

Survey of the Status of Important Fauna Species in the Kyparissiakos Lease Area

Interim Progress Report

June 2026

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Abbreviations and scientific names

Calonectris diomedea	Scopoli's Shearwater
Caretta caretta	Loggerhead Turtle
Chelonia mydas	Green Turtle
Delphinus delphis	Short-beaked Common Dolphin
Grampus griseus	Risso's Dolphin
Hydrobates pelagicus	European Storm-Petrel
ESAS	European Seabirds at Sea (survey method)
Larus audouinii	Audouin's Gull
Larus michahellis	Yellow-legged Gull
Monachus monachus	Mediterranean Monk Seal
n.m.	nautical mile
Phalacrocorax aristotelis desmarestii	Mediterranean Shag
Physeter macrocephalus	Sperm Whale
Puffinus yelkouan	Yelkouan Shearwater
Stenella coeruleoalba	Striped Dolphin
SAC	Special Area of Conservation (Natura 2000 network)
SPA	Special Protection Area (Natura 2000 network)
SDF	Standard Data Form (Natura 2000 datasheet)
Tursiops truncatus	Bottlenose Dolphin
WP	Work Package
Ziphius cavirostris	*Cuvier's Beaked Whale*

1 Introduction

In the context of Environmental Monitoring and Recording of Critical Environmental Indicators of Biodiversity, such as marine mammals (cetaceans and monk seals), sea turtles and seabirds, the Hellenic Petroleum Exploration & Production of Hydrocarbons Kyparissiakos Gulf Single Member S.A. company has assigned to Nature Conservation Consultants (NCC) Ltd a contract for conducting the present Project, namely the "Survey of the Status of Important Fauna Species in the Kyparissiakos Lease area" (Block 10).

The Project consists of 3 work packages (WP):

I. Pelagic Surveys for marine mammals, seabirds, sea turtles, nearshore and in the open sea, using an open water RIB vessel, a sailing boat, and a single-engine aircraft.
II. Coastal surveys for monk seals and seabirds breeding sites in the coastal zones of the adjacent Natura 2000 sites, using inflatable RIB boats.
III. Colony surveys at the Strofades islets SPA and the surrounding project area, using GSM nest cameras, thermal cameras and GPS/GSM transmitters, as well as analysis of the transmitters' data fitted on Loggerhead turtles in the previous years.

The present document constitutes the Interim Progress Report for Work Packages WP I–III. It presents the field surveys carried out during the first semester of 2026 and the results in each Work Package.

The present project represents the 2026 continuation of the ongoing project entitled "Survey of the Status of Important Fauna Species in the Kyparissiakos Lease Area", which has been implemented during the period 2020–2026.

2 Description of the Project Area

The **Project Area** is in the Ionian Sea, southeast of Zakynthos Island and west of the Peloponnese, approximately from the northern town of Zacharo and the southern town of Methoni. It extends between latitudes of 36°50'N in the south and 37°30'N in the north and between longitudes of 20°55'E in the west and 21°30'E in the east. Its total surface area is 3,422.5 km^2.

The **Wider Project Area** envelops the project area and extends further north and east to additionally include the southwestern, south-eastern and eastern coast of Zakynthos, and the western coast of Peloponnese south of Kyllini, together with their neighbouring islets (Figure 2-1)

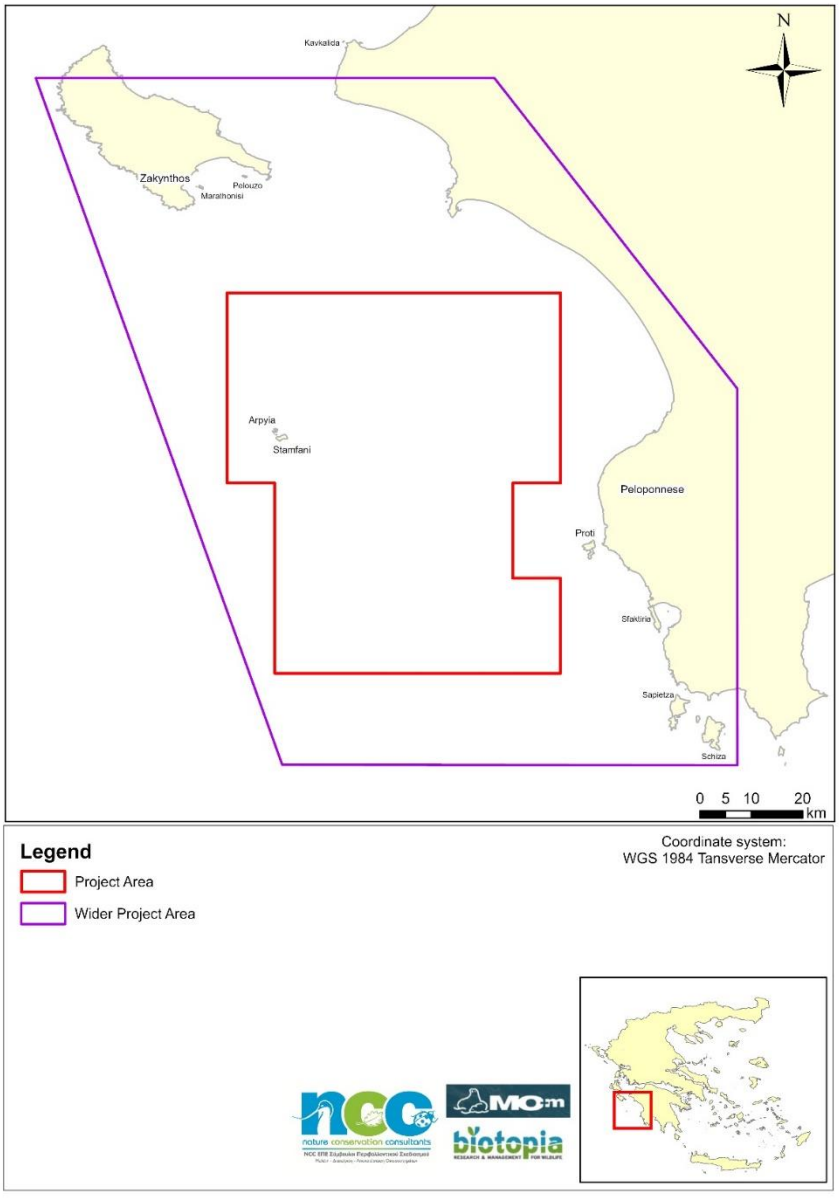


Figure 2-1. Wider project area

Oceanographic characteristics of the Project Area

The sea depth within the Project Area exceeds 500m and reaches more than 3,500m at its southwestern corner. The only exception is the Strofades islets in the west, which are surrounded by a narrow belt of coastal waters (Figure 2-2).

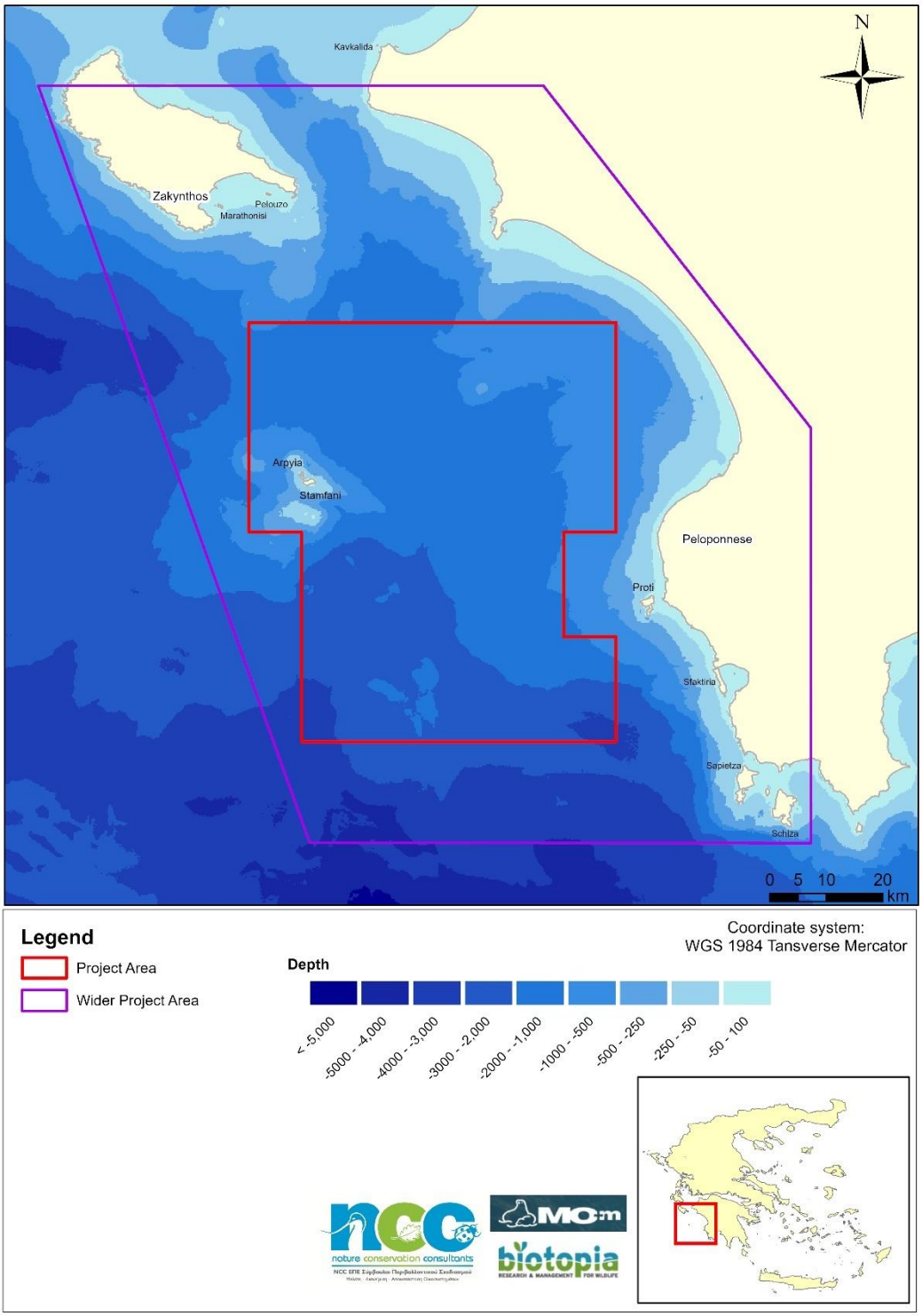


Figure 2-2. Bathymetry in the Project Area

In northern, north-eastern and eastern part of the Wider Project Area the slope of the sea floor descends gradually, without abrupt breaks towards southwest, however the southern and the western part exhibit numerous abrupt descends of the sea floor, accompanied by step slopes of the sea floor reaching up to 53^{o} (Figure 2-3).

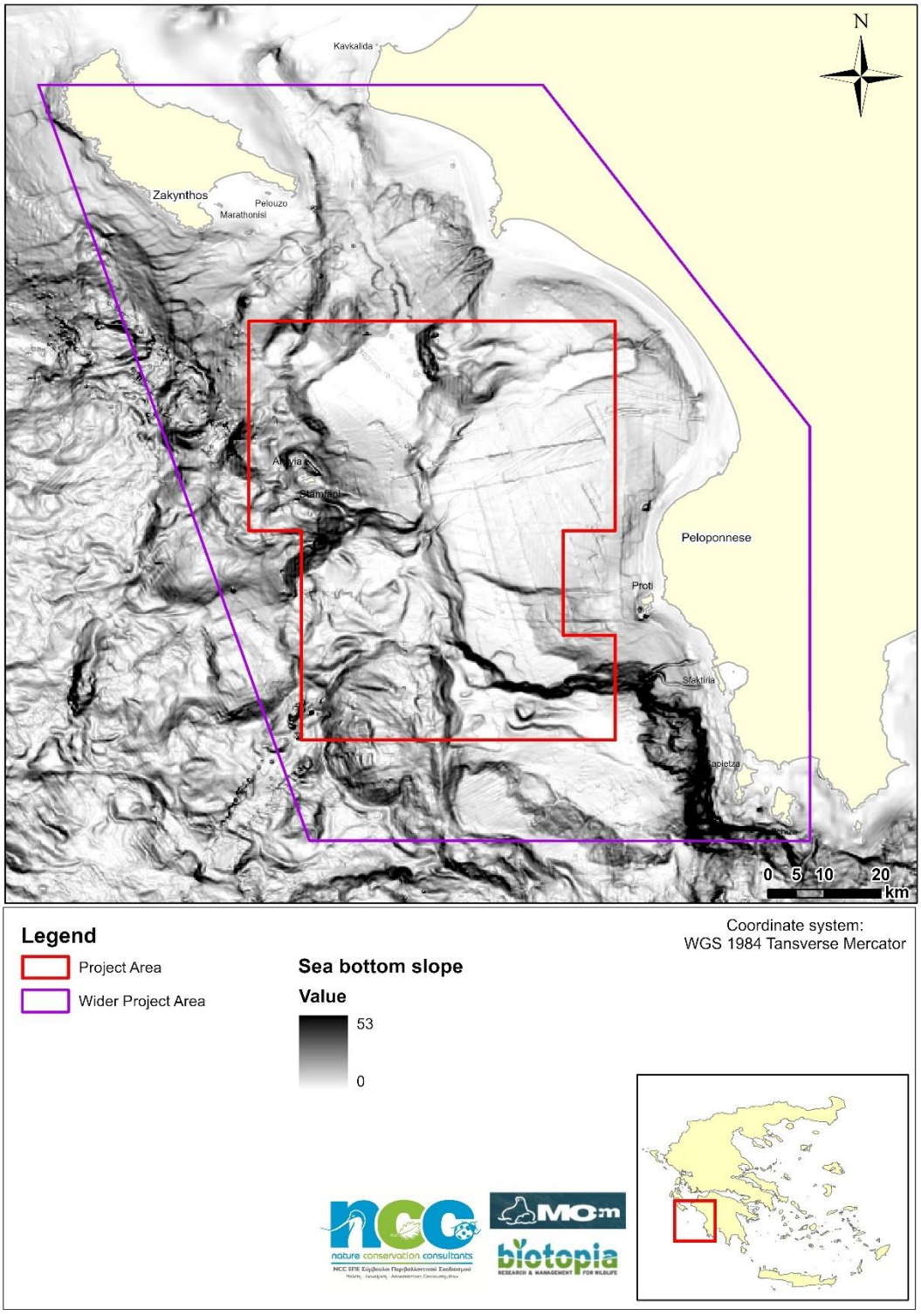


Figure 2-3. Slope of the sea floor in the Wider Project Area

2.1 General information about the main cetacean, seabird, and sea turtle species in the Project Area

2.1.1 Cetaceans

Hellenic seas host an unexpectedly high diversity of cetaceans with eight species that are resident in the area, seven of which belong to the Odondoceti suborder: Sperm Whale (*Physeter macrocephalus*), Cuvier's Beaked Whale (*Ziphius cavirostris*), Risso's Dolphin (*Grampus griseus*), Bottlenose Dolphin (*Tursiops truncatus*), Striped Dolphin (*Stenella coeruleoalba*), Short-beaked Common Dolphin (*Delphinus delphis*) and Harbour Porpoise (*Phocoena phocoena*) along with one representative of the Mysticeti suborder: Fin Whale (*Balaenoptera physalus*). The Harbour Porpoise is restricted to the Thracian Sea and North Aegean Sea, while the others are present in one or more seas in Greece (Frantzis et al. 2003).

It is important to note that due to the semi-enclosed nature of the Mediterranean basin, in combination with its very particular oceanographic features and oligotrophic waters especially moving towards the east of the basin, cetacean species populations of the Mediterranean (which occur elsewhere in the world also) are treated separately by the IUCN, when it comes to the designation of their threat status and population trends. In most cases, the Mediterranean subpopulation of cetacean species has at least one level higher in their designated threat status than the global population for the same species or is classified as Data Deficient.

The Wider Project Area is located along the Hellenic Trench, which is one of the most important areas for cetaceans in Greece. Except for the Harbour Porpoise (found only locally in the north-eastern Aegean) and the Fin Whale (observed mainly in the Ionian Sea, along the Hellenic Trench, north of Kefallonia), the remaining six commonly occurring species of cetaceans inhabiting Greek waters have been sighted or recorded as strandings in the Wider Project Area.

Table 2-1. General types of habitats, bathymetric characteristics, and distance from coast of recorded presence in Greek seas of common cetacean species that are present in the Wider Project Area (from Frantzis 2009).

Species	Common name	Habitat		
		Type	Depth	Distance from coast
Physeter macrocephalus	Sperm whale	Slope, secondarily pelagic	1235 m (510-2933 m)	8.1 km (1.6-25.2 km)
Ziphius cavirostris	Cuvier's beaked whale	Slope, probably pelagic as well	1066 m (491-2279 m)	8.6 km (2.1-26.5 km)
Grampus griseus	Risso's dolphin	Slope, probably over its shallower part	737 m (165-1717 m)	8.2 km (0.3-28.3 km)
Tursiops truncatus	Common bottlenose dolphin	Typically, coastal, also over shallow waters "offshore"	121 m (1-1504 m)	3.0 km (0.0-26.0 km)
Stenella coeruleoalba	Striped dolphin	Typically, pelagic and slope	1024 m (75-2920 m)	8.7 km (0.6-37.1 km)
Delphinus delphis	Short-beaked Common dolphin	Coastal and shallow, ("pelagic" and deep only in the Gulf of Corinth)	86 m (11-274 m) Gulf of Corinth: 713 m (275-935)	8.7 km (0.6-37.1 km)

The Wider Project Area includes coastal areas, continental shelf and slope, as well as pelagic areas. For the present study and based on the types of marine habitats typically used by the species present in the Wider Project Area, the focus of pelagic surveys is primarily on the species with regular presence in the Wider Project Area, namely the **Sperm Whale (*Physeter macrocephalus*), Cuvier's Beaked Whale (*Ziphius cavirostris*), Striped Dolphin (*Stenella coeruleoalba*)** and **Risso's dolphin (*Grampus griseus*)** in the pelagic and continental slope areas, and **Short-Beaked Common Dolphin (*Delphinus delphis*)** and **Bottlenose Dolphin (*Tursiops truncatus*)** in coastal areas. Accounts on biology, ecology, as well as conservation and threat status of the cetacean species of interest are provided below. It should be noted that large data gaps are still present regarding the distribution and abundance of cetaceans in the eastern Mediterranean (Mannocci et al. 2018).

2.1.1.1 Sperm Whale (*Physeter macrocephalus*)



Figure 2-4. Sperm Whale (Physeter macrocephalus) (© Massimo Demma/ICRAM)

The second largest cetacean found in Greece and the largest Odontocetes found globally is the Sperm Whale (*Physeter macrocephalus*). The Sperm Whale prefers deep water habitats particularly deep continental slope water where they hunt their preferred prey, large mesopelagic cephalopods (Frantzis 2009, Notarbartolo di Sciara et al. 2012).

The Hellenic Trench is the species core habitat for the eastern Mediterranean sub-population (Frantzis et al. 2014). The total species population size in the Greeks Seas is estimated at 180 – 280 individuals (2013-18 Habitats Directive Article 17 Reporting at https://nature-art17.eionet.europa.eu/article17/), the population size in the Hellenic Trench 200 – 250 individuals (Frantzis et al. 2014) and the estimated population size in the Ionian Sea, including international and Italian waters 62 individuals (95% CI: 24-165 individuals, in Lewis et al. 2003), however this is likely to be an underestimation (Frantzis 2009).

2.1.1.2 Cuvier's Beaked Whale (*Ziphius cavirostris*)

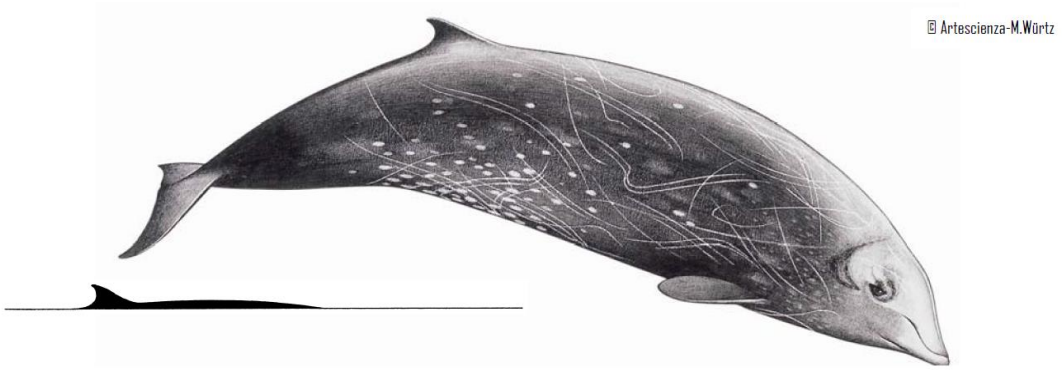


Figure 2-5. Cuvier's Beaked Whale (Ziphius cavirostris) (©Artescienza-M. Würtz)

Cuvier's Beaked Whale, a medium sized odontocetes, shares the same habitat and distribution as that described for the Sperm Whale, namely the continental slope. Almost all past species sightings occurred above depths of 500-1,500m (Frantzis et al. 2003). It is the only beaked whale common in the Mediterranean Sea. In Greece, most past sightings are associated with the Hellenic Trench, from eastern Rodos Island to northwest Corfu Island (Frantzis et al. 2003,

Frantzis 2009) with the highest number of sightings south of Crete and west of Lefkada (Frantzis et al. 2003, Podestà et al. 2016). Along the Hellenic Trench the species feed almost exclusively on mesopelagic and bathypelagic cephalopods (Frantzis 2009). Several sightings and numerous strandings have been recorded in the Wider Project Area (based on Frantzis 2009).

The Hellenic Trench is one of the species of high-density areas in the Mediterranean. The total species population size in the Greeks Seas as well as in the Wider Project Area is unknown (2013-18 Habitats Directive Article 17 Reporting at https://nature-art17.eionet.europa.eu/article17/). It is worth noting that Greek seas are considered to host quite a significant portion of the Mediterranean population (Frantzis 2009).

2.1.1.3 Risso's Dolphin (Grampus griseus)



Figure 2-6. Risso's dolphin (Grampus griseus) (© Massimo Demma)

Risso's dolphin is the largest dolphin that commonly occurs in the Greek Seas. The sightings and strandings records indicate that the species is present in all parts of the Greek Seas, however the only known area where the species is predictably present is the Myrtoon Sea extending south to the north-western Crete. The species is present in the Ionian Sea, as confirmed by strandings which have been recorded from north Corfu Island to south Peloponnese. No sighting records have been made in the Ionian Sea, which indicates that either the species is present in low numbers, or it is present outside warm period when past surveys have been made. The strandings in the Ionian Sea have been recorded from the end of September until late April. The species is present primarily along the continental slope, preferably deep water and shelf break where the slope is the steepest, but also close to the coast, particularly when the shelf is narrow (Frantzis 2009). The species feeds mainly on squid and occasionally on fish.

The total species population size in the Greeks Seas is estimated to be 100 – 600 individuals (2013-18 Habitats Directive Article 17 Reporting at https://nature-art17.eionet.europa.eu/article17/). The population size in the Wider Project Area is unknown.

2.1.1.4 Bottlenose dolphin (Tursiops truncatus)

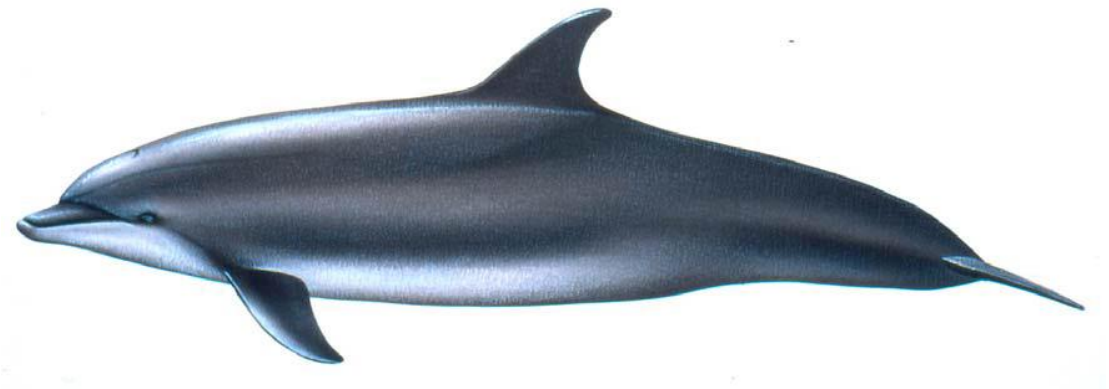


Figure 2-7. Bottlenose dolphin (Tursiops truncatus) (© Artescienza-M. Würtz)

The bottlenose dolphin is the most common species of dolphin found in coastal shallow waters of the Mediterranean (Frantzis 2009). It is homogeneously distributed across all Greek Seas as it has been sighted in most coastal areas, straights and gulfs. (Frantzis 2009). The Bottlenose Dolphin in Greece, like Short-beaked Common Dolphin prefers the continental shelf usually staying within a depth of up to 200m (Frantzis 2009). It is known to consume a variety of prey items, being quite adaptive.

The total species population size in the Greeks Seas is estimated to be 3,800 – 9,000 individuals (2013-18 Habitats Directive Article 17 Reporting at https://nature-art17.eionet.europa.eu/article17/). The population size in the Wider Project Area is unknown.

2.1.1.5 Striped dolphin (Stenella coeruleoalba)

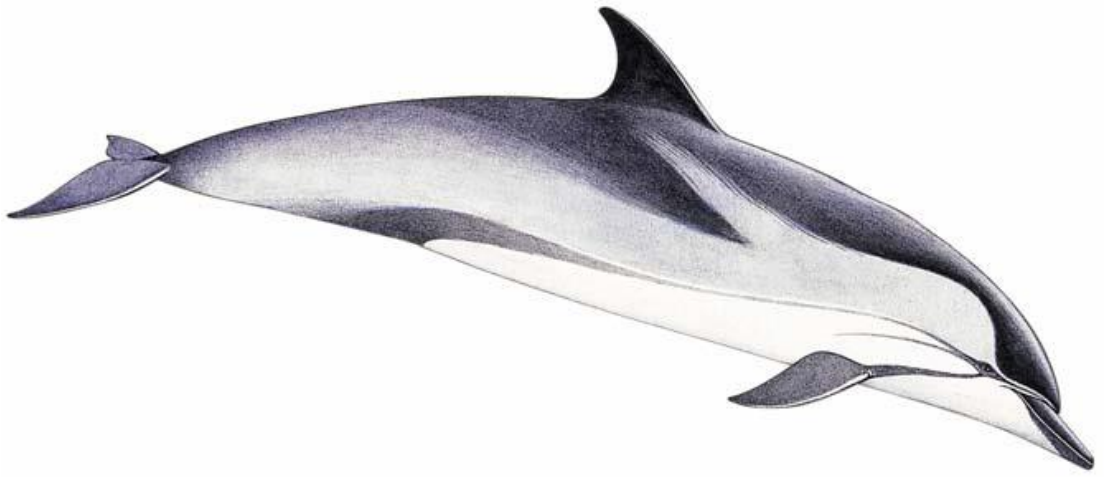


Figure 2-8. Striped dolphin (Stenella coeruleoalba) (© Massimo Demma/ICRAM)

The Striped Dolphin, a small delphinid, has a year-round presence in Greek waters. It is the most abundant dolphin species in Greece and the Mediterranean overall (Frantzis 2009). Its

distribution in Greece is widespread, and it occurs in all deep (>500m), pelagic waters and the continental slope but it can also inhabit intermediate depths of 200-500m (Frantzis 2009). The Striped Dolphin is frequently sighted along the length of the Hellenic Trench. The species diet includes mainly cephalopods, as well as fish and crustaceans.

The total species population size in the Greeks Seas is estimated to be 20,000 – 80,000 individuals (2013-18 Habitats Directive Article 17 Reporting at https://nature-art17.eionet.europa.eu/article17/). The population size in the Wider Project Area is unknown.

2.1.1.6 Short-beaked common dolphin (Delphinus delphis)

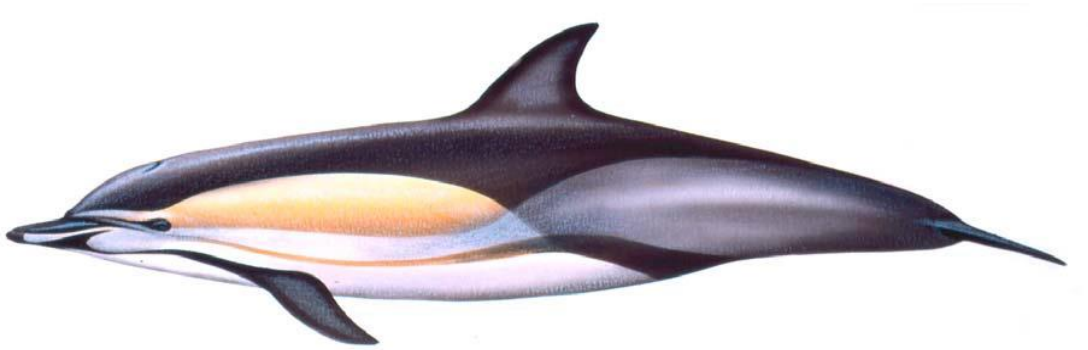


Figure 2-9. Short-beaked common dolphin (Delphinus delphis) (© Artescienza-M. Würtz)

The Short Beaked Common Dolphin (or simply Common Dolphin) is a small delphinid with a year-round presence in Greek waters. Its distribution in Greece is patchy, and their presence seems to be mostly limited to the central and northern Greek Seas (Frantzis 2009). In general, it prefers shallow (<200m) and coastal waters, with exception of Gulf of Corinth where it exhibits preference to pelagic habitats (Frantzis 2009). It exhibits flexible feeding habits. The distribution of the Common Dolphin in the Ionian Sea is limited to shallow waters between north Lefkada, Kefallonia and south Zakynthos and the mainland. In the Inner Ionian Sea, the main prey includes shoaling fish e.g., anchovies and sardines.

The total species population size in the Greeks Seas is estimated to be 750 – 4,200 individuals (2013-18 Habitats Directive Article 17 Reporting at https://nature-art17.eionet.europa.eu/article17/).

The population of Common Dolphins of the Inner Ionian Sea has been the focus of regular surveys for years and has been well documented (Bearzi et al. 2008B). The local population counted 150 individuals until the mid-90s, and their range seemed to cover the entire Inner Ionian. Since then, the population has declined dramatically with only an estimated 15 individuals encountered over the past years, mostly sighted in southern Lefkada (Bearzi et al. 2008B).

2.1.2 Seals

2.1.2.1 Mediterranean Monk Seal



Figure 2-10. Mediterranean Monk seal (Monachus monachus)

The Mediterranean Monk Seal is the only pinniped (seal) living in the Mediterranean region, the rarest extant member of the Phocidae family and one of the rarest marine mammals in the world.

Mediterranean monk seals were once widely and continuously distributed in the Mediterranean and Black Seas, and in the North Atlantic waters from Morocco to Cap Blanc, including the Canary, Madeira and the Azores Islands. A few individuals have been recorded in Senegal, the Gambia and the Cape Verde Islands in the southern end, as well as in Portugal and Atlantic France in the northern end of the species' distribution. Today the distribution of the Mediterranean is highly fragmented and consists of three to four isolated subpopulations (Karamanlidis et al. 2016). In the Mediterranean Sea, the stronghold of the species has been on islands in the Ionian and Aegean Seas, and along the coasts of Greece and western and southern Turkey (Güçlüsoy, Kiraç, Veryeri, & Savaş 2004, Gücü, & Orek 2004, Anonymous, 2007). In the North Atlantic, two subpopulations exist: one at Cabo Blanco (also known as Cap Blanc) at the border of Mauritania and Western Sahara (González & Fernandez de Larrinoa 2012, Martínez-Jauregui et al. 2012), and one at the Archipelago of Madeira (Pires, Neves, & Karamanlidis, 2008). An unknown number of monk seals might still survive at the Mediterranean coasts of eastern Morocco (and perhaps Algeria) (Mo, Bazairi, Bayed, & Agnesi, 2011), but without on-going systematic conservation actions the fate of this subpopulation is unknown.

The total species population size in the Greece is estimated to be 300 – 400 individuals (2013-18 Habitats Directive Article 17 Reporting at https://nature-art17.eionet.europa.eu/article17/).

2.1.2.2 Sea turtles

There are three species of sea turtles that regularly occur in the Mediterranean: **Loggerhead Turtle (*Caretta caretta*)**, **Green Turtle (Chelonia mydas)** and **Leatherback Sea turtle (*Dermochelys coriacea*).** The sea turtles live almost exclusively in the marine environment with females returning to land for dig nests and lay eggs, while males almost never return to

land. The range of all three species extends along the Wider Project Area (Legakis & Maragou 2009, 2013-18 Habitats Directive Article 17 Reporting: species range), however only Loggerhead Turtle and Green Turtle have been recorded in the area (2013-18 Habitats Directive Article 17 Reporting: species distribution). Among these two the Loggerhead Turtle is the species of interest due to its regular presence and nesting in the Wider Project Area of the Kyparissia Bay, while the Green Turtle is regular but rare visitor in the area. The Leatherback Sea turtle to is only considered in Greece to be a visitor from the Atlantic (Casale & Margaritoulis 2010).

2.1.2.3 Loggerhead turtle (Caretta caretta)



Figure 2-11. Loggerhead Turtle (Caretta caretta)

The Loggerhead turtle is an oceanic turtle with a global distribution. It is a migratory species and may travel thousands of kilometers to forage and to return to its breeding sites. After hatching, logger-head turtles adopt an oceanic lifestyle in major current systems (Bolten and Witherington 2003). After 4-19 years spent in the oceanic zone, they move to neritic areas where they forage and mature over 10-39 years (Avens and Snover 2013). After attaining sexual maturity, they migrate between neritic foraging grounds and nesting areas. The Mediterranean, where the species is nesting in the eastern basin (Legakis & Maragou 2009), the breeding population of the loggerhead turtle is spread over tens of rookeries which are estimated to produce over 7,200 nests annually (Casale & Margaritoulis 2010) with most nests being found in Greece. The country's two most important nesting beaches are in the Wider Project Area, namely on Zakynthos (Laganas Bay) and on Peloponnese (Kyparissia Bay), which host 43% and 19% of all nests in Greece, respectively (Legakis & Maragou 2009). The average number of nests per season for the period 1984-2007 at Laganas Bay and at Kyparissia Bay are 1,244 nests/season (range: 833-2,018 nests/season) and 621 nests/season (range: 286-927 nests/season) (Casale & Margaritoulis 2010). Currently, Kyparissia Bay hosts the largest Loggerhead turtle nesting aggregation in the Mediterranean Sea (Rees et al. 2020).

In Greece and in the Central Mediterranean, the turtles after hatching disperse mainly in the Ionian, south-central Mediterranean and Adriatic Seas (Casale & Mariani 2014). Loggerhead turtles, especially juveniles, forage in almost all oceanic areas in the Mediterranean. Water circulation system has the greatest effect on their distribution (Casale et al. 2018). The neritic

foraging areas (i.e., those located above continental shelf) are more frequently used by larger turtles, including adults (Casale et al. 2018). Loggerhead turtles generally overwinter within or close to their foraging areas, however some may move from cold areas e.g., Adriatic Sea during winter (Casale et al. 2018).

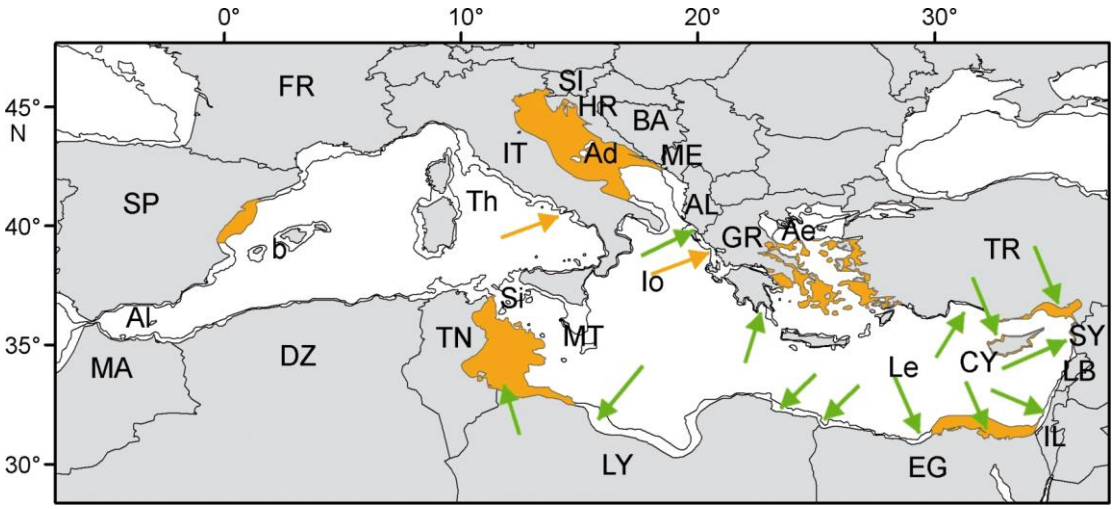


Figure 2-12. Neritic foraging and wintering sites for loggerhead turtles (orange areas and arrows) and green turtle (green arrows) (adopted from Casale et al. 2018).

Migration corridors are areas which are frequently used by migrating turtles, mainly for adult breeding migration and particularly for post-breeding migration from breeding areas to foraging grounds. Therefore, these migratory corridors are used at the end of the breeding season, in May and June by males, while in July and August, mostly by females (Casale et al. 2018). The main migration corridors are presented in Figure 2-13.

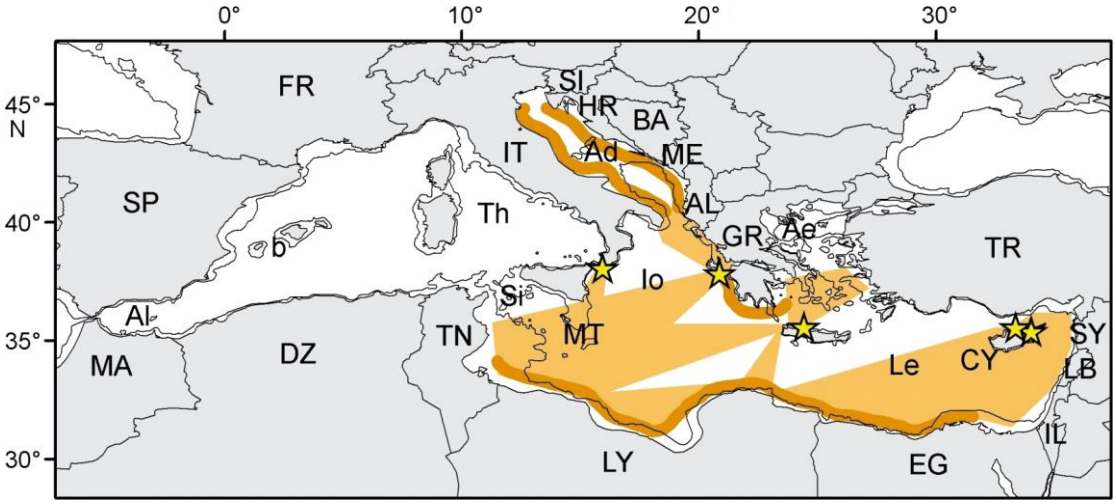


Figure 2-13. Main known migratory corridors for adult loggerhead turtles to and from breeding sites (stars). Light brown areas represent migratory funnels in the open sea while darker strips represent paths along the coasts, typically in shallow waters (adopted from Casale et al. 2018).

The movements of the Loggerhead turtles nesting in the Ionian Sea, particularly those from Zakynthos have been well studied by satellite or GPS telemetry (e.g., Zbinden et al. 2008, Schofield et al. 2010a-c, Schofield et al. 2013, Luschi & Casale 2014). The data from 75 tracked turtles breeding on Zakynthos showed after breeding the turtles migrate to neritic sites with waters shallower than 100m, with the majority of turtles migrate north to the Adriatic Sea and Amvrakikos Gulf (42%) or south-west to Libya and Tunisia (32%), while the remaining either stay in the Ionian Sea or move to the eastern or western Mediterranean (Zbinden et al. 2008, Schofield et al. 2013). After leaving their foraging areas (in October – November) the tracked turtles move to their overwintering areas further south (Zbinden et al. 2008). The main foraging and overwintering areas are presented in the Map 11, below. The main foraging areas are located over the continental shelves and slopes (Ullmann & Stachowitsch 2015) in the Northern and Southern Adriatic Sea, Ionian Sea, the Strait of Sicily and the Tunisian shelf. A small proportion (~7%) were residents of Zakynthos. Significantly more males than females remain within 100km of Zakynthos (Schofield et al. 2013).

2.1.2.4 Green turtle (Chelonia mydas)

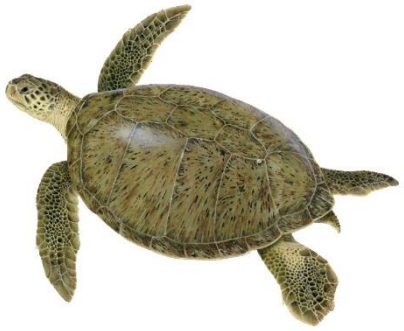


Figure 2-14. Green turtle (Chelonia mydas)

The green turtle (*Chelonia mydas*) is a migratory oceanic turtle with a global distribution. Their nesting sites in the Mediterranean are located mostly in Turkey, Cyprus and Syria (Figure 2-12) with an average of 1500 nests per year. No regular nesting areas are in Greece. They use mostly marine areas in the Levantine basin, but also forage in Greece and Libya, as well as occasionally in the Adriatic Sea and the western Mediterranean basin (Figure 2-13). In Greece local concentration have been found in Lakonikos Bay, southern Peloponnese. Stranding data indicate that there is a more frequent presence of adult green turtles in southern Aegean (Casale & Margaritoulis 2010). The species has been recorded in the Wider Project Area.

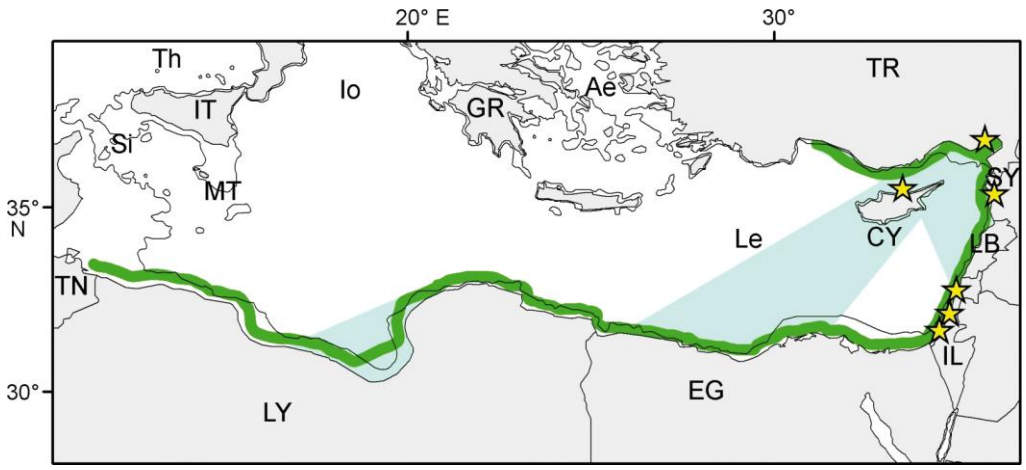


Figure 2-15. Main known migration corridors for adult female green turtles during reproductive migrations from the breeding sites (stars) (adopted from Casale et al. 2018).

2.1.3 Seabirds

To the present study, only those seabird species which are exclusively associated with the marine environment and the pelagic area, that have been recorded in the Ionian Sea in the past and their presence in the wider Project area has been confirmed. These species include pelagic seabird species**: Scopoli's Shearwater (*Calonectris diomedea*), Yelkouan Shearwater (*Puffinus yelkouan*)** and **European Storm-petrel (*Hydrobates pelagicus*)**, as well as coastal seabird species which could be present in the pelagic areas due to shallow waters in the Project area or due to human activities, i.e. **Yellow-legged Gull (*Larus michahellis*) and the Mediterranean Shag (*Phalacrocorax aristotelis desmarestii*).**

2.1.3.1 Scopoli's Shearwater (Calonectris diomedea)

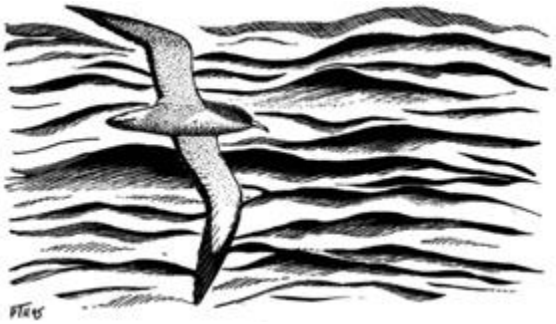


Figure 2-16. Scopoli's Shearwater (Calonectris diomedea) (© Paul Hirst)

Scopoli's Shearwater (C*alonectris diomedea*) breeds across Mediterranean with most of the population spending the non-breeding season in the Atlantic. In the past it was considered conspecific with the Cory's Shearwater (C*alonectris borealis*) which breeds in the Atlantic. In Greece the species breeding in the Aegean and Ionian Sea with the largest known colony being located at Strofades Islets (within the Project Area), south of the Zakynthos Island in the Ionian

Sea, with an estimated breeding population of 5,550 pairs (Karris et al. 2017). Other large colonies occur mainly in the southern, central and eastern Aegean Sea although breeding has also been confirmed in the northern Aegean Sea (Fric et al. 2012). The only other known breeding area in the Ionian Sea is at Diapontia islands at Kerkyra with much smaller breeding population of 60-100 pairs (Fric et al. 2012).

2.1.3.2 Yelkouan Shearwater (Puffinus yelkouan)

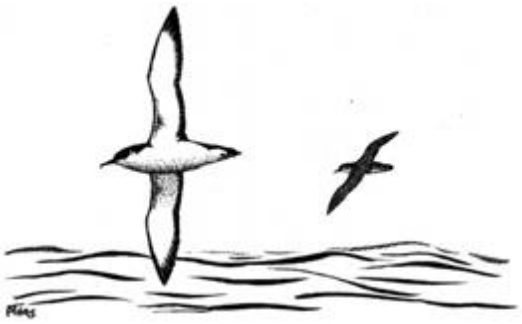


Figure 2-17. Yelkouan Shearwater (Puffinus yelkouan) (© Paul Hirst)

Yelkouan Shearwater is an endemic species to the Mediterranean and the Black Sea. The known species colonies in Greece are in the Aegean Sea, while no colonies have been found so far in the Ionian Sea. The main known colonies are located the North, East and Central Aegean Sea (Fric et al. 2012), with the largest being on Gyaros island in the Northern Cyclades (Fric & Portolou 2016). During the non-breeding season Yelkouan Shearwaters disperse widely within the Mediterranean Sea (mainly Adriatic and Aegean Seas) and the Black Sea. Additionally, 4,000-6,000 individuals are estimated to overwinter in the Aegean Sea the main foraging areas of the Yelkouan Shearwaters are rich coastal and pelagic fishing grounds in the North, Central and East Aegean Sea, while the species is less common in the South Aegean and Ionian Seas (Fric et la. 2012).

The global species population is estimated at 15,337-30,519 pairs with a decreasing population trend (30% in the next 54 years i.e., three generations). Ten colonies in the Mediterranean Sea have disappeared during the last 60 years (Derhe 2012B, BirdLife International 2015, Birdlife International 2018B). The national population is estimated at 4,000-7,000 pairs (without the inclusion of the Gyaros colony which is estimated at 3,090-7,450 pairs), equivalent to 22% percent of the global population (more than 38% with the inclusion of the Gyaros population). The national population trend is estimated to be stable.

2.1.3.3 European Storm-petrel (Hydrobates pelagicus)



Figure 2-18. European Storm-petrel (Hydrobates pelagicus) (© Paul Hirst)

European Storm-petrel is the smallest seabird species in the Western Palaearctic. Its distribution is limited mainly to the Northeast Atlantic Ocean and the West Mediterranean Sea, while the Aegean Sea comprises the easternmost part of its range. The Mediterranean subspecies *Hydrobates pelagicus melitensis* comprises less than 5% of the overall global population (i.e., 12,000-17,500 breeding pairs) with the main colonies located in Malta, Sicily and the Balearic Islands. The species occurs in all Greek seas mainly in spring and summer during the breeding period. Up to date only two colonies have been located, one in the Central Aegean Sea and another in the Cyclades. Storm-petrels, usually individual birds, or very small groups, are regularly observed in the Cyclades, Dodecanese, Central and southwest Aegean Sea and the Karpathian Sea suggesting potential existence of other breeding colonies (Fric et al. 2012).

2.1.3.4 Mediterranean Shag (Phalacrocorax aristotelis desmarestii)



Figure 2-19. Mediterranean Shag (Phalacrocorax aristotelis desmarestii) (© Jens Overgaard Christensen)

Mediterranean Shag is a cormorant species, resident and widely spread in Greece which usually occurs in coastal waters. Shags breed colonially, forming small, loose (rarely dense) colonies, on cliff ledges or small caves or even under thick vegetation. Nesting sites are re-used in successive years by the same birds. They often roost in large groups (Fric et al. 2012). It is a good swimmer and a foot-propelled diver which feed on benthic and pelagic fish in

waters with depths up to 80 m which are usually located in coastal zones within a 20 km radius around their colony or roosting sites (Wanless *et al.* 1991; Velando and Friere 1999).

The Greek national population size is 1,300 -1,450 pairs (Fric et al. 2012), equivalent to 2% of the species European population (BirdLife International 2015, BirdLife International 2018D). The population in Greece is stable (Fric et al. 2012). The island of Zakynthos hosts an important population of the Mediterranean Shag (i.e., 44-46 adult and juvenile individuals) (Portolou et al. 2009, Fric et al.2012). The species breeds along the western coast of the Zakynthos and forages in coastal waters along the western and eastern coast, including the Bay of Laganas. Therefore, the major breeding and foraging areas of the Mediterranean Shag around Zakynthos Island are located outside the Project Area and within the Wider Project Area.

2.1.3.5 Yellow-legged Gull (Larus michahellis)

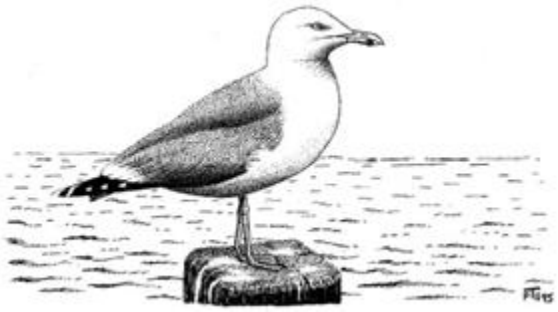


Figure 2-20. Yellow-legged Gull (Larus michahellis) (© Paul Hirst)

The Yellow-legged Gull is the most common gull species in Greece. It is widely distributed around the southern regions of the Palaearctic, from the western part of the Black Sea across to the Mediterranean, Iberian Peninsula, and reaching the Macaronesian region. Breeding grounds are centred mainly around the Mediterranean but reach also the Black Sea, Caspian Sea, and eastern Atlantic. In Greece, the species is resident and widespread all along the coastline of mainland Greece and of the islands of the Aegean and Ionian Seas.

In Greece, the largest breeding colonies are located on uninhabited islets of the Evoikos and Saronikos Gulfs that surround Attica, the most urbanised area in the country, although colonies occur on most Greek islets (Fric et al. 2012). Wintering grounds include the coast of southwest Asia, most of the European coast up to Denmark and the coast of Africa from Western Sahara through the eastern Mediterranean (del Hoyo *et al.* 1996).

3 Methodology

3.1 Pelagic surveys

Pelagic surveys for cetaceans, sea turtles and seabirds are carried out using i) the 15m sailing boat ARTINA, ii) a 7,5m RIB boat and iii) a high wing, ultralight aircraft.

3.1.1 Boat surveys

"Zig-zag" transect lines will be used, focusing on the deeper part of the area (below 800m depth), with a total length of 900-1000 nm (including the transfer to and from ports) to ensure uniform coverage of both the study area and the most suitable habitat for the deep-dwelling marine mammals, such as the sperm whale and the Cuvier's beaked whale. Binoculars will be used for the accurate identification of encountered animals from a distance and for a more precise estimation of group size. All on-transect/on-effort navigation data and sighting locations will be recorded using a specialized software for subsequent analysis.

Visual surveys will be conducted for 6 to 10 hours per day, with an average of 8 hours. Researchers will aim for the upper time limit of 10 hours, however when sighting conditions deteriorate beyond an acceptable threshold (usually ≥3 Beaufort scale, cresting waves, scattered whitecaps), the survey effort will have to be interrupted. Surveys will continue during night hours with the use of the boat thermal camera.

The acoustics detection team works in cooperation with the visual observers, detecting cetacean vocalizations by using a hydrophone array towed behind the sailing boat. The hydrophone array system consisting of High Frequency Magrec HP03 hydrophone elements, comprising a HP03 preamp (Low cut filter set at 2kHz) with a nominal sensitivity of 1.5kHz – 150kHz along with a topside Magrec HP/27ST Amplifier along with a Lenovo Thinkpad Laptop using the PAMGUARD acoustic analysis software specifically developed for cetacean monitoring, covering the range of possible vocalizations for species likely to be encountered during our surveys. The towed hydrophone system is submerged and active, and a Passive Acoustic Monitoring (PAM) operator is active on the equipment during all "On Effort" times during the survey. The hydrophone system consists of 4 hydrophones, which record on 4 different channels. The visual observers and PAM operator rotate every 1.5 hours to minimize fatigue.

The PAM operator immediately informs the visual observer team of any acoustic detection.

The hydrophone recordings are analysed real-time during the survey by PAMGUARD software using the "*whistle and moan detector*" and the *"Click Detector"* modules.

PAM surveys will take place during day and night. The improved 2025 survey protocol will be followed, to enable the identification of animal groups and possibly of individual animals. This will mainly focus on Cuvier's Beaked whales and Sperm whales. Once an animal is spotted visually or acoustically, the research vessel will stop the sampling transect and remain on the site to further spot possible groups of the

species, take evidence of its presence (including pictures, video and possibly biological material), using the drones and the zodiac boat..

The PAM acoustic surveys will include:

1. Line-transect type surveys using towed hydrophone.
2. Searching and tracking activities, especially for sperm whales in deep water areas. Combination of towed hydrophone and directional hydrophone.
3. Dipping hydrophones, compact recording systems for opportunistic recording. Useful for collecting recordings from known species, through drone deployment.

The marine mammal observations will be visual, conducted by qualified researchers, certified MMO/PAM operators. Statistical analysis will be performed to make adequate extrapolations from the sampling data. Relative abundance will be expressed with a specific index as a frequency of observations, which will be the number of encounters with cetaceans (each species separately), per unit of effort to find them. The total effort will be the nm (nautical miles) that the research vehicle (vessel or aircraft) has traveled under adequate observation conditions (sea state <3 Beaufort). At the same time, the absolute abundance will be approximated by counting the number of recorded individuals. The results will be comparable with the results of the same sampling effort that can be carried out in the future using the exact same methodology to determine any change in potential trends, to increase or decrease the frequency of presence and abundance in the study area.

In parallel with the cetaceans surveys, two experienced observers will be counting seabirds using the ESAS methodology. Researchers will follow the standardized European Seabirds at Sea (ESAS) methodology, which is a standardized method of recording seabirds at sea in Europe. The method is based on the survey of seabirds by vessels moving at low speed. Seabirds swimming in the sea are recorded in a 300 m wide belt along the 5-minute intervals, while flying seabirds, are recorded once a minute to avoid any double counting. The result of spatial analysis of the data collected by the ESAS method is the estimation of spatial abundance of seabirds (in number of individuals per km^2). This method focuses mainly on pelagic species of seabirds such as Cory's Shearwater, Yelkouan shearwater and Storm Petrel, as well as on coastal species (e.g. Yellow-legged Gull and Mediterranean Shag).



Figure 3-1. Visual boat surveys

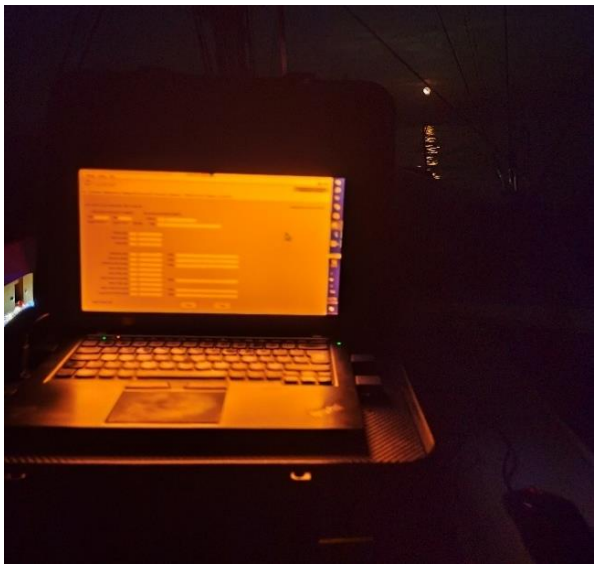


Figure 3-2. Night PAM boat survey.



Figure 3-3. Deployment of the towed hydrophone array behind the sailing boat

Photo – Identification

Photo-identification (photo-ID) is one of the most reliable non-invasive methods for identifying individual marine mammals. It relies on the unique natural characteristics of each animal, including the shape, scars, and pigmentation patterns on the tail fluke or dorsal fin, which act as a biological "fingerprint" for individual recognition.

Photo-identification is widely applied across different species of marine mammals such as dolphins, seals, and whales by using permanent external traits (scars, pigmentation patterns, and notches) that remain stable over time. This approach enables the estimation of population trends, spatial distribution, and individual movement patterns. In the case of the sperm whale (*Physeter macrocephalus*), the technique focuses primarily on the tail fluke, whose morphology is distinct for each individual and represents a highly reliable feature for identification. The shape of the fluke, the pattern of its trailing edge, notches, scars, and pigmentation marks remain consistent over time and can be used as diagnostic characteristics for individual recognition. Through this approach, it is possible to estimate the minimum number of individuals observed, detect potential re-sightings, and assess the spatial and temporal distribution of sperm whales within the study area.

During field surveys, photographs were taken whenever sperm whales were sighted, focusing particularly on moments of deep diving when the tail fluke was fully raised above the water

surface (fluke-up). For each encounter, the date and time of the first and last observation, the group size and composition, and the general behaviour of the animals were recorded. From the total number of photographs, only those meeting the quality criteria for identification clear focus, full fluke exposure, and near-perpendicular angle were selected for further analysis. The selected images were organized by encounter and uploaded to the Flukebook platform, which applies an automated algorithm for pattern matching. The system-generated matches are not considered final; each proposed match is visually reviewed by the analyst to confirm specific morphological traits such as the outline of the fluke, notches, and scars. Each identified individual is assigned a unique code (e.g. SW1, SW2) and archived in a dedicated reference folder containing one or two representative photographs. All individual codes (SW1–SW14) correspond to entries in the NCC Flukebook database (Project: Ionian_2025_PhotoID).

The results of algorithmic matching are always interpreted with caution, as similar scores alone do not constitute definitive evidence of identification. The final confirmation relies on expert visual assessment of morphological features to ensure that every identification is scientifically valid and well-documented. Photo-identification metadata are compiled in a dedicated Excel database, which includes, for each individual, the corresponding photo codes, observation times, group composition, behavioral notes, and key morphological characteristics. This database serves both as a validation record and as a reference for future cross-comparison of observations.

Photo quality control is conducted at two stages: initial field selection (sharpness, angle, full fluke exposure) and subsequent post-processing review to ensure temporal and spatial consistency across identifications. Potential limitations of the method include environmental and behavioral factors such as lack of full fluke-up, distance from the observer, sea state, or lighting conditions which can reduce the reliability of individual recognition. Despite these limitations, photo-identification remains a fundamental and effective tool for documenting the number, composition, and behaviour of sperm whales observed during the surveys.

3.1.2 Aerial surveys

For the aerial surveys, a high-wing, light aircraft Cessna C172R Skyhawk is used, powered with a Lycoming IO-360-L2A, 160 Hp. This four-seater aircraft offers an excellent view from its cockpit and is considered suitable, reliable, and cost-effective for such a mission. Messolonghi Airport (ICAO designator GR-0008) is used as a base for the aerial expeditions. The flights are performed along the Project Area at an altitude of 1000 ft MSL and an average Speed Over Ground of 90 knots. The aircraft travels in predetermined transect lines that are randomly placed to allow for homogeneous coverage probability over the study area. When animals are spotted, the aircraft deviates from its predetermined course and circles over the area of interest so that the observer can more accurately identify the species and count the number of individuals in the group. Whenever possible, photographs are taken to provide the most comprehensive confirmation of the data. The aircraft then resumes coverage of the predetermined route from the point where it was interrupted. The photographic operation is performed using a full frame DSLR (Nikon D750) with a 70-200mm F/2.8 Tamron SP lens. All photographs are georeferenced since the camera is equipped with a GPS Unit (Nikon GP-1A). The flights are monitored and recorded with the use of two specialized applications, namely the GARMIN-Pilot and the Fore-Flight.



Figure 3-4. The aircraft used for the aerial surveys spotting a group of Sperm whales

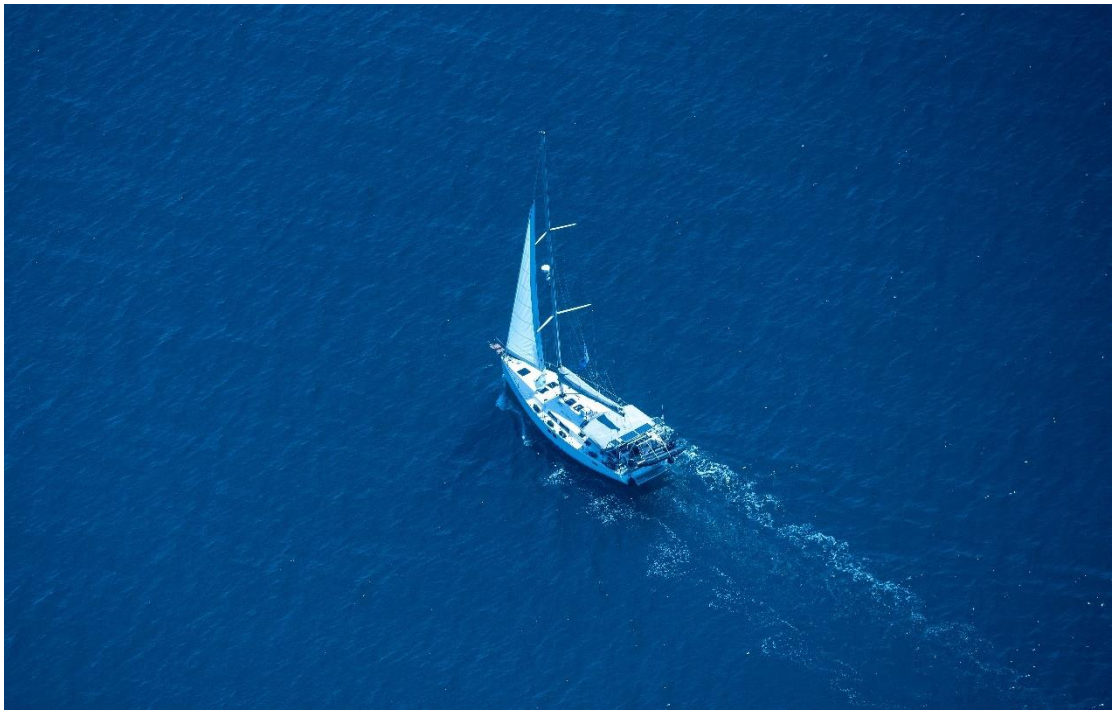


Figure 3-5. ARTINA sailboat from the aircraft's cockpit

In the following example, the staged photographic identification process of an initially "object of interest" located on the shore is clearly shown.



Figure 3-6. A: Recording an "object of interest", B: Approaching, C: Identifying

3.2 Coastal surveys

3.2.1 Coastal surveys and cave monitoring for the Mediterranean Monk Seal

Data on the Mediterranean monk seal are collected along the coastlines of the wider study area. The data collections is carried out using two very well-established methods, which have been developed by MOm and have been used on an ongoing basis in Greece for the past four decades.

More specifically, the methods used are:

A) The operation of the Rescue and Information Network (RINT). This is a well-established network that collects continuously information on monk seal observations (alive or dead individuals) throughout the Hellenic coastline.

B) The continuous monitoring of important monk seal pupping sites (marine caves) through the use of infrared (IR) trap camera systems. The data collected through the use of these systems support the detailed assessment of monk seal breeding activity. Depending on the monitoring objective, cameras either operate in time-lapse mode capturing images at regular intervals (e.g., every 2 hours) for continuous observation of known pupping sites, or in motion-triggered mode to record presence-absence data of the species. The photographs obtained through the use of these camera systems support also the identification of monk seal individuals. In previous years, MOm's research team conducted a detailed mapping of the coastline of the broader study area, documented the important caves used by the seals, and installed a permanent data collection system that is used to continuously record data related to the species' reproductive activity. This was deemed extremely important, as the species' key breeding area, identified on the southwestern coast of Zakynthos, is located within the broader region likely to be affected by future mining activities in the area.Coastline surveys will be conducted across southwest Zakynthos Island, the Strofades Islands, the Kyparissiakos Gulf, and the southwestern Peloponnese to identify and monitor marine caves that may serve as suitable pupping sites for the Mediterranean monk seal (Monachus monachus). Surveys will be carried out using a Rigid Inflatable Boat (RIB), enabling efficient coverage of extensive and complex coastal areas to ensure that no potential pupping site is overlooked.

In addition, infrared (IR) trap cameras will be installed in selected caves to collect data that will support further assessment of monk seal breeding activity. Depending on the monitoring objective, cameras will either operate in timelapse mode capturing images at regular intervals (e.g., every 1 or 2.5 hours) for continuous observation of known breeding sites, or in motion-triggered mode to record presence-absence data of the species.

Lastly, records of seal observations are collected through the operation of Rescue and Information Network (RINT).

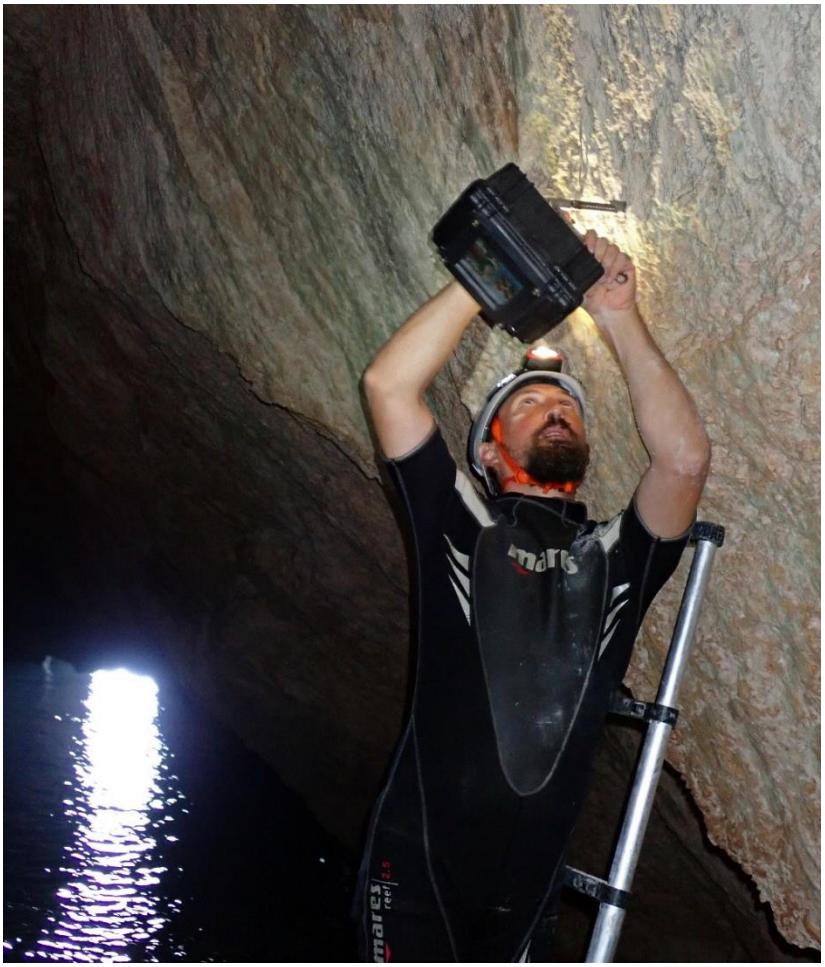


Figure 3-7. Installation of infrared camera systems in a monk seal shelter

3.2.2 Coastal surveys for seabirds

Boat-based coastline surveys are conducted, with the vessel navigating parallel to the shoreline at a distance of approximately 50–100 m, where navigation is feasible and safe. Observations are carried out visually using binoculars, covering both the terrestrial coastal zone and the adjacent marine environment.

For each observation, the species, number of individuals and geographic position are recorded using a GPS device, while all observations are documented on standardized field protocols and survey maps. For birds observed at sea, behavioural information (e.g. foraging, resting, commuting) is also recorded, together with any anthropogenic activities that may influence their presence or distribution.

In addition, the presence and activity of birds on land are documented, including evidence of nesting, roosting, resting, and low-altitude flights or other behaviours associated with habitat use.

3.3 Colony surveys - Telemetry

3.3.1 Colony surveys of Scopoli's Shearwater at the Strofades islets SPA with nest cameras

The internationally significant colony of Scopoli's Shearwater (*Calonectris diomedea*) at the Strofades Islets SPA, and the surrounding project area, will be monitored using GSM-enabled stationary nest cameras. These systems will document the breeding activity, assess the presence and behavior of ground predators, and detect potential anthropogenic disturbances to the colony.

Cameras will be deployed throughout the breeding season. All visual and acoustic data collected will undergo systematic analysis. The cameras are equipped with PTZ (pan-tilt-zoom) capabilities, allowing for adjustable fields of view and enhanced monitoring coverage compared to fixed-angle systems. Furthermore, their integrated audio recording functionality enables dual use of data for both visual and acoustic analysis, providing a comprehensive assessment of the colony's status and threats.

3.3.2 Telemetry of Scopoli's Shearwater at the Strofades islets SPA with satellite transmitters

10 GPS/GSM tags will be deployed to Scopoli's shearwaters, both adults and fledglings, on July and September-early October 2026, to record the parents' foraging trips, as well as the maiden journeys of the fledged birds and identify possible threats and mortality factors during this high-risk period.

By processing the data through Artificial Intelligence and machine learning software, the bird populations, movements, patterns of space use by the species for foraging in the "Kyparissiakos block" lease area will be further explored.

4 Results

4.1 Pelagic surveys

4.1.1 Boat surveys

A total of **445 nautical miles** of boat-based visual and acoustic surveys using both the sailing boat as well as the RIB vessel were carried out in June 2026 in the Project Area, as well as in the Wider Project Area and the surrounding areas, to assess the presence, abundance and distribution of the cetacean, sea turtle and seabird species of interest.

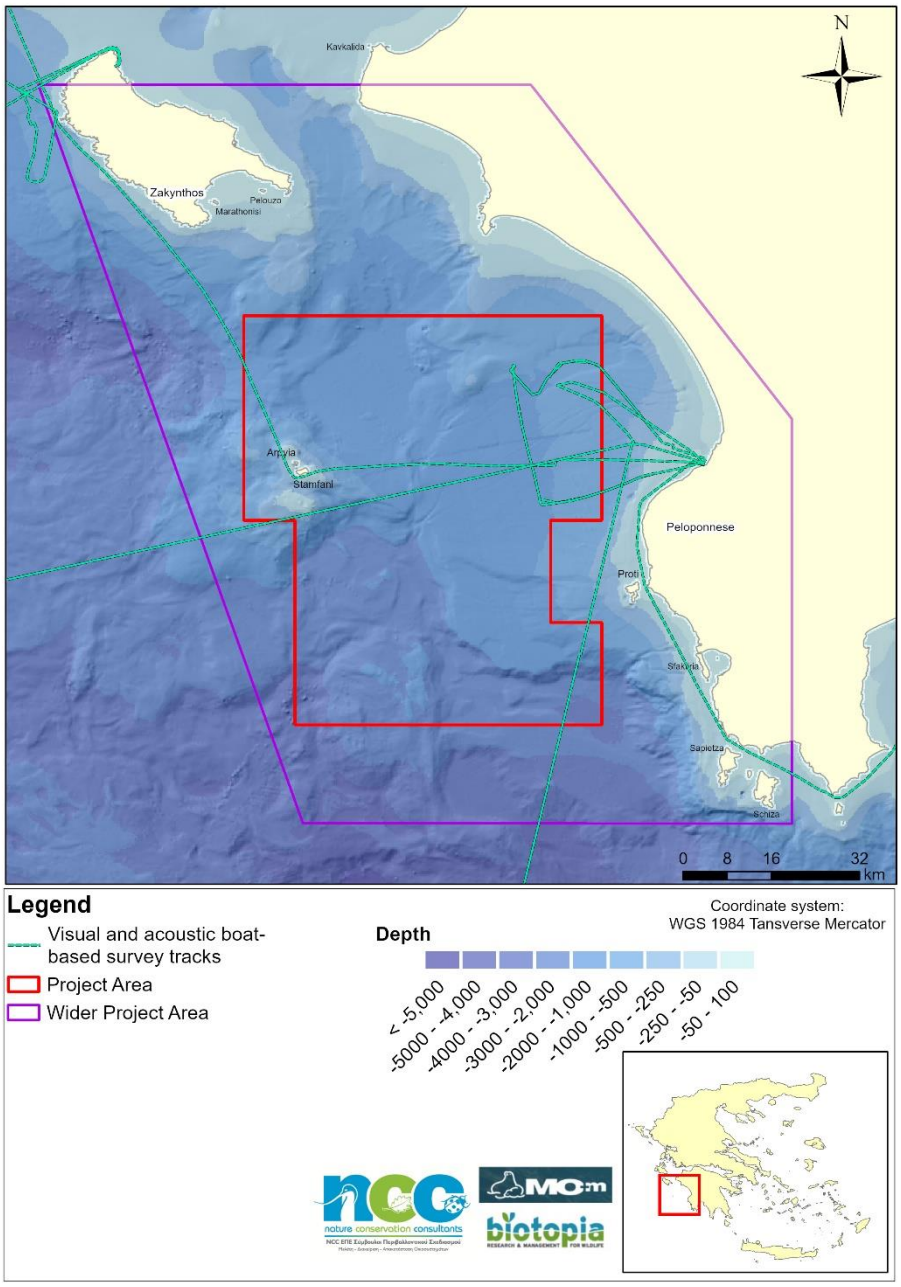


Figure 4-1. Visual and acoustic boat-based survey tracks

During the visual surveys the following species were recorded within the Wider Project Area:

- 1 cetacean species: a **sperm whale** (*Physeter macrocephalus*),
- 3 seabird species: **Scopoli's shearwater** (*Calonectris diomedea*), **Yelkouan shearwater** (*Puffinus yelkouan*) and **Yellow-legged gull** (*Larus michahellis*).
- 1 sea turtle species: a Loggerhead sea turtle (*Caretta caretta*)

Table 4-1. Species visually recorded in the Wider Project Area

Species	Common name	Number of individuals
Physeter macrocephalus	Sperm whale	1
Calonectris diomedea	Scopoli's shearwater	19
Puffinus yelkouan	Yelkouan shearwater	29
Larus michahellis	Yellow-legged gull	3
Caretta caretta	Loggerhead sea turtle	1

During the **acoustic surveys with the towed hydrophone**, **1 detection of Cuvier's beaked whale**, **1 detection of sperm whale** and **2 detections of dolphins** were recorded (species identification is not possible for dolphin species with the acoustic data) in the Wider Project Area.

The results of the boat visual and acoustic surveys are presented in the following figures.

4.1.1.1 Cetaceans' visual records

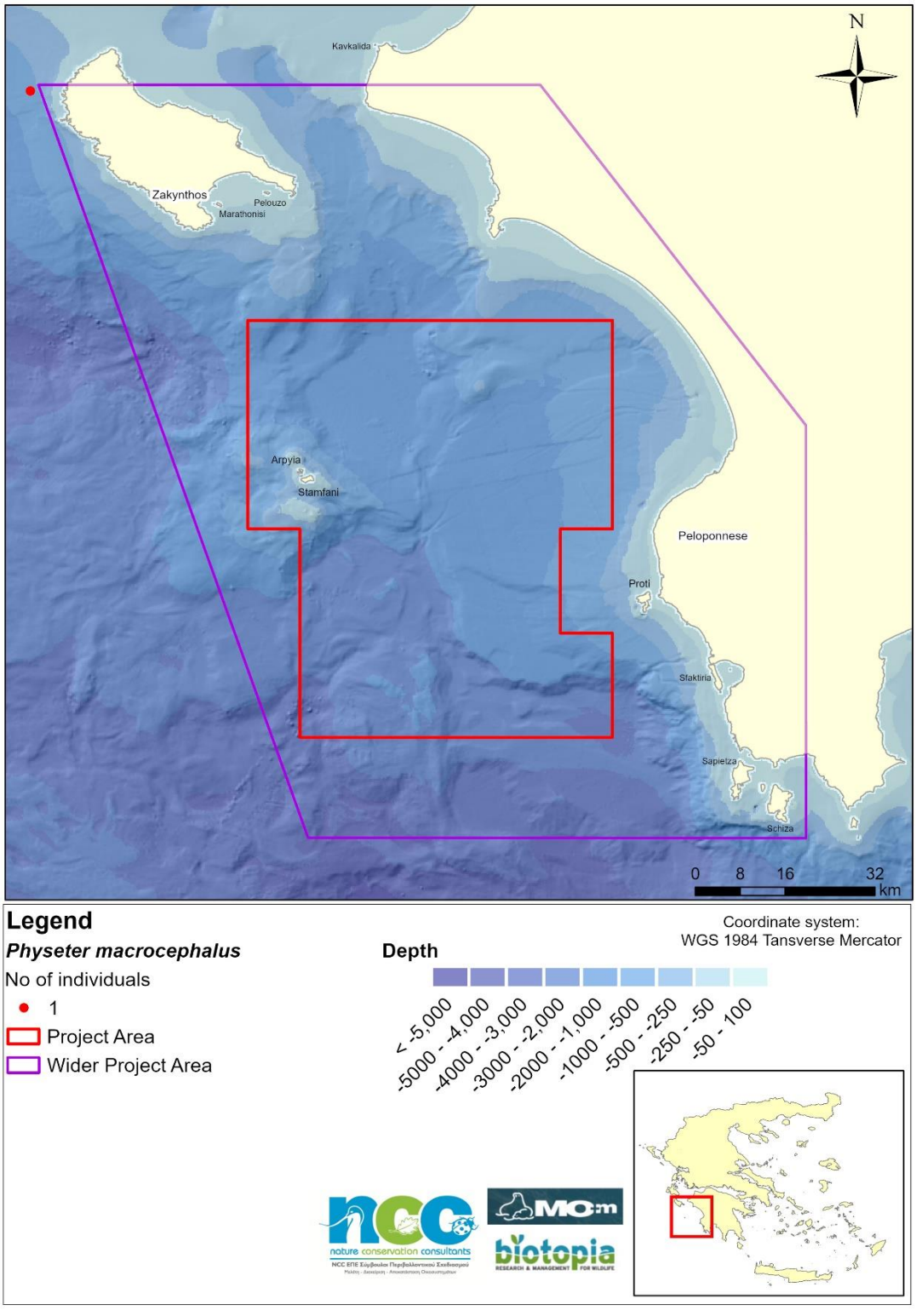


Figure 4-2. Locations of sperm whale visual records.

4.1.1.2 Sperm Whale Photo – Identification

Photo-identification analysis will be carried out during the second semester of 2026, when more sightings of sperm whale individuals are expected to be recorded.

4.1.1.3 Seabirds visual records

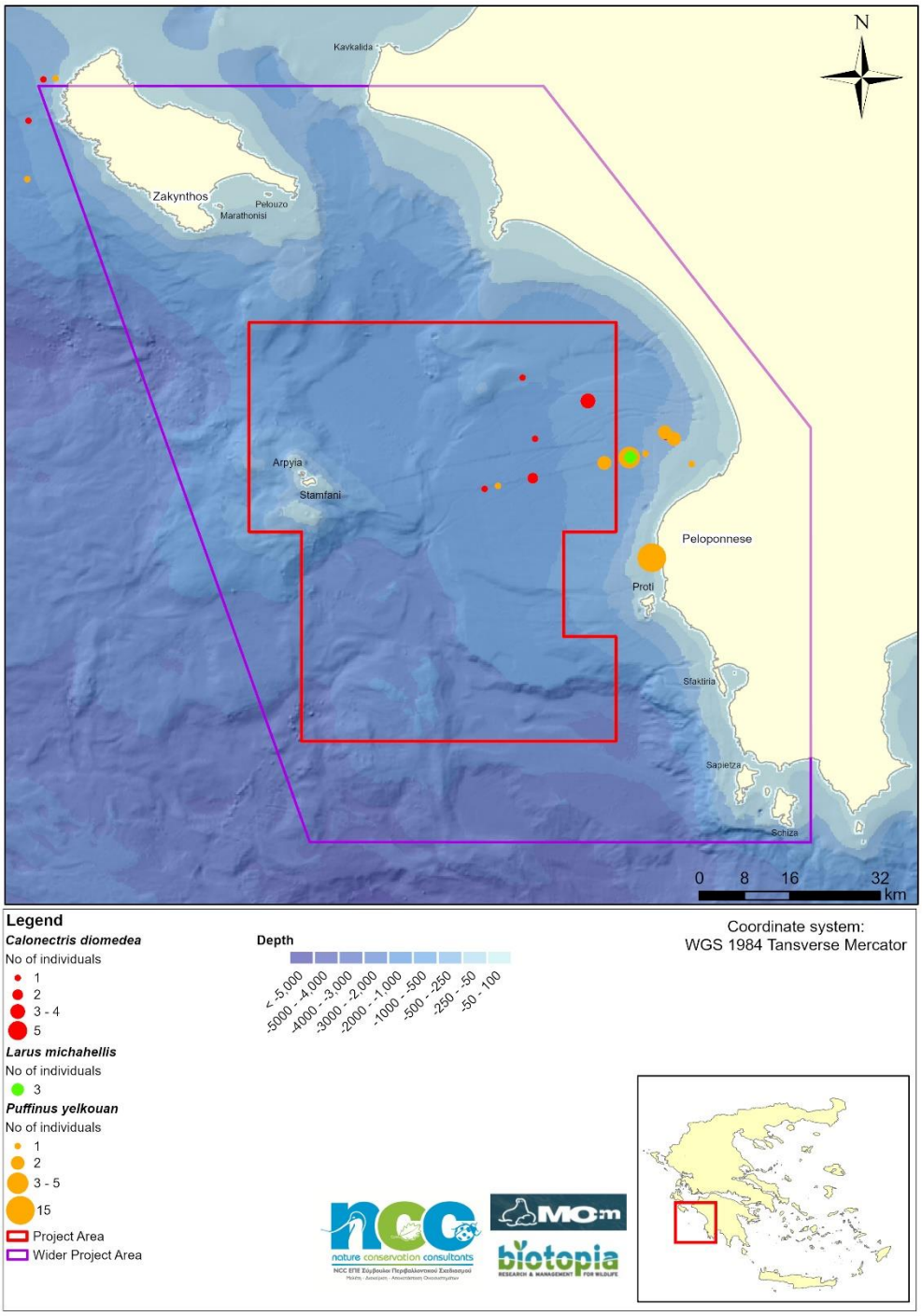


Figure 4-3. Locations of bird species visual records.

4.1.1.4 Sea turtles visual records

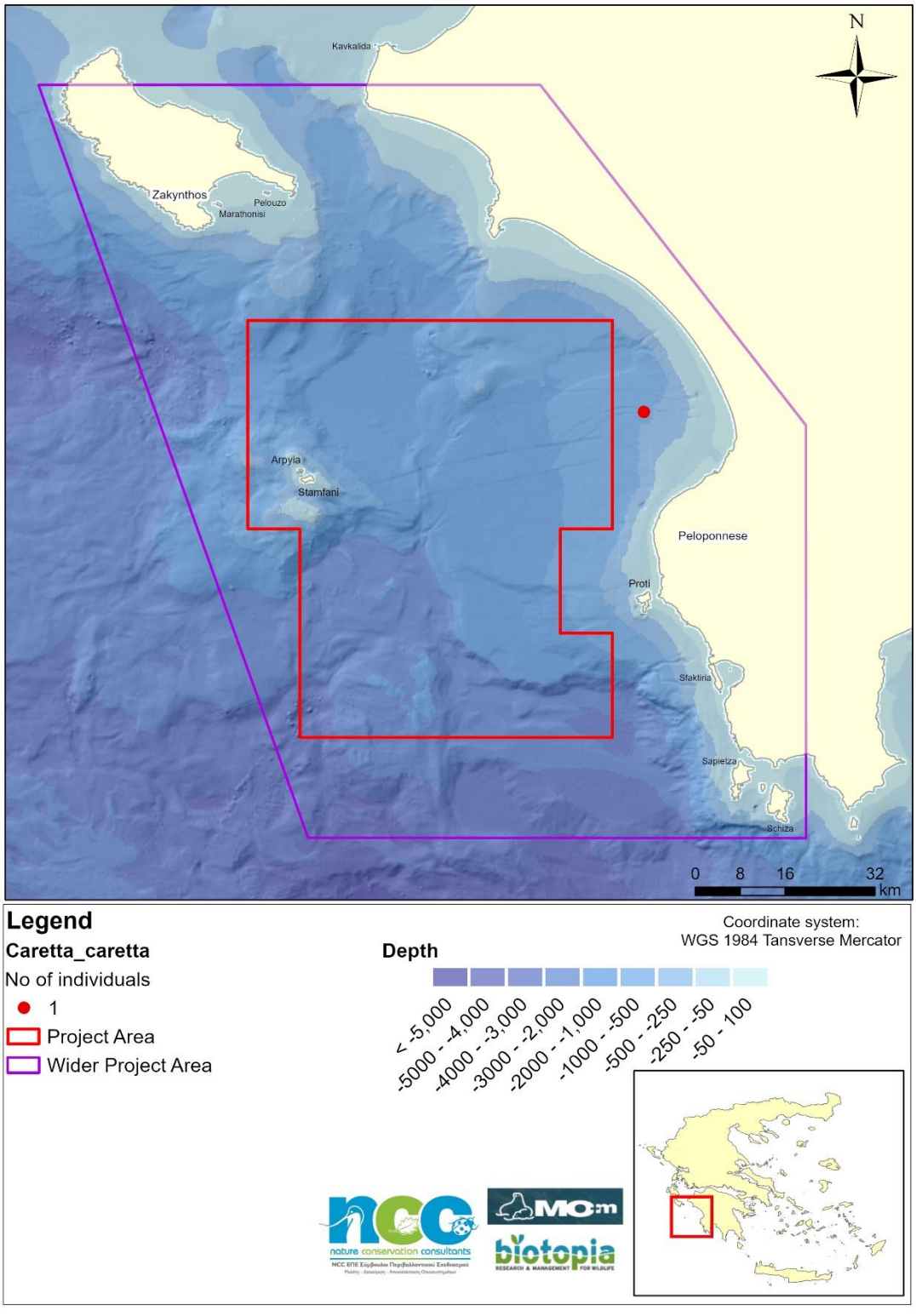


Figure 4-4. Location of Loggerhead sea turtle visual records.

4.1.1.5 Cetaceans acoustic records

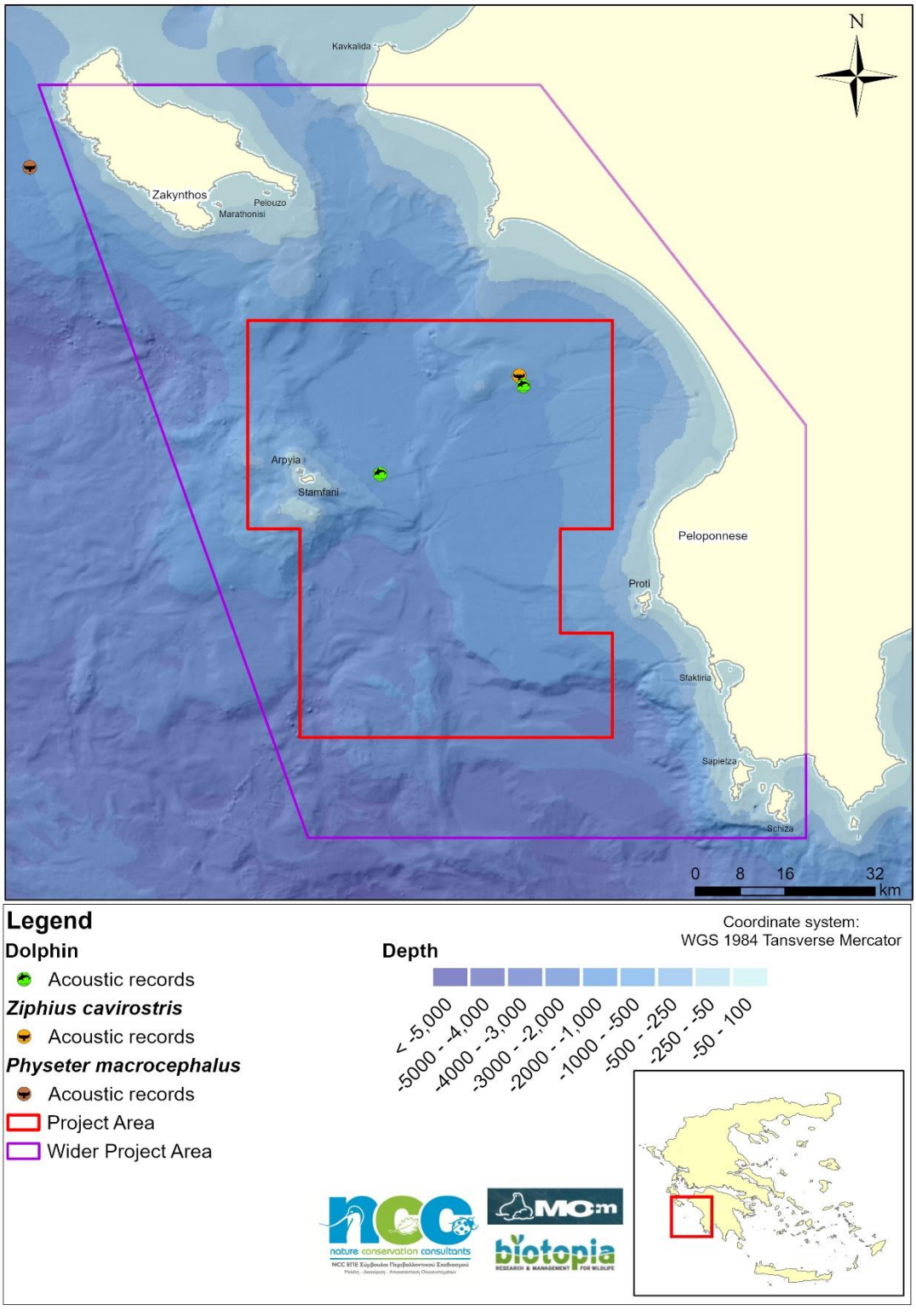


Figure 4-5. Locations of cetaceans acoustic records.



Figure 4-6. Visual effort during the boat surveys



Figure 4-7. Acoustic effort during the boat surveys



Figure 4-8. Solitary sperm whale male individual recorded North West of Zakynthos island.

4.1.2 Aerial surveys

The aerial surveys have been conducted on the 15th and 16th of June 2026 and. A total of **970 km** has been inspected, covering the Wider Project Area and the surrounding areas.

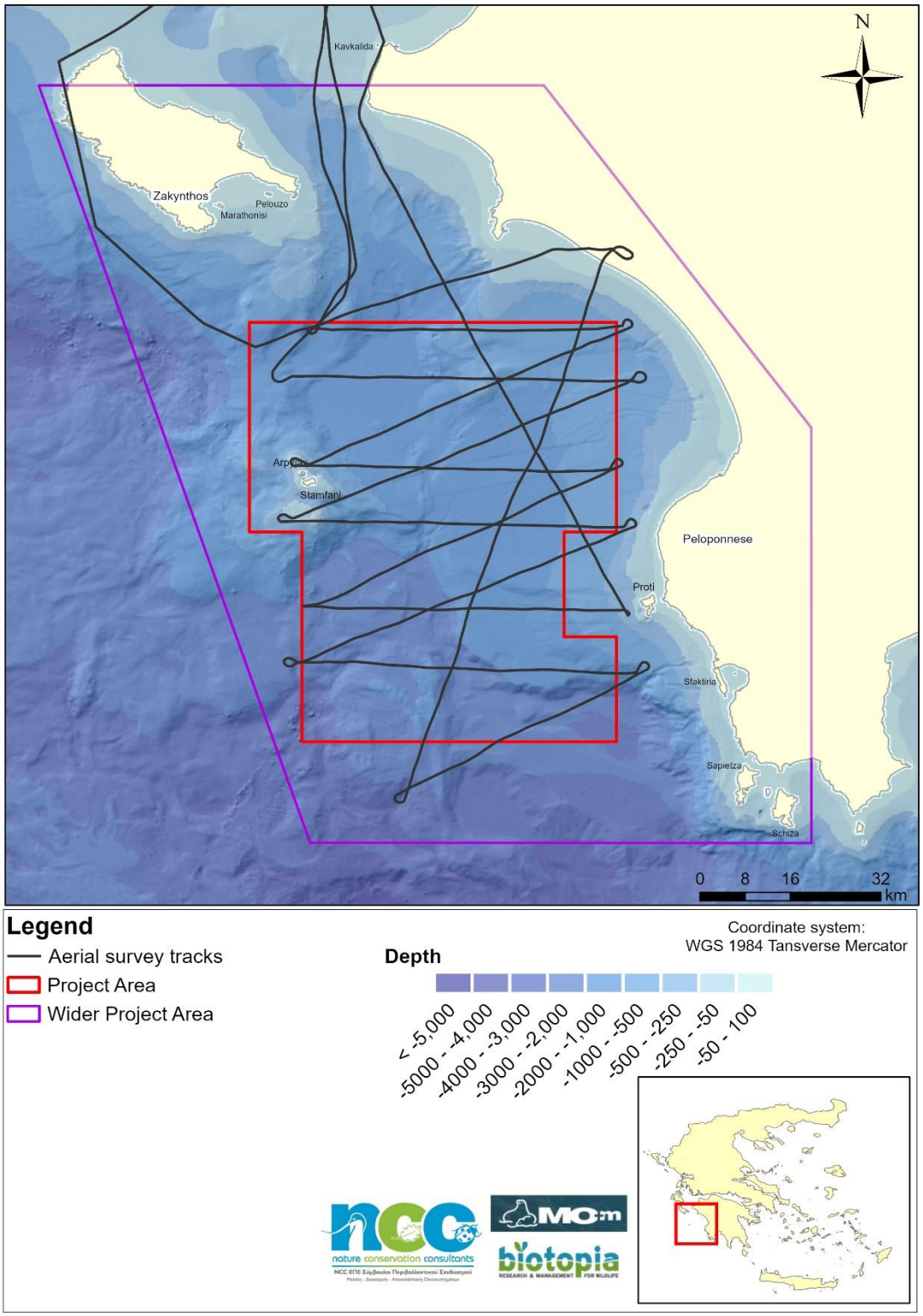


Figure 4-9. Aerial survey tracks

During these aerial surveys two groups of **striped dolphin** (*Stenella coeruleoalba*) **with 20 individuals each** were recorded visually inside the wider Project Area. It was confirmed that these were two different groups of animals, as they were located 13 kilometers apart within a period of less than 12 minutes.

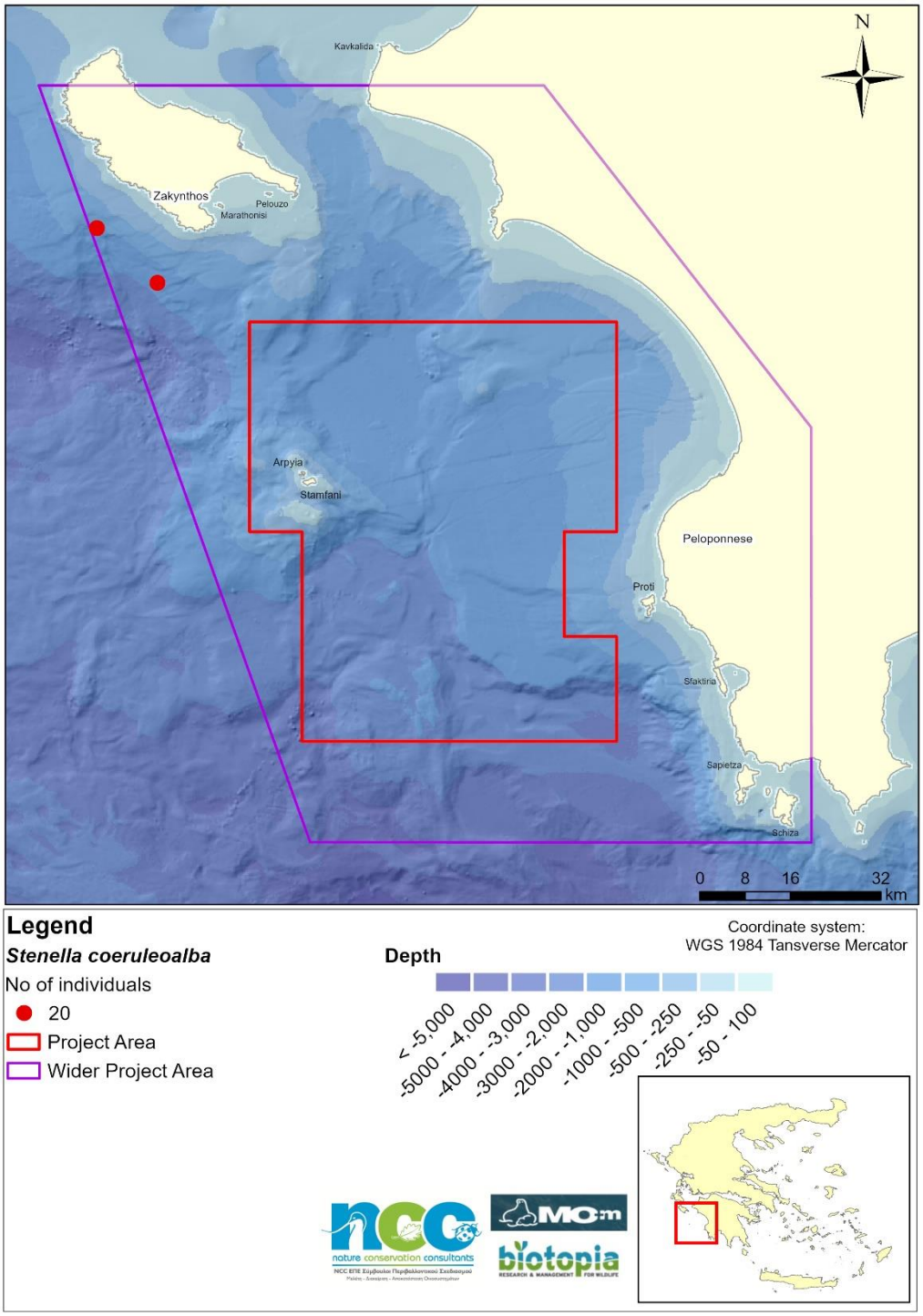


Figure 4-10. Aerial surveys records

4.2 Coastal surveys

4.2.1 Coastal surveys and cave monitoring for the Mediterranean Monk Seal

During the October 2025– June 2026 monitoring period, systematic monitoring of the Mediterranean monk seal population continued within the framework of the National Rescue and Information Network (RINT), with a particular focus on the southwestern coast of Zakynthos—an area already identified as critically important for the species' reproduction in the Ionian Sea. Moreover, six infrared Camera Trap Systems have been continuously operated in 2 caves on the southwest coast of Zakynthos island, located in the Wider project area. Four of the cameras were scheduled to work in Time Lapse configuration (every 1 hour or every 2.5 hours) while the two others were set in Motion detection configuration. The cameras were placed on the rocky walls of the caves and were positioned in such a way to maximize the coverage of the terrestrial components of the caves (internal beaches).

Through the RINT, a total of 4 monk seal sightings were recorded between 31 October 2025 and 1 June 2026, including 2 live animals and 2 dead.

Table 4-2. Monk seal records through RINT within the Wider Project Area

No.	Date	Area	Stage	Sex	Condition
1	22/2/2026	Achaia	Subadult	Male	Dead
2	24/2/2026	Ilia	Subadult	Male	Dead
3	17/4/2026	Zakynthos	Adult	Unknown	Alive
4	24/4/2026	Zakynthos	Subadult	Unknown	Alive

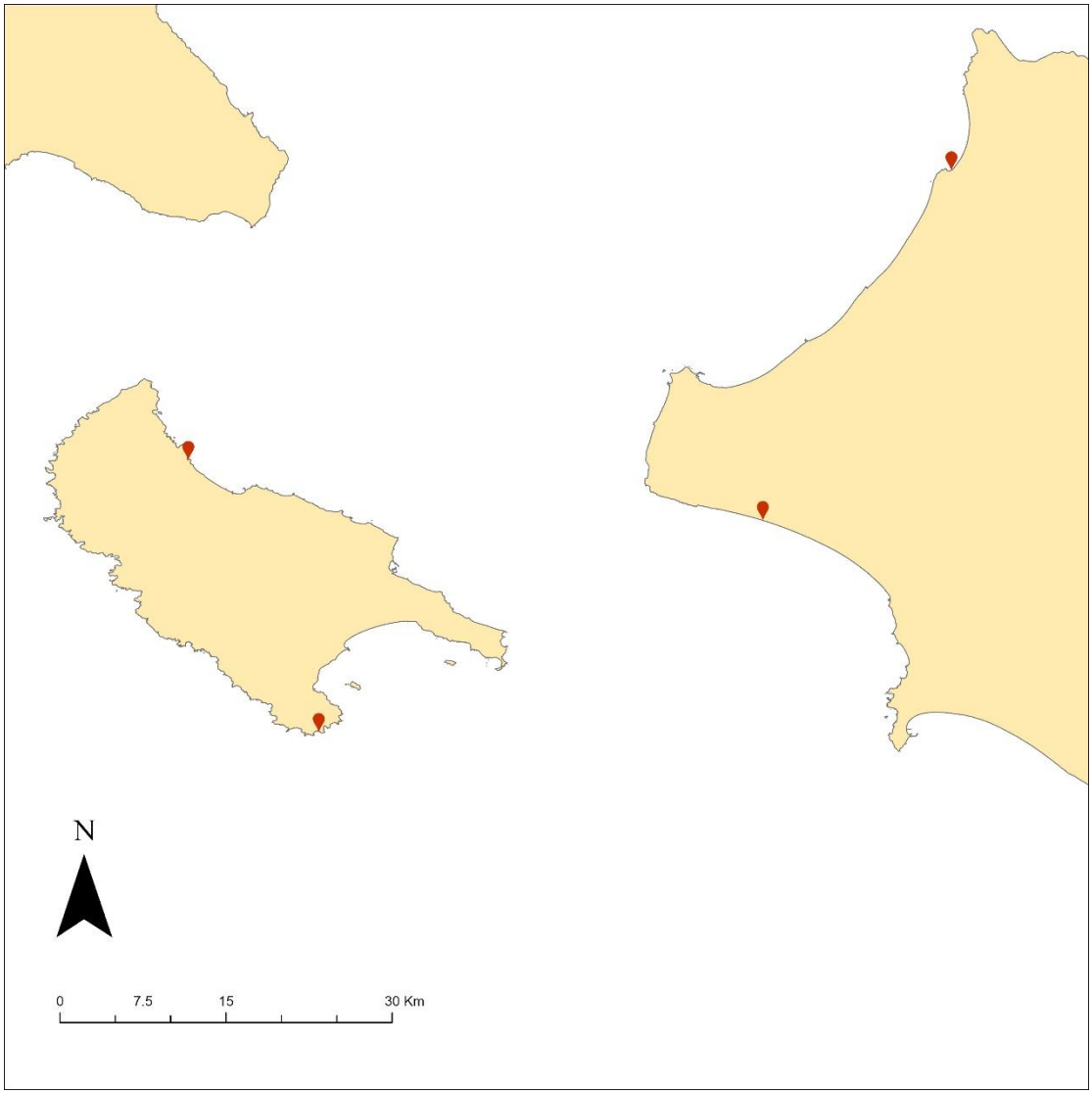


Figure 4-11. Geographic distribution of sightings during the period 31/10/2025-1/6/2026within the wider project area.

In early June 2026, MOm researchers conducted a field mission to the southwestern coast of Zakynthos, during which they assessed the condition of the area's sea caves as well as the status of the infrared recording systems. Data were collected from the cameras, and the systems were reset to continue recording. A preliminary analysis of the data confirmed the seals' consistent use of the area as well as the species' continuous breeding activity over the years. The data will be evaluated in detail in conjunction with the data to be collected upon completion of the current study period and will be presented in the project's final report.



Figure 4-12. General view of the SW coast of Zakynthos was significant monk seal pupping activity has been recorded.



Figure 4-13. A group of five monk seals in a cave at the SW of Zakynthos island (captured date: 18/1/2026)



Figure 4-14. An adult female monk seal with her pup in a marine cave at SW Zakynthos (captured date: 25/10/2025)



Figure 4-15. A male sub adult monk seal found dead on the coast of Kyparissiakos Bay on the 24th of February 2026.

4.3 Colony surveys - Telemetry

The installation of the GSM cameras, as well as the tagging of Scopoli's shearwater individuals, at the Strofades colony is planned to be implemented during the second semester of the project (July – October 2026).

5 Conclusions

During the first semester of 2026 all project's planned survey activities for the reporting period were successfully completed, providing an additional year of standardized information on the occurrence and distribution of marine mammals, seabirds and Mediterranean monk seals within the Kyparissiakos Lease Area and the surrounding waters. The continuation of the long-term monitoring project, initiated in 2020, further strengthens the baseline dataset available for the assessment of biodiversity in one of the most important marine areas of the Hellenic Trench.

Boat-based visual and passive acoustic surveys, complemented by aerial surveys, confirmed the continued presence of protected marine megafauna within the Wider Project Area. During the June 2026 boat surveys, the sperm whale was the only cetacean species visually recorded, while passive acoustic monitoring additionally detected Cuvier's beaked and dolphin species. These findings once again demonstrate the importance of combining visual observations with passive acoustic monitoring, particularly for deep-diving cetaceans that spend only limited periods at the sea surface and may therefore remain undetected by visual surveys alone.

The occurrence of sperm whales within the project area is consistent with previous years and further supports the significance of the Hellenic Trench as critical habitat for the eastern Mediterranean population of this endangered species. Although only a limited number of visual encounters were recorded during the first semester, photo-identification analysis, which will be completed after the second field season, is expected to provide additional information regarding the identity, site fidelity and possible movements of the individuals recorded during 2026. Maintaining a long-term photo-identification catalogue remains one of the most valuable outputs of the project, allowing the gradual improvement of knowledge on the local population.

The aerial surveys complemented the vessel surveys by covering a substantially larger area within a short period of time and resulted in the detection of two groups of striped dolphins, each comprising approximately twenty individuals. The aerial platform therefore continues to demonstrate its value as an efficient tool for documenting the distribution of highly mobile pelagic species that may be missed during vessel-based surveys because of their wide-ranging movements.

Seabird observations during the boat surveys were dominated by Scopoli's shearwater, while Yelkouan shearwaters and Yellow-legged gulls were also recorded. The predominance of Scopoli's shearwater is consistent with previous years and reflects the ecological importance of the Strofades Islands, which support the largest breeding colony of the species in Greece and whose breeding birds regularly exploit the surrounding marine environment, including the project area, for foraging. Monitoring of the breeding colony through GSM cameras and satellite telemetry is planned for the second semester of 2026 and is expected to provide valuable information on breeding performance, parental behaviour and marine habitat use.

Monitoring of the Mediterranean monk seal continued through the National Rescue and Information Network and dedicated field surveys in southwestern Zakynthos. The available records from the October 2025–June 2026 period confirm the continued regular use of the wider region by the species. Field inspections also verified the operational status of the camera monitoring system installed in important breeding caves. Images collected during the monitoring period documented the presence of multiple individuals, including females with pups, providing further evidence that the southwestern coast of Zakynthos remains one of the most important reproductive areas for the Mediterranean monk seal in the South Ionian Sea. At the same time, the occurrence of dead individuals highlights that anthropogenic mortality remains an issue of conservation concern and underlines the need for continued monitoring and conservation efforts.

Overall, the first semester of 2026 confirms the continued ecological importance of the Kyparissiakos Gulf and the adjacent Hellenic Trench for several protected marine vertebrate species. The combination of boat-based surveys, passive acoustic monitoring, aerial surveys and coastal monitoring provides complementary information that substantially improves species detectability and the understanding of habitat use across different ecological guilds.

As this is an interim report, several important analyses remain pending, including sperm whale photo-identification, Scopoli's shearwater telemetry and nest camera analyses, as well as the continuation of field surveys during the second semester. The completion of these activities will provide a more comprehensive assessment of seasonal patterns, species distribution and habitat use throughout 2026, allowing direct comparison with previous years and further strengthening the long-term biodiversity baseline for the project area.

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Annex I: Survey protocols

ESAS protocol datasheet for collection of seabird data

Empty species datasheet

BIRD DATA Ship-based seabird surveys **EUROPEAN SAS / Royal NIOZ**

Date:	Ship:	Obs.:	Page: of

Distance[1]:
F = in flight
A = swims, 0-50m
B = swims, 50-100m
C = swims, 100-200m
D = swims, 200-300m
E = swims, >300m
W = swims, no distance
Tr[2]: 1 = out, 2 = in transect

Direction of flight[3]:
2
9 N 3
NW NE
8 W 1 E 4
SW SE
7 S 5
6

Associated with[3]:
11 = cetaceans
12/3 = front/line in sea
14/5/6 = wood/litter/oil
18/21 = own/other ship
22/5 = buoy/stick
23/4 = near/on platform
26 = fishing vessel
27/8/9 = ice/land/shallows

Behaviour codes[4]:
30/1 = holding/without fish
32 = feeding chick
33 = "feeding"
34/5 = wading/scooping
36/7 = aerial purs/skimm.
38/9 = hydropl/pattering
40/1 = scavenging/at trawl
42/3 = dipping/surf.seizing
44 = surface pecking
45 = deep plunging
46 = shallow plunging
47 = pursuit plunging
48 = pursuit diving
49 = actively searching
60 = resting/asleep
61/2 = courtship displ/fd
65 = guarding chick
66 = preening/bathing

91 = kleptoparasitised
92/3 =attacked (brd/mm)

MSFAs[3] (Dirn codes)
50 = "participant"
51/2 = joined / joining
53 = scrounger type
54 = solitary diver
55 = beater (e.g. dolphins)
56 = social feeder/diver

Poskey	Time	G	Species	Age	Plum	Number	Dist[1]	Tr[2]	Dirn[3]	Behav.[4]	Prey[5]/notes

Prey examples[5]: 10 = "fish", 11 = small fish (bill length), 12 = medium fish (2-5 bl), 13 = large fish, 14 = sandeel ball, 15 = clupeoid ball, 16 = "fish ball", 21 = clupeoid fish, 22 = sandeel, 23 = gadoid, 24 = flatfish, 25 = regurg. fish, 32 = jellyfish, 34 = worm, 41 = swimming crab, 42 = starfish, 50 = carrion, corpse, 51 = seal carcass, 52 = whale carcass, 53 = bird carcass, 56 = active bird kill, 60 = fishery waste, 61-66 = specified discards

Protocol datasheet for collection of cetacean visual records

Index	GpsIndex	GpsTime	SightingNo	Time	Platform	Angle	Distance	Heading	Cue	Species	Confidence	MinNo	MaxNo	Adults	Juveniles	Calves	Birds	Behaviour1	Behaviour2	Behaviour3	SeenFrom	SeenBy	SightingEffort	Notes	ButtonRef	MagBearing	Reticles	RelBearing	EyeHeight

Protocol datasheet for collection of cetacean acoustic records

Index	GpsIndex	GpsTime	DateTime	Observer	End Time	Notes	SelfBoat	OtherBoat	WaterNoise	DOClicks	DOCNotes	DOWhistle	DOWNotes	DOOther	DONotes	SWClicks	SWCodas	SWOther	SWNotes	BWMoan	BWOther	BWNotes