



Evaluating the influence of professional fishery in the distribution of bottlenose dolphin (*Tursiops truncatus*, Montagu 1821) and seabirds in the Sicilian Channel.

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Cetaceans and seabirds are top-level predators that serve as sentinels of the health and status of lower trophic levels in the marine ecosystem. All cetaceans and some seabirds species are protected under the Habitat Directive and the Birds Directive, require to select, designate, and protect sites that support certain natural habitats or species as Special Areas of Conservation (SACs) and Special Protection Areas (SPAs, specifically for birds species), in order to create a Natura2000 network. For this reason knowledge of occurrence is fundamental. Bottlenose dolphin (*Tursiops truncatus*, is listed in the Annex II of the Habitat Directive) is a cetacean species associated with shallow waters and impacted by many anthropogenic activities, among these, the professional fisheries is noteworthy. From this perspective the aim of this study was to investigate the interaction between top predators (cetaceans and seabirds) and professional fisheries in the waters off the Agrigento Province (Sicilian Channel). The Sicilian Channel is classified as Ecologically or Biologically Significant Areas (EBSA), means the areas important for the healthy functioning of the oceans and service they provide. It is a key feeding area for at least 30% of the global population of Scopoli's shearwater, 10% of the global population of the vulnerable Yelkouan shearwater colony, and the colony of the endemic Mediterranean subspecies of storm-petrel *Hydrobatas pelagicus melitensis*. During forty-three daily survey bottlenose dolphins were encountered thirty-two times: seven times over eighteen daily survey sin 2016 and twenty-five times over twenty-five daily surveys in 2017. Twenty-three specimens were identified in 2016 and around the 80% of them were recaptured in 2017. Considering both years sightings, in the 56% of occurrences dolphins were engaged in feeding activity behind fishing boats. The main typologies of fishing practiced in the area and taking into account in the study are trawler and mid-water pair trawler. To understand the entity of top predators-fishery interaction, a geospatial analysis approach was applied to create distribution maps of the top predators and to compare it with the map of the fishing area. The knowledge about the ecology and habits of a species in a specific area, mainly for a resident species like bottlenose dolphins, is very important to understand the pressure to which is exposed and to evaluate the potential impact of anthropogenic activities.