

How do Mediterranean and Atlantic seabirds interact with fishing fleets and fish farms?

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The study methodology includes the setting of geolocators (GPS) to seabirds.
Credit: Raquel Castillo (UB-IRBio)

Most of the food areas of the Mediterranean and Atlantic seabirds are in the spaces of the Spanish Network of Marine Protected Areas (RAMPE), which gathers several protection figures for the conservation of the marine natural heritage. However, there are areas with no protection figures –such as the Gulf of Mazarrón, and the coasts of the

Barcelona province area– which are determining for species such as the European storm petrel and the Balearic shearwater, respectively.

These are some of the conclusions of the AMARYPESCA project to assess the efficiency of the Spanish Network of Marine Protected Areas and improve the fishing and aquatic management as well as the conservation of ocean seabirds. The project, funded by the Biodiversity Foundation, is led by Jacob González-Solís, professor at the Faculty of Biology and the Biodiversity Research Institute (IRBio) of the University of Barcelona, together with the Association of Naturalists of Southeast (ANSE), and counts on the collaboration of the Spanish Institute of Oceanography (IEO).

Seabirds and fishing fleet: fighting against accidental bycatches

The exploitation of fishing resources is a constant threat for the future of many seabirds whose populations are in regression worldwide. Only in the Mediterranean, the accidents coming from bird accidental bycatches affect nearly 5,000 specimens per year.

The AMARYPESCA project focused on the analysis of the interactions between seabirds and human activities regarding the marine areas within RAMPE. The study methodology includes the setting of geolocators (GPS) to seabirds and fishing boats that volunteer, apart from the vessel monitoring system to see the positioning of the operational fishing fleet in the Canary Islands and the peninsular Levantine (in collaboration with IEO). A new algorithm has enabled the integration of the time and space dataset to precise how and when the birds interact with fishing fleet and fish farms.

Within the project framework, researchers monitored several

populations of the Scopoli's shearwater (*Calonectris diomedea*), Cory's shearwater (*Calonectris borealis*), the European Storm petrel (*Hydrobates pelagicus* and *Hydrobates p. melitensis*) and the Bulwer's petrel (*Bulweria bulwerii*), as well as the European Shag (*Gulosus aristotelis*) and the Yellow-legged gull (*Larus michahellis*). Moreover, the study includes data provided by other national and international research teams on the monitoring of the Balearic shearwater (*Puffinus mauretanicus*), the Yelkouan shearwater (*Puffinus yelkouan*) and the Audonin's gull (*Ichthyaetus audouinii*).

Beyond Spanish protected marine areas

Most of the interactions of the cormorants and Scopoli's shearwater with fishing fleet occur within the RAMPE areas, largely in trawler, encircling and artisanal fishing that work close to the coasts and provide food to the seabirds daily through the discards.

"RAMPE areas cover a great part of the waters that surround the breeding colonies of the studied populations. This could be particularly important in species with a low mobility during the [breeding season](#), such as the Audonin's gull, the European shag and the Cormorant," notes Professor Jacob González-Solís, head of the Seabird Ecology Group of the UB-IRBio.

"However, most of these places do not have management measures to protect these birds in the marine environment," warns the researcher. "Therefore –he continues– they should have management plans to allow a regulation of the activities in the marine environment."

Limiting recreational fishing, applying mitigation measures to reduce accidental bycatches (tori lines, fishing gear night setting, etc.) and even the temporary removal of fishing activities during breeding seasons of some species are some of the strategies that could have a real impact on

the [seabird](#) populations.

Identifying risk areas to protect seabirds

The RAMPE protection areas only cover a small area regarding the mostly distributed seabirds in the oceanic environment (such as the Bulwer's petrel and shearwaters). "In these cases, the management of fisheries and application of mitigation techniques to reduce the risk of bycatches can be more efficient than establishing coastal protected areas," notes researcher Virgínia Morera, member of the Seabird Ecology Group (UB-IRBio).

Experts warn that only a small part of the interactions of the fishing fleet with the Balearic shearwater –[endangered species](#) according to the International Union for Conservation of Nature (IUCN)– take place within the RAMPE. "Therefore, it is necessary to continue with the research efforts to protect the areas with a high risk of interaction with fisheries with no protection figures and to identify decisive areas for the conservation of seabirds in the country," states Virgínia Morera.

Regarding fish farms, the European Shag and the Coromant are the species that visit these infrastructures the most. According to the experts, it is necessary to apply measures to limit the interaction of birds with [fish](#) farms, to prevent them from being dependent on it as a food source and to limit the massive populational growth of species like the European Shag.

More information: sites.google.com/view/seabirdecology/home-es

Provided by University of Barcelona

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