SPATIO-TEMPORAL DISTRIBUTION OF RECRUITS OF HAKE (*MERLUCCIUS MERLUCCIUS* L.) IN THE CALABRIAN TYRRHENIAN SEA (CENTRAL MEDITERRANEAN)

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Abstract
The distribution of hake (*M. merluccius*) recruits has been investigated along the Calabrian Tyrrhenian coasts. Data coming from national and international trawl survey projects have been integrated with seasonal catches carried out between 2004 and 2005 in the framework of a regional research SFOP-POR project. Two well defined areas, although characterized by spatio-temporal variability, were identified between 100 and 300 m in the Gulf of S. Eufemia and near C.po Suvero.
Keywords : Fishes, Recruitment, Tyrrhenian Sea, Western Mediterranean.

The identification of nursery areas of the hake *Merluccius merluccius* and their variability in space and time is very important for its management. The recruitment patterns of hake have been studied in many Mediterranean sites [1, 2, 3] but the information about seasonal variations in recruitment is still scarce. Along the Tyrrhenian coast of Calabria research trawl surveys (GRUND and MEDITS) which were carried out during the last ten years provided useful information about the distribution of hake recruits [2]. Data coming from these projects have been integrated with seasonal catches carried out between 2004 and 2005 in the framework of a regional research SFOP-POR project.

Data come from eleven seasonal trawl surveys carried out along the Calabrian coast from C.po Suvero to P. ta Pezzo. In particular eight GRUND (spring-summer 1994-2002), eight MEDITS (autumn1994-2002) and three POR surveys (autumn and summer 2004-2005) were analysed. Overall, 140 hauls were carried out between 10 and 800 m of depth, during daylight from dawn to sunset. To separate the recruits from the older specimens a cut-off, elaborated for each survey, is used [2]. On the basis of swept area, the number of recruits "R "of each haul were transformed into R per km^2 (Recruits Density Index-RDI). The nursery areas were identified using a GIS approach.

Despite the variability recorded between the different seasons and years (MEDITS and GRUND data), the density of recruits showed two stable areas (between 100 and 300 m) characterized by high concentrations of juveniles which were identified near C.po Vaticano (the larger one) and inside the S. Eufemia Gulf. The presence of these two areas was confirmed by the RDI found during POR surveys (Figure 1). During November 2004 both areas were found at a depth between 50 and 350 m; the RDI index showed a total mean value of 483 R/km^2 (min 40-max 2588 R/km^2). On the contrary, during summer survey only the nursery area inside the Gulf was found; the mean RDI recorded was 712 R/km^2 (range 40 - 4170 R/km^2). Finally in September no nursery area was found (mean RDI=124 R/km^2).

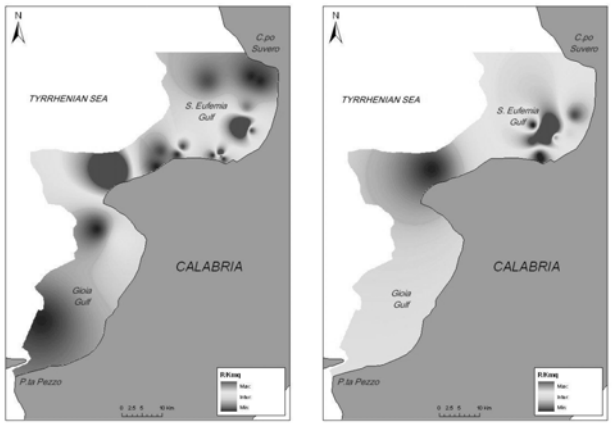

Fig. 1. Nursery area zones (dark grey) identified along Calabrian coasts during POR survey in November 2004 (A) and July 2005 (B).

References

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