

ANNEX I



WhaleSafe

**PROTOCOL OF CONDUCT FOR DISTURBANCE AND COLLISION RISK
MITIGATION OF SPERM WHALES IN THE WHALESAFE PROJECT AREA.**

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-BACKGROUND-

The sperm whale (*Physeter macrocephalus*) is one of the largest and most widely distributed of all marine mammals. It is one of the eight frequently cetacean species sighted in the Mediterranean sea. e. The Mediterranean sperm whale population is present in the IUCN Red List where it is recognized as Endangered.

Sperm whale may be particularly sensitive to noise pollution, resulting in changes in behaviour and distribution in response to unnatural low-frequency sounds (i.e. underwater pulses made by pingers or submarine sonar, seismic testing with air guns, close approaches by survey vessels and high-speed whale watching vessels). Sperm whale is a potentially affected species by increases in oceanic noise due to its long and deep dives. These noises can have a variety of harmful effects on this marine mammal, such as displacement to quieter areas for feeding and breeding and perturbation of communication. Sperm whales spend long periods (typically up to 10 minutes) "rafting" and socializing at the surface between deep dives. This behaviour make them more vulnerable to collision compared to other cetacean species. This threat will be. There were also instances in which sperm whales approached vessels too closely and were cut by the propellers. Species may be killed or injured by collisions with ships. This problem is likely to worsen as ships become more numerous, larger, and faster.

The disturbance from intense marine traffic (development of "highways of the sea") and collisions with vessels, especially hydrofoils and other passenger craft including high-speed ferries, is a serious threat. More than 6% of sperm whales stranded in Italy had died after being struck by a vessel, and 8% of photo-identified individuals in the Ligurian Sea have wounds or scars that were clearly caused by a collision.

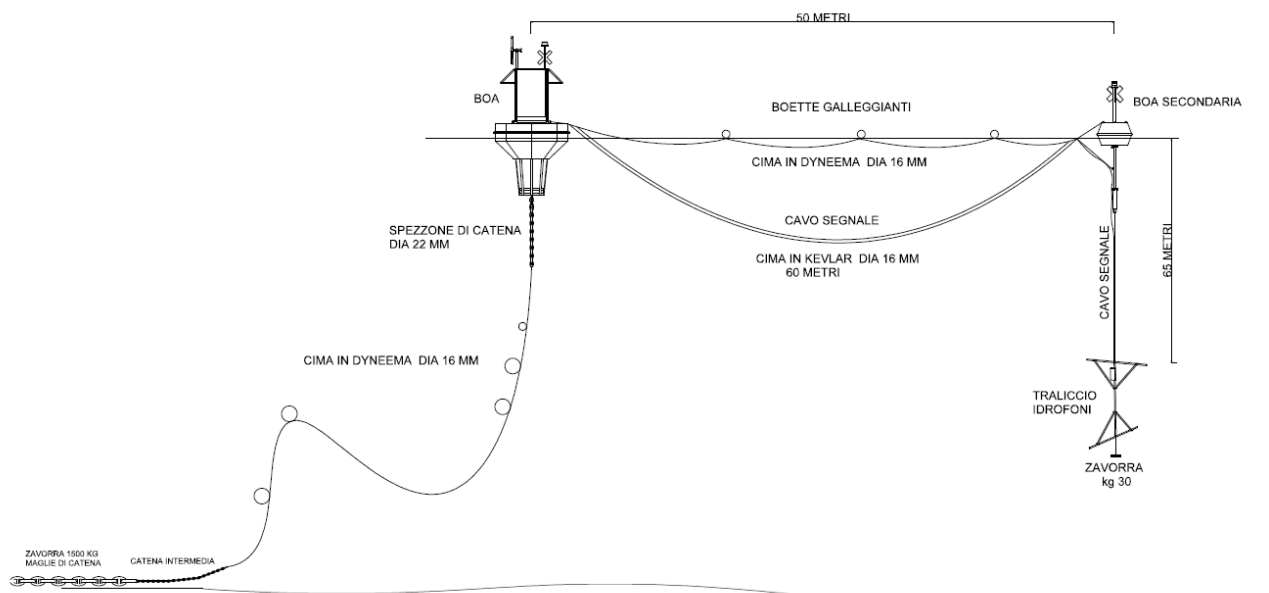
The aim of this document is to define a protocol of conduct for disturbance and collision risk mitigation of sperm whales in the WHALESAFE project area.

-THE WHALESAFE ACOUSTIC SYSTEM-

The system is based on two detection unit each capable to reconstruct the spermwhale acoustic signal. From the joint analysis of the two direction it is possible to localize the animal and to track it during its underwater activity, and eventually predict the emersion point.



Each detection unit is based on a main buoy (shown in the picture) equipped with solar panels and a data transmission system, and a secondary buoy connected to the main with a cable 50 m long that provide also the data transmission. Suspended to the secondary buoy at a depth of 70 m, four hydrophones detect the cetaceans sound.



The buoys are moored in the points:

44.2120 N 8.4945 E

44.2195 N 8.4985 E

And are free to move up to 100 m from the central position according to the sea and wind conditions

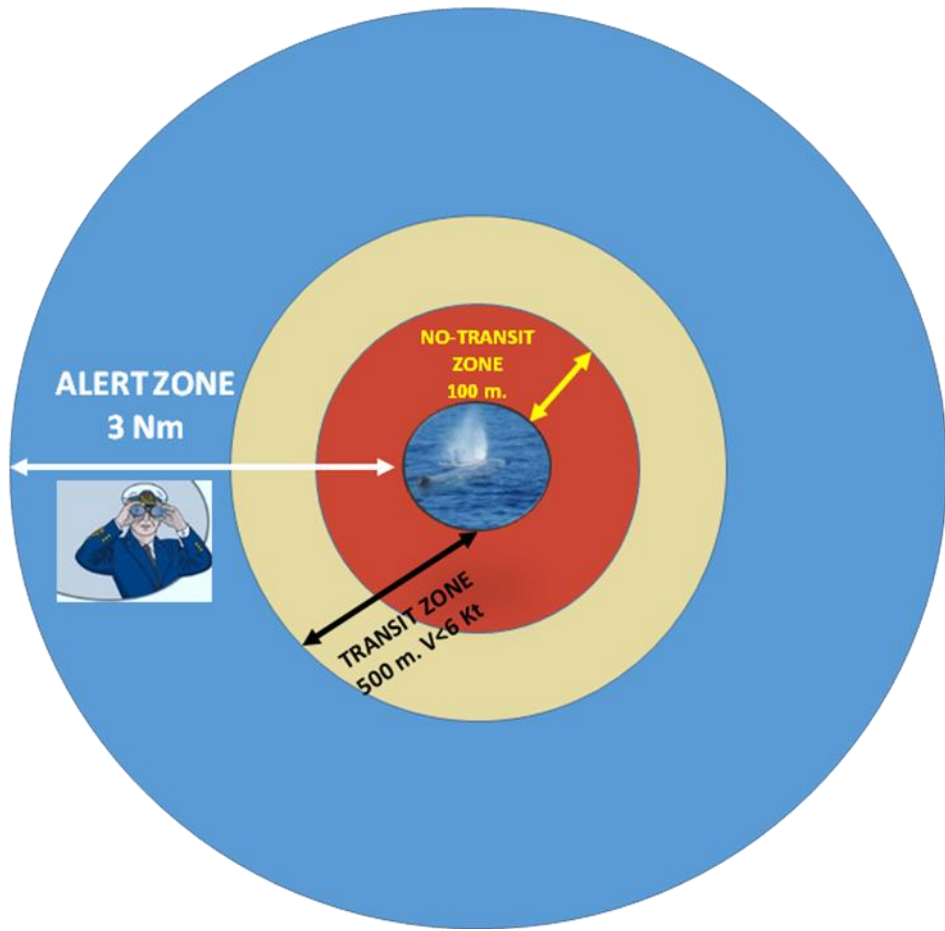
-PROTOCOL OF CONDUCT PROPOSAL-

Four levels of alarm are foreseen:

- **GREEN:** no sperm whale in the area;
- **YELLOW:** one or more sperm whales detected underwater;
- **ORANGE** (duration: 15 minutes): one or more sperm whales breathing at the surface, no ship on collision course (please follow the protocol of conduct);
- **RED:** one or more sperm whales breathing at the surface, ship/s on collision course (please follow the protocol of conduct).

When the sperm whale is breathing at the surface, three areas are defined around the animal (rules of the protocol of conduct):

- **NO-TRANSIT ZONE:** Transit is not recommended within 100 m from the sperm whale.
- **TRANSIT ZONE:** transit is recommended at distance lower than 500m from sperm whale at speed lower than 6Kt.
- **ALERT ZONE:** Within 3nm from the point foreseen for the surfacing of the sperm whale (reported as described in the next paragraph), ships have to keep particular attention by employing observers.



-INFORMATION TRANSFER-

Savona Coast Guard, through monitoring of Maritime Traffic in own responsibility area, will receive data entries from buoys system about the position and time of probable presence and emergence of cetaceans in the area . This information will be transmitted by radio (VHF channels), only in case of presence of naval activity in traffic affected areas . Therefore, Coast Guard's Operations Room will contact only ships involved during transit by providing information received . This Communication will be only an informative character and does not foresees any kind of change or obligation in navigation elements from ships. It will be the discretion of EVERY single board Command to value the Information receipt and possibly take it into account the purpose of navigation .

NOTICE TO MARINERS

Near the buoys ships must maintain a distance of 100 meters . the buoys are marked with a top mark " X " and yellow color , at night with a blinking yellow light. See ordinance nr .70/2016.

