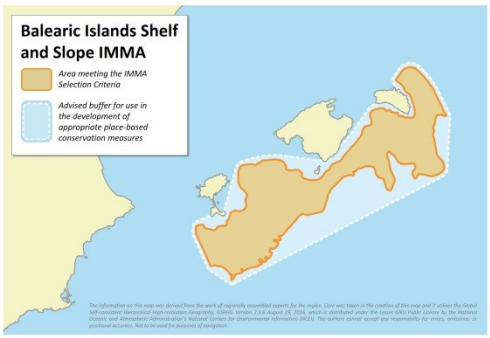
Balearic Islands Shelf and Slope Important Marine Mammal Area – IMMA



Area Size

22,708 km^2

Qualifying Species and Criteria

Sperm whale -
Physeter macrocephalus
Criterion A; C (1, 2)

Other Marine Mammal Species Documented

Delphinus delphis, Globicephala melas, Grampus griseus, Stenella coeruleoalba, Tursiops truncatus

Summary

The deep-water shelf and slope areas of the eastern Balearic archipelago contain a high density of Mediterranean sperm whales (*Physeter macrocephalus*). Both social units and mature males are consistently observed here. This ecologically important area thus also has an important role as one of the known breeding grounds for the species in the Mediterranean. The species is distributed from the deeper continental shelf to waters of 2,000-2,500m depth. The Mediterranean sperm whale sub-population is Endangered and is threatened in the area mainly by net entanglement and ship strikes.

Description of qualifying criteria

Criterion A - Species or Population Vulnerability

The Mediterranean sperm whale population is classified as an "Endangered" subpopulation in the IUCN Red List of Threatened Species based on the inference that, "in the absence of effective management to mitigate ongoing threats," the population is continuing to decline (Reeves and Notarbartolo, 2006; Notarbartolo di Sciara et al., 2014). The principal threats are from ship strikes and entanglement in driftnets, followed by ingestion of plastic debris, anthropogenic noise, chemical pollution, and disturbance by poorly managed whale watching operations (Rendell and Frantzis, 2016).

The area has had almost a decade of annual dedicated research cruises in the area. The data used to provide evidence on the importance of this area for the sperm whales come primarily from the previously referred surveys (Pirotta et al., 2011; Rendell et al., 2014).

Criterion C: Key Life Cycle Activities

Sub-criterion Ci: Reproductive Areas

The area is one of the few regions in the western Mediterranean basin in which social groups and singleton males are both sighted regularly - indicating it is an important area for contact between mature males and

reproductive females. Calves are also regularly sighted with the female groups.

Criterion C: Key Life Cycle Activities

Sub-criterion Cii: Feeding Areas

Bathymetric features and the hydrodynamic processes in the area act to concentrate prey for sperm whales and evidence suggests that the south-face continental shelf slopes are an important foraging habitat for this population. Acoustic data confirm the activity of feeding. Sperm whales in the area concentrate in areas where the bottom aspect is approximately between 0° and 210° (Pirotta et al., 2011), i.e. where the shelf wall is oriented north-eastward, eastward or southward. Depth might be associated with the bathymetric zonation of cephalopod assemblages, while slope aspect likely interacts with north-flowing Atlantic water drawn by the Balearic Current to determine the down welling/upwelling movements that are believed to influence the availability and concentration of sperm whale prey.

Supporting Information

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Annex I

Supplementary Maps