

ANCHEVA2018

Principal Investigator
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(CNR-IAMC)



RV G. Dallaporta

category: Regional
gross register tonnage (GT): 285
length overall (m): 35.3
breadth (m): 7.7
depth (m): 4.1
draft (m): 3.0
service speed (kn): 11.5

Cruise Location
Strait of Sicily
Southern Tyrrhenian Sea
Southern Ionian Sea

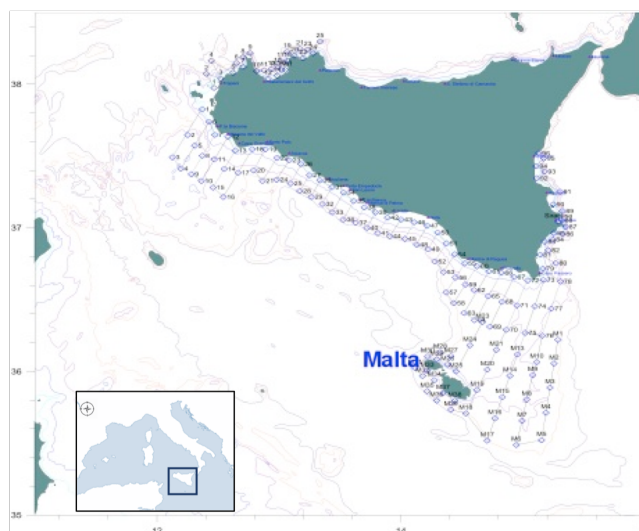
Disciplines
Biology Resources
Marine ecology and monitoring

Activities
Water sampling
Pretreatment and analysis of water samples
Seabed sampling
Fisheries sampling
Stations recovery
Sea placement
Acoustic survey

Main Equipment
Seabird CTD911plus and rosette, Echosounder SIMRAD EK 60 with 3 GPT and 3 split beam transducers 38, 120 e 200 khz, Simrad ITI Trawl monitoring system

One of the main objectives of marine sciences is to give support to the research on the status of exploitation of the biological resources and on the effects of environment. Substantial improvements were made in the basic knowledge both on ecosystems and on physics, chemistry, biology, geology. However, the ability to foresee the answer of the ecosystem to the combined effects of fishing and climatic variability is still rudimentary. In this context, many reasons have brought the international scientific community to propose the adoption of multidisciplinary approaches for studying marine ecosystems. However, these types of studies cannot disregard the evaluation of the state of the marine ecosystems and the biological resources. In carrying out the research, attention will be focused on the physical aspects of the sea and on the biology of pelagic fish populations (sardine, anchovy, round sardine, etc.) in the Strait of Sicily (Figure 1). On one hand, the echo-survey and the application of Egg production method (DEPM) will provide data on the reproduction, the distribution and abundance of the target species; on the other hand, the analysis of the oceanographic data, acquired with a multi-parametric probe, will allow conducting a study on the vertical and horizontal distribution patterns of the schools in relation to the main physical variables of the sea. The on board activities will be carried out day and night in all the study area. The data acquisition protocol foresees that the acoustic data are acquired during the day time along transects perpendicular to the coast (speed around 10 knots). For the species identification of the insonified fish schools and for the analysis of the size class distribution of the populations, hauls will be performed every day with pelagic trawl. At the end of each transect and at some intermediate points of longer transect, CTD casts will be collected when the vessel is moored, in order to measure some physical variables of the sea. Considering that the fundamental characteristic of this type of research is to be multidisciplinary, different collaborations have been established in order to cover the various necessary competences for an effective development of the research. In this respect, the outstanding collaborations with the Fishery Acoustics Laboratory of the Vnro in Moscow (Russia) are fundamental. Last but not least, the scientific value of the proposed survey should be underlined as regards the standardization of the acoustic and biological investigation methods among the scientists that will participate to the proposed survey and to the MEDiterranean Acoustic Surveys on small pelagics.

Figure 1: Investigated area



Basilone, G., Mangano, S., Pulizzi, M., Fontana, I., Giacalone, G., Ferreri, R., Gargano, A., Aronica, S., Barra, M., Genovese, S., Rumolo, P., Mazzola, S., Bonanno, A. (2017). European anchovy (*Engraulis encrasicolus*) age structure and growth rate in two contrasted areas of the Mediterranean Sea: The paradox of faster growth in oligotrophic seas. *Mediterranean Marine Science*, 18 (3), pp. 504-516.

P. Rumolo, A. Bonanno, M. Barra, E. Fanelli, M. Calabro, S. Genovese, R. Ferreri, S. Mazzola, G. Basilone G. (2016) Spatial variations in feeding habits and trophic levels of two small pelagic fish species in the central Mediterranean Sea. *Marine Environmental Research*, 115, 65-77