# Threats



All cetaceans are strictly protected by EU Habitats Directive 92/43/EEC and by Greek legislation. Additionally, they are protected by several international conventions. In their natural environment, cetaceans are threatened by illness, by parasites and by virus outbreaks: in 1990-91 for instance, a virus killed thousands of striped dolphins throughout the Mediterranean. Additionally, cetaceans are threatened by human activity:

#### Parameters related to fisheries:

- Food shortage because of the over-exploitation of marine resources. Of course, the impact of illegal fishing and amateur fishing is included here.
- Cetaceans are accidentally caught in fishing gear and drown, often in illegal drift nets. The beaked whale on the picture (right) was finally saved by a fisherman.
- Sometimes, dolphins are killed deliberately because of the damage they cause to fishing gear and fish catch.

#### Parameters related to pollution:

- As top predators, cetaceans accumulate the toxic substances in the water manifold in their bodies through their prey: various types of sewage, agrochemicals, heavy metals, polychlorinated biphenyls (PCBs), etc., can cause serious anomalies in the nervous, reproductive and immune systems of all mammals.
- Cetaceans often ingest plastic debris considered as prey and in many cases die of suffocation or starvation when their ingestion tract is blocked. Like all marine species, cetaceans take microplastics with their food, i.e. the millions of tiny particles into which plastic debris disintegrates with time with as yet unknown consequences. We now find microplastics even in the salt we buy in the super market.

#### Parameters related to noise pollution:

- The continuous and ever-increasing vessel traffic including the thousands of leisure boats affects the cetaceans' orientation system and reduces their ability to hear - nowadays the sea is full of noise.
- · Seismic surveys for the exploitation of hydrocarbons use sound levels
- and/or frequencies disastrous for cetaceans (and not only cetaceans) causing from loss of hearing up to injuries in their acoustic tract, intense stress, inability to communicate with one another and changes in their behaviour. The same applies for military exercises with the use of extremely powerful under-water sonars. Beaked whales in particular



become disoriented up to the point of mass strandings as did happen in the Ionian Sea in the 1990s and again in 2011

# Code of conduct

#### Encounter at sea:

- Keep a distance of more than 50 metres. If the cetaceans approach you, stay on course and keep a steady velocity of 7 knots, enjoy the encounter and take as many pictures / videos as possible.
- Never sail towards cetaceans
- either head-on or from behind and do not enter the pod the animals may be frightened or even become aggressive, especially the larger cetaceans.
- Avoid making abrupt changes in your course and speed again, the animals may be frightened.
- If you encounter large cetaceans such as sperm whales, keep a distance of 200 metres and slow down to 3 knots.
- Never chase after cetaceans and do not try to feed, touch or swim with them. They are wild animals that do not need to be fed and are better left undisturbed.

Please communicate your observation along with the date, time and exact location of your observation, providing pictures/videos taken to the Management Unit of Zakynthos and Ainos National Parks and Protected Areas of the Ionian islands.

E-mail: mdpp.ionian@necca.gov.gr, Tel. (+30) 26710 29258.

#### Injured, ill or dead animal: please immediately inform the local port police (tel 108) and:

- Always approach the animal carefully with slow movements so as not to frighten it.
- Do not touch the animal's blowhole without wearing gloves and a mask; certain viri which are deadly for cetaceans could otherwise be transferred.



- Discourage onlookers: the crowd will cause the animal significant stress.
- Do not attempt to move, roll or drag the animal, not even with the use of ropes, etc.
- Cover the animal with wet cloths keeping the fins and blowhole free.
- Take pictures of the animal from all sides, the tail (fluke), the dorsal fin and the mouth with the teeth in particular.
- In case of a dead cetacean, please take as many pictures/videos as possible.
- Please transfer to the port police all data collected (tel. 108).







## Dear friends

The present brochure was created by the environmental NGO «Archipelagos - environment and development» in collaboration with the Management Unit of Zakynthos and Ainos National Parks and Protected Areas of the Ionian I slands, Argostoli branch, of the Natural Environment and Climate Change Agency (N.E.C.C.A.).

We hope that this brochure will contribute to the better knowledge of the cetacean species of the Ionian Sea. These are largely unknown to the public although they constitute a substantial part of the natural heritage of the Greek seas.

The Management Unit of Zakynthos and Ainos National Parks and Protected Areas of the Ionian islands is the 11th Management Unit of the N.E.C.C.A. It is based in Zakynthos Island, with branches in Argostoli/Kefalonia, and in Corfu, and is responsible for the protection and the management of all Protected Areas in the Ionian Region [E-mail: mdpp.ionian@necca.gov.gr].

The NGO «Archipelagos – environment and development» was established in 1991 and is active in the preservation of the natural environment. Among other issues, we are involved in the conservation of the Mediterranean monk seal, the registration of bird fauna, rare plants and marine resources of the area, environmental education and information of the public, etc. (www.archipelagos-org.eu). Our philosophy is best reflected in our slogan:

> Destroying the environment is easy. Protecting it is difficult and expensive - but worth the effort. Its rehabilitation tomorrow might be impossible.

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# **Archipelagos**



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developmer

Get to know your fellow travellers

# Whales and dolphins in the Ionian Sea

MAY 2025

# What are cetaceans Spinal of a dolphin



Cetaceans (whales and dolphins) are marine mammals which evolved from terrestrial animals 45-50 million years ago. They have lost their fur almost entirely and live, feed, breed and suckle their offspring in water. However, they have to regularly come up to the surface to breathe atmospheric air with their lungs as all mammals do. Their

nostrils (or «blowholes») have moved to the top of their head through evolution of life in water. Their loud exhaling at the surface is full of vapour and shoots upwards in a column, seemingly of water, as vapour condenses as it cools in the air, always colder than the animal's body. Cetaceans never sleep but relax each half of their brain in turn: one half is resting while the other half controls the tasks of breathing and navigation. Being warm-blooded mammals, cetaceans have evolved a thick layer of fat under their skin that covers their entire body and protects them from heat loss.

Cetaceans can create various sounds, often very complex but characteristic for each species, with which they communicate. They also form strong social bonds between individuals of a species, or sometimes even between different species. Their social structures are often particularly complex and pertain to co-operation while hunting, help while giving birth, defense, etc.

Cetaceans are divided into (a) toothed whales (Odontoceti) including dolphins;

these have teeth like all mammals and only one blowhole, and (b) baleen whales (Mysticeti) with two blowholes at the top of their head and a series of baleens (ceratoid plates) growing from their upper jaw instead of teeth. Thus, from the biological viewpoint, the separation into «whales» for large and «dolphins» for small cetaceans is wrong: for instance. the sperm whale and the orca are actually both large dolphins, i.e. toothed whales. It is worth mentioning that the word «baleen» originates from the Greek word «phalaena» (φάλαινα).





Toothed whales have developed an echolocation organ (a sort of sonar) that allows them to recognize the shape and size of an object as well as its distance and movement. This organ is located in the front of their skull: the so-called «melon». Through their echo-lo-

cation ability, toothed whales can locate, hunt and catch fast moving prey in absolute darkness and can also recognize other animals and obstacles.

At the global level, there are at least 85 species of cetaceans. In the Mediterranean, 19 permanently resident and visitor species have been recorded so far. In the Ionian Sea, 7 permanent residents and 5 visitors have been recorded to the present time: about two thirds of the Mediterranean species! The sub-populations of almost all cetaceans in the closed Mediterranean Sea are genetically different from those in the Atlantic; this makes them important in terms of evolution, but at the same time vulnerable.

Whales and dolphins in ancient times

The name «cetaceans» originates from the ancient Greek word 'cetos' (κήτος). related to the marine goddess Ceto who represented large marine animals (whales, sharks, etc.). The ancient Greeks very often depicted dolphins: from the frescoes in Knossos up to decoration on earrings

Aristotle, in his «Historia Animalium» written ca. 2350 years ago, was the first to describe cetaceans. He described the presence of the sperm whale in Greek waters - he even named the cetaceans' blowhole a «physeter» (φυσητήρας), the same word used today in Greek. Moreover, he described a marine mammal separately under the name «mystacocetos» (μυστακοκήτος) as having «hair» in its mouth instead of teeth - obviously the fin whale.



# Short-beaked common dolphin

Delphinus delphis Permanent resident



The common dolphin can reach more than 2 metres in length and 100 kg in weight. Its colouring is guite complex: the back is black or dark grey. The area below is light yellow-beige in the front and light grey in the back. The belly is white. On its dorsal fin, almost every dolphin has a light patch, different for each animal; this in conjunction with

possible scars makes the individual recognizable: this is how dolphins are photo-identified. The species lives in groups (pods) in both shallow and deep waters and feeds on sardines, shads and to a smaller degree also on cuttlefish and squid.

The common dolphin lives in all temperate and tropical seas. Despite its name, the species is no longer common in the Mediterranean: it has disappeared from the Adriatic Sea and has become fairly rare in the western Mediterranean except for Gibraltar. In Greece, the species can be found mainly in the North Aegean Sea and the Inner Ionian Archipelago where, in the late 1990s, a resident population of at least 150 animals lived and reproduced. There, they lived in the same area as the coastal bottlenose dolphins, a rather rare occurrence. For this reason, the area has been designated as an Important Marine Mammal Area. During the 2000s, a rapid decline of the population was registered that was attributed to food shortage due to over-fishing by purse seines and trawlers and triggered fears for the collapse of the population. However, the animals may finally have dispersed in the open waters of the Ionian Sea



# Striped dolphin

Stenella coeruloalba

Permanent resident



This dolphin can reach a length of up to 2.2 metres and a weight of about 150 kg. It is dark grev on its back with a nuance of blue. The lateral zone is light grey and the belly is white. A distinct fine black stripe starts from the eyes and stretches towards he belly (hence the name striped dolphin). A characteristic light grey zone starts from the grey

lateral area and enters the darker part of the back. It is a pelagic species living in fairly deep waters in groups of 10-100 individuals. It sometimes forms mixed groups with common dolphins. The striped dolphin feeds on small fish such as sardines and on squid.

The striped dolphin lives in all temperate and tropical seas. It is the most common cetacean species in the Mediterranean

and in Greece and is absent only from the shallow northern Adriatic Sea. It is abundant in the Ionian Sea but is rather rare in the shallow Inner Ionian Archipelago. The Gulf of Corinth, with about 1.000 striped dolphins in a closed sea, is a special case: here, the striped dolphins often form mixed pods with common dolphins.



Moreover, interbreeding occurs between the species with hybrids bearing intermediate characteristics (see picture on the right).



## Fin whale Balaenoptera physalus



#### Permanent resident



The fin whale is the second largest whale after the blue whale, reaching up to 27 metres in length and 80 tons in weight. Its colouring varies between silver-grey and dark grey on the back. It is white on the belly and the lower part of the lateral fins with a fairly abrupt change. The right lower jaw is also white, while the left jaw is dark. The fin whale has two

symmetric blowholes and it exhales vertically upwards. Its neck has 50 - 100 skin folds allowing it to extend its huge mouth like an accordion, thus multiplying the available space. Instead of teeth, the fin whale has a series of baleens through which it filters zooplankton (so-called «krill») and small fish or squid. An adult female can eat almost one ton of food a day.

The species lives in the open sea, from the equator almost up to the poles, either

as single animals or in small groups of up to 7 individuals. Fin whales are permanent residents of the Mediterranean: a thriving population lives and reproduces in the waters between Corsica, Italy and mainland France where in 1999 a whale sanctuary was established. In Greece, the Ionian Sea is the most important area for fin whales: they are present relatively frequently, mainly in the deep

waters of the Hellenic Trench. However, from time to time, fin whales do enter the shallow Inner Ionian Archipelago: in the last century, fin whales have become stranded twice on the small island of Kastos [picture: skull].



# Common bottlenose dolphin

Tursiops truncatus Permanent resident



This dolphin species, our well-known 'Flipper', can reach a length of up to 3.3 metres and weighs up to 500 kg. Its beak is shorter and thicker than that of smaller dolphin species. It has a uniform dark grev colour on the back and light grey colour on the belly, often with light pink nuances. It lives in coastal shallow waters and often performs high leaps out of

the water or plays in front of a ships' bow. It feeds on eels, sardines, red mullets, hakes, squid, octopus, etc.

The bottlenose dolphin is present throughout the world's tropical to cold-temperate waters. In the Mediterranean, it is a regular species forming groups of

up to 30 individuals. In Greece, it is the most common dolphin species in all coastal areas from the Ionian and the Northern Aegean Sea to the island of Gavdos and is the only cetacean species in the Gulf of Ambracia, Ionian Sea. The species is actively reproducing in the central Ionian Sea and elsewhere. In the Inner Ionian



Archipelago, in the North Aegean Sea and around some islands of the Dodecanese it lives «sympatrically» with the common dolphin that prevails there.



Risso's dolphin

#### Permanent resident



Risso's dolphin is the largest of all dolphin species in Greek waters. It can reach a length of up to 4 metres and can weigh up to 600 kg. Unlike other dolphin species, it has no beak. Its colouring is light grey when newborn and becomes darker with age. However, scars from fights with other animals are of very light colour and the head of adult animals may

therefore sometimes appear white. The species lives mostly far off shore preferring areas with a pronounced relief at the edge of the continental shelf; thus, an encounter with this species is rather a rare event. But it may approach land if waters are deep enough. It feeds mainly on deep water squid. In general, this species has not been studied in detail to date.

The species is present in all tropical and temperate seas. It is present throughout the Mediterranean, though it is not common anywhere in the area. In Greece, Risso's dolphins have been registered in the Ionian and Myrtoan Seas, off Euboea and elsewhere; however, nowhere in Greece is this



species common. The presence of two Risso's dolphins was first registered in the closed Gulf of Corinth in 1997: here, the animals lived in pods together with striped and common dolphins. Most probably, they entered the gulf by chance since the species was never registered prior to this event.



### Sperm whale Physeter macrocephalus



#### Permanent resident



The sperm whale is the third largest cetacean on earth and has the biggest brain in the animal kingdom. The males can reach 18 metres in length and weigh up to 57 tons while females are considerably smaller. Their colouring is dark grey over the entire body. Other species have the blowhole at the top of their head and exhale vertically. On the left instead. Sperm whales dive to up to 2000 metres deep and feed on giant

contrary, the sperm whale's most distinctive feature is its almost rectangular head with the blowhole on the left part of the head; it exhales sideways to the squid up to 1.5 metres in length at these depths, locating their prey with their natural sonar. An adult male can eat about one ton daily.

The sperm whale lives in all oceans, from the equator to the poles. It prefers the waters above the edge of the continental shelf with submarine canyons and slopes, thus areas rich in food. A few hundred sperm whales are believed to live in the Mediterranean, and movements of males between the western and eastern basins have been registered. In Greece, the main population consisting of about 200-250 animals is permanently resident and actively reproducing in the Hellenic Trench. Here, single males, juvenile animals in groups and groups of females with their calves can be observed. The Hellenic Trench is the most important area for sperm whales at the Mediterranean level and, for this reason, it has been designated as an Important Marine Mammal Area.





# Cuvier's beaked whale

Ziphius cavirostris

#### Permanent resident



Cuvier's beaked whales can grow more than 6 metres long and weigh up to 3 tons. The head is rather small and ends with a short beak. Males are usually dark grey to olive green and females are dark grey to grey-brown or light reddish-brown. In adult males, white scars from bites by other males during their fights can accumulate and old males

become almost white. Cuvier's beaked whales have lost their teeth during evolution and only the adult males have one pair of small teeth in their lower jaw. This species is strictly pelagic and prefers areas with deep and open waters, diving as deep as 3000 metres and feeding on squid at those depths. In general, the species has not been studied thoroughly and basic data are lacking.

Cuvier's beaked whales are present in all tropical and cold temperate seas, often in small groups. The species is relatively common throughout the Mediterranean. The majority of observations at

the Mediterranean level are registered in the Hellenic Trench along the Ionian Sea down to SW Crete and Rhodes. Therefore -though also due to the frequent presence of sperm whales- this area has been declared an Important Marine Mammal Area. In the central Ionian Sea, animals are found stranded from time to time (picture: SW Kefalonia)





# Killer whale

Orcinus orca

### Possible visitor species



Male orcas can reach 8-9 metres in length and weigh about 6 tons while females are smaller. The animals have a distinct black and white colouring, characteristic of the species. Their head is rounded and has no beak. Orcas live in open seas and hunt, often in groups, various big

fish but also seals, other cetaceans and even big whales. This is why the orca is sometimes called a «killer whale» - however, it simply feeds upon other animals for its survival as we humans do.

Orcas live in all oceans, from the equator to the poles in various groups with extremely complex social structures. It is a regular species in the Straits of Gibraltar but sporadic sightings have also been reported from the eastern Mediterranean (Lebanon-Israel). One orca observation was recorded in the open Ionian Sea as well, approximately in the centre, slightly to the west. The species is not included in the cetacean species of Greek waters because the observation was made outside the Greek Exclusive Economic Zone on the basis of administrative -and not ecological- criteria. It is very probable that orcas do enter Greek waters since they migrate over huge distances and are unaware of national borders. Also, in the late 80's, fishermen reported a pod of ca. 10 orcas off Kefalonia island. But since no pictures were taken the event cannot be registered as an official observation of orcas in Greece.





# False killer whale Pseudorca crassidens

#### Very rare visitor

The false killer is similar to the orca, hence the name. The male can reach 6 metres in length and weigh up to 1.5 ton while the female is slightly smaller. Its colour is a uniform black or dark grey over the entire body and fins, with a witish-grey anchor-shaped patch between the pectoral fins. It is pelagic species feeding on tuna, barracuda,

bonitos but also on squid. At the global level, mass strandings for unknown reasons are not uncommon.

False killer whales mainly live in tropical and subtropical oceans but also appear in cold- temperate waters. They usually live in groups of 10 - 20 individuals or sometimes in larger groups, and they form strong social bonds between each other or even with bottlenose dolphins. The animals of one pod all help during a birth event by keeping the area secure and by holding the newborn at the sea's surface for it to breathe. The species is extremely rare in the Mediterranean and its status has not been properly evaluated yet. from 1988 until 2020, altogether 8 strandings and 11 live observations were reported. In the Ionian, in 1995, we had a chance encounter with two false killer whales together off NW Kefalonia. The picture we took (top left) is poor due to the prevailing conditions but it is still a document of an extraordinary event: it was the first recorded observation of live false killer whales in Greek waters!



# Acoustic monitoring of cetaceans in the central Ionian Sea



As part of the «Actions for the improvement of habitats of the Mediterranean monk seal (Monachus monachus) and mitigation of interaction between marine mammals and vessels in the NATURA sites of Kefalonia and Ithaca» project of the Management Unit of Zakynthos and Ainos National Parks and Protected Areas of the Ionian islands, Argostoli branch, hydrophones were installed on the sea bed in Kefalonia in 2022 to systematically monitor the acoustic signals and thus record the presence of cetacean species throughout the year. The levels of noise pollution were also registered.

The University of the Aegean, Mytilene, was responsible for the project's

realization, led by professor St. Katsanevakis with associate professor V. Trygonis as scientific co-ordinator for the part concerning cetaceans. Our NGO Archipelagos helped with local knowledge we have gained through long-term observations. We also provided assistance during establishment of the hydrophones.

