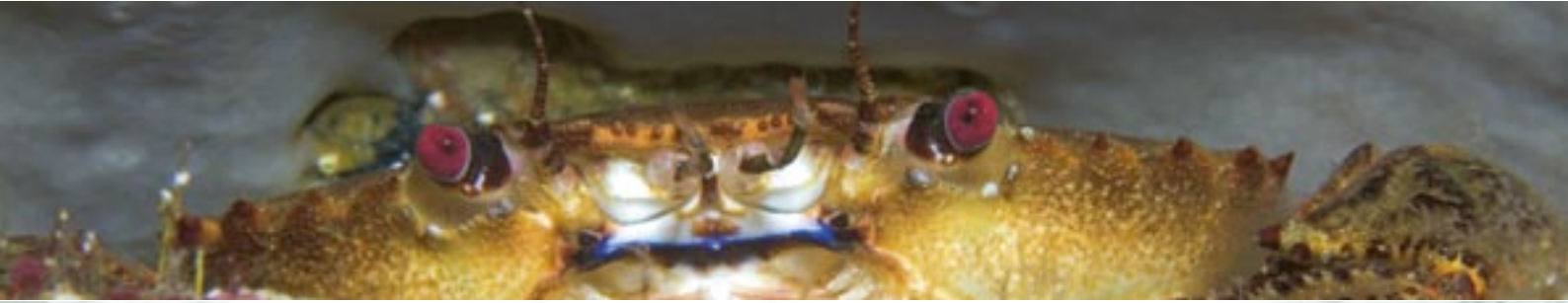


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"ONE OF THE MOST IMPORTANT RESULTS OF THE PROJECT IS THAT THE BOX TO PROTECT SPAWNING HERRING IS NO LONGER JUST A SIMPLE BOX, BUT A MORE ACCURATELY DEFINED AREA."

"IN THE SAME WAY THAT A PILOT MIGHT FLY IN A SIMULATOR BEFORE FLYING FOR REAL, THE EFIMAS PROJECT WILL DEVELOP NEW TOOLS AND SIMULATION MODELS TO TEST DIFFERENT MANAGEMENT REGIMES ON EUROPEAN FISH STOCKS AND FISHERIES"

Virtual fisheries management

By Rasmus Nielsen

Typical scene from the video camera showing *Nephrops* burrows

One of the most important results of the project is that the box to protect spawning herring is no longer just a simple box, but a more accurately defined area.

But just as important was the fact that we found that geologists, oceanographers, and biologists could work together – and that it worked well. Although a multi-disciplinary approach to investigation and solving of scientific questions did already go on, in a limited way, during many Marine Institute surveys, the cross-service project let us sample more evenly, and thoroughly, across the whole habitat. And, since the cross-service project began, several new cross-Institute groups have already been established and now maximise sea time with interdisciplinary surveys. Tools are borrowed and resource time is now shared on a quid pro quo basis.

Would we do it again?

Yes, absolutely. In hindsight, however, we could have extended the oceanographic grid and gained a better understanding of the mixing process between the river plume and the coastal waters. It would also be beneficial to revisit the location and carry out a limited multibeam survey, but with more grab sampling to allow us to interpret the relatively stable, but still dynamic processes such as local oceanographic currents and net sediment transport.

Where do we sign for more ship time?

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"SINCE THE CROSS-SERVICE PROJECT BEGAN, SEVERAL NEW CROSS-INSTITUTE GROUPS HAVE ALREADY BEEN ESTABLISHED AND NOW MAXIMISE SEA TIME WITH INTERDISCIPLINARY SURVEYS."

Most people know that European fisheries are not doing too well at the moment. Many important stocks have declined and so have the number of fishing boats and people employed within the fishing industry. At the same time, the management and regulation of European fisheries becomes more and more complicated every year. Because of this, managers such as the European Commission and national authorities are hoping to develop alternative regimes that take a broader, more long-term perspective and consider not only the biological consequences of managing a fish stock but also the social and economic impacts, for instance on the fishing industry.

Virtual management

To help develop a better management regime, the European Commission last year granted 4.5 million Euro for a research project titled Operational Tools for Fisheries Management Options (EFIMAS). With a total budget of 7.5 million Euro, EFIMAS is the largest among a string of ongoing EU projects that aim to evaluate and improve management of European fish stocks and fisheries. In the same way that a pilot might fly in a simulator before flying for real, the EFIMAS project will develop new tools and simulation models to test the outcomes of different management regimes on European fish stocks and fisheries. And instead of just looking at the impact of these virtual regimes on the fish stocks, the project will look at the social and economic outcomes as well – a much broader, more holistic approach. This will mean that before opting for a particular management approach, managers will have a better idea of what is likely to happen.

A testing framework

The project will develop a framework in which to try out different management options and regimes. Part of developing this framework will be a review of the current knowledge base and institutional set-up of relevant fishery management systems around the world; this will make the framework flexible enough to include the range of alternative fishery management systems.

Through the framework, EFIMAS will evaluate among other things: different stock and fishery assessment models; different economic-based fishery models; dynamics of the case stock and fisheries systems; uncertainties in the dynam-

ics and in the data collection, assessment and advisory processes; different management systems; and even examples of the ICES advisory process.

The framework and simulation models will then be tested in selected case studies representing different types of important EU fisheries e.g. in the North Sea, Baltic Sea, and the Mediterranean Sea. Feedback will be sought during this process, for example, through stakeholder workshops with representatives from management, the fishing industry, and NGOs.

Outcomes

Overall, we hope that the project will help drive the development of more realistic and reliable scientific management advice to fishery managers. It aims to provide a robust management evaluation structure that is driven by numerically defined fish harvesting rules. The evaluation framework will let managers explore different management approaches and identify the biological and socio-economic consequences, from the results.

Together with its sister projects, EFIMAS will hopefully help to give stakeholders greater confidence in the management process by making it broader and more accessible to them.

For more information please visit:

www.efimas.org

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EFIMAS involves cooperation between 30 research institutions from all over Europe covering the disciplines of fisheries biology, economy, and sociology. The project is coordinated by the Danish Institute for Fisheries Research (DIFRES) together with a Steering Group consisting of several European research institutes: Centre for Environment Fisheries and Aquaculture Science (UK), Institute for Fisheries Management (DK), Netherlands Institute for Fisheries Research (NL), Centre for the Economics and Management of Aquatic Resources (UK), and AZTI (E). EFIMAS will run from April 2004 – April 2008.