**Textes expositions SANTUAIRE PELAGOS - VILLE D’AJACCIO**

**PANNEAU 1/ Cetacean reproduction**

**Cetaceans: expert seducers**

During mating season, which is in spring and summer\* for most, cetaceans display some very funny behaviour! Some jump and perform impressive somersaults to attract a partner.

Often, the males sing complex melodies to summon the females within a radius of several dozen kilometres!

Sexual maturity differs depending on the species, ranging from a minimum of 7 years for the dolphin up to 18 years for the sperm whale.

*\*Fin whales reproduce in winter.*

**A long gestation period for enormous animals!**

These animals gestate for many months: between 11 for the fin whale and up to 16 for the pilot whale or the sperm whale.

At birth, the young weighs between 10 kg for the common dolphin and 2 tons for the fin whale.

**The miracle of life**

When a female gives birth, her young stays with her for around one year.

These marine mammals have two mammary glands and breastfeed twice a day. However, as they are not able to suck, the young animals cannot suckle their mothers. To feed, they use their rostrums to bang the nipples to make the milk shoot out.

The fin whale receives between 100 l and 150 l twice a day.

This milk is vital for the young to grow. The fin whale gains 95 kg per day for between 6 and 8 months.

During this time the mother educates her young, which will be invaluable once out alone in the Mediterranean waters.

This is why it is forbidden to approach groups of cetaceans with a newborn, so as not to frighten or disturb them.

**Information:**

If you see an animal in difficulty or a beached animal, do not touch it under any circumstances and call the emergency services immediately by dialling 18 or CROSSMED (+33 (0)4 95 20 13 63).

They will contact the appropriate people.

*This content is available in English on:* [*www.ajaccio.fr*](http://www.ajaccio.fr)

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**PANNEAU 2/ The different cetaceans present in the sanctuary.**

The large cetacean family comprises many species. There are 24 in the Mediterranean and 8 in the Gulf of Ajaccio, at the heart of the Pelagos Sanctuary.

**BOTTLENOSE DOLPHIN**

Sanctuary population: ~ 1000 individuals. In groups of 4 to 8 individuals. Max. length: 4 m/Max. weight: 650 kg Max. age: 30 years

**STRIPED DOLPHIN**

Sanctuary population: between 19,600 individuals in winter and 39,000 in summer. In groups of 10 to 15 individuals, up to several hundred in mating season. Max. length: 2.50 m/Max. weight: 150 kg Max. age: 57 years

**COMMON DOLPHIN**

Max. length: 2.60 m/Max. weight: 160 kg Max. age: 30 years

**RISSO’S DOLPHIN**

Sanctuary population: ~ 130 individuals. In groups of 10 to 15 individuals. Length: ~ 3 m/Max. weight: 400 kg Max. age: 30 years

**LONG-FINNED PILOT WHALE**

Sanctuary population: currently under estimation. In groups of 10 to 20 individuals, up to several hundred in mating season. Max. length: 7.5 m/Max. weight: 1 to 2 tons Max. age: 50 years

**FIN WHALE**

Sanctuary population: between 150 and 1,600 individuals depending on the year. Alone or in groups of 2 to 3 individuals. Max. length: 25 to 27 m Max. weight: 25 to 70 tons Max. age: 90 years

**CUVIER’S BEAKED WHALE or ZYPHIUS**

Sanctuary population: estimated at 100 individuals in the Ligurian sea. In groups of 2 to 6 individuals. Max. length: 7 m/Max. weight: 2 to 3 tons Max. age: 60 years

**SPERM WHALE**

Sanctuary population: currently under estimation. In groups containing dozens of individuals at the most. Max. length: 12 to 18 m/Max. weight: 25 to 55 tons Max. age: 60 years

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**PANNEAU 3/ CETACEANS’ SUPER POWERS**

**Echolocation: using sound to find their way.** The sea is a silent world. However, we can hear all sorts of clicks and whistles coming from the cetaceans who communicate and find their way in the water thanks to sound!

By emitting sound waves at frequencies of between 5 and 200,000 Hz, these cetaceans are capable of spotting prey several kilometres away!

In an aquatic environment, where sound travels 4.5 times faster than in the air, the echolocation system of marine mammals is just as accurate as sonar on a boat!

**Living sub-marines**

Cetaceans are mammals, in other words, they have lungs instead of gills and are therefore obliged to come to the surface to breathe. However, they are without doubt some of the best divers and breath-holders in the animal kingdom!

The sperm whale is one of the most remarkable as it can dive down to more than 2,000 metres for almost 2 hours!

To dive to such depths, cetaceans regulate their blood circulation which controls the density of the many fat pockets on their bodies.

However, dolphins, who rarely venture into deep waters, can regularly dive to depths of 100 m and sometimes even to depths of 600 metres! This is almost 200 metres deeper than current military sub-marines.

**Unrivalled physiological qualities**

It is thanks to myoglobin, a muscular protein which cetaceans possess in far greater quantities than land mammals, that they can manage without breathing for so long.

This protein transports, and above all, stores oxygen in muscle tissue, particularly that of the heart, meaning that the muscles are supplied with oxygen for the entire time the animal is holding its breath.

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**PANNEAU 4/ Living in harmony with cetaceans**

Even though they sometimes approach humans, it must not be forgotten that cetaceans are wild animals. Our activity has a significant impact on them.

**10 good behaviours to adopt at sea**

A certain number of rules have been defined within the Pelagos Sanctuary. If you are navigating in this sensitive area, it is important to know them and to apply them:

* **Viewing should be avoided** at fewer than **5 miles from the coast.**
* **Stop the viewing** if the animals are showing signs of disturbance or stress.
* **Do not approach** **if newborns** are present.
* At all times, **maintain a distance of over 100 m from the cetaceans.**
* **The boat must approach the animals in parallel**,from the sides, from the rear towards the front.
* **Avoid all sudden changes in direction or speed.**
* **Maintain a steady speed**, matching that of the slowest animal and limited to **5 knots at the most.**
* **Only one boat** is allowed within the viewing zone.
* Only stay for **15 minutes.**
* **It is forbidden to swim with, touch or feed the cetaceans.**

In France, since 1 July 2011, a ministerial order has made it possible to punish deliberate disruption to marine mammals in the waters under French jurisdiction.

**Maritime professionals called into action**

One of the main causes of death in the Mediterranean derives from collisions between commercial vessels and large cetaceans. Within the Pelagos Sanctuary, shipping companies have chosen to install a system which provides real-time information on the location of whales and makes it possible to share this information with the other vessels in the area. The various companies which use the Corsica-Continent route have all installed the REPCET system on their ferries.

An anti-collision decree, under the biodiversity law, requires boats of over 24 metres operating under the French flag within the Sanctuary to be equipped with an anti-collision device.

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**PANNEAU 5/ Senses in cetaceans**

Although cetaceans have more or less the same senses as human beings, they have developed in different ways over thousands of years.

**Sight**

Familiar with deep water, the underwater vision of cetaceans is far better than that of humans: it is suited to the blue light that penetrates deepest in water.

Thanks to the curvature of the lens of their eyes and their powerful ocular muscles, their vision adapts to the environment: they can see just as well out of the water as they can in the water.

**Touch**

Touch is a very important sense in the social relationships of cetaceans, who are highly sensual animals. Their skin is very reactive and comprises many nerve endings. Their pectoral fins and their rostrum are used to caress, but also to hit or strike. Cetaceans are often seen cuddling and mothers often maintain physical contact with their young.

**Smell and taste**

Cetaceans do not have a nose so their sense of smell is virtually non-existent, but they are able to differentiate between tastes thanks to a tongue filled with taste buds just like ours. The taste perception of cetaceans determines what they eat, with a preference for either fish or cephalopods.

**Hearing**

Cetaceans are animals which are very sensitive to sound; they use it to communicate, to find their way, to feed, to reproduce, etc.

Cetaceans do not have external ears, but an internal ear adapted to detect very low-frequency and very high-frequency sounds, inaudible to humans. They can even detect sound through their jaw. Hearing is an essential and vital sense for these animals, which is why it is important to adapt our behaviour at sea to avoid inflicting noise pollution on them.

**A mysterious sixth sense**

Several studies seem to demonstrate that whales are sensitive to variations in Earth’s magnetic field, allowing them to place themselves on the north-south axis when they migrate. However, this surprising ability to navigate in the oceans remains a mystery thus far.

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**PANNEAU 6/ The fin whale**

The fin whale, which is the second largest animal in the world, is extremely common in the Mediterranean. The highest densities are found between Corsica and the continent in July. It is also regularly seen in the middle of the Gulf of Ajaccio.

It belongs to the mysticete, or baleen whale, family: its jaws have plates as opposed to teeth.

To capture the shoals of krill and copepods, and the minuscule shrimps and crustaceans on which it feeds, it takes in up to 70 m3 of water before pushing it out through the plates which filter the prey. Each filtration may bring close to 10 kilogrammes of food and each fin whale can take in up to 1,800 kilogrammes every day.

 - Max. length: 25 to 27 m

 - Max. weight: 25 to 70 tons

 - Travelling speed: 15 to 25 km/h

 - Max. age: 90 years

 - Gestation: 11 to 12 months - 1 young every 3 years

- Sanctuary population: between 150 and 1,600 individuals depending on the year.

Sociable, it generally travels in compact groups comprising 2 to 3 individuals.

The females are usually bigger than the males.

It is an excellent swimmer, diving up to a depth of 250 m, and it can hold its breath for over ten minutes.

The fin whale has a fusiform body, with small pectoral fins and a large and triangular dorsal fin. The head makes up a quarter of the total length of its body, which is marked with 60 to 100 furrows starting at the lower jaw.

**How to spot it:**

* Its blowholes in the centre of its head can exhale straight up to a height of 4 to 6 metres.
* Its curved dorsal fin is situated on the posterior third of the body.
* We cannot see its tail fin when it is diving.

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**PANNEAU 7/ The sperm whale**

From the family of toothed whales (Odontocetes), the sperm whale is a sociable animal which lives in a group of ten or so individuals, led by an adult male, who is usually more imposing than the female. Its enormous head represents 1/3 of its total length.

A fantastic diver, it can go down to a depth of 2,000 metres when it holds its breath for over 1 hour, and it only stays on the surface for 5 or 10 minutes before diving again. It feeds mainly on several tons of squid (teutophagy) which it hunts deep down.

It is often spotted in the middle of the Gulf of Ajaccio due to the submarine canyon of over 1,000 metres in depth.

Unlike other cetaceans, it does not have a dorsal fin, but a series of bumps.

The sperm whale is found in warm to temperate waters and migrates south in winter and north in spring.

* Max. length: 12 to 18 m
* Max. weight: 25 to 55 tons
* Travelling speed: max. 20 km/h
* Max. age: 60 to 70 years
* Gestation: 14 to 15 months
* Sanctuary population: currently under estimation.

Gestation lasts 15 months and the young animals are breastfed for up to 2 years. At birth, it is 4 metres in length and weighs around a ton!

Male relationships within the same group are hierarchal.

Sperm whales are not often seen within the Sanctuary.

The global population of the sperm whale was heavily impacted by whaling which, although forbidden in these parts, still takes place in other parts of the world.

**How to spot it:**

* Its blowhole, located on the left-hand side of its head, exhales towards the centre of its head up to 3 metres high.
* Its dorsal fin is in the shape of a bump.
* Its tail fin is visible when it is diving.

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**PANNEAU 8/ Risso’s dolphin**

Lovers of temperate, warm and deep waters, Risso’s dolphins are sociable cetaceans who live in a pod of between 10 and 15 individuals. They have a robust body with no rostrum, and are recognisable by the many scars that mark their skin, so-called “social” marks which they inflict on each other when they fight. The older ones may also be practically white.

They swim fairly slowly, however, they can reach maximum speeds of 25 km/h. Despite its weight, it is very agile and capable of impressive leaps out of the water.

With its lower jaw only having 3 to 7 teeth, the Risso dolphin is a large consumer of cephalopods (squid, cuttlefish and octopus), which explains why it frequents depths of 600 to 1,000 metres where its food is found.

It can hold its breath for 30 minutes, although the average time it is under water is around 2 minutes.

* Length: ~ 3 m.
* Max. weight: 400 kg
* Max. age: 40 years
* Gestation: between 12 and 13 months
* Travelling speed: max. 25 km/h
* Sanctuary population: ~ 3,000 individuals

In the Mediterranean, the main concentrations are found in the Ligurian sea where they often frequent the continental slope and the bottom of the underwater troughs and canyons.

They are seen regularly throughout the year in the Sanctuary, but rarely in the Gulf of Ajaccio.

**How to spot it:**

* It poses upside down, exposing its tail fin for some tens of seconds.
* The white marks on its skin.
* Its lack of rostrum.

**Information:**

If you see an animal in difficulty or a beached animal, do not touch it under any circumstances and call the emergency services immediately by dialling 18 or CROSSMED (+33 (0)4 95 20 13 63).

They will contact the appropriate people.

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**PANNEAU 9/ The long-finned pilot whale**

Measuring up to 6 metres and weighing 3 tons, long-finned pilot whales are the largest of the Delphinidae in the Sanctuary.

It takes its scientific name (*Globicephala mela*) from the globular shape of its head. In fact, the long-finned pilot whale has a perfectly round frontal protrusion which increases in size depending on the age of the animal. Its pectoral fins are located very near the front of the body, they are bent and very long. As for its tail fin, this is relatively small and very indented.

The long-finned pilot whale is entirely black in colour except for one part of its belly, which has a round white mark, like a “tie”, starting at the throat and extending to the navel. The young animals are slightly lighter in colour.

Even though it belongs to the Delphinidae family, it is still called the “long-finned pilot whale”. It is found in the open sea and is able to hold its breath for 2 hours and dive to depths of 1,000 metres!

It is in these deep waters where they find the squid they so need to feed on.

* Max. length: 6 m
* Max. weight: 3 tons
* Max. age: 60 for the males and 80 years for the females
* Gestation: 15 to 16 months
* Travelling speed: 40 km/h
* Sanctuary population: ~ 3000 individuals

Sociable in nature, long-finned pilot whales live in groups of several-dozen individuals, which can increase to over one hundred in mating season (spring). The strong ties that unite them have been known to cause mass strandings.

Deep-water animals are usually seen in the sea between Corsica and the continent and are very rarely seen near the coast.

**How to spot it:**

* A short dorsal fin that is wide at the base
* It is entirely black in colour
* Its spherical head with no rostrum

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**PANNEAU 10/ The Ziphius**

The Ziphius, also known as the “Cuvier’s beaked whale” or even the “goose-beaked whale”, is a solitary creature, although they can sometimes be seen in small groups of 2 to 5 individuals.

Also described as a “mysterious whale”, even though it belongs to the Delphinidae family, this discrete and withdrawn species is often found in the Mediterranean. However, it rarely approaches boats and is not often seen.

Described for the first time in 1823 by the French naturalist Georges Cuvier (1769-1832), the Ziphius lives in the high seas and has a particular affiliation to underwater canyons.

Its head, with a visible rostrum, has a prominent and curved lower jaw. In males, two teeth grow from its mouth. These teeth, which are very handy during fights with other males in mating season, often leave marks on the flanks of its opponents. This is why older individuals have several more obvious marks. The skin of the Ziphius can vary from dark grey to reddish brown.

An extraordinary cetacean, this mammal can dive to the deepest depths and for the longest time. Thanks to its exceptional abilities, it can in fact dive down to hunt in depths of almost 3,000 metres, where it can stay for over an hour.

It mainly feeds on deep-sea fish and, above all, cephalopods.

As it stands, we do not know much about the Ziphius since it is rarely seen in the Mediterranean.

* Sanctuary population: estimated at 100 individuals in the Ligurian sea
* Lives in small groups: 2 to 6 individuals
* Max. length: 7 m
* Max. weight: 2 to 3 tons
* Max. age: 60 years

**How to spot it:**

- It lower jaw is longer than its upper jaw.

- It bears more obvious marks on its skin.

- It does not show its tail fin while diving.

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**PANNEAU 11/ The bottlenose dolphin**

The Bottlenose Dolphin (or the Tursiops truncatus) is the most well-known species of the Delphinidae family to science, but also to the general public thanks to the success of the TV series Flipper.

Its characteristic smile, due to the creases of its short and wide rostrum, and its triangular and curved fin of twenty-or-so centimetres make it easy to recognise.

It can measure 4 metres in length and weigh up to 400 kg. It has a muscly, robust and fusiform body, allowing it move through the water with ease and achieve maximum speeds of up to 45 km/h.

Its back is varying shades of grey. Its belly is white.

The Bottlenose Dolphin is one of the few Mediterranean cetaceans to live near the coast where it can be seen all year round. It is also often seen in the Gulf of Ajaccio. It rarely ventures beyond the continental shelf, and is therefore submitted to strong pressure from human activities.

Sociable, it usually lives in groups of 2 to 6 individuals, and sometimes up to fifty-or-so animals.

Extremely playful, the Bottlenose Dolphin is particularly fond of swimming at the bow of a boat. It also performs a myriad of acrobatic feats when it leaps out of the water.

It feeds on fish, cuttlefish or squid, which it hunts using echolocation, but also occasionally crustaceans. When hunting, it can go down to depths of up to 30 metres for 4 to 5 minutes, but it never stays for longer than 12 minutes without coming back to the surface to breathe.

* Sanctuary population: around 1,000 individuals
* Maximum length: 4 metres
* Maximum weight: 400 kg
* Maximum age: 30 years
* Gestation period: 12 months

**How to spot it:**

- It is the only one to regularly come near to the coast.

- Its fin is in the shape of a scythe.

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PANNEAU 12/ **The common dolphin and the striped dolphin**

Pelagic cetaceans, the common dolphin and the striped dolphin both live far from the coast. They have fairly similar characteristics, measuring between 1.80 m and 2.60 m in length and weighing up to 150 kg, meaning they are often mistaken for each other. We can tell them apart by their skin: the common dolphin is dark grey with a kind of hourglass marking on its flanks, whereas the striped dolphin has a bluish-grey back and has a long grey or white scarf down its sides.

Beyond the coastal zone, the striped dolphin is the most abundant species in the Mediterranean.

We estimate that there are between 25,000 and 45,000 individuals in the Pelagos Sanctuary, and up to 250,000 in the whole of the Mediterranean. Very sociable, it lives in pods comprising several dozen animals. Curious and playful, it likes to draw alongside boats and swim by their bows. It feeds on small fish, crustaceans and squid.

Contrary to what its name leads you to believe, the common dolphin is quite rare in the Mediterranean. Sociable, it lives in pods of between 10 and 100 individuals. This playful cetacean, with a fusiform and slender body, travels at a speed of 40 km/h. It mainly feeds on migratory fish and pelagic cephalopods. When they dive they can stay under water for up to 8 minutes and reach depths of 280 metres below the surface.

**The striped dolphin:**

* Maximum length 2.50 m
* Maximum weight: 150 kg
* Maximum age: 57 years
* Gestation period: 12 months

**The common dolphin:**

* Maximum length: 2.60 m
* Maximum weight: 140 kg
* Maximum age: 25 to 30 years
* Gestation period: 10 to 11 months

**How to spot them:**

* The common dolphin has a mark in the shape of an hourglass along its flanks.
* The striped dolphin has a long scarf that is lighter than its skin colour along its flanks.

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**Panneau 13/ Respiration in cetaceans**

As with all mammals, cetaceans have lungs and must regularly come to the surface to breathe, unlike fish who breathe through gills. In larger cetaceans, we can see the plume of breath that they emit with each exhalation. This plume shoots out through the blowholes that are found on the top of their heads, allowing them to breathe. Equipped with an entirely watertight sphincter, the blowhole is impermeable under water.

The edge of the blowhole is sensitive to pressure, which means they can start breathing even before they break the surface.

In order to feed under water without drowning and to not constantly take in water, cetaceans do not breathe through their mouths and even have separate feeding and breathing tubes. Thanks to this adapted respiratory system, inhalation and exhalation happen quickly, without them having to stop swimming or slow down.

In cetaceans, breathing is deliberate and not automatic, which requires a state of permanent consciousness. This is why cetaceans sleep with only one half of their brain at a time, allowing them to continue swimming and therefore rise to the surface even during their resting phase.

Cetaceans are able to renew more than 80 % of the volume of air in their lungs with each inhalation, whereas humans only renew 10 to 15 %. Their rib cages are particularly flexible giving them a large capacity for breathing. Their lungs are solid and contain cartilage in the air sacs, making them resistant to pressure.

Cetaceans are not susceptible to nitrogen narcosis or decompression sickness: their physiology, most notably their pulmonary and blood related physiologies, can trap nitrogen and dissolve gases better than humans.

When diving, only the vital organs are oxygenated, that is to say the brain, the heart, the sonar, the eyes, and the placenta in pregnant females. The other organs function independently.

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