

PREVEZA PILOT AREA

Location	Municipality of Preveza – Coastal Area between “Mytikas” and “Kanali”
Property	Municipality of Preveza
Position	Lat 39°02'59", Long 20°42'13"
Surface area	41,751.96 m ²
Perimeter	2.68 km
Waterfront:	1.29 km
Habitat type	Dir. 43/92: 2110 - Embryonic shifting dunes
Status:	The coastal area between "Mytikas" and "Kanali" in the Ionian Sea faces the potential threat of coastal erosion exacerbated by factors such as sea level rise, storm events, and human activities. Coastal erosion can lead to the loss of valuable habitat for endangered species like the " <i>Chelonia mydas</i> " and " <i>Caretta caretta</i> " as well as disrupt the integrity of the protected dune habitat. Additionally, the area's designation as a Natura 2000 site underscores the importance of preserving its ecological balance and biodiversity. By implementing a pilot monitoring system, we aim to better understand and address these challenges, contributing to the sustainable management of this critical coastal ecosystem.
Critical issues	<p>Coastal Erosion: One of the primary concerns is coastal erosion, driven by factors such as sea level rise, storm events, and anthropogenic activities.</p> <p>Habitat Degradation: The dune habitat within the coastal area is particularly vulnerable to degradation due to human activities such as tourist activities, recreational use, and invasive species encroachment.</p> <p>Water Quality: Pollution from runoff, agricultural activities, and urban development can degrade water quality in the coastal area, posing risks to marine ecosystems and wildlife.</p>
Species present at the site (Directive 92/43 EEC)	<i>Caretta caretta</i> (nesting), <i>Chelonia mydas</i> (nesting)

Objective: The establishment of a comprehensive monitoring system aimed at evaluating environmental conditions within a designated coastal area. This system will integrate IoT sensors for water level measurement, alongside cameras and drones. Leveraging advanced machine vision techniques, we aim to continuously monitor a range of environmental parameters, as well as the welfare of endangered species and their habitats within the specified region. By harnessing data from IoT sensors and cameras, we will track wave patterns, coastal erosion dynamics, and the overall condition of endangered species and their habitats, ensuring a holistic approach to environmental monitoring and conservation efforts.

Timeline:

Phase 1 (Preparation and Deployment)

Phase 2 (Data Collection and Analysis)

Phase 3 (Evaluation and Reporting)

Equipment:

The following equipment will be used:

- Sensors (water level, wave height, temperature, humidity, anemometer etc.)
- Cameras,
- Drone

Metrics:

- Water level fluctuations.
- Wave patterns and intensity.
- Coastal erosion rate.
- Nesting activities and population trends of endangered species.
- Dune habitat integrity.

Risk Management:

- Environmental impact assessment to minimize disruption to the ecosystem.
- Regular maintenance and calibration of sensors and cameras.
- Contingency plans for adverse weather conditions or equipment failure.

Evaluation and Feedback:

- Continuous monitoring of data quality and system performance.
- Surveys and interviews with stakeholders to assess the effectiveness of the monitoring program.
- Iterative improvements based on feedback and evaluation results.

Adaptation:

- Flexibility to adjust sensor placement and monitoring strategies based on emerging needs and insights.
- Integration of new technologies or methodologies to enhance monitoring capabilities.

