

## **Preface: European Commission's 'Scientific Support to Policies' Action EnviEFH: Environmental Approach to Essential Fish Habitat Designation**

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Under the Sixth Framework Programme (FP6) for research, the Commission of the European Communities (CEC) has launched its 'Scientific Support to Policies' (SSP) initiative promoting science to the decision-making process. To improve the quality of policy decisions and to promote the participation of researchers in the policy arena, CEC has funded a number of SSP actions in three priority areas: sustainable management of natural resources, health and security, and economic potential of an enlarging Europe. EnviEFH (Environmental Approach to Essential Fish Habitat Designation) was a 27-month SSP Action (December 2005–February 2008) in the priority area of sustainable management of natural resources under the theme of Fisheries and Aquaculture.

The overall aim of the EnviEFH Action was to integrate available scientific knowledge on species biology, ecology, and genetics in order to identify those water bodies and underlying surface critical to the long-term survival and health of fish populations in the Mediterranean Sea and adjacent areas. Those

areas, known as Essential Fish Habitats (EFH), are necessary to fish for spawning, breeding, feeding, or growth to maturity. In the European Communities, the term EFH was only recently and indirectly introduced during the ongoing reforming of the common fisheries policy (CFP). The concerted approach to protect species habitats through the Habitat Directive and the declaring of fisheries protection zones through the Marine Strategy Directive are initial efforts to introduce the spatial component in fishery management under the CFP.

The participant organizations and involved scientific teams in the EnviEFH SSP Action are listed in Table 1, while a photograph from the kick-off meeting is shown in Fig. 1.

As many marine species distributions are affected by the state of the marine environment, the general approach of the EnviEFH action was to let environmental variation show us where EFH occurs. Thus, we have created an extensive geographic information system database of remotely sensed satellite imagery and extracted a number of habitat descriptors including (besides environmental descriptors) distances from mapped thermal fronts and marine productivity hotspots in an effort to include ocean processes in habitat mapping. We used a number of statistical approaches and new technologies depicted in the articles of this issue and we tried to identify EFH by assembling and analyzing surveyed fisheries datasets on small, large, and demersal commercial resources of the Mediterranean and adjacent areas.

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Guest editor: V. D. Valavanis  
Essential Fish Habitat Mapping in the Mediterranean

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**Table 1** The EnviEFH consortium

Participants	Scientific teams	Subcontractors
Hellenic Centre for Marine Research (HCMR), Institute of Marine Biological Resources (IMBR) Crete/Athens, Greece	V. D. Valavanis, C.-Y. Politou, A. Machias, E. Lefkadiou, M. Giannoulaki, G. Tserpes, A. Pali Alexis, A. Kapantagakis, C. Gkani, A. Siapatis, S. Kavadas, J. Dokos, P. Cosmopoulou, C. Papakonstantinou	
Consejo Superior de Investigaciones Cientificas (CSIC), Instituto de Ciencias del Mar (ICM) Barcelona, Spain	P. Martin, F. Maynou, L. Recasens, P. Sanchez, P. Olivar, I. Palomera, A. Sabates, J. Cartes, F. Sarda, M. Demestre	
Centre National de la Recherche Scientifique (CNRS), Ecosystemes Coralliens: Structure et Fonctionnement, Laboratoire d'Ecologie Aquatique Tropicale et Mediterranee (EPHE) Perpignan, France	S. Planes, R. Lecomte, P. Lenfant, R. Crec'hriou, G. Criquet, G. Cadiou, G. Bernard, E. Roussel, L. Le Direach	GIS Posidonie P. Bonhomme
University of Aberdeen (UNIABDN), School of Biological Sciences (Zoology) Aberdeen, United Kingdom	G. J. Pierce, J. Wang, B. Santos, I. Katara, J. Smith	Highland Statistics, Ltd. A. F. Zuur, E. Ieno



**Fig. 1** EnviEFH consortium meeting. From right and round the table: P. Bonhomme (GIS Posidonie, France), C.-Y. Politou, J. Dokos, P. Cosmopoulou, C. Papaconstantinou, A. Pali Alexis, A. Kapantagakis (HCMR, Greece), G. Pierce and J. Wang (Univ. Aberdeen, UK), P. Martin and P. Sanchez (ICM, Spain), R. Crec'hriou (EPHE, France), and V. Valavanis (HCMR-Greece)

The contents of this issue include 21 articles that are organized as follows: an overview of approaches on species habitat modeling presents what methods and tools are currently available in the field followed by a comparison of four modeling approaches using marine species data. This is followed by a summary of teleconnection patterns between large-scale meteorological phenomena and local environmental variation in the Mediterranean. Next, the species-specific articles are included: three on cephalopods, two on shrimp, one on hake, seven on small pelagics, and

one on swordfish. Finally, the issue concludes with studies on the interactions of cetaceans and longline fisheries, the remote sensing of major ocean processes, the recent invasion of a zooplanktivorous ctenophore in the Mediterranean, and the development of a tool for selection and visualization of 4-dimensional marine ocean data.

We wish to acknowledge the EnviEFH project officers in the Directorate-General Fisheries and Maritime Affairs (Brussels, Belgium), Jacques Fuchs, Snorri-Runar Palmason, Jose-Perez Mauriz, Petter Fossum, and Apostolos Peltekis, for their extensive help and support throughout the duration of the project. We thank the many scientists, acting as anonymous referees, who further advanced with constructive comments on earlier versions of the articles in this issue (reviewers' names are listed below). We are grateful to Martine van Bezooijen (Springer) and Koen Martens (Royal Belgian Institute of Natural Sciences) for providing the outlet for publication of EnviEFH output in *Hydrobiologia*.

Finally, we encourage visiting the EnviEFH website for further updated information (<http://arch.hcmr.gr/enviefh/>). The site remains online after the end of the EnviEFH action (February 2008) and it will be updated regularly with relevant information on marine species habitat modeling. We hope that readers of this special issue of *Hydrobiologia* will find it useful and inspiring for further developments in the field.

**List of reviewers**

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