitat code	Habitat name	Area in the wider mapped area (m ² /ha)	Area within the SAC (m ² /ha)
HABITAT TYPES OF ANNEX I OF THE DIRECTIVE 92/43/EC			
1110	Sandbanks which are slightly covered by sea water all the time	630560/63,05	352272/35,22
*1120	* Posidonia beds (Posidonium oceanicae)	1267696/126,77	168032/16,80
1170	Reefs	594176/59,41	364816/36,48
HABITAT TYPES OF ANNEX I OF THE DIRECTIVE 92/43/EC			
119A	Soft substrata without vegetation	377664/37,77	8528/0,85
119B	Soft substrata without vegetation Cymodocea nodosa	1688672/168,87	513120/51,31
Sum of area		4558768/455,87	1406768/140,67

Table 2: Area of habitat types that were mapped in the wider area and the Special Area of Conservation GR1220012 'Limnothalassa Epanomis kai Thalassia Paraktia Zoni'

Habitat code	Habitat name	Area in the wider mapped area (m ² /ha)	Area within the SAC (m ² /ha)
HABITAT TYPES OF ANNEX I OF THE DIRECTIVE 92/43/EC			
1110	Sandbanks which are slightly covered by sea water all the time	1.486.432/148,64	622896/62,29
*1120	* Posidonia beds (Posidonium oceanicae)	6822320/682,23	451552/45,16
1170	Reefs	56976/59,97	16256/1,63
HABITAT TYPES OF ANNEX I OF THE DIRECTIVE 92/43/EC			
119A	Soft substrata without vegetation	6793264/679,32	2015792/201,58
119B	Soft substrata without vegetation Cymodocea nodosa	1303552/130,35	610880/61,09
Sum of area		16462544/1646,25	3717376/371,74

Overall,

- At both the marine areas of the project a new habitat type has been recorded and mapped; the habitat type «1170 Reefs» of Annex I of the Directive 92/43/EC which had not been recorded before, according to the data of the National Database
- The mapping data for the area 'GR Limnothalassa Aggelochoriou' have been obtained, which had been missing up to date
- In the area of «GR1220005 Limnothalassa Aggelochoriou» a new habitat type has been recorded and mapped; the priority habitat type «1120 "Posidonia beds (*Posidonium oceanicae*)» of Annex I of the Directive 92/43/EC, which had not been recorded before in the area. This habitat type was recorded in the form of patches and with a main area of distribution beyond the limits of the Special Area of Conservation GR1220012.
- In the area of «GR1220012 Limnothalassa Epanomis kai Thalassia Paraktia Zoni» the priority habitat type «1120 Posidonia beds (*Posidonium oceanicae*)» has a wider distribution out of the limits of the protected area. The habitat has a higher density at the southern part of the area.

The estimation of the conservation status, regarding the priority marine habitat type 1120, was based on *in situ* measurements via SCUBA diving (non destructive methods for monitoring sea grasses' meadows). The measured parameters included:

- Meadows' density as shoots/m² (using a quadrat of 1600 cm²) (20 random repeats)
- Meadows' cover: % matte along transects 20 meters long
- Dead – matte cover: % dead - matte along transects 20 meters long
- Basic characteristics of the meadows: upper and lower depth limit, meadows' type as continuous or patchy
- Plagiotropic shoots: % plagiotropic shoots (using a quadrat of 1600 cm²) (20 random repeats)
- Rhizome baring/burial: cm from the sediment to the beginning of leaves.

The above mentioned parameters in combination with the results of the phenological and lepidochronological analyses led to the estimation of the habitat's Conservation Status:

- A. «Special Area of Conservation GR122005 Limnothalassa Aggelochoriou» and wider marine area of the meadow distribution:
Conservation Status : C (Unfavourable)
- B. «Special Area of Conservation GR122012 Limnothalassa Epanomis kai Thalassia Paraktia Zoni» and wider marine area of the meadow distribution:
Conservation Status in the subarea Epanomi North: C (Unfavourable)
Conservation Status in the subarea Epanomi South: A->B (Excellent-good)
Overall Conservation Status in the area: B (good)

The general objective of the current management plan is to ensure the effective protection and conservation of the priority habitat type and other marine habitat types of Annex I of the Directive 92/43/EC at the two Special Areas of Conservation (SACs) of Epanomi and Aggelochori.

The specific aims of the present management plan are:

- To increase the limits of the marine protected area
- To minimize the impacts of fishing activities, through a rational frame of carrying out human activities, a continuous control of the qualitative and quantitative elements of the area and the implementation of some technical interventions
- To decrease the impacts of the boats' mooring
- To create the conditions for reaching an effective management in the area
- To reach at least a good chemical and ecological status of the coastal water bodies
- To decrease the pollution loads sourcing from the residential, agricultural, tourist and industrial activities
- To create an effective system of guarding/surveillance
- To coordinate the active cooperation of all authorities that are responsible for the management of the area

- To incorporate the participation of the stakeholders in the planning and management process
- To establish an integrated system of monitoring not only the protected areas but also the effectiveness of the management process
- To develop an integrated strategy of communication targeting at the protection of the natural environment as well as at the social, economic and environmental benefits that result from the protection of the environment

In order to achieve the above aims, the action plan was based on the results of both the mapping and the assessment of the conservation status of the meadows *Posidonia oceanica*, as well as on the data from the recording of the current condition of the area and includes the following proposed measures:

Measure 1: Alteration/Expansion of the limits of the marine parts of the two SACs

Measure 2: Regulation of the shellfish-culture, of the aquaculture and of the fishing activities

Measure 2.1: Installation of artificial reefs in the area of Aggelochori and in specific places of Epanomi area

Measure 2.2: Installation of environmentally friendly moorings in the areas where fishing activities take place

Measure 2.3: Specification of restriction measures within the Areas of 'Organized Development of Aquaculture Activities' of Thermaikos Gulf, and in particular in the area of Aggelochori

Measure 2.4: An education programme for the fishermen

Measure 3: Promoting the institutionalization of a management system of Special Areas of Conservation (SACs) and Special Protection Areas (SPAs), and designation of zones and terms for the development of activities

Measure 4: Installation of environmentally friendly moorings at the coastal area of the two study areas of the project

Measure 9: Guarding and surveillance of the study area

Measure 10: Creation of communication and promotion material for sensitization

Measure 11: Monitoring programme

Lastly, the technical specifications of the proposed management interventions (technical works) were described, which include the spatial planning and the installation of environmental friendly moorings at the coastal waters of the two study areas and the establishment of a monitoring system of the marine habitat types