

COUNTRY: PORTUGAL

Project Title:

Portugal GLOBEC

Project Contact and Source of Information (November 2003):

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1) ProRecruit - Shelf processes controlling recruitment to littoral populations in an eastern oceanic boundary: using barnacles and crabs as models.

Project Description:

To describe the temporal variability of recruitment of coastal invertebrate species (crabs and barnacles) having a planktonic larval phase in their life cycle, and to understand the interactions of physical forcing and larval biology that control the supply of larvae to coastal systems, with a special focus on process studies off northern Portugal.

System Types Studied:

North-eastern Atlantic Upwelling

Target Organisms:

Crabs, barnacles and other crustaceans

Physical Processes Examined:

Upwelling, downwelling, dispersion, retention, transport

Key Hypotheses and Issues:

The Western Iberia coast is affected by seasonal upwelling. The increase and relaxation of northerly, upwelling favourable, winds result in alternation of: equatorward/offshore flow and poleward/onshore flow, respectively. These effects change with depth and with the intensity and duration of the wind events. The project examine the following hypotheses: 1. During upwelling events, larvae are transported southward and offshore. 2. During relaxation of upwelling favourable winds or during southerly winds, larvae are transported northward and onshore. 3. Supply of larvae to systems on the western Portuguese coast occurs mainly during relaxation of upwelling. 4. Interaction between vertical distribution of the larvae and physical forcing affects onshore patterns of recruitment.

Chief Scientist:

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Participating Institutions:

University of Aveiro
INIAP-IPIMAR

University of Lisbon
University of Évora

Duration:

36 months (Started: October 2001)

Number of scientists and fte:

21

Budget:

224,459 Euros

Funding Agency:

Portuguese Foundation for Science and Technology (FCT)

2) PELAGICOS - Reinforcing the capacity of investigation in the area of oceanography and fishery biology applied to the management of pelagic marine resources

Project Description:

The programme aims to provide reliable evaluations of the current state of pelagic fish resources and their exploitation in Portugal and to propose options for their future management, based on an improved understanding of the interactions between pelagic fish, their natural environment and the patterns of human exploitation. This will be achieved by synthesizing scientific work of distinct disciplines (fisheries biology, oceanography, population dynamics, fishing technology, and sociology) and by reinforcing the information flow among scientists, resource users and administrators. PELAGICOS is a restructuring programme, not a research project, for that reason it can include within its remit work undertaken under various research projects nationally and internationally funded. In fact, one of the main aims of the programme is to gather and synthesize the information on small pelagic fish generated at INIAP-IPIMAR, regardless of the source of funding, which will always be adequately identified.

Website:

<http://ipimar-iniap.ipimar.pt/pelagicos/index.html>

System Types Studied:

Portuguese Coastal Waters

Target Organisms:

Small pelagic fish (e.g. Sardine *Sardina pilchardus*, Horse mackerel *Trachurus trachurus*)

Physical Processes Examined:

Upwelling, buoyant plumes, poleward flows

Key Questions, Hypotheses and Issues:

1. Understand the interactions among pelagic fish populations, environmental conditions and human harvesting
2. Evaluation of the state of pelagic fish resources and the level of their exploitation using current and alternative methodologies
3. Predict the future state of pelagic fish resources (short, medium and long term) and exploring management option scenarios with the associated implications for resources and their users.

Chief Scientist:

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Participating Institutions:

INIAP-IPIMAR
University Nova of Lisbon, Department of Sociology
FENACOOPECAS (Purse-Seine Association)
University of Évora, Department of Mathematics
University of Algarve, Department of Marine Sciences
University of Aveiro

Duration:

48 months (Started: June 2001)

Budget:

499,000 Euro

Funding Agency:

Portuguese Foundation for Science and Technology

3) SARDYN - Sardine dynamics and stock structure in the NE Atlantic

Project Description:

The principal objective of this project is a comprehensive study of the life history and structural dynamics of the sardine (*Sardina pilchardus*) in Atlantic European waters with an emphasis on the factors required for improvement of the assessment and management of this species. The study will lead to the modification/extension of existing assessment models or to the development of a new model based on biologically defensible definitions of the stock boundaries and an adequate description of the sardine dynamics within the stock area. The objective will be achieved by establishing a multi-disciplinary team to study the stock structure of sardine in the North-East Atlantic, to describe the sardine dynamics in relation to the environment and finally to integrate the above results in appropriate analytical assessment methods.

System Types Studied:

Portuguese Coastal Waters

Target Organisms:

Sardina pilchardus

Physical Processes Examined:

Upwelling, buoyant plumes, poleward flows

Key Questions, Hypotheses and Issues:

1. Identification of current spawning grounds and seasons of the sardine in the NEA.
2. Description of sardine spawning dynamics by the comparison of historical and recent information.
3. Description of sardine morphometric and genetic variability of sardine in Atlantic waters of continental Europe and comparison with the extremes of the species distribution (Azores, Morocco, Celtic Sea, Aegean Sea).
4. Analysis of evidence of seasonal and inter-annual fish movements from historical catch, survey and tagging data, with an emphasis on the current stock unit area and its boundaries.
5. Testing hypotheses on the mechanisms relating sardine spawning/adult distribution to environmental conditions.

6. Development of analytical assessment model specific for the NE Atlantic sardine, throughout the analysis of models that provides estimates of population parameters by area, as well as for the entire distribution of the population, and that could take into account migration and more than one distinct stock.

Chief Scientist:

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Participating Institutions:

INIAP-IPIMAR, Portugal
IEO, Spain
IMBC, Greece
MBA, UK
IMR, Norway
CNRS, France
AZTI, Spain
CEFAS, UK

Duration:

36 months (Started: December 2002)

Budget:

1,209,726 Euro

Funding Agency:

European Commission