

MariFish Briefings

Working Collaboratively Towards an Ecosystem Based Approach for Fisheries Management in the Mediterranean



September 2010

What are we working on?

Under **Work Package 7**, MariFish Partners identified common research themes or geographical areas of interest and selected five to be developed into collaborative research programmes. The Mediterranean region was identified as one area that would particularly benefit from collaboration under the MariFish project. Through a united vision, a regional collaborative programme was developed: "Towards an ecosystem based approach for fisheries management in the Mediterranean: essential fish habitats and their trophic interactions". To help steer the programme, the Mediterranean MariFish group was set up. By merging national programmes into a common Mediterranean ecosystem approach to fisheries, the group developed a transversal approach to identify common processes to study which can be applied to different species and different areas of the Mediterranean Sea.

What are our aims?

Three MariFish partners, **France** (Ifremer, on behalf of the French Ministry of Research), **Greece** (Ministry of Development, General Secretariat for Research and Technology GSRT), **Spain** (Ministry of Science and Innovation), signed a Memorandum of Understanding in 2008 to work collaboratively. Other partners that have joined the collaborative programme include **Italy** (an associated partner), **Cyprus** (as an Observer) and **Croatia** (involved in the Adriatic Sea), please see Figure 1. Our collaborative programme covers 3 major tasks:

1. To develop an **ecosystem approach for the demersal fisheries** through the "MEDITS database"
2. To improve our understanding of **trophic interactions** via a 'Models for the Ecosystem Approach to Fisheries in the Mediterranean Sea' Workshop (November 2010)
3. To identify and map **essential fish habitat of small pelagics**: anchovy and sardine in the Mediterranean Sea.

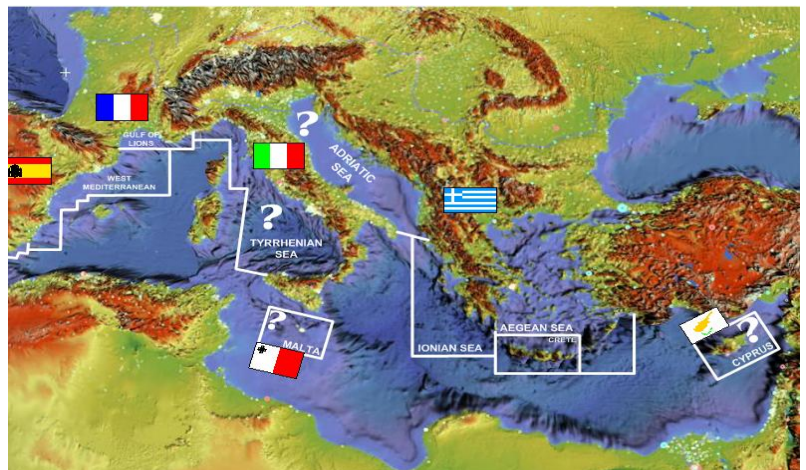


Figure 1: A map illustrating the geographical distribution of the Mediterranean MariFish Group.

For more information, the project results will be extensively presented at the **ICES ASC, Session R (21-24th September 2010 in Nantes, France)**. **Papers presented:**

- 'Habitat suitability modelling for sardine in a highly diverse ecosystem: the Mediterranean Sea' (Ferra et al.)
- 'Identifying the potential habitat of anchovy *Engraulis encrasicolus* during different life stages in the Mediterranean Sea' (Marianna et al.).



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Strengthening the links between European marine fisheries science and fisheries management



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What have we achieved so far?

Ecosystem approach for the demersal fisheries – “MEDITS database”

The Mediterranean group has identified three aspects that need to be resolved: (a) the availability of the data; (b) the availability of a standard exchange format; and (c) the building of the common historical data base. To address this issue the partners have agreed on a statement of free access to the MEDITS data and are currently working on a website to make their historical MEDITS data (period 1994-2000) freely available. The inclusion of the data for the period since 2001 will be provided, depending on an agreement to be requested of the national relevant authorities.

Trophic Interactions- Workshop (15-19th November 2010) will be run in parallel, with a workshop on integrated ecosystem modelling of the trophic chain end to end.

The Mediterranean group is organizing a workshop on ‘Models for the Ecosystem Approach to Fisheries in the Mediterranean Sea’. The workshop aims to address challenges specific to the Mediterranean Sea, these include: complex oceanographic and climate variability, heterogeneity of and connectivity between sub regions, the need to strengthen a multidisciplinary modeling force capable to develop and apply a series of complementary models, and the need to bridge scientific knowledge and fishery management within the EAF framework.

Essential Fish Habitat of small pelagics: anchovy and sardine in the Mediterranean Sea.

Progress is being made to identify areas in the Mediterranean Sea that could be considered as essential habitats for anchovy and sardine and to predict their temporal (seasonal and inter annual) variation in relation to environmental parameters. The identification of these areas was achieved by integrating existing and new knowledge, for example acoustic surveys (figure 2), satellite environmental data, advanced statistical analysis, GIS techniques and the presence/absence of each species. Using these techniques, we were able to produce our first common results for the summer and winter surveys, 2002-2007, in the Aegean Sea, Spanish Mediterranean waters and Sicily channel. Results include models and maps of critical spawning, juvenile and adult habitats for anchovy and sardine species (figure 3). Specifically, using models, anchovy & sardine adult habitat has been estimated for summer and winter, and sardine juvenile habitat maps were drawn with the factor of temporal persistency included.

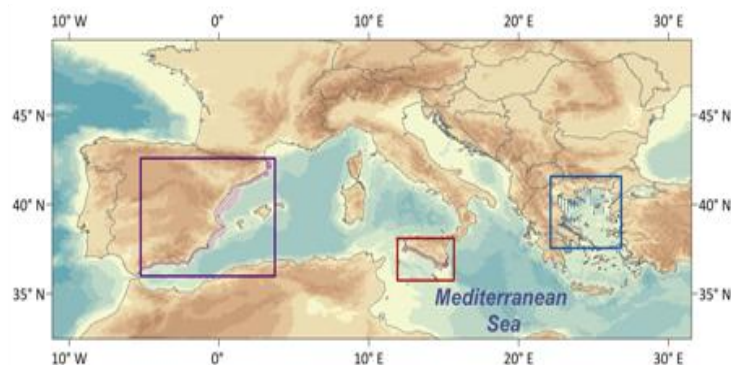


Figure 2: Areas covered by acoustic surveys: (a) Aegean Sea (b) Sicily channel (c) Spanish Mediterranean waters.

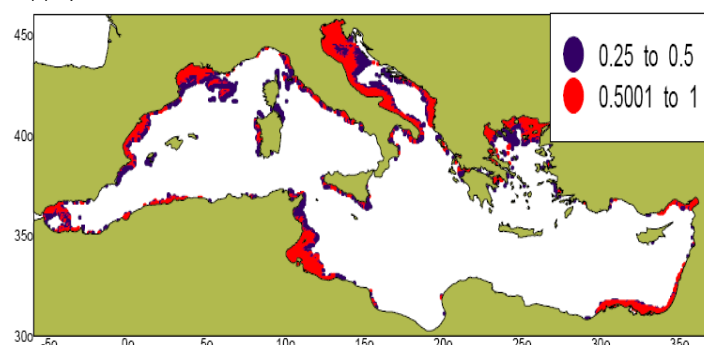


Figure 3: Map of areas representing anchovy and sardine potential spawning habitat (PSH) based on the GAM model from the northern Aegean Sea in June.

Future work within MariFish (by end Jan 2011)

During 2010, the Mediterranean MariFish Group intend to work on all of the above, continuing to improve the accessibility of the MEDITS data, improve our understanding of trophic Interactions through the workshop and finally, to improve the statistical models and maps of essential fish habitats of small pelagic within the Mediterranean.



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MariFish brings together the major funders of marine fisheries research in Europe and aims to strengthen links between marine fisheries science and fisheries management across Europe.

Find out more about this study and MariFish at www.MariFish.net

