

# Northern Fisheries

Newsletter from the Nordic Working Group for Fishery Research – NAF

Issue 29 June 2006

## Marine Protected Areas Call for Regional Cooperation

At the moment marine protected areas (MPAs) are keenly discussed as a tool for marine management. The purpose of the protected areas is to conserve valuable and rare marine habitats. Globally, biologists agree that MPAs have positive effects, but the scope of the effects and the methods for measuring them are up for discussion. There is actually also some uncertainty as to how to define the actual concept of MPAs.

**MPAs do not work on their own, in fact. For effective marine nature conservation more is needed - especially cooperation between responsible countries.**

In May 2004 an international workshop in Finland examined experience with MPAs. The participants and lecturers came from the Nordic and the Baltic countries, the rest of Europe, Australia, Canada and Russia.

– The idea of the workshop was not to adopt grand final summaries or programme statements, but rather to compare methods and experience in order to see whether MPAs produce the same results in different countries, and whether the problems of organizing and evaluating MPAs are identical, says project manager Jan Ekeboom from the Finnish Forest Management Agency. At the same time participants and organizers would get inspiration, input and fresh ideas and, especially, broaden their professional network.

### Regional Cooperation Necessary

MPAs are used increasingly as a tool for managing fish stocks and marine biodiversity.



*The same area off the north-western coast of Canada photographed before and after trawl fishing.  
Photo: Fisheries and Oceans, Canada*

How the areas are selected, managed and developed is being discussed keenly among biologists, fishermen and authorities. The discussion has several overall themes; selection, mapping and inventorying of habitats (the area and environment of one species of animal or plant), monitoring of the effects of the enclosure, management efficiency and the citizens' possibility of influence. All these themes were dealt with in the workshop. Methods and experience from the Nordic countries, Australia, Great Britain – specifically Scotland – and Canada were compared. Overseas experience was 'translated' into Nordic and Baltic conditions on an ongoing basis.

One of the central ideas of the workshop was that MPAs work best when a network of comparable areas is created. We know, for example, that most species are pelagic (swimming freely, not bottom dwelling) at some stage of

their life cycle – it may be at the larval stage or during the spawning season. Therefore an international MPA network protecting species in their pelagic stage may be a good means of protecting these particular species. This calls for increased regional cooperation, both in research and management. As several regions encompass very specific parts of global biodiversity in areas that cross borders, or in similar areas in several countries of the region, they may only be protected effectively via regional cooperation.

### Background Knowledge and Technology

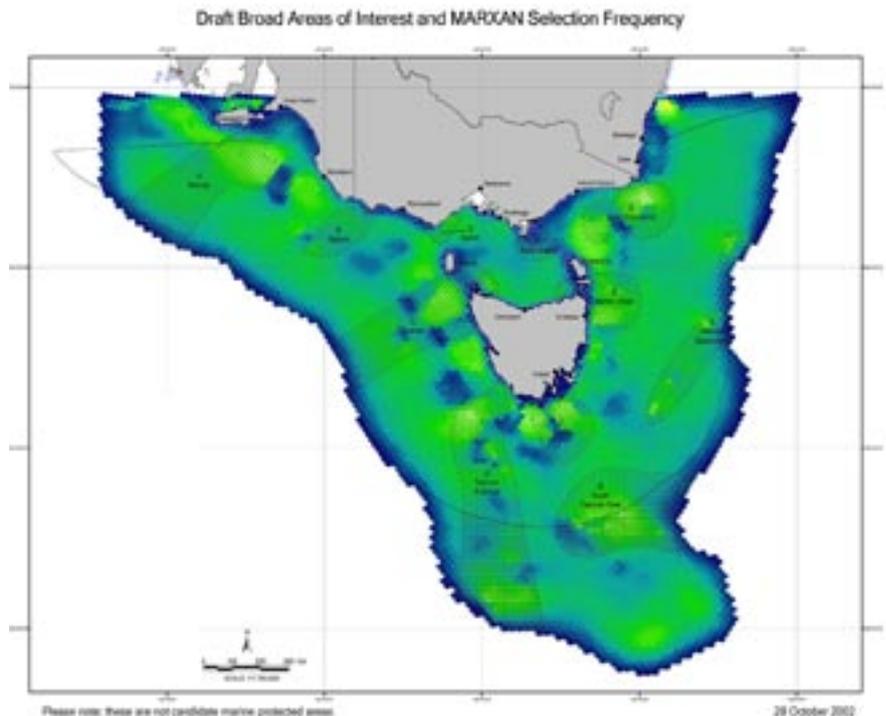
The report **Workshop on the Development and Management of Marine Protected Areas** provides solid background knowledge on these subjects and is therefore helping to push marine nature conservation in the right direction.

The presentations are included in the report. The participants met an interesting panel of international experts: Jon Day, Great Barrier Reef Marine Park Authority, Australia, John Roff, Acadia University, and Hussein Alidina, Dalhousie University and WWF of Canada, Per Nilsson, Tjärno Marine Biological Laboratory in Sweden, John Baxter, Scottish Natural Heritage, and Jon Davies, Joint Nature Conservation Committee in Great Britain.

The report gives a solid introduction to the concept of MPA (J. Baxter) and to methods and IT-tools for MPA planning (H. Alidina). Alidina presents the programme products MARXAN (*Marine Reserve Design using Spatially Explicit Annealing*) and GIS (Geographical Information System, a digital map system) in MPA work.

Per Nilsson asks who should benefit from MPAs – the fishing industry or marine life itself? He concludes that MPAs are good for both – the marine species get a breathing space for multiplication, and the fishermen can harvest greater catches later on.

You can read about the Australian experience of MPAs (J. Day) and look closely at the effects of MPAs in a specific area, i.e. Flamborough Head in Yorkshire, England (K. Evans).



*MARXAN (Marine Reserve Design using Spatially Explicit Annealing) produces detailed maps of sea areas and automatically identifies interesting areas for MPAs.*

## MPAs in six categories

The population size of a wide range of marine species is below the critical limit and their reproductive patterns have changed. The stocks of some species and in some areas (e.g. cod off New Foundland) have collapsed completely.

At the ecosystem level overfishing of fish stocks is seen to lead to loss of genetic and species diversity. Many habitats are under serious pressure from fishing with bottom-dragging gear.

This is where the marine protected areas (MPAs) are one of many means to protect stocks and habitats. In Nordic waters today a large number of areas are sheltered from some kind of human activity. These areas vary in size and range from areas of great natural historic interest,

where traffic and exploitation are banned, to areas where some kind of fishing, e.g. trawl fishing, is banned. Between these two types we have areas where activities may be constrained permanently or for short periods.

Marine protected areas are today a recognized and much used management tool together with protection and conservation of smaller areas, typically of high natural historic value or known as sensitive areas. MPAs have several different objectives. A marine area may be protected in order to conserve especially valuable or vulnerable habitats or species – e.g. coral reefs or seals, spawning areas or fish nurseries, or in order to protect shipwrecks or recreational areas. There are six categories of MPAs ranging from areas with total bans on human activity to areas

with moderate protection. A number of MPAs are a combination of several categories.

MPAs have been used in connection with fisheries management, e.g. for the purpose of reducing fishing pressure on individual species. Enclosure has also been used to protect certain life stages - e.g. spawning fish or fry.

It has, however, proved difficult to foresee ecosystem reactions to the enclosure of an area. Only a very thorough and expensive biological analysis can show whether the desired effects have been achieved – and whether they are due to enclosure or other factors. ■

The group work focused on the many different ways in which countries set up MPAs. It also showed that most participants had come up against identical obstacles and problems in their work with MPAs.

- The report gives an insight into the theory and methods of how to choose important MPAs, and ideas on how they can be managed. There is also a discussion of methods of protecting fishing areas, management and monitoring, says Ekebom.
- In the Forest Management Agency we have already used the knowledge we got from the workshop, and I know that several other participants have benefited from it after their return.

The results have been used in the EU-financed BALANCE project, the Nordic GIS project, in the Finnish/Baltic MPA Life project, and elsewhere.

– The most important result may well have been, however, that the participants got to know each other at a time when everybody in the Nordic countries needs this information, and that we were able to tell our colleagues in Great Britain, Canada and Australia what we are working on. It gave us a visibility that is of immeasurable value. Personally I feel that the workshop has exceeded my wildest expectations.

#### **Nordic Think Tank**

The results from the workshop will also be of use in the near future. With financial support from the Nordic Council of Ministers a think tank has been set up, “Nordic MPA Forum”, where the working basis will include ideas from the workshop. In Nordic MPA Forum there will be representatives from IUCN (World Conservation Union), the Forest Management Agency and English Nature (A multisectoral government agency advising the British government on nature conservation issues).

– In the think tank we will plan the future development of Nordic MPA activities. In HELCOM (*The Helsinki Convention of 1974 on the Protection of the Marine Environment in the Baltic Area*) we are just now preparing a Baltic Sea Action Plan based on the experience from the workshop.

The report on the **Workshop on the Development and Management of Marine Protected Areas**, TemaNord 2005:587, ISBN 92-893-1249-1 can be ordered or downloaded in PDF format from the website of the Nordic Council of Ministers: [www.fisk.norden.org](http://www.fisk.norden.org). ■

## Marine Protected Areas (MPAs)

MPAs (Marine Protected Areas) or “sheltered waters” arouse considerable interest all over the world and are considered a potential future method of managing marine resources more successfully than we are capable of today. MPAs are intended to protect marine organisms and environments against overexploitation. In simple terms, the purpose is to bring the area back to its “original state” in order to ensure the preservation of biodiversity and the environment, or to regulate consumptive use of resources carefully according to a plan in order to assess the consequences.

Today, there are 1300 MPAs in the world, differing in size and purpose. A conference on the subject in Australia in 2005 showed that the scientific results emanated from relatively small-scale trials, and that there were positive effects on marine resources. However, at present it is questionable whether MPAs constitute a breakthrough in the management of resources and environment on a large scale.

Assessing the use of MPAs means getting to grips with formidable problems. We know the ecosystem is complex, and any change in it sets off chain reactions throughout the whole system. It is not only human interference that causes changes, but also shifts in the climate. They suffice to trigger processes that upset the original balance, if it is at all possible to talk about an original balance. We all know that there have been drastic changes over time without human interference!

Some will maintain that when areas are closed to fishing of individual species, as we often do in our waters, or when the use of particular fishing tackle is banned, that constitutes a kind of MPA, because the objective is to conserve resources. The question is whether that is the right way of looking at it. It is most likely so that an MPA needs to be studied over a long period of time in order to yield scientific facts.

The “5<sup>th</sup> Conference of the Ministers of Environment of the North Sea Countries” clearly signalled the use of ecosystem approximation in its declaration of 2002. MPAs may become important elements in the development of ecosystem approximation. According to the Marine Research Institute of Norway, the challenge is to identify where in the ecosystem an MPA may have a significant effect and thus help progress in this field.

There are still many questions concerning MPAs. The Nordic Working Group on Fisheries Research (NAF) will stimulate to further thinking and work on this important subject which is of interest throughout the Nordic Countries. Therefore we will try and support initiatives that can move the forefront of knowledge one step forward! ■

*Lars Horn*

Chairman, NAF

Head of department

The Research Council of Norway

## New MPA project

The steering group for the Nordic Environment and Fishery Strategy (MiFi) will be supporting several projects in 2006, working on inventorying and evaluating marine resources or habitats. One of them – “Nordic Working Group on Marine Protected Areas as a tool for fisheries management” is a straight MPA project with participants from all five Nordic countries.

The objective of the project is to analyse a number of key questions in relation to the use of spatial planning and MPAs in fisheries management in the Nordic countries. The group will collect and process knowledge from completed and ongoing projects.

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# Conference on the Ecosystem Approach to Fisheries in Bergen 26 to 28 September 2006

## Implementing the Ecosystem Approach to Fisheries

The Nordic Council of Ministers is hosting a Conference on the Implementation of the Ecosystem Approach to Fisheries jointly with the Ministries of Fisheries from Iceland and Norway and with technical support from the Food and Agriculture Organization of the United Nations (FAO). The Conference will bring together scientists, government administrators responsible for fisheries management and the environment, the fishing industry and NGOs. The objective of the Conference is to review the conceptual framework for the ecosystem approach and discuss the practical implementation of ecosystem considerations in fisheries. Deadline for registration is August 31.



The ecosystem approach to fisheries has become a core element in international agreements, such as the UN Convention of Biodiversity. The ecosystem principle is embedded in the FAO Code of Conduct for Responsible Fisheries and is thus fundamental to contemporary fisheries management.

### The Bergen Conference aims to

- review existing concepts of the ecosystem approach
- discuss the implementation of ecosystem considerations in fisheries management
- exchange experience of ecosystem management
- identify the strategies and 'best practices' to facilitate the adoption of ecosystem thinking in practical fisheries management

The Bergen Conference is intended as a follow-up to the Reykjavik conference in 2001

'Responsible Fisheries in the Marine Ecosystem'. The conference in the capital of Iceland produced a political statement that fisheries management should incorporate ecosystem thinking in the development of management systems. That was reaffirmed at the World Summit on Sustainable Development in Johannesburg 2002, where the deadline for implementation was set at 2010.

Several states, interest groups and organizations have worked towards this goal, and extensive experience and knowledge have been gained both locally, regionally and nationally. Research has also progressed and there is now a better understanding of large marine ecosystems (LMEs). It is time to speed up the practical implementation of the ecosystem approach. That and a number of questions concerning the effects of ecosystem management and the role of governments and organisations will be discussed at the Bergen Conference.

### Further information and registration:

<http://cieaf.imr.no>

**Programme:** (PDF 74 kb in English):[http://cieaf.imr.no/2nd\\_announcement](http://cieaf.imr.no/2nd_announcement)

**Participation fee:** USD 150 (students: USD 90)

### Steering group:

*Gabriella Bianchi*, FAO  
*Peter Sandberg*, Norway  
*Hein Rune Skjoldal*, Norway  
*Kristján Thórarinsson*, Iceland

### Panellists:

*Mike Sinclair*, moderator  
*Poul Degnbol*, EC/Denmark  
*Serge Garcia*, FAO  
*Lori Ridgeway*, Canada  
*Peter Gullestad*, Norway  
*Jóhann Sigurjónsson*, Iceland  
*Qisheng Tang*, China  
*Inge Halstensen*, Norway ■



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### Nordic cooperation on fishery research

The Nordic Working Group for Fishery Research (NAF) co-ordinates joint research projects, takes the initiative to improve Nordic research cooperation, finds

suitable areas for Nordic cooperation, and evaluates the technical content of applications for support for research projects.

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