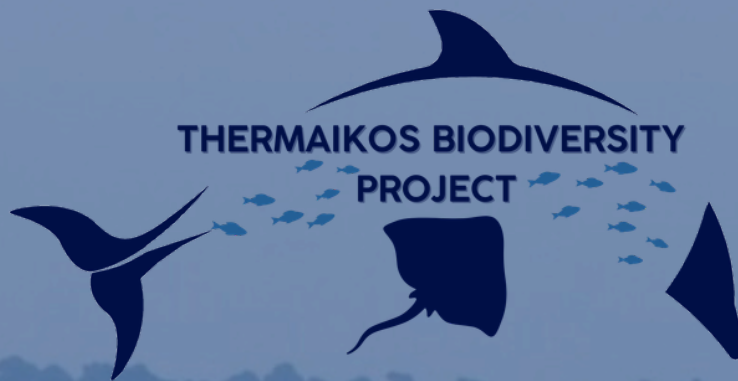




SANI
RESORT



2025 FINAL REPORT

THESSALONIKI, 2025

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Images

iSea

The report provides a summary of the activities undertaken between January and December 2025.



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BACKGROUND



Thermaikos Gulf, an area heavily impacted by human activities, includes complex estuaries, lagoons, wetlands, and rich coastal ecosystems which are part of the Natura 2000 network. This understudied area hosts cetacean species that face important threats for their survival, like prey depletion, marine and underwater noise pollution and interactions with fishing gear.

In this context, Thermaikos Biodiversity Project was launched in 2021 with the aim of monitoring the dolphin populations in the gulf. The project also included educational activities for children focussing in marine fauna.

In 2024, the project expanded, including snorkel biodiversity trips to the guests of Sani, where teenagers and adults could observe the marine biodiversity of Sani beaches. Additionally, a pilot project for the ex-situ conservation of the rough skate (*Raja radula*) started.

THERMAIKOS



BIODIVERSITY PROJECT

In 2025, the project continues in line with the previous year, with an intensive focus on the systematic dolphin monitoring for the fifth consecutive year, and maintaining a long-term dataset that has enabled us to obtain the first preliminary results.

Until late 2025 the team developed photo catalogues for three different species (*Tursiops truncatus*, *Delphinus delphis* and *Stenella coeruleoalba*) with almost 200 individuals identified throughout the three species. These results are a gateway to understand the intricacies of the population in Thermaikos and how to better protect them.

As part of the ex-situ conservation program for the critically endangered rough skate (*Raja radula*), we builded new collaborations with the fishers from 10 ports around Chalkidiki, encouraging them to contact us if they find eggs in their nets. In late 2025 the project had two succesfull hatchings of *Raja clavata*, of which one was released and one is under observation.

We also continue to focus on raising awareness of marine fauna biodiversity through snorkelling and children's activities.

THERMAIKOS



BIODIVERSITY PROJECT

2025 IN NUMBERS

45 Dolphin surveys

42 Encounters with dolphins

10 Ray egg cases

2 Successful Ray hatchings

25 Snorkelling trips

39 Educational activities

DOLPHIN SURVEYS



2025

CATALOGUES

We have identified

62

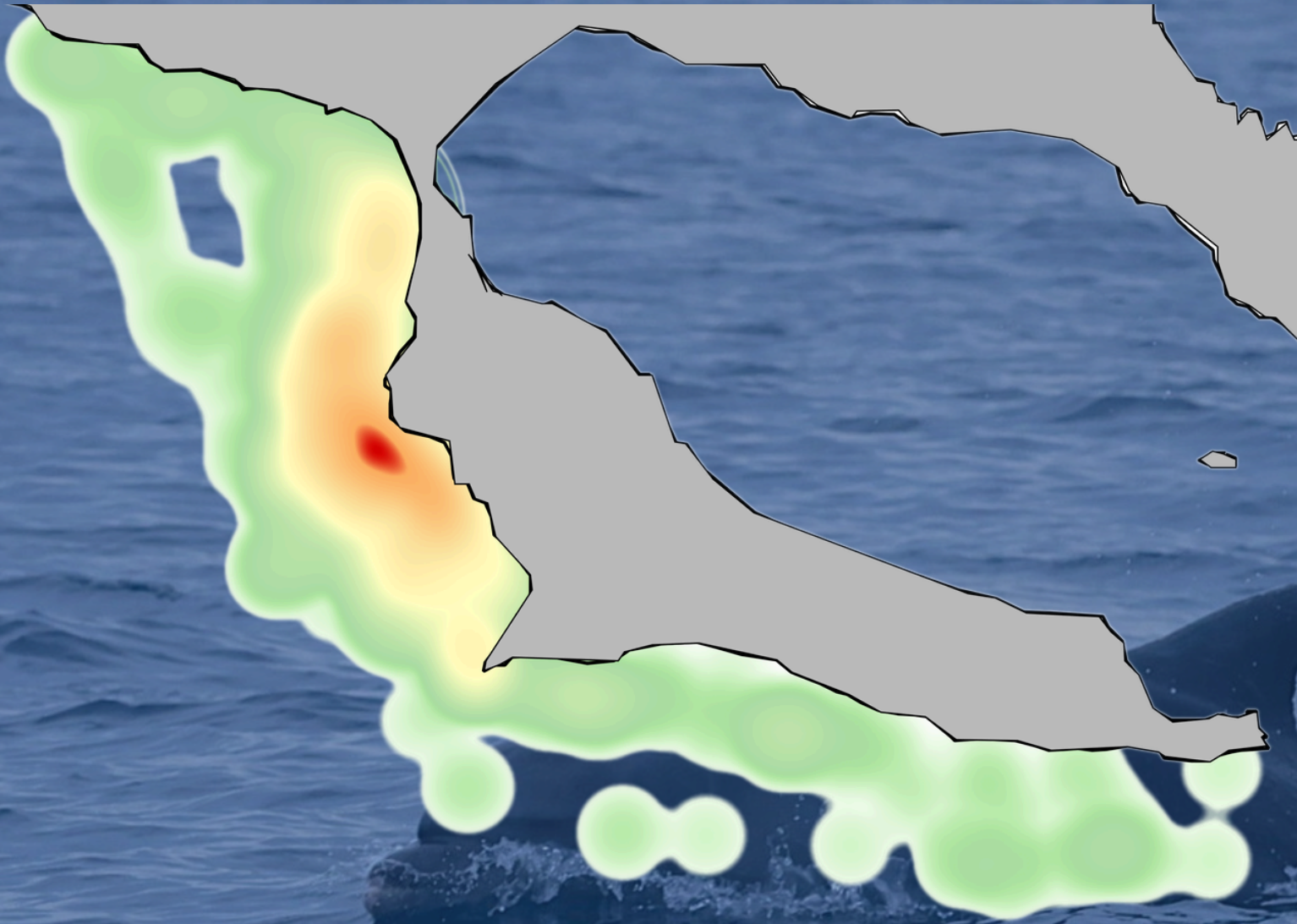
new dolphins since last year



Bottlenose dolphins are the most common species sighted in the area



DOLPHIN SURVEYS 2025



The field team of iSea have surveyed over

113.6 hours

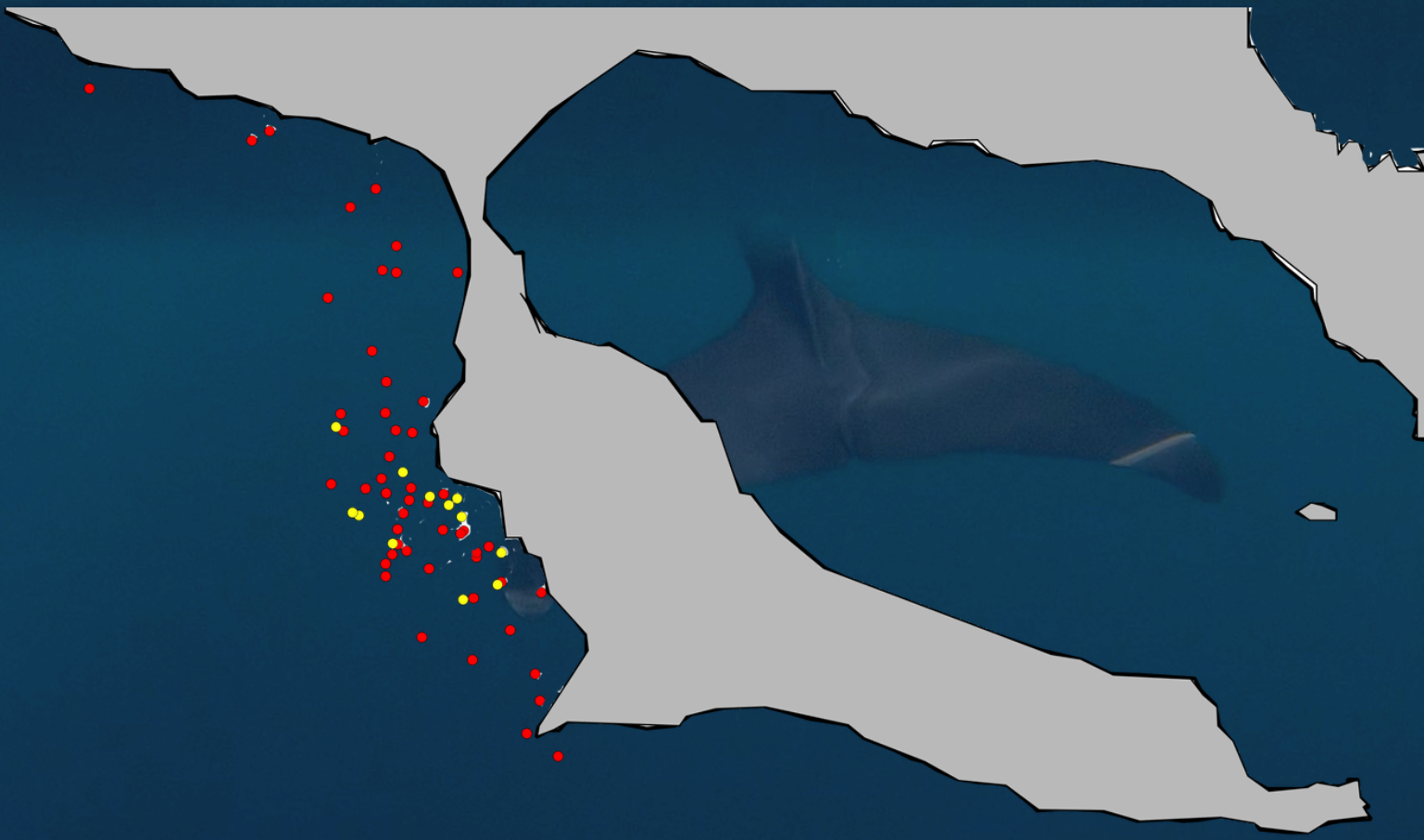
and over 2000 kms
along the coast of West Kassandra, including one off shore
survey

DOLPHIN



OCCURENCE IN THERMAIKOS

Dolphin presence in the west coast of Kassandia during our surveys:



- Common bottlenose dolphin
- Short-beaked common dolphin
- Stripped dolphin


As the previous image shows: presence of three dolphin species: *T. truncatus* (common bottlenose dolphin in red), *Delphinus delphis* (short-beaked common dolphin in yellow), *Stenella coeruleoalba* (stripped dolphin in white). Common bottlenose dolphins are the most frequently seen during our surveys.

EUROPEAN CETACEAN SOCIETY



CONFERENCE 2025

After years of data collection, we had the opportunity to present the initial findings on two of the species of dolphins in Thermaikos Gulf, the bottlenose dolphin and the common dolphin, at the 36th European Cetacean Society Conference in São Miguel (Azores, Portugal).





Encounter rates, residency patterns and site fidelity of common bottlenose dolphin (*Tursiops truncatus*) and common dolphin (*Delphinus delphis*) in Thermaikos Gulf, Greece

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AD-25

BACKGROUND

For decades, the common bottlenose dolphin and the common dolphin in the Mediterranean Sea have been subject to several anthropogenic threats^{1,2,3}. This has led to these subpopulations being classified as 'Least Concern' and 'Endangered', respectively, according to the IUCN Red List criteria^{4,5}.

The Thermaikos Gulf, located in the North Aegean Sea, is an important maritime route to Thessaloniki, the second largest city of Greece. The gulf is also subject to intense commercial fishing activities⁶. The presence of dolphins in the area is well known to the local citizens and visitors. However, literature on the dolphin population is scarce.

RESULTS

The encounter rate for bottlenose dolphins resulted in 0.003±0.009 groups/km, with no significant differences between seasons (Kruskal-Wallis test, $P = 0.6543$). Common dolphins had a lower encounter rate, 0.002±0.001 groups/km, with no winter encounters.

	Monthly residency rate		Seasonal residency rate		Site fidelity	
	<i>T. truncatus</i>	<i>D. delphis</i>	<i>T. truncatus</i>	<i>D. delphis</i>	<i>T. truncatus</i>	<i>D. delphis</i>
Mean	0.090	0.066	0.130	0.104	0.427	0.877
SD	0.060	0.030	0.077	0.048	0.358	0.287
Min	0.053	0.053	0.083	0.063	0.063	0.074
Max	0.263	0.158	0.333	0.250	1	1

METHODOLOGY

Between 2021 and 2024, the first systematic boat surveys were conducted to monitor the local dolphin population using photo-identification. A total of 47 daily surveys were completed, covering 2214 km of survey effort. Only high-quality, distinct photos were used in the study. Individuals were identified by comparing and matching them based on the unique features of their dorsal fins.

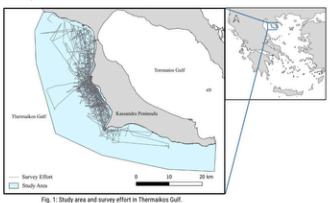




Fig. 1. Study area and survey effort in Thermaikos Gulf.



27 sightings of *Tursiops truncatus*
84 individuals in the catalogue



8 sightings of *Delphinus delphis*
44 individuals in the catalogue

The encounter rate per kilometre was calculated as n/L , where n is the total number of sightings and L is the total length of the transect in kilometres. Data was visualized in QGIS Desktop version 3.42.0. Prior to analysis, the study area was divided into cells of 5 x 5 km to normalize the data due to the unequal survey effort⁷.

The residency pattern was described using monthly and seasonal residency rates. Site fidelity was calculated for each individual to assess how frequently the study area was revisited. An agglomerative cluster analysis was performed to classify individuals based on residency rates and site fidelity⁸.

DISCUSSION

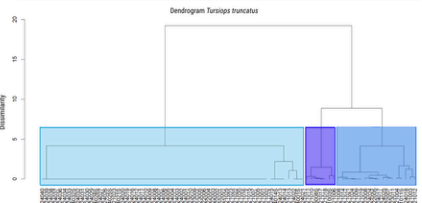
This work provides preliminary information for the ongoing Thermaikos Biodiversity Project, focusing on coastal dolphins inhabiting an area heavily influenced by human activity and lacking in information. The dendrograms obtained by analysing dolphin residency and site fidelity should be treated with caution, as they are based on a limited number of sightings, especially those of common dolphins. The bottlenose dolphin has been present in the area consistently throughout the years and seasons. However, the common dolphin exhibits a more sporadic presence, particularly during the warm season, which may be related to prey availability⁹.

Further monitoring efforts in the Thermaikos Gulf are required to clarify the distribution of these cetaceans, enhance our understanding of the threats they face, and contribute to the design of effective conservation measures.

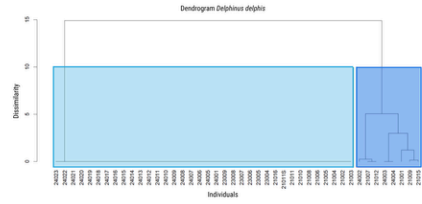
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DENDROGRAMS



Dendrogram *Tursiops truncatus*



Dendrogram *Delphinus delphis*

The dendrogram suggested three residency categories for bottlenose dolphins: transient, semi-resident and resident. However, for common dolphins, it proposed only two categories: semi-resident and transient.

The cophenetic correlation coefficient was 0.8931 for bottlenose dolphin and 0.9348 for common dolphin, suggesting the dendrograms provide a good representation of the differences between groups.

	Monthly residency rate		Seasonal residency rate		Site fidelity	
	<i>T. truncatus</i>	<i>D. delphis</i>	<i>T. truncatus</i>	<i>D. delphis</i>	<i>T. truncatus</i>	<i>D. delphis</i>
Transient	0.0006	0.0526	0.0890	0.0833	1	1
Semi-resident	0.126	0.125	0.185	0.108	0.219	0.325
Resident	0.248	-	0.333	-	0.226	-

iSea presented a poster entitled: 'Encounter rates, residency patterns and site fidelity of common bottlenose dolphin (*Tursiops truncatus*) and common dolphin (*Delphinus delphis*) in Thermaikos Gulf, Greece'.

This study proposes three residency categories for bottlenose dolphins (resident, semi-resident and transient) and two for common dolphins (semi-resident and transient).

MARINE LITTER in Thermaikos



Marine litter is an unfortunate consequence of human activity and enters the ocean through multiple pathways, including land-based sources and direct disposal from vessels. During the Thermaikos Biodiversity Project (TBP) surveys, we systematically identify and collect floating litter encountered within our research area.

Monitoring floating aquatic litter alongside biodiversity provides critical insights into the pressures affecting marine ecosystems. Litter can directly impact marine species through entanglement, ingestion, or habitat degradation, while also serving as an indicator of human influence on coastal and offshore areas. By documenting the type, abundance, and sources of litter, TBP contributes not only to local conservation planning but also to raising awareness among stakeholders and the public about the cumulative effects of human activity on the Gulf of Thermaikos.

TANK WITH EGG CASES



As part of an ex-situ conservation project, suitable incubation conditions have been created for endangered ray species. A total of 10 egg cases of endemic Mediterranean species have been found in females that did not survive after being caught in fishing nets.

4 Species

10 Egg cases

1 Releases

2 Successful hatchings

In addition, 4 egg cases of other species not originally targeted by the project were found. These species are the White Skate (*Rostroraja alba*), the Thornback Skate (*Raja clavata*), and the Smallspotted Catshark (*Scyliorhinus canicula*).

SNORKELLING BIODIVERSITY TRIPS



A total of

148

guests from SANI Resort have participated in the snorkelling biodiversity trips held at the Water Sports of Sani Club in the 2025 season.

ACTIVITY DESCRIPTION

Participants on the snorkelling trips attend a presentation on coastal marine fauna and habitats. Afterwards, they take a guided tour in shallow waters, where they can spot some of the animals mentioned in the presentation.

EDUCATIONAL ACTIVITIES 2025



In this season, the iSea team has carried out **39** activities in the gardens of Sani Resort with children attending the kids' clubs.

A total of children have participated in these activities

437

ACTIVITY DESCRIPTION

The activities include charts of marine animals, a map of Greece and silhouettes of the different cetaceans that inhabit Greek seas, so that they can learn about the biodiversity of the surrounding area.

They also have the opportunity to do puzzles, as well as match pictures of dolphins' dorsal fins to learn about photo identification.

COMMUNICATION

2025



Website Reach

The project website has been updated with the data, resources and goals of the project for 2025.

266 PAGE VIEWS



Mass Media reach

A total of 16 Articles were published in the National and International press as a result of 1 Press Release published regarding the first successful Thornback ray hatching in Greece.

59 PRESS RELEASE VIEWS



16 ARTICLES IN PRESS



Social Media Reach

4 posts on Social Media platform of iSea



6,363 people reached
100 content interactions



5,200 people reached
288 content interactions



2,705 people reached
83 content interactions



4,625 people reached
151 content interactions



A video was created highlighting the first successful hatching in a controlled environment and the release of a Thornback ray in Greece.. The short version of the video, in GR and in ENG, was published on iSea's YouTube channel, receiving **897** views.

