

CETACEAN EXCLUDER DEVICES TO MITIGATE THE DOLPHIN BYCATCH IN PAIR TRAWL FISHERIES

Nair Vilas-Arrondo*¹, Eva Velasco¹, Paula Gutiérrez-Muñoz¹, Camilo Saavedra¹
and Julio Valeiras¹

¹ Centro Nacional Instituto Español de Oceanografía-CSIC, Centro Oceanográfico de Vigo,
Subida a Radio Faro 50-52, 36390 Vigo, SPAIN.

nair.vilas@ieo.csic.es, eva.velasco@ieo.csic.es, camilo.saavedra@ieo.csic.es,
paula.gutierrez@ieo.csic.es, julio.valeiras@ieo.csic.es

Abstract:

Fishing bycatch mortality is one of the greatest threats to cetaceans worldwide. Approximately 500,000 marine mammals are accidentally caught each year by different fisheries around the world (1, 3). Over the last decade, a concerning increase in the number of strandings with bycatch evidences has been recorded in the Bay of Biscay and Iberian Coast MSFD subregion (ABI). For 2020, annual bycatch estimate of common dolphins (*Delphinus delphis*) was higher than the annual estimate, of around 4,000 individuals, for 2016-2018 in this subregion (2). OSPAR provides a threshold of 985 individuals for annual anthropogenic mortality, demonstrating their vulnerability to fishing gears.

In 2020, the European Commission stated a request on emergency measures to prevent bycatch in the Northeast Atlantic. ICES proposed several measures. To address this issue, the CetAMBICion project brings together France, Spain and Portugal, in a joint program, trying to estimate and reduce cetacean bycatch in the ABI, in collaboration with the fishing industry. The objectives are aligned with the Habitats Directive and the Common Fisheries Policy.

Bycatch and stranding rates per fishery have been used to identify the areas and gears with greatest risk of producing bycatch of cetaceans. Researchers have tested technical fishing measures, such as acoustic deterrents and cetacean excluder devices (CEDs), to mitigate bycatch on board pair trawling in northern Spain. The CED consists of a net device with a grid that allows fish to enter the net and dolphins to exit at the top of the fishing gear, being effective in releasing cetaceans and other bycaught species. Criteria for determining its effectiveness in the fishery studied must include both success rate of dolphin releases and no losses in fish catches. Therefore, each device must be designed specifically for each fishery. The first trials of devices designed for pair trawling are showing promising results.

Key words: Bycatch, Cetacean, Trawling, Technology

Acknowledgments: The authors acknowledge the collaboration of fishing associations and crews of fishing vessels during pilot experiments at sea. This work was made within the Project 'Coordinated Cetacean Assessment, Monitoring and Management Strategy in the

Bay of Biscay and Iberian Coast sub-region (CetAMBICion)' cofounded by European Commission's DG ENV/MSFD 2020 (Marine Strategy Framework Directive) call.

References:

- (1) Gray, C. A., & Kennelly, S. J. (2018). Bycatches of endangered, threatened and protected species in marine fisheries. *Reviews in Fish Biology and Fisheries*, 28(3), 521-541.
- (2) ICES. 2021. Workshop on estimation of MOrtality of Marine MAMmals due to Bycatch (WKMOMA). ICES Scientific Reports. 3:106. 95 pp. <https://doi.org/10.17895/ices.pub.9257>
- (3) Sacchi, J. (2021). Overview of mitigation measures to reduce the incidental catch of vulnerable species in fisheries. Studies and Reviews No. 100 (General Fisheries Commission for the Mediterranean). Rome, FAO.