



TOWARDS ECOSYSTEM-BASED MANAGEMENT



Peter Auster & Paul Donaldson, NURC, University of Connecticut

The recent cod recovery plan proposal will be an important test of CFP reform

Niki Sporrong
Editor

In December 2002, the Council finally reached agreement on CFP reform, notably on the conservation and sustainable exploitation of fisheries resources (Regulation 2371/2002), structural aid under the Financial Instrument for Fisheries Guidance (Regulation 2369/2002), and emergency aid to support vessel decommissioning (Regulation 2370/2002). The agreement followed several years of consultations with key stakeholders, and several months of intensive discussion and negotiation within the Council.

At the heart of the Commission proposals was the desire to introduce a more coherent fisheries management system, combining traditional fisheries management tools (catch limits, gear restrictions, etc) with a more effective fleet policy to ensure a balance between fishing effort and resource availability. Economic incentives were to contribute to these aims rather than undermine them. The main instrument for integrating these measures was to be long-term stock management plans. These would also secure greater stability for the sector and reduce the risk of stock collapse, while moving away from the highly political yearly negotiations on catch limits. EU fisheries policy was also to take greater account of the ecosystems of which commercial fish stocks are part.

In order to secure agreement, significant compromises were made in many areas,

including fleet policy, the use of subsidies and the introduction of management planning. But the 2002 reform of the CFP has still provided us with a more comprehensive basis for the management of EU fisheries, including objectives to reduce the negative impacts of fishing on the marine environment. The centrepiece is a commitment to set up recovery and management plans for all EU commercial stocks.

The inshore regime – an issue of concern for several Member States – has been reinforced, but will be reviewed again in 2012. Another addition welcomed by many is the possibility to establish Regional Advisory Councils where stakeholders will be able to advise on management issues, but on a more regional level.

Substantial improvements have also been made in the area of subsidies, in particular the end of funding for new builds and export of capacity by 2005, and additional economic incentives to bring capacity down by scrapping vessels.

However, the issue of overcapacity, seen by many as the key obstacle to any substantial improvements in the state of the resources, has not been resolved in a convincing way. Any real reduction will depend heavily on the content of the future recovery plans and the will of the Council to introduce effort limitations – a traditionally contentious issue central to the recent cod recovery plan proposal (see box on page 3).

One also has to wonder about the real commitment of Ministers to the gist of the reform. Despite agreement on issues such as applying the precautionary principle, shifting to a more long term perspective on management, and taking effects on the wider marine environment into account, last year's quota negotiations provided one of the worst examples of Council horse-trading, with several prime ministers putting the Commission under pressure to reduce its ambitions. We ended up with a rather generous set of quotas for next year, far removed from earlier scientific advice and not consistent with the precautionary approach.

Now that the dust has settled, the spotlight has moved on to other pressing issues. Yet the 2002 decisions provided only the basis for an improved CFP; many difficult decisions still lie ahead.

INSIDE

2-3

Update on CFP reform

4-6

Focus on Marine Protected Areas

7-12

European Scene

Edited by Niki Sporrong of IEEP London. Translated into French by Ilona Bossanyi. This Newsletter is financially supported by the Esmée Fairbairn Foundation.

Contributions from Charles Berkow (Swedish Green Party); Callum Roberts and Fiona Gell (University of York); Maren Aschehoug Esmark (WWF-Norway); Euan Dunn (RSPB); Jessica Lindström Battle; and James Brown, Saskia Richartz, Clare Coffey and Claire Monkhouse (IEEP).



IEEP London

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A Synopsis of CFP Reform

Niki Sporrong
IEEP London

Agreement on the three regulations forming the basis of CFP reform was finally reached in the days before Christmas last year. These new regulations represent major changes to certain areas of the CFP, in particular:

- New objectives, including an explicit commitment to the precautionary approach and the implementation of an ecosystem-based approach;
- the abolition of public aid for building new vessels after 31 December 2004, accompanied by increased aid for the scrapping of fishing vessels affected by effort reductions under recovery plans; and
- the introduction of multi-annual recovery plans for stocks outside safe biological limits and management plans for other stocks.

A new basic Regulation

From January 2003, Regulation 3760/92 was replaced by a new Regulation on conservation and sustainable exploitation of fisheries resources (2371/2002). The new Regulation covers a larger range of issues and establishes clearer and broader objectives. In particular, it aims for sustainable use, more long-term resource management and greater coherence with other EU policies.

Application of the precautionary approach is laid down in the objectives, together with sustainable exploitation, minimising the impacts of fishing on the marine ecosystem, and a progressive implementation of an ecosystem-based approach to management.

Among the measures suggested to achieve conservation and sustainability in the sector, are recovery plans for already overfished stocks and management plans for other stocks. Limitation of fishing effort will be subject to case-by-case scrutiny. Plans are also required to take interactions between different stocks and fisheries into account, and may include targets related to other species or the wider marine environment. A big remaining question is whether the plans will include so-called pre-determined harvesting rules, which would end the annual horse-trading at the December meeting.

The special inshore regime in waters up to 12 nautical miles is once again time-limited (now until 31 December 2012), but Member States have greater powers to manage all fishing activities within their territorial or coastal waters. They can also propose temporary emergency measures to protect either stocks or other natural assets within the waters under their jurisdiction (including those in their fisheries zones/EEZs). In addition, the Commission can take emergency measures if there is evidence of serious

threat to the marine ecosystem resulting from fishing activities, as well as threats to the resources themselves.

The Council did not support ambitions to develop a single EU inspectorate, although some other improvements to monitoring and control were secured. The Commission can now inspect vessels and landings directly, but Member States are not obliged to act on the results. The Council is to establish a 'catalogue of measures' to be applied when encountering serious infringements, and the VMS system will gradually be extended to all boats longer than 15 metres. The Commission has since come forward with additional suggestions for improving enforcement (see box on page 3).

Some important improvements regarding governance and consultation are also included, notably the concept of Regional Advisory Councils (RACs). These are to be composed of representatives of all parties with an interest in fisheries management in a given sea area or fishing zone, including environment and consumer interests.

Adjustment of fishing capacity

In the EU Sustainable Development Strategy (Göteborg 2001), one of the key issues to be addressed under the CFP was to adapt EU fishing effort to the level of available resources. Overcapacity in the EU has been estimated to be as high as 60 per cent in some fisheries, and despite previous fleet policy programmes aimed at bringing capacity down, the issue has yet to be adequately addressed.

In the new basic Regulation, the ambition to bring capacity into line with available resources remains. A new approach to fleet adjustment is introduced, with national reference levels based on targets under the previous fleet management programme (MAGP IV), plus effort limitations under the recovery plans.

When capacity is removed with public aid, the reference level is reduced accordingly. While exits supported by public aid cannot be replaced, an entry/exit ratio of 1 to 1 still applies to the introduction of vessels without aid and vessels of less than 100 GT introduced with aid. For vessels over 100 GT introduced with public aid, the ratio is now 1 to 1.35.

The new Regulation also provides for more rigorous monitoring of capacity through the revision of the EU fishing fleet register.

Together, these provisions are intended to lead to a gradual downward revision of the reference levels. However, actual reductions will depend on the take up of public aid being offered for scrapping vessels,

and this in turn will depend heavily on effort limitations set out under the recovery plans. The new system may prove to be more effective than the last multi-annual guidance programme, but it is difficult to predict whether it will be sufficient.

Aid to the sector reformed

In the area of structural aid to the fishing sector several important improvements have been made. The current Regulation on structural assistance (2792/1999) has undergone significant change and an additional emergency measure for scrapping fishing vessels (EC 2370/2002) has also been put in place. Together they should redirect funding over the next few years from construction of new vessels and export of capacity, to decommissioning and socio-economic measures.

The amendments to the structural aid rules will eliminate some of the most problematic subsidies to the sector. However, subsidies for construction of new vessels and export of capacity (including joint

ventures) will be available until the end of 2004. This potentially enables Member States to use up all the aid allocated under these headings for the period 2000-2006.

Modernisation projects continue to be eligible for aid, but it is restricted to projects involving equipment, vessel monitoring systems and safety measures. Aid should not increase tonnage, apart from improvements made above the main deck. In all cases of new builds and modernisation projects, eligibility for aid is conditional upon national compliance with fleet reference levels, as well as the correct keeping of a national fleet register.

The new emergency measure provides an added incentive to encourage adoption of strong recovery plans and to support associated effort reductions. Hopefully, this should result in a significant increase in decommissioning.

For further information about proposals and decisions on the reform of the CFP, more detailed briefings are available on the IEEP website: <http://www.ieep.org.uk>

● 'New approach' to fisheries agreements

Just before Christmas, the Commission released a Communication on the future EC policy on fisheries agreements (COM(2002)637). The Community has had fishing access agreements with third countries, predominantly in Africa, since the extension of national jurisdiction out to 200 nautical miles in the 1970s. Fishing agreements were set up to hold on to European fishing possibilities, with the Commission responsible for their negotiations, on the basis of a Council mandate.

The Commission is now proposing what they call a 'new approach', aiming for more integrated Fisheries Partnership Agreements (FPAs) with third countries, going far beyond payments for access. Nevertheless, the Communication states that the

first objective of FPAs is to defend the interests of the EU industry, thereby allowing the European long distance fishing fleet to consolidate its role in sustainable exploitation of global fish resources. In addition, the promotion of joint ventures is to remain an important part of all future cooperation.

Some important improvements are suggested, such as the introduction of sustainability impact assessments to evaluate the effects of FPAs. It is also recognised that resources are scarce, even on a global level, and that flags of convenience, illegal fishing activities, lack of transparent rules and subsidies distort competition and often lead to practices contrary to sustainable use.

How much of a new departure this proposal represents is difficult to judge.

● Suggestions on improving scientific advice

In February this year, the Commission published a Communication (2003/C 47/06) on improving scientific and technical advice for Community fisheries management.

A number of measures are suggested to improve the reliability, transparency and timeliness of scientific advice. Recognising the growing need for more up-to-date and comprehensive scientific information, the Commission proposes two key measures in order to improve data availability:

1. Reorganising the provision of advice to improve relevance and timeliness, particularly by strengthening cooperation between the fishing industry and scientists in data collection and monitoring activities. Emphasis is also placed on prioritising scientific

research and resources on 'high-risk situations', increasing Community involvement in ICES and other organisations relevant to fisheries advice, and improving the institutional framework for the resulting measures by defining clear policy objectives and introducing a method for obtaining rapid responses.

2. Devoting more resources to obtaining scientific advice. The need for more extensive data collection is recognised, as is the need for more specialised staff and the establishment of more sophisticated administrative structures.

The Commission has indicated that €2.3 million will be provided for pilot projects aimed at supporting and enhancing national scientific capacity.

● Commission pushes on with strategy on monitoring and control

In March 2003, the Commission announced a Communication called 'Towards uniform and effective implementation of the Common Fisheries Policy' (COM(2003)130). It essentially consists of two elements: a Plan of Action for increased cooperation between Member States and their enforcement agencies, and details on the process of establishing a new joint inspection structure, which would organise the deployment of inspection and surveillance activities along the lines set out in the Action Plan.

The eleven-point 'Action Plan for cooperation in enforcement'

includes a Community inspection strategy to target critical EU stocks, such as highly migratory species in the Mediterranean, cod, herring and some sprat stocks. Specific monitoring programmes are to be adopted for these stocks, establishing common inspection and surveillance priorities, and benchmarks for inspection and surveillance of fishing activities. The Plan also contains more general actions to improve operational cooperation (eg tackling access to information and use of new technology, reporting, and the follow-up of irregularities), to

secure more uniform inspection and surveillance between Member States (eg through the exchange of inspectors) and to support evaluation and review. Implementation of the plan has already begun with the development of a Compliance Work Plan and Scoreboard (COM(2003)344) in June 2003.

The Commission proposes that the joint inspection structure should take the form of a Community Fisheries Control Agency, taking the Plan of Action forward on a more permanent basis. Multinational

inspection teams would help ensure greater confidence that the rules of the CFP are being enforced equally throughout the EU. Importantly, the Agency's activities would extend beyond EU waters to international and third country waters. Activities will include the organisation of inspection and surveillance of licences, vessel characteristics, and fishing activities. The Commission intends to develop legislative proposals for the Council to adopt such a structure in 2004, following a more detailed feasibility study.

Marine Reserves for Fisheries Management and Conservation: A Win-Win Strategy



Flatfish such as plaice are often caught by beam or bottom trawls that have direct impact on their habitats.

Jim Greenfield/imagequest.3d.com

Fiona R. Gell & Callum M. Roberts
University of York

In recent years, the desperate state of the world's fisheries has become increasingly obvious. Here in Europe we are suffering badly. New scientific studies indicate that there are less than a tenth as many fish in European waters as there were a hundred years ago. Fleets from many countries compete for dwindling resources and devastating emergency measures are being taken in response to a fisheries crisis spiralling out of control. EU-wide legislation enforced at local levels has alienated fishing communities from fisheries management and many feel helpless to act.

'Marine reserves show great promise as a means of rebuilding fish stocks and restoring productivity'

Against this bleak backdrop, a new fishery management approach is offering hope for the future. Marine reserves – areas of the sea that are closed to all fishing – show great promise as a means of

rebuilding fish stocks and restoring productivity. They also represent a way of better matching management to local needs, helping to restore the connection between fishers and the local resources.

The potential of marine reserves

Much of European fisheries management – at least in the North-East Atlantic and Baltic Sea – is focused on assessing the status of stocks of different commercial fish species and setting yearly quotas for them. The problem with such an approach is that it is risky and error prone. Data on fish stocks is usually limited, information on levels of fishing mortality is often inaccurate, fishery management models lack realism, and fishery ministers often give greater weight to short-term socio-economic concerns than to scientific advice. It is hardly surprising that fisheries management is failing. What fisheries management needs is an injection of biological reality: if we don't let fish breed, there will be few to catch; if we don't let fish grow, we will squander their potential productivity.

Marine reserves have in the past been more closely associated with nature conservation than fisheries management, but evidence is building that they can help sustain fisheries when part of a wider fisheries management strategy. Marine reserves offer refuges from fishing pressure and the collateral damage done by gears such as trawls. Within them, fish live longer and grow larger. Because bigger fish (in most cases) produce more eggs, those within reserves can restock fishing grounds as ocean currents carry away their eggs and larvae. As stocks build up in reserves, juvenile and adult fish should 'spill over' from protected areas to places where they can be caught.

But what evidence is there that these no-take marine reserves work, and that they would be an effective tool in European fisheries management? We recently reviewed experiences with marine reserves and other forms of fisheries closures from around the world. We examined how fish stocks inside and outside protected areas have responded, and effects on adjacent fisheries. We looked at a wide variety of examples, from small-scale coral reef fisheries in the Caribbean and Pacific, to large-scale industrial fisheries in the Atlantic. The evidence that marine reserves can indeed help promote productive and sustainable fisheries is growing fast.

Our findings show that reserves promote a rapid increase of exploited species within them, with stocks

often increasing five times or more in size within 5-10 years of establishing a reserve. Benefits continue to accrue over long periods as habitats recover and fish grow larger and older. Stock increases translate into higher catch rates nearby. In many cases, initially sceptical fishers have come to support reserves as they have seen benefits grow. Reserves work across a wide variety of species and habitats, and it seems likely that effective reserves can be designed for any place that is fished.

Positive examples from Europe

Most examples of well-managed and long-established marine reserves in Europe come from the Mediterranean. For example, on Tabarca Island, off the Spanish coast, a zoning scheme with a marine reserve surrounded by a buffer zone and a recreational zone has proved effective. The area is dominated by seagrass and protection of this habitat has been increased through the use of artificial reefs within the reserve, which prevent trawling. Underwater surveys show that the abundance and quantity of fish are higher inside the reserve than outside, and that numbers and sizes of most important target species such as groupers and seabreams have increased since the area was first protected in 1986. Commercially important invertebrates such as lobsters, octopus, squid and pen shells have also increased in number, and catches of several key species increased in fishing areas adjacent to the reserve. For example, the catch of grouper increased by 50 per cent, gilt-headed seabream by 60 per cent and bream by 85 per cent after six years of protection. A later study confirmed these trends, and reported that bream catch had more than tripled after nine years of protection.

In another Spanish reserve, the Columbretes Islands Marine Reserve, lobster catch rates from experimental fishing were significantly higher inside the reserve than at two sites outside it. Although no data are available on the overall effect of this 14km² reserve on the local fishery, it appears that people are now fishing around its boundary, suggesting increased catches adjacent to the reserve.

While European marine reserves are still scarce, there is much to be learnt about their possible performance from more limited fishery closures. For example, studies of a trawl ban in the Gulf of Castellammare, Sicily, revealed rapid and dramatic increases in the quantity of important commercial fish species. In only four years, catch per unit effort for 9 out of 11 economically important species increased between 4 and 185 times. These gains have translated into economic benefits to fishers operating within the management area. In Devon, England, a voluntary agreement between trawl and pot fishers has reduced conflict and is reportedly having positive effects on catch species.

Experiences elsewhere

Marine reserves were first developed as a fishery management tool for complex coral reef fisheries.



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Scallop dredges have a substantial impact on the sea bottom and its biodiversity

One concern often raised in Europe is that reserves may work for small-scale coral reef fisheries targeting relatively sedentary species but not for commercial fisheries targeting more mobile species. We looked at marine reserves in other temperate or sub-tropical regions, and the effects these had on mobile species similar to those found in Europe. Experiences in such places give a good indication of how marine reserves might function if they were introduced more widely in Europe.

One of the best examples comes from the other side of the Atlantic. George's Bank, off the coast of New England, was once one of the most productive fishing grounds in the world. However, in the 1980s the fishery was in steep decline and there was great concern for the future of the fishing community. In 1994, three areas totalling 17,000km² were closed to fishing for bottom-living species such as cod, haddock and flounder, and to all fishing gears that might damage their habitats. The closed areas formed part of a management package that included limited entry into the fishery, increased mesh sizes for trawls and a gradual reduction in effort.

The closed areas have been judged a success by fisheries scientists and fishers alike. Scallops have shown the most spectacular increases. In five years, densities of legal size scallops inside closures rebounded to between 9 and 14 times those in fished areas. Scallop fishers have reaped the benefits by fishing around the closed area boundaries. Important commercial fish species such as haddock, yellowtail and witch flounder have also benefited, and stocks are now well on their way towards recovery. Cod have responded more slowly but there are encouraging signs of recovery. Cape Cod fishers have reported substantial improvements in catches and reduced distances travelled to get a decent catch. The biological consequences of protecting habitats

from damaging fishing methods such as trawling and dredging have also been evident. Studies show that within the closed areas, the biological complexity of habitats has increased, enhancing survival of both young and old fish.

There are many more examples of commercial species benefiting from reserves and fisheries closures in other parts of the world with habitats and fisheries similar to those in Europe, including New Zealand, South Africa, Australia, Canada and Chile. In the George's Bank case, gear closures were explicitly designed for the management of large-scale commercial fisheries.

North Sea fisheries managers today face a similar situation to that confronting George's Bank fishery managers in the early 1990s. The New England experience suggests that marine reserves could help turn European fisheries around. But how extensive would closures need to be?

Size and control matters

One of the main concerns that fishers often have about marine reserves is that losing a significant proportion of their fishing grounds will lead to a corresponding decrease in catch. However, a large body of theoretical work predicts that protecting 20-40 per cent of fishing grounds in networks of local-scale reserves would produce maximum benefits to fisheries. Real examples are confirming this. Fisheries benefits have been strongest in places where between 10 and 35 per cent of fishing grounds have been protected. In George's Bank, for example, the closures encompass 25 per cent of the fishing grounds.

'protecting 20-40 per cent of fishing grounds in networks of local-scale reserves would produce maximum benefits to fisheries'

Another concern shared by fishers and managers is how to manage and effectively enforce marine reserves. If they are poorly enforced, poachers will benefit most, whilst law-abiding fishers lose out. Two main solutions have been emerging from experience around the world. In the case of large-scale industrial fisheries, we can turn to developing technology in the form of satellite transponders. Such instruments allowed the location of vessels in New England to be very accurately traced and showed a very high level of compliance with closures by the fleet. A potential spin-off from satellite data is greater accuracy of estimates of the distribution of fishing effort. This

would improve stock assessments, and management decisions based on them. In more small-scale fisheries, self-enforcement has been successful, with fishers and other members of the community ensuring people comply with regulations.

One of the big advantages of spatial approaches such as marine reserves to fisheries management is that local fishers can become more closely involved in management and contribute to its success. The evidence we have examined indicates that most benefits from reserves and fishery closures are delivered to local fisheries, within a few to a few tens of kilometres from the protected area. If local communities are confident that they will benefit from management, then they are more likely to implement and enforce the necessary measures. Examples from around the world also point to wider benefits of marine reserves through increased local involvement in management, the development of alternative incomes to fishing and a sense of community ownership of resources fostering sustainable use. Obviously these benefits are less applicable to offshore areas, but they certainly apply to Europe's extensive coastal fishing grounds.

Reconciling fishing and conservation

As fisheries have declined, fishers and conservationists increasingly find themselves in conflict. Evidence is accumulating rapidly that fisheries activities damage and destroy sensitive habitats, such as cold-water reefs and maerl beds, and reduce biodiversity in general. They can also threaten species such as dolphins, and there is growing concern about the plight of many fish and invertebrate species. But there is another way.

In the sea, we have an opportunity quite unlike that prevailing on land – it seems that there can be harmony between exploitation and conservation. Marine reserves can protect species and habitats within their boundaries, while supplying a vigorous extractive industry in areas beyond. At the World Summit on Sustainable Development in 2002, countries agreed on targets for creating national networks of marine protected areas by 2012 and rebuilding overexploited fish stocks by 2015. Our research shows that if we make rapid headway with the protected areas target, we will help rebuild fish stocks at the same time.

*This article is based on a report, *The fishery effects of marine reserves and fishery closures*, available online at http://www.worldwildlife.org/oceans/fishery_effects.pdf*

For further information, contact Fiona Gell or Callum M. Roberts, Environment Department, University of York, York, YO10 5DD, UK. Emails: frg3@york.ac.uk, cr10@york.ac.uk

New Study to reveal Secrets of Seamounts

Jessica Lindström Battle

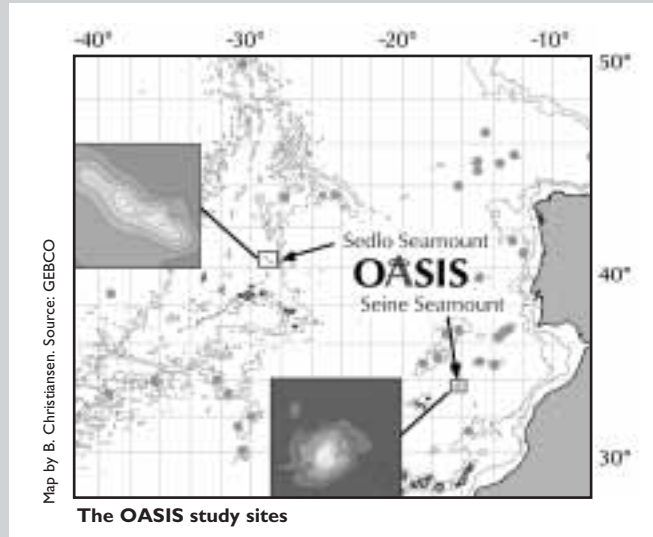
Far out in the open ocean, high underwater mountains rise from abyssal plains. Created by volcanic activity, seamounts are found in all oceans, and each constitutes an ecologically distinct environment. Due to their position in oceanic currents and their large size and steep slopes, they often generate an upwelling of nutrient-rich deep-sea water to the surface. This enhances the growth of plankton that in turn provide the basis for an abundance of invertebrates and fish, making seamounts important breeding and feeding grounds for vast numbers of pelagic and demersal species.

Many species found at and around seamounts grow very slowly – for example some larger fish live over 100 years, not reproducing until the age of 25. In addition to extreme longevity, late maturity and low reproduction rates, fish such as the orange roughy only come together at seamounts in large numbers during parts of their life cycle, making them highly vulnerable to overfishing. Due to their isolated locations, the seamount fauna is also characterised by a high rate of endemism (species that are unique to one place). These factors make seamount ecosystems very sensitive to disturbance

from human activities.

Pelagic and demersal fisheries constitute the greatest threat to seamount communities, as plummeting fish stocks in shallower waters push fishing fleets further out at sea. Most seamounts are situated in international waters where fisheries and other exploiting activities remain largely unregulated. But also within European waters, a very first attempt to control the rapidly expanding deep-sea fishing industry was made only recently. The dragging of heavy trawls over fragile bottom habitats and the removal of large parts of resident and aggregating fish populations have already had negative consequences for the biodiversity of underwater environments. Mining is another potential threat to these unique ecosystems, as the crust covering seamounts often contains high concentrations of commercially valuable minerals.

Today, the seamount ecosystems and the human impacts upon them are poorly known. The OASIS project (Oceanic Seamounts – An Integrated Study), funded by the European Commission, is the first European scientific seamount study integrating physical, biogeochemical and biological research. Two



seamounts in the North-East Atlantic will be studied over three years. The primary goal is to provide a holistic, integrated assessment of seamount ecology. The scientific knowledge gained will be integrated in ecosystem models and used to develop concepts for seamount conservation.

Sustainable fisheries depend upon well-functioning ecosystems. In order to ensure a sustainable fishery and viable fishing communities, an ecosystem-based management approach for important oceanic ecosystems (including seamounts) is crucial. Therefore, one of the aims of OASIS is to produce comprehensive, science-based management

guidelines for seamounts. In addition to these, site-specific management plans for the two seamounts under study will be developed and presented to stakeholders.

Until we know more about these fragile ecosystems and the long-term impacts of fishing and other human activities, the participants in OASIS believe that it is necessary to apply the precautionary principle to seamount management to ensure the protection of these unique and important environments.

For further information, contact: Dr. Bernd Christiansen, Project Coordinator, University of Hamburg, Germany. bchristiansen@uni-hamburg.de or look at <http://www.rrz.uni-hamburg.de/OASIS/> The OASIS newsletter can be downloaded at: <http://www.rrz.uni-hamburg.de/OASIS/Pages/page1.html>

Global depletion of predatory fish communities

A recent article in *Nature* (15 May 2003) suggests that the biomass of large predatory fish has declined globally by more than 90 per cent and that entire fish communities, across a range of ecosystems, have declined considerably. In addition, it shows that industrialised fisheries typically reduce community biomass by

80 per cent within 15 years of exploitation.

The article is based on a study of changes in fish communities and estimates of the global decline in predatory fish in shelf and oceanic ecosystems. The aim was to compare the composition and abundance of unexploited fish communities with those currently exploited. This information can then be used in fisheries management, such as the restoration of fish

stocks and associated ecosystems to healthy levels. Today, management measures are rarely introduced before ecosystems have been heavily affected, and at that stage simply stabilise fish stocks at low levels. Fish stocks reduced to low levels are a threat to sustainability, and are only able to generate low economic yields.

In heavily exploited communities, the extinction of populations is a concern,

especially in those that have a high age of maturity. Extinctions often go unnoticed, even in closely monitored systems.

The findings of the study support the concerns that recently motivated the Johannesburg UN resolution to restore fish stocks to healthy levels.

Myers, R.A. & Worm, B. (2003) Rapid worldwide depletion of predatory fish communities. *Nature*, Vol. 423: 280-283.

UN Fish Stocks Agreement update

The 1995 UN Fish Stocks Agreement, one of the main instruments to follow the 1992 Rio Summit, entered into force on 11 December 2001. When *El Anzuelo* (VOL 9, 2002) last reported on progress under the Agreement, the EC had adopted a Decision to conclude the Agreement, but it had not been deposited with the UN, since Greece, France and Ireland had not completed their ratification processes.

Greece and France have now achieved the Parliamentary procedure to ratify the agreement, while the Irish Parliament is in the process of doing so. It is hoped that this will be completed by 23 July, when the next UN meeting relating to the Agreement is due to be held. Since this is a mixed competence agreement, this would enable the EU, as well as the Member States, to participate as a contracting party rather than as an observer.

Of the ten countries due to join the EU on 1 May 2004, only Cyprus and Malta have so far ratified the UN Fish Stocks Agreement. For the remaining countries, ratification has to be achieved before their accession to the EU.

For further details contact: Serge Beslier, Head of Unit, Directorate B, Fisheries DG, European Commission, Brussels, Belgium. Tel: +32 2 2991111; email: serge.beslier@cec.eu.int

Internet conferences on biodiversity

The BioPlatform and MARBENA thematic networks, supporting the European Platform for Biodiversity Research Strategy (EPBRS), have held three Internet conferences this year on marine and terrestrial biodiversity issues within the EU, including the Baltic and Mediterranean regions. The results of the conferences are intended to feed into a process of creating a lasting network for marine biodiversity research in Europe.

The last conference, held in June of this year, related to the Baltic region. The objectives were to discuss bottlenecks and identify solutions for

producing and applying relevant knowledge for policy, management and conservation decisions. While language and political reasons were identified as being historic constraints to the sharing of information in the region, funding and changes in work practices are now considered to be the main challenges. Despite being neglected by researchers in the past, it was agreed that further research in the Baltic Sea, an evolutionary young sea, may significantly add to European marine science and provide new lessons.

Details of the conferences and the MARBENA project can be found at <http://www.vliz.be/marbena/> For further information, contact: Pim van Avesaath; email: P.vanAvesaath@nioo.knaw.nl. For more information on the Bioplatform, go to <http://www.bioplatform.info/>

Joint OSPAR and HELCOM Meeting

For the first time the annual conferences of the OSPAR and HELCOM Commissions were held jointly. The last week of June, officials met in Bremen, Germany, to discuss the environmental status of the North-East Atlantic and Baltic seas.

The week started off with a meeting of the OSPAR Heads of Delegation, followed by a session of HELCOM officials late on Tuesday. Ministers then met in separate fora, before coming together in a joint session on Wednesday and Thursday.

Points on the agenda included: environmental impact of fisheries and of shipping, Marine Protected Areas, an ecosystem-based approach to the management of human activities, the European Marine Strategy and the future roles of the OSPAR & HELCOM Commissions.

Ministerial Statements are expected from the separate meetings, as well as from the joint session. Ministers last met in 1998 (OSPAR) and 2001 (extraordinary HELCOM meeting on the safety of shipping), respectively.

For further details, please contact: The OSPAR Secretariat, UK. Tel: +44 20 7430 5200; Fax: +44 20 7430 5225; e-mail: secretariat@ospar.org The HELCOM Secretariat, Finland. Tel: +358 9 6220 220; Fax: +358 9 6220 2239; e-mail: helcom@helcom.fi

Mixed blessing for cetaceans at IWC

After four days of heated discussions in Berlin, Germany, the 55th Annual Meeting of the International Whaling Commission (IWC) drew to a close on 19 June. Whilst a majority supported the extension of the IWC remit to include all conservation needs of whales, dolphins and porpoises (the Berlin Initiative), proposals for whale sanctuaries in the South Pacific and South Atlantic failed to gain the necessary three-quarters majority.

Delegates also failed to reach a compromise on the revised whale stock management scheme (RMS) – an issue that has been unresolved for some years and precludes any decision on the introduction of commercial catch limits.

Under the Berlin Initiative, IWC Members will be able to address the full range of threats to cetaceans, including bycatch, marine pollution, climate change, noise pollution and ship collisions. A Conservation Committee composed of all Contracting Parties will be established to prepare the Commission's future Conservation Agenda and see to its implementation.

A request by Japan to sanction the commercial killing of 150 minke whales and 150 Bryde's whales was defeated by a clear majority. Moreover, the issue of scientific whaling was also revisited, following the submission of three proposals from Japan and Iceland. Two Resolutions were passed, urging countries to abstain from special permit catches and requesting that Japan stops its scientific catches of minke whales.

The next IWC plenary session will be staged in Rome in 2004.

For further details, contact: The International Whaling Commission. Tel: +44 1223 233971; Fax: +44 1223 232876; e-mail: secretariat@iwcoffice.org

New EU position on WTO subsidy rules

Fisheries subsidies finally became part of the WTO agenda in the 2001 Doha Negotiating Mandate, following

successful lobbying from WWF and others. Paragraph 28 of the Doha Ministerial Declaration states that 'In the context of [the subsidies] negotiations, participants shall also aim to clarify and improve WTO disciplines on fisheries subsidies, taking into account the importance of this sector to developing countries.'

Some countries, the so-called 'Friends of Fish', have supported the abolition or at least the reduction of subsidies to the fishing sector, among them Iceland, New Zealand, USA and a number of developing countries. A recent position paper by the European Communities shows that the EU has now joined this group and argues for stronger WTO rules on fisheries subsidies. The paper reflects recent agreement within the EU to phase out support for building new fishing vessels, and for exporting capacity or setting up joint ventures in third countries. The immediate result will be to further isolate Japan and Korea, the main opponents to strengthening WTO fisheries subsidy rules.

Two specific subsidy categories are proposed by the EU: prohibited subsidies including aid for vessel construction and subsidies to transfer capacity to third countries; and permitted subsidies including decommissioning schemes and aid to mitigate social and economic impacts of restructuring.

On transparency, the EU proposed more stringent subsidy notification rules and the publication of a 'scoreboard' on the number of notifications per country and subsidy type. Not surprisingly, the EU paper is silent on a range of other types of subsidies.

For further information, contact: DG Trade: TRADE-A3@cec.eu.int

EU marine strategy underway

In October 2002, the Commission published its Communication 'Towards a strategy to protect and conserve the marine environment'. The paper marks

The Real Cost of a Prawn Sandwich

The significant waste and destruction caused by prawn trawling is the focus of a current campaign run by the Environmental Justice Foundation (EJF), a UK-based independent non-profit organisation. Some of the key findings in their recent report, 'Squandering the Seas', include:

- In the tropics, trawlers can catch 10-20 kg of marine species to obtain just 1 kg of prawns. This non-target bycatch is usually thrown overboard, dead or dying.
- 150,000 sea turtles are killed in tropical prawn fisheries every year. Prawn trawling is also thought to be the greatest threat to seahorses.
- Globally, prawn fisheries alone are responsible for one third of discarded catch, yet produce less than 2 per cent of seafood.
- Local fish stocks and fishing grounds are heavily impacted, and catches have declined sharply in many areas where trawlers operate.
- Prawn trawling is often carried out in the waters of developing countries by foreign fleets, including those of EU nations, for foreign markets. This threatens food security in some of the world's poorest countries.

To tackle these issues, EJF is working at a number of levels. At the international level, it is pressing for the adoption of a UN FAO International Plan of Action on Bycatch Reduction, in addition to implementation of existing international treaties on responsible fisheries. On an EU level, EJF is calling for reform of EU fishing agreements with third countries to reduce damage to the environment as well as conflict with local interests. In Britain, EJF is calling for all supermarkets and retailers to prove that the prawns they sell come from environmentally and socially sustainable sources, and urging consumers not to buy prawns until this is done.



© NOAA

High value prawns are separated from unwanted bycatch

To ensure long-term sustainability, an independent, internationally recognised system for certification and monitoring of prawn production is needed. While farmed prawns can be found in many supermarkets, aquaculture is unfortunately not a sustainable alternative to prawn trawling. It is responsible for the destruction of mangrove areas, pollution of agricultural land and water supplies, depletion of local fish and prawn stocks, and the forcible displacement of people.

For further information, or a hard copy of the report, please contact Annabelle Aish, the Environmental Justice Foundation, UK. Tel: + 44 20 7359 0440; email: annabelle.aish@ejfoundation.org
Copies of 'Squandering the Seas' can also be downloaded at: <http://www.ejfoundation.org/trawling.html>

the first step towards the completion of one of seven thematic strategies, which are to be developed under the Sixth Environmental Action Programme.

The document sets out 14 ambitious objectives, including halting biodiversity decline by 2010; changing fisheries management to reverse declining stocks and ensure sustainable fisheries; raising the quality of seafood to prevent risk to human health; eliminating pollution by dangerous substances; and improving the knowledge base on which marine protection policy is founded. It suggests a number of actions that can be taken in order to achieve these objectives, such as bilateral agreements, political cooperation, fishing agreements with third countries and participation in international treaties.

A consultation period was launched following its release, which so far has included a conference held in December in partnership with the Danish Presidency. Both the European Parliament and Council of Ministers have stressed that an ecosystem approach needs to be taken in developing the strategy, with the former urging that the ongoing reform of the CFP should also be used to promote the protection of the marine environment. The Commission has invited comments on the document from all stakeholders, and following this will present a draft strategy. The final strategy is to be produced by July 2005.

Further information: 'Towards a strategy to protect and conserve the marine environment' (COM(2002)539), 2.10.2002
The Marine Strategy lead officer is Olle Hagström, DG Environment, Brussels.
Tel: 0032 2 299 2116; email: ulle.hagstroem@cec.eu.int

● PUBLICATIONS

- *Eels: Their Harvest and Trade in Europe and Asia*. TRAFFIC, available at: <http://www.traffic.org/bulletin/Nov2002/eels.html>
- Together with IUCN, Fauna & Flora International and ResourceAfrica, TRAFFIC also recently launched a website on the precautionary principle: <http://www.pprinciple.net/>
- *Fisheries and Nature: Co-Existence or Extinction?* IFAW Workshop Proceedings, European Parliament, 5 March 2003. For more information, contact: IFAW EU Office, Rue Boduognat 13, B-1000 Brussels, Belgium. Tel: +32 2 230 9717; Fax: +32 2 231 0402; email: generaleu@ifaw.org
- *A Strategic Framework for Scottish Aquaculture*. Scottish Executive. Available at: <http://www.scotland.gov.uk/library5/environment/sfsa.pdf>
- *Review and Gap Analysis of Environmental Indicators for Fisheries and Aquaculture*. IEEP, London. Available at: <http://www.ieep.org.uk>
- *Integrating fisheries and environmental policies – Nordic experiences*. TemaNord 2003:521. To order a copy go to: <http://www.norden.org/pub/miljo/miljo/sk/>

Fish Food for Thought



Euan Dunn, RSPB

Sandeels in the pipeline, Esbjerg, Denmark

Maren Aschehoug Esmark
Marine Conservation Officer,
WWF-Norway

Although fish farming is widely believed to take pressure off wild fish, farmed fish such as salmon and trout eat feed made from wild-caught fish. Without a change in industry practices, the growing number of farmed fish could eat their way through wild stocks of small pelagic fish – a major food source for a number of animals, including orcas, puffins, and other wild fish.

Each year, some 90 million tonnes of wild fish are caught from the world's oceans. But not all these fish end up on our dinner plates. More than one third is used to make fishmeal and fish oil. Of this, two thirds are used

to feed farmed fish.

Aquaculture is one of the fastest growing food industries in the world. In a new report, focusing on salmon and trout farming, WWF takes a closer look at the assumption that fish farming takes the pressure off wild fish stocks. The report concludes that rather than reducing pressure on wild fisheries, salmon and trout farming is increasing this pressure and is currently not sustainable.

Salmon and trout are carnivorous fish that in the wild eat smaller fish, squid, and other crustaceans. When farmed, they are fed pellets made largely of fishmeal and fish oil. The amount of feed needed for farmed fish is staggering. WWF has calculated that, as a conservative estimate,

4 kilograms of wild-caught fish are needed to produce 1 kilogram of farmed fish.

The aquaculture industry currently consumes 70 per cent of the global production of fish oil and 34 per cent of total fishmeal. The salmon and trout industries alone consume 53 per cent of the world's fish oil. If fish farming continues to expand at the current rate, the demand for fish oil by the fish feed industry is likely to exceed available resources within the next decade. If fish oil supply fails, like it did in 1998 under the strong El Niño in the Pacific, the aquaculture industry will face severe feed shortages.

Most fish oil and fishmeal is made from small, bony pelagic fish such as anchovies, pilchards, mackerel, herring, and whiting. Some species are also used for human consumption, but others, known as 'industry fish', are only used for making these products. Small pelagic fish are a finite resource however, and many stocks are already fished at or above their biological limit.

There is no possibility to sustainably increase catches of pelagic fish in any of the south-east Pacific Ocean fisheries, and the situation is no better in the North-East Atlantic, where many stocks are already over-exploited. The species most under threat today is blue whiting. It is being harvested outside safe biological limits and scientists fear that, if the present fishing effort continues, the stock will collapse.

Collapse of small pelagic fish stocks is not only a potential problem for fish farms. The fish species used for fishmeal and fish oil are also vital for the marine ecosystem, as prey for other fish, birds, and mammals. Heavy

exploitation means less food for cod, haddock, and tuna – all commercially important fish species – not to mention seabirds such as puffins and marine mammals such as orcas.

Since no increase in global production of fishmeal and fish oil is expected, the salmon farming industry is now looking for alternative feed resources. Increased use of fish offal or even utilisation of bycatch could contribute to solving the problem; feeding farmed fish a resource that otherwise would be lost. Unfortunately, the current trend seems to be to process less fish on land and dump vast amounts of fish offal in the sea every year.

The industry is also looking at non-fish sources of feed. One alternative is to increase the use of vegetable proteins. Several examples show that fishmeal and fish oil can be substantially replaced by alternative protein and oil sources. Whatever solution the fish farming industry finds, it must be sustainable and not adversely affect the environment.

So is fish farming a long-term answer to the fisheries crisis? No, the only cure is good management. Producing fish by aquaculture will not reduce the pressure on wild fish stocks. Only an end to overfishing, reductions in fleet size, and an ecosystem, rather than single stock, approach to management will contribute to ending the current fisheries crisis.

For more information, contact: Maren Aschehoug Esmark, Marine Conservation Officer, WWF-Norway. Phone: +47 22 036515; Email: mesmark@wwf.no

The WWF report can be downloaded from www.wwf.no/core/pdf/food_for_thought.pdf

Oiling the Wheels of Parliament

Euan Dunn

of BirdLife International reviews a recent Brussels Public Hearing on 'The Fishmeal and Fish Oil Industry – An International Perspective'

Forever caught in the blades of cross-cutting issues, the fishmeal and fish oil industry's mission is to defend itself as part of a safe and sustainable food chain. In April, it had the ear of the Fisheries Committee of the European Parliament (which is currently preparing its own report on industrial fishing) and Commission officials at a public hearing in Brussels.

The sector lobbied above all for overturning the EU ban on feeding fishmeal to ruminants, introduced in 2001 for fear of contamination with mammalian meat and bone meal – MMBM – believed to be responsible for BSE in cattle and vCJD in humans. Since then, the use of fishmeal for feeding livestock has fallen by around 30 per cent. With the Commission due to review the ban by the end of June, the sector was encouraged by strong support from EP Fisheries Committee Chairman Struan Stevenson

MEP and Daniel Varela MEP for lifting the embargo, the former declaring that evidence of contamination was proving as hard to find as Iraq's weapons of mass destruction.

The sector's other priority was to argue against industrial fisheries damaging human consumption fisheries and the environment. Catherine Stihler MEP supported RSPB's case for maintaining the East Scotland sandeel closure but there is a bigger picture: in a classic case of 'fishing down the food web', the growth of industrial fishing in Europe mirrors the collapse of North Sea whitefish and mackerel which at their peak consumed large amounts of sandeels and other targets of industrial fishing.

So is industrial fishing a bottleneck to whitefish recovery? Niels Axel Nielsen (Danish Institute for Fisheries Research) argued not, but another study concludes that future recovery of mackerel or whitefish would probably compete severely with sandeel-dependent wildlife (seabirds etc) and threaten the sustainability of the present industrial fishery. In my view, industrial fishing cannot justify priority in this three-way struggle and will need to be scaled down.

Meanwhile, expanding aquaculture is an increasingly powerful driver of industrial fishing (see previous article). In one estimate, aquaculture will consume the entire world production of fish oil by 2006. The search is therefore on to find alternative ingredients for aquafeed. Reid Hole (Nutreco) anticipated increasing use of plants and novel marine raw materials such as algae and krill. There was no mention, however, of invoking environmental impact assessment.

In the final debate, Stuart Barlow (IFFO) posed the rhetorical question: "What are we going to do with 10 million tonnes of sustainably fished anchovy (if not convert it into fishmeal and oil)? To generous applause, Vice Chairman of the Fisheries Committee Rosa Miguélez Ramos respectfully suggested we should eat it.

The '999' fishmeal and fish oil processing plant in Esbjerg, Denmark



Euan Dunn, RSPB

New cod recovery plan based on reformed CFP

In early May 2003, the Commission released a proposal for a long-term recovery plan for cod stocks of the Irish Sea, to the West of Scotland and the Eastern Channel, as well as the North Sea (including the Skagerrak) and Kattegat (COM(2003)237). The objective of the plan is to ensure safe recovery of these stocks to sustainable levels within a time frame of five to ten years. For stocks below safe biological limits, recovery measures may involve very limited fishing possibilities.

Quotas will be set to aim for a 30 per cent increase in the quantities of adult fish each year, and the annual change in TACs will be limited to 15 per cent upwards or downwards. Once the proposed target level for a stock is met for two consecutive years, the recovery plan will be replaced by a multi-annual management plan.

Central to the plan is a fishing effort limitation scheme. In future, the effort required to harvest the annual quota based on the targets for recovery will be calculated in kilowatt days. Quotas and kilowatt days will then be distributed to the Member States in proportion to their share of the total Community landings of cod during 2000-2002. How they divide the fishing possibilities amongst their vessels will be up to each Member State.

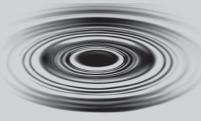
A number of specific measures to strengthen vessel monitoring, inspection and control are also suggested.

In addition, Commission refers to the new aid provisions intended to support implementation of the recovery plans.

The fate of the proposed plan is significant both for the recovery of the cod stocks, and as a test of the application of the new CFP. Similar plans for hake, sole, haddock and lobster are expected to follow later this year.

For further information, contact: Chiara Gariazzo, Communication and Information Unit, DG Fisheries, Brussels. Tel: +32 2 2999255; fax: +32 2 299 3040; email: chiara.gariazzo@cec.eu.int

For further information, contact: Dr Euan Dunn, Senior Marine Policy Officer, RSPB, The Lodge, Sandy, Beds SG19 2DL, UK. Email: euan.dunn@rspb.org.uk



Apart from acting as a source of independent information on fisheries and the environment, *El Anzuelo* aims to present different perspectives on the issues, and thereby encourage discussion and debate among the various players. If you wish to respond to material included in this or the previous issue, we would be happy to hear from you.

A STORM IN THE BALTIC

Dear Editor

■ Can an EU Member State take unilateral action, at its own expense, for the protection of a common resource? Not when it comes to fisheries, according to a Commission position taken in January 2003. The ruling upset many Swedes, and led Green members of the Convention on the Future of Europe to suggest adding an article in the new EU Treaty giving Member States an explicit right to go beyond Community policy to protect natural resources, the environment or health in the areas of agriculture and fisheries.

It all started with the depleted cod stocks in the Baltic and North seas. The situation in the Baltic, particularly with the eastern stock, had prompted earlier national discussions about the eventual need for a temporary closure. This was also proposed by Sweden ahead of the yearly negotiations in the International Baltic Sea Fishery Commission (IBSFC) in September 2002.

The Swedish Green Party has long argued that fisheries management had failed and that something drastic needed to be done. Finally, after national elections in October last year, an agreement was made with the

Government to announce plans for a unilateral moratorium on cod fishing, while providing temporary compensation to the industry.

The Green Party's position was that the Baltic Sea management measures for cod agreed in the IBSFC were incompatible with a precautionary approach to fisheries management for four reasons:

- the eastern cod stock was still far below safe biological limits and would be for some years;
- management of the eastern and western stocks was not separated, despite repeated recommendations by ICES;
- the agreement was based on suspiciously low levels of 'non-reported landings' (ie illegal fishing); and
- there was an assumption that new technical measures to increase selectivity in the fishery would take full effect from the first year, despite the explicit warning from ICES on this point.

The initial reaction from a bemused EU Fisheries Commissioner, Franz Fischler, on a visit to Sweden a week later, was that the Commission would not in principle oppose a unilateral ban. But in a stunning reversal at the end of January, the Commission concluded that the Swedish Government does not have the right to stop the fishing activities of its own fleet, since fisheries management falls under Community competence.

Since fisheries management is exclusively within Community competence, Treaty revisions strengthening the principle of subsidiarity do not apply. In short, the decision was that Sweden can not take unilateral action at its own expense for the protection of a common resource, even if the action in no way undermines the Common Fisheries Policy, the interests of other Member States, or the interests of any company in any other Member State.

The decision drew a lot of attention in Sweden and the Commission was severely criticised in the media. Normally pro-EU commentators were appalled. Consumers, in the meantime, have responded by reducing their cod consumption by fifty per cent. The image of the Commission was further tarnished

when Fischler and the Swedish Director-General for Fisheries, Jörgen Holmquist, again gave completely contradictory views on whether or not Sweden would be able to take unilateral technical measures to protect cod stocks. Proposals for an alternative line of action, including such measures, were being prepared in the Ministry of Agriculture and Fisheries, suggesting among other things, the use of new, more selective gear, larger areas closed off from trawling and no-take zones.

Recognising the need to strengthen the NGO voice in international fisheries discussions, the Green Party got the Swedish Government to agree to finance an international NGO fisheries secretariat, which will hopefully set up shop later this year. Meanwhile, based on alarming new reports about the state of the stocks, the Commission has announced emergency measures temporarily banning all cod trawling in EU waters in the Baltic Sea. The measures came into force on 15 April and will effectively extend the existing 'summer ban' in place from 1 June to 31 August.

The latest ICES advice (June 2003) clearly shows that the biological justifications for a cod fishing ban in the Eastern Baltic Sea remain. Possibly, the equivalent of the current level of bycatch in other fisheries could be allowed. There is a risk, however, that governments in the Baltic region and the Commission agree on further gear modifications to be implemented when the summer closure ends, rather than on a reduction in fishing opportunities. It is the Green Party's view that this is unlikely to be sufficient as long as the stock remains far below safe biological limits.

Charles Berkow
Environmental Policy Adviser
Green Party, Sweden
Tel: +46 8 786 4979
Email: charles.berkow@riksdagen.se

N.B. On 26 June 2003, the Swedish Government decided to support a Secretariat on Sustainable Fisheries (see above). The budget for 2003 will be SEK 2 million.

IEEP is an independent body for the analysis and advancement of environmental policies in Europe. While a major focus of work is on the development, implementation and evaluation of the EU's environmental policy, IEEP has also been at the forefront of research and policy development in relation to the integration of environmental considerations into other policy sectors.

This newsletter is part of IEEP's sustainable fisheries programme, which aims to identify, develop and build a consensus around alternative approaches to fisheries management. It is part-funded by the Esmée Fairbairn Foundation, and is sent free of charge to key practitioners in the Member States of the EU and in accession countries.

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We are currently considering turning *El Anzuelo* into an electronic newsletter, possibly with a web-based news section, and would like to hear from our subscribers whether this would be an attractive option.

Any feedback is welcome: central@ieeplondon.org.uk