

Silencio Project: Studying the viability of using electric propulsion to small inshore fishing boats to reduce their acoustic impact in the environment

Clara Alméjida¹, Pablo Álvarez¹, Antonio Cardenal-López², Ignacio González¹, Enoc Martínez³, Joaquín del Río³, Cristian Simoes¹, Soledad Torres-Guijarro², Marta Vazquez¹ and Silvia Torres¹

¹Unidad de Tecnologías Marinas, Centro Tecnológico del Mar-Fundación CETMAR, C/Eduardo Cabello s/n 36208 Vigo (Pontevedra), utmar@cetmar.org, storres@cetmar.org

²atlanTTic, Universidade de Vigo, Escola de Enxeñaría de Telecomunicación, 36310 Vigo (Pontevedra), España, cardenal@gts.uvigo.es, soledadtorres@uvigo.es

³SARTI-MAR, Observatorio OBSEA, Universitat Politècnica de Catalunya, Rambla Exposición 24 08800 Vilanova i la Geltrú (Barcelona), enoc.martinez@upc.edu, joaquin.del.rio@upc.edu

Abstract

Silencio develops innovative sustainable solutions to reduce underwater-noise impact of fisheries and shell-fisheries in ecosystems assessing the use of electric propulsion by small inshore fishing boats. An hydrophone is installed in Cortegada platform (Ría de Arousa, near Marine ZEPA Rías Baixas and Illas Atlánticas National Park), from RAIA Observatory, focused in computing sound pressure levels at the targeted frequencies of the Marine Strategy Framework Directive to characterize the ambient underwater-sound. Records are being treated and studied by the Universidade de Vigo to detect natural and human underwater-sound sources. Besides, OBSEA Observatory-UPC will install another hydrophone to compare the underwater-sound records and to assess the capability of applying Silencio algorithms to other records. Moreover, more usual inshore fishing activities are typified (fishing gear, length, using-time and distance, power and uses of the engine, gas consume, docker facilities, etc.) to assess the capability of performing these fishing activities by electric propulsion attending to autonomy, volume and weight of batteries, price, profitability, etc. Some of these activities will be recreated by the use of some own-developed electric outboard engines and the underwater-noise and carbon-footprint will be quantify. Further, Silencio spreads the idea of an environmentally sustainable, socially responsible and economically viable fishing sector.

Keywords: Underwater noise, noise monitoring, acoustic impact, Electric engines, Inshore fishing