Interreg NEXT Black Sea Basin

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Establishing and Operating an Innovative Marine Technology Transfer Network for Enhancing the Transition to a Sustainable Blue Economy in the Black Sea Basin

Identification of the condition of the benthic ecosystem and its associated threats in Greek Pilot site

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1. Introduction

Despite the widespread pressures across the study area, the coastal zone near Fanari, in the Thracian Sea, stands out as an ecologically exceptional region and a highly promising candidate for conservation and long-term monitoring. This area hosts extensive meadows of both *Posidonia oceanica* and *Cymodocea nodosa*, two key Mediterranean seagrass species known for their crucial role in supporting biodiversity, stabilizing sediments, and maintaining high water quality. According to the Ecological Evaluation Index (EEI), a standardized ecological assessment tool ranging from 2 to 10, developed by Panayotidis and Stamatis (2001), the Fanari region falls within the highest ecological status category. This classification reflects a pristine or near-pristine condition of the coastal ecosystem, characterized by healthy benthic communities and minimal anthropogenic disturbance.

2.Identification of current status on Greek pilot site

In order to identify and assess a suitable area for long-term monitoring of seagrass meadows, the Democritus University of Thrace undertook the following actions:

- **Seagrass mapping**: Identification of the spatial extent of *Posidonia oceanica* and *Cymodocea nodosa* meadows using available cartographic and satellite data.
- **Field exploration in the Perama area**: On-site sea expedition to visually confirm the presence of seagrass meadows in nearby coastal areas.
- **Underwater video documentation**: Use of GoPro cameras for in situ video surveys to identify seagrass species and verify their condition and distribution.

This expedition is illustrated on the map below (Figure 1), and a screenshot from the underwater identification process is shown in the accompanying Figure 2.

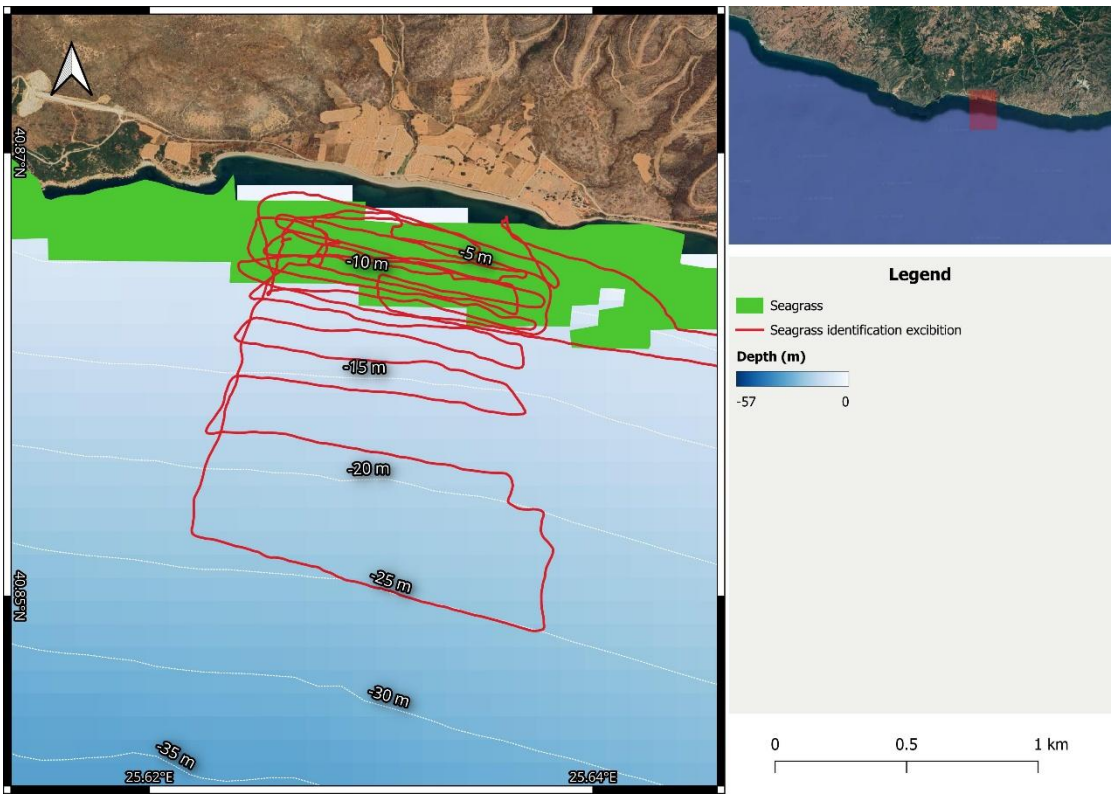

***Figure 1**. Detailed map of the Fanari coastal zone in the Thracian Sea, illustrating the extent of seagrass meadows (in green) and the path of the seagrass identification expedition (in red).*

***Figure 2**. Underwater image captured during the field expedition using a GoPro camera, showing healthy stands of Posidonia oceanica and Cymodocea nodosa meadows in the coastal zone near Fanari. The video served to confirm species presence and seagrass condition in situ.*

References

Panayotidis, P., & Stamatis, N. (2001). Ecological evaluation of transitional and coastal waters: A marine benthic macrophytes-based model. *Medit. Mar. Sci*, *2*, 45-65. https://doi.org/10.12681/mms.266