MEDTOP - MONITORING THE OPEN SEAS

FIELD GUIDE TO TRACKING TOP PELAGICS IN THE SOUTH WEST MEDITERRANEAN
The Toftevaag has been “Monitoring Top Pelagics in the South West Mediterranean” since 1990, gathering one of Europe’s most extensive datasets on biodiversity. The dataset helps towards the design of Marine Protected Areas and develops technological measures for reduce risks and human impact for whales, dolphins, marine turtles and seabirds.

This field guide is developed for the participants of surveys conducted on board the Toftevaag, for the conservation of marine biodiversity. These projects are conducted under the main international frameworks and strategies of United Nations, Convention on Migratory Species, the European Union, and very specially the Marine Turtle Conservation Act and Marine Turtle Conservation Fund from the US Fish and Wildlife Department.
The home range of our species

Some travel from the Caribbean to the east of the Mediterranean.
And some dive up to 3,000 meters down!
Our Research Site
WHAT YOU NEED

**Binoculars** - We have binoculars on board, but we recommend that you bring your own

**Concentration** – You won’t have many hours of look out watch per day. But when you are on look out, we count on you!
The Species

- Common dolphins
- Striped dolphins
- Bottlenose dolphins
- Long finned pilot whales
- Risso’s dolphins
- Killer whales
- Fin whales
- Sperm whales
- Cuvier’s beaked whale
- Loggerhead turtle
- Green turtle
- Seabirds
- Fish, jellies,....
**Cetaceans**

- Common dolphins
- Striped dolphins
- Bottlenose dolphins
- Long finned pilot whales
- Risso’s dolphins
- Killer whales
- Fin whales
- Sperm whales
- Cuvier’s beaked whale

**Detecting cetaceans**

- Cues
- Associated cues
- Behaviour
- Group size
1. Fin / back
2. Blow
3. Jump
4. Splash
Detecting target species - associated cues

1. Birds
2. Smell
3. Bait balls
4. Hydrophone
Detecting target species - behaviour

Behaviour affecting detectability

- Animals avoid vessel
- Animals approach vessel
- Diving behaviour
- Conspicuous behaviour
- Inconspicuous behaviour
Detecting target species - behaviour

Behaviour affecting detectability

- Animals avoid vessel
- Animals approach vessel
- **Diving behaviour**
- Conspicuous behaviour
- Inconspicuous
Detecting target species - behaviour

**Behaviour affecting detectability**

- Animals avoid vessel
- Animals approach vessel
- **Diving behaviour**
- Conspicuous behaviour
Detecting target species - behaviour

Behaviour affecting detectability

• Animals avoid vessel
• Animals approach vessel
• Diving behaviour
• Conspicuous behaviour
• Inconspicuous behaviour
Detecting target species

**Group size, behaviour, sea state, light,...**
- Large groups – compact (less than 50m between individuals)
- Large groups – dispersed
- Small groups
Detecting target species

**Group size**

- Large groups – compact (less than 50m between individuals)
- Large groups – dispersed
- Small groups
Odontocetes - diving deep for deep squid
Odontocetes - diving shallow for deep squid
Odontocetes - surface feeding on small pelagics
Odontocetes - diving for demersal fish
SPECIES - Common dolphin

IUCN Status 2020: Least concern
SPECIES - Striped dolphin

IUCN Status 2020: Least concern
SPECIES - Bottlenose dolphin

IUCN Status 2020: Least concern
SPECIES - Long-finned pilot whale

IUCN Status 2020: Least concern
SPECIES - Risso’s dolphin

IUCN Status 2020: Least concern
SPECIES - Orca

IUCN Status 2020: Data deficient
SPECIES - Fin whale

IUCN Status 2020: Vulnerable
SPECIES - Sperm whale

IUCN Status 2020: Vulnerable
SPECIES - Cuvier’s beaked whale

IUCN Status 2020: Least concern
Marine Turtles

Loggerhead turtle
Green turtle
Leatherbacks and other rare observations
Species: Loggerhead turtle
Species: Green turtle
Species: Leatherback turtle
Detecting turtles

Cues

Associated cues

Behaviour

Detecting target species - behaviour

Behaviour affecting detectability

- Animals avoid vessel
- Animals approach vessel
- Diving behaviour
- Conspicuous behaviour
- Inconspicuous behaviour
Detecting target species - behaviour

**Behaviour affecting detectability**

- Animals avoid vessel
- Animals approach vessel
- **Diving behaviour**
- Conspicuous behaviour
- Inconspicuous behaviour
Detecting target species - behaviour

Behaviour affecting detectability
• Animals avoid vessel
• Animals approach vessel
• Diving behaviour
• Conspicuous behaviour
• Inconspicuous behaviour
Seabirds

Cory shearwater
Manx shearwater
Mediterranean shearwater
Storm petrel
Adouin gull
Sandwich tern
Black tern
Osprey
....other species
Species - terns

Sandwich tern – Sterna sandvicensis

Black tern – Chlidonias niger
**Species - gulls**

Storm petrel – *Hydrobates pelagicus*

Adouin gull – *Larus adouinii*
Species - shearwater

Cory’s shearwater - Calonectris diomedea

Balearic shearwater - Puffinus mauretanicus

Yelkouan shearwater - Puffinus yelkouan
Species - shearwater

Yelkouan Shearwater
- usually protruding feet
- pale eyeing often prominent
- brown-black uppersides have less contrast with white underparts
- dusky undertail
- variable amounts of dark on underwing and undertail
- flies in tight flocks
- often lifts head
- tends to fly in lines
- can look brownish in strong sunlight

Manx Shearwater
- pale spur behind ear coverts
- high contrast between black uppersides and white underparts
- gleaming white underparts with occasionally marked axillaries
Other commonly observed fauna

- Swordfish
- Sun fish
- Basking shark*
- Jellies – salps, velellas, pelagia noctiluca,..
- Bait balls (small pelagics)
- Sharks*
Species - fish

Swordfish - *Xyphias gladius*

Sun fish - *Mola Mola*
Species - jellies

Ctenophores

Pelagia noctiluca

Salpas

Vellelas
Species - small pelagic fish, bait balls

Flying fish

Sardines
Species - cartilaginous fish

Blue shark

Basking shark
Species - cartilaginous fish

Giant devil ray - *Mobula mobular*

IUCN Status 2020: Endangered
Homo sapiens

- Maritime transport
- Fishing
- Energy
- Security
- Tourism
- Marine litter / plastic pollution
Species: Human Activities

Tanker

Cargo
Species: Human Activities

Fast ferry

Ferry
Species: Human Activities

Military

Seismic
Species: Human Activities

Sailboat

Motor boat
Species: Human Activities

Fishing boat / sailing motoring
Species: Human Activities

Trawler (bottom)
Species: Human Activities

Longline (surface)
Species: Human Activities

Gillnet / trammel net
Species: Human Activities

Trap net
Species: Human Activities

Sports fishing
Species: Marine litter
Species: Ghost fishing gear
Species: Microplastic
This research is conducted with the support of: