

ICES Annual Report

for

2004

International Council for the Exploration of the Sea
Conseil International pour l'Exploration de la Mer

May 2005

**International Council for the Exploration of the Sea
Conseil International pour l'Exploration de la Mer**

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Part I

2004 Annual Science Conference

General Assembly

Centro Cultural Caixanova

Vigo, Spain

22 September 2004

The assembly was addressed by the **President of ICES, Michael Sissenwine**:

The Annual Science Conference is our premier scientific event. It is also the reason that most of you are here. It is also the time when the delegates representing the 19 member countries of ICES, and scientists representing the scientific community, attend to business, such as the budget and planning about one hundred working group meetings that will occur over the next year.

It is a pleasure to be able to hold our meetings in Galicia here in Vigo. This is a beautiful region full of culture and history, including legions of sunken treasure from a fleet of Galleons sunk in battle in 1702. This is also a place of musical culture, which we will get to experience later in the program.

Vigo is not only an enjoyable place for our meeting. It is also an appropriate place for marine scientists to conduct their work. Vigo is the home for Spain's largest fishing fleet. It also has shipyards, canneries, petroleum refineries and other industries. All of these depend on the sea for raw materials and transport. The relationship with the sea can be extremely positive, but it can also be disastrous when we become careless, as people of this region know firsthand, having experienced an oil spill of millions of gallons when the Tanker "Prestige" split in two and sank not long ago. Of course, it is our goal as a scientific organization to provide the scientific information needed to make society's relationship with the sea as positive as possible.

Once again, let me welcome you to ICES and encourage you to both partake of the opportunities for scientific exchange, and to enjoy our surroundings.

The President then introduced **Minister Enrique Lopez Veiga, Galician Fisheries Minister**:

For me it is an honour to welcome, on behalf of the Council of Galicia, this ICES Annual Science Conference for several reasons. Firstly, because we are in Vigo, which is the capital of fisheries in Europe. Secondly, because the regional government which has competence wishes to welcome all participants.

What you have in front of you is an old fisheries biologist reconverted into a politician, which is happening more and more. The fact that the Minister of Fisheries of Galicia and most of his team are fisheries biologists, tells you what we believe in. We are certainly relying upon you. From a modern perspective, we know that there is nothing else but conservation and rational use of the resources. For all that, we need your advice. We need you very strongly. We have to take away from the political speech things which are not due to who we are. Conservation has no political colour. It has to do with responsibility, with long-term future for our resources and rational conservation of the natural resources. Galicia relies heavily on fishing and we have the obligation, now more than ever, to encourage our people to participate. I want you to remember that when you give your advice it has to be translated into practical law or practical decrease or practical rules. Don't ever forget that: we need deadlines and benchmarks which are easily translated into rules.

We (the Galician Government) always try to understand what you want to say. Your advice is of great use to us. It is the substance of the fisheries policy, but do not forget that when you

work, you work for people and you work for the future of the fisheries society, not only of Galicia, but of the whole world. I think that the sea is the brotherhood of most people.

This organisation is more than 100 years old and has survived wars and enmities between peoples. You are an example. We wish you all the success of the world.

Minister Lopez Veiga, thank you for your insightful comments.

The President then introduced **Mr Salvador Ordonez, State Secretary for Universities and Research:**

It is for me a great honour to participate at the Opening Session of this Annual Science Conference of 2004, of the prestigious International Council for the Exploration of the Sea, and it also brings a special satisfaction the fact that this Conference is held in a Spanish town like Vigo, with such a lifelong tradition and intimately linked to the sea and its resources, also possessing a huge oceanographic research potential.

We will have to become again “good visionaries”, and have the foresight to anticipate issues that are critical to the sustainability of marine resources. Greater understanding of oceans and seas will lead to wiser management of their resources.

In 1902, ICES founders were clever in envisioning an international scientific collaboration that would achieve knowledge impossible from investigations made by one nation alone. You can therefore be proud to have become one of the few scientific forums in which practically all areas of marine science are represented. A good example of this wide view is the news on your web page:

- a) Will Atlantic cod stocks recover?;
- b) Eel stocks dangerously close to collapse; Seamounts – hotspots of marine life;
- c) What’s happening to Atlantic salmon?;
- d) Collecting oceanography data from ferries;
- e) Is time running out for deep-sea fish?

More than 1600 scientists that participate in their work groups and committees are responsible for the increase of knowledge about the sea and its resources.

In particular, let me share with you the vision that the next age of ocean exploration in the present century will lead to unimaginable scientific discoveries. These new discoveries will not only expand knowledge of the seas, but will improve policy regarding marine ecosystems, such as your impressive array of theme session subjects clearly highlights.

I look forward to working with the Spanish Delegates on an action plan which can incorporate the recommendations stemming from the Conference.

The role of the national institutes of research is fundamental within the ICES structure, coordinating their activities, making easier the participation of their experts, financing oceanographic surveys and the organisation in itself, and permanently providing information to international databases.

Spain became an ICES member in 1924, through the Spanish Institute of Oceanography, which actively participates in more than forty meetings scheduled by the Council every year and whose activity in the North East Atlantic has for many years been mainly focused in co-operating within the ICES framework. This has also been the excellent result of the strategic vision of its founder, Odón de Buen y del Cos (1863–1945), who in 1910 succeeded in con-

vincing his contemporaries of the importance and transcendence of the oceanographic studies in Spain.

In order to fulfil its objectives, ICES recently implemented an important analysis process that derived in the adoption of a Strategic Plan, formally ratified by the representatives of the 19 Governments who act as ICES contracting parties, after signing the Copenhagen Declaration on 4 October 2002, on the day of the Centenary of its foundation.

The objective of this Copenhagen Declaration is to contribute to the conservation, protection and recovery of the health and the integrity of the ecosystems of the Earth, according to the 1992 Rio Declaration on Environment and Development.

Likewise, this Declaration calls for the need for the Scientific Council to manage the living marine resources under the ecosystem approach, based on the FAO Code of Conduct for Responsible Fisheries and on the United Nations Conference on Highly Migratory Species.

Spain, open to both the Atlantic and the Mediterranean, together with the Canary and the Balearic archipelagos, has a special interest in the knowledge of the sea and its resources so as to base this scientific knowledge on its marine policies in general, and on its fishing policy in particular. This particular interest is especially true in this Autonomous Community of Galicia, where the fishing, the sea food production, and the marine cultures are productive sectors of enormous importance.

The Spanish society is increasingly more sensitive and demanding towards the conservation of the environment, its biodiversity, and the rational use of the natural resources. Users of the sea and its resources claim the right of this use for future generations as well.

The importance of fishing and tourism in our country is well-known. The tourism industry accounts for about 12% of the Spanish GDP, and it is important to maintain the water quality along our coast and to lay the foundations for an integrated management of the coastline in general.

Fishing is a fundamental socio-economic activity in our coastal communities and it also represents an important food supply for the population. The sustainable exploitation of the fisheries, maintaining the equilibrium of the ecosystems must be a constant goal in management. A well-developed fishing research is needed in order to achieve a rational management of fisheries.

Aquaculture deserves a special mention in our country and particularly in this Community of Galicia. With an annual production of over a quarter of a million tonnes, this industry has experienced in recent years an important development. Control and research of water quality and toxic phytoplankton, advances in biological knowledge of the species and culture techniques, and monitoring of the impact of aquaculture on the marine environment are some of the aspects in which progress should be made.

The present Spanish government has committed itself to give priority to scientific research, by providing the necessary means, and to focus on societal needs under the sustainable development approach. The study of the marine environment, of their ecosystems, their protection and their potentials, by reason of its social, economic, and scientific interest, will merit preferential attention over the forthcoming years.

This Conference is, beyond doubt, a magnificent occasion to learn about and discuss the latest advances in marine research, in issues as passionate and of such practical importance as the ones that will be dealt with in the Theme Sessions from today to next Saturday.

The presence here in Vigo of around 800 marine scientists from more than 25 countries, 179 participants of which are Spanish, allows us to predict that the Conference we are opening

today will be a success. We also wish that you find it an enriching experience, and the Spanish government will closely follow its conclusions.

Thank you very much.

The President then introduced the next speaker, the **Mayor of Vigo, Corina Porro**:

Vigo congratulates itself on having the opportunity to gather more than seven hundred researchers, from twenty five countries in this town that, as the most of you will have already seen, is closely linked to the sea.

The roots of Vigo are to be found precisely in a tiny fishermen village that soon applied new techniques to its long fishing tradition, such as the processing of fish products, salting plants, canning factories or ship building, which allowed it to establish itself as the biggest economic and social engine of Galicia.

At present, we are the first town in this community, providing the highest contribution to GDP, and also the one registering the most rapid demographical growth, as well as being the town where more companies establish themselves and where they most rapidly get consolidated.

Logically, these facts are not just the product of chance. Vigo inhabitants, ladies and gentlemen, are dynamic, creative, entrepreneurial and hard-working people.

In this sense, we are aware that your considerations will be of utter importance for the fisheries policy design. The advice provided by the International Council for the Exploration of the Sea is, beyond any doubt, a keystone for most of the regulatory commissions related to fisheries and marine environment of the NE Atlantic and the Baltic Sea. It is in these areas where some of the most important species for the Spanish fleet can be found, largely composed of Galician vessels.

And all of you are aware of our worry for the conservation of the species and for the monitoring of the marine environment, and you also know the need for the commission resolutions to conform with the “principle of financial prudence” so as not to jeopardise business viability or to impose restrictions that could not be socially accepted.

This difficult equilibrium should be possible. Nobody is interested in overfishing, “food for today, hunger for tomorrow”, but the enormous influence of the Common Fisheries Policy on Vigo and Galicia economy must observe a series of medium-term social criteria.

Actually, notorious researchers warned about the risk that some cod and hake stocks could drop dramatically. The Council and the Commission consequently adopted several regulations that modified or supplemented the dispositions in force until then. Half of all hake captures were taken by Vigo vessels and the restrictions imposed by the Commission for 2004 were unacceptable.

At that time, Galician Regional Government launched a comprehensive round of negotiations in order to reach consensus on a new document, more adjusted to the principle of financial prudence that I mentioned before.

With this example I would like to insist on the need to combine the scientific, environmental, and socioeconomic dimensions in the long term, so that the interested sectors can have the opportunity to participate.

In any case, we must say that during the last twenty years the Common Fisheries Policy has indeed brought about stability to the sector and has avoided the complete depletion of some fish stocks. Nevertheless, the current challenges call for new reforms.

The conservation of fish stocks, the recent EU enlargement, the globalisation of the economy, the stepping in of new agents in the fishing sectors and the increasing importance of the environmental dimension of fisheries management are nowadays the main challenges we all, scientists, politicians, experts, and the sector itself, must face.

The world's total population increases by 90 million people every year. In 2050 we will be almost 10 billion. Under these circumstances, the sustainable management of renewable marine resources will be the highest priority for humankind.

You are well aware of these facts and your part of the responsibility for the future is extraordinary. I encourage you to hold a series of fruitful discussions here in Vigo, in the effort to conjugate factors in a reasonable way.

Thank you very much for your attention and please be welcome.

The **President of ICES** resumed his speech.

Now, I would now like to take a few minutes to share with you my perspective on ICES and the importance of the scientific activity that we are all about.

As you know, the International Council for Exploration of the Sea is the world's oldest example of lasting cooperation between nations to use science for a common good.

The use of the word "exploration" in our name probably reflects the age of the organization. It is from a time when science and exploration were inseparable: when scientists were exploring the North and South poles and the head of the Nile. Today, exploration is more likely to be associated with an economic investment in finding new sources of oil and gas, or new stocks of fish. An important aspect of ICES is that it has always been true to "exploration" in its name in both the sense of "scientific discover" and "economic importance." ICES scientists are on the leading edge of exploring the wonders of the sea. There are several other international organizations that are ICES partners in this endeavor. However, ICES is unique in its commitment and practical experience in translating scientific information into scientific advice that directly guides economic decisions.

The agenda for this year's Annual Science Conference reflects the balance between scientific discovery and scientific advice for sound decision-making. There are sessions exploring how the biology and physics of the sea interact, and about recent discoveries of coral reefs in the deep, cold waters of the oceans. And there are sessions on better ways to assess how much fishing can be sustained or how to map habitat as a scientific basis to protect it. The integrating theme for all of the ICES scientific activity is an "ecosystem approach." ICES is about discovering how marine ecosystems function, about giving advice on how people affect marine ecosystems, and how the marine ecosystems affect them.

While an ecosystem approach is a powerful integrating theme for our work, it is not without risks. Some people fear it because it seems intangible, and thus it is an unknown. Another concern is that our limited knowledge of ecosystems will lead to pressures to delay decisions that are needed for conservation, or conversely, that overzealous application of the precautionary approach will block all development and use of the sea. Society cannot afford either extreme. There is an urgent need to move from generalities to specifics. ICES unique combination of research on ecosystem processes and its practical experience formulating scientific advice, position it to lead the way in advancing the ecosystem approach.

Earlier this year, ICES conducted a dialogue meeting among scientists, fishery managers, environmental policy leaders, and stakeholders, specifically to consider how to make an ecosystem approach operational. A key conclusion is that we need to advance the approach incrementally and collaboratively. There is no magic point where we suddenly switch from a conventional approach to an ecosystem approach. The transition is gradual.

All of the ICES member countries, and all of the Commissions we advise, are advancing an ecosystem approach. This is reflected by:

- Measures to reduce bycatch and discarding in fisheries;
- The identification, mapping, and protection of habitat;
- Monitoring of ecosystem health indicators;
- Integrated coastal management planning;
- Measures to reduce land-based sources of nutrients and contaminants;
- Use of climate information in stock assessments and in setting biological reference points that reflect regime shifts;
- Setting aside some of the production of prey species to supply the needs of predators;
- Protocols for applying the precautionary approach;
- Increasing recognition of the importance of involving stakeholders in science and in decisions.

There are many other examples.

These advances are not all occurring everywhere, but progress is being made. We no longer need to talk about an ecosystem approach in an abstract sense. It is time to recognize what we are doing today is an ecosystem approach, upon which we need to build. For example, ICES is now giving a high priority to integrating its advice on fisheries, ecosystems, and the environment for regional ecosystems.

It is hard to imagine that this progress could have been made without the scientific investments that member Nations made in marine research, and the critical role that ICES has played to stimulate, coordinate, and communicate this research. For example, ICES had working groups on the ecosystem effects of fishing, multispecies models, fisheries (specifically cod) and climate, and deep-sea fisheries, long before these topics became headlines.

I do not mean to imply that enough has been done, and that there is clear sailing ahead. It is also hard to imagine the progress continuing without a continuing investment in research, and without ICES practical experience in translating research results into useful scientific advice. I expect that we would all like faster progress, and there are some that believe that progress has been unacceptably slow. Fair enough, we can all judge for ourselves.

Regardless, the message is the same. An ecosystem approach is about sound research, integration, and translation of research into practical advice. Of course, it also depends on the political will to make tough decisions. ICES can even help with this part of the equation. Tough decisions become easier when research reduces uncertainty.

Clearly, advancing the scientific basis for an ecosystem approach is an overarching theme that is worthy of our energy. However, ICES will only be successful if it pays attention to practical aspects of how it carries out its daily activities.

To me, this means expanding the scientific community accessible to ICES. I am pleased to report that the registration for this Annual Science Conference is the largest ever.

It also means more partnerships with other scientific organizations that share our scientific interests. In this regard, I can tell you that at these meetings David Pugh, Chair of the Intergovernmental Oceanographic Commission, and I will be signing a memorandum of understanding between ICES and IOC to enhance collaboration.

We also need to pay attention to users of ICES scientific advice to assure that it is relevant, timely, and of high quality. In this regard, our Management Committee for the Advisory Proc-

ess has held meetings with Fishery and Environmental Commissions, and it has responded to their requests for “fast track” advice. It is also reviewing quality assurance protocols.

All of these activities require a Secretariat that has the tools needed to support ICES scientists. This year, the Secretariat has been reorganized to better serve our needs, including establishment of a Data Center, and a focal point for scientific program development. We also move to a new headquarters facility that affords more and better space for staff offices and meeting rooms.

I am also pleased to report that ICES publications are doing well, with the impact factor of the *ICES Journal of Marine Science* steadily increasing.

This is only a sample of the some of the positive things that have happened in the last year.

Unfortunately, it is also my duty to report some sad news as well. I regret to inform you that several valued scientific colleagues and friends passed away the last year or so.

Karsten Palmork of Norway died on 12 May 2003 at the age of 86. He was the head of the Chemistry Laboratory at the Marine Institute in Bergen. He attended ICES meetings from 1966 to 1988, and he was a member of the Marine Chemistry Working Group.

Britta Pedersen of Denmark died 16 November 2003 at the age of 58. She was chair of the Marine Chemistry Working Group, member of ACME, and active in OSPAR.

Unsstein Stefansson of Iceland died 19 January at the age of 82. He was Iceland’s first expert to ICES in the field of oceanography. He attended ICES from 1948–1979. He was a Professor at the University of Iceland, and a former head of Oceanography at UNESCO.

Miguel Oliver of Spain died in January. He was Spanish delegate to ICES from 1973–1982. In Spain, he served as Secretary of State for Marine Fisheries and Deputy Director and Director of the Spanish Institute of Oceanography. In addition to participating in ICES, he was very active in the General Council of Fisheries of the Mediterranean Sea.

Professor Volkert Dethlefsen died 25 March 2003 at the age of 61. He was a pioneer in marine environmental research. He was Scientific Director of the Cuxhaven branch of the Institute of Fishery Ecology at the German Federal Research Centre. He was also a Professor at the University of Hamburg. In ICES, he was member and chair of the Marine Environmental Quality Committee and member of the Advisory Committee on Marine Pollution and Advisory Committee on the Marine Environment.

Ramon Margalef died this year at the age of 85. He was a Professor at the University of Barcelona where he was the chair for ecology. While his direct involvement with ICES was small, his influence as a world-renowned ecologist was substantial. One cannot think about the topic of biodiversity without recalling Margalef’s index. His view of ecology as “seeing ourselves as part of the natural world” connotes today’s ecosystem approach.

Please rise and offer a moment of silence in honor of our deceased colleagues.

Thank you. While the passing of friends and colleagues is always sad, I hope we can pay tribute to them by continuing to advance the science that was so important to them. That’s what this week is all about.

It is now time to for to take a short break from our science agenda for a musical interlude by the Ourense Royal Pipe Band. The band represents the highest level of musical expression from over 15,000 students of the School of Bagpipes.



Musical interlude by the Ourense Royal Pipe Band.

The President then introduced the Open Lecture by Dr Peter Brewer:

This year's Open Lecture will be given by a long time colleague of mine. He is world renowned for his research in marine chemistry. His research is particularly relevant to a scientific and public policy issue that affects us all. The issue is the fate of the carbon dioxide that we are adding to our biosphere. As you know, much of it ends up in the ocean. We are all aware of implications for climate change, but our open lecture is looking beyond climate change to the broader implications for oceans.

Dr Peter Brewer is an ocean chemist and senior scientist at the Monterey Bay Aquarium Research Institute. He is the former President and Chief Executive. He was also a senior scientist of the Woods Hole Ocean Oceanographic Institution. He is a fellow of the American Geophysical Union and the American Association for Advancement of Science. He has lead many sea-going scientific expeditions. He is the author of over one hundred scientific publications. The title of Dr. Brewer's open lecture is: "Beyond climate: the emerging science of a low pH-high CO₂ Ocean."

Dr Brewer's lecture can be found on the ICES website
<http://www.ices.dk/iceswork/asc/2004/themes.asp>.

The President thanked Peter Brewer for the Open Lecture and adjourned the session.

Open Lecture on Beyond Climate: The Emerging Science of a Low pH-High CO₂ Ocean

by Peter G. Brewer, USA

“...scientists’ growing understanding of climate change has prompted renewed scrutiny of the relative contributions of natural and anthropogenic changes to marine populations.”

“The Sea Knows No Boundaries: A Century of Marine Science under ICES.” H. Rozwadowski (2002).

Helen Rozwadowski’s excellent history of ICES refers to climate on the very first page – yet the index contains no reference to carbon dioxide [CO₂], the primary cause of man-made climate change. But so extraordinary is the quantity of CO₂ now being transferred to the upper ocean, and so profound may be the changes this will cause, either independently from or associated with climate change, that fisheries scientists will need to be intimately involved with this problem in addition to the much discussed changes in thermohaline forcing. This science, and the crafting of novel research programs to address the issue, is the focus of this lecture.

By the end of the 20th century any questions over the extraordinary build-up of fossil fuel CO₂ in sea water had vanished; fossil fuel CO₂ is now a major ion of sea water, and it is accumulating in the upper ocean at a rate of ~25 million tons per day. The ocean has now absorbed some 400 billion tons of fossil fuel CO₂; ~50% of this is stored in the upper 250 m of the ocean so critical to marine fisheries, and biogeochemical impacts, which will inevitably be imprinted on the associated climate change, are beginning to be questioned. Simple calculations based upon the IPCC IS92A “Business as Usual” scenario show that by the mid-21st century the surface ocean could experience a ~0.3 pH unit change, with further significant decreases to follow. It is quite possible that the upper ocean could see changes of 0.5 pH units by the early 22nd century. And if all known fossil fuels were burned then surface ocean pH changes of 0.8 pH units, exceeding changes experienced in about 300 million years, are possible.

The immediate consequence of this is a dramatic drop in carbonate ion [CO₃] concentration, the essential factor for calcification of marine systems as diverse as coccolithophores and coral reefs; upper-ocean carbonate ion concentrations could drop by ~40% by mid-century, and 55% by 2100. This will cause a shoaling of the marine lysocline, with the calcite and aragonite dissolution horizons moving upwards. But the quantity of calcium carbonate available for dissolution is too small to significantly alter this trend and buffer the ocean water column changes.

The rapidity of the ocean response to this chemical forcing is also distinct from the thermal forcing of climate. The lag time for the Earth to experience the full thermal impact of introducing a greenhouse gas to the atmosphere is ~35 years – we are today only now seeing the thermal impact of greenhouse gas concentrations of the early 1970s. But the large chemical changes described here are experienced within only a year or two, and can be observed with little error today.

These changes exceed those experienced by the ocean over millions of years, and the probability of this occurring is high. Climate strategies of reducing the rate of greenhouse gas emissions to the atmosphere are essentially based upon giving more time for the ocean to absorb the CO₂, thereby ensuring this occurs with only the time scale at issue.

Is a lower pH ocean an inconsequential, or a serious, worldwide, problem? What should ocean scientists do to investigate this? Direct injection of CO₂ into the deep ocean has been considered as one strategy to moderate both climate change and the intense accumulation in the upper ocean, and the first small-scale experiments have been carried out. This has raised fears of biological impacts from lowering deep ocean pH; yet deep injection of even 1% (250,000 tons per day) of the present day surface ocean invasion rate would require such a large investment that it is highly unlikely that this will take place in the near future. Even then 99% of our environmental concern should logically be directed at the extraordinary upper ocean changes now occurring.

We appear to have too little knowledge of the impact of lowered ocean pH on fundamental processes as diverse as respiration, reproduction, and calcification. Many marine animals migrate through large pH gradients daily; many do not. No maps exist charting the response of marine ecosystems to such CO₂ system perturbations; food supply, temperature, etc. are well known variables, but few researchers have explored this CO₂ space. Where they have done so there are clear responses. Concerns have arisen over the great sensitivity of squid to pH changes, and to the role that the gradual lowering of ocean CO₂ status over geologic time has played in evolutionary physiology. Reproduction of some species of sea urchins has been shown to be affected by CO₂ levels approximating those from atmospheric CO₂ doubling. Coral reef impacts are clearly strong.

Who will be the winners and losers in this new world? Which ecosystems can adapt, and which cannot thrive? How will we know if observed changes are from this effect, or other perturbations? Are there chemical limits beyond which we should not go for sound ecological reasons? The 20th century approach, with a heritage in the early ICES hydrographic experience, of long survey cruises and time-series stations will not alone be effective as a way to address this issue, and a new attack is called for.

It now appears to be possible to carry out novel actively controlled CO₂ perturbation experiments in the ocean in much the same way that ecosystems are exposed to elevated CO₂ levels on land through the Free Air CO₂ Enrichment (FACE) program. In this way scientists could simulate in the field the ocean chemistry of the coming decades, and observe ecosystem responses.

Carrying out such work would be a very considerable challenge. This could involve creation of a ring of pipes and sensors (pH, velocity, etc.), cabled to shore for control, and diffusing either small volumes of CO₂ or acid on the upstream side, so that a relatively constant perturbation of the CO₂ system is maintained within the experimental area for long periods of time. For shallow waters, such as coral reef systems, this may be installed and maintained by divers. For deeper systems new, sophisticated ROV techniques would be required. New knowledge will be required. In atmospheric experiments the released CO₂ simply mixes. In the ocean a complex chemistry occurs, with lag times from the important slow hydration/de-hydration kinetics. These challenges are being rapidly overcome and fundamental experimental design issues of system control and observation are now being addressed.

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Invited Lecture on Acoustics in the New Century: Behavior, Ecology, and Ecosystem Science

by Julia K. Parrish, USA

Acoustics has long been a primary tool in the arsenal of fisheries biologists seeking to estimate population size and establish catch limits of commercially important species. Acoustic techniques are used to locate targets of interest, interpret the intensity of the signal from individuals to groups of organisms, and estimate the shape and density of aggregations, as well as determine gear location, gear performance, and fish-gear interactions. Unlike optical techniques that are greatly limited by the attenuation of light, acoustics can be used to visualize and provide digitized information over a vast range of spatial scales, both of the environment and of the organism, without significant intrusion into the system.

Within the last quarter century, acoustics has been used to advance a wide range of ecological and behavioral research in the marine environment, and especially in the pelagia, including: trajectory tracking, school morphodynamics, species identification, and predator-prey interaction. Acoustic tags have revealed patterns of individual movement on daily, seasonal, and annual cycles, establishing temporal and spatial migration patterns, and mapping organisms to their habitats as a function of life history. In addition, acoustics have allowed for expanded resolution in benthic habitat mapping. Finally, the intersection of acoustics and remote sensing has advanced our knowledge of bio-physical coupling; in particular, distribution, abundance, and aggregation architecture with respect to environmental parameters, and the identification of ephemeral hotspots.

At present, acoustics provides us mainly with snapshots, but biology is dynamic. Organisms move; schools morph and remorph into new shapes, sizes, and species compositions; species interact in complex spatio-temporal patterns; and the strength of physical-biological coupling changes in cyclic, episodic, and chronic ways. It is these interactions, from the behavioral responses of school members, to predator-prey interactions, to species packing in the physical environment, that shape ecosystems and define ecosystem science.

Acoustics in the new century can, and should, be the ultimate “peeping Tom” of the marine environment, providing us with a synoptic view of species’ behavior and ecology, as a function of environmental and anthropogenic forcing. In addition to fisheries surveys and oceanographic cruises, ships of opportunity, networks of listening stations, moored arrays, smart FADs, docking stations, AUVs, and even the organisms themselves can become components of a comprehensive data gathering effort. Using new processing and analytical techniques, past surveys can be data mined for new insights. Meta-analyses will allow us to explore the fundamental similarities and differences in schooling behavior among species, as well as document change as a function of fishery pressures within species. And finally, rather than remain descriptive, acoustic data will be used proactively to frame hypotheses about system structure and function, from the organization of schools, to the organization of ecosystems.

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Invited Lecture on From *Lophelia* reefs to carbonate mounds: understanding cold-water coral reefs

by J. Murray Roberts, UK

The last ten years have seen a major resurgence of interest in the distribution and ecology of cold-water coral reefs. While known since the days of Linnaeus, the occurrence of cold-water corals in the Northeast Atlantic remained a subject of purely academic interest until human activity began to impinge directly on continental shelf and slope areas. Recent large-scale research efforts have produced exciting findings of large coral reef structures along the European margin, including reefs dominated by *Lophelia pertusa* on the Norwegian shelf and large carbonate mound structures in the Porcupine Seabight. Developments in acoustic survey technology have improved our ability to map such areas using both multibeam and sidescan sonar techniques, while advances in remotely operated vehicles allow accurate visual survey and experimentation in deep-water reef areas. In parallel, our understanding of the biodiversity of cold-water coral reef systems grows with every new survey and efforts are now moving to refine our understanding of reef ecology and their role as essential fish habitat. Central to understanding the latter is a sound appreciation of the physical factors that influence reef development and growth. To further this, work to develop long-term observatories capable of recording hydrographic and biological information is needed. However, alongside our improved understanding of these long-lived communities is increasing evidence for significant damage from deepwater trawling. Effort is now increasing around the world to conserve vulnerable cold-water coral reefs by creating deepwater marine protected areas.

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Invited Lecture on Sustainable Aquaculture Development in Europe

by Alistair Lane, Belgium

The European Commission, in its 2001 communication “A Sustainable Europe for a Better World: A European Union Strategy for Sustainable Development¹”, highlighted specific objectives and measures toward sustainability. With regard to the more responsible management of natural resources, it cites fisheries management as a ‘headline objective’, and EU measures including biodiversity indicators, a system of resource productivity measurement and various initiatives within the reform of the Common Fisheries Policy (CFP).

The EU strategy for the sustainable development of European Aquaculture² provided the first specific objectives for the aquaculture sector, principally focussing on the ambitions of:

Creating long-term secure employment, in particular in fishing-dependent areas;

Assuring the availability to consumers of products that are healthy, safe, and of good quality, as well as promoting high animal health and welfare standards;

Ensuring an environmentally sound industry.

This initiative was welcomed by the European aquaculture sector, and was subsequently adopted by the European Parliament and the Council of Europe. The Parliament resolution 2002/2058 made 36 specific calls to the Commission, with regard to the implementation of the strategy. Both Parliament and Council highlighted the importance of research.

To assist the implementation of the strategy, a Platform for Sustainable European Aquaculture is being created, whose principle objective is to provide consumers with, and demonstrate the benefits of, high quality, safe, and nutritious farmed fish and shellfish products, grown under sustainable conditions. The platform will provide coordinated recommendations and components for the future development of European aquaculture, drawn together by consensus of the relevant stakeholders.

In particular, it will provide:

A central point, or hub, bringing together European networks, European initiatives, and European research and technological development;

An interface between the different stakeholders to facilitate and support the further development of protocols, the proposal of research areas, and the assessment of new technologies.

A source of balanced information for consumers on the benefits of high quality aquaculture processes and products.

The actions proposed to achieve the objective of the platform are based on the development and implementation of sustainable aquaculture protocols based on low environmental impact, high competitiveness, and ethical responsibility with regard to biodiversity and animal welfare. These protocols will be developed through stakeholder participation and will lead to the establishment of sustainability standards, agreed by the European aquaculture sector and accepted by consumers. The protocols will provide consumers with balanced information show-

¹ COM (2001) 264 final.

² COM (2002) 511 final.

ing the benefits of sustainable European aquaculture and its products. The platform will also focus on the transfer of existing knowledge to SMEs.

The platform will be steered by the principal European stakeholders – the European Consumers' Organisation, the European Bureau for Conservation Development, the Federation of European Aquaculture Producers, the European Mollusc Producers Association, the European Feed Manufacturers Federation, and the European Aquaculture Society (EAS), who will act as its coordinator. Newly-generated results from the EC 6th Framework Research Programme will provide valuable input.

While research effort on sustainability indicators and other aspects of sustainable development is ongoing, more is required. Research must provide the scientific basis for protocols and standards, and especially legislation. The geographical and cultural divergence of European aquaculture – with 25 Member States and 20 official languages – means that the task of incorporating regional or national information to this European dimension will be a challenge.

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Theme Session J on Prey-Predator Interactions in Dynamic Environments: Methods, Approaches and Key Issues for the Study of Recruitment Processes

Conveners: P. Pepin (Canada), E. D. Houde (USA), and P. Petitgas (France)

Background

There are growing demands to address fluctuations in fish stock abundance in increasingly changing ecological and oceanographic contexts. This includes hydrobiological questions which are asked of temporal and spatial scales of population and metapopulation structures and the action and interaction between larval fish, their predators, and plankton. Fish stock demographic structure and its spatial organisation at spawning time is recognised as an important feature in the fate of offspring and the formation of the new year class. Questions surrounding the interaction of pre-recruit fish and their environment have required interdisciplinary studies as well as the development of new methodologies to provide understanding of prey-predator interactions, transport, ontogenetic migrations, and stock structure. Biophysical models differ in structure among studies, which requires comparative interpretation of strengths and weaknesses in order to establish generalities among areas and species. The development of new methodologies to describe larvae and their environment requires thorough evaluation before they can be integrated routinely in the study of population dynamics. The goal of this Theme Session was to provide a forum for presentation, evaluation, and discussion of approaches and methodologies to further develop integration across scientific disciplines in the study of recruitment variability.

The Theme Session was sponsored by the Working Group on Zooplankton Ecology and the Working Group on Recruitment Processes. There were twelve (12) papers and three (3) poster presentations assigned to the session. The authors of Poster presentations were given 3 minutes to highlight the objectives and major conclusions of their studies. Many participants to the session commented on the usefulness of this approach to increase interest in viewing the posters and discussing the studies with the authors.

Presentations

The scope of the papers contributed to the session was highly diverse, reflecting the combination of two proposed sessions into a single one. No single theme emerged from the studies presented during the session, but many provided significant insight into the breadth of methods and approaches that can be used to investigate recruitment processes. There were many common underlying issues in the various studies.

The most significant issue to arise was the need to approach studies of population dynamics and recruitment by considering issues that cover life history closure. Recruitment processes are not only dependent on factors that occur shortly after reproduction but also require understanding of the role of adults with respect to eggs (e.g., quality) produced and where they are placed in the environment (e.g., hydrodynamic environment). The migration and location of juveniles also have important consequences for recruitment success. As in real estate, the quality of the product is important, but what makes it work is the important issue of “location”. This was evident in the conceptual papers of Irigoien *et al.* (Doc. J:04), Martino and Houde (Doc. J:05), Villamor *et al.* (Doc. J:07), Castro *et al.* (Doc. J:06), Allain *et al.* (Doc. J:14), North *et al.* (Doc. J:10), and Petitgas *et al.* (Doc. J:13).

The title of the session highlighted predator-prey interactions but they were not the dominant, directly or indirectly, subject of study in the session papers. However, some did point to the role of such interaction on recruitment processes. The session included a study based on the concept that impacts on key elements of the larval fish food web may be caused by changes in

upper trophic levels other than fish. Barz *et al.* (Doc. J:12) found that locally, gelatinous zooplankton may represent a potentially important impact on the zooplankton community and production. Although the particular year studied did not show a strong impact on Baltic zooplankton, the study highlighted the concern that organisms such as gelatinous zooplankton have the potential to compete with young fish through their impact on their common food source. This potential interaction is in addition to the more direct loss which such predators may cause on early life stages through predation. Chambers and Witting (Doc. J:11) found that they could not have identified major predators of young tomcod without making use of otoliths found in their guts because digestion rates appeared to greatly impact their ability to use stomach content data. Their results indicated that young fish may move into habitats where their growth is sub-optimal to reduce risk of being preyed upon. Finally, the potential impact of human disturbances on ecosystems, other than through fishery losses, was highlighted in a study of the control of zooplankton communities through alien introductions, which might in turn impact larval food availability (Doc. J:01). The impact of the predatory cladoceran *Cercopagis pengoi* on small zooplankton may have consequences to the survival potential of larval fish. The example provided by Ojaveer *et al.* (2004) showed that the occurrence of *C. pengoi* introduced to the Gulf of Riga may have led to the reduction of the small cladoceran *Bosmina*, a major food source for goby larvae in the region, following its first appearance in the 1990s.

Biophysical modelling is a major tool that allows coupling study of the interaction and of factors at several scales and stages. North *et al.* (Doc. J:10) and Petitgas *et al.* (Doc. J:13) showed that lack of knowledge of some basic elements of the physical system can have important implications on our ability to predict dispersal of organisms. Allain *et al.* (Doc. J:14) used circulation models in an alternative manner by applying data gained from the growth history of young fish to identify areas of high and low survival potential. Even in well studied stocks, such as the Bay of Biscay anchovy, there remain major questions about the contribution of different components of the fishery/population to the potential survivorship and recruitment based on the observations.

Otoliths were once again demonstrated to be an important tool to identify which individuals survive or are selected by predators. Examples were presented of their use in conjunction with population studies (Doc. J:05), growth and predation studies (Doc. J:11), and biophysical models (Doc. J:14). There was discussion about how the use of microchemistry might be used to interface with biophysical models as a validation method. With developments in new techniques, the assembly felt that the subject continues to be of interest to the ICES community, independent of the life history stage of concern.

Theme Session K on Life History, Dynamics and Exploitation of Living Marine Resources: Advances in Knowledge and Methodology

Conveners: Olav Kjesbu (Norway), Pauline Kamermans (The Netherlands), and Ian L. Boyd (UK)

Background

This Theme Session was a continuation of a similar ICES ASC session held in Oslo in 2001 with the purpose to bring together scientists working on the life history of fish, shellfish, and mammals to build bridges between the disciplines, both in terms of knowledge and methodology. More specifically the topics addressed are:

- The life history of the principal groups of living marine resources
- The status and trends in their size or age structure, growth, condition, maturity, and fecundity
- The interactions of these characteristics with population density and environmental change
- How these characteristics determine population trends
- Changes or advances in the methods used to investigate these aspects

The 2-day Theme Session received great interest: a total of 73 abstracts were received, resulting in 38 oral presentations and 35 posters. A high number of people listened to the various presentations.

Conveners were Olav S. Kjesbu (Norway), Pauline Kamermans (The Netherlands), and Ian L. Boyd (UK). The conveners represented different fields of expertise in line with the idea of the Session.

The Theme Session was divided into 4 sub-sessions, each chaired by two conveners:

- Recruitment Dynamics and Reproduction
- Distribution and Migration
- Growth Patterns
- Stock Characteristics

Overall, most of the contributions referred to fish studies, but there were also several on shellfish while only one was on mammals.

The quality of the oral presentations and posters was generally very high. Several young scientists attended the Session and all together 8 Master and Ph.D. students gave talks.

Presentations

Recruitment Dynamics and Reproduction

This sub-session contained 12 oral presentations and 9 posters.

The great influences of environmental factors (in particular ambient temperature) on fish recruitment were further supported. For cod it was found that no larval hatching appears above 10°C.

A new method for disentangling phenotypic plasticity and genetic drift was presented, indicating that observed changes in age and size at maturation have an evolutionary component. Re-

cruitment from heavily exploited populations with truncated size/age distributions was shown to be more influenced by environmental conditions, indicating less resilience to adverse climatic situations.

Skipped spawning was considered to be an important phenomenon both in herring and cod, particularly affecting second-time spawners. This conclusion was based either on reading of fish scales or life-history modelling.

Introduction of better methods to assess maturity stages was highlighted in several contributions, pointing to the increased use of histology.

The Japanese oyster *Crassostrea gigas*, which was introduced to Europe in the 1960s and which is today commercially important both in France and in the southern Netherlands, has most likely undergone eco-physiological changes and is now expanding northwards, significantly affecting ecosystems.

Distribution and Migration

There were 13 oral and 11 poster presentations in this sub-section of the Theme Session. These were mainly focused upon fish considering changes in the distribution within shoals to larger scales within whole communities.

Detecting small-scale patterns of movement and migration, over periods of hours to days, appears to be particularly difficult and has mainly relied upon modelling. To date, heterogeneity of shoal structure, which would be predicted from knowledge of the different life-history stages present within shoals, such as spawning herring, has not been detected.

At larger scales there is substantial evidence of changes in the structure of fish communities that are likely to have occurred because of changes in distribution, most of which are correlated with warming trends. However, the dynamics of these changes is very complex involving multiple environmental drivers as well as many different potential species interactions. This means that the correlation with warming trends remains tentative in most cases. Contributions of particular note concerned the determination of the distribution of capelin in the Barents Sea, using the stomach contents of cod as a sampler and the examination of the distribution patterns and ecological overlap of two species of grenadiers from the South Atlantic. In the former case, capelin could not be sampled adequately using fishing gear and in the latter case, there was evidence that competitive exclusion was determining the depth distribution of the two grenadiers.

Migratory patterns are well known for main fish species and most of these migrations appear to be associated with movements between spawning and feeding grounds. Work on plaice in the North Sea is making rapid progress in tracking the migratory patterns of individual fish. The separation between optimal habitats for breeding and optimal habitats for feeding raises some important questions about the different types of critical habitat that need to be maintained for fish conservation as well as the juxtaposition of these habitats. It is clear that some fish stocks are likely to be very vulnerable to disruption of the migratory process. This also appears to be the case for some elasmobranchs, which appear to congregate in reasonably predictable spawning and nursery areas. The spawning areas often appear to be associated with sea mounts.

Growth Patterns

The Growth Patterns sub-session contained 5 oral presentations and 11 posters.

In the oral presentations datasets on growth were related to environmental data to gain insight into the cause of the patterns. The opposite was presented as well: use of dataset on growth as an indicator of climate variability. In addition, data difficult to sample, or rare species, were

collected in an indirect way by sampling the stomach of the predator, or by pooling information of species with a similar life cycle. Furthermore, models were used to obtain information on population growth.

The posters provided information from otolith analyses, or other organs that can serve the same purpose, and the methodological problems that can be encountered. In addition, predictions of growth were improved with new models and tagging studies. Posters also discussed the food type for a particular species.

The general conclusion is that for well-studied species there is enough data available to improve growth models. However, validation of techniques used in the past is necessary. For rare or difficult-to-study species an alternative approach seems to be very useful.

Stock Characteristics

The Stock Characteristics sub-session contained 7 oral presentations and 3 posters.

Data on abundance, growth, and maturation were related to environmental factors. Acoustic surveys, tagging methods, and video surveys were used to estimate growth and abundance. Information was provided on how methodological problems in stock assessments can be improved. Finally, a paper showed what management strategy is needed to rebuild a stock.

The posters all dealt with discards: observations, models, and ways to reduce discards.

The general conclusion from this sub-session is that it is very important to improve methods of stock assessment, because management relies heavily on the data provided by scientists.

General discussion

The 45-minute plenary discussion focused on these three topics:

- methods to describe aggregations of marine animals;
- genetic drift in heavily-fished populations;
- mechanisms behind skipped spawning.

The first topic was raised following a presentation on aggregations of anchovy and sardine off Peru³. It was apparent that this topic raised many new and interesting questions related to which indices/statistical methods are to be preferred under different situations. Due to the short time set aside for this part, further ASC sessions should consider discussing this topic in greater detail.

The second topic included possible genetic (evolutionary) changes as well as phenotypic plasticity and paternal effects, based on the feasibility that increased fishing pressure is associated with earlier sexual maturity. It was asked if fish condition effects/positive density-dependent effects are properly accounted for in ongoing works. More studies in this particular respect seem to be required as there is some conflicting evidence. The egg quality aspect was discussed in light of recruit and repeat spawners. It is known that recruit spawners, at least for Atlantic cod, tend to show higher egg mortality. Perhaps more importantly, the length of the spawning season for batch spawners is shorter for recruit spawners.

³ added as an oral presentation to the programme during the meeting: Swartzman, G., Gutierrez, M., Bertrand, A. & Bertrand, S. Regime shift effects on the abundance and aggregations of anchovy and sardine off Peru 1983–2003.

The third topic raised questions on how to properly classify skipped spawners. Further examinations of fish scales (with reference to herring) should be encouraged, as well as histological sampling of adult fish not undertaking migrations to the spawning grounds.

Conclusion

As in Oslo in 2001, this was a very popular session; it obviously fills a gap. ICES is recommended to consider if this session should appear as a 3-year series.

Theme Session L on Baltic Sea Ecosystem Structure and Dynamics – Consequences of Physical and Anthropogenic Forcing

Conveners: Eero Aro (Finland) and Christian Möllmann (Denmark)

Background

The Baltic Sea is a comparatively simple ecosystem with a high degree of trophic coupling. Although the trophic structure of the system is very well documented, relatively little is known about the spatial and temporal ecosystem functioning in relation to environmental forcing and human impact. The physical environment in the Baltic Sea is highly variable due to its semi-enclosed nature and changes in atmospheric forcing. The recent two decades have been characterized by a low frequency of major inflows of North Sea water into the Baltic Sea, which resulted in stagnation of deep water masses. Furthermore, the unusual high NAO period of the 1990s has resulted in a generally warmer and more humid climate also in the Baltic area. The resulting changes in the hydrography have affected plankton community composition and growth and recruitment of fish stocks. In addition the Baltic brackish water ecosystem suffers from human impact, i.e. eutrophication and overfishing constantly modifying the ecosystem. Thus the Baltic Sea is vulnerable to rapid changes and sensitive to physical and anthropogenic forcing.

A large number of national and international, multidisciplinary research programs have been conducted in the Baltic Sea during the last two decades, covering investigations at all trophic levels. The aim of this Theme Session was to summarize existing knowledge from these programmes, and to provide an integrated view of the functioning of the Baltic Sea ecosystem as a basis for developing an ecosystem approach to fisheries (EAF).

Presentations

Papers and posters presented covered studies from phytoplankton and zooplankton up to fish as well as their abiotic environment. The session started with a presentation (Doc. L:03) summarizing the hydrographic and hydrochemical trends in the last decade, characterized by only two major Baltic inflow events (1993 and 2003), necessary to improve salinity and oxygen conditions in the Central Baltic. In addition to these strong and cold inflows occurring in winter, weaker summer/autumn inflows of warm, saline and less oxygen-rich water were detected in 2002 and 2003, a new climate-related phenomenon. A result of the long-lasting anoxic conditions in the deep basins is the large amount of phosphate stored below the halocline. Deep vertical convection is able to supply the surface layer with these water masses, having the potential to induce large-scale blooms of algae, especially of cyanobacteria.

A detailed case study to document spatio-temporal trends in nutrient and phytoplankton dynamics in the Bornholm Basin (Doc. L:21 and Doc. L:26) was conducted between March 2002 and April 2003 using a multi-fluorescence probe (distinguishing Cryptophyceae, Cyanophyceae, Chlorophyceae, Diatoms + Dinoflagellates) as well as conventional phytoplankton counts. The diatom-dominated spring bloom was found to reach its maximum before the onset of the seasonal stratification. During summer, a subsurface maximum developed near the thermocline consisting of diatoms and cryptophyceae. Nutrient concentrations pointed towards a nitrogen limitation during this period. Horizontal patterns of phytoplankton distribution-derived multi-fluorescence probe were compared to satellite data. The results showed that the satellite data generally overestimated phytoplankton, but were useful in detecting the surface spring bloom.

A second group of presentations reported on investigations of the regulation of zooplankton populations from both a bottom-up and a top-down perspective. The appearance of the preda-

tory Ponto-Caspian cladoceran *Cercopages pengoi* in the southern Baltic was demonstrated, and related to the recent warming during the 1990s (Doc. L:05). Warm summer temperatures seem to favour the development of the population and relatively warm winter temperatures allow latent eggs of the cladoceran to develop successfully. Temperature effects have been further explored in studies on the different species of *Acartia*. Using a combination of field and laboratory studies it could be shown that the spring recruitment of *Acartia longiremis* and *A. bifilosa* is mainly dependent on hatching of resting eggs buried in the sediment rather than on in-situ egg production (Doc. L:12). The effect was found to be temperature-dependent and is a candidate process for the observed strong increase in the population size of the *Acartia* species. Temperature-dependence of egg production and hatching success could be shown for *A. tonsa* (Doc. L:09). The laboratory study further demonstrated influences of salinity and food supply on e.g. hatching success and cohort development.

An important copepod in the Central Baltic food web is *Pseudocalanus* sp. and a full seasonal cycle could be described for the first time (Doc. L:20). The study characterizes the life-cycle of *Pseudocalanus* sp. with an ontogenetic distribution and a production peak in early spring. Furthermore, the positive influence of the 2003 inflow on the population size was shown to indicate the process behind the decrease of the stock during long stagnation periods. A further threat to the population is the present large sprat stock which was shown to consume at times the full production of the *Pseudocalanus* sp. population (Doc. L:28). The study further showed weaker predation influences by the herring and sprat populations on *Temora longicornis* in June/July, however with strong spatial differences.

Predation effects were further explored in more northern areas of the Baltic Sea (Doc. L:17 and Doc. L:13). Intraguild predation and competition between herring larvae and mysids in the northern Baltic has been explored with laboratory and field experiments showing a potential influence on herring larval survival and eventually recruitment. A long-term study from the Gulf of Riga demonstrated how predation by the large local herring stock modified the temperature-mediated increase in most of the mesozooplankton populations.

A group of presentations dealt with distribution, feeding, and growth of pelagic fish species. Distribution of herring and sprat observed with hydroacoustics in the Bornholm Basin was found to be constrained by temperature and salinity conditions (Doc. L:23). The fish concentrate mainly in the halocline in the centre of the basin, while they dome up at the margins of the basin. A diel cycle of selective feeding by sprat was observed in the same area and demonstrated, besides prey-specific preferences, the unusual occurrence of night feeding (Doc. L:18). The importance of the availability of different copepod species, especially *Pseudocalanus* sp., for growth of herring was demonstrated for the Gulf of Finland and for the open Baltic basins. In the first area the importance of the lipid content in different copepods was explored and verified the importance of *Pseudocalanus* sp. for herring growth (Doc. L:04). The climate-mediated decrease of *Pseudocalanus* sp. in the deep Baltic basins was also shown to be responsible for the local herring stock (Doc. L:27). The effect of the *Pseudocalanus* sp. decrease on the sprat growth was however not so pronounced and competition within the large sprat stock seems to be responsible for the observed growth decline. Based on this study a conceptual model of ecosystem process leading to growth changes of pelagic fish stocks has been developed.

Early life-stages of fish were the main research targets of the next group of presentations. Long-term time-series of cod eggs and larvae indicate dominance shifts between the cod and the sprat stock in the Central Baltic during the 1900s (Doc. L:07). These remarkable time-series confirm to a large degree the present perception of the stocks.

The effect of the 2002 summer inflow on the reproductive cycle of sprat was investigated in a field study comprising observations of the maturity cycle and ichthyoplankton occurrence (Doc. L:19). The unusual warm temperatures induced a winter spawning which, contrary to

predictions had no influence on overall recruitment of the stock and individual condition. The latter was attributed to the compensatory effect of enhanced food supply after the following 2003 winter inflow.

Temperature-dependent parameters for bioenergetic models and growth-feeding relationships have been explored in extensive laboratory experiments for post-larval Baltic sprat (Doc. L:24 and Doc. L:25). Clear temperature dependence was found for the maximum food intake and routine respiration, as well as a relationship between increased energy expenditure (SDA) with ingested energy. Further experiments were conducted to describe the relationship between rates of feeding and growth, and to compare the utility of commonly used indicators of *in situ* growth to track changes in somatic growth. The growth-feeding relationship was found to be linear, and robust estimates of starvation metabolism, the rate of feeding at maintenance (zero) growth, maximum food consumption, and gross growth efficiency were obtained. When exposed to a variety of changing feeding regimes, RNA/DNA in muscle of post-larval sprat was always the best indicator of somatic growth.

Analyses of the lipid content on three trophic levels (seston, copepods, and sprat larvae) were conducted to investigate similarities and connections within and between these levels (Doc. L:22). The results show that the system is characterised by generally low lipid amounts, and that the total variability of fatty acid composition appears to be small, presumably due to high proportions of structural lipids.

The final presentation in this part of the session reported on a study using a 3D-hydrodynamic model in investigating the importance of retention vs. dispersion of larvae for the recruitment of the sprat stock in the Bornholm Basin (Doc. L:02). The study showed retention in the basin to be favourable for recruitment success, and a developed retention index was strongly correlated to recruitment from an assessment model during the 1990s. However, no association to recruitment was found in the earlier decade which needs further exploration. The index nevertheless successfully improved the existing stock-recruitment relationship for Baltic sprat.

The final group of papers dealt with various aspects in relation to Baltic cod stocks. The knowledge on the role of physical forcing and species interaction on Baltic cod recruitment was summarized (Doc. L:29). The effect of climate-mediated changes in hydrography on different life-stages of cod was demonstrated and incorporated in a stock-recruitment model.

A summary of the influence of variation in the cod stock size indicated that the annual removals of biomass from the ecosystem were in a range of 2 million tonnes annually (herring, sprat, cod) in the 1980s, including yield, predation, and death from other causes (Doc. L:01). In 2000 these removals from the system had decreased to about 1 million tonnes. The decrease in removals has been mainly caused by decrease of cod stock and restriction in the fishery. The authors concluded that herring and sprat are at present controlling the Baltic open sea ecosystem. There is an indication that the increase of the grey-seal population and its predation on fish populations needs closer attention in the future.

Two different scenarios influencing the spatial distribution of cod in the Baltic was investigated using trawl survey data (Doc. L:16). It could be shown that the distribution of cod is very much dependent on ambient oxygen contents in the deeps. Based on Swedish bottom trawl surveys it was concluded that during periods of low oxygen content in the deep basins the stock biomass is easily overestimated and vice versa.

Modern Data Storage Tags (DSTs) were used in combination with statistical techniques and output from a 3D-hydrodynamic model to develop a geolocation technique for individual tagged cod (Doc. L:06). Studies on the maturation cycle between different spawning areas of Baltic cod stocks indicated the importance of sound knowledge of the stock structure to facilitate management (Doc. L:08). The final presentation reported size-based interactions between the Baltic fish species on the basis of an extensive database on stomach contents (Doc. L:10).

Conclusion

Together with a large number of presentations spread over the other sessions, the session provided a holistic view on ecosystem functioning in the Baltic. Major steps forward were made especially in understanding the life-cycle and regulation of Central Baltic copepod populations, as well as pelagic fish recruitment and growth. The newly gained knowledge will be very useful to develop the EAF for the Baltic Sea.

Theme Session M on Regime Shifts in the North Atlantic Ocean: Coherent or Chaotic?

Conveners: Jeremy Collie (USA), Roger Harris (UK), and John Steele (USA)

Background

The papers in this Theme Session examined regime shifts in the North Atlantic Ocean, to see whether there are consistent and coherent patterns as observed in the North Pacific. In particular, contributions were sought to answer the following questions:

Are there consistent patterns in the North Atlantic cases across trophic levels?

Is there spatial and/or temporal coherence across geographic areas and ecosystems as proposed for the North Pacific?

Are there agreed methods of analysis? In particular, is PCA the most appropriate way to integrate heterogeneous data?

Is there a generally acceptable explanation? Is forcing top-down as well as bottom-up? Are the patterns explicable as a low-pass filtering of physical variability? Or do we need basic ecological processes such as switching between different stable equilibria?

There continues to be discussion over the definition of regime shifts. Without a specific definition, the term risks being devalued as either an explanatory or a descriptive term. One point of discussion has to do with how large an amplitude, how sudden, and how persistent a change must be to be called a “regime shift”. A second point of disagreement concerns the pre-eminence of ocean climate in causing regime shifts, as opposed to other perturbations. A narrow definition of regime shift might be: *a rapid and striking transition from one persistent climate state or regime to another, with serious consequences for fish populations and ecosystems*. A broader definition might be *a rapid and striking transition from one persistent ecological state or regime to another, due to climate change, internal dynamics, or other forcing*. The second definition recognizes that climatic effects act concurrently with fishing and other perturbations.

Presentations

Several papers described physical forcing in the North Atlantic and teleconnections with other regions. There is evidence for the 18.6-year lunar nodal tide cycle in long time-series of temperature, salinity, and sea level from the Faroe-Shetland and Kola time-series (Doc. M:01). The North Atlantic Oscillation (NAO) index, and regional correlates of it, appear to dominate the ocean climate in the North Atlantic. Several papers demonstrated spatial coherence in physical variables (e.g. SST) and biological variables such as fish recruitment (Docs. M:04, 05, 07, 09, 16, and 17). A coherent regime shift in both the North Sea and Baltic Sea (Doc. M:09), corresponded to a change in the NAO in 1988–89. Regional comparisons, such as this, help to define when a regime shift occurred and to identify the underlying mechanism.

The patterns of climatic forcing appear to be more dominant and coherent on the eastern side of the ocean basins than on the western sides (Doc. M:05). In the North and Baltic Seas, regime shifts are apparent in phytoplankton, zooplankton, and fish data, suggesting a bottom-up mechanism (Doc. M:09). In the northwestern Atlantic, phytoplankton and zooplankton abundance has changed little over the past several decades, suggesting the shifts in fish abundance were triggered from the top down (Doc. M:05).

Principal components analysis is a useful tool for summarizing the variability in multiple time-series (Doc. M:04). However, it is not much help in discerning the causal mechanisms

relating the biotic and abiotic variables. A structured protocol for identifying and analysing regime shifts has been described and applied to freshwater communities (Doc. M:06). To the extent that this protocol can be adapted to marine shifts it will help to define and categorize regime shifts and to identify the forcing variables and mechanisms. The longer the causal chain between the forcing and response variables, the more difficult it is to elucidate the mechanism, and the more likely that at least some of the links are highly nonlinear (M:02). Several of the papers investigated mechanisms that link ocean variability to biological production (Docs. M:08, 12, and 17). Once these mechanisms have been identified, the longer data series can be used to test their explanatory power.

The final two papers considered the management implications of regime shifts. If regime shifts are discontinuities between alternative stable states, the margin of error in specifying fishing mortality rates is much narrower than is the case for models with single equilibria (Doc. M:03). Marine protected areas may hedge against our uncertainty about the underlying structure of marine ecosystems, but do not substitute for a better understanding. In the North Pacific, methods are being developed to incorporate low-frequency variability (regime shifts) in fish production into harvest advice (Doc. M:10). The harvest control rules that are used to manage North Pacific groundfish were simulated with low-frequency environmental variation. This management evaluation tool can be used to identify control rules that are robust to abrupt regime shifts.

The contributions to this Theme Session met our expectations and help to maintain progress in documenting and understanding regime shifts. We would have liked more contributions from physical oceanographers to better integrate the biophysical basis of regime shifts. Given the recent attention to the continuous plankton recorder data, it would have been nice to have had a contribution from someone working with the SAFOS data.

Conclusion

This Theme Session was successful in demonstrating that long time-series exist in many of the ICES regions to demonstrate the existence of regime shifts. An agreed definition of regime shift is necessary to keep it as a meaningful concept. At the same time, it is important not to be so narrow as to exclude understanding that may come from examining other regions and ecosystems. The way forward involves moving from analysing time-series to establishing the functional relationships between the response and forcing variables. As this understanding matures, these relationships can be incorporated into the simulation frameworks that are used to evaluate the performance of fishing control rules. In this manner, understanding of regime shifts can eventually be incorporated into ICES advice on fisheries management.

Theme Session N on Oceanographic Processes Related to the Continental Slopes of the North Atlantic

Conveners: Alicia Lavín (Spain), Denis Gilbert (Canada), and Xavier Carton (France)

Background

Session synopsis

The western continental slope of the Atlantic Ocean is well known for its intense boundary currents at surface and subsurface levels. At the eastern (European) continental slope energy levels are much lower. Processes there, however, may strongly affect marine circulation and production. Papers and posters were invited which addressed physical, chemical, and biological processes at both of these boundaries, in particular:

- 1) The role of the eastern North Atlantic slope current in providing a source of heat and salt and in forming a meridional link between different populations of marine species (Docs. N:01 and N:02);
- 2) the influence of the Mediterranean outflow on the properties of the eastern North Atlantic slope current (Docs. N: 06 and N:10);
- 3) the role of filaments arising from slope current processes in transporting water from the continental shelf into the ocean basins;
- 4) a description of slope processes in the Northwest Atlantic related to the Labrador Current, Gulf Stream eddies, exchanges with the continental shelf at trenches, and the deep western boundary current (Docs. N:03 and N:07);
- 5) analyses of how the energy transported laterally by internal waves and internal tides generated and reflected at the continental slopes becomes available for boundary-intensified turbulent diapycnal mixing;
- 6) the role of the slope currents of the North Atlantic in the global thermohaline circulation (Doc. N:04);
- 7) the influence of climate variability on slope currents (Docs. N:08 and N:11);
- 8) the impact of slope current variability on processes in adjacent marginal seas (Doc. N:07);
- 9) an evaluation of processes on continental slope dynamics arising from modelling and observational studies (Doc. N:12);
- 10) general processes on continental slopes (Docs. N:05, N:09, and N:13).

Presentations

General view of the Session

In total, we received 13 papers covering 8 of the 10 suggested topics. The only two topics for which we did not receive any contribution were those dealing with coastal filaments and internal waves/tides. Geographically, we received two papers from the northwest Atlantic (Docs. N:03 and N:07), two papers from the northern North Atlantic (Docs. N:04 and N:08), eight papers from the northeast Atlantic (Docs. N:01, N:02, N:05, N:06, N:09, N:10, N:12, and N:13), and one theoretical paper applicable to all continental slope regions (Doc. N:11).

We had invited papers bearing on physical, chemical, and biological processes of the North Atlantic continental slope. The thirteen papers received all addressed physical processes in one way or another. Biological processes were addressed in two papers dealing with Norwegian lobster larvae and zooplankton (Docs. N:01 and N:02). Biological/chemical processes were also addressed in four papers dealing with oxygen and/or nutrients (Docs. N:05, N:07, N:09, and N:13).

Despite the low number of papers received, the Session presented a wide variety of new and interesting results based on a combination of field observations, modelling, and theoretical studies to try to understand the physical processes taking place on the continental slopes of the North Atlantic. The dispersal of Mediterranean outflow water in the vicinity of the Iberian Peninsula was discussed, with a paper on the behaviour of Meddies in the Gulf of Cadiz and another paper following the Mediterranean Water vein from the Portugal slope to the Galician Bank and then to the Bay of Biscay. The average speed of propagation of temperature signals from the continental shelf edge into the Laurentian Channel of the Gulf of St. Lawrence was estimated at 1 cm/s, twice as fast as previous estimates. A sophisticated 3-D model of water circulation and stratification in the Gulf of Maine was presented. This model represents a new tool for the study of the impacts of climate variability on fish recruitment in the Gulf of Maine. One presentation used ADCP measurements to provide a more detailed description of the spatial structure of currents on the eastern side of the Faroe-Shetland Channel. Finally, four presentations on the Bay of Biscay and Cantabrian Sea area brought new light on the spatial and temporal variability of mixed layer depth and the seasonal cycles of water temperature, salinity, and nutrients.

Noteworthy papers

The Conveners selected 3 particularly interesting papers. The first one, by Alexander Sirota, Pavel Chernyshkov, and Natalia Zhigalova, provided a nice example of how the northward displacement of the boundary between North Atlantic Central Water (NACW) and South Atlantic Central Water (SACW) could influence zooplankton species assemblages off the north-west African Coast. The second paper, by Steingrímur Jonsson and Hedinn Valdimarsson, described a barotropic current north of Iceland that accounts for a major part of Denmark Strait Overflow Water (DSOW). This suggests that the Iceland Sea would be an important source region for DSOW. The third paper, by Manuel Ruiz Villarreal, Guillermo Díaz del Río, Henrique Coelho, and Paulo Chambel, presented current-meter measurements of seasonal changes in the circulation of the Cantabrian Sea. They also presented numerical model results showing that under conditions of “equatorward” flow, an upwelling favourable, up-canyon flow existed in the Aviles canyon. Finally, the Conveners selected the Jonsson & Valdimarsson paper as the most innovative contribution to Session N because it changes our view of the Nordic Seas limb of the thermohaline circulation, putting greater emphasis on the Iceland Sea as a source region of deep water exiting through the Denmark Strait.

Conclusion

Although we were pleased with the 13 papers received, we feel we could/should have received more, especially given the great number of physical oceanographers working on internal waves and internal tides over the continental slope. We feel that efforts to attract greater numbers of physical oceanographers to ICES Annual Science Conferences must continue. One practical way of reaching this goal would be to ensure that a theme session focussing on a topic of interest to the physical oceanographic community should be presented in each of the coming years.

Theme Session O on Larval Fish Growth, Feeding and Recruitment in Relation to Patterns and Activity in the Plankton Communities

Conveners: Thomas Miller (USA), Luis Valdés (Spain), and Steve Hay (UK)

Background

The Theme Session, jointly sponsored by WGZE and WGRP, was motivated by the need to understand the complex interactions within the planktonic community and their impact on fish recruitment. There are a multitude of interactions within and between the zooplankton and ichthyoplankton communities that can have non-intuitive effects on the dynamics of both communities. At the simplest level, zooplankton are the dominant prey of early life stages of fish and thus larval fish may represent an important source of mortality for zooplankton populations. Yet, at a higher level, the interaction between zooplankton and early life stages of fish represents a suite of complex trophodynamics. In one relatively unique example, larval fish can switch ontogenetically from being prey of zooplankton to being their predators. Such a switch, tantamount to imagining antelope preying on young lions – only to fall victim to their parents – has been termed intraguild predation. Intraguild predation is common in planktonic systems but relatively rare elsewhere. Accordingly, understanding the implications of intraguild predation on the distribution, abundance, and survival of fish early life stages is an important challenge to ICES scientists. A final motivation for the session arises from the recognition that both zooplankton and larval fish have overcome the same physical, chemical, and ecology challenges to survival over evolutionary time. Thus, comparative studies may provide insights into how individual species adapt to their local environment.

Presentations

The Theme Session comprised 10 oral presentations and six posters that together explored interactions between zooplankton and ichthyoplankton over a range of spatial and temporal scales, using a diversity of approaches. Presentations ranged from small spatial and short temporal scale studies of the behavioural interactions between krill (*Meganyctiphanes norvegica*) and its zooplankton prey (Breien and Browman) to an examination of the relationship between zooplankton and larval fish on Georges Bank (USA) over large spatial scales and long temporal scales (Buckley *et al.*). Presentations involved *in situ* field sampling, *in vitro* laboratory studies, and “*in silico*” modeling studies. Often individual presentations involved multiple approaches. There were strong contributions from the U.S. GLOBEC–Georges Bank and the German GLOBEC programmes. But equally, there were presentations also from individual research programmes which stand testament to the continued vibrancy of individual, curiosity-driven marine research. Several themes arose from the presentations.

Importance of scale

Zooplankton and early life stages of fish interact over a range of spatial and temporal scales. Accordingly, our research must similarly span a range of spatial and temporal scales. We must consider behavioural, ecological, and evolutionary time scales. For example, Parada and Hinckley considered parameter estimation in a simple NPZ model to determine the most likely values of parameters relating to predation pressure on and grazing pressure of phytoplankton (Fig. 1). Presumably the parameter estimates so derived relate to the evolution of the predator-prey system. Not only must we consider a range of temporal scales, but we must consider equally a broad range of spatial scales. For example, presentations from both the German and the US GLOBEC programmes indicated the benefit of research conducted at a series of nested scales. In these programmes, relatively small-scale process studies inform and help explain larger scale patterns and observations. Importantly, a central conclusion drawn from presenta-

tions in the Theme Session is that there is unlikely to be a single dominant scale at which research is most effective. Also, it is important to remember that patterns observed at one scale may be counter to patterns observed at other scales. Several examples of this phenomenon were presented in the session. One example of this feature was Hirche's presentation on intra- and inter-annual variability in copepod growth and energy content in the German Bight.

An equally important scaling issue that was addressed in the session was the phenology of production and growth. Voss *et al.* presented information on the differential success of early (April) and late (June) cohorts of sprat in the Baltic Sea. The early spawning peak produced more larvae than the later spawning peak, yet it was the later cohort that was overwhelmingly responsible for the recruits in the fall. This outcome was explained by a comparison of the phenology of the zooplankton community during the two spawning peaks that indicated a more favourable feeding environment for later spawned larvae. Clearly, given the highly seasonal nature of planktonic trophodynamics, particularly in temperate latitudes, understanding the consequences of phenology remains an important challenge.

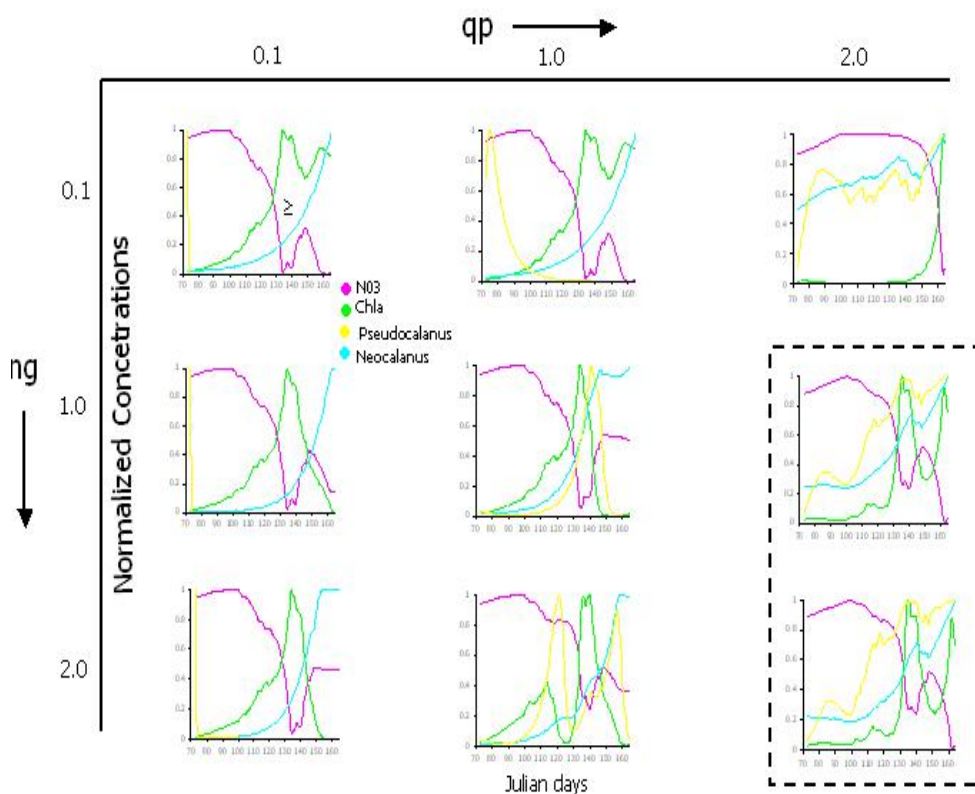


Figure 1. Time-series of predicted concentrations of nitrate, chlorophyll *a*, *Pseudocalanus* and *Neocalanus* as a function of predation pressure (qp) and grazing pressure (ng) in a simple NPZ model of Shelikof Strait (USA). The dashed box represents parameter combinations that most closely matched the observed long-term average patterns, and presumably represent the effects of evolution on predator-prey systems (from Parada and Hinckley: Ecosystem model of the Shelikof Strait in the Gulf of Alaska: Sensitivity analysis of predation and grazing model parameters, and parameter estimation using data on *Neocalanus* spp. and *Pseudocalanus* spp. CM 2004/O:11).

Diversity of approaches

Three approaches to understanding interactions between zooplankton and fish early life stages were showcased: *in situ* field studies, *in vitro* laboratory experiments, and *in silico* modeling studies. Each approach has benefits and drawbacks. However, it was clear from the presentations that progress is likely to be most rapid when these approaches are combined so that results from lab experiments inform field sampling, the results from the field serve as fodder for models, **but equally** models drive changes in survey designs, and both in turn produce hypotheses that can be tested in the lab. The interaction among these approaches represents an efficient way for unraveling the complex interactions that are characteristic of fisheries oceanography.

It was also clear from the presentations that the continued adoption of new technologies offers real benefits to the field. These technologies often permit inferences regarding processes and their scales of action that have heretofore been impossible. Examples of such advances evident in the session included the routine use and analysis of data from a visual plankton recorder in US GLOBEC–Georges Bank studies (Lough *et al.*) and the application of multiple condition analyses on individual larvae used in the German GLOBEC studies (Alheit *et al.*). While neither approach constitutes a new technology, both having been developed almost 15 years ago, they have been sufficiently refined so that their application can now be considered routine.

Conclusion

Interdisciplinary research

The final message from the presentations was that the collaboration and cooperation of scientists from different disciplines has a great deal to offer the field. Although not unique to these programmes, such collaborations are a common feature of large international programmes such as GLOBEC. While these programmes should not occur at the expense of individual-level, curiosity-driven science, it is clear that these large, often international programmes offer tremendous potential in bringing together scientists with often disparate insights into how marine systems operate. These large programmes will likely be even more influential if they are investigated in a comparative fashion such that the applicability of insights from different programmes can be broadly assessed. This will require that these large marine programmes be conducted in substantially dissimilar locations – something that has yet to be achieved.

Theme Session P on Physical-biological Interactions: Experiments, Models and Observations

Conveners: Charles Hannah (Canada), Francesco Peters (Spain), and Wolfgang Fennel (Germany)

Background

Ecosystems of marginal and shelf seas are characterized by pronounced gradients and high spatio-temporal variability of both physical-chemical (temperature, salinity, nutrients, oxygen, turbulence) and biotic (e.g., food-web structure, productivity, taxonomic composition) characteristics. In addition, the structure and extent of human impact (eutrophication, pollution, fisheries, bio-invasions) differs between and within the seas. Better understanding of the physical-biological interactions which control the dynamics of the systems and the responses of the systems to natural and anthropogenic forcing is essential for proper management of natural resources, ranging from environmental quality to commercial fish stocks.

Presentations

The Session was very successful with 42 presentations (32 talks and 10 posters) and attendance ranging from 60–70 on Friday to 30–40 on Saturday morning. The topic of physical-biological interactions is clearly important to the ICES community as a similar session in 2003 had 34 papers and was very well attended.

The field of physical-biological interactions can cover a broad spectrum of trophic levels from bacteria to whales, and of spatial scales from microscopic to oceanic basins. The presentations were very diverse and covered most of the ICES area from the Iberian shelf around the North Atlantic to the Gulf of Maine. During the session several broad themes emerged.

One theme was habitat mapping, or classification, which has become an important technique for ocean management. Here one seeks relationships between physical parameters (such as depth, temperature, salinity, bottom sediment type, and bottom roughness) and the community structure. The idea is to be able to provide maps of the community structure, at a range of scales, without the need for extensive and high resolution observations of the biological communities. The empirical relationships derived during habitat mapping have their origin in the relationship between the organisms and their environment and we expect that there will be increased collaborations among the map makers, marine ecologists, and the physical-biological interactions community.

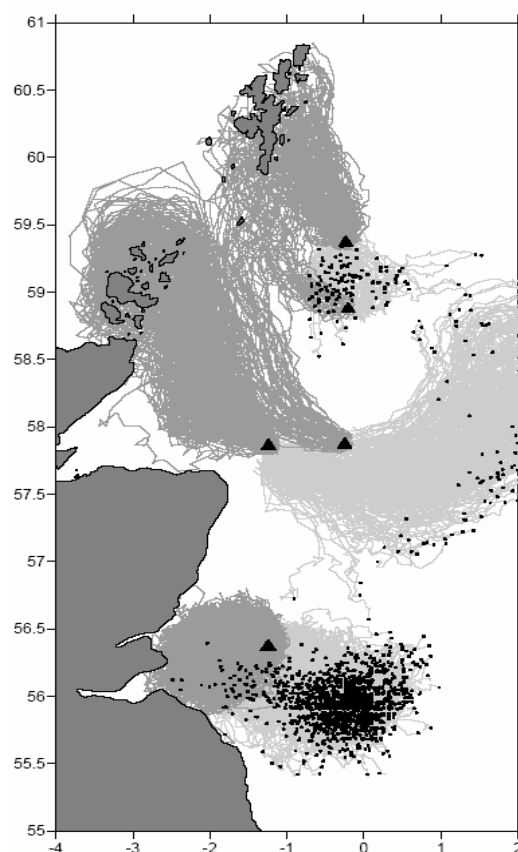


Figure 1. Trajectories of all particles that reached the stations sampled for sandeel otolith larval analysis (solid triangles) at the appropriate sampling date. The darker lines are trajectories between source locations and sampling stations; the lighter lines are trajectories between sampling stations and settlement positions (small black dots) (from A. Gallego, M. R. Heath, and B. Cook: The Origin and Destination of Sandeel Larvae Sampled in the Northern North Sea: Bio-Physical Modelling Simulation Results. CM 2004/P:09).

A second theme was the routine use of 3-D circulation models for a wide variety of applications, including: 1) circulation for particle tracking models for estimating drift and dispersion of larval fish, oyster larvae, zooplankton, krill, and sea lice; and 2) sophisticated biogeochemical models for eutrophication studies and prey fields for larval fish models. An unscientific survey of other theme sessions suggests that the routine use of 3-D circulation models to interpret field data has become common across the ICES community. We can expect this trend to continue as the skill level of the circulation models increases.

A third theme was the use of 1-D models of fish egg distributions for both operational purposes (estimating egg abundances from underway sampling of egg distributions) and understanding interannual variability in recruitment of fish and zooplankton. The new generation of 1-D models shows the potential for significant explanatory power.

WGPBI has stressed the importance of increased information on the life history characteristics of planktonic organisms and fish. As such, careful observational studies are one of the keys to the future of modelling physical-biological interactions. There were presentations on the relationship between the vertical distribution of planktonic organisms and the vertical structure of the water column; the relationship among nutrients, turbulence and plankton; gastric evacuation rates of sprat; plankton succession; distinguishing zooplankton and turbulence in acoustic

backscatter; the relationship between temperature and the hatching rates of copepod eggs; and the vertical distribution of feeding and mortality rates.

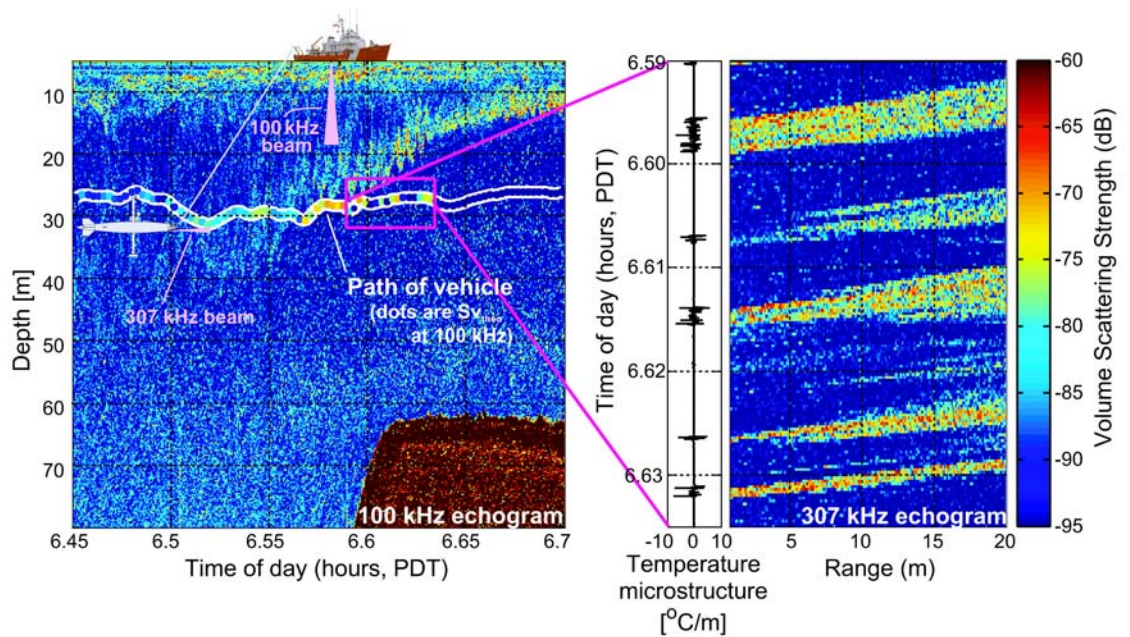


Figure 2. At peak tidal currents, the stratified turbulence in the lee of the sill scattered sound at levels that exceeded the returns from even the strongest plankton targets found in the fjord (from T. Ross, I. Gaboury, and R. Lueck: Acoustic observations of plankton and turbulence in a tidally mixed fjord. CM 2004/P:20).

Theme Session Q on Recent Advances in the Oceanography and Biology of the Iberian Waters and Adjacent Shelf Seas: Results from Integrated Multidisciplinary Projects

Conveners: Luis Valdés (Spain), José M. Cabanas (Spain), and Steve Coombs (UK)

Background

Theme Session Q “Recent Advances in the Oceanography and Biology of the Iberian Waters and Adjacent Shelf Seas: Results from Integrated Multidisciplinary Projects” was conceived as an opportunity to examine and review the new results and the limitations from large cooperative research projects conducted in the Iberian Peninsula waters and adjacent shelf seas.

The Iberian Atlantic coast extends from Gibraltar to the French border and constitutes a significant proportion of the European continental margin. Traditional uses of the sea and their living resources demand a permanent scientific/technical assessment and surveillance of the marine ecosystem. During recent years, marine research in the Iberian peninsula has experienced an important development based on: i) the mobilization and coordination of human resources and capabilities, ii) the implementation of new technologies, and iii) the participation in large integrated research projects mainly funded by the EU. In the last decade, the decline of pelagic resources has also required research to focus on investigating the causes.

Against this background, it was a good opportunity to review past work and to consider strategies for a better integration and representation of Iberian oceanographic science in EU research and assessment bodies.

Twenty-one papers and four posters were presented in the Session, for the most part related to primary production and plankton as food for small pelagics, ichthyoplankton and larval survival conditions, and biology and survey methods for sardines and anchovies; one paper dealt with sardine as prey for cetaceans and another was devoted to a review of the present and future of Spanish marine investigations. In addition to the papers presented in this Theme Session, an important number of contributions relevant to the area were also presented at other theme sessions.

The sessions were well attended with the meeting room filled to near capacity.

Presentations

Presentations were organised into three groups:

1) Production processes and plankton

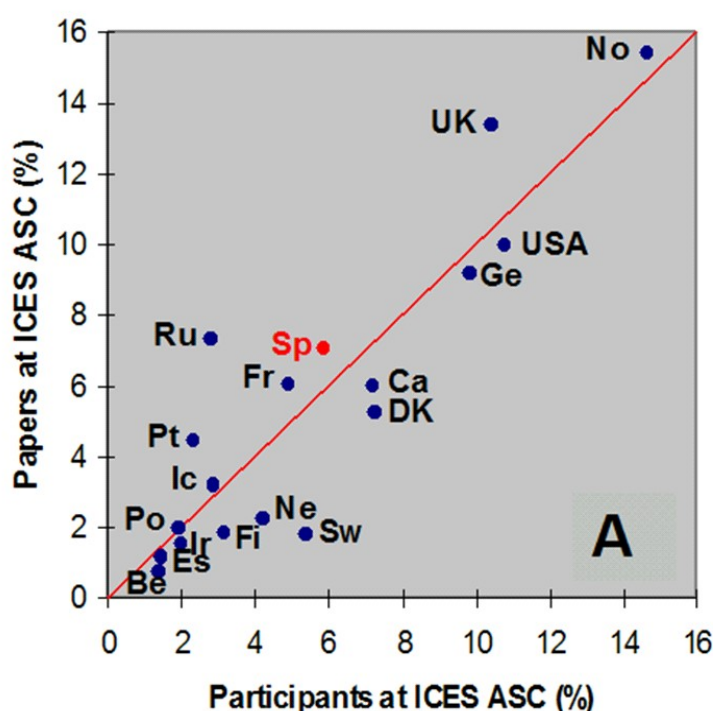
The generation and aggregation of plankton in coastal waters supports the biomass and diversity of the pelagic trophic web. In this sense, it is important to know the physical features and mechanisms that sustain production and their occurrence over the shelf. The importance of phenomena such as coastal upwelling or thermal and haline fronts in this context is well established.

The role of bacteria in the generation of dissolved organic carbon, the size and population structure of phytoplankton, the levels of primary production, and the characteristics of mesozooplankton in Iberian (Atlantic and Cantabrian) waters were presented and discussed in relation to food for pelagic fish. The contrast between areas was shown for dissolved organic nitrogen between oceanic and shelf regions, and for primary production between different regions on the shelf. Differences in production by phytoplankton cell size and the rather indirect energy transfer to copepods relying on a principally omnivorous/microbial diet were shown.

2) Early life of small pelagics

Focussing on sardines and anchovies, a set of papers were concerned with their early life history: spawning area and season, ambient conditions, and relationships with egg and larval survival.

Local scale variability in spawning/environmental relationships of sardine and anchovy in the eastern Biscay were highlighted using both observational and analytical methods. Decadal changes in sardine growth and maturity data were discussed for the Iberian Peninsula, and temperature relationships of spawning were presented for the entire range from the UK to west Africa. Close coupling of spawning with environmental conditions was demonstrated.



Contributions to ICES ASC: Percentage of papers presented as related to the percentage of participants by countries in the period 1995-2003. Spain's share highlighted in red. From L. Valdés and A. Lopez-Urrutia "Critical review of the Spanish capability in marine research and its representation in research projects, scientific journals and marine councils". CM 2004/Q:17.

3) Biology and survey methods

In this section, maturity, stock discrimination, recruitment, tagging, and acoustic and egg production methods of stock determination of sardine in the northeast Atlantic were addressed. Results from genetic analyses of sardine showed high levels of gene flow with little population demarcation along the European shelf. To support the genetic studies, a tagging methodology for sardine has been devised but is at too early a stage yet to measure its success in the field.

Improved analysis methods (such as GAMs and modelling), as well as new sampling technologies, were shown to enhance results from existing datasets. There are problems with combining existing data (such as acoustics from different survey vessels) or different methodologies (e.g. Lidar and acoustics), but it is expected that these problems can be resolved.

One paper about small pelagics as prey for dolphins along the Galician coast based on stomach content of stranded cetaceans, showed the significant biomass consumed by the dolphin population.

Conclusion

The main conclusions from the Session were:

- The value of historical survey data sets and the requirement for their continuation
- The benefits of amalgamating data sets from different groups
- Advantages from the use of new analytical methods and modelling studies
- How consideration of processes at other trophic levels can assist in understanding changes in fish populations
- The clear linkages between spawning and environment.

Theme Session R on New Developments in Fisheries Acoustics: Applications in Bottom Trawl Surveys and Multi-frequency Species Identification

Conveners: Paul Fernandes (Scotland, UK) and Nicolas Bez (France)

Background

Bottom trawl surveys are the key fishery-independent method for the assessment of commercially exploited groundfish. These surveys only provide point data, which are then raised to wider areas. It is now routine to collect acoustic survey data on many bottom trawl surveys. These data are continuous along both the trawl track and the cruise track between stations and can, therefore, provide a wider perspective in which to place the trawl data. The first aim of this Theme Session was to invite papers on the methods for the collection, analysis, and use of acoustic survey data in the context of bottom trawl surveys.

An important requirement for an acoustic survey is the allocation of detected echoes to fish species. This is currently based on ground-truth trawl data and the experience of the scientists. Modern scientific echo sounders are capable of operating at a number of frequencies between 12 and 400 kHz. Different fish species tend to have frequency-specific acoustic properties which may be used to identify fish aggregations to species. The second aim of this Theme Session was to examine methods for the collection, analysis, and use of multi-frequency acoustic survey data, specifically for the purpose of species identification.

Presentations

A total of 29 presentations were given which were all well prepared and well tuned to the scientific objectives of the Theme Session. Combining acoustic and trawl data was considered in 13 presentations. One presentation tackled bottom detection algorithms, dead zone considerations, and the implementation of a vertical backstep (Doc. R:17). In order to use acoustic data available between trawl stations, two presentations considered the impact of the presence of the research vessel or trawl on the acoustic (backscattering) energy. Strong consistency between acoustic data recorded during and between trawling was found on a global scale (Doc. R:14). At a finer scale, a monitoring experiment indicated that vertical fish distribution was affected more by the bottom trawl than by the vessel when cruising at normal speed (Doc. R:07). A set of seven presentations considered the correlation between acoustic and trawl data. These presentations covered several areas: Bering Sea (Doc. R:10), Southern Ocean (Doc. R:03), Barents Sea (Docs. R:28 and R:26), North Sea (Docs. R:28, R:04, and R:05) and Irish Sea (Doc. R:28); and several techniques: geostatistics (Doc. R:28), fuzzy logic (Doc. R:04), artificial neural networks (Doc. R:05), generalized additive models (Doc. R:24), and individual fish echo tracking (Doc. R:28). All of the statistical approaches faced difficulties in finding strong operational combination techniques. Nevertheless, even when weak, the relationship between the trawl and acoustic data was found to be better appraised when using the entire available underway acoustic data rather than using only the data measured on stations. Presentations from partners of the European project CATEFA (combining acoustic and trawl data for the estimation of fish abundance) compared data from a variety of surveys. Barents Sea surveys, which are typified by semi-pelagic species, low species diversity and large depth (such that the area sampled by the acoustic beam is comparable in size to the trawl opening), rendered better results than trawl surveys in the North Sea and Irish Sea. Four presentations specifically considered trawl catchability (Docs. R:07, R:26, R:35, and R:33). Finally, the potential for improving the correlation between the two sources of information by scrutinising echograms was presented (Doc. R:17).

All presentations were based on real field data and can be considered as data driven. The use of acoustic data in (bottom) trawl surveys has provided a better understanding of trawl catchability and selectivity. Several elements presented during the Session and brought up in the final discussion indicate that the ability to determine, model, validate, and ultimately use the correlation between acoustic and trawl data, could be dependent on technological and scientific developments to come. The use of multibeam sonar, narrow beamwidth transducers with a high repetition rate, and means or protocols to scrutinise or interpret acoustic data are likely to be key advances.

Interpretation of acoustic data to species has been a long-standing problem in acoustic surveys. The second part of this Session considered solutions to this problem, concentrating on methods which employed more than one acoustic frequency, whilst remaining in the non-specialised domain of narrowband mid-frequency levels (12–400 kHz). These frequencies are those that are typically used in surveys designed to estimate the abundance and distribution of fish. There are many factors to be considered in the quality control of multifrequency acoustic data (Doc. R:36), and sets of good quality multi-frequency data are now available from an online database (Doc. R:27) put together by European institutes involved in the SIMFAMI project (Species Identification From Acoustic Multi-frequency Information). A number of multi-frequency acoustic processing algorithms were presented which isolated specific species, or groups of species, including: jellyfish (Doc. R:06), zooplankton (Docs. R:22 and R:39), mackerel (Docs. R:18 and R:20), and sandeel (Doc. R:12). Empirical models of frequency-specific scattering (Doc. R:38) can, therefore, allow for the distinction of groups of organisms with significantly different physiology, such as small and large plankton, fish with swimbladders (gadoids and clupeoids), fish without swimbladders (*Scomber scombrus* and *Ammodytes spp.*), and organisms with a small gas inclusion resonant at the lower frequencies. Identification of the latter is currently unknown, but could be fish larvae, siphonophores, or perhaps bubbles associated with phytoplankton, but are not zooplankton (Doc. R:13). However, the distinction of multifrequency acoustic signals (frequency response) within groups of similar physiology (e.g., fish with swimbladders such as herring and Norway pout) is weak (Doc. R:15), unless the different species are of significantly different sizes (Doc. R:16). Other techniques can provide additional information. In some cases these can improve the identification process, such as single-target tracking for salmon (Doc. R:08) and gadoids (Doc. R:16); and image processing (using fractal dimensions) for hake and rockfish (Doc. R:19). Broadband sonar (Docs. R:25 and R:31) has often showed promise, but remains subject to similar constraints of the discrete narrowband systems: fish of similar physiology and size are difficult to distinguish within the frequency ranges often considered. Alternative sampling techniques such as LIDAR (light detection and ranging, Doc. R:42) were also presented, but the quantitative interpretation of these data is still at a rudimentary stage. Methods for the verification of all techniques need improvement, both in terms of obtaining good alternative sampling data (Doc. R:30) and devising techniques to compare them (Doc. R:11).

Conclusion

The application of acoustic techniques to detect and quantify demersal fish species can be successful, providing the target species are not constrained to the area very close to the seabed, that the water depth is large (>200 m), and that the species diversity is low. More complex areas such as the North Sea require alternative approaches with improved technology such as multibeam sonars and echosounders tailored to count individual echoes. As for species identification, it is clear that with an extended number of narrowband acoustic frequencies (e.g., 18, 38, 120, and 200 kHz), identification of groups of scatterers is possible. These groups include plankton, fish with swimbladders, fish without swimbladders, and a group containing small gas bubbles (larval fish, siphonophores, or phytoplankton). Acoustic survey techniques are, therefore, increasingly being applied to a wider range of species than has hitherto been possible. This, in combination with other properties of the technique (high resolu-

tion, extensive coverage, and precise quantification), make acoustic surveys more useful than ever for studies of aquatic ecosystems.

Theme Session S on the Use of Estuarine and Freshwater Habitats and the Way that Freshwater and Diadromous Fish Use Them

Conveners: Vincent Vauclin (France) and Willem Dekker (Netherlands)

Background

Diadromous fish spend part of their life utilising widely differing habitat types: marine, estuarine, and freshwater. The freshwater environment differs from the marine environment not only in chloride content, but also in magnitude, in inter-connectivity, and in spatial variation. Human impacts can act more directly in freshwater than in the sea, destroying the physical habitat, polluting, blocking migration, or draining important habitat areas. Additionally, the spatial overlap between human populations in industrialised lowland areas around marine harbours and estuarine habitats connecting marine and freshwater environments has made diadromous fish particularly sensitive. One of the factors in the decline of stocks has been the loss of habitat, either through the physical destruction of the habitat itself (drainage, polders, etc.) or the loss of accessibility through hydropower dams and other barriers. Process studies on a case-specific basis have shown paramount effects and suggested mitigating measures (fish ladders, etc.). The overall effect on the population (eel) or metapopulation (salmonids), however, has been difficult to assess, due to the scattered nature of the habitats, and with only relatively recent innovation and involvement of national and international managers in the protection and restoration of rural habitats. Within the ICES community, the methodology for the assessment of exploitation is well known and applied, but for diadromous fish, the study of other anthropogenic impacts is equally needed.

Presentations

Table: Overview of presentations during Theme Session S.

TOPIC	ATLANTIC SALMON	EUROPEAN AND AMERICAN EELS	ALLIS AND TWAITE SHADS	ATLANTIC TOMCOD
Habitat loss		S:02/S:10/S:12		
Migration barriers		S:04/S:15		
Pollution	S:03/S:04/S:07			S:11
Other topics: Status Climate change Behaviour Fishing	S:05/S:06 S:14	S:18	S:08 S:20	

Note: Presentation Doc. S:01 was withdrawn and Doc. S:09 was missing.

Progress in habitat loss quantification has been reported, be it due to pure destruction (Doc. S:12) or to loss of access (Doc. S:04) caused by man-made dams, on extended geographic areas. This is of particular importance as the assessment of freshwater habitats is likely to contribute greatly to the steep decline of European and American eels (*Anguilla anguilla* and *A. rostrata*) observed in the last decades. Some improvements of the assessment of the European eel freshwater habitat were also proposed, as the habitat preferences of this species has not been fully addressed so far.

The specific effect of pollution was dealt with in papers on Atlantic salmon (*Salmo salar*), through mortality of adults (Doc. S:03) and at early stages (Doc. S:07). Evidences of physio-

logical adjustment of tomcod (*Microgadus tomcod*) to PCB contamination was also reported, although the impact on its population was not presented and probably needs to be clarified.

Other contributions focusing on changes in migration timing of Atlantic salmon (Doc. S:05 and Doc. S:06), on estuarine migration of salmon, and on reproductive migration and behaviour of Allis shad (*Alosa alosa*) were presented.

Conclusion

The presentations during this Theme Session clearly indicated that anthropogenic factors, other than fisheries, have a major impact on diadromous fish stocks. The direct impact of habitat loss, migration barriers and hydropower plant mortality, pollution, and introduction of parasites, was shown to occur in local process studies. Quantification of the impact is established in isolated studies, but spatial integration into an overall impact on the stock is currently not achieved. Overall loss of habitat (either due to migration barriers or physical loss) has been quantified in some cases, but only a first approach to quantification of the impact on a larger spatial level has been proposed. Pollution and barriers are localised impacts, but their common occurrence necessitates a general assessment of their effects. The impact of exploitation is generally not contrasted with the other anthropogenic factors; management advice currently addresses the respective problems separately. Neither the relative importance of the different anthropogenic impacts nor their priorities have been considered in compiling management advice. This results in an unbalance in current assessment of the anthropogenic impacts on diadromous fish stocks. Further development of the concepts involved is urgently needed, noting the poor state of most diadromous fish stocks and the potentially decisive role of all above-mentioned impacts. Joint development and sharing of expertise across the different diadromous species might speed up this process, as realised in this Theme Session.

Theme Session T on Acoustic Seabed Classification – Applications in Fisheries Science and Ecosystem Studies

Conveners: Rudy Kloser (Australia) and Roger Coggan (UK)

Background

The aim of this Theme Session was to bring together researchers where acoustic systems have been used to classify and map the seabed for applications in fisheries and ecosystem studies. The philosophy of the session focused on how acoustic systems are used in combination with other sampling devices to characterise the seafloor at a variety of scales. There is now a growing interest in developing marine habitat classifications that are biologically relevant (eg. marine bioregionalisation, assessing essential fisheries habitats, marine protected areas, and environmental monitoring). The degree to which the hydroacoustic remote sensing survey approach can be applied to these needs is under constant review in several ICES working groups within three committees (Living Resources (LRC), Marine Habitat (MHC), and Fisheries Technology (FTC)). The Session also aimed to provide input to the ICES objectives within the strategic plan to address the following issues:

- Test the validity of the proposed EUNIS classification by producing habitat maps based on physical and biological field samples [MHC]
- Develop relationships between habitat characteristics and biological assemblages [LRC/MHC]
- Establish a framework to evaluate acoustic seabed classification technology and applications in bottom mapping [FTC/MHC]

Within the Session presentations and posters were received on:

- 1) Case studies of marine habitat mapping and classification. (7)
- 2) Incorporation of ground-truthing data and integration with other technologies, e.g. video, towed, and stationary physical samplers. (2)
- 3) Analytical and statistical approaches to developing classifications and mapping these. (4)
- 4) Problems of spatial and temporal scale: mapping deepwater seascape at a 100-km scale or mapping a small shallow reef at a 1- to 10-m scale? (2)
- 5) Limitations of the acoustic remote sensed tool for biological surrogacy (e.g. biodiversity). (2)

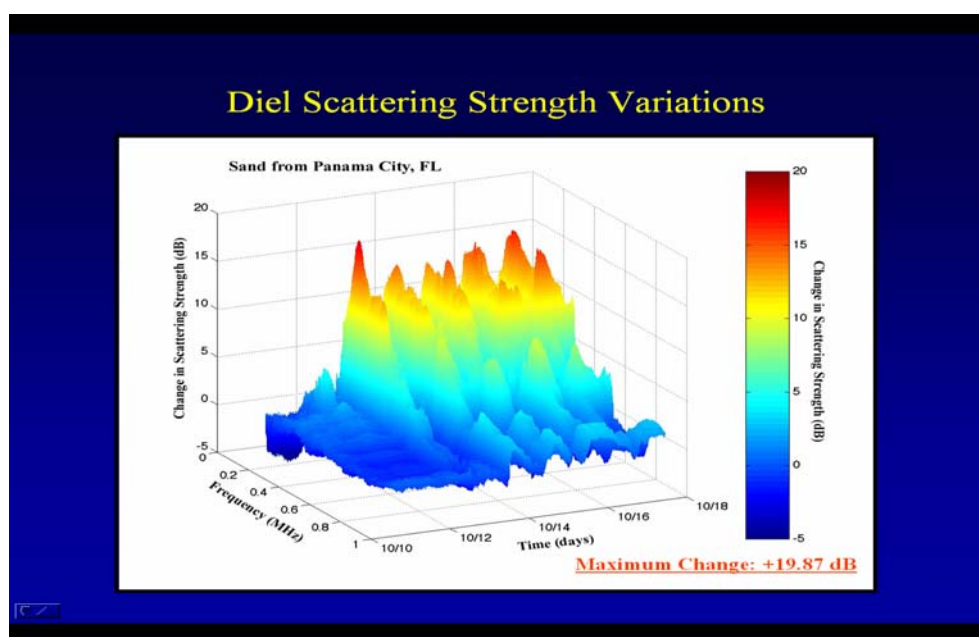
Presentations

The presentations at the Session covered a large range of applications, from the use of basic bathymetry collected by fishing vessels to assist in developing deepwater habitat characterisation for Patagonian Tooth fish in South Georgia in the southern ocean to mapping intertidal seagrass beds in Spain. Technology ranged from simple single-beam echo sounders to sidescan and multibeam systems. Processing and analysis methods ranged from traditional visual segmentation to new methods of clustering and segmentation based on clustering and decision trees. Clustering of acoustic metrics into distinct classes using the acoustic backscatter data was concentrated on developing objective methods to establish the number of classes. A decision tree method helped incorporate acoustic and other associated bathymetric variables to provide better ecologically significant habitat maps. The largest single study attempted to cover the eastern Bering Sea using acoustic data collected from routine fisheries surveys.

In most applications the use of acoustic methods was ‘ground-truthed’ with physical and visual samplers on contrasting features within the acoustically derived maps. The direct collection of biotic data highlighted the fine-scale natural variability of benthic communities. It was

clear from the presentations that you could map acoustic facies that related well with the terrain, yet these facies were not always proven to be ecologically independent units (particularly in soft sediments). An alternative approach suggested the use of biotic sampling collected by video and physical samplers to map probabilities of occurrence of communities to be associated to these acoustic facies. It was noted that the EUNIS seabed habitat classification system recommended by ICES was not used in any of the example papers. Discussion suggested that recent and ongoing development of the EUNIS classification scheme, especially for circalittoral soft sediments would encourage its wider adoption.

Several papers reinforced that the acoustic reflected signals are not a direct measure of specific seabed properties and users need to be aware of the sources of noise and interference that can affect the interpretation of acoustic data. A notable new observation of diurnal photosynthetic gaseous bubbles in shallow water demonstrated that it could account for variability observed in single-beam surveys at the same site during day and night. Another paper highlighted that acoustic instruments had specific sampling resolutions that varied considerably due to range and incidence angle, depending on the instrument and the environment at the time of sampling, and which became important when the patch size of the habitats were of a similar size or smaller. A simple extension of the acoustic technique to detect high densities of shallow subsurface biota (e.g. sandeels) using existing methodologies was still proving to be problematic.



The acoustic signature of shallow water sediments may show a diurnal cycle. Laboratory measurements reveal large diel changes in acoustic scattering, over a wide range of acoustic frequencies, that are synchronised with natural light cycles. These changes appear to be driven by the production of surficial and interstitial oxygen bubbles by diel cycles in photosynthesis. The magnitude of the effect in the laboratory suggest that the acoustic signature of shallow water sediments may change throughout the day, having implications for acoustic characterisation of the seabed in large-area surveys, or for monitoring specific sites over time. From D.V. Holliday, C.F. Greenlaw, Jan E.B. Rines, D. Thistle: "Diel variations in acoustical scattering from a sandy seabed". CM 2004/T:01.

There is a need to apply different scales to provide seabed classification maps that are appropriate for particular applications. It was discussed that the needs of end users of habitat maps varied considerably, tending to favour larger scale and coarser resolution for management purposes. Finer-resolution maps were important in understanding the ecological characterisation of a region and potential impacts. A notable contribution addressed the management

needs of habitat mapping at different spatial scales to manage a deepwater demersal fish (pink ling). It provided an example of the mapping needs at different spatial scales to specifically address different management goals (Williams *et al.*, 2004). The paper provided a clear example of where the sustainable management of the resource, due to the highly targeted nature of fishing effort, required spatial controls. Effective use of spatial controls in the fishery required a detailed assessment of the habitat at a variety of scales.

Conclusion

The Session brought together many researchers from different disciplines and from different working groups and committees within ICES. Discussions both formally within the Session and after papers were presented provided ideas for improvement of acoustic methodology development and application to specific fishery/ecological management needs.

Theme Session V on Mariculture in the Coastal Zone: Sustainability, Perspectives and Limitations

Conveners: Josianne Støttrup (Denmark) and Pauline Kamermans (Netherlands)

Background

Theme Session V on Mariculture in the Coastal Zone: Sustainability, Perspectives and Limitations was formed to combine three Theme Sessions originally planned for the ICES Annual Science Conference. These were: "Mariculture in Integrated Coastal Zone Management Systems", "Towards Sustainable Aquaculture", and "Shellfish Culture in the ICES Area: Perspectives and Limitations". The Session was convened by J. Støttrup, Denmark and P. Kamermans, Netherlands.

In the opening address, it was noted that the apparent poor participation in Mariculture theme sessions in no way reflected the interest or importance of the subject. Quite the contrary, aquaculture is gaining ever more interest and is the target of several conferences, a number of which have been and are being held this year and which are thus more likely to attract participation from researchers working on aquaculture issues, compared to the more fisheries-oriented themes within the ICES Conference.

Presentations

The papers presented addressed issues concerning sustainability, perspectives, and limitations. Sustainability requires both good science and integrated coastal planning. Science contributes with models to describe and estimate nutrient output from different types of fish farming units in different typological conditions, ranging from open coasts to enclosed areas where the water exchange rate is low. It is also important to be able to evaluate or estimate the importance of aquaculture nutrient input relative to other nutrient sources both for planning and management purposes. This theme was elaborated in two presentations at the Session. Such information can feed into environmental risk analysis, which is a process consisting of four main steps: hazard identification, risk assessment, risk management, and risk communication. This was part of the GESAMP initiative on environmental risk analysis for coastal aquaculture presented at the Theme Session. The quality of the risk analysis is much dependent on the data input and there is therefore a need to be able to identify the uncertainties of this data and their magnitude or variability. An example of a risk analysis for sea bass was presented at the Theme Session and demonstrated the utility of this exercise.

A serious limitation to the development of marine aquaculture is pollution. This was demonstrated in one presentation where the level of contaminants in the area rendered the site inappropriate for the culture of mussels. Another, perhaps more unusual limitation to aquaculture development was an issue addressed by one presentation which described the preliminary results of attempting to enhance nutrients in the coastal zone by inducing upwelling in a coastal area.

Innovative perspectives for aquaculture was represented by a presentation on mussel farming, implemented in a highly eutroficated fjord area in Denmark to remove excessive nutrient input and also to replace existing mussel harvest practices using bottom dredgers which impact the bottom habitat, with pelagic cultures which may impact a smaller area. Linking perspectives with sustainability this presentation outlined the use of GIS as a tool for organising the complex of restrictions and possibilities in order to analyse the potential for mussel culture. Data is made available to both managers and stakeholders on the internet, and thus stakeholders have a possibility to understand decisions and to participate in the development of new policies.

Theme Session Y on Conserving Biodiversity and Sustaining Fisheries through MPAs

Conveners: Paul J. B. Hart (UK), Steve Murawski (USA), and Jeremy Collie (USA)

Background

In recent years there has been increasing interest in marine protected areas (MPAs) to conserve biodiversity and as a fisheries management tool. Experience is accumulating on the effectiveness of MPAs, marine reserves, fishing reserves, and ecological reserves. However, many questions remain as to their proper siting, design, and evaluation.

Contributions are particularly welcome on:

- Trade-offs between conserving biodiversity and sustaining fisheries.
- Siting and sizing an MPA in the ICES region from a fisheries science perspective.
- Siting and sizing an MPA in the ICES region from a conservation biology perspective.
- Evaluation of MPA design and experiences from existing MPAs, including biological, economic, and social perspectives (e.g. meta-analyses).
- New approaches for the design of MPAs and indices to measure their effectiveness (e.g. modelling studies).
- Regulatory systems for implementing and maintaining the integrity of MPAs.
- What do MPAs offer that could not be achieved by TAC, effort control, and the traditional technical measures of fisheries management?

An anticipated outcome of this Session is an increased awareness of the value of MPAs to fisheries managers in the ICES area and an incorporation of MPA thinking into current practices.

Presentations

Twelve papers were presented, including one by Bryce Beukers-Stewart (Poster Y:17) filling in for a withdrawn presentation. Additionally, there were eight posters on the Theme in the Poster Session presented by their authors on the evening of 23 September.

The introductory talk was given by Ed Houde (Doc. Y:06) who was asked to provide an overview of the status of MPAs as fishery management tools. In a stimulating paper, Ed Houde emphasized that it was better to talk more generally about issues of spatial management, with MPAs and other classes of closed areas being tools to affect various objectives of place-based management. Marine reserves are the most controversial of the closed area options in that they bring about exclusions of stakeholders from areas and have economic impacts on livelihoods. Spatial management has a number of advantages and Ed Houde listed nine. One that has been suggested is that stock assessment does not have to be so rigorous or extensive if closed areas are being used as a primary measure. However, other aspects of MPA regulation, brought out later in the session, do mean that demands for high volume spatial data management are increased, with appropriate complexity for spatially-explicit analysis of fishery impacts and resource status. Ed Houde reported that in the USA, MPAs were considered by some user groups as most appropriate in cases of impending stock collapse, rather than as a tool for sustainable fisheries management. Recreational fishers are particularly against closed areas as it limits their access to something they consider their right. If spatial management is to be considered for an area, then zoning the types of closure is often a good idea and Ed Houde cited the Florida Keys Marine Sanctuary as a case which took around 10 years to implement and consists of different zones with different levels of restriction on human activity.

The contributed papers to the programme were structured to first consider papers that dealt with the science of determining how MPAs should be sized and structured, moving on to the effects they have, and finishing with some case studies that demonstrated their benefits and limitations. David Kaplan (Doc. Y:15) gave a modeling paper on how the spatial arrangement of a linear sequence of closed areas along a straight coastline would influence the catch of fish when their recruitment was determined by diffusion and advection of younger stages. Constant spacing of reserves means that catch levels are tuned to the advection distance. Variable reserve spacing is important when advection is more important than is diffusion.

Stuart Rogers (Doc. Y:05) provided an account of the development of a habitat structure map for areas around the British Isles and the use of VMS (vessel monitoring systems = satellite tracking) and aerial survey to monitor the position of fishing boats in relation to habitat type. Overlap of these data sets using GIS allows an accounting of the amount of effort, by vessel gear type, according to habitat characteristics. The VMS can also be used to monitor the positions of ships in the vicinity of closed areas where the reporting time for vessel position was every two hours. Using a model it was possible to show that the proportion of vessels potentially infringing on a closed area that are detected could be a function of the interval between position reports. Closed areas would have to be greater than 65 km wide for the proportion of infringers to be less than 20% of the total MPA area.

Papers by Gunnar Stefansson (Doc. Y:07), Hillaire Drouineau (Doc. Y:09), and Marion Verdoit-Jarraya (Doc. Y:13) used modeling methods to examine the influence of MPAs on catches for a range of fisheries in the ICES area. Stefansson and Rosenberg (Doc. Y:07) evaluated the relative effectiveness of MPAs, TACs, and effort controls, alone and in combination. They concluded that the use of multiple measures used in concert would buffer against uncertainty factors surrounding each method (e.g., uncertainty in q for TAC and effort management, uncertainty in distributions for MPAs). Used alone, MPAs would have to be c.a. 50% of the area occupied by the stock. Drouineau *et al.* (Doc. Y:09) provided a simulation of the hake-*Nephrops* fishery in the Bay of Biscay, using a spatial modeling tool called ISIS-Fish. They concluded that for hake-*Nephrops*, the closed areas would not be as effective as alternative measures, although the sizes of closed areas simulated were small compared to the area occupied by the stock. For lobster, they concluded that MPAs could be an effective tool, when sufficient area was closed. The paper by Verdoit-Jarraya *et al.* (Doc. Y:13) was presented by D. Pelletier. This study established that closed areas can be an effective measure when sited around spawning areas, but significant additional measures were required in order to eliminate overfishing on the whiting stock.

A number of case studies illustrated the influence of closed areas on various aspects of exploited stocks or on habitat structure. In the Mediterranean stocks of lobster (Doc. Y:08 Raquel Goni) showed a beneficial influence of a closed area. Her study demonstrated convincingly that “spillover” of lobsters from a modest-sized marine reserve was occurring as lobster density decreased with distance from the boundary. She applied GAM modeling to take into account multiple environmental variables in the analysis. Their tagging information supports data developed from the analysis of CPUE. The effects that closed areas can have on prey species through the reduction of fishing on their predators was illustrated through studies by Aitor Forcada (Doc. Y:14) and Jennifer Ashworth (Doc. Y:11). Forcada (Doc. Y:14) conducted multivariate analyses of two reserves in the SW Mediterranean. Their analyses showed differences between open and closed area fish community assemblages due to the influences of fishing on valuable target species. Ashworth (Doc. Y:11) demonstrated for MPAs in Egypt that there were important food chain consequences resulting from MPAs. Her analysis showed that prey release from targeting of predatory fishes outside the closed areas resulted in higher proportions of herbivores there, as compared to the MPAs. Steve Murawski (Doc. Y:02) presented data from VMS, observer-based CPUE, and research surveys to show how the various Georges Bank closures have influenced the abundance of commercial species such as haddock

and flounders, and the behaviour of fishers around the edges of the reserves targeting spillover. Paul Hart (Doc. Y:01) made the point that an area closed for a long time as a byproduct of a private agreement between fishers using mobile and fixed gear has both conservation effects and illustrates how good governance can grow from the appropriate social structures in fisher communities. Bryce Beukers-Stewart (Doc. Y:17 and poster) emphasized the accumulation of scallop biomass in closed areas as compared to the surrounding open areas, and the potential for larval export as a subsidy to surrounding open areas. John Meyer (Doc. Y:16) evaluated the potential for secondary effects of MPAs in the western Gulf of Maine on invertebrate resources using settlement trays and other analyses. He showed that recovery in cobble habitats was likely a very slow process and interpretation of fishery effects was confounded by a combination of seasonal and year-round closures.

The poster session provided eight contributions considering a wide variety of MPA-related issues. Jeremy Collie (Doc. Y:10) demonstrated convincingly the positive impacts of Georges Bank closures on the abundance and biomass of megabenthic invertebrates, across a number of taxa. Ewan Hunter (Doc. Y:24) provided important new insights on spatial variability of thornback rays using data storage tags and innovative methods for geo-referencing positions. Their analysis also evaluated the potential for various closure scenarios for improving conservation of ray resources. Joachim Claudet (Doc. Y:20) provided multivariate analyses of fish assemblages for an MPA in the NW Mediterranean. Their analyses showed the influence of closed areas and habitat type on patterns of rockreef fish assemblages.

E. Roldán (Doc. Y:18) analyzed effects of a small MPA off Tarragona, Spain. Four years after establishment of the reserve the fish communities were similar in and outside the reserve, emphasizing the time-dependency of interpretation of MPA effectiveness. Géraldine Criquet (Doc. Y:21) demonstrated differences in fish abundance and sizes inside and outside reserves off the French Mediterranean using commercial catch and visual census data. Aitor Forcada (Doc. Y:22) demonstrated spillover through the evaluation of density gradients around MPAs off France and Spain (at distances up to 1500 m). D. Alvarez-Berastegui (Doc. Y:19) described the BIOMEX program (<http://biomex.univ-prep.fr>) looking at spatial and temporal effects near closed areas. They describe a conceptual model that integrates various aspects of MPA biology and zoning.

Conclusion

The Theme Session demonstrated that the analysis of MPAs as management tools is an active area in the ICES constituency. Importantly, there are emerging a number of well-documented case studies from temperate regions, which can be compared with studies from the tropics, which predominate in the published literature. Modelling studies are showing what might be the effects of closing areas either permanently or seasonally, whilst case studies are providing evidence of the beneficial effects of MPAs on biodiversity and on fish catches. A variety of conclusions from the papers/posters presented in the Session have important implications for the development of MPAs in the ICES Area. Closures in these temperate waters appear mainly beneficial to species that have restricted movements or where protected spawning stocks can act as a supply of new individuals to areas outside reserves. For closures to be effective for species that are moderately or highly migratory (e.g., cod, saithe=pollock), the proportion of the area that needs to be closed is very high, and the placement should consider siting in migratory corridors, especially if MPAs are to be a primary management measure. Spillover effects have been demonstrated for reserves at virtually all spatial scales, when species with low to moderate movement rates across boundaries are involved. Targeting of spillover had provided documented increased economic benefits in these cases, but documenting these requires high-resolution effort and catch data, which implies upgrading many such sampling programmes.

MPAs appear to be most effective when used in concert with effort control or TAC systems, and can, under the proper circumstances, provide a measure of back-up given critical uncertainties surrounding traditional methods. They are also valuable for the conservation of sensitive habitats that are hotspots for biodiversity.

Additional emphasis by ICES is encouraged, perhaps including additional theme sessions or study groups that are encouraged to collate existing case studies into a comprehensive review for the ICES area, develop appropriate spatially-explicit modeling frameworks and theory, and explore new databases (such as VMS and observer data).

Theme Session Z on How Useful are Biological Effects Measurements in Marine Ecosystem Management?

Conveners: Ketil Hylland (Norway) and Kris Cooreman (Belgium)

Background

There is an increasing use of biological effects methods to assess human impact on marine ecosystems. There are some cases in which the results from biological effects monitoring have been used to regulate inputs or the use of chemicals. One such example is the ban on TBT as an antifouling agent following monitoring of gastropod masculinisation along European coasts. Another case is the use of benthic community monitoring to regulate the inputs of drilling muds in the Norwegian offshore industry. Although management objectives commonly relate to ecological quality, there is still only limited use of methods to assess biological responses. The Session aims to address the question of how suitable the range of available techniques are for management purposes and how they can be implemented in, e.g., marine risk management.

Presentations

40–50 persons attended the Session that was opened by Ketil Hylland who held a short introduction on the background for the Session. The main objective was to review the ability of biological effects techniques to assess the state of the marine environment in a holistic manner. Marine ecosystem management does require the use of biological effects techniques to determine the health of populations and communities.

The Session included nine oral presentations (one withdrawn) and three posters.

The following is a short synthesis of the material that was presented at the Theme Session and the Poster Session. Conclusions are provided at the end following the discussions at the Session.

The first paper of the Session (Doc. Z:01), presented by John E. Thain (CEFAS, UK), described how *in vitro* bioassays and bioassay-directed analysis/TIE can be used in marine ecosystem management. The described approach is known as bioassay-directed analysis (also referred to as toxicity identification evaluation; TIE) and allows the identification of hazardous substances that are having a demonstrably detrimental effect on marine ecosystems. The paper provided examples of how bioassay-directed analysis can be integrated with biological effects monitoring and how the data generated can be used to inform the process of ecosystem management.

The second paper of the Session (Doc. Z:03), also presented by John E. Thain (CEFAS, UK), reviewed the use of sediment bioassay methods in the management of disposal of dredged material in the marine environment in the UK. Over the past few years several countries within Europe have started to introduce sediment bioassays into the risk assessment process. This paper presents some of the bioassay methods being advocated across Europe and focuses on the UK experience using the whole sediment bioassays *Corophium volutator* and *Arenicola marina*. These techniques were often combined with bioaccumulation tests with fish, shrimps, mussels, and polychaetes in order to develop the appropriate methodology. These results are presented along with the proposed scheme of how whole sediment bioassays could be introduced into the process of risk management of dredged material in the marine environment.

The third paper (Doc. Z:10) was by Ketil Hylland (NIVA, Norway) on the development of an effect-based decision scheme for marine sediments. Using a case example of a study from Tromsø harbour, the presentation put forward a three-tier approach to classify sediments ac-

cording to their toxicity and levels of selected contaminants. The first tier comprised a review of existing data. The second tier involved sampling sediment at around fifty locations, extracting them, and assessing toxicity using a “worst-case” approach. Data from the second tier were used to class locations in three categories: “clean”, “uncertain”, or “contaminated”. Sediments classed into the “uncertain” category were then subjected to testing in tier three, which included bioavailability and whole sediment tests. The results from the project are currently being used as a basis to develop a risk assessment framework for Norwegian coastal sediments.

The next paper in the Session (Doc. Z:02), again presented by John E. Thain (CEFAS, UK), described the use of sublethal effect-methods, biomarkers, in the UK National Monitoring Programme (NMMP). The NMMP seeks to integrate national and international monitoring programmes across UK agencies and to provide high quality marine monitoring data sets (in compliance to e.g. EC Directives and OSPAR). Biological effects techniques have been increasingly used in the programme and follow those required by the OSPAR Joint Assessment Monitoring Programme (JAMP). In 2003 a programme of flounder sampling took place in UK estuaries; Belfast, Clyde, Forth, Tyne, Alde, Thames, and Southampton Water. The following JAMP biological effects techniques were used; EROD, bile metabolites, DNA-adducts, liver histopathology, metallothionein, and external fish diseases. Clear distinctions between estuaries were evident for each technique – indicating the utility of the methods to identify putative impacts by specific contaminants in each estuary and providing an input for managerial action.

The paper (Doc. Z:04) presented by Dorota Napierska (Sea Fisheries Institute, Poland) described the use of enzyme activity measurements in flounder *Platichthys flesus* from the Polish coastal area of the Baltic Sea as a biomarker of chemical contamination. Some parts of the Polish coast, namely the Gulf of Gdansk, are semi-enclosed and are characterised by long retention times for contaminants. At the same time, the Gulf of Gdansk is subjected to strong anthropogenic pressure from the Vistula River load as well as domestic and industrial discharges from the large Tri-City agglomeration. The studies were performed to discern between variations due to pollution and natural fluctuations and aimed to contribute to the design and implementation of ecotoxicological test procedures. Following monitoring in three subsequent years, clear contaminant-related responses could be seen in the study areas. The results of the study were discussed in the context of their relevance to the monitoring of biological effects in the southern Baltic Sea. The presentation indicated how sublethal responses in flounder could aid managers in identifying contaminant hot-spots and putative chemicals responsible for impacts.

Using an extensive dataset, Matt Gubbins (FRS, UK) presented a study (Doc. Z:06) describing a decade of UK organotin-specific biological effects monitoring on trends, ecological quality assessment, and future monitoring requirements. The imposex / intersex response of marine gastropods to tributyl tin (TBT) exposure is a well established and much studied phenomenon, the monitoring of which has lead to bans for TBT-based antifouling agents. UK competent monitoring authorities have conducted comprehensive spatial surveys of organotin effects on dogwhelks (*Nucella lapillus*) and periwinkles (*Littorina littorea*) around the UK coastline and the Shetland Islands over the past 10–15 years. All these data are compiled and assessed with respect to OSPAR assessment criteria and ecological quality objectives to provide an overall picture of the current status of TBT-effects in the UK, inform ecological quality assessments, and direct future monitoring efforts.

ICES has recently co-sponsored an international workshop on biological effects of contaminants in pelagic ecosystems (BECPELAG), partly addressing effects of effluents from offshore oil- and gas-production. The next paper (Doc. Z:09), presented by Ketil Hylland (NIVA, Norway), reviewed how biological effects methods are currently being developed and used to monitor environmental impacts of offshore activities. The presentation also discussed the use of *in situ* biological effects measurements (biomarkers) as compared to the use of risk assess-

ment modelling tools. Current data indicates that risk assessment modelling does not provide sufficient protection for the environment and that *in situ* studies are required to identify environmental impacts relevant to management.

The final paper of the Session (Doc. Z:08), presented by Ketil Hylland (NIVA, Norway), reviewed how biological effects methods (biomarkers, bioassays) may be useful in a risk assessment (RA) framework. Current RA procedures involve separate effects and exposure assessments. Sublethal effects method (biomarkers) would in many instances improve on effects assessments. *In situ* methods, including passive samplers and whole sediment tests, would clearly improve on exposure assessment. In addition, field assessment using an integrated approach (chemistry, biology) would complement the current dichotomous exposure-effect assessments that result in a final risk characterisation.

Two posters (Docs. Z:11 and Z:13) in the Session contributed to the development of a microbial biosensor to the management of environmental contamination by short-chain PAHs and the detection of hydrocarbon taint in fish, respectively. Both studies make use of the same microbial biosensor, a mutagenised *Pseudomonas fluorescens* strain, as a technique, for use in environmental emergencies, for the detection of low molecular weight PAHs, particularly in sediment and in fish. In sediment, successful field trials have been carried out and the future goal is to have a sea-going biosensor that can be used on research vessels enabling environmental monitoring at sea, thereby enhancing the rapid response capability during pollution incidents. In fish, the technique warrants further investigation as a potential method to identify petrogenic taint-inducing hydrocarbons.

A third poster of the Session (Doc. Z:12) presented information on the biological effects of fish farm chemotherapeutics on non-target marine crustaceans as a potential monitoring tool for regulators. In some Scottish coastal waters, the salmon aquaculture industry relies on the application of the chemotherapeutics cypermethrin and emamectin benzoate for effective treatment of sea lice infestations. Monitoring for these chemotherapeutics is currently based on analysis of sediments for chemical residues and benthic community diversity. The ability to measure biological effects in non-target biota would enable separation of the effects of chemotherapeutics from organic enrichment under fish farms. Several biological effects techniques have been tested for monitoring the effects of sea lice chemotherapeutics.

Conclusion

The scope of the Session was wide and the contributions covered issues ranging from the use of passive samplers with associated biological testing through applications for monitoring or sediment management to an overview of how biological effects methods may be integrated into a traditional risk assessment framework.

The discussions focused on the potential of biological effects techniques to assess the impact of contaminants and other anthropogenic influences in an ecosystem context. An issue raised in many of the talks was the relationship between biological effects methods and “traditional” risk assessment. It was concluded that biological effects methods can contribute to decision support for environmental managers.

Some areas of concern emerged from discussions during the Session:

- Chemical analysis of dredged material is inadequate for assessing suitability for disposal at sea.
- *In situ* studies are needed for sediment risk assessment.
- There is still a lack of chronic techniques that can be used in bioassays with invertebrates.
- Bioavailability of contaminants in sediments should be determined using sediment-dwelling organisms.

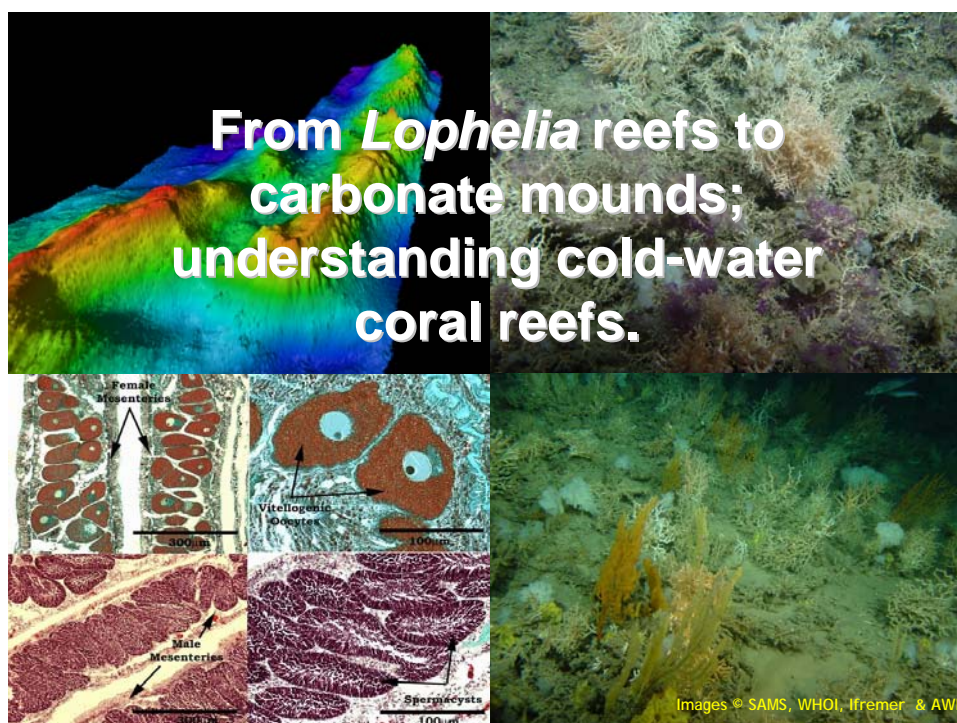
- There is a need for a large-scale research and monitoring effort to clarify effects of offshore activity on fisheries in the North Sea.
- The poster on the chemotherapeutants cypermethrin and emamectin benzoate showed that further research is needed on suitable biological measurement techniques in target and non-target species. Since both chemicals cause increasing membrane permeability, techniques measuring membrane permeability might be a good option for further investigations.
- Hyperpigmentation in dab is a disease which causes growing concern since the incidence has been gradually increasing during the last decade, especially at the Doggerbank area. The aetiology of the disease is still largely unknown.
- A second area of concern is the high levels of TBT in brown shrimp (*Crangon crangon*) in the southern North Sea. Average levels in muscle up to 90 ng TBT cation/g ww have been observed. Possible detrimental effects are unknown. Reasons should be identified since there is evidence shrimp populations in general appear to be declining in those areas. The decreases may well be caused by a combination of fishing mortality, climate changes, and inputs from anthropogenic activities. There is no or very little information on the possible effects of these compounds in crustaceans, which poses a real research need.

Theme Session AA on Cold Water Corals and Structural Habitats in Deep Water: Biology, Threats and Protection

Conveners: Mark Tasker (UK) and Pål Mortensen (Norway)

Background

Knowledge about the distribution, ecology, and threats to deepwater corals and other habitats on deep shelves, continental slopes, seamounts, and mid-ocean ridges has increased considerably on a global scale within the past 10 years. Octocoral forests, *Lophelia* reefs, and giant carbonate mounds are among the highlights of the new discoveries. Many new discoveries have come from recent multinational surveys (ACES, ECOMOUND). Many of these habitats are structure forming and have a high number of associated species. Synchronous with this increase in knowledge and new discovery has been the realisation that these habitats are under immediate threat, predominantly from fishing activities.



Some impressions from the keynote lecture.

Presentations

Partly as a consequence of this rise in knowledge and interest, ICES established a Study Group on Cold-water Corals (SGCOR). This Group in turn spawned the idea of a theme session to bring its work to the wider ICES audience and many of the papers in the Session were by Study Group members. It was also hoped that Group members, many of whom are new to ICES, would come to the Annual Science Meeting and thereby learn more about ICES. Eleven papers were offered for the Session, and nine were delivered orally, with one poster presentation. The author of the withdrawn paper and a number of the Group's members were at a meeting on seamounts being held in the USA. Consequently the objective of bringing most of the Group's members to the Annual Science Meeting was not achieved. An average of around 60 comprised the audience, so the objective of bringing the topic to a greater part of the ICES

community was not fully met either. However, immediately preceding the Session, the plenary lecture by Murray Roberts on 'From *Lophelia* reefs to carbonate mounds: understanding cold-water coral reefs' attracted a much larger audience of around 300 people.

The Session was organised as a conceptual line, leading from mapping, through understanding the importance of reefs (both to fish and to other taxa), covering threats, and then considering conservation actions. Papers were offered on all of these topics, with an additional paper outlining the history of previous meetings on cold-water corals and bringing a meeting in November 2005 to the attention of Session attendees. Despite this logical order, all speakers expressed views on the essential need to safeguard these reefs from the impacts of human activities, especially from fisheries. Several issues arose in various papers. There was a recognised need to survey and map deepwater areas, both to determine where reefs were and where they are not present. This is an expensive process and cheaper survey tools would help. Once habitats have been mapped, there are various tools to discover the importance of reefs. There is insufficient taxonomic expertise available globally for all current studies. A question that came up after several of the papers may be paraphrased as "How much should we conserve?" – this probably cannot be answered unless we have better sampling tools and more taxonomic expertise available to tell us what is present. A slightly more alarming statement in two papers was that some results on fish populations would not be published in publicly-available reports until protection had been put in place, as publication seemed likely to lead to immediate damaging exploitation.

Conclusion

The Study Group on Cold-water Corals has reached the end of its planned three-year life – and its work will be inherited by a newly established Working Group on Deep-water Ecology (WGDEC). The Theme Session provided a strong indication of the health of work within ICES on cold-water corals and boded well for the future of this and related work within ICES.

Theme Session CC on Cephalopod Stocks: Review, Analyses, Assessment, and Sustainable Management

Conveners: Graham J. Pierce (UK), Jean-Paul Robin (France), and Julio Martinez-Portela (Spain)

Background

The original proposal for the present Theme Session was justified by the availability of much unpublished information on cephalopod biology and fisheries arising from various CEC-funded R&D projects during the last 15 years. The Theme Session relates directly to a current EC-funded Concerted Action, “CEPHSTOCK” and provides a route for dissemination of the review and synthesis work carried out under this project. The Theme Session was intended to facilitate the wider dissemination and publication of some of these results, with the long-term aim of informing future management decisions for the major fished stocks of cephalopods in European waters. Thus the theme is also directly relevant to the work of the ICES WGCEPH.

Any future European research programmes related to cephalopod biology and fisheries will need to take into account knowledge acquired on cephalopod populations outside the NE Atlantic. The Theme Session therefore aimed to attract scientists working on cephalopod stocks outside the NE Atlantic to bring their expertise into the ICES community.

The scope of the Theme Session was thus:

- 1) The current state of knowledge on exploited cephalopods (biology, fisheries, environmental relationships, stock identity) in European waters;
- 2) Current fishery data collection, stock assessment, and management practices for cephalopod capture fisheries world-wide;
- 3) The current status of cephalopod culture and the prospects for commercial aquaculture;
- 4) Socio-economic issues related to cephalopod fisheries;
- 5) Current knowledge of aspects of cephalopod biology and ecology related to their suitability as resource species for capture and culture fisheries, including life-history and ecological data and assessment of environmental factors which affect the immuno-competence and physiology of cephalopods;
- 6) Assessment and management options for currently unregulated cephalopod fisheries.

Summary of Presentations

The Theme Session attracted 28 oral presentations and 12 posters that may be broadly divided into those mostly concerned with biology and those focusing on fisheries.

Biology and ecology

Insights into life history and ecology were provided by the availability of substantial historical datasets and the application of relatively sophisticated statistical approaches. Some basic assumptions about squid life history, namely that mature animals stop feeding and stored resources are remobilised and diverted into gonad growth, were questioned by new analysis of life history data. Thus there was a generally positive relationship between gonad weight and digestive gland weight in male *Loligo forbesi*, which could be interpreted as implying that gonad growth is fuelled by feeding.

Several studies highlighted environmental influences on life history processes, e.g. differences in growth rates associated with sea surface temperature variation or upwelling.

There were a number of physiological, biochemical, and endocrinological studies of growth, nutrition, and maturation, e.g. concerning the role of hormones and enzymes, and changes in protein and lipid content with maturation. Lipid may be sequestered to pass on to the eggs and ultimately to provide a resource for the paralarvae. Several of these studies were facilitated by the use of captive animals. There were also behavioural studies on predation behaviour.

The use of biochemical indices (e.g. fatty acid profiles, stable isotope ratios) to demonstrate trophic interactions was also highlighted. At the same time this work revealed an ontogenetic switch from demersal to pelagic feeding in *Loligo forbesi*.

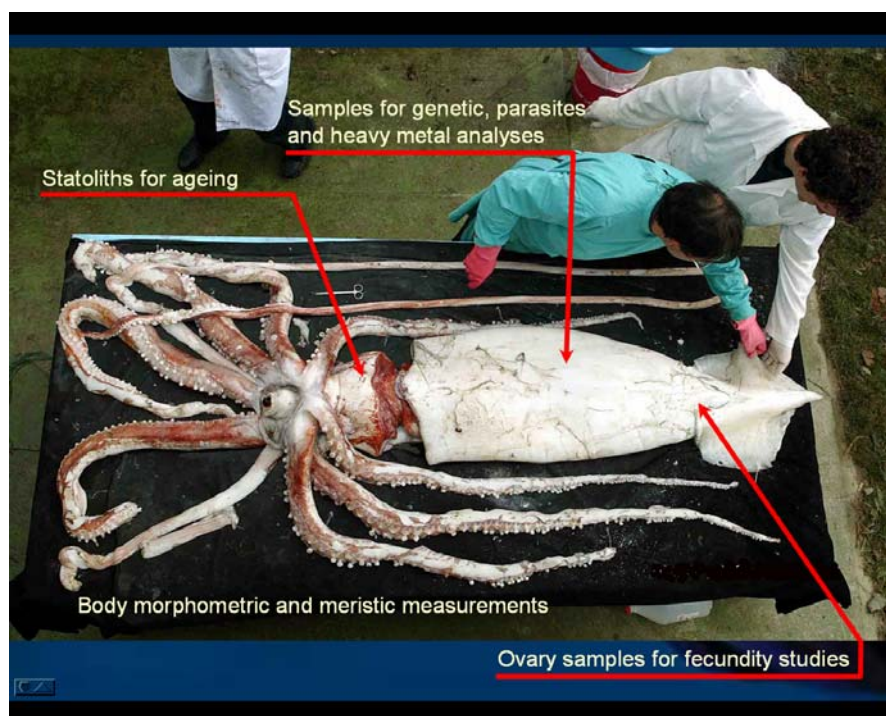
Two studies focused on contaminants in cephalopods. The first of these concerned metals and indicated that some octopus contain high levels of cadmium. It was also shown that octopus can build up high levels of domoic acid, which is responsible for amnesiac shellfish poisoning. It is not clear whether octopus suffer any ill effects but the potential risk for consumers is clear.

Although obtaining age data by reading statoliths remains a time-consuming and painstaking procedure, the value of age data was highlighted in several papers. Thus, relationships of various growth parameters with age are more consistent and easy to interpret than relationships with length. Furthermore, knowledge of age allows reconstruction of environmental conditions experienced through the life-cycle, hence identification of critical events or phases.

The wider ecological importance of cephalopods was emphasised. Ommastrephid squid make up only an estimated 1% of nekton biomass world-wide, but contribute around 10% of the associated production. Thus these squids were described as “accelerators” in biogeocenological processes, or “ecosystem enzymes”.

There were presentations on less well-known species, which highlighted a number of important issues, as well as providing new data on biology. As a general point, information on such species is important for an ecosystem approach to management and to address questions about biodiversity. Presentations in Session K (life history) showed that loliginid squid were an important component of one of four communities identified during analysis of survey trawl data. The “squid” community was abundant in shallow coastal and eastern Channel waters, particularly over coarse sand.

The opening talk of Session CC concerned the giant squid *Architeuthis dux* and in particular how the use of underwater airgun arrays appeared to be responsible for mass mortality of these animals on the Asturian coast of Spain. Thus underwater noise is a conservation issue that does not just affect marine mammals. Bobtail squid (Sepiolidae) such as *Rossia macrosoma* are routinely collected in research trawl hauls and have fishery potential in southern Europe. Their biology remains largely unstudied. Finally, a study on the deepwater cirrate octopus *Opisthoteuthis* provided a reminder that the taxonomy of many cephalopod groups is in need of revision.



Architheutis dux, stranded specimen. Samples and parameters taken for further studies are indicated. From A. Guerra “A review of Giant squid records in the north-eastern Atlantic and severe injuries in *Architheutis dux* after acoustic explorations”. CM 2004/CC:29.

Fisheries and assessment

The opening talk of the fisheries assessment Session briefly reviewed different approaches to assessment of stock biomass, all of which were further explored in other presentations, namely models, indices, and direct estimates.

Despite biological differences between most exploited finfish and cephalopods, many standard assessment tools and models have been successfully applied to cephalopods, e.g. stock-recruitment relationships, cohort analysis, production models, and depletion models. Indeed, there are examples from all of the main resource categories of cephalopod, namely loliginid and ommastrephid squids, octopus, and cuttlefish.

Indices such as survey CPUE and paralarval density are used in the assessment of Japanese *Todarodes pacificus* stocks. Direct estimates may be based on trawling, jigging, or (as in the case of the South African squid *Loligo vulgaris reynaudii*), hydroacoustic methods. The use of geostatistics and GLMs to improve abundance estimates was also discussed.

Issues arising included difficulties in defining stock boundaries and the importance of understanding migration and distribution patterns before undertaking surveys to estimate abundance.

Several papers concerned environmental influences on abundance. Techniques such as GLMs, GAMs, and dynamic factor analysis (a time-series method) allow complex non-linear relationships to be modelled, factoring out other effects such as seasonal patterns, e.g. as described for *Illex argentinus*.

Important environmental variables included depth, SST, and substrate type, although it was noted that SST is often used because it is easily available, while other less easily quantifiable environmental features may be more relevant. Evidence from Japanese studies suggested that hydroclimate regime shifts in the 1980s and 1990s may have been largely responsible for changes in abundance. The effect of global warming is also relevant. As highlighted in the

opening lecture of the conference, the increase in CO₂ concentration of the ocean is expected to lead to a substantial drop in pH, to which most cephalopods are likely to be intolerant.

Although it is often said that cephalopod stocks are rather robust to overfishing it is generally unclear whether changes in abundance can be driven by fishing pressure. The possible role of competition emerged from a study of abundance trends in two closely related *Loligo* species in European waters, and it is also of interest to determine whether patterns in cephalopod abundance relate to those of other resource species.

Theme Session DD on Mortality and Linkages between Fish Eggs/Larvae and their Predators in Marine Ecosystems – A Multidisciplinary Approach

Conveners: Torstein Pedersen (Norway) and Jake Rice (Canada)

Background

The Theme Session was intended to encourage presentation of ideas and collaboration among scientists in different areas of marine research that have interest in the survival and recruitment of fish eggs/larvae. Even though numerous studies of the mortality of eggs and fish larvae exist, few studies have attempted to partition early life stage mortality into predation mortality and mortality caused by other factors (e.g. starvation or abiotic factors).

Multispecies models developed during the last 25 years have changed the perception of fish stock dynamics. These models include quantification of predation from predators on larger fish based on stomach data, but the fact that evacuation rates of small fish larvae in predator stomachs are fast have probably discouraged scientists from attempting to use stomach analysis on eggs and particularly fish larvae. Thus, relatively few studies have attempted to quantify predation mortality at the larval stage.

New sampling and data integration technology has provided much better opportunities to investigate the fate of eggs and larvae and to integrate data on drift patterns, growth, and mortality, but to take full advantage of these possibilities requires coordinated multidisciplinary approaches and is a major challenge to scientists.

Presentations

Eleven papers were given as talks and two posters were presented. The habitats included the Barents Sea, the Cantabrian Sea, the east coast of USA, and the Iberian continental shelf. Eight contributions were from the BASECOEX-programme targeting capelin and herring in the Barents Sea. A number of target species were presented, and all predator and prey species were pelagic fishes.

Spawning strategy and egg cannibalism

The beach-spawning capelin in northern Norway and the spawning of Atlantic menhaden in offshore waters are two extremes examples of different spawning strategies. While larvae of Atlantic menhaden are carried inshore, the opposite is the case for capelin. Despite the very different spawning strategies in different species, one must expect that the spawning strategy is a long-term adaptation which maximises the survival of the offspring. Thus, the patterns of offspring release in time and space may provide hints of what may be the critical factors for the survival of a given species.

A particular source of mortality is caused by egg cannibalism as demonstrated for mackerel and capelin. Despite most expectations, capelin which have finished spawning and are about to die, frequently feed on capelin eggs. The effects of egg cannibalism on the total natural mortality need to be further investigated, but the studies indicated that about 5–20% of the egg production may be eaten by cannibals.

Drift patterns

New drift models for tracking eggs and larvae from the spawning habitats to the nursery areas have an impressive resolution and give new insight to drift patterns of eggs and larvae. If carefully developed, such models may be expanded to integrate growth and mortality processes of larvae and to assess overlap of predators and prey. These models may also help researchers to

develop better sampling strategies, as demonstrated for the estimation of egg-production of sardines at the Iberian shelf. Modelled drift patterns of eggs and larvae were shown to be affected by bottom topography and large-scale current patterns, but also on short-term variability in wind fields. The discussion stressed the need for validation of hydrodynamic models against measured data.

Zooplankton, egg, and larvae distribution patterns

New technology has given increased opportunity to collect data on fish eggs, larvae, and zooplankton with high vertical and horizontal resolution. Thus, hypotheses linking resource availability, size of organisms, and predation risk for zooplankton and fish larvae may be addressed. The contributions reminded us that the vertical dimension should not be ignored, especially not when visual predators may be important.

Otolith increments studies

The growth-mortality hypothesis (that the surviving fish grow better than average) was tested for Atlantic menhaden based on a large collection of otolith material. The results indicated that the hypothesis had to be rejected for this particular population, and it was discussed how the otolith increment material best could be used to address the hypothesis in general. For capelin larvae, data from rearing experiments indicate that less than one increment per day was deposited for slow-growing larvae, but fast-growing larvae deposited about one zone per day. Condition indices of wild caught larvae indicated that feed intake may be relatively high in wild larvae compared to the slow-growing bag larvae. It was discussed whether otolith increment data combined with the large amount of survey data of length distributions at different early life stages could give new insight into growth, drift, and mortality processes.

Stomach analysis and estimation of mortality rates

Digestion rates of fish predators were shown to decrease rapidly with increasing larval prey size, so that opportunities to detect predation may be large for larger larvae. Schooling pelagic fishes like herring impose large demands on survey logistics, but heavy predation from herring on capelin larvae was observed in areas where dense herring schools encounter high capelin larval abundances. It was stressed that surveys should target areas and time windows when predator and prey overlap. There may be a potential to develop more general approaches for predation from pelagic fish stocks since these fishes may have similar diet and feeding patterns, but different life histories and overlap with prey in time and space.

Conclusion

The Session included contributions based on a variety of approaches and techniques (experimental, field, laboratory, and modelling) and thus lived up to the intention of bringing scientists in different areas of marine research together. Although much of the work presented was in progress, valuable inputs from the audience to the various presentations were noted. The possibilities of engaging scientists from different areas in larger coordinated programmes to enhance scientific progress within this field were generally supported.

Theme Session EE on Stock Identification Methods

Convener: Steve Cadrin (USA)

Background

Stock identification is an interdisciplinary field that involves the recognition of self-sustaining components within natural populations. Stock identification remains a central theme in fisheries science and management. Indeed, the reliability of stock assessments and therefore the effectiveness of fishery management are severely limited for many principal fishery resources, because stock structure and delineation are uncertain. Despite its importance, stock identification remains one of the most confusing subjects in fisheries science for non-specialists.

The ICES Stock Identification Methods Working Group was established to review methodologies of stock identification and develop a protocol for the application of stock identification results. The Group was organized in an open format to invite a wide participation of experts on stock identification to summarize the various approaches. Over the last decade, the Group has compiled a volume of contributions aimed at synthesizing the many disciplines involved in stock identification and focusing on the application of results to fishery science and management (Cadrin *et al.*, 2005). Contributors to the publication and other researchers or managers with expertise in stock identification approaches were invited to present case studies or reviews relevant to stock identification for the Theme Session.

Summary of presentations

Presentations were organized by methodological topic. The Session began with an *introductory section*, including an overview by the convener and case studies on using multiple approaches to stock identification for anglerfish and horse mackerel. The second section was related to *phenotypic variation*, consisting of a general description of phenotypic characters, a group of presentations on morphometrics and meristics (including case studies for hake, anchovy, and anglerfish), spacing patterns of circuli (with a blue whiting example), microchemistry of whiting otoliths, parasites (including a case study on herring), and fatty acids. A section on *applied marks* included a review of conventional tagging methods for stock identification and some case studies that considered mark-recapture data with genetics information in the Baltic. The section on *genetics* included a general introduction and case studies on blue whiting allozymes, and microsatellites of Atlantic salmon and herring. The section on *data analysis* had a description of neural network analysis of horse mackerel data and a review of maximum likelihood methods for stock composition analysis. The final section was on the use of stock identification information for *resource management*, with presentations on forming fishery management advice and case studies for Baltic herring and cod.

Discussion

Several aspects of stock identification were discussed. Participants noted the challenge of accurately classifying samples to many groups, and the subjectivity involved in deciding how many groups to consider. Two general approaches to the problem were proposed: Exploratory analyses (e.g., PCA, k-groups cluster analysis) can be conducted to determine how many groups are illustrated by patterns of variance in the data; however, a more holistic approach would be to consider information from other stock identification disciplines to determine the number of putative stocks in the sample.

The difficulty in concluding genetic homogeneity was discussed, because of the issue of negative results. The consensus solution was to explore as many genetic characters as possible. Alternatively, it was noted that false differences in genetics characters is also a potential problem if sampling is not representative.

The advocacy for interdisciplinary analysis of stock identification information was unanimous, but the approach imposes new challenges for providing advice to managers. One promising method for combining information from various methods is a likelihood framework, in which the results from different approaches are 'weighted' by their performance in classifying known samples. Therefore, crossvalidation of each approach remains an important aspect of stock structure research within disciplines.

During a scheduled break in the second day of the Session, two topics were raised for discussion by the Session convener:

The Future of SIMWG – The prospect of continuing SIMWG was discussed. The main objective of SIMWG, completing a volume of methodological protocols, has been completed. Other objectives, like advising on specific issues concerning stock identification may be best addressed by other specific study groups. For example, the Study Group on Stock Identity and Management Units of Redfishes conducted a review of stock structure for *Sebastes mentella* (SGSIMUR 2004). Similarly, stock identification questions for Baltic herring were addressed by the Study Group on Baltic Herring Assessment Units (SGBHAU 2001, 2002, 2003).

Participants voiced their opinions that SIMWG should continue to serve its original purpose in the ICES community. In the future, stock identification may become even more important, because stock boundaries and characteristics may rapidly change with changing climates and ecological conditions. As new methods continue to be developed, ICES will need them to be evaluated in the context of other approaches. Furthermore, the group felt that SIMWG provides a forum for discussing the implications of new methods. Perhaps the best way to proceed for SIMWG is to adopt its earlier approach to documenting methodological protocols, in which new methods are reviewed in the annual SIMWG report, and successive reports may eventually form material for an updated volume.

Theme Session on Applications of Stock Structure Information for Pelagic Stocks – A theme session for the 2005 Annual Science Conference is being proposed by Emma Hatfield and Doug Hay on the application of stock identification results for management of pelagic stocks. Although there was one chapter in the SIMWG book on management applications (Hammer and Zimmerman, 2005), the topic deserves more attention. There were mixed feelings in the group on limiting the scope to small pelagics or including demersal stocks as well. Certainly, pelagic species present particular difficulties with delineating stocks and mixed-stock fisheries, and four EU projects are currently funded for small pelagic (HOMSIR, HERGEN, WestHer project, and sardine project). However, many interesting implications of demersal stock structure would also be worth considering. Perhaps the conveners can request papers on the implications of stock structure research, with preference for small pelagic applications, and use their discretion in acceptance of papers for the theme session.

One thread of discussion, the resistance to revise management units based on stock identification results, justifies a theme session dedicated to the application and implication of stock structure information. In lieu of guidance on how to affect information-based changes in management units, stock identification is merely academic. Managers must be convinced that the benefits of redefining stock boundaries (e.g., greater long-term yield, ecosystem conservation) will exceed the short-term costs (e.g., reallocation issues). Therefore, participants strongly endorsed the proposed theme session.

Conclusion

A theme that emerged throughout the development of SIMWG and the theme session is the strength of interdisciplinary analyses. Many presenters advocated such a holistic approach. If results from each approach are viewed in the context of what precise aspect of stock structure they reveal, a more holistic view with multiple perspectives is possible, providing more reliable information for resource management. As new methods continue to emerge, their results

should be considered by SIMWG along with those from traditional approaches to improve our ability to study stock structure.

Theme Session FF on Modelling Marine Ecosystems and their Exploitation

Conveners: Gunnar Stefánsson (Iceland) and John Pinnegar (UK)

Background

This Session aimed to explore and discuss the diverse array of modelling approaches currently being used to describe marine ecosystems throughout the world. Specifically, multispecies models focusing on both predator-prey and technical interactions were presented, as were models focusing on the spatial distribution of species or fishing effort. Additional presentations focused on ecosystem indicators as well as on socio-economic modelling approaches. The Session provided a forum for the final outputs of the EU-funded framework V programme DST² (Development of Structurally Detailed Statistically Testable Models of Marine Ecosystems).

Presentations

A total of 38 contributions were presented in this Session, including 32 verbal papers and 6 posters. Given the considerable interest in this Session, it was necessary to assign the contributions into 5 sub-themes which were communicated over 5 periods and two days. The sub-themes were:

- Papers from the EU project DST² and focusing specifically on the modelling program GADGET.
- Papers on multispecies models and predator-prey interactions.
- Papers on ecological indicators and size-based models.
- Papers on spatial models.
- Papers on mixed-fishery management and technical interactions.

Papers from the EU project DST² and focusing specifically on the modelling program GADGET

Seven papers were presented under this heading, four of which addressed the underlying methodology behind GADGET and three of which applied the technique to ecosystems around Iceland and the Celtic Sea. A diverse array of multi-area, multi-fleet, and/or multi-species formulations was presented.

Papers on multispecies models and predator-prey interactions

Six papers were presented under this theme, covering several different modelling approaches. These included three contributions which focused specifically on the importance of suitability functions and functional-response types in models incorporating predators and their prey. In particular a novel example was given of how to evaluate multispecies functional responses using Bayesian techniques.

In addition to these papers, a further three multispecies assessment models were presented, including several derivatives of MSVPA.

Papers on ecological indicators and size-based models

Under this theme, five papers addressed a variety of ecosystem questions. Two papers utilized multispecies IBMs (Individual-Based Models) to evaluate the performance and responsiveness of different ecological indicators (e.g. mean and maximum length, trophic level, etc.). One

contribution focused on a new class of model which combined elements of size-spectra with components taken from MSVPA type models.

Papers on spatial models

The eight papers under this sub-theme dealt with a variety of models and issues, ranging from Gadget through IBMs and including proposals for future work. Contributions included specific case-studies focusing on predator-prey spatial overlap (e.g. cod and capelin), one of which was a specific response to an ICES study group (SGMSNS) decision on the importance of gurnards as predators on 0-group cod in the North Sea.

One model of the IBM-type included rules of individual fish behavior, whereas another was based on the GADGET approach, i.e. using 'migration matrices' to describe the average behavior for a whole group of individuals. A completely different IBM was presented whereby the "individual" is the vessel, and decision rules were used to describe the behaviour of fishers. Models were also used to weigh-up the potential conflicts between fleets in different countries (USA and Canada) and to search for potential 'win-win' opportunities in terms of future harvest strategy.

Papers on mixed-fishery management and technical interactions

Under this theme six papers dealt with diverse issues including the effect of management actions and decisions on the economic performance of the fishery and on local economies.

When TACs are set for individual species in a mixed fishery, the quota for one species will be fished out first. At this stage a discard scenario may occur since fishing for other species will continue. One paper in this sub-session evaluated alternative harvest strategies, such as setting a combined TAC for two species simultaneously or using effort controls designed for the more restrictive species.

Posters

Six posters were presented, of which three utilized Ecopath with Ecosim software, one focused on size-based metrics and the influence of climate and fisheries, one presented a length-based derivative of MSVPA, and one introduced a model which enables stable isotope data to be interpreted, and thereby allows such data to be used to describe feeding patterns in fish.

Conclusion

Interest in the topic of this Theme Session was clearly indicated by the high level of attendance on each day and the willingness of people to contribute papers. On both days, more than 125 participants came to each session, demonstrating that quantitative and predictive science has great relevance to the work of a great many scientists. On the main theme of statistical multispecies models, it is clear that these can now be used to evaluate and test relationships in multispecies systems. On the other hand it is also clear that these models are quite complex and have therefore only been used to describe fairly simple systems of 1–3 species in 1–2 areas so far.

Closing Session

Saturday 27 September 2004

The General Secretary announced the results of the elections of Science Committee chairs that were made during the course of this Conference and Statutory Meeting:

- Francois Gerlotto (France) was elected as Chair of the Fisheries Technology Committee;
- Cornelius Hammer (Germany) was elected as Chair of the Baltic Committee;
- Dankert Skagen (Norway) was elected as Chair of the Resource Management Committee; and
- Pierre Pépin (Canada) was elected as interim Chair of the Publications Committee.

The Chair of the Consultative Committee thanked the outgoing Chairs (Stig Carlberg (ACME), Brian MacKenzie (Baltic Committee), Carl O'Brien (Resource Management Committee), Stephen Walsh (Fisheries Technology Committee), and Bill Turrell (Publications Committee) for their contributions so far to the work of ICES, including their contributions to the Consultative Committee.

The General Secretary congratulated the Spanish hosts for providing such good facilities which had been thoroughly enjoyed by the 760 registered participants.

The Chair of the Consultative Committee introduced the winners of the Best Paper, Best Newcomer, and Best Poster awards.

Best Paper:

The winner was the paper in Theme Session R by Nils Olav Handegard (presenter) and Dag Tjøstheim, Institute of Marine Research, Bergen, Norway on "The effective swept volume of a bottom trawl", Doc. R:07.

Best Paper by a Newcomer:

The winner was Christian Jørgensen, University of Bergen, Norway. He presented the paper Doc. K:28 co-authored by B. Ernande, O. Fisker, and U. Dieckmann on "Skipped spawning is common for the Northeast Arctic cod in a life-history energy allocation model".

Best Poster:

This award was won by Azure Westwood and Steve Cadrin, Northeast Fisheries Center, Massachusetts, USA, on "The use of electronic tags to study fish movement: a case study with yellowtail flounder of New England", Doc. K:81.

The President addressed the Session and commended all those who had contributed to the success of the Conference. He thanked the outgoing Chairs of Committees and Expert Groups for their generous services to ICES, and especially Jake Rice, the outgoing Chair of the Consultative Committee.

The President then declared the 2004 ASC closed.

Part II

92nd Statutory Meeting

Report of the Consultative Committee

1 Opening

The ConC meeting, which consisted of three sessions (19, 27, and 28 September), was opened on 19 September at 15.00 hrs. The Chair welcomed all participants and pointed out that the primary objective of the first session of the Committee would be to ensure that the Committee Members were well prepared for the week to come. There was a presentation round of all members. In addition to the members of the Consultative Committee, all of whom were present; the meeting was attended by Paul Keizer (Incoming Chair of ACME) and Doug Wilson (Observer, IFM, Denmark), Mike Sissenwine, and from the ICES Secretariat David Griffith, Julie Gillin, Görel Kjeldsen, Jesper Heldbo, and Vivian Piil.

2 Adoption of agenda and timetable

The Chair requested that Agenda Item 10 be moved forward to follow Agenda Item 3. With this minor revision, the agenda was adopted.

3 Minutes of the Consultative Committee June meeting / response from the Bureau

The minutes of the mid-term meeting of the Consultative Committee (ConC) were adopted.

Response from the Bureau

The Chair informed the Committee that Agenda Item 18 of the draft Bureau Minutes (under which item the Bureau responds to recommendations brought forward by the Consultative Committee) would be the centre of discussion. The overall response from the Bureau had been positive.

Action Plans – The Bureau was very impressed with the audit preparations and they approved the template and the database which is under development by the ICES Secretariat and will make the Action Plan process more manageable.

Young Scientist Conference – The response from the Bureau to the proposal of a Young Scientist Conference to be held (preferably) in 2007 had been very positive, but there had been no firm decision on the matter of funding. The Committee was informed that the Chair of the PICES Science Council, Ian Perry, would be attending the Consultative Committee meeting on Monday 27 September and this matter would then be dealt with in more detail. Committee Chairs were asked to nominate candidates for the Steering Committee and it was noted that the Resource Management Committee should be represented in the Organising Committee.

Awards – The Bureau had welcomed the information on the recognition programme. The Committee noted that the Lifetime Achievement Award requested by the Bureau was already part of the programme.

Open recruitment to Science Committee Expert Groups – With regard to Expert Groups reporting to Science Committees, the Consultative Committee noted that the Bureau had supported the Committee's proposal for open recruitment. The national Delegates will still be encouraged to nominate Experts as this will ensure stable participation and increase likelihood of funding for travel of core members. In future, Expert Group Chairs reporting to Science Committees will be authorised to invite members at their own discretion. It was pointed out by the General Secretary that once authorised, all members would share the responsibility for the outcome of the report and therefore the new rule on open recruitment will ensure that all

members are scientists who in some way will contribute to the report. A person invited by the Chair should have access to own funds (CM 2004/Del04/19/1).

In this connection, the Chair encouraged Committee Chairs to consider if there might be interest in some Expert Groups changing parentage to a Science Committee, in which case the Expert Group would no longer be under the constraint of national nomination. Analytical assessment groups should stay under ACFM. If such requests become common, it may be necessary for ConC to develop more explicit criteria for determining whether an Expert Group should be parented by a Science Committee or an Advisory Committee.

The Chair of ACME requested that the issue of open recruitment for Expert Groups referring to an Advisory Committee be brought on the agenda for the next meeting of the Committee.

4 Introduction of new Head of Science Programme, Adolf Kellermann

David Griffith welcomed Adolf Kellerman, the new Head of Science Programme, and invited him to introduce himself.

5 General arrangements for Annual Science Conference and Statutory Meeting (2004)

ConC noted the arrangements for the elections of new Science Committee chairs (Resource Management Committee, Baltic Committee, and Fisheries Technology Committee). Furthermore, the arrangements for the introduction of the open and plenary lectures were noted.

At its third session, ConC evaluated the 2004 Annual Science Conference as a whole, and noted that the scientific contents of Theme Sessions had, as usual, been very high. However, some problems had been identified:

- Some slots had been moved forward and this had resulted in some people missing out on talks they were interested in;
- Some talks had been very thin. ConC discussed if there was a need to be more rigorous – should people be allowed to speak if they had not submitted their papers? It was also noted that papers that were not included on the CD-Rom were not necessarily bad. In conclusion, ConC agreed that next year there was a real need to communicate that deadlines should be taken seriously. Theme Session convenors should be informed and reminded that one of their responsibilities is to communicate with authors whose papers have been accepted, informing them of the deadline for submitting their manuscripts and chasing late authors;
- In order to reduce the increasing numbers of papers, convenors of Theme Sessions which attract many submissions should encourage some papers to be switched to posters;
- Suggestion to include ASLO (American Society of Limnology and Oceanography) guidelines on making presentations in Guidelines to Convenors – many speakers had presented large tables with small fonts;
- Suggestion for the ASC Handbook that titles should be organised per day;
- Not all convenors kept speakers within the time allowed;
- Participants had not been particularly satisfied with the Poster Session – the room had been crowded and too hot.

The Chair commented that there is not one solution that will solve all these problems. ConC noted that it is important to ensure that convenors are well informed and prepared to deal with these problems. Furthermore, the Chair noted that more prominence should be given to poster sessions.

As a follow-up it was agreed to update the Conveners' Handbook, i.e., 1) conveners should be more selective in accepting papers, 2) deadlines should be taken seriously, and 3) it was decided to extend the deadline for conveners to hand in Theme Session reports to the ICES Secretariat by one week in order to enable them to attend more scientific sessions during the conference.

Highlights from Science Committee meetings

- Lack of participation is a major problem;
- Concern in Baltic Committee and Oceanography Committee over declining role of physical and chemical oceanography in ICES. Strong link required as part of integrated ecosystem assessments and advice;
- Draft recommendation (category 4 resolution) from Baltic Committee authorising the General Secretary to encourage EU to support marine research in its Seventh Framework;
- Baltic Committee will develop and implement improved peer review of reports during 2005;
- Positive response from Science Committees on more flexible Expert Group membership rules;
- Existence of Science Committees (Marine Habitat Committee report) – why do they exist, bottom-up driven science management;
- International Polar Year – Oceanography Committee has set down a group of three people to start planning this symposium.

ConC was informed of the award selection process. Each of the eight Science Committees had selected a person for the ASC Award Selection Committee and the Chair of Consultative had appointed a Coordinator. Going through some of the PowerPoint presentations had facilitated the process of selecting the Best New Paper and the Best New Scientist, and this process was recommended for coming years. ConC noted that a coordinator should be elected ahead of the Annual Science Conference next year and that a list of previous year's winners should be provided to the Award Selection Committee. The winners were presented with award certificates at the Closing Session and were also offered a copy of Helen Rozwadowski's book "The Sea Knows No Boundaries".

New members were appointed for the Recognition Programme Subgroup: Tom Sephton (Mariculture Committee), Niall O'Maoleidigh (Diadromous Fish Committee), Nils Hammer (incoming Chair of Baltic Committee), and a representative from the ICES Secretariat (to be decided by the Secretariat). It was noted that members are elected for their three-year term, with the most senior member assuming the Chair annually.

The overall impression of the conference had been very positive – a large number of PCs were provided for participants, the venue/buildings were very nice, and the service level had been high. ConC agreed that it would convey a gift to the local organisers as a thank you for hosting the meeting.

6 Update on progress on Regional Ecosystem Assessments

The Chair of the Publications Committee gave a short account of the status of REGNS, also outlining the timetable and the objectives:

- REGNS is a technical group which is developing tools to serve the future. The North Sea was chosen as a pilot because there is a lot of data in that area;
- the REGNS process is needed because the tools to produce integrated assessments are not available;
- The REGNS initiative will improve the ability of ICES to provide scientific advice in more integrated ecosystem contexts. However, it is not intended to re-

place the annual advisory processes, not to feed directly into specific advisory needs of Advisory Committees on an annual basis.

- The annual advisory process does need an Expert Group (or groups) focusing on their need for annual support in the preparation of integrated ecosystem overviews, and inputting ecosystem considerations more directly into the annual advice.
- To meet the second need, the Working Group for Regional Ecosystem Description (WGRED) has been established. This Working Group produces initial drafts of all the overview text for all regions and shall assist in the development of the advice in the short and medium term. WGRED should meet before the annual cycle of assessment working groups, ideally at the same time as the annual meeting of assessment working group chairs, so all assessment working groups would have the WGRED products for their meetings.

Timetable for REGNS

2004

The first Terms of Reference were given and feedback was received (mostly positive).

ASC 2004

New TORs have been allocated to 12 Expert Groups – more specific data sets are being requested. There will be five facilitators, who will be in direct communication with the Expert Groups.

May 2005

The Integrated Assessment Workshop will produce a “proof of concept” for an integrated assessment.

Furthermore, ConC was informed that a Category 4-resolution had been put forward to ask the EU for funding for a fulltime secretary to work for REGNS within the ICES Secretariat, and to support travel of scientists to participate in their meetings and workshops.

The REGNS process has its background in the North Sea Conference process and in particular the Bergen Ministerial meeting on the North Sea in 2002. REGNS is developing a framework for making general ecosystem assessments, a work which requires input from many different specialist groups within the ICES system: phytoplankton, zooplankton, benthos, fish ecology, fish stock assessment, etc. Therefore, the REGNS Chair has approached by letter all Expert Group chairs in order to solicit their contribution to the process. He was eager to identify their views on the process and whether they will be contributing to the process.

At the same time, in support of the need to move to more integrated approaches to provide the annual advice to clients, the Chair of Consultative Committee has sent letters to all chairs of Expert Groups (Science Committees and Advisory Committees); however, not much feedback has been received. The Chair asked that this topic be put forward at the forthcoming committee meetings, with a view that Expert Groups reporting to a Science Committee should consider what they can contribute to a more integrated ecosystem advice (by giving new terms of reference), and Expert Groups under the Advisory Committees should identify what they would like to see from the rest of ICES.

Recognising the scale of the undertaking, the Committee considered that it may well be its task, at the end of the day, to sort things out between REGNS and WGRED. The Committee briefly discussed how REGNS may influence integrated advice but reached no conclusion. It is clear that there is a need to highlight significant environmental events each year, focusing on the big signals, and this would be a task of WGRED, which might also be one of the users of the tools developed by REGNS.

On the operational advisory side, the advisory committees are developing an advisory system within an ecosystem approach based on the SGAWWP process. This is an incremental approach and clients have been brought into this approach. The next step in the SGAWWP process is to establish regional assessment groups. This process is distinct from the REGNS process and ACE/ACFM proposed that a new Working Group for Regional Ecosystem Descriptions (WGRED) be established. This group should compile ecosystem advice as input to the integrated assessment. In writing such a chapter of ecosystem advice, it must be assured that these be as scientifically sound as the other chapters of the advisory reports.

There was concern within ConC whether the REGNS and the SGAWWP process could both be fuelled within ICES given the limited resources available, and if a choice had to be made then if the REGNS or the SGAWWP process should have priority. It was argued that the two processes would be seen as supplementing each other instead of competing and it was recognised that the advisory and science process could provide synergy, e.g., investigating inconsistencies in the treatment of information. ConC also recognised that pressure on ICES Expert Groups is high; it will be necessary to look seriously at the prioritisation next year – parts of the system are overloaded.

The ICES Workplan for the coming years should include “do” and not just “talk a lot”. REGNS serves an important function which will evolve over time, but ICES is not prepared to uniformly use the benefits it is producing. REGNS is seen as a spearhead and ICES “needs to be vigilant when we look at the terms of reference for Expert Groups to make sure the work is being done, so that we can position us for the future”.

ConC concluded that both processes were necessary and that they should be closely coordinated, e.g., there is a need for setting up a clearing house on data, tools, and guidelines. ConC may be the parent of such a clearing house. The Committee is confident that the relevant Expert Groups have the capacity to work with the core REGNS and WGRED teams on different timetables. In some respects the work to serve both processes would be the same provided proper coordination is in place; external data sources should be the same.

7 Elections of new Committee Chairs

ConC was informed that Francois Gerlotto (France) was elected as Chair of the Fisheries Technology Committee, Cornelius Hammer (Germany) was elected as Chair of the Baltic Committee, Dankert Skagen (Norway) was elected as Chair of the Resource Management Committee, and Pierre Pépin (Canada) was elected as interim Chair of the Publications Committee.

8 Review of Action Plan Audit

The Chair tabled the meeting document “On the matter of Audits” and commented on the use of the term “audit”, which had caused some confusion. The Committee decided that it would try to avoid the word “audit” and instead use the term “Action Plan Progress Review” for the Action Plan process undertaken by the Consultative Committee.

In discussion, it was pointed out that there may be parts of the Action Plan that no one feels responsible for. The Chair replied that in case an Action Plan item had not been cross linked to any Expert Group term of reference this would lead to a review of an Action Plan item that had not been used. Either the Action Plan should be modified to reflect the reduced priority of the activity, or more effort should be made to have an Expert Group address the issue.

The first progress review had been carried out following the format developed at the mid-term ConC meeting this year. ConC noted that the Action Plan database is under development and will be ready to be taken into use by the next intersessional meeting as a guide for the review of next year’s resolutions.

ConC welcomed the suggestion from some of the Science Committees to integrate the Action Plan Progress Review into the work of all Expert Groups. It was agreed that this would be a very useful process for the groups when drafting new resolutions.

9 Status of ICES symposia

ConC reviewed the progress of ICES symposia (or ICES co-sponsored symposia). In summary:

The Committee recommended approval of co-sponsorship with GLOBEC and PICES of the Symposium on Climate Variability and Sub-Arctic Marine Ecosystems to be held in Victoria, BC (Canada) from 16–20 May 2005.

The Committee noted that the ICES/NASCO Symposium on The Interactions between Cultivated and Wild Diadromous Fish Species was on schedule. This symposium will be funded by NASCO (£10 000), and 50% of the funding will be taken from the registration fee. It was noted that NASCO is concerned about a funding shortfall. ConC will convey this concern to the Council, but has no specific action to recommend.

The Committee recommended approval of ICES co-sponsorship of the Third International Symposium on Deep-Sea Corals. The co-sponsorship will not imply any financial costs to ICES. The planning of the symposium is well underway. The ICES logo will be added to the Symposium volume to attract European participation, but there will be no provisions for publication in the *ICES Journal*. The Steering Group includes members of the ICES Study Group on Corals (SGCOR), so there should be a good ICES link to the symposium, even though ICES sponsorship is a somewhat late addition to the planning for the symposium.

The Committee noted that no progress had been reported in the development of the Symposium on Marine Bioinvasions to be held on the US East Coast for three days in early 2006. The members of the Steering Group were still not known and the dates were still outstanding. Paul Keizer volunteered to contact the symposium conveners. The Bureau was concerned about the feasibility of moving bioinvasive species earlier in time than the initial proposal. Subsequently, it was established that planning for the symposium is progressing quite well, but ICES involvement in the planning has not been strong.

The Committee noted that good progress had been made in connection with the Symposium on Fishing Technology in the 21st Century to be held in Boston, USA, in November. The list of theme sessions is almost ready, the steering committee is in place and financial sponsorship is being sought.

The Committee recalled its decision at its mid-term meeting to cancel the Symposium on Precautionary Approach to Fisheries Management: Lessons Learned and Future Directions and recommended the approval of a new symposium entitled Management Strategies: Case Studies of Innovation to be held in Galway, Ireland for four days in late 2006 with Paul Connolly (Ireland) and Jake Rice (Canada) as conveners, and Mike Armstrong (UK) and Doug Wilson (DK) as co-conveners. Additional members of a steering committee would also be sought.

The Committee noted that the Symposium on Marine Environmental Indicators Utility in Meeting Regulatory Needs to be held in 2007 is presently seeking funding. Dates and venue (in Great Britain) are still outstanding, but a scientific steering committee with ICES involvement is working actively.

The Committee recommended approval of co-sponsorship of The 4th International Zooplankton Production Symposium to be held in May/June 2007 in Hiroshima, Japan. Louis Valdés will be contacted with a view to take on the job as ICES co-convener of this symposium.

The Committee recommended approval of the International Symposium on Integrated Coastal Zone Management to be held in Arendal, Norway, from 11–14 June 2007. ICES is well represented on the scientific steering committee and the planning committee.

The Committee recommended approval of the Symposium on Linking Herring to be held in Galway, Ireland in the summer of 2008. A new title will be needed. The Chair of Resource Management will be responsible for monitoring the progress of this symposium.

The Committee recommended approval of the Symposium on Fisheries Acoustics, Science and Technology to be held at the Institute of Marine Research in Bergen, Norway in June 2007.

Three symposia are under preparation for 2008 – the International Polar Year Symposium in 2007/2008, Marine Mortality of Salmon (to be developed further by the Diadromous Fish Committee), and the Symposium on Ecosystem Approach. Firm proposals for these symposia should be drafted for the 2005 mid-term meeting of the Committee.

The question of whether ICES symposia should be increased from two to three symposia was raised. We have been unable to slow down the momentum of symposia. The *ICES Journal* is the limiting factor for the number of symposia. The Committee agreed to bring forward a proposal to the Publications Committee to contact the publisher with a view to increasing the number of volumes from two to three per year. It was noted that there is no obligation to use the *ICES Journal*, but that ICES would not be interested in supporting symposia if they are not being published in some primary journal or as a book. It would also be possible to seek publications channels other than the *ICES Journal*. The strain on the ICES Secretariat in connection with symposia varies from case to case – it was agreed that a good organising committee can to a large extent run the process itself.

The Committee was concerned that sometimes ICES is not very well visible when co-sponsoring symposia. ICES members who are on the steering committee for co-sponsored symposia should make sure that ICES is not just a logo on a document but gets reasonable billing in communications and displays both before and during the symposium. The question of increased participation of the ICES Secretariat for logistic support at symposia was raised. This is a good way to keep ICES prominent at co-sponsored symposia, but does have financial implications. This should be explored further at future ConC meetings, and with the Secretariat.

10 Development of programme for the 2005 Annual Science Conference (Aberdeen, UK)

10.1 Meeting arrangements

A final decision about the registration fee for next year's Annual Science Conference in Aberdeen, UK, had not been made. The Committee endorsed a proposal that the General Secretary inform the Council that ConC would support an increase per participant of £5 per day, which would cover lunch and transport. The recommendation would also include the establishment of a fund for young scientists.

The Committee noted that the increase in registration fee was a last resort due to a specific, local problem and that this would not be a recurrent increase. Furthermore, it was emphasised that lunch and transport facilities should be taken into consideration when entering negotiations with conveners for future Annual Science Conferences in order to avoid a similar increase in registration fee. After the meeting, the issue was discussed by the Council and resolved by a Category 4-resolution (4DEL08), allowing for an increase in the ASC registration fee of "an amount not to exceed 25% in order to enhance arrangements for the Conference and to provide benefits to participants".

It was pointed out that 2005 would be the first year under the new format of the Annual Science Conference, meaning that an extra day will be added to the conference and that the Delegates Meeting will be held separately. The Publications Committee and Consultative Committee meetings will still be held in conjunction with the Annual Science Conference.

Until now all Science Committees have held their first meeting before the Opening Ceremony, and in recent years several have had additional meetings during the week. Some of these have had to be scheduled at the same time as Plenary Lectures or Theme Sessions, which has caused Committee business to conflict with science programmes. For 2005, the major time slots for Science Committee meetings have been allocated after the Opening Ceremony of the conference, to run concurrently with each other. Again, however, if Committees need additional time, extra sessions will have to be scheduled in parallel with Theme Sessions. Efforts should be made to minimise such conflicts to the extent possible.

10.2 Review of proposed Theme Sessions

At the first session of the Committee there was a preliminary discussion on Theme Sessions for 2005. At the mid-term meeting of the Consultative Committee in June 2004, there had been a full slate of Theme Sessions and at the MCAP meeting two new Theme Sessions had been identified. Committee Chairs were asked to identify Theme Sessions that were not time-sensitive and could be postponed to the 2006 Annual Science Conference.

A discussion followed on how to identify good/bad theme session proposals and how to avoid Theme Sessions that do not attract papers. It was pointed out that Committee Chairs should have an assurance that there is commitment behind the proposals and that they will attract quality submissions. This will entail work for the Theme Session conveners – they have to promote their Theme Sessions at the ASC to get approval, and are then expected to actively recruit contributions from good scientists in the relevant fields.

The Chair also encouraged Committee Chairs to bring up the subject of invited speakers at their Committee Sessions and to tie new names to the relevant Theme Sessions.

A discussion followed on whether ConC would encourage focussed or broad scope theme sessions – to make theme sessions more general, but still have a theme – and how would you judge what was good and relevant? It was suggested to have *food for thought* theme sessions – a forum where one could have more strategic discussions, not just in committees, but also as part of the opening session. However, this should be further discussed at the next ConC meeting.

Among the issues to discuss further was:

- A consideration on using ICES Theme Sessions as a vehicle for promoting and reporting on big EU multi-lab projects.
- One-day theme sessions instead of two-day sessions as an attempt to get more focus on the topic.

ConC noted that there were both positive and negative points to Theme Sessions being brought up two years in advance. This gave ample time to build interest in the Theme Session, and allowed ConC to plan strategically to ensure good coverage of all scientific interests of ICES. However, it tended to fill up meeting schedules far in advance, reducing the opportunity for ICES to respond quickly to emerging issues.

Also, the Chair brought the attention of the Committee to a letter from Robin Cook, UK Delegate, proposing two new theme sessions and two open lecturers and requested that this document was distributed to the members.

At its third session, ConC reviewed the draft proposals for theme sessions in 2005. Some theme sessions were merged and other sessions were transferred to 2006.

10.3 Invited lectures and other special events

ConC discussed whether it was desirable to schedule plenary lectures for every day of the conference. On the positive side, many Theme Session conveners really liked the idea of having a Plenary Lecturer to use as a “hook” to build interest in their session, and it allowed ICES to bring in some exceptional scientists who probably would not attend otherwise. On the negative side, they took up significant time on the meeting schedule, as sessions could not run concurrent with a Plenary Lecture, and attendance had been mixed this year. As a compromise it was agreed to go with only two Plenary Lectures in 2005, rather than three as in recent years. In conclusion, ConC agreed to bring forward to the Council the following names for the Open Lecture and Plenary Sessions for the 2005 Annual Science Conference:

Open Lecture

Keith Sainsbury: “Ecosystem Approach to Fisheries”

Plenary Lectures

Graham Shimmield: “Climate change and human impacts on the marine environment and ecosystems of the Arctic Seas”

(Linked to Theme Session on Recent Advances in our Understanding of Marine Turbulence in an Ecological and Climatological Context)

Sean Pascoe: “Anticipating fisher response to management: Can economics help?”

(Linked to Theme Session on Fishers’ Perceptions and Responses in Management Implementation)

The Chair of ACFM brought forward a proposal for a *fisheries format panel discussion* to take place at the 2005 Annual Science Conference which could be linked to the Theme Session on Fishers’ Perceptions and Responses in Management Implementation. The panel forum should involve stakeholders, and there should be short kick-off talks by invited speakers after which the floor would be open for dialogue or debate.

A discussion followed on the length of such a session. ConC noted that a strictly European focus would not be appropriate; global experience should be included, and furthermore the session should include science components, not just a single perspective from the fishing industry. It would be necessary to allow for more than a couple of hours for the panel discussion. Finally, the importance of allocating a suitable room was pointed out.

11 Development of programme for the 2006 Annual Science Conference (The Netherlands, Maastricht)

The Committee had no new information on the 2006 Annual Science Conference in The Netherlands. Apparently, the venue still has not been decided. There are a number of Theme Sessions which will be carried over from proposals for 2005, and a number of these need to be revisited to ensure that conveners are still committed to the topics. Many of the issues raised in Section 10.2 regarding Theme Sessions should be taken into account when preparing the programme for 2006.

12 2007 Annual Science Conference (Finland)

There was no information on the 2007 Annual Science Conference in Helsinki, and planning for the scientific sessions has not commenced.

13 Publications Committee

The Chair of the Publications Committee Bill Turrell presented the Publications Committee report, highlighting topics of relevance to ConC.

- Ethical concerns regarding animal experiments – a statement for authors. ConC reviewed the phrasing of the instruction to authors. The Committee acknowledged the importance of the issue, and agreed that ICES should adopt the first sentence of the paragraph with the revision ‘Should’ to be replaced by ‘must’, as mandatory. The Committee expressed its concern that the rest of the paragraph was too open-ended and should be rephrased. Some ConC members were also concerned over the informal censorship of manuscripts reflected in the sentence. It was agreed that ICES as a whole needs a strategy for this issue and a Code of Practice should be developed.
- The Chair of the Consultative Committee proposed the establishment of a sub-group under the Consultative Committee to be charged with exploring the feasibility and implications of developing a Code of Practice on ethical concerns. It will be proposed to the Council that the group include one person from the Publications Committee, one person appointed by Delegates, one person by Committee Chairs (Tom Sephton volunteered to chair the group), and one person appointed by the Secretariat. The group will report back to ConC and then the Council on the feasibility and implications of such a Code of Practice. Development of such a Code should not be undertaken until ConC and the Council have considered that report, and approved a specific course of action.
- Page restrictions on the ICES MSS series. Concern was expressed that this page limit compromises the quality of papers from popular symposia. In order to get maximum impact factors you need to have substantial papers. The publishers have no way to negotiate flexibility except through charges for additional pages – inclusion of extra pages costs 250 US\$ per page. Symposium conveners should know that they have to generate money for publication, if they expect contributions to exceed the page allocation per issue.
- ConC was informed that the membership issue would be resolved at the Council meeting by a Category 4-resolution changing the existing rules that will a) place membership under national nomination, with two nominations per country, and b) remove the three-year limit on membership.

14 Issues from MCAP and the Advisory Committees

The Chair of MCAP reported from the MCAP meeting and said that a large part of that meeting had dealt with plans for 2005. He noted that the plans for MCAPs work in 2005 would be agreed directly at the Council level. The key issues would be the development of contacts with the Client Commissions, the unification of the internal ICES advisory process, and the quality issues of the advice.

The Chair of the Consultative Committee noted that many of the issues that were reported from the committees had been dealt with under different agenda items, e.g., the REGNS process. The rest would be picked up in the package of resolutions.

15 Issues from the Consultative Committee

Young Scientist Conference

Ian Perry, Chair of the PICES Science Council, attended the Committee’s second session. He thanked the Committee for the invitation and opportunity to enhance ICES/PICES collaboration and gave a brief update on the planning for the Young Scientist Conference. The Committee discussed the following issues:

- As the Conference will be hosted by the US, ConC suggested Boston or the New England area as possible locations for the conference. Furthermore, it was noted that a research facility would be preferable to a conference centre, and in this connection the University of New Hampshire or Chesapeake Bay were mentioned as venues which would also be attractive in terms of fundraising.
- A number of suggestions were made for a senior scientist fundraiser: Keith Brander (who was involved in the fundraising for the last Young Scientist Conference), Francois Gerlotto (good connections to the Pacific world), Tom Miller, and Ed Houde were all suggested. It was also suggested that Delegates could play a more active part in supporting the fundraising, but not be directly involved in the Steering Committee, and furthermore it came up in discussion that it was also important to have a theme in order to raise money.
- Potential funding sources were discussed briefly, and it was noted that SCOR funds young scientists from underdeveloped countries;
- The issue of publication should be left to the Scientific Steering Committee. There is no room in the *ICES Journal*.
- The target group will be young scientists (defined as someone who is younger than 35), and the conference should also try to have at least 10% of its participants coming from underdeveloped countries. It was suggested that young award winners be invited to the conference and also it would be relevant to invite PhD students.
- Science Committees provided names of a number of scientists who would be interested to serve on the Scientific Steering Committee for the Conference.

The Committee discussed the relevance of establishing a mechanism to report to PICES matters that have a Pacific interest/direct relevance. Ian Perry suggested that the best thing would be to invite ICES representatives to PICES meetings. The Chair encouraged Committee Chairs to be vigilant as to matters of direct relevance to the Pacific, and flag them to be part of a communication to PICES each year by whoever attends the PICES Annual Science Conference as the ICES representative.

16 Selection of new Chair of Consultative Committee

Following an election process, Harald Loeng was nominated as incoming Chair of Consultative Committee, for subsequent appointment by the Council.

The Chair informed the Committee that there is a position as Vice-Chair of Consultative Committee which was not filled during the last term. The Committee agreed to take up this issue at its intersessional meeting in June.

17 2004 draft resolutions

The Committee reviewed the proposed package of resolutions and introduced amendments where appropriate. This package was then presented to the Council and in cooperation with the Chair of Consultative Committee amended further in a few cases. The Resolutions can be found on the ICES website at <http://www.ices.dk/iceswork/recs/recs.asp> and a table of Expert Groups that were dissolved, changed committee, or were renamed is attached as an annex to this report.

The Committee in particular noted that:

- the REGNS process is large and complicated and must be closely monitored;
- ACFM has changed the format of the recommendations and is using generic terms of reference for all fish stock assessment groups;
- the process towards a unified advisory system will continue, and ACE and ACFM will meet in parallel in 2005 while ACME is actively considering how best to become part of this process;

- the advanced fish stock assessment courses will continue in 2005;
- FTC requested that the Committee become an ex officio member of ACFM. This should be on the invitation of the General Secretary;
- FTC and OCC are actively seeking to make an impact on the advisory process;
- as a mechanism for improving communication and integration, a ToR was added to all Baltic Study Groups requesting them to meet jointly in 2006;
- the BSRP is progressing. Several ToRs regarding setting EcoQOs for the Baltic were transferred to WGECO to make use of the experience of that group. Baltic Member States are encouraged to ensure they send members to the April 2005 meeting of WGECO;
- the issue of animal ethics (Publications Committee) will be considered in 2005, and the special group proposed by ConC was approved;
- the Committee discussed the feasibility of a new role of ICES and in particular of the Secretariat as the coordinator home for projects funded from competitive funding sources such as Framework 6 proposals. The discussion was held in connection with the application to the European Framework 6 requesting support for the process towards a pilot integrated assessment for the North Sea. The Committee agreed to and supported this recommendation (4ACE02).

On the issue of transfer of Expert Groups to new committees, the Committee decided to deal with this on a case-by-case basis. The Committee discussed the need for a mechanism/policy, and decided that this could be brought up again at the June mid-term meeting.

Consultative Committee

The Committee discussed possible dates for the 2005 intersessional meeting. It was decided that it would be left to the Secretariat to decide on dates. The Committee had previously met between ACE and ACME to reduce costs. It was noted that it would be preferable to schedule the meeting before the Bureau meeting and after the advisory meetings. Furthermore, conflict with the NASCO meeting and EuroGoos meetings should be avoided.

The Committee agreed to invite Andrew Kenny to the intersessional meeting as a link between REGNS and the Consultative Committee.

Matters arising postponed for June 2005:

- 1) Parentages of WGs and SGs to be reviewed in the light of the change of the rule on nomination of membership, and the need for a more explicit overall policy should be discussed.
- 2) Existence of Science Committees (see MHC Report), why do they exist, bottom-up driven science management
- 3) Real-time oceanographic information used in the stock assessments
- 4) Quality assurance peer review and auditing of SG and WG reports by Science Committees.
- 5) Identification of areas of low participation in EGs and at the ASC, and discuss strategies to address.
- 6) Vice-Chair of ConC to be discussed – and to be elected if needed – in June 2005.

18 Any other business

The Chair of Consultative Committee thanked the outgoing Chairs, Stig Carlberg (ACME), Brian MacKenzie (Baltic Committee), Carl O'Brien (Resource Management Committee), Stephen Walsh (Fisheries Technology), and Bill Turrell (Publications Committee) for their contribution to the work of the Committee.

List of various Expert Groups that were dissolved, established, changed committee, or were renamed by virtue of Council Resolutions at the 92nd Statutory Meeting

TYPE OF ACTION	NAME	CHAIR - OUTGOING	CHAIR -INCOMING
<i>Change of Chairs</i>	Committees		
	Consultative Committee (ConC)	Jake Rice, Canada	Harald Loeng, Norway
	Publications Committee	W. Turrell, UK	Pierre Pepin, Canada
	Advisory Committee on the Marine Environment (ACME)	Stig Carlberg, Sweden	Paul Keizer, Canada
	Resource Management Committee (RMC)	Carl O'Brien, UK	Dankert Skagen, Norway
	Fisheries Technology Committee (FTC)	Steve Walsh, Canada	Francois Gerlotto, France
	Baltic Committee (BCC)	Brian McKenzie, Denmark	Nils Hammer, Germany
	Expert Groups		
	Working Group on Ecosystem Effects of Fishing Activities (WGECO)	Chris Frid, UK	Stuart Rogers, UK
	Herring Assessment Working Group for the Area South of 62° N (HAWG)	Else Torstensen, Norway	Mark Dickey-Collas, Netherlands
	Working Group on Biological Effects of Contaminants (WGBEC)	K. Hylland, Norway	John Thain, UK
	Working Group on Environmental Interactions of Mariculture (WGEIM)	Ed Black, Canada	Francis O'Beirn, Ireland
	Working Group on the Assessment of Southern Shelf Demersal Stocks (WGSSDS)	Steve Flatman, UK	Wim Demare, Belgium
	Working Group on Beam Trawl Surveys (WGBEAM)	G. Piet, Netherlands	Richard Millner, UK
	Marine Chemistry Working Group (MCWG)		Jacek Tronczynski, France (as co-Chair)
	Working Group on Cephalopod Fisheries and Life History (WGCEPH)	Jean-Paul Robin, France	Joao Pereira, Portugal
	Working Group on Seabird Ecology (WGSE)	R. W. Furness, UK	Stefan Garthe, Germany
	ICES/HELCOM Study Group on Quality Assurance of Chemical Measurements in the Baltic Sea (SGQAC)	E. Lusiak-Pastuszek, Poland	Michael Gluschke, Germany, and Elisabeth Sahlsten, Sweden
	Study Group on Baltic Fish and Fisheries Issues in the BSRP (SGBFFI)		Post of co-Chair established (Henn Ojaveer, Estonia) to join Maris Plikshs (Latvia)
	Study Group on Redfish Stocks (SGRS)	T. Sigurdsson, Iceland	Christoph Stransky, Germany
	Study Group on Salmon Scale Readings (SGSSR)	Lars Karlsson, Sweden	Jari Raitaniemi, Finland
	Study Group on Survey Trawl Standardisation (SGSTS)	Francisco Velasco	David Reid, UK
	The Stock Identification Methods Working Group (SIMWG)		John Waldman, USA, and Steve Cadrin, USA (as co-Chairs)
	Study Group on Multispecies Assessment in the Baltic (SGMAB)		Fritz Köster, Denmark (as co-Chair)

ICES - EuroGOOS Planning Group on the North Sea Pilot Project NORSEPP (PGNSP)		Hein-Rune Skjoldal, Norway (as co-Chair)
Planning Group on the HAC Data Exchange Format (PGHAC)	Dave Reid, UK	Laurent Berger, France

Dissolved

Study Group on Ecological Quality Objectives for Sensitive and for Opportunistic Benthos Species (SGSOBS)	Karel Essink, Netherlands	
Study Group on Sea Bass (SGBASS)	Mike Pawson, UK	
Study Group on the Development of Fishery-based Forecasts (SGDF)	Paul Marchal, France	
Study Group on Assessment Methods Applicable to Assessment of Norwegian Spring-Spawning Herring and Blue Whiting Stocks (SGAMHBW)	Steve Murawski, USA	
Study Group on Long-term Advice (SGLTA)	Poul Degnbol, Denmark	
Study Group on Stock Identity and anagement Units of Redfishes (SGSIMUR)	Kjell Nedreaas, Norway	
Study Group on Growth, Maturity and Condition in Stock Projections (SGGROMAT)	Tara Marshall, Norway, and Coby Needle, UK	
ICES-IOC SG on the Development of Marine Data Exchange Systems Using XML (SGXML)	Anthony Isenor, Canada, and Robert D. Gelfeld, USA	
Study Group on Cold Water Corals (SGCOR)	Mark Tasker, UK	
Study Group on Closed Spawning Areas of Eastern Baltic Cod (SGCSA)	Fritz Köster, Denmark, and Hans-Harald Hinrichsen, Germany	
Working Group on <i>Nephrops</i> Stocks (WGNEPH)	Mike Bell, UK	

*Established/
Re-established*

Working Group on Deep-water Ecology (WGDEC-ACE)		Mark Tasker, UK
Working Group for Regional Ecosystem Description (WGRED-ACE)		Jake Rice, Canada
Annual Meeting of Assessment WG Chairs (AMAWGC-ACFM)		Poul Degnbol, Denmark
Working Group on Acoustic and Egg Surveys for Sardine and Anchovy in ICES Areas VIII and IV (WGACEGG-LRC)		Miguel Bernal, Spain
Working Group on Assessment of New MoU Species (WGNEW-ACFM)		Henk Heessen, Netherlands, and Jean-Claude Mahé, France
SG on ICES Publication practises regarding ethical concerns on the use of animals in scientific research (SGPPE-ConC)		—
SG on Stock Identity and Management Unit of Whiting (SGSIMUW)		Phil Kunzlik, UK
Study Group on Management Strategies (SGMAS-ACFM)		Dankert Skagen, Norway, and John Simmonds, Scotland, UK

TYPE OF ACTION	NAME	CHAIR - OUTGOING	CHAIR -INCOMING
<i>Renamed</i>	Study Group on Survey Trawl Gear for the IBTS Western and Southern Areas (SGSTG) to Study Group on Survey Trawl Standardisation (SGSTS)		
	Study Group on Information Needs for Coastal Zone Management (SGINC) to Working Group on Integrated Coastal Zone Management (WGICZM)		
<i>Changed parent</i>	Regional Ecosystem Study Group for the North Sea REGNS (ACE to RMC)		
	ICES/EIFAC Working Group on Eels (WGEEL) (ACFM to DFC)		
	Working Group on Elasmobranch Fishes (WGEF) (LRC to ACFM)		
	Working Group on Seabird Ecology (WGSE) (OCC to LRC)		
	Study Group on the Bycatch of Salmon in Pelagic Trawl Fisheries (SGBYSAL) (DFC to ACFM)		
<i>New Workshops</i>	A Workshop on Time Series Data Relevant to Eutrophication Ecological Quality Objectives (WKEUT-ACE)		Ted Smayda, USA, and Gunni Ærtebjerg, Denmark
	A Workshop on Sampling Design for Fisheries Data (WKSDFD-ACFM)		Joël Vigneau, France
	A Workshop on <i>Nephrops</i> Stocks (WKNEPH-ACFM)		I. Tuck, UK
	A Workshop on Unaccounted Fishing Mortality (WKUFM-FTC)		Mike Breen, UK
	A Workshop on Survey Design and Data Analysis (WKSAD-FTC)		Paul Fernandes, UK, and Michael Pennington, Norway
	A Workshop on the Impact of Zooplankton on Cod Abundance and Production (WKIZC-OCC)		Øyvind Fiksen, Norway, and Jeff Runge, USA
	A Workshop on Advanced Fish Stock Assessments Techniques (WKAFAT-RMC)		Dankert Skagen, Norway, and Einar Hjorleifsson, Iceland

Form of ICES Advice

The concepts of integration and an ecosystem approach are gaining momentum throughout the aquatic science community, and with all of our clients. Therefore, ICES and its major client commissions have agreed that ICES will provide more integrated scientific advice, rather than separate Advisory Documents produced by ACFM, ACME, and ACE. Correspondingly, the form of advice was modified for 2004 by integrating the advisory material from ACFM and ACE, and is expected to continue to evolve in the future by also integrating the advice from ACME. However, even the 2004 outline of the Advisory Report looks substantially different from the form of advice in past years, particularly with regard to the advice to the traditional clients on fisheries management. It should be noted, however, that the report structure is not final and will be adjusted according to evolving needs of ICES and its clients, for example the inclusion of ACME advice.

The advice is provided on a regional or area-specific basis, although the exact definition of these regions or areas is still under discussion with the clients and within the science community.

For the fisheries advice the structure of the Advisory Document is such that within each region, three sections feature a broader ecosystem perspective more prominently in the advice. The first of these sections is an ecosystem overview, the second section deals with ecosystem influences on the fisheries, and the third section is on the effects of the fisheries on the ecosystem. These sections state the knowledge based on environmental drivers in fish stock assessments, impacts of fishing on habitat structures and fish communities, and other ecosystem considerations. The core advice sections take this information on par with single-stock boundaries and mixed fisheries consideration, so that the interactions of human activities and the full ecosystem are integrated in the advice itself. As our capacity to provide the advice grows, it is expected that advice on more human activities than just “the fisheries” in each region will be handled in the same way.

These overviews are prepared by a Working Group for Regional Ecosystem Description, but are supplemented by identification of special environmental events – events that make a year so different that it may have a significant impact on other parts of the ecosystem in ways that other scientists and managers should be taking into consideration. The fish stock assessments will include an account of these events and their impacts. Although at the moment the focus is on fishery-ecosystem interactions, ICES wants to integrate all the advice as soon as practical.

Advisory Committee on Ecosystems (ACE)

The Committee met in June 2004 and reported to DG Fish, HELCOM, and OSPAR. The main topic was to complete the work on Ecosystem Quality Objectives. In October the Committee reviewed a study done on the definition of eco-regions. This study was presented to the 2nd stakeholder conference under the EU European Marine Strategy process.

Advisory Committee on Fisheries Management (ACFM)

The review of the fish stock assessments was changed in 2004 by having these reviews done in separate groups involving experts outside ACFM, and also in a limited number of cases involving experts recruited from laboratories not normally involved with ICES assessments.

The Committee met twice in 2004 and provided the normal range of fish stock assessments. The Committee in a mail procedure reviewed and adopted advice on Baltic cod in February, on closed areas for cod fishing in the Baltic in April, on North Atlantic salmon for NASCO in May, and some flatfish stocks in August.

Advisory Committee on the Marine Environment (ACME)

The Committee met in June 2004 and reported to HELCOM and OSPAR. The Committee contributed overviews for some contaminants: Tris(4-chlorophenyl)methanol (TCPM) and tris(4-chlorophenyl)methane (TCPMe), arsenic and its speciation, Polybrominated diphenylethers (PBDEs), Toxaphene, and Phenylurea herbicides.

Fisheries Technology Committee (B)

Chair: Stephen J. Walsh (Canada)

Rapporteur: Norman Graham (Norway)

Opening

The Committee met on 21 September from 09:00 to 13:00 and 24 September from 16:00 to 18:00. The agenda was adopted without modifications. There were 25 participants from 15 member countries. The meeting was dedicated to the memory of Erik Stenersen (Norway), who passed away suddenly 3 weeks ago and who had been a long serving participant at the WGFAST meetings.

Reports of Expert Groups

Working Group on Fishing Technology and Fish Behaviour (WGFTFB)

The ICES-FAO Working Group on Fishing Technology and Fish Behaviour (WGFTFB) met in Gdynia, Poland, 20–23 April 2004 (Doc. B:05). The group considered four specific topics (ToRs) with a fifth considered during the joint session with WGFAST on 22 April. Topic Groups worked by correspondence to produce a series of review documents, outlining the state of the art, summarising the key issues, and providing recommendations for future actions. These working document reports formed the core of the 2004 WGFTFB meeting. The Theme Group on Colour and Contrast in Netting Materials and Twines, and its relationship with fish behaviour, reviewed nearly 50 years of research, covering a wide range of gears, locations, species, and behavioural reactions. To obtain information on whether fishing gear manufacturers considered netting colour important, the group also conducted extensive commercial interviews. It was concluded that in fishing conditions where visual stimuli are important, i.e. shallow waters, manipulation of netting colours might provide a simple mechanism to improve selectivity. It is recommended that in order to define fisheries where visual stimuli may be important, light measurement methodology should be standardised. The Theme Group on Technological Increase in Commercial Fishing Operations concluded that technological creep is traditionally viewed from either a biological or economic perspective and that such advances can have positive, negative, or neutral effects depending on that perspective. Biologically, increases in efficiency pertaining to increased CPUE can be of concern to managers, particularly where effort limitation schemes are used. From an economic viewpoint, efficiency increases may affect CPUE, but they can also result in a reduction in operating cost for a given unit of catch. The significance of this is that it is acknowledged that economic forces are amongst the most important drivers of change in the catching sector. The Theme Group on Benthic Impact and Mitigation Measures found that the effects of towed gears varied considerably between fisheries, that the determination of these effects was problematic, and that experimental protocols and interpretation of the results needed to be carefully considered. The group identified a number of useful modifications such as drop-out panels and semi-pelagic gear, and several novel projects that had focussed on more benign methods of stimulating fish reactions to aid fish capture. The group needs to obtain WGFTFB to seek advice from other WGs such as WGEKO to define quantifiable impact indicators. The Theme Group on Baltic Cod Selectivity collated all available selectivity data on T90 codends and conducted an alternative analysis, which identified the principal components affecting selectivity. However, this could not be directly compared to the Bacoma data due to the differences in methodological approach. It was agreed that a further analysis using the guidelines laid down in the ICES Selectivity Manual for Towed Gears be conducted together with all available Bacoma data. This initiative coincides with an official request from the International Baltic Sea Fishery Commission (IBSFC) received a week prior to the WGFTFB meeting.

Working Group on Fisheries Acoustics, Science and Technology (WGFAST)

WGFAST convened 20–23 April 2004 in Gdynia, Poland (Doc. B:06) at the Sea Fisheries Institute and thanked their gracious host. The Working Group continued to address a variety of advanced technologies for ecosystem-based assessments, with particular attention to continued improvements in acoustical survey methods. Work was organized into four topic sessions and progress was facilitated by reviews of each topic, presentations on recent research, expert-led discussions, and the distillation of advances and outstanding issues. Especially in the context of ecosystem-based assessments, absolute abundance estimates should be pursued via error analyses. Such analyses have revealed that the principal challenges when using acoustics to evaluate ecosystem structure are: 1) species identification; 2) target strength estimation; and 3) fish detection bias due to avoidance reaction to survey vessels or residence in boundary areas such as near the sea surface, near-bottom, or near-shore. To further address these issues, it is necessary to improve the validation methods, account for the stochastic and non-stationary nature of sound scatter from marine organisms, and to characterize vessel noise and corresponding fish reactions. In the last decade, many multi-frequency techniques have been developed to improve species identification, at least for simple systems with a few dominant species having aggregations that are unmixed and dispersed. Empirical observations and model simulations of sound scatter from fish have progressively elucidated the variability of target strength due to the stochastic nature of sound scatter and the many non-stationary abiotic and biotic factors. Recently, many new empirical and physics-based models of target strength have been developed to account for this variability and thus characterize the probability density functions of target strength. Account of these target strength distributions in acoustical biomass estimations should ultimately reduce their systematic and random error. Related to fish avoidance reactions to survey vessels, multiple research efforts are underway. These and additional studies are needed to: 1) improve measurements of radiated vessel noise fields; 2) characterize the effectiveness of noise-quieted vessels; 3) identify the root causes of fish avoidance reactions; and 4) improve our understanding of how fish detect and respond to sound. WGFAST will next meet at FAO in Rome, Italy, on 19, 20, and 22 April 2005 to examine works in the following research areas: 1) measuring underwater acoustic energy and its effects on fish; 2) technologies for remote species identification (low-frequency, Doppler, multi-frequency, broadband, data integration, optical sensors); 3) alternative technologies (small-craft, buoys, ROV, AUV, gliders, fishing vessels, multi-beam sonar, acoustic cameras), with special attention to shallow water and near-boundary assessments (coastal, riverine, demersal and epipelagic species, and bottom typing); and 4) target strength (modelling and measurements).

Study Group on Collection of Acoustic Data from Commercial Vessels (SGAFV)

The Study Group on Collection of Acoustic Data from Commercial Vessels (SGAFV) held its first meeting at the Sea Fisheries Institute (SFI), Gdynia, Poland, prior to the 2004 meetings of WGFAST and WGFTFB (Doc. B:02). The meeting was chaired by W. Karp (USA), with Alex De Robertis (USA) acting as Rapporteur. Twenty-five scientists from six ICES member countries and three observer countries attended the meeting. Major agenda items and meeting goals included: review Terms of Reference (ToRs), review developments in the field, develop outline for final report, assign initial authorship responsibilities, reach agreement on work to be completed before the next meeting of the Study Group, recommend changes in the ToRs if appropriate, and identify major agenda items for 2005 meeting of SGAFV. All of these tasks were accomplished during the meeting. In addition to developing an outline for the final report and identifying participating authors, lead authors for each chapter were identified. Each of the lead authors is now working with their group of writers to prepare draft text in advance of next year's meeting.

Study Group on Unaccounted Fishing Mortality (SGUFM)

SGUFM presented a report of their activities in 2003/2004 at the WGFTFB meeting in Gdynia (Doc. B:09). During this period, the Study Group has been collating data from a variety of sources, this will continue through 2004 and 2005. SGUFM are seeking contributions from scientists for data gathering, workshop participation, information on discard mortality and illegal and misreported landings, and to inform the Group of relevant data in the grey literature, of ongoing projects, and of anecdotal evidence. The potential of utilising discard data was well demonstrated for two fisheries in the North Sea, clearly identifying these as having high or acute discard problems. Such information could be used to specifically target gear technology research priorities.

Study Group on Acoustic Seabed Classification (SGASC)

The second meeting of the ICES Study Group on Acoustic Seabed Classification (SGASC) was held at the Sea Fisheries Institute (MIR), Gdynia, Poland 18–19 April 2004 (Doc. B:03). A total of twenty-nine delegates and observers participated in the two-day meeting, representing eleven countries and five industry groups. The meeting was chaired by John Anderson (Canada). Since the inaugural meeting in 2003, members of the Study Group have been working by correspondence to develop a detailed outline for an *ICES Cooperative Research Report* (CRR) on acoustic seabed classification. Lead authors were identified to develop the report chapters adopted last year and to recruit further experts as required in order to meet the Terms of Reference originally identified for the Study Group. The Study Group reviewed presentations by lead authors and developed timelines over the next year for the writing and editing of the *ICES Cooperative Research Report* on Acoustic Seabed Classification. The Study Group will meet next year, 2005, in association with the Working Group on Fisheries Acoustics and Science Technology (WGFAST) to review and finalize the CRR. The Study Group now has a direct contact with the Working Group on Marine Habitat Mapping (WGMHM) through R. Coggan (United Kingdom).

Ecosystem-based management of marine resources will require that natural regions be identified and mapped over a range of hierarchically nested scales. Acoustics is regarded as the remote sensing tool that will provide the basis for classifying and mapping ocean resources. Existing acoustic systems can measure seabed sediment properties and bedform morphology from scales of boulders ($< 1 \text{ m}^2$) to the scale of shelves ($> 100\,000 \text{ m}^2$). Acoustic metrics relating to seabed habitats can be regarded as proxy measures, or surrogates, of seabed habitats that can be collected in a cost-effective manner continuously across broad scales. Acoustic systems considered by the Study Group include vertical incidence single beam echosounders (SBES), oblique incident sidescan sonar systems (SSS) and multibeam echosounder systems (MBES).

The aim of the *ICES CRR* is to review the state-of-the-art in acoustic seabed classification (ASC). The report will provide an overview of the major issues and applications in this field and a comprehensive review of the technologies and techniques used to investigate these. Acoustic technology and classification science is rapidly evolving to meet the needs of nations to manage and conserve coastal resources. As such, the *ICES CRR* must be seen as representing a snap-shot of the discipline at this point in time. While we anticipate that new developments will occur regularly and that this subject must be revisited in the future, we hope that the *ICES CRR* will form a basis of our current understanding and will provide guidelines for the coordination of scientific developments in this field.

Report on the Workshop on Survey Design and Data Analysis (WKSAD)

The Workshop on Survey Design and Analysis [WKSAD] met in Aberdeen, Scotland, UK, from 21–25 June 2004. The report is available as ICES CM 2004/B:07. A review of methods

of designing and analysing fish surveys was given, with the essential statistical elements to survey planning being described and an analytical framework for survey analysis proposed. Some surveys perform rather well and stock assessments may be improved using alternative models which use survey data more explicitly. This was followed by a summary of current methods describing survey practise in most of the ICES member states. Survey designs, estimation of abundance and variance, and use in assessments were covered for trawl, acoustic, and other (ichthyoplankton, visual, drag or dredge) surveys. A number of issues were raised where some uncertainty still remained, such as tow duration in trawl surveys, visual surveys, adaptive sampling and biological sampling methods in acoustic surveys.

There was general agreement on the choice of survey design. In the presence of positive local autocorrelation (common in most fish surveys), a more precise estimate of the population mean will usually be obtained by systematic sampling or stratified random sampling rather than by simple random sampling. The optimal sampling design depends on the population and the relative importance of getting the most precise estimate of the population mean, and also to getting a good estimate of that precision. Fixed survey designs are practical in areas with significant un-trawlable seabed, but cannot provide unbiased estimates of the variance. Information additional to that of fish density should be collected on surveys, particularly when that information is related (covariate) and can be collected more extensively. Information from the commercial fishing industry should also be considered, where appropriate, to provide guidance on survey design. A range of other options were considered and guidelines for the conduct of cooperative research surveys were given. A number of intercalibration studies of trawl surveys and acoustic surveys were presented. If calibration factors are estimated with poor precision (as is often the case), then applying them may result in estimates whose mean-square-errors are greater than the unadjusted estimates. Suggestions and advice for intercalibration exercises were given.

The Terms of Reference for the next meeting are: a) Evaluate analyses of estimates of the abundance, associated variance, and density maps, from surveys of a simulated fish population whose abundance is known; b) Evaluate alternative analyses of seven survey datasets; c) Review the state of knowledge regarding the effect of trawl duration on fish catch rate with a view to considering a reduction in sample trawl duration; d) Evaluate analyses of covariate data which could provide improved precision of abundance estimates; e) Review methods for combining surveys of the same resource using different methods; f) Evaluate the sensitivity of methods to estimate biological parameters in terms of analytical assumptions and measurement error.

The FTC Chair noted that some of the results on vessel intercalibration from this report will be used during the intercalibration experiments in 2005 with the English GOV surveys.

Study Group on Target Strength Estimation in the Baltic Sea (SGTSEB)

SGTSEB has met three times and the last meeting was held in Bergen, Norway in June 2003 (Doc. B:08). At the 2003 meeting it was decided to work on establishing a TS-relation based on relatively few terms, expressing the influence of fish length, pressure (depth), and frequency. Influences from tilt distribution, fish condition, and geographic area would be contained in the constant term until further knowledge has been obtained. The basis would be available data from surveys in the area. In 2004 the Study Group worked by correspondence. Members from Stockholm University, Sweden sent a letter asking for available acoustic data combined with fisheries data to scientists at the various institutions around the Baltic and has received some datasets from Lithuania, Latvia, Germany, and Sweden. A Danish dataset is available, but has only been partly extracted because the SG Chair had an increased workload with cruises in 2004. The Study Group has also begun work on a set of X-ray images of herring and sprat (to obtain swimbladder shapes) delivered by Sweden from two locations, and this work will continue in 2005. Work on converting the datasets to the same format for analy-

ses follows the method as published in the *ICES Journal of Marine Science* in 2004. There are some difficulties since various datasets are recorded with different software, but the SG believes that they can overcome some of the problems. Informal meetings with some of the group members were done during the WGFST meeting in Gdynia and the literature list was updated.

For 2005, the Study Group will continue working by correspondence focusing on completing analyses of the Danish dataset, completing the set of X-ray photos, updating the literature search, and finalizing the *ICES CRR* report.

Study Group on Survey Trawl Gear for the IBTS Western and Southern Areas (SGSTG)

SGSTG met in Santander, Spain, 11–13 February 2004 to carry out their Terms of Reference (Doc. B:01). The report was reviewed by WGIBTS in April who suggested that the work of the Study Group had been successful, but that completion of their future ToRs would be delayed by current unfinished national and EU projects and the activities of other related ICES expert groups. Upon request of the Chair of SGSTG, the FTC Chair proposed the dissolution of this SG at the ConC mid-term meeting in June 2004, which was agreed upon. The Chair of SGSTG was thanked by the Committee for his work.

Fisheries Technology Committee, ACE, ACFM, and Consultative Committee business

ACFM Issues

- 1) **Discussion Group on the Incorporation of WGFTFB Information into Fisheries Based Advice.** The Chair of the ACFM was invited to the WGFTFB meeting and gave a presentation on the type of inputs required for fishery-based advice that could be provided by the WGFTFB. The Chair of the ACFM and the *ad hoc* discussion group met for one day to discuss the details of such advice and possible mechanisms through which it could be provided. The group identified areas where the WGFTFB could play an important role, such as the provision of: selectivity data by métier, definition of fleets, monitoring changes in technology and its application, capacity definitions, assessment of discards and bycatch in relation to the ecosystem approach, quantification of benthic impact, and the development of survey technology. The group concluded that the WGFTFB should be pro-active in encouraging dialogue between disciplines and needed to be able to respond at short notice to specific requests whilst continuing to encourage longer-term, systematic research. The group considered that the formation of an ICES multi-expert group workshop would be advantageous in order to facilitate open discussion regarding, *inter alia* methodologies, data collection, and standardising the means of incorporating WGFTFB information into ACFM's fisheries and ecosystem-based advice.
- 2) **WGFTFB response to the IBSFC** – Requests for advice on three specific gear topics were received by ICES from the IBSFC in April 2004. The timing of it was late for work to be started at the WGFTFB meeting the same month. However, an *ad hoc* group consisting of the Chair of WGFTFB and other members from the Baltic countries was set up, working throughout the summer to carry out the review of requests and report directly to ACFM. These reviews relate to:
 - 2.1) The suitability of mesh size for the pelagic trawl fishery for Baltic herring;
 - 2.2) Which mesh size for 90° turned codends compares to the selectivity of a BACOMA window of 110 mm for cod;
 - 2.3) Which hook size/shape was appropriate for the MLS of Baltic cod. The following is a synopsis of the scientific information provided by WGFTFB.

Request 1 – Herring selectivity

Due to the high escapee mortality rates observed, it is unlikely that controlling the length of first capture by mesh selection will provide any benefit to the stock and is likely to contribute considerably to unaccounted mortality. There are a number of technical modifications that may be used to reduce the quantity of meshed fish (stickers) associated with pelagic trawls, such as a reduction on mesh size or the use of netting that is turned by 90°.

Request 2 – Cod selectivity

A meta-analysis of selectivity estimates obtained from 299 hauls made during 14 cruises was conducted. This resulted in estimates for 19 gear types, comprising both T90 and BACOMA configurations. From this analysis, a model was derived that predicts for both L50 and SR: a 110-mm codend constructed from T90 mesh gives the same selectivity as a 110-mm BACOMA window fitted in a 105-mm codend. However, there are a number of caveats that must be considered. The individual cruises were not specifically designed or structured to answer the particular question posed. This presents a number of limitations for the statistical analysis:

- i) The analysis may underestimate the random variation due to over-representation of some cruises.
- ii) Due to the confounding effects of factors such as twine thickness, the number of meshes in circumference, and the vessel type, it has not been possible to determine the effect of these on selectivity. It is known from controlled experiments with conventional diamond mesh codends that these parameters have a significant effect on selectivity. In order to ascertain such effects, further research specifically aimed at quantifying such effects is needed before any advice on these parameters can be given. The group was informed that the IBSFC had approved the use of codends constructed from 110-mm T90 mesh in the Baltic cod fishery.

Request 3 – Hook selectivity

It is not possible for the WGFTFB to recommend a specific hook size and shape that corresponds to the minimum landing size of 38 cm for Baltic cod as there is no selectivity data currently available that can be used to determine the appropriate hook parameters. A controlled experiment where a range on different hook sizes and shapes are tested simultaneously is required.

A representative in attendance at the FTC meeting informed the Committee that during the 30th Session of the International Baltic Sea Fishery Commission (IBSFC), held in Gdańsk/Gdynia, 6–10 September 2004, its Standing Committee on Regulatory Measures decided to recommend to the Plenary the adoption of the **Resolution No. XXXI on the introduction of trawls using 90° turned diamond meshes**:

“Taking note of ICES advice on the selective properties of trawls using 90° turned diamond meshes, the Contracting Parties agree to allow for this type of gear when fishing for cod.

The Contracting Parties recognised that before this type of trawl can be introduced into the IBSFC Fishery Rules a detailed specification of the trawl is needed. The Contracting Parties therefore agreed to develop a technical specification and to revert to this matter when such a specification has been developed”.

The Fishing Technology Committee was very pleased with the amount of analyses carried out by the *ad hoc* WGFTFB group and praised the group on the extent of its full report delivered to ICES regarding this sensitive issue.

ACE issues

The Chair updated his activities in ACE and tabled a specific request from ACE looking for information about sonar effects on fish. Upon request of the Chair of ACE, the FTC Chair and Chair of WGFAST met with Mark Tasker from ACE to discuss the availability of information for ACE's response to DG Environment's request for advice on the effects of sonar on whales and fish for later this year. The FTC Committee noted that further work will be done on this topic in WGFAST in 2005.

Consultative Committee issues

The Chair summarized the highlights of the mid-term meeting of ConC and the meeting held on 19 September. Noteworthy was that there will be a resolution to the Delegates concerning relaxing the rules of who could attend meetings of those Expert Groups that do not report directly to an advisory committee. This is modelled on the operations of FTC. The Chair updated his role in the ICES Recognition Program which was embraced by the Delegates and was starting at this ASC meeting. Items directly related to the 2004 ASC were mentioned: 1) inform Theme Session Chairs to have their reports (electronic version) finished and passed in to ICES Secretariat by Saturday at the latest; 2) resolutions, deadline Saturday (24 September), need justifications, especially theme sessions and symposia; and 3) request for a Committee member to sit on the ASC Award Selection Committee. For the timing of 2005 ASC ConC noted that the Science Committees will now meet after the opening ceremonies instead of before as was the custom in the past. It implies an extra day of the ASC, i.e. 5 days.

The Chair noted that FTC has been asked by the Diadromous Committee to send a representative to the Study Group on the Bycatch of Salmon in Pelagic Trawl Fisheries (Marianne Holm, Norway), and this has been acted on.

Discuss the Letter to Expert Groups of Science and Advisory Committees – The Chair presented the letter sent to all expert group Chairs regarding the changes within the ICES operating procedures to come into line with the ecosystem approach to the marine environment. There was general agreement within the Committee that this was a positive move. It was noted that WGFTFB has already begun the move on this initiative at its annual meeting in Gdynia in April of this year. Working with the Chair of ACFM, the WGFTFB is proposing a dialogue workshop for early 2005 with five other working/study groups under either the Resource Management Committee, ACE, or ACFM. It was proposed that the Chair of NSCFP be invited to participate. WGFAST will be considering their role in providing a broadbase perspective on developing ecosystem-based technologies.

ICES Action Plan Audit – The Chair presented the new format for the ICES audit system. There were a number of discussions on how the Excel spreadsheet could be improved as its current form caused some confusion for some expert group Chairs due to repetition. It was agreed that the concept was good as it allowed the potential ability to cross-reference between committees and expert groups. Some Chairs were reminded to complete their audits before the 24 September meeting.

New Committee business

Forthcoming Theme Session topics, Workshops, and Symposia

- a) A second Joint FTC-LRC Workshop on Survey Design and Data Analysis [WKSAD] (Co-Chairs: P. G. Fernandes, UK, and M. Pennington, Norway) will be held in Sete, France, from 9 to 13 May 2005. The first successful workshop held in June in 2005 was attended by 24 people from UK, Norway, USA, Canada, France, Ireland, Portugal, Denmark, Germany, Iceland, and Belgium. This highly successful workshop identified that there was insufficient time to meet all obliga-

tions because this is the first collective look at this topic since the early 1980s. It was proposed that a second workshop be planned.

- b) A Joint WGFTFB, SGFI, WGECON, and WGFS Dialogue Workshop on Changing Expectations of Fishery-Based Advice (Co-Chairs: Norman Graham, Cornelius Hammer, Martin Pastoors, and Stuart Rodgers) will be held in March, 2005 at the ICES Headquarters. Fishery-based and ecosystem-based data is needed for multi-fishery, mixed-species forecasts. The objective is to provide a forum to discuss the interaction of WGFTFB, SGFI, WGECON, and WGFS in formulating requirements and inputs into fishery- and ecosystem-based advice. The Chair of the North Sea Commission on Fisherman Partnerships will be invited to attend. There are a number of new initiatives on fishery-based advice and forecasting that WGFTFB believes it can contribute to regarding ACFM's changing expectations for advice. There is an urgent need to develop dialogue on this topic with several other ICES groups to coordinate the way forward.
- c) The ICES Symposium on "Fishing Technology in the 21st century" 29 October–3 November, 2006 in Boston, USA. The Conveners Chris Glass (USA), Bob van Marlen (Netherlands), and Steve Walsh (Canada) have finalized their theme topics and have so far only one acceptance for the potential 7 Steering Committee members still outstanding. Planning is well under way with an update on theme sessions being available by the end of October, and a first Call for papers by 12 November. A website is being created which will be hotlinked to the ICES website.
- d) The ICES Symposium on Fisheries Acoustics, Science and Technology proposed to be hosted in Bergen in June 2007 with Egil Ona, Norway, Rudy Kloser, Australia, and David Demer, United States as Conveners is awaiting confirmation from ConC next week. This has been discussed at the mid-term meeting of ConC and was postponed to the September meeting.
- e) Two new theme sessions are proposed for the 2006 ASC:
 - i) A Joint FTC/LRC Theme Session on the Use of data storage tags to reveal aspects of fish behaviour important for fisheries management, Conveners: David Somerton (USA) and Julian Metcalfe (UK);
 - ii) A Joint FTC/LRC Theme Session on the Spatio-temporal characteristics of fish populations and their environmental forcing functions as components of ecosystem-based assessments, Conveners: François Gerlotto (France), and a representative from LRC.

Draft Resolutions

The Committee approved all existing resolutions drafted by the Chair of the expert groups with only minor changes for the continuing work.

Future meeting locations

FTC expert groups will meet in Rome at FAO Headquarters. In 2006 WGFTFB will meet in an undecided European venue and WGFAST will meet in Hobart, Tasmania.

Concern was expressed that not all expert groups would be able to meet in Australia in 2006. Due to limited travel budgets in many institutes, members felt that for the WGFTFB to meet with the WGFAST in 2006 would potentially result in dilution between the WGFTFB, the 2006 symposium on fishing technology in the 21st century in Boston, and the Annual Science Conference. It was agreed that the WGFAST should accept the offer to meet in Hobart, Tasmania while the WGFTFB should seek a European location. Two possible venues have been offered, Dublin (Ireland) or Aberdeen (Scotland). The Committee expressed great concern that this should not be perceived as a break in the traditional pattern of always meeting together.

New and ongoing science initiatives

Three presentations were made on new and ongoing science initiatives of the Committee: 1) Technologies used in the MAR-ECO survey of the mid-Atlantic ridge (Olav Rune Godø, IMR, Bergen), 2) NMFS Workshop on underwater video analysis (Dave Somerton, NMFS Seattle), and 3) FTC's role in the new SCOR Panel (Bill Karp, NMFS Seattle).

The presentation on *Technologies used in the MAR-ECO survey of the mid Atlantic ridge* showed that an extensive range of vessels and international institutes had been involved in the survey. A large range of technologies were employed, including synchronized acoustical systems, demersal and pelagic trawls, optical profilers, ROVs, and a number of autonomous Landers. Trawling was conducted at depths of up to 3500 meters, using specially modified instrumentation in order to cope with the depths encountered. Several new species and bottom features were identified.

The NMFS Workshop on underwater video analysis was based on an initiative from the NMFS advanced technology working group. The workshop focused on the increasing use of visual observation techniques. These are used for a number of scientific purposes: for fishery-dependant assessment techniques, benthic habitat mapping, and for the identification of critical habitats, particularly in areas where the deployment of survey trawls is not viable due to topographic conditions. A number of new techniques, both technological and analytical were demonstrated, showing an almost exponential growth in new techniques. The Committee felt that this work was important to various members and should be further explored within FTC. It was noted that there is another EU-funded initiative relating to the use of video techniques for stock assessment of *Nephrops* and scallops and that an approach should be made to the organizers to assess FTC contributions. This project could be addressed in one of the ToRs for the WGFTFB/WGFAST joint session in 2005.

FTC involvement in the SCOR panel – At the most recent annual meeting of the SCOR Executive Committee (Moscow, Russia, October 2003), the Executive Committee approved the transformation of SCOR Working Group 118 on New Technologies for Observing Marine Life to a panel. The Executive Committee recognized that WG 118 provided a valuable service to the Census of Marine Life (CoML) project and to the broader oceanographic community. It was decided to reform WG 118 as a SCOR panel because SCOR working groups are short-term activities whose work is focused on producing a peer-reviewed document, such as a book or special journal issue. The new group may be continued through the life of CoML and will be intended to provide quick advice to CoML projects. The purpose of a SCOR panel on this topic will be to bring to the attention of the international community of fisheries scientists, marine biologists, biological oceanographers, and others the potential benefits of emerging technologies in the detection of marine life and how these can be economically deployed on larger scales.

The Committee endorsed the continuation of Bill Karp as our ICES representative on SCOR and recognized that there was a need for a regular update of SCOR activities from time to time. The Committee recognized that the SCOR work could help the Committee develop a broadbase perspective on the development of ecosystem-based technologies.

Election of new Chair of FTC

The election had 3 candidates from 3 member countries, and François Gerlotto from France was elected to be the new Chair of the Committee. The Committee thanked the outgoing Chair, Stephen J. Walsh (Canada) for his hard work over the past three years and for the positive changes he has introduced to the operation of the FTC and associated expert groups.

The meeting adjourned at 18:10 hrs on 24 September 2004.

Oceanography Committee (C)

Chair: Einar Svendsen (Norway)

Rapporteur: David Mountain (USA)

The Oceanography Committee met on Tuesday, 21 September from 14:00 to 19:30 (36 attending) and on Saturday, 25 September from 08:30 to 10:30 (25 attending).

Some important issues

- 1) Numerical models now provide new information on ecosystems that can be useful for integrated science and advisory purposes. How can ICES promote regular deliveries of operational modelling products to the ICES community?
- 2) How can we better put forward and communicate highlights and specific happenings between disciplines to promote the “ecosystem approach”?
- 3) An annual summary document on recruitment time-series would be a valuable product from the assessment working groups.
- 4) There is a concern about the future updates and operationality of the ICES oceanographic database.
- 5) The ICES/GLOBEC office must be secured funding since the GLOBEC issues are directly relevant to the “ecosystem approach”.
- 6) Several examples of the environmental effects on fish stocks, in particular recruitment, are now available, but we still have problems with the implementation of this knowledge into assessment.
- 7) The ICES website needs improvement, including to act as a message board to communicate advances and updates of data and information. A specific request is to have the web as a “Virtual network for taxonomic experts on zooplankton”.
- 8) There is a lack of chemical oceanography in ICES to address the challenges of estimating the effects of contaminants and eutrophication on total stocks.

Opening

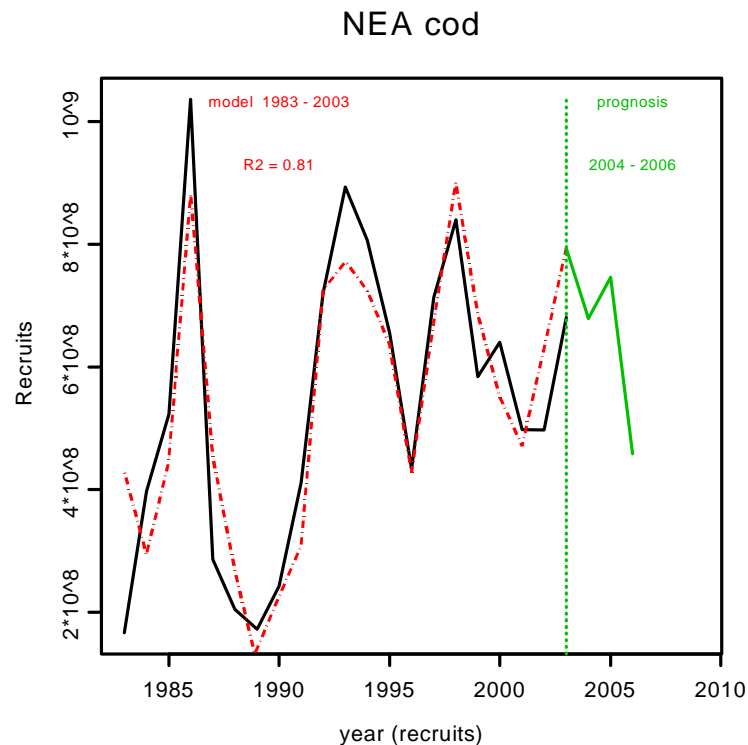
The Chair explained the planned long duration of the meeting (to 20:00) due to the number of Working Group reports to be reviewed – and offered that it could be shortened, depending on the will of the group.

The Chair presented ideas concerning the ecosystem approach, which, with respect to science can simply be to: *consider the most important processes within and the driving forces on the ecosystem*. The most important driving forces are in general:

**Climate-physics and *Fisherman-fisheries management,*

while in some areas important driving forces may also be related to:

*Fertilization, *Pollution, *Introduction of new species, and *Habitat disturbance.*



An example of an “ecosystem approach” demonstrating a two-and-a-half-year prediction (dashed, red and green) of recruitment of 3-year-old Northeast Arctic cod (ICES assessment, black line), based on climate effects during the year of spawning, ICES assessment prediction of maturing capelin (for the year of 1-group cod, related to cannibalism) and observations of the 1-group cod in January. From: Stiansen, J.E., H. Loeng, P. Dalpadado, G. Ottersen and R. Ingvaldsen. 2004. Ecological conditions in the Barents Sea, 2003-2004. Working document in: Report of the Arctic Fisheries Working Group, ICES Copenhagen, 4-13 May 2004. ICES CM 2004/ACFM:28.

The system can be studied either by looking at “everything” or, from a single-species perspective, by looking out on the surrounding ecosystem. Either way, climate/physics is strongly involved. The Chair encouraged each group/individuals to consider how their area relates and can contribute to an ecosystem approach to science and management advice, since this is of great interest to the ICES establishment.

Appointment of Rapporteur

David Mountain was appointed Rapporteur with great appreciation of the participants.

Adoption of agenda

The draft agenda was adopted.

Arrangements for the meeting

The Chair encouraged the Working Group presentations to be short and focused on highlights to allow an earlier finish.

Committee business

Nomination for the ASC Award Selection Committee

Sarah Hughes (UK) volunteered to be on the Award Committee.

Reports of Expert Groups and draft resolutions (terms of reference)

Working Group on Modelling of Physical-Biological Interactions [WGPBI] (Doc. C:03)

Charles Hannah, Chair, introduced Doc. C:03. The meeting was the first meeting for this Working Group, and it was well attended. Two subgroups were formed at the meeting. The Fish Recruitment Modelling group is preparing a review paper on larval fish modelling, and recommended that a theme session in 2005 and a workshop in 2006 on larval fish modelling be planned and sponsored jointly with the Working Group on Recruitment Processes. The Numerical Experimentation group is developing and defining 'Best Practices' in modelling physical-biological interactions. The group felt that in 5 years it should be possible to simulate BATS data that would pass an 'Ecological Turing Test' (i.e., simulated data that could not be differentiated from real data). The recommended ToRs for 2005 were reviewed.

Workshop on Future Directions in Modelling Physical-Biological Interactions [WKFDPI] (Doc. C:02)

Charles Hannah, co-Chair, introduced Doc. C:02. The Workshop exceeded all expectations, being very well attended and stimulating. As ecosystem models have become more complex, they are starting to be used for advisory purposes. The Workshop encouraged their use operationally by ICES. As an example, a one-dimensional model is being used to improve estimates of egg abundance from survey data. Thin-layers, small-scale turbulence, and predator-prey interactions are areas where improvements in our basic understanding are needed before they can be realistically represented in models. There also is an important need for validation of models. This need requires consideration of what types of observations will be needed to test the models, including the technologies to make those measurements. The group is planning a special issue of the *ICES Journal of Marine Science* with papers from the Workshop. The Workshop recommended creating a database of the effects of turbulence on plankton. Tom Osborn expressed concern for the quality of existing data on turbulence-plankton interactions. Keith Brander suggested that a connection between the ICES modelling effort and GODAE should be pursued, and the Chair responded that he shall participate in the next GODAE symposium.

Pierre Pepin prepared comments on both Doc. C:02 and Doc. C:03. The need to integrate the modelling work with observationalists was strongly highlighted at the Workshop, but not as strongly represented in the Workshop report. He also suggested that a future ToR be to apply one or another of the existing models for some of ICES needs. Discussion on this last point focused on whether the Working Group was the appropriate group to undertake such an application. Another option would be to do this regionally by a group like the Regional Ecosystem Study Group for the North Sea (REGNS). General consensus was that some avenue should be found within ICES to do this, but that it should not be the responsibility of this Working Group.

ICES/GLOBEC Working Group on Cod and Climate Change [WGCCC] (Doc. C:13)

Geir Ottersen, co-Chair, introduced Doc. C:13. Ken Drinkwater, the other co-Chair, is stepping down and a new co-chair will need to be appointed. The group revised the Strategic Plan, which identifies the need to incorporate environmental information into fisheries management, to develop better understanding of zooplankton-cod linkages, and to better understand the importance of climate variability. A new WGCCC Action Plan was developed that laid out a series of workshops on different topics through 2009. Preparations for the book on cod and climate are continuing, with publication expected in 2005. A theme session on "Cod in a Changing Climate" is being recommended for 2005. An updated *Cooperative Research Re-*

port on Spawning and Life History Information for North Atlantic Cod Stocks, edited by Keith Brander, is in preparation and will be issued in the near future. The Symposium on the Influence of Climate Change on North Atlantic Fish Stocks, held in May in Bergen, was very successful and well attended. A workshop on zooplankton-cod linkages is planned for June 2005. The recommended ToRs for next year were reviewed. A recommendation was made for a symposium on “Climate Variability and Sub-Arctic Marine Ecosystems” in May 2005 in Victoria, BC, to be co-sponsored by ICES with GLOBEC. The ICES sponsorship would be through the publication of a symposium volume.

Working Group on Oceanic Hydrography [WGOH] (Doc. C:06)

Alicia Lavin, Chair, introduced Doc. C:06. Representatives from fourteen countries were present at the meeting and provided input on recent hydrographic conditions to the Working Group report. The inputs from the member countries and from NORSEPP were summarized in the ICES Annual Ocean Climate Status report. Conditions were generally warmer in the eastern Atlantic and cooler in the northwestern Atlantic. The WG undertook actions to promote interaction with CLIVAR through members participating in CLIVAR meetings and contributing to the CLIVAR newsletter. A theme session is being recommended for 2005 on “Recent Advances in our Understanding of Marine Turbulence in an Ecological and Climatological Context”. The recommended ToRs for 2005 were reviewed. In discussion it was pointed out that some areas were not represented in the annual status report because no input was received. The relevant committee members indicated that input would be provided in the future.

Working Group on Recruitment Processes [WGRP] (Doc. C:09)

Tim Miller, co-Chair, introduced Doc. C:09. The Working Group reviewed various projects including the modelling of the advection of eggs being done at IMR, various products from the US GLOBEC program, results from STEREO and METACOD, and results from the German GLOBEC project. The Working Group is compiling a review of the inferences about recruitment processes that can be derived from physical-biological models, considering models from a number of regions of the world. The Working Group is also assessing the importance of spatial processes in determining larval mortality and growth. The recommended ToRs for 2005 were reviewed.

The WG has been meeting in alternate years, which may have contributed to its mainly reviewing the work of others as opposed to being a forum for more dynamic discussion of ongoing research. It was questioned if the group should prepare an annual summary document on recruitment time-series – i.e., have an operational mandate. The general consensus was no, but it would be a valuable product coming from the assessment working groups.

Working Group on Zooplankton Ecology [WGZE] (Doc. C:07)

Luis Valdés, Chair, introduced Doc. C:07. The Working Group updated the plankton monitoring results in the ICES area in a summary status report for 2002/2003. The report is an appendix to the Working Group report. Information on phytoplankton time-series were included in the summary report when they were collected at the same time as the zooplankton data series. In the summary status report, the discussion included a general overview of the North Atlantic using copepod abundance, the color index, and temperature as the primary data sets. The 3rd International Zooplankton Production Symposium was held in Gijon in May 2003. The results of the symposium were published in the *ICES Journal of Marine Science* in 2004. The Working Group is requesting a theme session in 2006 on “Methods and comparisons of plankton field sampling and analysis, particularly the use of image acquisition and analysis technology”. The Working Group also recommends that ICES sponsor a workshop on “Enzyme Activity Measurements and Assays in Marine Science”. A suggestion was made to bring annual status reports from phytoplankton ecology, zooplankton ecology, and hydrography together in

a combined report. The difficulties and benefits of doing this were discussed. It was felt that while this might be premature, it would be something to consider in the future.

Helge Abildhauge Thomsen prepared comments on the report. The plankton status report was felt to be very useful, although some improvements in the format could make it more easily readable. The issue of a lack of taxonomic expertise raised in the report was endorsed as important. The inclusion of more specific references within the report could help the reader.

Working Group on Phytoplankton Ecology [WGPE] (Doc. C:01)

No one was present to make a presentation of Doc. C:01. Franciscus Colijn prepared comments on the report. While the ToRs were well covered, a number of concerns about the Working Group were raised. The taxonomic list is still not completed, and it was discussed if ICES should only accept primary production data that uses ICES standard methods. There was no conclusion to this discussion. The proposed future work seems too broad. The Working Group needs to get more people involved and expand its geographical coverage if it is to be a viable group.

A group met to discuss the issue of the WGPE and reported recommendations to the Oceanography Committee. Additional ToRs were discussed and agreed to.

ICES-IOC Working Group on Harmful Algal Bloom Dynamics [WGHABD] (Doc. C:08)

Jennifer Martin, Chair, introduced Doc C:08. At the Working Group meeting national reports were reviewed to update the decadal mapping of harmful algal events and added to the HAE-DAT database. The Group is investigating improved computerized methods for generating the decadal maps. Since the various programs monitoring harmful algal events use different methods, comparisons between the data sets are difficult to make. As a result the Working Group is resubmitting a request for a workshop on New and Classic Techniques for the Determination of Numerical Abundance and Bio-volume of HAB-species. The Working Group also reviewed existing phytoplankton dynamics models in relation to HABs. It recommends a theme session to be held in 2006 jointly with the WGPBI on “Harmful algae bloom dynamics: validation of model predictions (possibilities and limitations) and status on coupled physical-biological process knowledge”. The draft ToRs for 2005 were reviewed.

Working Group on Seabird Ecology [WGSE] (Doc. C:05)

A scheduling conflict unfortunately precluded presentation of this report. One of the ToRs are slightly adjusted according to requests from REGNS and WGECON.

ICES-IOC Steering Group on GOOS [SGGOOS] (Doc. C:10)

Bill Turrell, co-Chair, introduced Doc. C:10. The Steering Group needs increased attendance by fishery scientists. PICES will now send a representative to the Steering Group meetings. Presentations were made at the meeting on various GOOS pilot projects in the North Atlantic. The Steering Group received an update on EuroGOOS activities. An implementation plan for SGGOOS has been developed. ICES activities that relate to GOOS need to be identified and promoted to increase the linkages between ICES and GOOS. A specific list of recommended actions is included in the report. A theme session is planned for 2005 on “Comparing and contrasting the scientific strategies and output of regional ecosystem pilot projects”. An ICES co-chair to replace Bill Turrell will need to be identified. The recommended ToRs were reviewed.

ICES-EuroGOOS Planning Group on the North Sea Pilot Project NORSEPP [PGNSP] (Doc. C:04)

No one was prepared to present the report. Bill Turrell and Einar Svendsen commented on the weak participation at the last meeting, in particular from the fisheries side. However, since the ongoing work is very relevant for ICES and in particular the REGNS activities, and a new co-Chair, Hein Rune Skjoldal, is willing to put significant effort into the group, OCC decided to move forward as planned in the report.

Steering Group for the ICES/GLOBEC North Atlantic Programme and Regional Office (SGNARO) (Doc. C:15)

Fritz Köster, co-Chair, introduced Doc. C:15. The group had two ToRs, to review and advise on the status of the Regional Office and on the status of the Cod and Climate Change programme.

The Steering Group has contributed to synthesis products, specifically the ICES Symposium on Hydrographic and Biological Variability held last May in Bergen, and the ICES book on cod that is in preparation. A plan has been prepared to carry the programme through 2009.

The Regional Office is contributing to a number of issues, including REGNS and the IPCC 4th assessment. For future directions, with termination of GLOBEC, ocean research within the sphere of IGBP will occur under a new programme, the Integrated Marine Biogeochemistry and Ecosystem Research (IMBER) project. Consideration should be given as to how ICES should participate in that programme, perhaps with an extension of the Regional Office under new guidelines.

Future funding for this office has been and continues to be problematic, with some current sources of support due to terminate. Some additional funding sources will be needed.

It is recommended that the current ToRs be continued in 2005, and that the chair of WGCCC is added to the membership of SGNARO.

Working Group on Marine Data Management [WGMDM] (Doc. C:11)

Helge Sagen, co-Chair, introduced Doc. C:11. The Working Group developed guidelines to provide consistent advice for managing and exchanging data, including provision of services to users. It reviewed ITIS and recommends that ITIS should be considered as a decentralized approach to data entry. How taxonomic communities working in particular seas can directly contribute records to the ITIS database needs to be investigated. The Working Group reviewed the capabilities of IODE's Ocean Portal and the EU SeaSearch portal to assess their usefulness. It found that Google actually was a better search engine than either portal. Two aspects of the SGXML work were also tested: moored current meter data were mapped to the data structure; an XML file was generated, and web tools were used to validate the XML schema. The conclusion was that new XML attributes and 'bricks' are required to fully describe these data. It is recommended that other standards such as GML be considered by SGXML. A theme session on "Marine Integrated Data" was recommended for 2005, to be held jointly with the Study Group on the Management of Integrated Data. The recommended ToRs were reviewed.

ICES-IOC Study Group on the Development of Marine Data Exchange Systems using XML [SGXML] (Doc. C:12)

No representative was present to introduce the report, but the work was slightly discussed by participants. The group will officially be terminated after this, but will produce a final report of their work and keep communicating by e-mail until April 2005.

Consultative Committee and Oceanography Committee Business

The new structure of advice. How can we contribute?

A letter from Jake Rice (Chair of the Consultative Committee) had been sent out concerning the new structure of advice in ICES, with the objective of maintaining a clean and rich ocean and focusing on the questions:

- What is the status and variability of the ecosystems?
- How do fisheries impact ecosystems?
- How does environmental variability impact fisheries?

In addition the Chair added:

- What is driving environmental variability, and what are the possibilities and limitations to predictability?

While the second question is not highly relevant to the Oceanography Committee, the other questions are.

These questions have implications for ‘operationality’ – i.e., something that is to be delivered on a regular basis. While this is a science committee, it will be valuable for the Committee to consider how it can contribute in this area. The Chair gave the example of several IMR products relating inflow of Atlantic water to the North Sea to the prediction of horse mackerel fishing, and recruitment predictions of cod, herring, and capelin.

The ICES Annual Climate Status report is now a good product, but the question still remains as to how the assessment scientists can interpret this information. One option would be for an assessment committee to participate in developing the report. Also, perhaps the report needs to be more widely distributed. It was recognized that we can’t expect assessment experts by themselves to use the Climate Status report.

A variety of possible ways to improve the communication of the oceanographic information into the assessment process were briefly discussed. A few examples could be identified for consideration by a group of both oceanographers and assessment scientists. It was pointed out that environmental information input doesn’t necessarily need to be quantitative to be useful. It was also pointed out that the Living Resources Committee has had similar discussions on how to bring oceanographic information into the assessment process.

Chemical oceanography in ICES

A challenge facing ICES is to develop methodologies and tools to quantify and assess the effects of contaminants and eutrophication on marine populations. How do we move forward? Since it is expensive to monitor everywhere, coupled bio-physical-chemical models could be used to estimate the dose exposure to the fish stocks. It was pointed out that there could be many problems with modelling the physics and with knowing the trophic interactions sufficiently well. Additional concern beyond eutrophication and contaminants is the general lack of chemical oceanographers in ICES and the ability to consider other chemical issues.

Physical oceanography in ICES

There is now no natural home for the physical oceanographers within ICES. The current physics presence is intimately tied to biology, so that the more pure physical interests do not have a community within ICES with whom to meet. The General Secretary, in recognizing this problem, has recommended that WGOH becomes THE forum for physical oceanography in ICES. There was concern that this approach would leave out a major part of the physical oceanographic community that deals with smaller-scale issues. There was a general consensus that

having appropriate theme sessions at the ASC on physical topics would be one avenue for attracting physical oceanographers into ICES. The WGOH was given the challenge of attracting (the best) physical oceanographers to ICES.

International Polar Year

The Committee felt that it would be good for ICES to be involved in the International Polar Year, although this would be somewhat late.

It was pointed out that changes in the Barents Sea productivity over recent decades could be a good focus for ICES-related interests. Another suggestion was for ICES to sponsor a symposium on “Centennial variability in the polar region, from physics to whales” that could put the International Polar Year into a historical context. This would build on the successful decadal scale symposia that ICES has sponsored in the past.

A small group will meet to generate recommendations on how ICES could participate in the International Polar Year. This group will consist of Valdimir Ozhigin, Peter Wiebe, and Harald Loeng.

A young oceanographer should be asked to volunteer to participate in planning for a new Joint ICES/PICES Young Scientist Conference on Marine Sciences in 2007.

Elisabeth North (USA) was nominated and accepted this role.

Letter to EU

Brian MacKenzie introduced a recommendation initiated in the Baltic Committee for the General Secretary to write a letter to the EU urging that priority should be given to marine research in the forthcoming 7th Framework Programme, and asked that the Oceanography Committee jointly sponsor the recommendation. It was recommended that the recommendation include a request that the Delegates should carry the same message back to their own countries.

The Committee agreed to join in this recommendation.

Forthcoming Symposia and Theme Session topics

The recommended Theme Sessions were reviewed. It was pointed out that in 2006 additional sessions should be considered. A number of the Working Groups are expected to make recommendations for 2006 Theme Sessions in the coming year.

A recommendation was made for a 2006 Theme Session on “How does environmental variability impact fisheries?” This would relate to the earlier discussion on getting oceanographic advice into the ICES process and could be focused on selected case studies.

New requests from REGNS

The new requests from REGNS for various working groups were reviewed. The request to the WGOH was modified.

Action Plan progress and future OCC topics

The Chair had not been well enough prepared for producing the links between the WG actions and the Action Plan, including the status of progress. Unfortunately there was no time for discussing other future OCC topics than had already been discussed. The Chair welcomed good ideas to put forward in the ICES system

Any other business

No important topics were raised due to time limitations.

Closure

The meeting was closed at 10:30.

Resource Management Committee (D)

Chair: Carl M. O'Brien (UK)

Rapporteur: Maria de Fátima Borges (Portugal)

The Resource Management Committee met on Tuesday 21 September from 09:00 to 13:00. Twenty-five participants attended the meeting.

Opening

The Chair opened the meeting, welcomed the participants and the Rapporteur was appointed. The Chair outlined the agenda and timetable for this single session of Committee business. These were adopted without modification.

Attention was drawn to the Joint Session on Surveys with the Living Resources Committee. Members of the Resource Management Committee actively support this science session and the Chair reminded the Committee that three of its Expert Groups present reports during the survey session:

- International Bottom Trawl Survey Working Group [IBTSWG] (ICES CM 2004/D:05);
- Planning Group on Northeast Atlantic Pelagic Ecosystem Surveys [PGNAPES] (ICES CM 2004/D:07); and
- Planning Group on Redfish Stocks [PGRS] (ICES CM 2004/D:01).

The Chair introduced the Committee to this year's Annual Science Conference programme and mentioned the Theme Sessions of particular relevance to the remit of the Committee.

Committee Business

Matters referred by the Consultative and Advisory Committees

The Consultative Committee raised a number of items for consideration by the Resource Management Committee. The Chair reminded the Committee that its Action Plan provides a way of ensuring that its scientific work remains relevant to the ICES Strategic Plan. Furthermore, the Consultative Committee has asked that the work of each Science Committee be aligned with each other. To this end, the Committee is requested to directly *map* the terms of reference of its Expert Groups into the ICES Action Plan and identify outputs for the last year 2003/2004. The Chair had completed this task during the past year and advised the Chairs of Expert Groups that future terms of reference would need to be supported by reference to the appropriate Action Number within the Action Plan.

The Chair informed the Committee of the decision to cancel the joint FAO-ICES symposium on the *Precautionary Approach to Fisheries Management: Lessons Learned and Future Directions*, planned for 2005, due to lack of response from Chile and the evolving international approaches to fisheries management. The Consultative Committee had proposed that a symposium covering harvest control rules and management strategies rather than just precautionary reference points should be developed for 2006. This was discussed by the Resource Management Committee and endorsed with a title of *Development of Innovative Management Strategies*.

Speakers and Theme Sessions for ASC 2005 and 2006

One proposal presented at last year's Committee meeting for Theme Sessions in 2005 was discussed. The session entitled: *Fishers' Perceptions and Responses in Management Imple-*

mentation was unanimously supported by the Committee for inclusion in the 2005 ASC programme without further amendment.

During this year's ASC meeting, a joint proposal from the Living Resources Committee and this Committee entitled: *Evolutionary Effects of Exploitation on Marine Resources* was proposed by Mikko Heino for inclusion in the 2006 ASC programme.

Other suggestions were proposed for future theme sessions, but these all need to be developed further. The topics covered included:

- Change and the art of management advice; and
- Maximum sustainable yield and harvest control rules.

The latter was discussed at some length by the Committee and considered merely to be a part of the proposed symposium for 2006 on the *Development of Innovative Management Strategies*.

Presentation of, and adoption of, Reports and draft Resolutions

Study Group on Multi-species Assessments in the North Sea [SGMSNS]

This group had worked by correspondence (Doc. D:08) to prepare for a meeting in 2005. A resolution had been produced by the members of the study group and was not amended by the Committee.

Study Group on Growth, Maturity and Condition in Stock Projections [SGGROMAT]

The Group had its second, and final, meeting in December 2003 and was co-Chaired by Coby Needle (UK) and Tara Marshall (Norway). Carl O'Brien (UK) presented the report of the meeting (Doc. D:02). This Group is a continuation and extension of a previous ICES group SGPRISM. The Group reported on progress in summarising available data. Existing models for growth and maturity have been summarised and there is software under development but not yet completed due to competing demands back at national laboratories. The Committee proposed that future model development work be undertaken by SGASAM. Concern was raised about the coordination of the databases that had been created and a category 4 resolution had been produced for the collation of meta-data by ICES.

Workshop on Advanced Fish Stock Assessment Techniques [WKAFAT]

One of the co-Chairs of this Workshop, Dankert Skagen (Norway), provided a brief summary of Doc. D:04. The Committee discussed the future of this course. There is a need to extend and broaden courses in assessment methodology to incorporate recent developments in assessment methods, including the exploration and investigation of basic data, as well as the simulation approaches that are developing rapidly. It was suggested that this would require a series of courses at different levels, both elementary courses covering standard methods as an introduction to the field for newcomers, and a more advanced course. A resolution for a course on modern approaches was developed during the ASC.

Working Group on Methods of Fish Stock Assessments [WGMG]

The Chair of this Working Group, Carl O'Brien (UK), presented Doc. D:03. The group had concentrated on the terms of reference proposed last year by ACFM; namely, to develop robust methods and software for the investigation of management procedures for stock recovery and the evaluation of harvest control rules; and to identify appropriate estimators of stock conservation limits and reference points relating to longer-term yield. The group had reviewed approaches from around the world involving those of the IWC and the earlier ICES groups

such as LTMMWG and CFEWG. A number of EU-funded projects are developing software tools, but these were not available at the time of the meeting in Lisbon, Portugal. The Committee discussed the group's progress and agreed that WGMG should not meet next year, but should await the outcome of the ongoing EU-funded activities and the results of the ACFM group SGMS [Study Group on Management Strategies] which will specifically address the development of a framework for management strategy evaluations in a Precautionary Approach.

Working Group on Fishery Systems [WGFS]

The Chair of this Working Group, Martin Pastoors (The Netherlands), was not present during the Committee session, but another member of the Working Group, Doug Wilson, presented Doc. D:06. The Group had successfully addressed four of its six terms of reference while postponing two terms of reference until next year's meeting. The linkages between the collection of knowledge, management systems, monitoring and control, and adaptations and responses by the fishermen were discussed. ACFM had proposed a new term of reference for the group; namely, to review the reports of two of its groups (SGMS and SGLTA). The Committee agreed that the group should address this at its next meeting.

Study Group on Age-length Structured Assessment Models [SGASAM]

This group is scheduled to meet in December 2004 and a resolution was approved at last year's ASC. The disbanding of the Working Group on *Nephrops* Stocks [WGNEPH] by ACFM was discussed in the context of the future need for any methodological developments in relation to the assessment of *Nephrops* stocks. The SGASAM was considered the natural home for any such future developments.

Any other business

There was no other business.

Election of new Chair

Dankert Skagen (Norway) was elected to serve for a period of three years from 1 January 2005.

Finally, a vote of thanks was given to the out-going Chair, Carl O'Brien, for his work on behalf of the Committee over the last four years.

Marine Habitat Committee (E)

Chair: Heye Rumohr, Germany

Rapporteurs: H.-St. Jenke (Tuesday), Paul Keizer (Thursday)

The Marine Habitat Committee met on Tuesday 21 September from 09:00–13:00, and on Thursday 23 September from 08:30–10:30. 25 persons were present on Tuesday, comprising Committee members from Canada, France, US, Spain, Norway, Sweden, Germany, and the Netherlands (out of 19 countries). Four Expert Group chairs were present and some members of Advisory Groups. On Thursday 14 persons were present from nine ICES Member Countries.

Opening

The Chair opened the meeting giving the new Head of Advisory Services of ICES, Hans Lassen, the floor for a short introduction to the new structure of ICES advice and consequent changes in the Secretariat structure. After this Mark Tasker, Chair of SGCOR, informed the Committee about the planned new Working Group on Deep-water Ecology (WGDEC), which will report to MHC. This is to continue the work of SGCOR following a request from OSPAR for advice on seamounts in 2005.

Reports of Expert Groups

Benthos Ecology Working Group (BEWG)

Heye Rumohr, Chair of BEWG, gave a short account of the latest performance of the group indicating that the group is, despite its long existence (23 years), in a rejuvenating process with a “changing of the guard” going on. The Group was always method-oriented and looked at harmonization and standardisation of benthic methodology. Several *TIMES* publications tell of these activities. The Group also took requests for considerations of EcoQO’s on board and oriented their discussion at the ecological impact of windfarms, dredged spoil disposal, and followed the ecological events after the “Prestige” oil spill. New topics for the Group are the field of phytobenthos ecology and the sampling methodology in this field. The coverage of avian-benthic coupling by reporting on the feeding ecology of diving sea-birds is one of the new fields of interest. There are strong relations with SGNSBP, most members of which are also members of BEWG. The Group maintains its own web-page (www.dvz.be/bewg) where membership, ToRs, history of BEWG work, and useful links are covered and updated. The terms of references were adequately addressed.

Study Group on North Sea Benthos Project (SGNSBP)

In the absence of members from SGNSBP, Heye Rumohr gave a short account of the activities of this group. The group is well underway and has intersessional meetings to secure progress in the publication of their results. Authorships are determined and so is a set of rules for the use of data from the 2000 studies. This set of rules was communicated to the chairs of WGECO, REGNS, and ACE for consideration in the REGNS process.

Marine Chemistry Working Group (MCWG)

Lars Føyn gave an overview of the work of the Marine Chemistry Working Group (MCWG), focussing on three activities:

The Group discussed a presentation of the work of the AMPS group (the Expert Group on Analysis and Monitoring of Priority Substances). The MCWG was critical to the way analytical methods for freshwater seemed to be implemented for sea water analysis in the EU Water Framework Directive.

The request from REGNS to start a process of preparations to summarize the marine chemistry of the North Sea for input to REGNS in 2006 for the period 2000–2004, and trends in chemistry and contaminants over recent decades was taken in a positive manner. MCWG concluded that although this task may be an OSPAR issue most of the expertise and data were to be found within the MCWG and in the home laboratories of the MCWG members.

MCWG pointed to the fact that this item has been discussed at several MCWG meetings and that MCWG has warned that an EcoQO for eutrophication has to be developed for each specific area and the use of fixed numbers for winter concentration of nutrients to judge the status should be avoided.

Study Group on Information Needs for Coastal Zone Management (SGINC)

Josianne Støttrup reported on the work of the Study Group on Information Needs for Coastal Zone Management (SGINC). The key issue of the Study Group was to identify the expertise needed for Coastal Zone Management (CZM). At present, there is only little discussion between ICES- and WFD-activities. In this context, terms like D(riving force), P(ressure), S(tate), I(m pact), and R(esponse) (the DPSIR concept) and EcoQO's as well as the different views taken on these terms by WFD-, CZ- and ICES-Advisory Management were discussed.

A questionnaire had been sent to all ICES Expert Groups to provide information on relevant activities and to identify and provide information pertaining to the coastal zone.

The SGINC made several general recommendations that:

- ICES should feel responsible for the ecological processes in the *coastal waters* with the same concern as for the science in the ocean.
- ICES should only deal with *natural science* of the coastal zone as part of the process of ICZM.
- ICES should define what the *ecosystem approach* means for the information and assessment needs for coastal zone management.
- ICES should establish an ICES Working Group for natural science information in support of ICZM. The WG should have a broad representation of scientific fields and should report to all three Advisory committees.

Working Group on the Biological Effects of Contaminants (WGBEC)

Ketil Hylland, outgoing Chair, reported on the Working Group on the Biological Effects of Contaminants, the work of which can be divided into ICES- and science-related work. Former activities comprised reviews of EU-projects like EU-BEEP, EU-BECPELAG, and EU-FIRE, monitoring of activities of the “Prestige” oil spill, quality assurance procedures of the Biological Effects Monitoring (BEQUALM), preparation of the Workshop on Integrated Monitoring of Contaminants and their Effects in Coastal and Open-Sea Areas (WKIMON), summarisation of the effects of contaminants on North Sea biota for REGNS, as well as OSPAR requests. The scientific work dealt with new methods, chronic effects, and biomarker investigations. The value of the assistance from the Working Group on the Statistical Aspects of Environmental Monitoring (WGSAEM) was explicitly underlined.

Working Group on Marine Sediments (WGMS) / Working Group on the Statistical Aspects of Environmental Monitoring (WGSAEM)

No expert was present for the presentation of the work of the WG on Marine Sediments in Relation to Pollution (WGMS) and the WG on the Statistical Aspects of Environmental Monitoring (WGSAEM).

Working Group on Marine Habitat Mapping (WGMHM)

The work of the WG on Marine Habitat Mapping (WGMHM) was reported by R. Coggan. It was noted that there were a large number of smaller habitat mapping projects throughout the ICES Member Countries in addition to larger initiatives such as the Irish mapping project. It became clear that there is a need for guidelines and standardisation of the habitat mapping. Work is in progress in this field in the INTEREG III project MESH. It is different to collect data under an existing classification system or to formulate a classification system on the basis of existing data sets. Further, pelagic habitat classification must be developed. But WGMHM does not at present have the relevant expertise.

WGMHM is drafting an international habitat map for the North Sea. Furthermore, EEA has commissioned the Norwegian Institute NIVA to develop a North Sea habitat map at EUNIS level 3.

Working Group on the Effects of Extraction of Marine Sediments on the Marine Ecosystem (WGEXT)

Andy Kenny gave a short account of the work of WGEXT. The Group has not made as much progress on their forthcoming *Cooperative Research Report* as had been hoped for intersessionally in 2003, and therefore they would like to formally request that the production of the report is delayed by one year (in preparation for publication from 2006 onwards). They are planning an intersessional meeting of key authors to meet in Lowestoft, UK, from 11–12 November 2004 in order to progress this publication further.

WGEXT has made significant efforts to meet the OSPAR requests for information/data. For example, the 2004 report includes information on extraction activities for 12 countries and this builds on previous year's efforts to collate this information.

ICES WGEXT 2003 'Guidelines for the management of marine sediment extraction' will be included as an annex to a book being prepared and published by SANDPIT (an EU programme). Full acknowledgement will be given to ICES and WGEXT, and this should help to disseminate our outputs to a wider audience (i.e., outside the ICES and OSPAR communities).

Consultative and Marine Habitat Committee business

Josianne Støttrup was nominated as representative of MHC for the new ASC Award Selection Committee. Members of MHC were requested to pass their nominations on to J. Støttrup by Friday evening.

Facing the ongoing poor attendance by Expert Group Chairs and the little time available for scientific discussions, the Group had an engaged discussion after provocative questions from the Committee Chair: "Do we need MHC for the ICES advice", "What is the value of the Science Committees", and "Do the ICES Delegates need the Marine Habitat Committee?" It remained unclear why we had two levels of reporting for Expert Working Groups. The open dissatisfaction and concern about the function and purpose of the Science Committees at present needs clarification and change of the system. The function of the Science Committees has become a purely bureaucratic one and allows for no further science discussion. The proper participants should therefore be the Expert Group chairs and experienced science managers to review and update the ToRs, the audit forms, and to give professional guidance to the Expert Groups (see also the comment *Why still ICES Science Committees? A personal view by Heye Rumohr* at the end of this Committee report).

Forthcoming Symposia and Theme Session topics

The MHC had proposed three theme sessions for the 2005 ASC. The Chair indicated that there were too many theme sessions proposed for 2005 and the Consultative Committee would ap-

precipitate the identification of any sessions that could be postponed or deleted. MHC discussed the 3 theme sessions:

- 1) **Oil spills in marine ecosystems: impacts and remediation**, co-convenors Joan Albaiges and Ken Lee. There was a discussion of the possible difficulty in attracting an adequate number of quality papers given the competition with numerous international symposia with a similar theme. It was determined that it was still important for ICES to provide a venue for the discussion of this research and that the co-convenors had the necessary contacts to solicit contributions for a high quality session. The need for the co-convenors to actively solicit contributions was noted. It was also agreed that the description of the session needs to be revised to reflect a broader range of interest as requested by the Delegates. It was agreed that this session was a high priority for 2005 as it had already been postponed from 2004 so as to provide a timely venue for research on the "Prestige" spill.
- 2) **Quality Assurance of Marine Biological Studies**, co-convenors J. Davies, A. Ikauniece, and P. Schilling. It was noted that Schilling had not yet been approached. It was agreed to postpone this session to 2006. The convenors need to expand the description and the session should include environmental studies in general, including biological effects studies. Quality control mechanisms should also be included.
- 3) **How to Improve Environmental Monitoring and Biological Studies: Integrating Ecology and Statistics**, co-convenors Rob Friar and a biologist to be named. It was agreed that this should proceed in 2005. The chair of MHC was tasked with identifying a co-convenor as soon as possible and directing the convenors to actively solicit papers. The scope of the session should be expanded to include the presentation of case studies. It was also felt that deletion of the adjective "state of the art" would make the session appear less formidable to potential participants and the perspective audience.
- 4) After the meeting a forth proposal was put in by the Netherlands for a theme session in 2006 about: **Human health risks and environmental quality**, co-convenors D. Vethaak and an unnamed scientist. This proposal is still at a very early stage.

There are two proposed symposia that are relevant to the MHC:

- 1) **Marine Bioinvasions** to be held in 2006. The planning for this symposium, co-sponsored by ICES, is well underway.
- 2) **Marine Environmental Indicators: Utility in Meeting Regulatory Needs** to be held in 2007 is being convened by Hubert Rees, Eric Jagtman, and Kris Cooreman. The convenors are presently soliciting sponsors and seeking a venue.

Audit of the ICES Action Plan

The completed Action Plan forms for each of the MHC Expert Groups were reviewed.

- BEWG – concern was expressed about the REGNS related TOR requesting all of the BEWG data. This was considered to be an excessive workload; someone should be paid to collate these data. However, it was noted that MCWG and the physical oceanographers had agreed to respond to the REGNS request.
- MCWG – a problem was noted regarding the communication with SGEUT on the eutrophication related TOR.
- WGBEC – this WG was not able to deal with the TORs that involved collaboration with WGSAM. Also the TOR on chronic exposure and adaptation was not dealt with due to a lack of time. It is expected that one or two statisticians will attend the 2005 WGBEC meeting.
- WGMHM – they were unable to address the TOR on pelagic issues due to the lack of expertise in the WG. Links need to be established with the relevant expert groups such as WGZE and WGPE or else the TOR needs to be removed.

Last year there was still a problem in dealing with the request to support habitat mapping for the Baltic Sea. It was noted that this issue appears to be in hand and funds will be made available for Baltic scientists to attend the 2005 WGMHM meeting.

- WGS AEM – this is a small group for which there are high expectations and a heavy workload. There is a need to find a better way of facilitating effective collaborations with other WGS.
- WGMS – the completed form was not available for discussion. Some information had been received but it needs to be properly transferred to the form.
- SGINC – This SG was not able to conclude the work on the TOR regarding decision support systems since the expected expertise was not available for their meeting. WGEIM has undertaken work in the past on integrated management but SGINC has not been able to access that information and expertise.
- WGEXT – the report was received late and therefore it was not available for discussion. The Chair noted that the WG identified some minor problems but nothing severe.

In general the WG members felt that this report was very useful for identifying problems and issues, and not too difficult to complete. It was agreed that it would be useful if the report was completed as part of the Expert Group meeting and then included in the WG report as well as being sent electronically to the Secretariat.

There was also discussion about the format and quality of the WG reports from the perspective of how they are used. WGs are not well-informed about how the Advisory Committees use their reports. It was recommended that the WG chairs be sent copies of the relevant Advisory Committee reports.

Any other business

The Chair noted that a resolution will be taken to the Delegates to open the membership of Expert Groups that report to Science Committees to anyone approved by the Expert Group chair. Expert Groups reporting to Advisory Committees will continue to be by nomination of national Delegates.

There was a continuation of the discussion on the purpose of the Marine Habitat Committee and Science Committees in general. The Chair was urged to take this message to the Consultative Committee.

The meeting was closed at 10:45 with thanks to Vivian Piil and the Chair.

Why still ICES Science Committees? A personal view by Heye Rumohr, Chair of Marine Habitat Committee

At the Vigo meeting of MHC the Group started an unplanned discussion on the “raison d’être” of Science Committees. The remits of MHC are to deal with *quantity, quality and functional value of living resources of marine habitat of coastal areas, continental shelves, and the open ocean. This includes studies of marine biodiversity, effects of human activities such as coastal development and fishing, subsequent anthropogenic effects on habitat and depending living resources, including effects of contaminants, but also habitat change.*

At present seven Working Groups and two Study Groups report to MHC. At the meeting, eight out of 19 countries were present plus three chairs out of nine. This was an improvement to former meetings at ASC. Three WG progress reports were presented by WG Chairs, three by informed colleagues and the rest could not be realized. Facing the ongoing poor attendance by WG Chairs and the little time for scientific discussions the group had an engaged discussion after provocative questions from the Chair: “Do we need MHC for the ICES advice”, “What is the value of the science committees” and “Do the ICES delegates need the Marine Habitat Committee”? It remained unclear why we had two levels of reporting for Expert Working Groups. The “sexy” ones report to ACME and ACE. Are the remaining ones second order WG’s?

The open dissatisfaction and concern about the function and purpose of the Science Committees at present needs clarification and change of the system.

Science Committees of ICES were installed in the early 20th century when there was no institutional home for the growing marine scientific disciplines. This situation has changed considerably over the years, and the number of scientific corporations, the series of discipline-centered symposia make the Science Committees obsolete. ICES has reacted to this fact already with the institution of Theme Sessions and Mini-Symposia at its ASC.

The parental role of Science Committees for the presentation of progress in marine science is history. The function of the Science Committees has become purely bureaucratic and allows for no further scientific discussion. Consequently, ICES named them *Business Sessions*. The proper participants should therefore be the WG chairs and experienced science managers. The question is, what is the critical minimum size of such a group to review and update the ToRs, the audit forms, and to give the Expert Groups professional guidance. This guidance was not always available through a Committee with varying attendance of only a small fraction of nominated national members and even fewer WG chairs.

My radical proposal would be to dissolve the level of Science Committees, severely reduce the numbers of Working Groups and Study Groups. Further strengthen the role of discipline groups and task them with the emerging new topics instead of installing new groups for every individual wish. All Groups shall report to the advisory level, with much more formalized WG reports, which will then be easier to read and evaluate, and the advisory parts to be extracted. The “audit” forms for the ICES Strategic Plan should be integral parts of the WG reports and be delivered with them. Care should, however, be taken not to weaken the environmental side and the non-fish biology expertise of ICES by this process. Discussions are needed on how to stock the ConC when there are no longer Science Committee chairs available. One solution would be using the level of senior WG Chairs. This more professional process should be cost-neutral or even cheaper for both ICES and the contracting parties.

Mariculture Committee (F)

Chair: Thomas W. Sephton (Canada)

Rapporteur: Ellen Kenchington (Canada)

The Mariculture Committee (MCC) met on Tuesday 21 September 2004 from 14:00–18:00 and on Thursday 23 September 2004 from 08:30–10:30. Fifteen participants attended the meetings.

Opening

The Chair welcomed everyone to the meeting, took attendance, and provided housekeeping details. It was noted that only approximately half of the Mariculture Committee members were in attendance. Through the course of the year there has been a low level of interaction within the Committee, but very good interaction within the constituent working groups. This is a general problem within some ICES Science Committees. It emerged from the discussion of this issue that some members may not have received information (and hence did not respond) due to incorrect e-mail addresses: this was rectified.

Appointment of Rapporteur

E. Kenchington was proposed as Rapporteur prior to the meeting and was accepted by the Committee.

Adoption of Agenda and Timetable

The meeting timetable and agenda were circulated prior to the meeting, discussed briefly and adopted. A call for other business items was made but no items were added.

Arrangements for the meeting

There were some last minute changes to the ASC schedule and the Mariculture Committee guest speaker for the Invited Plenary Lecture thus became Mr. Alistair Lane, Executive Director, European Aquaculture Society (EAS), Belgium. The title of his talk was “Sustainable Aquaculture Development in Europe”. Introductory notes were prepared by the Chair with the assistance of others.

This year, the Mariculture Committee had only one Theme Session: V: Mariculture in the Coastal Zone, Sustainability, Perspectives and Limitations [Convener: Josianne Støttrup, Denmark]. This was a small session with only six oral presentations and six posters. Unfortunately, the organizing committee collapsed three of the Mariculture Committee theme sessions into one due to a lack of participation. It was felt that conflicting meetings by other aquaculture associations and groups were responsible for not being able to draw the necessary participants to fulfill the intended agenda. It was also suggested that the timing of the abstracts might be a problem for some groups. Many of the Expert Groups meet in May and so there is little time to raise enthusiasm to participate amongst the Expert Group members in person. However, the overall ASC conference attendance was high this year and so this is clearly not a deterrent for others. A discussion on the process for selecting topics for theme sessions was deferred to the agenda item on Forthcoming symposia and theme session topics.

Committee business

The Mariculture Committee initiated a new method to review annual WG reports by sub-groups of Mariculture Committee members with limited success. WG Chairs were reminded that reports are to be submitted within three weeks of close of the annual WG meeting. Each

Chair was given 20 minutes to present the highlights of the WG meeting to the Mariculture Committee.

Report of Expert Groups

Prior to the meeting the Chair asked that WG Chairs prepare short presentations on the activities of their WGs, highlighting significant results and bringing forward outstanding issues for discussion. For example, progress being made in relation to achieving the ICES action plan or ToRs being suggested for other Expert Groups to consider. This approach was proposed after the 2002 Mariculture Committee meeting as an alternative to longer presentations addressing all ToRs, given the fact that all reports are circulated to the Mariculture Committee prior to the meeting. It was noted that each WG should conclude its meeting with the ratification of the draft WG Report and that it should be available for each member to leave with a copy for further review and comment.

The WG Chairs were made aware of the proposed REGNS (Regional Ecosystem Group for the North Sea) Study Group and encouraged to attend the discussion meeting during the ASC in order to see if their expertise should be included.

WG on the Application of Genetics in Fisheries and Mariculture [WGAGFM] (Doc. F:04)

E. Kenchington (Chair) presented the highlights of the report of the 2004 WGAGFM which met in Hamburg, Germany from 3 to 5 May, 2004. Fifteen persons representing ten countries were present with five others participating through correspondence prior to and during the meeting, and nine apologies received. This is a considerable improvement over the previous year and can be attributed to the updating of the membership list by the ICES Secretariat, direct encouragement from Mariculture Committee members in soliciting attendance from their official members and movement of the timing of the meeting to early May after the close of the academic year. Five terms of reference (ToR) were addressed, although one was dismissed as the appropriate information was unavailable for review. Nineteen recommendations were made arising from the ToRs. One of the ToRs was at the request of WGECO and will be used in the provision of advice to ACE. Other ToRs addressed stock structure in eels, an evaluation of reaction norms as a method for detecting evolutionary change, and a review and an assessment of the methods for determining effective population size (N_e) in marine fishes. The WG continues to do an excellent job of completing their ToRs and addressing issues of relevance to ICES.

The WG has a process of establishing the venue of the meeting two years in advance in order to allow for the hosts to prepare. In 2005 the WG meeting is proposed for the Danish Institute for Fisheries Research, Silkeborg, Denmark, 3–6 May 2005 (E. Eg Nielsen host) with the 2006 meeting proposed for Newport, Ireland (P. McGinnity host).

The WG was active on other issues intersessionally, specifically reviewing Annex 7 of the ICES Code of Practice for the Introductions and Transfers of Marine Organisms 2003 and adding material on triploid organisms for inclusion, and also participating in the Study Group on Stock Identity and Management Units of Redfish (SGSIMUR) (Chair: Kjell Nedreaas, Norway) which met in Bergen, Norway, from 31 August to 3 September 2004. At least three WG members attended the SGSIMUR meeting in person while two others provided comments through correspondence. This is separate from WG members who were directly involved with the study.

It was noted that 2005 will be the last meeting for the current WG Chair and that at the 2005 meeting a new chair will be elected for a three-year term to commence in 2006.

Mariculture Committee members commented on the relative balance of ToRs related to mariculture vs. fisheries (WGAGFM has both mandates) and queried whether the WG was reporting to the correct committee. The WG Chair felt that the advice was reaching the appropriate interests within ICES but that this was a matter for the Mariculture Committee to discuss, presumably with ACME, ACE, and ConC. She also stated that the WG had sufficient expertise to address questions related to mariculture and encouraged the other WG Chairs to think of WGAGFM as a resource to supplement their ToRs. In particular the WG has experts able to comment on triploids, inbreeding, heterosis, and other issues of concern to both finfish and shellfish culture. A case in point is the contribution made to WGITMO at very short notice. A. Bodoy suggested that joint or overlapping meetings might be planned in the future.

Action Item: Mariculture Committee Chair to review the parent Committee reporting relationships of WGAGFM with ACME, ACE, and ConC.

The Mariculture Committee Chair commented positively on the fact that WG practice is to identify a lead for each proposed ToR. The WG Chair advised that this practice was established as WG form by the previous Chair (M. M. Hansen) in order to ensure that expert advice was present at the meeting to address the ToRs (leads must put forward the ToR to the meeting, solicit consensus to proceed from meeting attendees, and must agree to attend the meeting the following year to present the ToR and contribute to the WG report).

WG on Environmental Interactions of Mariculture [WGEIM] (Doc. F:02)

No written report was submitted due to a changeover in chairmanship (E. Black outgoing, F. O'Beirn incoming). The next meeting is scheduled for Ottawa, Canada hosted by E. Black. The Mariculture Committee Chair reported good progress on all ToRs, with the following highlights:

- The implementation of the Water Framework Directive (2000/60/EC) has progressed with the publication of all the guidance documents and the restructuring of the common implementation process. However, uncertainty still remains around some of the implications of monitoring for the Water Framework Directive and how the impact of aquaculture activities in a water body will be regarded as they will be considered as one of the pressures acting on the overall quality of the water body.
- Work initiated on five documents dealing with the potential impacts of escaped aquaculture marine non-salmonid finfish species: cod, halibut, sea bass, sea bream, and turbot. Using format of risk analysis.
- Excellent synthesis document produced which summaries the state of knowledge of the literature and research on the current bath treatments and in-feed additives (treatments) used to treat salmon for sea-lice and their fate in the near and far field environment and their effects on non-target organisms (e.g., crustaceans and invertebrates). This document will be published as a book chapter.

Action Item: Chair of WGEIM to correspond with WGAGFM and review the historical information produced by WGAGFM for the genetic implications when preparing its state of knowledge reports and the associated risk analyses information summaries.

WG on Marine Fish Culture [WGMAFC] (Doc. F:03)

The Mariculture Committee Chair presented a report submitted by the Chair (A. Mangor-Jensen) who sent his apologies to the meeting. The WG plans to meet in May somewhere in Scotland. The WG has examined many practical aspects of marine fish culture over the last 20 years. Marine aquaculture has developed to become a profitable industry in many countries. A natural evolution of the tasks of the WG will be to focus on welfare aspects for the fish in captivity to position ICES to provide relevant integrated advice to the ICES client community.

WG on Marine Shellfish Culture [WGMASC] (Doc. F:05)

A. Bodoy (Chair) presented an update on the 2004 activities of WGMASC. This new WG met for the second time in 2004 in Portland, Maine (USA). The WG was established to deal with the development of shellfish culture. Because of the importance of seed availability for research, aquaculture and enhancement activities, a better knowledge of hatchery production and technology is required. Shellfish are dependant of the surrounding environment, both in terms of available food and survival rates. These can be affected by predation, pathogens, pollutants, and water quality. The WG should contribute to increase our understanding on how these different items can affect shellfish production.

The WG has a variety of ToRs that will generate good advice for ICES clients. In order to get information on the state of the industry they devised questionnaires and circulated them to major shellfish growers and hatchery operators. It was suggested that the WG could exchange ToRs with WGAGFM to fill out their guidelines for shellfish culture, particularly with respect to inbreeding and triploid production.

Action Item: Chair of WGMASC to correspond with WGAGFM to review the information base of genetic implications of shellfish culture which WGAGFM has produced.

Action Item: Chair of WGMASC to work with Chair and members of WGEIM on the subject of shellfish carrying capacity as it appears in the ToR for both expert groups.

WG on Pathology and Diseases of Marine Organisms [WGPDMO] (Doc. F:01)

The Mariculture Committee Chair noted that excellent progress on all ToRs had been made and that this WG is active in the provision of advice to ACME. The WG Chair (T. Lang) sent a request to Mariculture Committee members to ensure active participation in the WG. Of note from the annual report:

- In general, there is little information regarding disease/parasite interactions between wild and farmed fish. Emphasis should therefore be given to research in this area. Increased use of wild broodstock for the enhancement of aquaculture activities increases risk of introducing pathogens. Important to further develop and implement measures (e.g., predictive risk assessment models) to assess and minimise the risk of disease transfer from wild to farmed fish and vice versa.
- WGPDMO nominated S.W. Feist, UK as new editor for the ICES Identification Leaflets for Diseases and Parasites of Fish and Shellfish. The report on trends in important diseases affecting the culture of fish and molluscs in the ICES area 1998–2002 was published.
- WGPDMO will actively contribute to the ICES integrated regional assessment of the North Sea Ecosystem coordinated by the ICES Regional Ecosystem Study Group for the North Sea (REGNS). Contribution will focus on an assessment of data on the health status of North Sea biota for the period 2002–2004, and will also examine any trends in the prevalence of diseases over the recent decades and the results of an analysis on cause-effect relationships between diseases and environmental factors.

Mariculture Committee members noted that not all governments are able to monitor finfish health to the necessary standards in order to understand the normal background loads of diseases and parasites. This information is needed so that we are not looking backward when disease outbreaks in farmed fish occur. WGPDMO is actively involved in the REGNS Study Group (see above).

Consultative Committee and Mariculture Committee business

Nominations for the ASC Award Selection Committee

ICES is restructuring the Award Selection Committee in order to increase the value of the present recognition system. A small Study Group was put together to revitalize the awards scheme. There are now five awards: Service (new), Merit (existing), President's Certificate of Recognition (new), President's Prix d'Excellence (new), and Lifetime Achievement Awards (existing). Details can be found on the ICES website. Nominations to the Awards Committee will be sought over the coming year.

Another Young Scientists conference is planned for 2007. WG Chairs were asked to identify potential young members who may wish to help organize the meeting. It was noted that a 'Young Scientist' is usually someone under 40 with less than 10 years experience. The Mariculture Committee Chair agreed to get details on the conference and to distribute them to the WG Chairs so that they can canvass their members. A couple of names were suggested at the meeting and transmitted to the ICES Secretariat.

ConC update and requests

Bureau and ICES Delegates are to finalize a resolution to open the participation of the WGs reporting to Science Committees (e.g., all our WGs) to all those who are authorised by the WG Chair (in cooperation with the WG members) and able to participate and contribute to achieving the WG ToRs. Currently ICES rules state that only those nominated or identified by national Delegates can attend WG meetings. This will increase exposure of the WG to those outside of normal ICES interactions who would not normally be allowed to attend. Success stories of WGs (Fish Technology, Ballast Water) welcoming 'outsiders' into their meetings prompted this change, thereby broadening the awareness of ICES and providing a vehicle for introducing new blood to the organisation. WG Chairs must still deliver products to meet their ToRs. Some questions were raised as to whether some members would still be identified as official members as this can be an important factor in getting permission to attend the meeting. The Chair of WGAGFM stated that this has been the practice of that Working Group for over a decade and that two classes of attendees are recognized; observers who participate in the meeting but do not vote on recommendations or put forward ToRs, and official members who participate fully. This has allowed students and local scientists to contribute expertise to the meetings.

The ConC discussion of having WG Chairs become ex officio members of Science Committees was not approved by the Delegates as this might introduce an imbalance among countries on matters that required a vote.

ACME update and requests

WG chairs should be consulted early in the year by assigned ACME contacts so that advice can be organized well in advance of advisory meetings. The Mariculture Committee Chair advised that there is now a new term—"Expert Groups"—which will eventually be used throughout ICES to replace SG and WG.

Mariculture Committee action and responses

The Mariculture Committee is still monitoring the Strategic Plan and reviewing WG ToRs in that context.

Forthcoming symposia and theme session topics

The Mariculture Committee Chair advised the ConC that there are a number of conflicting aquaculture science conferences and symposia occurring within the same timeframe as the

Annual Science Conferences (ASC) in 2005 (Aberdeen) and 2006 (The Netherlands). For example, EAS, WAS, the National Shellfish Association, and the European Marine Biology Association have conferences and symposia that will attract many who might otherwise attend the ASC. For the future it was felt that larger over-arching theme sessions are more likely to succeed. Also, ICES should consider seriously the possibility of co-sponsoring sessions as part of other aquaculture conferences and events in order to maintain its visibility in mariculture.

2005 ASC and supporting Resolutions

The conference will take place in Aberdeen, Scotland. The Mariculture Committee forwarded a Theme Session, co-sponsored by Marine Genomics Europe, entitled “Integrating / implicating genetics into fisheries management”. This proposal was prepared by F. Volckaert (Belgium), endorsed by WGAGFM at their 2004 meeting, and put forward by E. Kenchington to the Mariculture Committee. This theme session was accepted by ConC. The programme is now full and no further theme sessions are available.

2006 ASC and supporting Resolutions

This conference will take place in the Netherlands and submissions for theme sessions are needed by June 2005 for the ConC meeting. It was suggested that a session on carrying capacity might be suitable.

Action Item: WG Chairs to submit theme session suggestions to Mariculture Committee Chair by April 2005.

2007 ASC and supporting Resolutions

The 2007 ASC will be held in Finland, but no other information is available at this time.

Symposia

ICES is now over-booked with symposia and is looking at 2007–2008 for suggestions. The limiting factor for symposia is the ability of the ICES Secretariat to be involved in organizing and publishing the final documents.

Upcoming symposia relevant to Mariculture Committee WGs:

Symposium on Interactions of Wild and Cultured Atlantic Salmon, 16–18 October 2005. Bergen, Norway [Diadromous Fish Committee lead].

Action Item: WG Chairs to submit symposia suggestions as well as opportunities to co-sponsor events with other mariculture organisations to Mariculture Committee Chair by September 2005.

Action Plan progress and future Mariculture Committee topics

The Mariculture Committee was asked to assess the performance of underlying WGs and Committees.

Strategic Plan and WG ToRs

The Action Plan Audit 2004 will eventually become an integrated database. By making the Action Plan a living document the Mariculture Committee will be better able to assess performance and be more pro-active as opposed to simply accounting for the previous years' activities. For example the move by WGMAFC to deliver products relevant to fish welfare will result in the production of leading position documents similar to the ICES Introductions and Transfer Code, which is widely used. The form will likely have to be altered to include more information, but as this is only the second year of the process no changes have been made.

Currently WG performance is evaluated by one of three categories. In theory, ICES Science Committees should be able to see at a glance which WGs are in line with the Strategic Plan and identify their performance. However, at present the evaluations are made based on reading the reports, and it was suggested that cumulative impact (advice over a number of years) is not captured. This would be needed to know when to retire ongoing ToRs.

It was decided that Mariculture Committee members would be called upon to assist in evaluating the performance of the Expert Groups as part of the annual review of the Expert Group Annual Reports. The members of each Mariculture Committee sub-group would be called upon to offer a subjective review of the annual performance of the assigned Expert Group, based on the information contained in the Annual Report which they had reviewed previously. Clarification of the exercise will be provided by the Chair.

Integrated ecosystem advice and deliverables

A letter was sent by the Chair of the Consultative Committee (J. Rice) to WG chairs, asking what information they could or would like to contribute to ecosystem advice to ICES Science Committees. So far, no response has come back, but not all WG chairs present had received a copy of the letter. Generally, issues such as genetics, carrying capacity, disease, and introductions would seem relevant. The main opportunities/needs for input from Expert Groups reporting to Science Committees are found in the sections on effects of the environment on the fisheries, and effects of the fisheries on the ecosystems. WG Chairs should be informed that there is a need to make a reference to integrated advice and ecosystem approaches in WG ToRs. The WG can/should suggest ToRs for other expert groups (in relation to providing integrated advice), with ConC controlling the administration of workloads. Mariculture Committee members noted that the letter was very biased towards fisheries and may have alienated ACME WGs.

Action Item: WG Chairs to identify to the Chair of Mariculture Committee any opportunities to provide integrated advice as part of their ongoing activities.

There is also need for a mechanism to alert ICES to significant atypical ecosystem events that must be incorporated into the ecosystem approach of providing advice: suggestions are wanted. An example was given of the drastic decline of capelin off Iceland which would have implications for predator species (birds, mammals, fish); notification of this event should be given to the appropriate groups. The Mariculture Committee suggested that the ICES newsletter might be a vehicle to relay such information. Concerns were voiced over the validation of an event before broadcasting information to others. It was mentioned that the new reporting format for ICES assessment WGs asks whether there has been an unusual event in the region. Once verified, these could easily be collated into a relational database and made available to ICES members on the web page. The updates could be sent out in an electronic newsletter to all WG Chairs with internet links to the reports. It was suggested that one of the OSPAR groups is charged with recognizing any unusual changes or effects that occur and that a member of ICES usually sits in on the OSPAR meetings. This information could be given directly (electronically) to ICES.

Day 1 of the meeting adjourned at 17:45 on 21 September 2004.

Review draft Resolutions and WG ToRs

A discussion and review of the proposed ToRs for each WG was completed. The Mariculture Committee was particularly careful to review the ToRs for concrete deliverables and to highlight those changes or new ToR that we want brought to the attention of the Delegates and Bureau so that they fully understand the importance of ratifying the ToR. Venues and meeting dates were also verified where possible. Each ToR was also viewed for cross links or redun-

dancy to other WG ToRs. It was noted that WG Chairs should be given a rationale for removing ToR, especially if they were not present at the meeting.

Action Item: Mariculture Committee Chair to identify all changes to WG ToRs and corresponding rationale to appropriate Chairs at the conclusion of the ConC meeting.

For WGAGFM it was noted that while many of the current ToR are fisheries-oriented, in the past some very good reports have been produced dealing with mariculture practices, specifically breeding programmes for fish and shellfish. The Chair of the Mariculture Committee asked that these reports be given to him, along with the WGAGFM private website link so that the Chairs of the other WGs could benefit from these. For WGPDMO the number of ToRs has increased again. In 2003 the WG was unable to complete their ToR due to the number. In 2004 these were reduced to 9 but in 2005 there are 11, some given to the WG.

Any other business

Best management practice documents should be examined and prepared. Several are available from various countries, but these have not been reviewed. The EU is planning on developing these and it would be good to make sure that the expert groups review them before they are released. There was discussion about whether a single Best Practise document is appropriate for all ICES countries, but this is something that could be addressed through the review process.

The Chair advised that the Mariculture Committee meeting format could include presentations if desired.

Closure

The meeting adjourned at 10:15 on 23 September 2004.

Living Resources Committee (G)

Chair: Dave Reid (UK)

Rapporteur: Emma Hatfield (UK)

The Living Resources Committee met on Tuesday 21 September from 09:00 to 13:00.

Opening

The Chair opened the meeting, welcomed the participants and it was agreed that Emma Hatfield (UK) would be Rapporteur. The agenda was presented and adopted. The Chair mentioned that in the afternoon of 21 September a joint meeting would be held, together with the Resource Management Committee, on surveys.

Reports of Working Groups

Study Group on the Biology and Life History of Crabs (SGCRAB)

As there was no representative from this group, Doc G:13 was not discussed.

Working Group on Cephalopod Fisheries and Life History (WGCEPH)

Jean-Paul Robin (France), Chair of WGCEPH, presented Doc. G:02. WGCEPH planned to work by correspondence in 2004 and to produce their report through this means. The final report was not available at the time of the meeting, but the draft was presented. It was possible to address most of the ToRs. Recommendations for 2004 were mainly as in 2003, but included a request for funding for data collection to enable monthly assessment of the most important cephalopod stocks.

Working Group on Elasmobranch Fishes (WGEF)

Doc. G:11 was presented by the Chair, Maurice Clarke (Ireland). WGEF worked by correspondence in 2004. Landings data for most elasmobranchs continue to be unavailable on a species basis, but rather by category like "sharks" or "rays and skates". It is hoped that the new EU Data Regulations on sampling will reduce this problem. Deepwater sharks are now included in the remit of this Working Group. The German government asked the advice of the WG in commenting on the accuracy of a proposal to add two shark species to the CITES list Appendix II. It was discussed again whether this group should be under ACFM or LRC, but it was felt that the work of the group should focus both on assessments and on increasing knowledge of the biology of these species. Given their role as indicators of ecosystem quality it was felt that WGEF should remain under the auspices of the LRC. The group also attracts a wide participation including NGOs and other stakeholders. This should be encouraged, and will now be straightforward with the change of rules on participation in Science Committee Working Groups, provided WGEF stays under LRC parentage.

Working Group on Fish Ecology (WGFE)

Jim Ellis (UK), Chair of WGFE, presented Doc. G:09. This group had its second meeting in April 2004. Its remit was to decrease the workload of WGECO and specifically answer some of the requests from OSPAR and HELCOM. Subjects raised included new data from feeding studies on gadoids, indicating that the data currently used in MSVPA may no longer be valid. There was a worry that if the ToRs of the group were broadened further, this would result in too much work being spread too thinly across the Group's members, and would probably be counter-productive.

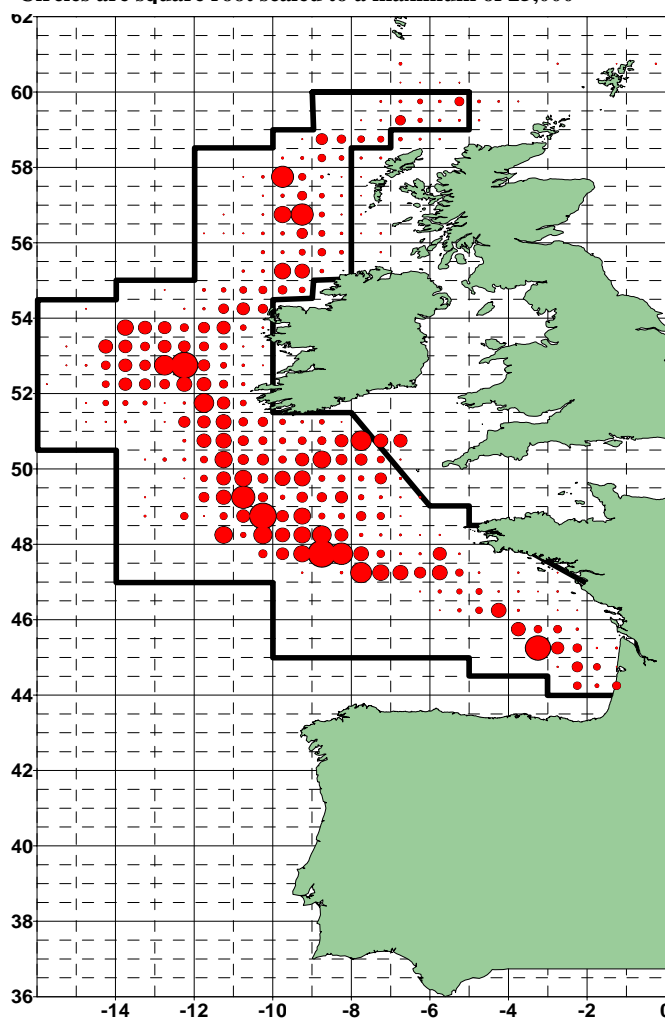
Stock Identification Methods Group (SIMWG)

There was no representative from this group, so Doc G:12 was not discussed. However, the Group has prepared an extensive document for publication, presumably as a CRR. The work of the Group was also the subject of a large and well supported theme session within the 2004 ASC.

Study Group on the Regional Scale Ecology of Small Pelagics (SGRESP)

The report G:06, of the first meeting of this group, was presented by the Chair, Pierre Petitgas (France). Stock ID cards were produced describing key life history parameters for each of the stocks discussed in the SG. These ranged from Biscay sardine and anchovy to NE Atlantic mackerel, Atlanto-Scandian herring, and blue whiting. Migratory behaviour of the various species was discussed and one of the conclusions drawn from discussions was that adults are thought to play a key role in all of the changes seen in the stocks' behaviour over time. The short- and medium-term products that could be delivered to assessment working groups were discussed, as was the close relationship developed already between SGRESP and WGMHSA. The Group is a collaborative venture with the GLOBEC SPACC and this allowed a much wider perspective to be taken, including for instance small pelagics in the Benguela and Humboldt Current systems.

Mackerel egg production in the western area March to July 2004
Circles are square root scaled to a maximum of 25,000



Workshop on Mackerel and Horse Mackerel Egg Staging and Identification (WKMHMES)

Mike Armstrong (UK) presented this report on behalf of Steve Milligan. The workshop entailed extensive trials of the performance of teams from all countries involved in the ICFES Triennial Mackerel and Horse Mackerel Egg Surveys. The workshop addressed issues of sorting the mackerel and horse mackerel eggs from the plankton and from the egg sample, as well as stage identification. This followed a two-stage process of trials, followed by harmonization work, and then repeat trials. A new standard set of pictures and descriptions of species and egg stages was produced, and suggestions on analysis protocols and equipment. A sub group also looked at fecundity and atresia determination and standardised approaches to this. It was suggested by LRC that the workshop report should be expanded and published as a CRR on the ICES website to give it wide access.

ConC and LRC business

- LRC was informed of the decision to allow Science Committee Chairs to authorise memberships as well as the Delegates; this was approved.
- In this context, the transfer of ACFM groups to LRC was discussed, but no conclusions were reached, apart from the suggestion that WGEF remain in LRC.
- The issue of integrated advice (reference letter by ConC Chair) was discussed. The LRC Chair encouraged a response by all Expert Group Chairs to the Chair of ConC, as soon as possible.
- LRC was notified of the existence of the section in the ACE report on how ecological and environmental information can be integrated with fishery and stock information. LRC considered that SGRESP should be considered as a model for an integrated advice WG, and that such integration should occur outside assessment working groups.

Theme sessions 2005

In earlier theme session outlines for 2005 there were two proposals for theme sessions including marine mammals. Tore Haug (Norway) proposed a single unified theme session in 2005 incorporating these, it would have a similar framework to the title already agreed in principle by ConC: *“Marine mammals: Monitoring techniques, abundance estimation, and interactions with fisheries”*. This has been agreed by all parties involved. The timing of the session in 2005 is important for participation of the extensive sea mammal research community in Scotland.

Emma Hatfield (UK) presented a slight modification to a theme session proposed by LRC in 2003. This would be for 2005 and would be entitled *“Multidisciplinary approaches to the identification of stock structure of small pelagics: implications for assessment and sustainable management”*. A theme session in 2005 would be very timely due to some EU-funded research projects that will finish in 2005.

Maurice Clarke proposed a session entitled *“Elasmobranch Fisheries Science”*. There has been no theme session on this or any related matter for some years. Recently considerable progress has been made concerning the assessment of elasmobranchs, and they are specifically mentioned in the new MOU between EC and ICES, making this appropriate for an early theme session in 2005.

Olav Kjesbu (Norway) proposed a theme session entitled *“Advances in Reproductive Biology: methodology and applications for fisheries science”*. This session would address the need for an understanding of egg production in modifying the stock-recruit relationship, underpinning much management advice. The timing in 2005 would allow the session to take advantage of several EU and other projects reaching their conclusions.

Theme sessions 2006

A theme session entitled “Large scale changes in the migration of small pelagic fish and the factors modulating such changes” was proposed by Jürgen Alheit (Germany) and Dave Reid (UK). The session would target migrations which have changed dramatically over recent years and would, where possible, detail explanatory factors, e.g. environment/climate change, population effects, or anthropogenic impacts.

A theme session entitled “Genetic effects of exploitation on marine resources” by Mikko Heino (Norway). This session is based on the potential impact of the often massive selection pressures that fish stocks are exposed to as a result of fishing, and whether these only alter the demographics and life history strategies of the fish, or whether there are also changes in the genetic make up of the stocks.

Proposals for symposia

LRC did not have a proposal for an ICES symposium in 2006 or 2007.

Action Plan progress

The Action Plan Audit was discussed and the spreadsheet was forwarded to Expert Group Chairs. A full reply by September 25th will not be possible due to the late arrival of documentation to the LRC Chair.

Draft Resolutions

Draft resolutions were adopted for all Working/Study and Planning Groups residing under the Living Resources Committee.

Any other business

Proposals for new groups

A proposal was made for a new working group entitled “The Working Group on Acoustic and Egg Surveys for Sardine and Anchovy in ICES Areas VIII and IV [WGACEGG]”. The group is proposed to integrate all the surveys carried out in this area into a common framework. It will aim to standardise designs and methodology for both acoustic and DEPM egg surveys, as well as coordinate and plan the surveys for the following year. The group will continue and expand the important analysis methodology development work in DEPM from SGSBSA. It will also build on the development of standardisation for acoustic surveys started by the PEL-LASES EU project. Stock estimates for these species are provided via both metiers, and an important aspect of their work will be to seek ways of integrating such advice into a single package for the use of WGMHSA. Finally, the group will look at the potential for including other indicators in the advice such as oceanographic features, e.g. upwelling and stratification.

Closure

The Chair thanked the Rapporteur for her help with the report of the LRC session and thanked all members for their participation in the discussions.

Baltic Committee (H)

Chair: Brian MacKenzie (Denmark)

Rapporteurs: Henn Ojaveer (Estonia); Nils Hammer (Germany); and Fritz Köster (Denmark)

The Baltic Committee met on Tuesday 21 September from 09:00–13:00, and on Friday 24 September from 08:30–10:00. 28 persons attended the meetings, including representatives from all Baltic countries, USA, BSRP, and the ICES Secretariat. Many of the members can be seen in the plate below.

This year's meeting included two scientific presentations and presentations of six Expert Group reports. Short summaries of the scientific presentations, discussions of Expert Group reports, and other Committee matters are given below.

Opening

The Chair of the Baltic Committee, Brian MacKenzie (DIFRES), opened the meeting and welcomed the Committee members, Study Group chairs, and other attendees. The proposed agenda was adopted.

Rapporteurs were appointed (Henn Ojaveer, Estonia, Nils Hammer, Germany, and Fritz Köster, Denmark).

Presentation and adoption of reports and draft resolutions

Working Group on Baltic Fisheries Assessment [WGBFAS] (Doc. ACFM:22)

- Section 1.9: Overview of Baltic fish stocks (T. Groehsler)

T. Groehsler gave a report on cod, herring, sprat, and flatfish stocks in different Baltic sub-regions, listed the main assessment problems and reviewed working group advice on management.

It appeared that several stocks are at risk. Both the western and eastern cod stocks, and the central basin herring (Subdivisions 25–29, excluding the Gulf of Riga) stocks have been declining or are now at low levels. The sprat stock and the Gulf of Riga and Bothnian Sea herring stocks have high reproductive capacity and are harvested in a sustainable way. The eastern Baltic cod and Bothnian Bay herring assessments are very uncertain due to inadequacy of essential input data (catch, effort and discards, aging uncertainties) and lack of survey information.

For flounder, a tentative assessment has been made, indicating a relatively stable stock since 1978. As for plaice, turbot, and brill, only landing data exists and no analytical assessments are conducted.

- Section 1.8: Recent environmental – hydrographic conditions in the Baltic Sea (G. Nausch, IOW, Germany)

The most important hydrographic events in the past 12–18 months was the major inflow of saline, oxygenated water which occurred in January 2003, and two smaller inflows which occurred in the summer months in 2002 and 2003. The last major inflow (January, 2003) rapidly reached the Bornholm Basin and brought large amounts of oxygen (oxygen content reached 5–6 ml/l in January), but the oxygen content decreased sharply afterwards to very low levels below the halocline. The current situation indicates that hydrogen sulphide is present again in these areas in deep waters and that the thickness of this layer increases rapidly (now 20–30 m). Important processes also occur in the western Baltic Sea in the late summer-autumn

period when the oxygen content rapidly decreases and hydrogen sulphide appears in coastal areas. This phenomenon depends on weather conditions.

- Request from WGBFAS for environmental information from the Baltic Committee

The Committee recognised the need of supplying environmental information to WGBFAS annually. The Expert Group prefers to receive updated and recent information. Since the WGBFAS meets in April, hydrographic information from late winter/early spring (February–March) is most useful. The Chair of the Baltic Committee agreed to ask relevant laboratories shortly after the New Year to send updated hydrographic information (e.g., temperature, salinity, oxygen contour plots and maps) to WGBFAS in early April.

Study Group on Multispecies Assessment in the Baltic [SGMAB] (Doc. H:06)

Eero Aro (Finland), co-Chair, presented the report from the Study Group on Multispecies Assessment in the Baltic (SGMAB). The Group worked by correspondence because there was no meeting scheduled in 2004. The next planned meeting will be 13–17 June 2005.

Eero Aro stated that the multispecies reference points for the Baltic Sea have not been derived and that many environmental issues are disregarded in the assessment and management advice. Regarding future tasks, three categories were identified according to the character of activities: technically-oriented activities (e.g., validation, maintenance and update of databases), scientifically-oriented activities (e.g., development of models, modelling suitability coefficients, consideration of environmental factors, and spatial differences) and management-oriented activities (e.g., implementation of suitable medium- and long-term projection methodology). The Chair informed the Committee about a recently started EU FP6 project (BE-CAUSE) which will address some issues related to the work of the Expert Group. This project may be a good possibility for cooperation with SGMAB.

The report and Terms of Reference for the next meeting were accepted by the Committee. One day of the 2005 meeting will be a joint meeting with SGFFI. The overlap in the meeting dates will ensure communication between groups and increase cooperation.

Study Group on Fish and Fisheries Issues in the BSRP [SGBFFI] (Doc. H:04)

Maris Plikshs (Latvia), Chair, presented the report of the Group's activities in 2004.

The background of the SG and ToRs for the 2004 meeting (held in Riga 3–5 February 2004) were introduced. A detailed description of cod and sprat stock dynamics and their interactions was presented. This included the influence of hydrographic conditions, clupeid egg predation, food limitation of first feeding cod larvae, juvenile cod cannibalism, and the impact of contamination. Open sea and the Gulf of Riga herring stock dynamics and the factors responsible were also presented and explained. An important recent phenomenon is individual change in growth of pelagic fish (herring, sprat) in the Baltic Sea. However, existing knowledge of factors responsible for the changes in herring and sprat growth is presently insufficient to incorporate into stock assessment models. A major problem for understanding cod population dynamics and improving the assessment is age-determination. SGFFI can contribute to solving this problem by developing historical datasets on growth and size of cod otoliths.

An important component of the SGFFI is coastal fish species (or more precisely non-assessed fish). Coastal fish stocks are shown to be influenced by natural factors (climate, predation by marine mammals and fish-eating birds) and human impacts (eutrophication, fishing activities, and invasion of non-indigenous species). There are few coordinated activities for coastal fish research despite the availability of common sampling methodologies.

The group concluded that it needs additional support from BSRP for the recovery, completion, and continuation of various time-series (e.g., otolith weights, catch and effort data). This includes computerisation of data existing only on paper. Some new initiatives for non-assessed commercial species in coastal waters were identified and will be investigated. The Group also recommended establishing a co-Chair (H. Ojaveer) to assist with the Group's activities, particularly with internationally non-assessed fish species.

The report and Terms of Reference for the 2005 meeting (9–13 June) were accepted by the Committee. One day of the 2005 meeting will be a joint meeting with SGMAB. The overlap in the meeting dates will ensure communication between groups and increase cooperation.

ICES-IOC-SCOR Study Group on GEOHAB in the Baltic [SGGIB] (Doc. H:05)

The report of SGGIB was presented by the Chair, Markku Viitasalo (Finland).

The Terms of Reference for 2004 were generally met. The report focused primarily on:

- Continuation of the planning of GEOHAB implementation;
- Updating the checklist of Baltic HAB species (see ICES CM 2004/H:05) which contains a list of HAB species in the annex;
- Reporting and discussion of new findings;
- Reviewing ecosystem and other HAB models, including coupled biological–physical oceanographic models and fuzzy logic models (EU-Project HABES);
- Planning a workshop for spring 2005 for planning cruises in 2003–2005 in the Gulf of Finland and the Northern Baltic Sea (RV “Aranda” and RV “Muikku”). During these cruises zooplankton and phytoplankton concentrations should be measured, cyanobacteria by fluorescence detectors, fish by means of hydroacoustics together with CTD, etc.;
- Preparing an application to the GEOHAB SSC;
- Taxonomy of HAB species;
- Biology of HAB species (Checklist of Baltic Sea Phytoplankton Species, Baltic Sea Environment Proceedings No. 95);
- Short-term and seasonal patterns of HABs;
- High resolution monitoring of HABs;
- Field experiments: the effect of cyanobacteria on fish (pike larvae) being fed on zooplankton which has itself been fed with cyanobacteria had the effect of decreased predation, i.e. the foraging rate was decreasing. Apparently there are indirect negative effects even if the fish are not feeding directly on the cyanobacteria.

The next meeting is planned to overlap with the ICES WG on Harmful Algal Blooms. Wider participation in SGGIB is desired (e.g., by the German GLOBEC programme).

The Committee appreciated the structure and content of the report and is aware that the Group is making substantial progress towards an improved understanding of HAB dynamics in the Baltic Sea and how they might impact other components of the ecosystem. The report and Terms of Reference for the 2005 meeting were accepted by the Committee.

Study Group on Ecosystem Health Issues in Support of the BSRP [SGEH] (Doc. H:02)

The report of SBEH was presented by the Chair, Eugene Andrulewicz (Poland).

The SGEH meeting (Nov. 2003) was attended by 28 participants, including one from USA. Experts from other institutions (HELCOM, BALTIC 21) were included, and an overview of a US ecosystem health assessment (MMED) was presented.

The SGEH Chair noted that many of the ToRs will be difficult to achieve and are too ambitious. He also noted that some of the participants were by correspondence, and that others lacked first-hand experience with the topics addressed by the ToRs. This is preventing the Study Group from performing its work effectively. The Committee felt it important that the Group receives sufficient back-up from national laboratories and BSRP as the tasks to be dealt with are extensive and need a broad range of expertise.

The Baltic Committee agreed and decided to reduce and modify some ToRs to make them more likely to be achieved. The scope of several of the ToRs is equivalent to entire separate EU-projects. EcoQOs for assessing ecosystem health are not easily developed. Due to lack of participation in SGPROD, a ToR related to habitat classification and mapping was moved to WGMHM after consultation and agreement with the chairs of SGEH and ACE.

A workshop on ecosystem health indicators with support and attendance from US EPA will be held in 2005.

In general the work requested of SGEH should be designed more closely to the expertise of the expected participants. Progress towards some of the ToRs was satisfactory, but was negligible for several others.

The report and Terms of Reference for the 2005 meeting were accepted by the Committee.

Study Group on Baltic Sea Productivity in Support of the BSRP [SGPROD] (Doc. H:01)

The report of SGPROD was presented by the Chair, Bärbel Müller-Karulis.

The first meeting was held in October 2003. The Study Group should provide ICES with expertise for the productivity module in the BSRP and contribute to BSRP by defining productivity-related indicators.

The BC found the report to be a useful summary of productivity-related issues in the Baltic. Most activities and analyses are concentrated in the coastal zone. Substantial progress has been made towards the ToRs and the ICES Action Plan. Some of the planned activities for the coming year are a workshop on ecopath modelling (with support from US NOAA) and sponsorship of a theme session at the 2005 ASC on trophic modelling.

In the discussion it was pointed out that a study group cannot develop *de novo* parameters such as EcoQOs, a study group can only report and summarise on existing research provided by other well-funded research groups.

The report and Terms of Reference for the 2005 meeting were accepted by the Committee.

An additional issue was a questionnaire prepared by the SGPROD chair and sent to chairs of all ICES WGs and SGs in June 2004. The questionnaire concerned the BSRP participation in ICES WGs and SGs. Feedback was dissatisfying because only 20 out of 114 working group chairs replied. The beneficiary countries are well represented in the fishery research and management groups, and in the eutrophication groups, but less so in others. There was a major lack of participation in plankton groups and groups dealing with ecosystem health issues. The greatest obstacle is the funding problem for the experts who seem to be available in the accession countries and Russia. The questionnaire will be resent again, since some chairpersons apparently did not receive it.

Study Group on Baltic Ecosystem Model Issues in Support of the BSRP [SGBEM] (Doc. H:03)

The report of SGBEM was presented by the Chair, Wolfgang Fennel (Germany).

One of the ToRs for the Group was to analyse the scientific basis of ecosystem and fishery models of the Baltic. The BS is generally well monitored but requires more and better data. A question to be addressed is the link between environmental parameters and the fish stocks and the fishery. Zooplankton bulk models were examined, also the zooplankton-fish interaction models. The truncation of the individual models may be the key problem, since none of the models encompass the total. There is therefore a need to improve the mechanistic description and a need for initialisation and validation of models. The Chair of the SG made a suggestion to explore the possible better use of AUVs in restricted areas such as the Gulf of Riga.

Progress towards ToRs and the ICES Action Plan objectives was satisfactory in most cases.

The report and Terms of Reference for the 2005 meeting were accepted by the Committee.

Update status of the Baltic Sea Regional Project (Assistant Coordinator A. Andrushaitis)

The Assistant Coordinator updated the recent developments of the BSRP to BCC members. Most coordination centres and lead laboratories are now in place, and several meetings involving staff have been held to initiate work activities.

Baltic Committee contribution to ICES Action Plan

The Consultative Committee has requested all Science Committees, including the Baltic Committee, to contribute to the auditing of progress towards completion of the ICES Action Plan. A new spreadsheet file has been developed by the ICES Secretariat to assist with tracking the evaluation of progress towards fulfilling the Action Plan objectives.

Most study groups made satisfactory progress towards meeting their Terms of Reference and contributing to the objectives of the ICES Action Plan. Some topics are progressing slowly due to lack of expertise and participation in some study groups.

Matters arising from the Consultative Committee and Advisory Committees

Nominations for the ASC Award Selection Committee

Three Baltic colleagues were identified to assist with the selection of award winners at the 2004 ASC.

Integrated ecosystem advice, request from the Consultative Committee for new ToRs to promote the integration of fisheries and ecosystem advice

The Chair of the Consultative Committee circulated a letter to all working and study groups of ICES in August 2004 requesting their input for ideas and suggestions on how to promote the integration of fisheries and ecosystem advice. This letter was forwarded by the Chair of the Baltic Committee to all Baltic Committee members.

The letter from the Chair of the Consultative Committee was used when developing new Terms of Reference. Several of the new ToRs will support this request.

In addition a new ToR was added to all Baltic study groups to encourage integration and better communication between the groups. This ToR requests all Baltic study groups to plan their meetings accordingly.

Forthcoming symposia and theme session topics

The Baltic-oriented theme session at the 2004 ASC (Baltic Sea Ecosystem Structure and Dynamics – Consequences of Physical and Anthropogenic Forcing; Conveners: E. Aro and C. Möllmann) attracted a large number of contributions (28 oral presentations and four posters).

In 2003 the Baltic Committee proposed a theme session for the 2005 ASC (Material and energy flows in trophic networks of the Baltic Sea ecosystem; Conveners: Bärbel Müller-Karulis and Arturas Razinkovas). The Committee continues to support this proposal for 2005 and requests that it is not postponed to 2006.

Three new proposals for theme sessions were presented by the Baltic Committee. The descriptions are given below:

Holistic approach to management of the human activities in the Baltic Large Marine Ecosystem. Conveners: Jan Thulin and Andris Andrushaitis

This theme session will focus on progress in elaboration of the ecosystem-based assessment tools and management strategies for the Baltic ecosystem. Marine productivity, ecosystem health, fish and fisheries, and socio-economy aspects will be dealt with in an integrated manner. The session will examine the GEF Baltic Sea Regional Project's developments, aiming at strengthening environmental assessment and monitoring systems and at implementing an ecosystem-based approach to the management of the Baltic Sea.

Modelling for Dummies: Individual-based predation and growth models, their parameterization and uses in fisheries ecology. Conveners: Markku Viitasalo and unknown

Individual-based predation and growth models are useful tools for estimating the amount of carbon, fatty acids and other growth-supporting substances, as well as those with a potentially harmful effect, being transferred up the food chain.

However, for an Individual-based Model (IBM) to be realistic, the modelled predation cycle needs to be broken down to its components, i.e., search, detection, pursuit, capture or escape, handling and ingestion. Parametrizing most of these components usually requires taking into account a multitude of behavioural and physiological factors affecting the predator, the prey, and the environment during the predatory interaction. Also, coupling of the IBMs to population models remains a challenge.

This session invites presentations of different IBMs, explained in layman's terms, but especially descriptions addressing the experimental and field-based parametrizing and verification of the models, as well as presentations on the application of the IBMs to the real world.

Marine Biodiversity and Ecosystem Functioning (Conveners: Carlo Heip, Hermann Hummel (both at Netherlands Institute for Ecology, Yerseke) and unknown (preferably someone from North America))

Marine biodiversity fluctuates in time and space (e. g., due to fishing, eutrophication, habitat destruction, species transfers), but the impacts of these changes on the structure and functioning of ecosystems is unclear. This theme session will report and compare changes in marine biodiversity (e.g., including genetic and faunistic changes) and how these variations affect marine ecosystems and the provision of ecosystem services. Investigations involving all marine taxa and habitats are welcome.

Background information for the Consultative Committee: The Dutch colleagues who are proposed as Conveners are coordinators of a large EU Network of Excellence called Marine Biodiversity and Ecosystem Functioning (MARBEF; www.marbef.org). The network has > 50 marine and fisheries institutes as partners. One of the main topic areas being investigated includes fish biodiversity, which will be investigated by 15 fisheries institutes such as CEFAS, IFREMER, DIFRES, NIOO, IMR-Bergen, etc.

The theme session proposals will be submitted by the Chair of the Baltic Committee to the Consultative Committee for consideration.

Election of new Chair

The three-year term of the current Chair expires 31 December 2004 and cannot be renewed. A new chair was elected by members of the Committee. The new Chair will be Cornelius Hammer, Rostock, Germany.

Any other business

BONUS-project and the 7th Framework Programme of the EU

An update of the BONUS project was presented by its coordinator Kaisa Kononen (Finnish Academy of Science).

The coordinator noted that the EU is identifying priority research areas for the new 7th Framework Programme of research. The process is presently open for input via an EU website until 15 October 2004. The BONUS coordinator requested BC to support marine research in the Baltic region by sending a support letter to the EU.

The Chair noted that if the letter was meant to be an official communication from ICES, and to have the full support of ICES, it would have to support marine research in all areas of Europe and not only the Baltic Sea. Although it was felt that the Baltic is a good test candidate for the ecosystem approach to fisheries management, and thus especially suited for a corresponding suggestion, it was agreed that a coordinated ICES initiative has more weight and gives opportunities for the other science committees to contribute. The Chair discussed the issue with the ICES General Secretary and they prepared a draft recommendation requesting the ICES Delegates to authorize the General Secretary to prepare such a letter and send it to DG Research, with copies to DG Fish and DG Environment.

The recommendation received support from the Oceanography Committee who requested that the ICES Delegates contact their national EU offices and request those officers to encourage the EU to give marine research a high priority in its 7th Framework Programme.

This recommendation and the request to ICES Delegates was brought forward to the Consultative Committee by the Chair of the Baltic Committee for further consideration.

Review and quality assurance of study group reports

The Chair of the Baltic Committee noted that the review process for BC study group reports is unsatisfactory and has been this way for several years. Most Committee business focuses on consideration of resolutions, including new Terms of Reference, and various topics related to the Consultative Committee. The Chair proposed that the Committee in the coming years improves the way in which it assures the quality and relevance of the work done by study groups. A discussion of whether this is feasible in terms of an increased work load, availability of time during BC meetings for discussion of the reviews, and when to review reports (i.e., as draft or as final versions), revealed that a system to review the final reports should be implemented in 2005.

The Committee agreed that the present review process is sub-optimal and that it would discuss the matter intersessionally with the objective of implementing an improved review system during 2005.

The role of physical oceanography within ICES

The Baltic Committee members discussed the necessity to retain expertise in physical oceanography in ICES. The members are aware that declining participation in ICES of physical oceanographers is detrimental to its future work and more generally the development of integrated ecosystem assessments and management. The Baltic Committee encourages ICES to improve its links to this community to ensure its continued participation. The Chair of the Baltic Committee will present these comments to the Consultative Committee.

Membership and participation in working and study groups under the Science Committees

The Chair of the Baltic Committee was informed during the Consultative Committee meeting that membership in working and study groups under Science Committees is no longer restricted to participants appointed by ICES Delegates. It is now ICES policy that members of these groups can be any expert who in the opinion of the group chair can contribute scientifically to the group's Terms of Reference and its execution of work. The Chair encouraged chairs of study groups to identify and invite key experts who would be able to assist them with their work.

Closure

The Chair thanked participants for their constructive input and collaboration during the meeting, and the Committee thanked the Chair for his contributions during the past three years.

The Chair then adjourned the meeting.

Diadromous Fish Committee (I)

Chair: Niall Ó Maoiléidigh (Ireland)

Rapporteur: Malcolm Beveridge (UK, Scotland)

The Committee met on Tuesday 21 September from 14:00 to 18:00 and on Wednesday 22 September from 11:30 to 13:30. 18 participants attended the meeting.

Opening

The Chair welcomed the participants, reminding Delegates of the ToRs, aims, and responsibilities of the Diadromous Fish Committee. The Diadromous Fish Committee was to act as a forum for discussion of all aspects of diadromous fishes and to consider the status of stocks and recommendations for research as reported by Expert Groups and directly by members of the Committee.

Appointment of a rapporteur

Malcolm Beveridge (UK, Scotland) was appointed rapporteur.

Adoption of agenda and arrangements for the meeting

Changes to the order of business were briefly reviewed and the agenda was duly adopted. The arrangements for the meeting, including the use of audio-visual equipment and reporting procedures were outlined.

Committee business

Reports of SGSDf, SGBYSAL, and SGSSR

The Chair of the Diadromous Fish Committee presented a summary of the draft report of the Study Group on the Status of Diadromous Fish Species (Doc. I:02), drawing attention both to the information that had been compiled to date and to the deficiencies. The Committee was asked to consider recommendations for further reports from countries, the usefulness of summarising information in tabular form, and the need to develop a plan of action as final inputs to complete the draft and formally submit this to ICES. It was noted that many blanks in the tabular summaries could be easily completed. Many species, for example, were not present in a number of countries; remaining gaps could then be readily identified and specific requests for information put together. Principal deficiencies were in North America. The Committee noted the September deadline for the SGSDf report, but agreed that the updated draft, including the recommended additions should be re-circulated for comments before formal presentation to ICES by October 2004.

The Report of the Study Group on the Bycatch of Salmon in Pelagic Fisheries (SGBYSAL – Doc. I:01), was presented by the Chair, Marianne Holm (Norway). While much progress had been made on identifying the overlap in time and space between pelagic fisheries and the likely distribution of salmon post-smolts and adults, the absence of critically important disaggregated commercial catch data from NEAFC member countries was highlighted and discussed. It was noted that both NASCO and the ICES secretariat had written to NEAFC to help expedite the data from member states. It was also suggested that NEAFC vessel monitoring system data, although only of recent origin, may also be used in the shorter term. The DFC also noted that the next SGBYSAL meeting must take place after the various pelagic working groups had met, in order that the appropriate fisheries scientists could attend, but prior to the meetings of the Atlantic salmon working groups in April 2005. It was noted that the report and

its recommendations were of importance to the NASCO SALSEA research project and that efforts must be made to ensure that the findings were fed into the development of the research project. The Committee resolved to hold the Study Group again in 2005 if either the appropriate data were made available or a strong commitment to providing these data was made. Similarly, the Committee recommended that a member of the Fish Technology Committee be invited to the meeting to allow a more in-depth review of inter-calibration between commercial and research trawling methods.

No report is available as yet from the Study Group on Salmon Scale Reading (SGSSR). This meeting, to be chaired by Lars Karlsson (Sweden), will be held in Riga during November 2004. The ToRs were reviewed by the Committee and it was agreed that they should remain unchanged. It was noted that both wild and hatchery fish scales were being considered, but that the two-day meeting would be unable to cover topics such as sea trout, North American Atlantic salmon scales, or isotope analysis. Given concerns expressed by Delegates about the importance of scale reading work for other diadromous fish species, the remit of the Study Group should be reviewed at next year's DFC meeting with a view to expanding the ToRs.

Review of status of stocks and research requirements for WGNAS, WGEEL, and WGBAST

While it was acknowledged that ACFM reviewed the advice from the Working Groups on North Atlantic Salmon (WGNAS), Eels (WGEEL), and Baltic Salmon and Sea Trout (WGBAST), the Committee considered that new developments, recommendations, and future plans in these Working Group reports should also be considered by the DFC.

The status of stocks and recommendations for further research by WGNAS were presented by the Chair of DFC. Most of the major stock complexes assessed by ICES are outside safe biological limits, and much of the recent decline has been attributed to problems in the marine habitat. It was noted that recommendations from WGNAS were included in the developing NASCO SALSEA Project (see below), intended to comprehensively investigate the biology and ecology of Atlantic salmon at sea. It was also noted that there were continuing developments on Atlantic salmon genetics, through EU and other initiatives that had broad implications for stock identification. The Committee noted that the pilot scale tagging study, recommended by the WGNAS and planned for April 2004, in which 500–1000 externally tagged large salmon would be released at sites in major salmon farming countries (Norway, Scotland, Ireland, Russia, Faroe, Iceland), was postponed for a year for a variety of reasons. The salmon farming industries in some countries were reluctant to support the work and there were health concerns from veterinarians. In stressing the significance of farm escapees for the management of wild Atlantic salmon stocks, the attention of the Committee was drawn to the most recent data from the Faroes, which indicated that 25–30% of salmon caught in the commercial fishery were of farmed origin.

The WGEEL report (ICES CM 2004/ACFM:09) was presented by the Chair (Willem Dekker, Netherlands). The information clearly showed that both eel recruitment and landings had declined significantly in recent years and were currently at all time historic lows. Moreover, further significant declines were inevitable. Work on the development of management targets and post-evaluation was presented and a summary of the status of Management Plans in European member states was given, showing that few countries had yet elaborated such plans and that none had as yet been implemented. Parallels between the status of eel and sea trout stocks were drawn. Clarification was provided on the interactions between the European Commission and ICES with regard to the provision of scientific advice. While there is a Memorandum of Understanding between the two bodies regarding the provision of advice, there had been no specific request to ICES for advice on eels. The DFC was reminded, however, that it was within the ICES mandate for the Committee to make a resolution for an eel working group through a science committee. General concern was expressed by the Committee that there was

inadequate response to the current eel situation both at scientific (ICES and EIFAC) and management (EU) level.

It was reported that the EU was currently considering emergency action, in which exploitation of all life stages of the eel might be closed for several months each year until scientifically-based Biological Reference Points (BRPs) were developed and could be introduced. The responsibility for developing such BRPs for eels was not clearly assigned. The development of appropriate BRPs for Atlantic salmon in the North East Atlantic had been facilitated by a specific EU-funded concerted action (SALMODEL) and these were applied by ICES in the provision of advice. There was general consensus that a similar approach would progress these issues for eel. The Committee agreed to update the current ToRs for the WGEEL with the intention that there be a working group meeting held in either November or December in 2004.

The Committee considered a presentation of the WGBST (Doc. ACFM:23) providing information on status of stocks and research recommendations. Specific attention was paid to growing concerns about the poor survival of hatchery-produced smolts (possibly due to the increasing size of hatchery fish as a result of artificial high nutrition feeds) and the perilous state of sea trout populations in the northern part of the Baltic due to bycatch in coregonid fisheries and the impact of hydro-schemes. Overlap with WGNAS recommendations for Atlantic salmon was noted and ideas for future theme sessions were discussed (see below).

Inclusion of a wider range of Diadromous Fish stocks and topics

Conclusions and recommendations of the 1st International Sea Trout Conference, held in Cardiff 6–8 July 2004, were presented (K. Whelan, Ireland). It was noted that an international forum to focus on the management and protection of stocks (similar to those for salmon and eel) was absent. Despite the fact that sea trout does not generally undertake large-scale geographic migrations and is therefore not exploited outside of national jurisdictions, the Committee felt that much could be done to improve coordination of research and monitoring efforts among participant ICES countries.

Consultative Committee and Diadromous Fish Committee business

Links with other committees and overlap

Attention was drawn to the developing links with other committees. Specifically, the Chair of SGBYSAL had requested that a nominee of the Fisheries Technology Committee should attend the next SGBYSAL to improve the input on inter-calibration between commercial fishery fishing methods and research fishing methods. Similarly, a member of the Mariculture Committee was on the steering committee of the 2005 Symposium on “Interactions between cultivated and wild diadromous fish species”.

Specific requirements to help the Diadromous Fish Committee in its work

No specific requirements were noted.

Nominee for Merit Awards Steering Group and nominee for committee for ICES/PICES Young Scientist Conference 2007

Håkan Wikström agreed to represent the DFC on the Steering Group. Details were also presented for the ICES Young Scientists Conference, to be held in 2007. Nominations for membership of the Steering Committee, which would be tasked with choosing a suitable theme and helping organise the conference, were also sought.

Adequacy of arrangements for meeting

The Committee noted that as far as possible, future DFC meetings should be scheduled to avoid clashing with those of the Mariculture Committee. It was also felt that a meeting room which facilitated round table discussion rather than an auditorium style room was preferable.

Forthcoming symposia and theme session topics

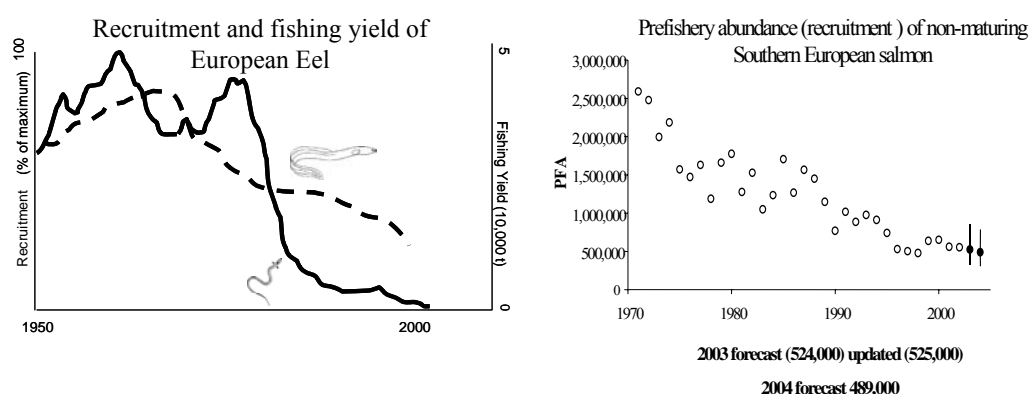
An overview of theme sessions for 2005 was presented, drawing specific attention to those that were likely to be of most interest to DFC Committee members and asking them to bring them to the attention of colleagues.

Feedback on Theme Session 'Non-high seas habitats and the way that the different diadromous fish use these' (2004)

Fourteen submissions were to be presented as papers (two cancelled) and six as posters. Two papers were on shad, six on eels, and four were on salmon. Three of the presentations were from North America.

Theme session in 2005 on 'rebuilding diadromous fish stocks'

The SGSDF report had highlighted that many species were vulnerable or endangered. The theme session would focus on stock rebuilding programmes, in which status of stocks, a review of threats and problems, stakeholder involvement, action plans and their implementation and monitoring should all be included. While papers on entire programmes, both implemented and planned, would be sought, aspects of programmes would also be acceptable. Examples of stock rebuilding programmes include the development of the NASCO guidelines and specific examples from the Baltic and Bay of Fundy for Atlantic salmon, the EU Action Plan for European eels, Irish and Scottish sea trout recovery programmes, recovery programmes for Norwegian Atlantic salmon stocks impacted by *Gyrodactylus salaris*, striped bass in the United States, sturgeon in Europe, and lampreys in Portugal. The current title was changed to 'Rebuilding programmes for diadromous fish populations', and it was suggested that two further Conveners in addition to Ted Potter, representing non-salmonid and North American interests, should be sought.



[left] Historical recruitment (as percentage of maximum) (solid line) and fishing yield of European Eel 1950–2000. Diadromous Fish Cttee (dashed line) (CM 2004/I:02).

[right] Historical recruitment (as prefishery abundance) of non-maturing European Salmon 1971–2004. Diadromous Fish Cttee. (CM 2004/I:01).

Update on ICES/NASCO symposium in 2005 – ‘Interactions between cultivated and wild diadromous fish species’

An update was presented to the Delegates by the symposium conveners. The date and venue were given. The reason for the symposium, target groups, the structure of the symposium, presentation formats, and publication plans were summarised. The availability of symposium details on the ICES and NASCO websites and in the first announcement flyer was also given. It was noted that the conveners aimed to create an environment which would foster constructive dialogue among all parties. NASCO accorded the symposium the highest priority and felt that it would be similarly regarded by both the salmon farming industry, which was committed to sustainable production methods and sustainable markets, and by all those concerned with the management of the seas.

The Committee noted particular concern about the funding of the symposium. It was estimated that to run such a symposium, in which the best speakers could be invited, would cost around £ 100 000. Symposium fees would cover approximately 50%, the rest coming from public and private sponsors. The NASCO Board had committed £ 10 000, with significant amounts also being pledged by the Norwegian salmon farming industry, government bodies, and research councils. It was noted that ICES would contribute DKK 10 000 (~£ 1 000) directly, to support the publication of flyers and provide secretariat support. ICES would also support publication of the proceedings in the *ICES Journal of Marine Science*. It was noted that there were no further funds in the ICES budget for the meeting, but that ICES would cooperate with NASCO in seeking sponsorship.

The Committee expressed its satisfaction with the progress being made and there was a consensus that the theme was sufficiently wide to include non-salmonid species interests. It was noted that ICES felt that the European Aquaculture Society, with its broad representation of the European Aquaculture industry, should be invited to join the meeting steering committee. The conveners agreed to approach the organisation to seek their involvement in the steering committee. The importance of choosing an editor who was both technically skilled and able to devote sufficient time to the task to get the proceedings to publication within a reasonable time period (15 months) was also highlighted. Peter Hutchinson, NASCO, had been nominated to do this as he had been responsible for bringing the previous ICES/NASCO joint Symposium in Bath (1998) to publication in a very satisfactory manner.

The Committee was informed that a complementary meeting emerging from a NASCO initiative (Sal-Coop) to bring together scientists and the aquaculture industry, will also take place in 2005 at AQUANOR, entitled ‘*Tackling it together*’. It was anticipated that a series of recommendations would be produced that could be fed into the ICES/NASCO symposium.

Joint PICES/ICES/NASCO Symposium for 2007/08 on ‘Factors affecting mortality of salmon at sea’ – update from NASCO on marine research initiative

A presentation was made by the NASCO Secretariat, summarising the work of the International Atlantic Salmon Research Board (www.salmonatsea.com) and the inventory of research that it had carried out. An account was given of the range and type of projects and costs. It was explained that the inventory was essential in highlighting knowledge gaps and research opportunities. One direct output from the exercise was the SALSEA project, which had been drafted in late 2003, and which comprised a suite of three work packages that comprehensively addressed the issues of Atlantic salmon mortality at sea. A further workshop will be held in Dublin in October 2004 to review the present project draft, strengthen the North American dimension and shape the project into a number of integrated components that could be presented to potential public and private sector funders. Outputs from the SALSEA project will feed directly into the proposed PICES/ICES/NASCO symposium in 2007 or 2008. There would also be opportunities for those working on Baltic species, on other diadromous or ma-

rine species to take part in SALSEA or benefit directly from anticipated outputs in such areas as tag developments. Due to the complex nature of the SALSEA proposal which would require a high level of scientific coordination, the Committee undertook to investigate the establishment of an ICES/NASCO planning group to coordinate the marine research once funding had been acquired.

Action Plan and future topics for the Diadromous Fish Committee

Action Plan progress and audit

The DFC Chair gave a summary of how the Action Plan would be tracked by ICES, using as an illustration the work that had been done by the Study Group on the Status of Diadromous Fish Species (SGDFS) and the Study Group on Salmon Bycatch (SGBYSAL). It was noted that the audit would be in database format, with fields indicating the year initiated, Action Plan code, narrative text, terms of reference, the role of any Expert Group, links to relevant report(s) and comments. The database will be used by ICES, clients, and stakeholders to quickly provide an assessment of progress with specific elements of the Action Plan. It was also noted by the Committee that those responsible for undertaking the work were also responsible for completing the database and it was questioned whether this would provide a wholly unbiased audit of progress. Questions were also raised about how audit results were to be used and the consequences of recording an “unsatisfactory” category.

Possible interactions with DIADFISH

A presentation was given on the DIADFISH project (a network of excellence sponsored by the EU), established in 2002 to generate funding opportunities for work on diadromous fish species in EC member states, although a number of Russian institutions had also been accorded membership. The DIADFISH website provided valuable information not only on its activities, such as the Symposium on Diadromous Fish, to be held in Bordeaux in March/April 2005, but also on expertise and research at member institutions.

Draft Resolutions

Resolutions for Working Groups/Study Groups

- A Study Group on the Bycatch of Salmon in Pelagic Trawl Fisheries [SGBYSAL]. This need arises from a request by NASCO to provide estimates of bycatch of salmon in pelagic fisheries and advise on their reliability, for its meeting in June 2005.

It was noted by the Committee that this Study Group should only take place if there is a strong prior commitment from participants to make available the requisite disaggregated data in pelagic catches.

- A Study Group on the Status of Diadromous Fish Species [SGSDFS]. Proposed as a result of the Committee’s decision to establish “baseline” status report on all diadromous fish in response to the query on the scope and diversity of species which should be handled.

This will complete specific country inputs on the status of diadromous fish and particular threats to these species, as well as developing a strategy for highlighting threatened and endangered species.

- A Study Group on Salmon Scale Reading [SGSSR]. This was proposed for 2004, but may be postponed until early 2005.
- A Working Group on Eels [WGEEL]. In the absence of a specific request for advice from the EU to ICES and considering the tenuous status of eel stocks internationally, the Committee strongly endorsed holding a meeting of this Work-

ing Group in November or December in 2004, or failing this, at an early date in 2005.

Proposals for theme sessions/symposia or other actions

- 2005 – A theme session on ‘Rebuilding programmes for diadromous fish populations’ has already been proposed for 2005 and is being developed further.
- 2006 – A theme session on ‘Strategies for monitoring and assessing diadromous fish’ is proposed for 2006. Considering the lack of information on some species and the lack of coordinated and standardised information on other species, especially threatened and endangered species, there is an obvious need to assess current and required assessment methods, including the use of data from monitored rivers and novel sampling techniques which may now be available.
- 2007 – A theme session on ‘Application of genetic identification to management of salmon stocks’ is proposed for 2007. Advances in this field have been significant in recent years and the potential for providing stock-specific catch advice (at regional, river, and tributary level) is being realised. The theme session will allow the potential for these applications to be reported and the implications for salmon management to be discussed with the scientific community, stakeholders, and resource managers.
- An ICES/NASCO Planning Group on Salmon Research at Sea (PGSALSEA) should be considered to coordinate aspects of the new international SALSEA initiative once appropriate funding has been acquired (possibly 2006 or 2007).

Any other business

No other business was raised.

Living Resources Committee (G) and Resource Management Committee (D) – Joint Session on Surveys

Chair: Carl M. O'Brien (UK)

Rapporteur: Dave Reid (UK)

The Joint Session on Surveys met on Tuesday 21 September from 14:00 to 18:00. 30 participants attended the meeting.

Opening

The Chair opened the meeting, welcomed the participants and the Rapporteur was appointed. The Chair outlined the agenda and timetable for this single session of joint Committee business. These were adopted without modification.

Presentation and adoption of reports and draft Resolutions

Baltic International Fish Survey Working Group [WGBIFS]

The Chair of WGBIFS, Rainer Oeberst (Germany) presented Doc. G:08. The Group was able to meet all their ToRs this year. As requested by the Chair of LRC the report concentrated on areas where there were possible needs for improvement. The surveys were completed mostly as specified, although small areas in the Kattegat and the Gulf of Finland were missed. The main difficulties in the acoustic surveys lay in the rapid changes in the ratio of herring to sprat in the hauls, leading to difficulties in raising to rectangle. This problem was discussed at the meeting of WKSAD in Aberdeen (reported below), but apart from more hauls no obvious solution was found. In the trawl surveys, the main problems remained those of inaccessible grounds to fishing and the different gears deployed by national surveys. Inter-calibration especially for cod was difficult due to low stock abundance. The presence of anoxic bottom layers in some bays and basins was also a problem as the fish moved into the pelagic zone and became inaccessible. WGBIFS will continue to seek solutions to these problems.

Planning Group on North Sea Cod and Plaice Egg Survey [PGEGBS]

Mark Dickey-Collas (The Netherlands) presented Doc. G:03. This was the first attempt at a global coverage of this new survey and was remarkably successful, given the *ad hoc* nature of the vessel provision. Six nations eventually took part in dedicated or adapted surveys. It was possible to cover at least part of the survey area throughout the season, and to achieve a detailed and comprehensive coverage at peak spawning towards the end of February and the beginning of March. Analysis of samples is ongoing and will be completed for the Group's next meeting in 2005. The main problems encountered were bad weather and non-standardized sampling gear.

Working Group on Mackerel and Horse Mackerel Egg Surveys [WGMEGS]

The Chair of WGMEGS, Dave Reid (UK) presented Doc. G:10. During 2004 the Group worked by correspondence. A planned joint meeting with SGSBSA was not possible in 2004 due to other competing commitments. The results of the WKMHMES were considered and most recommendations relevant to the survey were adopted. A full planning document was prepared by the Chair and used by all cruise leaders during the surveys. Additional contact was maintained during the survey, allowing rapid response to immediate problems. The result was one of the best coverages achieved to date in the survey time-series. As scheduled, the survey analysis was fully complete by September 2004 and the biomass and egg production

data delivered to the WGMHSA. This is the first time this has been achieved in the survey year.

Working Group on the International Bottom Trawl Surveys [IBTSWG]

The Chair of IBTSWG, Jean-Claude Mahe (France) presented Doc. D:05. In general, the surveys were executed according to plan in 2004. There are still some standardisation issues, particularly with the GOV modifications by CEFAS in the first quarter survey and in the use of the MIK net. Additionally, there are some concerns over the relative performance of the GOV used by different nations. The Group planned for a switch to a full depth-stratified design in the western area, and a study is being carried out for the Celtic Sea and in the Irish area. Work on the DATRAS database is almost complete and it should be online via the ICES web site shortly. The question of data ownership and open access was raised again without solution. Quality assurance work on the IBTS database at ICES Headquarters is continuing.

Working Group on Beam Trawl Surveys [WGBEAM]

Guus Eltink (The Netherlands) presented Doc. G:04. The surveys involving four countries were carried out as planned. The Group has started work on improving the index calculation method from these surveys now that a reasonable time-series is available and following the outcome of the EU-funded projects MIQES and EVARES. The Group continued to work on the production of catchability criteria for this survey. However, the five different beam trawls used makes this a complex process. Beam trawl data from all the surveys are now incorporated into the new trawl survey database DATRAS, and will be available shortly. 11 specified epibenthic taxa are now included in the standard data collection protocol for these surveys. It is hoped that these can also be incorporated into DATRAS. Richard Millner (UK) will take over the Chair from Gerjan Piet (The Netherlands) from 2005.

Planning Group on Aerial and Acoustic Surveys for Mackerel [PGAAM]

As there was no representative from this Group, Doc. G:07 was neither presented nor discussed.

Planning Group for Herring Surveys [PGHERS]

Chris Zimmermann (Germany) presented Doc. G:05. Six acoustic surveys and three larval survey sets were carried out in 2003. The Group was responsible for working up the data and forwarding to the HAWG. No major problems were encountered. The Group is planning to move towards a fully integrated acoustic survey design in the near future. However, at present, concern about scrutiny standardisation prevents this. The 2004 survey has been designed to allow major overlap areas between vessels, especially in the important Shetland area. This should allow resolution of the scrutiny questions. A further scrutiny workshop will be held in 2005 and the overlaps evaluated. An exchange of maturity stage photographs was organised and these will be used to ensure harmonisation of maturity determination on the surveys. The HERSUR database for acoustic survey data is still being maintained by Denmark, and this will be enhanced to provide metadata to HAWG.

Planning Group on Northeast Atlantic Pelagic Ecosystem Surveys [PGNAPES]

The Chair of PGNAPES, Jan-Arge Jacobsen (Faroes) presented Doc. D:07. The surveys were carried out as planned in 2004 and the biomass estimates for Atlanto-Scandian herring and blue whiting produced. The Group also provided estimates of the zooplankton abundance and distribution as well as CTD profile data. The Group described the migration pattern of the two fish species and the changes in these in recent years, as well as their relationship to the hydrography and zooplankton situation. This represents an important approach to the provision of

integrated data, and should be seen as a model for other survey groups. In addition, PGNAPES planned the surveys for 2005 and took measures to ensure standard survey practices and protocols.

Workshop on Survey Design and Data Analysis [WKSAD]

The Chair of WKSAD, Paul Fernandes (UK) presented Doc. B:07. The workshop carried out a comprehensive review of survey design methods and analysis and agreed to adopt Cochran's 11 steps as a guide to good practice. It considered a range of survey metiers including trawl, acoustic, ichthyoplankton, and TV. It also addressed questions such as random versus fixed designs, stratification, abundance and variance estimation, as well as final application of data. Some survey-specific issues were identified such as tow length, use of trawls in acoustic surveys, and others. The tendency to have entrenched and model-based approaches was identified as a problem, as well as the weakness in reporting estimation procedures and precision. An agreement was reached on the best practice designs, and identified systematic sampling or stratified random sampling rather than simple random sampling as the best approach. The workshop agreed that it was desirable to incorporate ancillary data where this was of good quality, and to expand the use of fishers in future survey work. The importance of inter-calibration between vessels was recognized.

Any other business

There had been full and frank discussions of the reports at the end of each presentation and the need for further general discussion was not necessary. Participants in the session, and the presenters, found the session invaluable and proposed that the session be scheduled for the next ASC in 2005.

Publications Committee (PUB)

Chair: Bill Turrell (UK)

Introduction

The Committee met during one full day meeting and one partial day meeting on 20 September and 25 September 2004. The first meeting was attended by 13 participants (of which there were five Committee members, three IJMS editors, three publisher representatives, three Secretariat coordinators, and the President). The second meeting was attended by 13 participants (six members, four IJMS editors, and three Secretariat coordinators). It was noted that this was the third year the Committee has sat under the amended Rules of Procedure with the Chair reporting to the Consultative Committee.

Review of the 2003 Publications Committee report

The Committee reviewed the 2003 Publications Committee report, and the principal issues were:

ICES Advice Series: The 2003 Publications Committee was charged by the Consultative Committee to reconsider the possibility of an Advice Series, which would remove Advisory Committee reports from the Cooperative Report series. A final recommendation was prepared and resulted in a change in the format in which ICES publishes its advice.

New ICES Editor: The Committee gratefully notes that its recommendation to appoint Dr A. Payne as Editor-in-Chief (IJMS) was endorsed by the Bureau, and by the 2003 Council.

Review of ICES Publication Activities 2002/2003: In all, 2002/2003 was an outstanding year for publications in ICES. Much progress was made with the *ICES Journal of Marine Science*, as well as the internal publication series. Of particular note is the start of a process that will lead to the digitisation of past ICES publications. The production of a highly commended, user-friendly status report for European Seas was another highlight of the year.

Publication issues raised by the Consultative Committee

Two main issues were raised in relation to the Publications Committee in the 2003 Consultative Committee report:

- 1) The Consultative Committee noted the introduction of the new series for publication of ICES advice. It considered this development a good step forward but that its introduction should be closely monitored by the Chair of the Publications Committee and MCAP. The Publications Committee recommended that the new advice format should be reviewed after it has been in place for several years.
- 2) The Consultative Committee noted the increased interest in web-based products, and noted that Cooperative Research Reports are also provided on the ICES Website, but sometimes in a form that cannot be printed or copied. This restriction has now been lifted.

Matters arising 2003–2004

Ethical concerns regarding animal experiments

Recently the use of animals as part of scientific research has attracted increasing attention. On one hand, the use of animals in experimental settings is important because the results provide new knowledge about key parameters and variables that can lead to more comprehensive management of natural resources. On the other hand, a key consideration in animal research has been to ensure that experiments are designed with ethical consideration of the well-being

of the organisms used in manipulative studies. As the flagship publication of ICES, the *ICES Journal of Marine Science* should demonstrate a philosophy of societal responsibility by ensuring that ethical practices guide the publication of articles under its auspices.

To address this issue, the editors of the *ICES Journal of Marine Science*, in consultation with the Chair of the Publications Committee and the General Secretary, propose to include the following as part of the instructions to authors:

Authors should provide confirmation that they adhered to the legal requirements of the country in which the work was carried out. If ethical issues arose during the course of the study, they should be described in the manuscript. In exceptional cases, where unresolved ethical questions remain, the manuscript may be sent to appropriate experts in the ethical use of animal research for additional refereeing. In such cases, the decision as to whether the manuscript is accepted for publications remains with the editor or, in the final instance, the editor-in-chief.

The statement outlines a clear procedure for dealing with concerns raised by reviewers but does not impose a policy that is beyond the regulations of each country. As with all issues facing the use of animals, the position of a species/group on the evolutionary ladder impacts on ethical guidelines, and is part of the development of all conventions and recommendations on the ethical use of animals in research. In ICES countries for example, trawl sampling does come into consideration because of the balance of societal needs (for assessments, new knowledge), the moderate level of stress, and the humane processing of samples (fish are subsampled, some are released, others are euthenized in the same manner as the commercial fishery but generally in smaller numbers so processing is more rapid); these procedures are considered acceptable. Another topic of concern might include seals which are sampled in many countries. Animals sacrificed for assessments and biological collections are killed with a rifle, death is nearly instantaneous (hence suffering is not chronic), and the need for information is high – once again, such protocols are not an issue, and they meet ethical guidelines in any of the national and international conventions currently applied.

Membership: This continues to be a concern for the Committee. In 2003, the size of the Publications Committee was increased by Council resolution from five to seven. However, one of the two new positions was not filled. In addition, according to the present rules four members of the present Committee have served their three-year term and hence are no longer eligible to serve on the Committee. After considerable discussion, the General Secretary, the President, and the Committee arrived at a revision of the Rules of Procedure that will; a) place membership under national nomination with two nominations per country, and b) remove the three-year limit on membership. A resolution was prepared for submission to the 2004 Council.

Symposia: The Publications Committee noted that the Consultative Committee is now regularly recommending ICES sponsorship of three symposia per year. For the past few years, however, ICES has only sponsored two per year. As a consequence two special issues (each about 250 pages) devoted to symposium papers have appeared annually in the *ICES Journal*, and no publication backlog has developed. In order to deal with the increase to three ICES symposia each year, Elsevier has agreed to increase the number of special issues appearing each year to three, commencing in 2006. Hence the total number of volumes to be published in 2006 will be nine. This arrangement will not lead to an increased financial burden for ICES, because Elsevier will recover the increased publication costs through increased subscriptions and hopefully there will be an increased volume of purchased electronic downloads.

The Publications Committee also noted the importance of high quality, topical symposia. It is in fact the symposia volumes that are chiefly responsible for a high ISI rating of the *Journal*,

and annual fluctuations can be attributed to symposia of varying interest to the general marine science community.

The following table outlines future symposia publication commitments:

TITLE	MEETING DATE	COVER DATE
Quantitative Ecosystem Indicators for Fisheries Management (Paris)	Apr 2004	2005
Influence of Climate Change on North Atlantic Fish Stocks (Bergen)	May 2004	2005
Gadoid Mariculture: Development and Future Challenges (Bergen)	Jun 2004	2006
Climate Variability and Subarctic Marine Ecosystems (Victoria, BC)	May 2005	
Interactions between Cultivated and Diadromous Fish Species (Bergen)	Autumn 2005	
Ecosystem Studies of the Subarctic Seas (ESSAS)	2005	
Marine Bio-invasions (US East Coast; Boston, MA?)	Early 2006	
Harvest Control Rules / Precautionary Approach (Poland/Rome)	Late 2006	
Fishing Technology in the 21 st Century (Boston, MA?)	2006	
Fourth International Symposium on Zooplankton Production (Hiroshima)	Spring 2007	
Marine Environmental Indicators (UK)	2007	
Fisheries Acoustics Science and Technology (??)	2007	
Ecosystem Fisheries Management (??)	2008	
Salmon Mortality at Sea (??)	2007/8	
International Polar Year	2008	

Following the decision to increase symposia volumes from two to three, the organisers of the Fourth Symposium on Zooplankton Production can be informed that the proceedings can be published in the IJMS.

2004 ASC paper submission: The percentage submission of full papers to the 2004 ASC has fallen compared to 2003 and 2002. This year only 65% of papers were submitted in time to be included on the ASC CD-ROM. In 2003 this figure was 72% and in 2002 it was 73%. The total number of papers was higher in 2004 owing to the large number of theme sessions. The Committee is concerned by the decline in the submission rate, which may be partly explained by a low perception of the utility of ICES CM papers. Authors are also increasingly unaware of the status of CM papers, in as much as they can be works in progress, and that publication as an ICES paper does not prevent publication elsewhere. Papers which are not submitted ahead of the ASC cannot receive publicity. The ICES Communication Officer has also noted a trend whereby paper abstracts increasingly do not reflect the content of the final paper. The overall impression is that the move towards an increasing number of theme sessions, with the attendant increase in the number of overall papers results in lower scientific standards. The Committee will review the letter to authors sent out by the General Secretary when papers are accepted in order to try to address some of these concerns.

ICES Secretariat Publications: In 2003 the Secretariat devoted editorial work towards the production of the report *Environmental Status of the European Seas*. After the success of this report, the Secretariat has focused on a similar report for the GIWA initiative of UNEP. The resources needed for the preparation of the GIWA report has resulted in only one edition of the Newsletter in 2004. It is hoped to return to two issues in 2005.

Communications strategy: The Secretariat informed the Committee that the Communications strategy produced in 2003 has been revised, and a Bureau document (Bureau 1396) will be presented to Council this year describing the changes. The Committee notes the developments of these policies and will include the finally agreed policy as part of the Publications policies.

ICES status reports: The Committee noted that a variety of status reports are being developed by expert groups (e.g. WGOH, WGZE, WGPE, WGHAB). These status reports will evolve into one of the fundamental products required to support integrated assessments which is a fundamental aspect of ICES advisory work in the future. Expert groups are encouraged to improve the format, content, and quality of status reports, and where possible publish them each year as *Cooperative Research Reports*. The Committee also considered that it should review the production of status reports after more experience is gained in their production. The new advice format addresses the Committee's concerns of last year that stock assessments should also be presented in summary form in a status report format.

ICES Editor: The Committee noted that the ICES Editor, Judith Rosenmeier, has retired. The Committee expressed its thanks for the effort and skill Judith Rosenmeier brought to the post. The Committee welcomed the appointment of the new ICES Editor, Bill Anthony.

Extension of IJMS contract with Elsevier: The two-year contract extension with ICES will run from January 2004 through December 2005. Discussions between the IJMS Editor and the General Secretary concerning the publishing contract commenced at the 2004 ASC.

New ICES Journal Editor: Verena Trenkel (IFREMER, Nantes) has joined the ICES JMS editors. Chris Frid will step down in December 2004, and a replacement is being sought.

New Secretariat Structure: After the restructuring of the Secretariat, some editorial responsibilities have changed. These are as follows;

ICES Fisheries Statistics: Previously – ICES Fisheries Adviser. Now – ICES Data Centre Manager.

ICES TIMES: Previously – ICES Environment Secretary. Now – ICES Head of Science.

Plankton Leaflets: The Committee noted the successful publication of the *ICES Identification Leaflets for Plankton* as a CD-ROM and also on the ICES Website. The Committee wishes to particularly note the hard work which went into this development by the Secretariat and by the editor, J. Alistair Lindley.

New editor of Disease Leaflets: Since the term of the previous editor of the Leaflets, Sharon McGladdery, came to an end, the ICES WG on Pathology and Diseases of Marine Organisms (WGPDMO) nominated a new editor at its 2004 meeting (9–13 March 2004): Stephen W. Feist, CEFAS Weymouth Laboratory.

Books: The Committee noted that several high quality books have been published resulting from work carried out under ICES expert groups or at ICES symposia. This is certainly to be encouraged, but the Committee renewed its advice that editors of such publications keep the ICES Secretariat informed of progress, outline the review-editorial process, and provide a brief summary of the proposed content. In addition, the Secretariat should see a copy of the proposed cover design in order to check the logo use. The Secretariat will then be happy to provide copyright permission for the use of the logo. This will next occur for a volume on Cod and Climate Change.

Japanese translation of the Code of Practice on the Introductions and Transfers of Marine Organisms: The General Secretary accepted an offer to make a Japanese translation of the *Code of Practice on the Introductions and Transfers of Marine Organisms* provided that (1) the normal editorial screening process of the *Journal of the Japanese Society of Fish Genetics and Breeding Science* will ensure that the translation will be technically and scientifically correct; (2) the International Council for the Exploration of the Sea will be acknowledged as the source of the original publication.

ICES Publications activities in 2003/2004

ICES Journal of Marine Science: The Editor presented a full report of *Journal* activities in 2003/2004 (Pub Doc: 2004/06). A meeting of all editors in January 2003 proved extremely useful. The *Journal* would like to repeat this in 2005, possibly with a meeting at the Aberdeen ASC. The *Journal* is attempting to recruit a sixth editor, and if submission rates continue to increase, there may be a need for seven editors. There is currently no backlog of papers, and the average time from submission to publication is 10 months. When delays occur, it is often the result of authors themselves holding back papers following review. A maximum of three months will be set for authors to revise papers, after which papers will have to be resubmitted. The subject matter of *Journal* publications has swung towards fishery management areas. Science Committees are encouraged to promote the *Journal* among their expert groups. Approximately two thirds of papers are submitted from Government agencies, and one third from Universities, showing the *Journal* is succeeding at reaching new science communities. 158 papers were submitted in 2003, a record for the *Journal* to date.

ICES Journal of Marine Science – Publisher's Report: The publishers presented a full report of *Journal* activities in 2003/2004 (Pub Doc: 2004/01). A major project is underway to roll out an Electronic Editorial System. This will greatly improve the editorial process and be of benefit to both editors and authors. There is a general decline in the number of subscriptions for the *Journal* (215 in 2004 compared to 300 in 2000). However, this trend has been noticed by all journals as libraries move to electronic delivery. The number of electronic pay-per-view downloads is increasing. The ISI rating has decreased from 1.76 in 2002 to 1.06 in 2003. The high value in 2002 was due to a popular symposium volume. The dependence of the ISI rating on good ICES symposia was again noted. Income to ICES for 2003 was approximately 30,000 UK pounds. This was a decrease from 44,000 UK pounds in 2002. However, an accounting error in 2002 resulted in ICES receiving a double payment. The correct figure should have been 22,000 UK pounds. Therefore *Journal* income actually has increased again in 2003. No increase in income is projected for 2004. The price of a subscription will be increased once the *Journal* moves to three symposia volumes per year.

ICES Cooperative Research Reports: The General Secretary presented a report of CRR activities in 2003/2004 (Pub Doc: 2004/03). A total of ten CRRs were published. Production time for a CRR has been reduced.

ICES Identification Leaflets for Plankton: The Editor presented a full report of activities in 2003/2004 (Pub Doc: 2004/04). Although only one new leaflet has been issued this year, there was a major effort in converting the leaflets to electronic format. The Editor has agreed to a method to add updates/amendments to the leaflets as they arise, and these will appear on the ICES Website.

Additional reports were presented for the *ICES Identification Leaflets for Diseases and Parasites of Fish and Shellfish*, the *ICES Techniques in Marine Environmental Sciences*, the ICES Website, and the *ICES Newsletter*. All series are progressing well.

Review progress with the Work Plan

At the 2003 meeting of the Publications Committee, a template assigning outcomes achieved in 2003 to Action Plan points was completed. This was reviewed in 2004, and new actions noted. The Committee notes that the major work item to be carried out in the next few years is the preparation of summary guidelines for all ICES publications series. The guidelines will cover issues such as the intended objective of each series, the editorial and review processes, the formats and submission routes, the pricing and dissemination policy, and the recommended citation format. The series to be covered are the standard publications along with the ICES Website, the *ICES Newsletter*, *ICES Status Reports*, and the new *ICES Advice* series. The summary guidelines will appear as a linked PDF file.

Matters referred by the Bureau/Council

No matters were referred to the Committee by the Bureau or the Council.

Publications Committee Chair

The current Chair (W. Turrell, UK) will stand down at the end of 2004. Owing to the suggested rule change covering membership of the Committee, an interim Chair was elected by members. The Committee congratulated Pierre Pepin of Canada on his election.

Report of the Finance Committee

Chair: Eduardo López-Jamar (Spain)

The Committee met on Thursday 23 September 2004 from 09:00 to 14:20 hrs.

All members were present except Boris Kotenev. Georges Pichot attended the meeting from 11:15. Denmark was represented by Niels Axel Nielsen (Danish Delegate). The President (representing the Bureau), the General Secretary, J. Andersen-Rosendal, and I. Lützhøft from the ICES Secretariat, also participated. Liz Tirpak from the US State Department took part in the meeting in the capacity of observer.

Agenda Item 1 Approval of Agenda

Agenda item two was amended. The Agenda was then adopted.

Agenda Item 2 Financial Accounts for the Financial Year 2003

The General Secretary summarised the final Income and Expenditure Accounts and Balance Sheet for the Financial Year 2003 (Doc. C.M. 2004/Del04/15/2). He drew attention to the indication in the Profit and Loss Account of an excess of Income over Expenditure of DKK 1,926,070 for the year. The document also showed how the Bureau had allocated this sum at their meeting in January 2004.

The Chair, Georges Pichot, Serge Labonté, and Niels Axel Nielsen, signed the Final Accounts and Balance Sheet and also signed for the receipt of the Long-Form Audit Report.

Agenda Item 3 Status Report on the Accounts as of 15 September 2004

The General Secretary reviewed the Status Report as of 15 September 2004 (Doc. C.M. 2004/Del04/15/3). He pointed out that:

- 1) Under Income:
 - 1.1) All member countries had paid their contributions in full except USA and Russia. L. Tirpak informed that USA would be able to pay their arrears by February 2005 the latest. Part Payment of Russia's contribution had been received on 21 September 2004.
 - 1.2) Full contributions have been paid by NEAFC, IBSFC, HELCOM, and NASCO. The contributions from EC and Faroes & Greenland have not yet been received. OSPAR paid their contribution for the first six months, as normal.
 - 1.3) Ongoing Projects showed an income of DKK 1,004,447.

It was agreed that the revised 2004 Budget which was made in January 2004 by the Bureau, should be shown as a separate column, and also that the Budget headings should show the date of the budget in question.

After some discussion, the Committee accepted the Status Report as of 15 September 2004 and agreed to submit it to the Council with the proposed changes.

Agenda Item 4 Draft Budget for 2005 and Draft Forecast Budget for 2006

Draft Budget for 2005

The General Secretary summarised the Draft Budget 2005 (Doc. C.M. 2004/Del04/15/4). He reminded the Committee that the Draft Budget for 2005 was prepared on the basis of the Forecast Budget approved by the Council at the 2003 Annual Science Conference. The amounts under *Income* are the same as in last year's approved Forecast Budget for the National Contributions and for the Commissions. An *amendment* to the Draft Budget shows Income from *ICES Journal of Marine Science*.

The income item "Sales of Publications" was adjusted downwards.

Amendments to the Draft Budget were agreed as follows:

- DKK 50,000 was removed from ASC travel and allocated to MCAP and Consultative Committee travels in equal shares of DKK 25,000.
- Travel costs for the Dialogue Meeting was set at DKK 0 since no Dialogue Meeting is planned for 2005.
- A corresponding sum of DKK 65,000 was allocated to Other Secretariat Travels and Meetings.
- The Publication Budget Line "Extraordinary Budget to Restore Cuts" was renamed "Priorities of the Publications Committee".
- DKK 25,000 was reallocated from "Priorities of the Publications Committee" to ICES Cooperative Research Reports.

The Committee accepted the Draft Budget for 2005 with the proposed changes and agreed to recommend its approval by the Council.

Draft Forecast Budget for 2006

The General Secretary noted that the Draft Forecast Budget for 2006 had been produced at the January 2004 Bureau Meeting.

Having amended the Draft Forecast Budget 2006 in the same way as the Draft Budget, the Committee accepted the Draft Forecast Budget.

Agenda Item 5 Appointment of Auditors for 2004

On the basis of the satisfactory services provided by the current Auditors during the past year, the Committee agreed to propose to the Council that KPMG C. Jespersen be appointed as the ICES Auditors for another year.

Agenda Item 6 Matters Referred to the Committee by the Bureau or the Council

6.1 Report of the *ad hoc* Working Group on Finances

The General Secretary presented the report (Bureau Doc. 1397) of the *ad hoc* Working Group on Finances (see Annex 1).

The Committee accepted the explanations provided in the document, but pointed out that the apparent discrepancy between the unadjusted percentage cost recoveries for fisheries advice (72%) and environment/ecosystem advice (29%) would be smaller if the DKK 1 million cost of networking with IGOs were to be set against fisheries advice. The Committee recognised that the non-requested advice provided from time to time by the Advisory Committees represents a legitimate transfer of information of significant societal value.

The Finance Committee endorsed the *ad hoc* Group's recommendations and advised that these matters should be kept under review.

6.2 Member Country contributions

Some member countries (Belgium, Germany, and France) have informed the Secretariat that they have technical problems in paying their contribution in advance of the next calendar year. The Committee proposed that the Secretariat should continue to explore possibilities to overcome these technical problems.

Agenda Item 8 Any Other Business

There being no other matters raised under this item, the Chair closed the meeting. He thanked all the Committee members and the ICES Secretariat for their support.

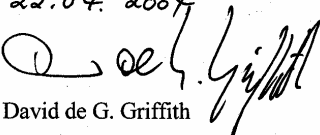
PROFIT AND LOSS ACCOUNT FOR 2003

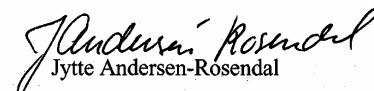
Note	DKK
Income	
1 National Contributions.....	18,165,000
2 Other Contributions.....	5,835,794
Affiliated & Observers.....	89,770
Sale of Publications.....	67,149
3 Miscellaneous Income	1,458,333
Ongoing Projects.....	3,217,317
	28,833,363
Expenditure	
4 Salaries	18,455,199
5 Office Expenses	2,327,034
EDP Expenses	2,065,464
6 Travels and Meetings.....	3,487,191
7 Publications	638,663
Incidentals for President and Chairmen	432,329
Write down Stock/Centenary Glasses	115,650
	27,521,530
Operating Profit	1,311,833
8 Interest Receivable.....	614,237
Profit for the Year.....	1,926,070

BALANCE SHEET AT 31 DECEMBER 2003

Note

	ASSETS	DKK	DKK
	Current Assets		
	Stocks		168,400
	Debtors		
	Debtors Publications, etc.	2,527	
9	Prepaid Expenses	2,260,882	
	Unpaid Contributions from Observer, etc.	50,000	
	Unpaid Contributions from Ongoing Project.	88,201	
	Miscellaneous Debtors.	177,257	
10	Other Debtors.....	271,735	
	Total Debtors		2,850,602
11	Investments		10,934,802
	Cash at bank and in hand		14,231,928
	TOTAL ASSETS		28,185,732
	LIABILITIES		
12	Total Capital and Reserves		5,570,557
	Prepaid Contributions.....	16,908,369	
	Prepaid Ongoing Projects	3,445,874	
	Office Maintenance	384,305	
	Publications.....	883,189	
13	Other Creditors	993,438	
	Total creditors		22,615,176
	TOTAL LIABILITIES		28,185,732

22.04. 2004

 David de G. Griffith
 General Secretary

22.04. 2004

 Jytte Andersen-Rosendal
 Office Manager

AUDITORS' REPORT

We have audited the final accounts of the International Council for the Exploration of the Sea for the period 1 January 2003 – 31 December 2003.

The final accounts is the responsibility of the General Secretary. Our responsibility is to express an opinion on the final accounts based on our audit.

Basis of opinion

Our audit was carried out in accordance with Rule 20(vii) adopted at the 82nd (1994) Statutory Meeting in Canada and included such auditing procedures as we considered necessary.

Our audit has not given rise to any qualifications.

Supplementary information

Profit for the year is significant influenced by the transfer of DKK 839,000 from Capital and Reserves to miscellaneous income regarding excess of income over expenditure from 2001.

Opinion

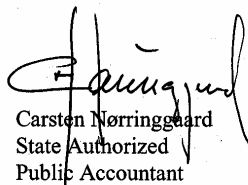
In our opinion, the final accounts of the International Council for the Exploration of the Sea as at 31 December 2003 present fairly assets and liabilities, the financial position and profit for the year.

Copenhagen, 22 April 2004

KPMG C.Jespersen
Statsautoriseret Revisionsinteressentskab



Poul Erik Olsen
State Authorized
Public Accountant

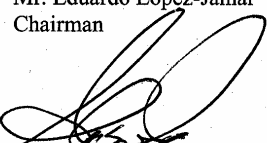


Carsten Nørringgaard
State Authorized
Public Accountant

Having scrutinized the Final Accounts and Balance Sheet, we recommend that the Bureau submits the document to the Council for approval.



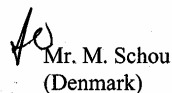
Mr. Eduardo López-Jamar
Chairman



Mr. Serge Labonté
(Canada)



Mr. Georges Pichot
(Belgium)



Mr. M. Schou
(Denmark)



Mr. Boris Kotenev
(Russia)

Budget Financial Year 2005

Income

	Budget	Revised Budget
	2004	2005
INCOME		
National Contributions		
Belgium	712,800	736,000
Canada	1,069,200	1,104,000
Denmark	1,069,200	1,104,000
Estonia	356,400	368,000
Finland	534,600	552,000
France	1,425,600	1,472,000
Germany	1,425,600	1,472,000
Iceland	1,069,200	1,104,000
Ireland	712,800	736,000
Latvia	356,400	368,000
Netherlands	1,069,200	1,104,000
Norway	1,425,600	1,472,000
Poland	1,069,200	1,104,000
Portugal	712,800	736,000
Russia	1,069,200	1,104,000
Spain	1,069,200	1,104,000
Sweden	1,069,200	1,104,000
United Kingdom	1,425,600	1,472,000
USA	1,069,200	1,104,000
Total	18,711,000	19,320,000
Income from <i>ICES Journal of Marine Science</i>		300,000
Income to ACFM Chair Stipend	500,000	
Sale of Publications	160,000	50,000
Other Contributions	5,978,987	7,398,792
Contributions from Affiliates & Observers	171,363	178,777
ASC Income (Fees)		375,000
Externally Funded Projects and own Funds		1,325,324
GRAND TOTAL	25,521,350	28,947,893

Expenditure

Incidentals for President and Chairmen	567,300	610,000
Salaries	16,841,780	18,041,558
Office Expenses	2,273,000	1,941,400
IT-Expenses	2,092,323	2,844,935
Expenses for ASC & Statutory Meetings	760,000	1,155,000
Travels, Meetings, etc.	2,811,947	3,010,000
Publications	175,000	845,000
GRAND TOTAL	25,521,350	28,447,893

Sub Total	500,000
Transferred to Fund for Young Scientists	500,000
Final Balance	0

INTEREST RECEIVABLE

Interest	400,000
Interest transferred to Capital Reserve Fund	400,000

Agenda for Council: 2004 Annual Science Conference

(92nd Statutory Meeting)

Delegates Meeting

- 1) Adoption of the Draft Agenda
- 2) Elections and appointments of Council Officials at the 92nd Statutory Meeting
- 3a) Progress Report on Administration
- 3b) ICES policy on relationship with the news media
- 4) 2004 ICES Annual Science Conference – Social events
- 5) Arrangements for future Annual Science Conferences and Statutory Meetings: 2005: Scotland, 2006 the Netherlands
- 6) Report of the Management Committee for the Advisory Process
- 7a) Report of the Management Committee on the Advisory Process meeting with ICES Client Commissions (MCAP-MICC)
- 7b) Recommendations of the SGAWWP – Review of progress
- 8) Status of the Quality Assurance Working Group
- 9) Authority of the Bureau
- 10) Business plan for sharing of revenue from the registration fee
- 11) Data Development Project
- 12) Procedure for the appointment of the new General Secretary (January 2006)
- 13) Status Report on the GEF Baltic Sea Regional Project
- 14) Current status of the ICES/GLOBEC Programme and Office
- 15) Report of the Finance Committee
 - Final Accounts for the Financial Year 2003
 - Status Report as of 15 September 2004
 - Draft Budget for 2005 and Draft Forecast Budget for 2006
- 16) Signing of Memorandum of Understanding with the Intergovernmental Oceanographic Commission (IOC)
- 17) Appointment of Chair of the Consultative Committee
- 18) Appointment of Chair and four new members of the Publications Committee
- 19) Reports and Recommendations of the Consultative Committee
- 20) Any other business

Delegates Meetings Decisions (92nd Statutory Meeting)

1 Adoption of the Draft Agenda.

The Agenda was **adopted**.

2 Elections and Appointments of Council Officials at the 2004 Annual Science Conference (92nd Statutory Meeting) (Del04/2/1)

The comments in Del04/2/1 were **noted**.

3.a Progress Report on Administration (Del04/3/1)

The General Secretary summarised the main points of his report on the year so far:

- Payment of national contributions. He updated the section concerning Russia's payment: a part payment had been received, with an undertaking to pay the remainder during October.
- The move of ICES headquarters to new premises at H.C. Andersens Boulevard 44–46.
- Involvement of the European Commission's Joint Research Centre in ICES activities (on the General Secretary's invitation).
- Annual meeting with the Partner Commissions (formerly WGCOOP) is now under the aegis of MCAP (MCAP-MICC).
- Secretariat re-structuring.

The USA apologised for the delayed payment of their contribution for 2004 and explained the background. The US Delegate anticipated that the US government will resolve the matter expeditiously.

Council **noted** these developments.

3.b ICES Policy on Relationship with the News Media (Del04/3/2)

The General Secretary explained that the substance of the document was the same as that agreed in Tallinn last year, with two additions as requested by Delegates at that time. Delegates welcomed the document, and asked that it be fully implemented. It was **agreed** that a press strategy document should be prepared for consideration at the February 2005 Bureau meeting. It was also **agreed** (as requested by the European Commission observer) that copies of press statements should be copied to the Partner Commissions of ICES at the same time as they were copied to Delegates.

4 2004 ICES Annual Science Conference – Social Events (Del04/4/1)

The arrangements put forward in Del04/4/1 were **noted**.

5 Arrangements for future Annual Science Conferences and Statutory meetings – 2005: Scotland, 2006: The Netherlands (Del04/5/1)

2005: Aberdeen. The ASC opens on Tuesday 20 and ends on Saturday 24 September, but business meetings start on Sunday 18 September. Committee sessions will take place during parts of Wednesday 21 through Friday 23 September. By prior decision the **Council** meeting will be held separately from the ASC in 2005 and 2006, on a trial basis. Delegates **agreed** to postpone the date proposed in Doc. Del04/5/1 from just before ACFM to *after* ACFM. Council will thus meet at ICES headquarters on Wednesday 19 and Thursday 20 October 2005.

2006: The Netherlands proposed to host the 2006 ASC at Maastricht, on the grounds that Amsterdam was expensive and Rotterdam had no appropriate facilities. The Delegate of The Netherlands explained to Delegates that Maastricht has university facilities and many hotels in various price categories, and everything necessary can be made available there. Council expressed a consensus view that the best date for the ASC would be late September¹.

6 Report of the Management Committee for the Advisory Process (Del04/6/1)

This item was taken after items 7a and 7b. Despite diverging views among the Delegates regarding the proposal to admit stakeholder observers to ACFM meetings, Council noted that MCAP and the Bureau considered that they had been mandated at last year's meeting to "take tangible action". There being no consensus to alter the course of action undertaken by MCAP and the Bureau, the proposed arrangements to invite stakeholder observers to the ACFM meetings in October 2004 and May 2005, on a pilot basis, were **agreed**.

In the light of that decision the EC observer expressed the view that it would seem appropriate for ICES to invite the North Sea Commission Fishery Partnership, as a nascent EU Regional Advisory Committee, to send an observer to ACFM. Council so **agreed**.

7.a Report of Management Committee on the Advisory Process Meeting with ICES Client Commissions (MCAP-MICC) (Del04/7/1)

The EC observer expressed dismay at some "surprise" decisions/actions by ICES following the discussions with the Commissions at MCAP-MICC. He also suggested that it would be useful to have more than one EC-ICES meeting per year. Recognising the advantages to be gained from improving transparency and two-way communication with the Partner Commissions of ICES, the Delegates **agreed** to take this course of action.

Delegates also took **note** of the advice of the MCAP Chair that the fast-track approach has thrown up new procedural questions for ICES, and that MCAP will have to deal with these new and more complex requests later this year.

7.b Recommendations of the SGAWWP – Review of progress (Del04/7/2)

Most of the issues covered in this document were addressed under Agenda item 6.

¹ Following further discussion between the Delegate of The Netherlands and the ICES General Secretary, the dates of Tuesday 19 September – Saturday 23 September were fixed (business meetings to start on Sunday 17 September).

Recalling the Council decision 2003 to evaluate, at the 2004 Delegates meeting, progress made regarding the thirteen recommendations of SGAWWP, based on a detailed report by the Secretariat, the Delegate of Sweden regretted that no report had been distributed before the meeting. In view of the expressed demand for improvements of scientific advice and the advisory process, as well as what he described as the slow and uneven progress so far, he proposed that the intended evaluation – based on a detailed report on progress made, areas remaining, and suggestions for further action – should take place at the next Delegates meeting.

The EC observer said he would be glad of an opportunity (at MCAP early next year, for example) to comment on the work in progress. He expressed concern at the difficulty in getting people to be members of the assessment review groups, other than Working Group Chairs.

The President asked MCAP to review progress at its next meeting. He invited Delegates to submit comments and questions on the paper *MCAP September04 Doc. 18* (Del04/7/2) to the Secretariat, as guidance for the next progress report.

8 Status of Quality Assurance Study Group (Del 04/8/1)

The Chair of MCAP presented this document, explaining that the Study Group had operated under great difficulty since (for the reasons stated in the document) no members had been appointed to it, other than the Chair and the three Advisory Committee Chairs as designated in the Resolution setting it up (C.Res. 2003/2MCAP02). Although the Study Group had done creditable work in drafting a quality policy statement, it would be unfair to regard this as anything other than a first draft. He said that the development of (for example) a Quality Manual and a Quality Handbook would be a major task, and he asked Delegates to make the necessary resources available. The Study Group had also recommended the creation of a post of ICES Quality Manager, and the MCAP Chair said that while it was still premature to address this aspect just yet, it was clear that it, too, would have big resource implications.

The President pointed out that ICES continues to face the dilemma of work priorities versus resources, both within the Secretariat and in Member Countries. He said the development of the necessary documentation will be laborious, and their application a challenge.

Delegates **agreed** that the issues addressed by the Study Group were extremely important for ICES and its credibility, and looked forward to it continuing its valuable work in 2005.

The EC observer also stressed the urgency of these matters for ICES and said that he believed the Services of the European Commission would be ready to look at resource implications, as and when it is demonstrated that there are real resource implications involved in getting a quality system into place. He added that the question of resources should not be regarded as a handy excuse for not really addressing the problem.

9 Authority of the Bureau (Del04/9/1)

The President introduced this document. He said that the ensuing discussion would be valuable to ICES, regardless of whether or not any action is taken. He emphasised that the outcome does not necessarily have to be a Resolution to adopt any particular course of action.

The Delegate of Sweden reminded Council that this item was on the agenda and the document was on the table because of incidents during the last two years which had created uncertainty among outside interested parties regarding ICES decisions and recommendations. He said that the credibility of ICES had been affected, adding that this was especially unfortunate since it may affect also the credibility of fisheries advice. In order to prevent a recurrence, he suggested that the Council *confirms that all decisions and statements on governance and policy issues should be the responsibility of the Council unless it decides explicitly, for reasons of*

urgency, to request a subordinate body, the Bureau, or the President for a decision or a statement, fully respecting Article 11 of the Convention as well as Rules 8, 9, 13, and 14, of the Rules of Procedure. When such a request is made the statement or the decision should explicitly make reference to the Council mandate. No explicit objections were raised to this suggestion.

The Swedish Delegate suggested that when unexpected matters arise intersessionally, and action is called for, there are three possible courses to follow:

- i) the General Secretary and the Secretariat respond, calling upon the in-house competence, trust, and corporate memory;
- ii) an extraordinary Council meeting is called (although this, he said, would be a clumsy reaction);
- iii) a written procedure, using electronic facilities.

Sweden concluded by proposing the circulation of Bureau reports to Delegates, in accordance with Article 11(2) of the Convention and Rule 13 of the Rules of Procedure.

Regarding the general issue of the authority vested in the Bureau by the Convention and the Rules of Procedure, the President pointed out that these will always be open to interpretation. He said it would be difficult to draft a prescriptive wording that would *not* be open to interpretation.

Various views were expressed by several Delegates. Canada, Denmark, Germany, and Norway all spoke in support of the Bureau's interpretation of the Convention and the Rules of Procedure. The Delegate of Norway pointed out that it was up to the Bureau to find a balance between various views expressed at Council. He reminded Delegates that members of the Bureau represented ICES, not their own countries. UK and France supported the Swedish proposal that the report of Bureau meetings be circulated to Delegates as soon as possible, and UK proposed that a record of Council decisions should be circulated to Delegates soon after Council meetings.

Council **adopted** these two proposals. The President said that there appeared to be a clear consensus view that no further actions were necessary, and this was **agreed**.

10 Business Plan for sharing of revenue from the registration fee (Del04/10/1)

Following a discussion in which divergent views were expressed, Council agreed that the following procedures will apply to registration fees and exhibitor fees for Annual Science Conferences:

- a) The registration fee will be 105 Euros unless it is deemed necessary to increase it by an amount not to exceed 25% in order to enhance arrangements for the Conference and to provide benefits to participants. An increase above 105 Euros must be approved by the Bureau. The fee may occasionally be adjusted to take account of inflation.
- b) Income and expenditures arising from registration fees and exhibitor fees will be reflected in the regular budget of ICES, subject to review and action by the Finance Committee, the Bureau, and Council.
- c) Committee members and students will be entitled to a 50% reduction in registration fees; the registration fee shall be waived for conveners of scientific sessions; Delegates and Bureau members will pay the full registration fee.
- d) Registration fees will be allocated one third to enhance the scientific program, one third to support arrangements for the meeting that would otherwise have been the responsibility of the host, and one third as income to ICES.

- e) Exhibitor fees will be allocated half to support arrangements for the meeting that would otherwise have been the responsibility of the host, and half as income to ICES.

The Consultative Committee is invited to develop a plan for enhancing participation of “young” scientists in Annual Science Conferences with a view towards utilizing ICES share of income from registration fees and exhibitor fees, as well as the possibility of utilizing a portion of income allocated to enhance the scientific program, and other sources of funds that might be identified.

11 Data Development Project (Del 04/11/1)

This document was presented by its main author, the First Vice-President, who proposed that an *ad hoc* Working Group be established to identify the actions necessary to bring the matter further. This was **agreed**, as follows:

An *ad hoc* Bureau Working Group (Chair: First Vice-President) will meet for 3 days in January 2005 (back-to-back with MCAP) at Council expense to:

- i) Outline the data needed for ICES to produce the current advice as well as the type of advice which is likely to be requested during the next five years.
- ii) Outline in broad terms the database and software tools necessary to support efficient QA procedures and workflows.
- iii) Plan documentation and material to be available to the meeting suggested in STEP 1 of Document Del04/11/1.
- iv) Discuss and amend as appropriate STEP 1 to 4 in Del04/11/1.
- v) Discuss and suggest priorities for ICES Secretariat work plan 2005 with regard to the IT and database work.
- vi) Develop a synopsis for an ICES IT strategy and business plan to be developed in collaboration with the ICES Secretariat before June 2005.

In addition to the Chair, the Group will consist of the Chairs of ACFM, ACE, ACME, and CONC, the co-chairs of SGMID, and the Data Centre Manager.

The Group will work in close consultation with relevant Client Commissions, and will report on their view on data coordination mechanisms, IT needs, and financing in relation to any proposed strategy.

The Group will take account of constraints of Member Countries’ national IT systems.

12 Procedure for the appointment of the new General Secretary (January 2006) (Del04/12/1)

The document having been presented by the President and opened for discussion, Sweden proposed an alternative process whereby the Delegates would screen all applications and mark them on a scale of 1 to 10. The Secretariat would then consolidate this evaluation, as a result of which the top candidates (say the top six) would constitute the shortlist for interview. The shortlisted candidates would appear before a meeting of Delegates during the Annual Science Conference, where they would respond to Delegates’ questions. Delegates (guided by advice from the Bureau) would then decide the issue by vote. The Delegate of Sweden said that this process would be similar to those used by many other international organisations in response to modern demands for more transparency and accountability.

After an extensive discussion of the two alternative procedures, during which many Delegates expressed a clear preference for the general approach put forward in Doc. Del04/12/1, the President concluded that there was insufficient support for the Swedish proposal. Council then

proceeded to discuss the detailed implementation of the proposals in the document. It was **agreed** that the appointment would be based on merit. Regarding the desirability of scientific credentials (education, experience with research), some Delegates felt that these would be a requirement, while others did not.

A Swedish proposal to revise the criteria developed by the Bureau in 1999 was agreed.

Council further **agreed** that:

- i) The time-table proposed in the document should be followed:

October/November 2004: Forthcoming vacancy in the post of General Secretary to be announced.

1 April 2005: Final date for accepting applications for the post.

By May 2005: Evaluation panel screens the candidates and makes a shortlist.

By 15 August 2005: Interviews completed (allowing for the possibility of a second interview)

Bureau meets at ASC (20–24 September 2005) to draft a recommendation, with ranking, for immediate circulation to Delegates.

Council meets on 19–20 October 2005 in Copenhagen and appoints the new General Secretary.

- ii) A screening panel will examine all the applications and draw up a shortlist of candidates for interview. This panel will be composed of the Bureau, the General Secretary, Rolf Åkesson (Swedish Delegate), and a female member of the Secretariat staff.
- iii) The shortlisted candidates will be interviewed by the President, Niels Axel Nielsen (First Vice-President), Rolf Åkesson, the General Secretary, and a female member of the Secretariat staff. The possibility of involving a professional recruitment expert should also be considered, as should the possibility of involving somebody from one of the southern Member Countries of ICES.
- iv) The draft advertisement, amended to take account of the views expressed at this Council meeting, will be circulated to Delegates for approval as soon as possible after the meeting.
- v) If serious differences of opinion arise, the Bureau will decide on an appropriate course of action.

13 Status Report on the GEF Baltic Sea Regional Project (Del04/13/1)

Adopted.

14 Current Status of the ICES/GLOBEC Programme and Office (CM 2004/C:15)

The General Secretary presented the document, informing the Delegates that France had generously offered a commitment of DKK 171 000 per year for the three years 2005–2007. The already-revised budget (Appendix C of the document) should thus be further adjusted in the light of this. Although a cash flow problem remained, the Bureau had suggested that donor countries may be prepared to allow ICES to draw on its own assets to enable work to continue through 2005 and the early part of 2006, against their committed income for 2006 and 2007.

The President suggested that unless such an arrangement could be made, or additional funds were forthcoming, the ICES-GLOBEC Office would close next year. This would be unfortunate, he said, because the office had carried out good work, but the project had been initiated almost 10 years ago with clear goals and since that time the programme has reached maturity in ICES and with the international community. At some stage, he continued, we must therefore decide to move on, confident that the research will continue to flourish whether the ICES-GLOBEC Office is there or not.

Council **noted** this situation.

15 Report of the Finance Committee (Del04/15/1)

Report adopted.

Final Accounts for Financial Year 2003 (**Del 04/15/2**) – **Adopted**.

Status Report as of 15 September 2004 (**Del 04/15/3**) – **Adopted**.

Draft Budget for 2005 (**Del 04/15/4**) – **Adopted** unanimously on a roll-call vote.

Draft Forecast Budget for 2006 (**Del 04/15/4**) – **Adopted** unanimously on a roll-call vote.

Delegates **agreed** that an *ad hoc* Bureau Working Group will be established and will work by correspondence to:

- i) Develop rules for the ICES budget and financial affairs;
- ii) Consider (a) established practices as laid down in various ICES documents and (b) relevant rules of comparable international organisations;
- iii) The *ad hoc* Bureau Working Group will consist of the Chair of the Finance Committee (Chair), the Chair of MCAP, and four Delegates: Joe Horwood (UK), Gerd Hubold (Germany), Serge Labonté (Canada), and Georges Pichot (Belgium).

16 **Signing of Memorandum of Understanding with the Intergovernmental Oceanographic Commission (IOC)**

The new extended Memorandum of Understanding was signed by Mike Sissenwine, President of ICES, and David Pugh, Chairman of IOC. The MoU is reproduced on pages 177–179.



David Pugh, Chairman of IOC, takes questions at a press conference after his address to the ICES Delegates.

17 **Appointment of Chair of the Consultative Committee and Chair of the Advisory Committee on the Marine Environment**

The Consultative Committee's nomination of Harald Loeng (Norway) was **endorsed**.

ACME's nomination of Paul Keizer (Canada) was **endorsed**.

18 **Appointment of Chair and four new members of the Publications Committee**

The President explained that although the title of this agenda item reflected the *status quo* concerning the composition of the Publications Committee, the role of that Committee had been changed in recent years in order to bring it fully into the Consultative Committee framework instead of its earlier function as a publications audit group for the Bureau. These changes had worked well, he said, but since no corresponding changes had been made in the composition of the Committee the Council should consider a proposal tabled by the Consultative Committee. Since this proposal, if endorsed, would involve a change in the Rules of Procedure, and since it had not been possible to give two months' notice of the proposal, it was necessary (in accordance with Rule 16) to seek the unanimous approval of the Delegates to discuss the potential rule change. The necessary unanimity was obtained through a roll-call vote.

Following a discussion of the issues, Council **agreed** that the composition of the Publications Committee should be changed as follows:

- i) The members of the Publications Committee shall be appointed by Delegates. Each Member Country may appoint two members. The Chair shall be appointed in accordance with Rule 30(x).
- ii) Rule 27(ii) shall be deleted, with effect from 1 January 2005.
- iii) Delegates are invited to appoint members of the Publications Committee to take office on 1 January 2005. The Publications Committee shall elect a new Chair during the 2005 Annual Science Conference, who shall take office immediately upon election. From 1 January 2005 until that time, an interim Chair shall be appointed by the President.

19 Reports and Recommendations of the Consultative Committee

The Chairman of the Consultative Committee (CONC), Jake Rice, presented an executive summary of the CONC Report.

ICES Symposia

In order to help convenors of symposia to deal with proposals from participants for a “Symposium statement” on issues of policy, the President pointed out that ICES symposia are intended to be exclusively scientific in nature, and therefore should not be used as a platform for policy statements. He said that in his view any such statement must be regarded as the responsibility of the authors alone, and cannot be considered to be in any way binding on ICES. He suggested that these matters could usefully be drawn to the attention of symposium convenors.

Council **endorsed** these views.

Theme Sessions at the 2005 Annual Science Conference

The Delegate of Belgium criticised the fact that environmental science topics were very poorly represented in the list of proposed Theme Sessions. He said that it would not be in ICES interests to lose the interest and involvement of environmental scientists. The CONC Chair and the General Secretary confirmed that they had heard similar misgivings from other sources, and advised Council that the Belgian Delegate’s views should be heeded as an indication of a wider unease which they had detected among scientists, and others, in regard to a perceived imbalance of fisheries and environmental issues within ICES.

Progress on Regional Ecosystem Assessments

The CONC Chair explained that the moves towards integrated advice (mainly through the Regional Ecosystem Study Group for the North Sea (REGNS) is incremental, and aims to establish procedures which will be applicable to all ecosystems in the ICES area.

This major issue will also be addressed by the newly proposed Working Group for Regional Ecosystem Description (WGRED), which, unlike REGNS, will feed directly into the advisory process by (a) identifying sections in the ICES advisory report for which information on ecosystem characteristics and linkages can be incorporated; (b) reviewing available information sources regarding ecosystem characteristics and important environmental drivers for ecosystem productivity and important human impacts on the ecosystems.

It was suggested that if a visual representation of this challenging multiple-approach programme could be prepared (in tabular form, for example), it would be very useful in explaining it to administrators responsible for resource management and environment management.

Science Committees

Jake Rice repeated earlier appeals to Delegates to support the work of the Science Committees, and their subsidiary Expert Groups, by sending more participants to them. Meetings of some Science Committees have not been well attended, he said.

In regard to opening Expert Groups to wider participation, CONC proposed (Doc. CM 2004/Del04/19/1) that the Chairs of Expert Groups which report to the Science Committees should be allowed to invite people with relevant expertise, in addition to the members appointed by the Delegates. The CONC Chair further drew Delegates' attention to the fact (duly noted) that the agencies which co-sponsor some ICES Expert Groups can and do appoint members to those groups, without going through any ICES Delegate.

The CONC proposal to widen the appointment process for membership of ICES Expert Groups under the Science Committees was accepted, and after extensive discussion it was **agreed** that:

Membership of Expert Groups established under any of the Science Committees shall consist of experts appointed by national Delegates. In addition, experts who can contribute to the work of the Group may be appointed by the Group's Chair. The participation of Expert Group members in the latter category must be self-funding; their appointment will be for one year at a time. When a Chair is appointing experts, the Delegates should be informed in advance where possible, or otherwise as soon afterwards as is practicable.

It was further **agreed** that as an administrative measure within the Secretariat, the reports of Expert Group meetings will in future state the institutional affiliation of the members and not just their country, as has been the practice up to now.

The Secretariat will amend the relevant passages in the Delegate's Handbook to reflect these changes in practice.

International Polar Year (IPY)

Council agreed that ICES should seek to become associated with IPY2007–2008. The General Secretary was asked to submit an Expression of Interest to the IPY International Programme Office regarding ICES plans for a symposium in 2008, as an indication of ICES interest in IPY.

Draft Resolutions

With some amendments, all the draft Resolutions from the Consultative Committee were **adopted**.

20 Any other Business

20.1 Proposed changes in ICES Statistical Areas (Del04/20/1)

The General Secretary explained that the purpose of this proposal was to enable statistics on catch and fishing effort from inside and outside EEZs to be recorded, and that the procedure being followed was in full accordance with that approved by the Council in 1983.

Following requests from some Delegates that the names of some of the ICES statistical areas should be reviewed, Council **agreed** that this matter could be taken up by the ICES representative at the next meeting of the Coordinating Working Party on Fisheries Statistics (CWP), on the understanding that all countries affected by any such name changes would be consulted. The proposal in Doc. Del04/20/1 was **adopted**.

Closure of Council Meeting

In closing the meeting, the President thanked the Delegates, especially the new ones, for their constructive cooperation, and highlighted the contribution of the Delegates who serve ICES in roles that are often difficult – especially Niels Axel Nielsen as First Vice-President and Chair of the Bureau Working Group on Data Development, Paul Connolly as Chair of MCAP, and Eduardo Lopez Jamar as Chair of the Finance Committee. He particularly thanked the Spanish hosts for organising an outstanding meeting and for their hospitality.

The President expressed appreciation for the hard work of the ICES Secretariat, not only in setting up and running the ASC but also in meeting the challenges of the staff restructuring and the move to new headquarters. He warmly praised the outgoing Chair of the Consultative Committee, Jake Rice, for three years of invaluable and sustained leadership through a period of great change in ICES science policy.



MEMORANDUM OF UNDERSTANDING BETWEEN THE INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION (IOC) OF UNESCO AND THE INTERNATIONAL COUNCIL FOR THE EXPLORATION OF THE SEA (ICES)

This Memorandum of Understanding is made and entered into by and between

The Intergovernmental Oceanographic Commission of UNESCO, with office address at
1 rue Miollis 75762 Paris CEDEX 15, France, and represented by
the IOC Chairman, Dr David Pugh, and

The International Council for the Exploration of the Sea, with office address at
H.C. Andersens Boulevard 44-46, DK-1553 Copenhagen V, Denmark, and represented
by the ICES President, Dr Michael Sissenwine.

Recognising that...

the Intergovernmental Oceanographic Commission of UNESCO, hereinafter referred to as IOC, is a specialized United Nations body with expertise in ocean science and services;

the purpose of the Commission is to promote international co-operation and to co-ordinate programmes in research, services, and capacity-building in order to learn more about the nature and resources of the ocean and coastal areas and to apply that knowledge for the improvement of management, sustainable development, the protection of the marine environment, and the decision-making processes of its Member States;

in the effective implementation of its role the IOC relies on the network of the IOC Regional Subsidiary Bodies as mechanisms of implementation and strategic elements in identification of priority needs, formulation of, and agreement on regional co-operative programmes;

the IOC has significant responsibilities in the implementation of relevant parts of UNCLOS, the UNCED Agenda 21, the UNFCCC, and the Implementation Plan of WSSD;

Recognising that...

the International Council for the Exploration of the Sea, hereinafter referred to as ICES, exists to (a) promote and encourage research and investigations for the study of the sea particularly related to the living resources thereof; (b) draw up programmes required for this purpose and to organise, in agreement with its Contracting Parties, such research and investigations as may appear necessary; (c) publish or otherwise disseminate the results of this work; and (d) provide scientific information and advice to Member

Country governments and the regulatory commissions with which cooperative relationships have been established;

ICES is concerned with the Atlantic Ocean and its adjacent seas and primarily with the North Atlantic;

ICES seeks to establish and maintain working arrangements with other international organizations which have related objectives and co-operate, as far as possible, with them, in particular in the supply of scientific information requested;

The parties to this Memorandum of Understanding do hereby agree to work together in promoting integrated marine and coastal management and sustainable development as follows.

PART A

Objective

This Memorandum of Understanding is being entered into by the IOC and ICES to work together to, *inter alia*...

1. Prepare specific plans to intensify co-operation, to co-ordinate programmes, and to avoid unnecessary duplication, in the study of the North Atlantic and its adjacent seas;
2. Develop a common approach to specific issues, for example education, training, and technology transfer for third parties, or joint workshops, symposia and conferences on key issues.

PART B

Roles and Responsibilities

IOC and ICES agree to the following, as appropriate and within available budgets...

1. Prepare specific plans for co-operation including the following actions in the study of the North Atlantic.
 - 1.1. Intensify co-operation in the implementation of the Global Ocean Observing System (GOOS) including its Open Ocean and Coastal Modules.
 - 1.2. Develop structured and increased co-operation in the field of data and information management, including development of marine information technologies.
 - 1.3. Further develop studies on harmful algal blooms.
2. Develop a common approach to generic issues by...
 - 2.1. Co-operating through working groups and task teams on education, training and technology transfer for third parties;
 - 2.2. Organizing joint workshops, symposia, and conferences on key issues of interest to both organizations;
 - 2.3. Facilitating mutual access to relevant Committees and Expert Groups and co-sponsor existing and new groups where appropriate;

2.4. Organizing joint policy discussions for officers of ICES and IOC on future developments of and key issues in marine science and on the consequent development of co-operation between the two organizations;

2.5. Intensifying and expanding networking between the main intergovernmental organizations active in marine science, in particular IOC, ICES, and PICES.

Include, as appropriate, the actions described above in the Programmes and/or Action Plans of the two organizations.

PART C

Entry Into Force, Amendment, and Termination

This MOU will enter into force on the date of signing and will have a duration of three years.

This MOU can be terminated only by communication in writing sent by the interested Party to the other Party at least thirty days before the proposed date of termination.

This MOU can be amended only by agreement in writing reached between the Parties and only before the expiration of the agreement.

In witness whereof, the undersigned, duly authorized thereto, have signed this Memorandum of Understanding on the

28th day of September at Vigo
2004

On behalf of the Intergovernmental
Oceanographic Commission of UNESCO



David T. Pugh
IOC Chairman

On behalf of the International
Council for the Exploration of the Sea



Michael Sissenwine
ICES President

Resolutions adopted at the 92nd Statutory Meeting (2004)

Resolutions involving Publications

C.Res. 2004/1ACME01

The report on **Review of analytical methods for determining metabolites of polycyclic aromatic compounds (PACs) in fish bile**, by F. Ariese, J. Beyer, G. Jonsson, C. Porte Visa, and M. Krahn, as reviewed and approved by the Chair of the Marine Habitat Committee, will be published in the *ICES Techniques in Marine Environmental Sciences* series. The estimated number of pages is 47.

C.Res. 2004/1E02

The report on the **Measurement of scope for growth in mussels**, by J. Widdows and F. Staff, as reviewed and approved by the Chair of the Marine Habitat Committee, will be published in the *ICES Techniques in Marine Environmental Sciences* series. The estimated number of pages is 29.

C.Res. 2004/1C03

The report on **Spawning and Life History Information for North Atlantic Cod Stocks**, edited by K. Brander (ICES), as reviewed by the Chair of the Oceanography Committee, will be published in the *ICES Cooperative Research Report* series. The estimated number of pages is 250.

C.Res. 2004/1C04

The **2004/2005 ICES Annual Ocean Climate Status Summary**, edited by A. Lavin (Spain) and S. Hughes (UK), as reviewed and approved by the Chair of the Oceanography Committee, will be published in the *ICES Cooperative Research Report* series. The estimated number of pages is 35.

C.Res. 2004/1C05

The **2004/2005 ICES Annual Plankton Status Summary**, edited by members of WGZE, as reviewed and approved by the Chair of the Oceanography Committee, will be published in the *ICES Cooperative Research Report* series. The estimated number of pages is 15.

Resolutions involving Symposia

C.Res. 2004/2CSY01

A Symposium on **Climate Variability and Sub-Arctic Marine Ecosystems** will be held from 16–20 May 2005 in Victoria, B.C., Canada, with G. Hunt (USA) and K. Drinkwater (Norway) as Conveners.

The Symposium's scientific objective is *to present current knowledge of the effects of seasonal to multi-decadal climate variability on the structure and function of Sub-Arctic marine ecosystems*. Specific topics include:

- a) large-scale climate forcing on the physical oceanography of Sub-Arctic seas;
- b) processes structuring Sub-Arctic ecosystems (sea ice, low temperatures, low species diversity, etc.);
- c) the transfer and fate of energy through subarctic food webs, from primary producers through zooplankton and benthic fauna to fish, seabirds, marine mammals and fisheries;
- d) recent changes in subarctic ecosystems, time scales of variation and possible causes;

e) inter-comparisons between Sub-Arctic marine ecosystems.

The WGCCC proposes that ICES co-sponsor this Symposium with GLOBEC.

C.Res. 2004/2ACESY02

The **3rd International Symposium on Deep-Sea Corals** will be held in Miami, USA, from 28 November to 2 December 2005.

ICES will co-sponsor this Symposium together with the US Geological Survey and the US Minerals Management Service.

C.Res. 2004/2ACFMSY03

A Symposium on **Management Strategies: Case Studies of Innovation** will be held in Galway, Ireland for four days in late 2006 with Convener Paul Connolly (Ireland) or Jake Rice (Canada), and two co-Conveners (Mike Armstrong, UK, and Doug Wilson, Denmark).

The General Secretary will solicit appropriate co-sponsorship.

C.Res. 2004/2CSY04

An ICES-PICES-GLOBEC Symposium '**4th International Zooplankton Production Symposium**' will be held at the end of May or in the beginning of June 2007 (4–5 days) in Hiroshima, Japan, with Delegates from ICES, PICES, and GLOBEC (Luis Valdés) and Dr Shin-ichi Uye (Professor, Hiroshima University) as Conveners.

Venue:	International Conference Centre, Hiroshima, Japan.
Local sponsors:	The Plankton Society of Japan The Japanese Society of Fisheries Oceanography
Scientific Steering Committee:	Delegates from various countries (to be determined)
Local Organizing Committee:	Dr Shin-ichi Uye, Chief (Professor, Hiroshima University) Dr Hideaki Nakata (Professor, Nagasaki University) Dr Shuhei Nishida (Professor, the University of Tokyo) Dr Michio Kishi (Professor, Hokkaido University)
Scientific foci (suggested):	Human and climate forcing of zooplankton populations

A Scientific Steering Group will be established with members nominated by relevant International sponsors and working groups to assist the Convener in planning the Symposium. In consultation with the Convener, the General Secretary will solicit appropriate co-sponsorship and support. The Symposium has already received the formal agreement from PICES (Dr Alexander Bychkov).

C.Res. 2004/2BSY05

A **Symposium on Fisheries Acoustics, Science and Technology** will be held at the Institute of Marine Research in Bergen, Norway, in June 2007 with Egil Ona (Norway), Rudy Kloser (Australia), and David Demer (USA) as Conveners.

C.Res. 2004/2ESY06

An **International Symposium on Integrated Coastal Zone Management** will be held in Arendal, Norway, from 11–14 June 2007 with Erlend Moksness (Norway) as Convener.

The International Scientific Committee will be chaired by Josianne Støttrup, Denmark. A local Steering Committee has been established and will be chaired by Einar Dahl, IMR, Norway.

C.Res. 2004/2ACFMSY07

A **Symposium on Linking Herring** will be held for four days in the summer of 2007 or 2008 in Galway, Ireland, with Maurice Clarke (Ireland), Mark Dickey-Collas (Netherlands), and Aril Slotte (Norway) as Conveners. ICES will co-sponsor this Symposium with GLOBEC.

The theme sessions of the Symposium will include:

- a) **Herring in the middle** – the trophic and ecological interactions and impacts of herring;
- b) **Managing Change** – management and exploitation of herring in a dynamic environment, within the context of long-term change;
- c) **Variable Production** – particularly the role of reproduction, recruitment, and life history strategies;
- d) **Population Integrity** – the rigidity of stocks and the drivers of migration;
- e) **Counting herring** – qualitative and quantitative estimation of herring and its application.

C.Res. 2004/2ASY08

A **Young Scientists Conference** will be held during the summer of 2007 on the US East Coast with PICES and ICES as Conveners.

A Scientific Steering Group will be established with members including participants in the first (1999) ICES Young Scientists Conference.

Resolutions involving Meetings of Committees, Groups, and Workshops

Consultative Committee

C.Res. 2004/2A01

The **Consultative Committee** [CONC] (Chair: Harald Loeng, Norway) will meet at ICES Headquarters from 9–11 May 2005 to:

- a) review progress of 2004/2005 activities of Committees and Expert Groups;
- b) review and revise as necessary methods used to review progress activities of Committees and Expert Groups, in particular to ensure compatibility of the CONC review of progress on the ICES integrated Action Plan with other review-like initiatives under MCAP, the Delegates, the Bureau, and MCAP;
- c) discuss strategies to deal with support expected to be required from Expert Groups as the number of requests for ecosystem scale advice increase, e.g., European Marine Strategy, and ICES modifies its advisory approaches, e.g., integrated advice and advice on management strategies;
- d) review progress on preparations for integrated ecosystem assessments, in particular the response of Expert Groups to requests of REGNS, the 2005 REGNS meeting, and activities under the BSRP. Where opportunities for improvements are found, make plans to address them as resolutions are prepared for review at the 2005 Annual Science Conference;
- e) review status of preparations for ICES Symposia;

- f) consider the working practises necessary to further integrate environmental information into ICES Fisheries Advice;
- g) finalise the programme for the 2005 Annual Science Conference;
- h) further develop the plans for the 2006 Annual Science Conference;
- i) conduct a preliminary review of draft resolutions due for consideration by Council at the 93rd Statutory Meeting.

CONC will make its report available for consideration at the June 2005 Bureau meeting and the 93rd Statutory Meeting.

C.Res. 2004/2A02

A Study Group on ICES Publication Practices regarding Ethical Concerns on the use of animals in scientific research [SGPPE] [Chair: Tom Sephton, Canada] will work by correspondence in 2005 to:

- a) compile national and international examples of existing ethical code of practice for use by publications of scientific journals;
- b) consider whether ICES needs such a code or whether ICES can apply another code or codes;
- c) if the Group under b) finds that a code would be useful for ICES, specify the elements in a code of practice for use by the ICES editors.

SGPPE will report by 30 April 2005 for the attention of the Consultative Committee.

Management Committee on the Advisory Process (MCAP)

C.Res. 2004/2MCAP01

The **Management Committee on the Advisory Process** [MCAP] (Chair: Paul Connolly, Ireland) will meet:

A) At ICES Headquarters from 7–8 February 2005, at Council expense, to review the advisory process for 2005, including:

- a) further development of communications with Client Commissions;
- b) progress on developing a strategic approach to cost recovery;
- c) transparency policy and review of ‘pilot project’ on observers at ACFM in October 2004;
- d) review of the ‘Sandwich Approach’ in 2004;
- e) review experiences with fast-track advice and refine policy on dealing with these requests;
- f) review experiences with a single advisory report;
- g) agree a Table of Contents for the 2005 Advisory Report;
- h) interaction with the Regional Advisory Councils;
- i) auditing the advisory process;
- j) Quality Assurance work in 2005.

B) Together with Client Commissions (MCAP-MICC) at ICES Headquarters from 4–5 April 2005 at Council expense (for MCAP members) to review the advisory process for 2005 and beyond, including:

- a) review of 2004 MCAP-MICC meeting and follow-up to action points;
- b) further development of communications with Client Commissions;
- c) outline of ICES advisory work programmes for 2005;
- d) experience with observers at ACFM in 2004 and plans for the advisory committees in 2005;

- e) review of the 'Sandwich Approach' in 2004;
- f) quality of data used in the advisory process – links with the Data Collection Regulation;
- g) progress towards integrated advice and long-term advice;
- h) review experiences with a single advisory report;
- i) progress on establishing Regional Advisory Councils and the role of ICES vis-a-vis these RACs;
- j) any other business that the Clients may wish to discuss.

C) Immediately before or early in the ASC week and after the ASC week in Aberdeen, UK, at Council expense to review the advisory process for 2006 including;

- a) follow-up and status of action points from 2005 MCAP meetings and discussions with Clients;
- b) further development of communications with Client Commissions;
- c) review the status of ICES cost recovery for the advisory work;
- d) transparency policy and review of 'Pilot project' for ACFM in 2004 and 2005;
- e) review of fast-track advice policy;
- f) review progress of Quality Assurance work;
- g) review experiences with a single advisory report;
- h) review of interactions with the Regional Advisory Councils;
- i) progress on auditing the advisory process;
- j) consider proposal for a revised data policy;
- k) review of the integrated advice process;
- l) define the ICES approach to having observers in 2006 at meetings of working groups and Advisory Committees;
- m) review an audit of the advisory process.

C.Res. 2004/2MCAP02

A Study Group on Quality Assurance [SGQUA] (Chair: M. Waldock, UK) will meet by correspondence to:

- a) review progress in achieving the ICES Quality Policy (CM 1999/Del:21);
- b) identify gaps and how best to fill them;
- c) oversee preparation of documentation of the quality control procedures of ICES.

SGQUA will report by 31 January 2005 for the attention of MCAP.

Publications Committee

C.Res. 2004/2PUB01

The **Publications Committee [PUBCOM]** (interim Chair: P. Pepin, Canada) will meet on two days in 2005 during the 2005 Annual Science Conference to:

- a) review all inter-sessional activities 2004–2005, including matters brought to the attention of the Chair through the year;
- b) review all ICES Publications activities, including communications and the web-site, in 2004/2005;
- c) review progress with the Work Plan, and integrated web guidance, to achieve publication, information, and media objectives in the ICES Strategic Plan;
- d) review information to be supplied by the Secretariat on the cost of ICES publication-related work during 2004.

PUBCOM will report to the Consultative Committee at the 93rd Statutory Meeting.

Advisory Committee on Fishery Management (ACFM)

C.Res. 2004/2ACFM01

The **Advisory Committee on Fishery Management** [ACFM] (Chair: P. Degnbol, Denmark) has the following tasks:

- A) To **meet in plenary at ICES Headquarters from 26 May–2 June 2005 and from 6–13 October 2005** at Council expense to:
- prepare the advice and information on fisheries, living resources and their exploitation and the interaction by fisheries and the ecosystem, as requested by the Fishery Commissions (IBSFC, JNRFC, NASCO, and NEAFC), by the EC, and by Member Countries of ICES, and other advice which the Committee or Council may consider relevant;
 - contribute, as required, to the preparation of advice to other regulatory bodies in collaboration with the Advisory Committee on Ecosystems (ACE) and the Advisory Committee on the Marine Environment (ACME);
 - further revise the form of advice and methods to reflect the need for fisheries-based advice and advice to be based on long-term considerations;
 - establish and review working procedures for ACFM and propose Terms of Reference for ACFM, its subsidiary groups, and other relevant Council groups;
 - review reports of ICES groups as defined in Council Resolutions;
 - provide advice and guidance to the Science Committees on future scientific needs and priorities related to the work of ACFM.

Attendance at Council expense will be limited to the Chair, national members, and *ex officio* members of ACFM. Chairs of the Assessment Working Groups may be invited to assist ACFM to deal with special issues. However, Working Group Chairs will in general not be invited to participate in the ACFM meetings.

- B) Assessments made by fish stock assessment working groups will be reviewed by groups set up for that purpose. These groups will work in sessions or by correspondence. The tasks of these review groups are to ensure quality of the assessments made by the assessment working groups and, if necessary, update the assessments and projections. These review groups will each have at least three members: one chair who is appointed amongst the ACFM members, and two or three nominated experts chosen as independent experts with relevant expertise to allow them to do a technical review of the assessments. Chairs of the assessment working groups will assist in the review of their reports. The review meetings are open to other members of ACFM. Costs of these review meetings will be borne by the national institutes.
- C) Concerning North Atlantic Salmon ACFM will **work by correspondence in the period 29 April–4 May** to prepare advice on Atlantic Salmon for NASCO based on the reviewed report of the Working Group on North Atlantic Salmon. The expected release date is 6 May 2005.
- D) Present the fisheries advice to IBSFC, NEAFC, and EC (including RACs) by the ACFM Chair (Poul Degnbol or his designate). The advice on North Atlantic Salmon will be presented to NASCO by the Chair of the Working Group on North Atlantic Salmon.
- E) The Institute of Marine Research (IMR) in Bergen is invited to submit an assessment of the Barents Sea capelin for review and further processing in the advisory system.
- F) Concerning advice for *Pandalus* stocks the *Pandalus* Assessment Working Group will meet in Halifax, Canada, in parallel with the NAFO Sc.C./STACFIS shrimp meeting. The report of WGPAND will be available for ACFM's consideration on 4 November with a view to release the report by 9 November 2005. ToRs for WGPAND 2005 to be decided after the meeting in November 2004.

- G)** To hold Consultations at national expense in Aberdeen, UK in September 2005 and at other times as required during the 2005 ASC Meeting to:
 - a) finalise Terms of Reference, dates, and venues for meetings of groups reporting to ACFM in 2006;
 - b) conduct other business related to the functioning of ACFM.

The Consultations are open to Delegates, the Chair of the Consultative Committee, ACFM members and their alternates, Chairs of groups reporting to ACFM or their designates, *ex officio* members, Members of MCAP, observers to ACFM, and other experts at the invitation of the Chair of ACFM.

With the approval of the General Secretary, the Chair of ACFM may invite experts to attend relevant parts of the meetings mentioned under A)–C) above at Council expense.

- H)** Further consider the new MoU with the European Commission (EC) and develop a plan of action to address, in a timely manner, the new species listed in this MoU.

The reviews of fish stock assessment are moved out of ACFM and placed in separate review groups. The table below summarises the proposed membership of the Review Groups. Each group is assisted by the Chair(s) of the Working Group(s) whose reports are under review. Where feasible, the review groups will work by correspondence. The assignments are as follows:

Assignments for Review of Fish Stock Assessment

REVIEW GROUP	WG REPORT TO BE REVIEWED AND ITS MEETING DATES	STOCKS	NO. OF STOCKS FOR WHICH ADVICE IS GIVEN	REVIEW GROUP CHAIR [ACFM MEMBER]	1. REVIEWER	2. REVIEWER	EXTERNAL	WG CHAIR	WHEN OR IF CORRESPONDENCE: DEADLINE	MEETING PLACE FOR REVIEW GROUP *
I	HAWG 8–17 March 2005	all	10	Carmela Porteiro, Spain	Andre Forest, France	Jari Raitaniemi, Finland		Netherlands	18–20 April 2005	Vigo, Spain
II	WGNAS 4–14 April 2005	all	4 areas	Poul Degnbol, Denmark	James Kristmanson, Canada	DFC Chair (Ireland)		Ireland	25–27 April 2005	ICES HQ
III	WGBFAS 5–14 April 2005	all	10 (8)	Ciaran Kelly, Ireland	Reidar Toresen, Norway	Willy Vanhee, Belgium		Germany	23–25 May 2005	ICES HQ
V	WGBAST 5–14 April 2005	all	3	Jesper Boje, Denmark, Greenland	Alan Youngson, Scotland, UK	Jan Horbowy, Poland		Sweden	24–25 May 2005	ICES HQ
VI	AFWG 19–28 April 2005	all	7	Holger Hovgaard, Denmark	Denis Rivard, Canada	Maris Plikshs, Latvia		Russia	23–25 May 2005	ICES HQ
VII	NWWG 1 26 April–5 May 2005	Icelandic stocks, redfish and Greenland halibut in Va+XII+XIV	5 + ca. 3	Steve Cadrin, US	Frans van Beek, Netherlands	Tiit Raid, Estonia		Iceland	23–25 May 2005	ICES HQ
VIII	NWWG 2 26 April–5 May 2005	Faroe stocks, Iceland herring, capelin	6	Fatima Cardador, Portugal	Bengt Sjöstrand, Sweden	Evgeny Shamray, Russia		Iceland	19–20 May 2005	ICES HQ
IX	WGEF (LRC) 14–21 June 2005	all	Not known	Mark Dickey-Collas, Netherlands	Beatriz Roel, England	Tiit Raid, Estonia		Ireland	Correspondence 15 September 2005	-
X	WGHMM 10–19 May 2005	all	6 + 9 <i>Neph.</i>	Martin Pastoors, Netherlands	Knut Korsbrekke, Norway	? Belgium		Spain	29–30 August 2005	Ijmuiden, Netherlands
XI	WGSSDS 21–30 June 2005	all	12 + 1 <i>Neph.</i>	Colm Lordan, Ireland	Rainer Oeberst, Germany	Max Cardinale, Sweden	1	Belgium	28–30 August 2005	Dublin, Ireland
XII	WGNSDS 10–19 May 2005	all	13 + 5 <i>Neph.</i>	Carl O'Brien, UK	Knut Korsbrekke, Norway	Stuart Reeves, Denmark	1	Ireland	9–11 August 2005	Lowestoft, UK
XIII	WGNSSK1 6–15 September 2005	IIIa stocks	3 + 10 <i>Neph.</i>	Alain Biseau, France	Spain	Latvia		Scotland, UK	Correspondence 3 October 2005	-
XIV	WGNSSK2 6–15 September 2005	NSea stocks	13	Manuela Azevedo, Portugal	Gary Shepherd, USA	Alain Biseau, France	1	Scotland, UK	4–6 October 2005	ICES HQ

XV	WGMHSA 6–15 September 2005	all	7	Denis Rivard, Canada	Peter Cornus, Germany	Höskuldur Björnsson, Iceland		Ireland	4–6 October 2005	ICES HQ
XVII	WGNPBW 25 August– 1 September 2005	all	5	Jan Horbowy, Poland	Mika Kurkilahti, Finland	John Simmonds, Scotland, UK		Iceland	28–29 September 2005	ICES HQ
	Capelin in the Barents Sea (mid- October 2005)			To be reviewed at the ACFM meeting in October 2005						
XVIII	WGPAND 26 October–4 November 2005	all	2	Poul Degnbøl	Denmark, Faroe Islands	Natalia Anisimova and Sergey Golovanov, Russia		Denmark	Correspondence (ACFM Chair 3– 4 November 2005)	-
XIX	WGEEL 22–26/11 2004	European eel	1						1 May 2005	
No advice in 2005	WGDEEP	all	10							

* RGs scheduled to meet according to the table above are free to choose to work by correspondence instead of having a meeting.

Fish Stock Assessment Groups – stock assignments in 2005

A system with different types of assessments (Observation, Benchmark, Update, and Experimental) has been established in the fish stock assessment working groups. The plan for 2005 is as follows:

WG ACRONYM	MEETING DATES FOR WORKING GROUP	OBSERVATION LIST	BENCHMARK	UPDATE	EXPERIMENTAL
AFWG (incl. Barents Sea capelin)	19–28 April 2005	NEA cod, Coastal cod	NEA saithe	NEA haddock NEA Greenland halibut, Barents Sea capelin	<i>Sebastes mentella</i> & <i>marinus</i>
HAWG	8–17 March 2005	North Sea Herring		herring in Div. IIIa and Subdivs. 22–24, herring VIa, herring VIIa, Celtic Sea herring, herring in VIaS, sprat	
NWWG	26 April–5 May 2005	Faroe Plateau cod	Icelandic saithe, Faroe saithe, Icelandic herring	Icelandic cod, Icelandic haddock, Faroe haddock, Icelandic capelin	Greenland cod, Icelandic Greenland halibut, <i>Sebastes marinus</i> , deepsea <i>S. mentella</i> , pelagic <i>S. mentella</i> , Faroe Bank cod
WGBAST	5–14 April 2005	salmon 24–31		salmon 32, sea trout	

WGBFAS	12–21 April 2005	cod 25-32, cod in Kattegat	sole in IIIa, sprat	cod 22-24, herring 25-29 & 32 excl. GoR, herring Gulf of Riga, herring 30, herring 31, plaice, dab, turbot, brill	flounder 24-25
WGDEEP	7–9 September 2005	All species			
WGEEL (DFC)	22–26 November 2004	European eel			
WGHMM	10–19 May 2005	Northern hake, southern hake,	megrim VII and VIIIa,b,d, <i>L.whiff.</i> VIIIc and IXa, <i>L.boscii</i> VIIIc and IXa, all <i>Nephrops</i> stocks	<i>L.pisc.</i> VIIb,k and VIIIa,b,d, <i>L.bude</i> VIIb,k and VIIIa,b,d, anglerfish VIIIc and IXa	
WGMHSA	6–15 September 2005		Western horse mackerel, anchovy Biscay	NEA mackerel, sardine	North Sea horse mackerel, Southern mackerel, anchovy IXa, North Sea mackerel
WGNAS	4–14 April 2005	NA salmon			
WGNPBW	25 August–1 September 2005	blue whiting		NSSP herring	
WGNSDS	10–19 May 2005		haddock VIb, haddock VIIa, cod VIa, cod VIIa, whiting VIIa, all <i>Nephrops</i> stocks	whiting VIa, anglerfish IV & VI, megrim VIa, plaice VII, sole VII	megrim VIb
WGNSSK	6–15 September 2005	NS cod, plaice in IV	haddock in 34, saithe in 346, all <i>Nephrops</i> stocks	sole in IV, sole in 7d, plaice in 3, plaice in 7d, sandeel in other areas, Norway pout in IV, Norway pout in other areas, whiting in 47d, sandeel in IV	
WGPAND	26 October–4 November 2005		<i>Pandalus</i> in IIIa+IVa, Barents Sea shrimp		
WGSSDS	21–30 June 2005	sole VIIIa,b, sole VIIe	cod VIIe-k, whiting VIIe-k, plaice VIIf,g, <i>Nephrops</i>	plaice VIIe, sole VIIf,g, haddock VIIb-k	sole VIIh-k, plaice VII h-k, sole VII b,c, plaice VII b,c,
WGNEW	13–15 December 2005				Sea bass, flounder, common dab, lemon sole, brill, turbot, gurnards, red gurnards, and red mullet
WGEF	14–21 June 2005				elasmobranch

Cost Sharing

		Cost splitting keys (%)				
	ICES	DG Fish	IBSFC	NEAFC	NASCO	Sum
Secretariat support for ACFM	4	46	7	35	8	100
General Secretariat support for Assessment Working Groups	4	46	7	35	8	100
WGBAST			100			100
WGBFAS		20	80			100
WGNAS					100	100
WGNPBW		15		85		100
AFWG		15		85		100
HAWG		70.6	5.8	23.6		100
NWWG				100		100
WGDEEP				100		100
WGNEW		100				100
WGEEL (moved to DFC)	50	50				100
WGMHSA		75		25		100
WGNSDS		68.8		31.2		100
WGNSSK		75		25		100
WGPAND		75		25		100
WGSSDS		75		25		100
WGHMM		75		25		100

WGNSSK, WGSSDS, WGHMM, WGMHSA, WGBFAS, WGNSDS, WGNPBW, AFWG, HAWG, NWWG, and WGPAND will, in addition to the tasks listed by individual group, in 2005:

- 1) for stocks where it is considered relevant, review limit reference points (and come forward with new ones where none exist) and develop proposals for management strategies including target reference points if management has not already agreed strategies or target reference points (or HCRs) – following the guidelines from SGMAS (2005) and AMAWGC (2004 and 2005);
- 2) comment on the outcome of existing management measures including technical measures, TACs, effort control and management plans;
- 3) based on input from WGRED incorporate (where appropriate) existing knowledge on important environmental drivers for stock productivity and management into assessment and prediction, and important impacts of fisheries on the ecosystem;
- 4) update the description of fisheries exploiting the stocks, including major regulatory changes and their potential effects. The description of the fisheries should include an enumeration of the number, capacity and effort of vessels prosecuting the fishery by country;
- 5) where misreporting is considered significant provide information on its distribution on fisheries and the methods used to obtain the information;

- 6) provide for each stock information on discards (its distribution in time and space) and the method used to obtain it. Describe how it has been considered in the assessment;
- 7) provide on a national basis an overview of the sampling of the basic assessment data for the stocks considered;
- 8) provide specific information on possible deficiencies in the 2005 assessments including, at least, any major inadequacies in the data on landings, effort or discards; any major inadequacies in research vessel surveys data, and any major difficulties in model formulation; including inadequacies in available software. The consequences of these deficiencies for both the assessment of the status of the stocks and the projection should be clarified.

Advisory Committee on Fishery Management (ACFM) — Assessment Groups

C.Res. 2004/2ACFM02

The **Working Group on the Biology and Assessment of Deep-Sea Fisheries Resources** [WGDEEP] (Chair: O. A. Bergstad, Norway) will work by correspondence in 2005 to:

- a) compile the available data on landings and effort of deepwater species, including blue ling, ling, and tusk, by ICES Subarea or Division;
- b) update descriptions of deepwater fisheries in waters inside and beyond coastal state jurisdiction, for species such as grenadiers, scabbard fishes, orange roughy, forkbeards, ling, blue ling, and tusk, especially catch statistics by species, fleets, and gear - and if possible the biological status of these stocks;
- c) update the data on length/age at maturity, growth, and fecundity and document other relevant biological information on deepwater species;
- d) update information on quantities of discards by gear type for the stocks and fisheries considered by this group and make an inventory of deepwater fish community data.

WGDEEP will report by 31 August 2005 for the attention of ACFM, the Living Resources Committee, and the Resource Management Committee.

C.Res. 2004/2ACFM03

The **Herring Assessment Working Group for the Area South of 62°N** [HAWG] (Chair: Mark Dickey-Collas, Netherlands) will meet at ICES Headquarters from 8–17 March 2005 to:

- a) assess the status of and provide management options (by fleet where possible) for 2006 for:
 - i) the North Sea autumn-spawning herring stock in Division IIIa, Subarea IV, and Division VIIId (separately, if possible, for Divisions IVc and VIIId),
 - ii) the herring stocks in Division VIa and Subarea VII,
 - iii) the stock of spring-spawning herring in Division IIIa and Subdivisions 22–24 (Western Baltic);
- b) forecasts for North Sea autumn-spawning herring should be provided by fleet and according to the management plan agreed between the EU and Norway;
- c) catch options for Div. IIIa shall be given by fleets, taking into account that North Sea herring and Western Baltic herring are taken together in this Division;
- d) assess the status of the sprat stocks in Subarea IV and Divisions IIIa and VIIId,e;
- e) for the stocks mentioned in a) and d) perform the tasks described in C.Res. 2ACFM01.

HAWG will report by 18 March 2005 for the attention of ACFM.

C.Res. 2004/2ACFM04

The **Working Group on North Atlantic Salmon** [WGNAS] (Chair: W. Crozier, UK) will meet in Nuuk, Greenland, from 4–14 April 2005 to:

- a) With respect to Atlantic salmon in the North Atlantic area:
 - i) provide an overview of salmon catches and landings, including unreported catches by country and catch and release, and worldwide production of farmed and ranched Atlantic salmon in 2004,
 - ii) report on significant developments which might assist NASCO with the management of salmon stocks,
 - iii) provide a compilation of tag releases by country in 2004,
 - iv) identify relevant data deficiencies, monitoring needs, and research requirements¹;
- b) With respect to Atlantic salmon in the North-East Atlantic Commission area:
 - i) describe the key events of the 2004 fisheries and the status of the stocks, 2
 - ii) provide any new information on the extent to which the objectives of any significant management measures introduced in recent years have been achieved,
 - iii) further develop the age-specific stock conservation limits where possible based upon individual river stocks,
 - iv) provide catch options or alternative management advice, if possible based on forecasts of PFA for northern and southern stocks, with an assessment of risks relative to the objective of exceeding stock conservation limits, and advise on the implications of these options for stock rebuilding, 3
 - v) provide an estimate of bycatch of salmon in pelagic fisheries;
- c) With respect to Atlantic salmon in the North American Commission area:
 - i) describe the key events of the 2004 fisheries and the status of the stocks, 2
 - ii) provide any new information on the extent to which the objectives of any significant management measures introduced in recent years have been achieved,
 - iii) update age-specific stock conservation limits based on new information as available,
 - iv) provide catch options or alternative management advice with an assessment of risks relative to the objective of exceeding stock conservation limits, and advise on the implications of these options for stock rebuilding, 3
 - v) provide an analysis of any new biological and/or tag return data to identify the origin and biological characteristics of Atlantic salmon caught at St. Pierre and Miquelon;
- d) With respect to Atlantic salmon in the West Greenland Commission area:
 - i) describe the events of the 2004 fisheries and the status of the stocks, 2, 4
 - ii) provide any new information on the extent to which the objectives of any significant management measures introduced in recent years have been achieved,
 - iii) provide information on the origin of Atlantic salmon caught at West Greenland at a finer resolution than continent of origin (river stocks, country, or stock complexes),
 - iv) provide catch options or alternative management advice with an assessment of risk relative to the objective of exceeding stock conservation limits, and advise on the implications of these options for stock rebuilding. 3

Notes:

1. NASCO's International Atlantic Salmon Research Board's inventory of ongoing research relating to salmon mortality in the sea will be provided to ICES to assist it in this task.

2. In the responses to questions b.i, c.i, and d.i ICES is asked to provide details of catch, gear, effort, composition, and origin of the catch and rates of exploitation. For homewater fisheries, the information provided should indicate the location of the catch in the following categories: in-river; estuarine; and coastal. Any new information on non-catch fishing mortality, of the salmon gear used, and on the bycatch of other species in salmon gear, and of salmon in any existing and new fisheries for other species is also requested.

3. In response to questions b.iv, c.iv, and d.iv provide a detailed explanation and critical examination of any changes to the models used to provide catch advice.

4. In response to question d.i, ICES is requested to provide a brief summary of the status of North American and North-East Atlantic salmon stocks. The detailed information on the status of these stocks should be provided in response to questions b.i and c.i.

WGNAS will report by 20 April 2005 for the attention of ACFM and the Diadromous Fish Committee.

C.Res. 2004/2ACFM05

The **Baltic Fisheries Assessment Working Group** [WGBFAS] (Chair: T. Gröhsler, Germany) will meet in Hamburg, Germany, from 12–21 April 2005 to:

- a) assess the status of and provide management options for year 2006, for cod, herring, and sprat stocks in the Baltic, and for cod in Kattegat and sole in Division IIIa by appropriate areas* and stock components and taking into account the biological interaction between species. The options should be for a range of fishing mortalities, including those implied by agreed management plans;

*Areas:

Baltic Herring:

- 1) SD 22–24 (based on assessment made by HAWG)
- 2) SD 25–29, 32 excluding Gulf of Riga (25–27, 28.2, 29, and 32)
- 3) Gulf of Riga (28.1)
- 4) SD 30
- 5) SD 31

Sprat:

- 1) The whole Baltic: SD 22–32

Sole:

- 1) Division IIIa

Cod:

- 1) SD 22–24
- 2) SD 25–32
- 3) Kattegat

- b) provide any new information on the state of flatfish stocks in the Baltic;
- c) in considering the assessment of the Eastern Baltic cod stock, take into account the poor quality of age data (catches and survey results). The Group shall explore options for an additional assessment which excludes input estimates of landings (whether reported officially or not) or uses official landings as a minimum estimate of landings for those years where non-reporting is considered to be significant;
- d) consider assessments and management options which include information on landings, discards, and fishing mortality rates by fisheries (defined by gear types and mesh sizes), including the pelagic fisheries.
- e) for the stocks mentioned in a) perform the tasks described in C.Res. 2ACFM01.

WGBFAS will report by 28 April 2005 for the attention of ACFM and the Baltic Committee.

C.Res. 2004/2ACFM06

The **Baltic Salmon and Trout Assessment Working Group** [WGBAST] (Chair: I. Perä, Sweden) will meet in Helsinki, Finland, from 5–14 April 2005 to:

- a) assess the status of the wild and reared stocks of Baltic salmon in the light of IBSFC objectives:
 - i) to gradually increase the production of wild Baltic salmon to attain by 2010 at least 50% of the natural production capacity of each river with current or potential natural production of salmon,
 - ii) to maintain the Baltic salmon fishery as high as possible;
- b) provide catch options in number for Baltic salmon in 2006 for the Main Basin and the Gulf of Bothnia and for the Gulf of Finland that are consistent with IBSFC management objectives, see a);
- c) provide medium-term projections of yield and stock development of salmon stocks for a range of fishing mortality rates consistent with IBSFC management objectives, see a);
- d) provide any new information on the state of sea trout stocks;
- e) ICES should keep IBSFC updated on progress with revising estimates of smolt production potential in wild salmon rivers;
- f) Information on the development of fishing practices for salmon in the Gulf of Finland and assessment of the consequences of such development on catches of wild and reared salmon;
- g) for the stocks mentioned in a) perform the tasks described in C.Res. 2ACFM01.

WGBAST will report by 21 April 2005 for the attention of ACFM and the Diadromous Fish Committee.

C.Res. 2004/2ACFM07

The **Northern Pelagic and Blue Whiting Fisheries Working Group** [WGNPBW] (Chair: A. Gudmundsdottir, Iceland) will meet at ICES Headquarters from 25 August to 1 September 2005 to:

- a) assess the status of and provide management options for 2006 for the Norwegian spring-spawning herring stock and the blue whiting stock;
- b) provide as detailed information as possible on the age/size composition in different segments of the blue whiting fishery;
- c) compile existing information on discards and bycatch by the fisheries;
- d) enumerate the number, capacity, and effort of vessels prosecuting the fishery by country;
- e) for the stocks mentioned in a) perform the tasks described in C.Res. 2ACFM01.

WGNPBW will report by 2 September 2005 for the attention of ACFM.

C.Res. 2004/2ACFM08

The **North-Western Working Group** [NWWG] (Chair: E. Hjörleifsson, Iceland) will meet at ICES Headquarters from 26 April to 5 May 2005 to:

- a) assess the status of and provide management options for 2006 for the stocks of redfish in Subareas V, XII, and XIV, Greenland halibut in Subareas V and XIV, cod in Subarea XIV, NAFO Subarea 1, and Division Va, saithe in Division Va, haddock in Division Va, Icelandic summer-spawning herring and capelin in Subareas V and XIV;

- b) assess the status of and provide effort options and expected corresponding catches for 2006 for cod, haddock, and saithe in Division Vb as these stocks are under effort control;
- c) submit new information on stock identity of the components of redfish such as “pelagic deep-sea” *Sebastes mentella*, “oceanic” *Sebastes mentella* fished in the pelagic fisheries, and the “deep-sea” *Sebastes mentella* fished in demersal fisheries on the continental shelf and slope;
- d) update survey and fishery information on the stocks of redfish in Subareas V, VI, XII, and XIV. In particular, update information on the horizontal and vertical distribution of pelagic redfish and fisheries in the Irminger Sea and adjacent waters as well as seasonal and interannual changes in distribution. This information should allow NEAFC to further consider the appropriateness of separate management measures of different geographical areas/seasons;
- e) provide information on the horizontal and vertical distribution of pelagic redfish stock components in the Irminger Sea as well as seasonal and interannual changes in distribution;
- f) for the stocks mentioned in a) and b) perform the tasks described in C.Res. 2ACFM01.

NWWG will report by 6 May 2005 for the attention of ACFM.

C.Res. 2004/2ACFM09

The **Arctic Fisheries Working Group** [AFWG] (Chair: Y. Kovalev, Russia) will meet in Murmansk, Russia, from 19–28 April 2005 to:

- a) assess the status of and provide management options for the year 2006 for the stocks of cod, haddock, saithe, Greenland halibut, and redfish in Subareas I and II, taking into account interactions with other species;
- b) update the data files on Barents Sea capelin and oversee the process of providing intersessional assessment and predictions on the stock;
- c) for the stocks mentioned in a) and b) perform the tasks described in C.Res. 2ACFM01.

AFWG will report by 3 May 2005 for the attention of ACFM.

C.Res. 2004/2ACFM10

The **Working Group on the Assessment of Northern Shelf Demersal Stocks** [WGNSDS] (Chair: R. Officer, Ireland) will meet in Murmansk, Russia, from 10–19 May 2005 to:

- a) assess the status of and provide management options for 2006 for the stocks of cod, haddock, whiting, anglerfish, and megrim in Subarea VI, for cod, haddock, whiting, plaice, and sole in Division VIIa, for *Nephrops* Functional Units 11, 12, 13, 14, and 15, and for anglerfish stocks in Subarea IV and Divisions IIa, IIIa, and VIa;
- b) for the stocks mentioned in a) perform the tasks described in C.Res. 2ACFM01.

WGNSDS will report by 27 May 2005 for the attention of ACFM.

C.Res. 2004/2ACFM11

The **Working Group on the Assessment of Southern Shelf Demersal Stocks** [WGSSDS] (Chair: Wim Demare, Belgium) will meet at ICES Headquarters from 21–30 June 2005 to:

- a) assess the status of and provide catch options for 2005 for stocks of cod, haddock, whiting, and plaice in Divisions VIIbc, VIIe, VIIfg, and VIIhk, for sole in Divisions VIIbc, VIIe, VIIfg, VIIhk, and VIIIabd, and for *Nephrops* Functional Units 20–22;
- b) for the stocks mentioned in a) perform the tasks described in C.Res. 2ACFM01.

WGSSDS will report by 1 July 2005 for the attention of ACFM.

C.Res. 2004/2ACFM12

The **Working Group on the Assessment of Southern Shelf Stocks of Hake, Monk and Megrim** [WGHMM] (Chair: V. Trujillo, Spain) will meet in Lisbon, Portugal, from 10–19 May 2005 to:

- a) assess the status of and provide management options for 2006 for stocks of hake in Subareas III, IV, VI, VII, VIII, and IX, monk (anglerfish), and megrim in Subareas VII, VIII, and IX, and for *Nephrops* Functional Units 16, 17, 18-19, 23-24, 25, 26-27, 28-29, 30 and 31;
- b) for the stocks mentioned in a) perform the tasks described in C.Res. 2ACFM01.

WGHMM will report by 29 May 2005 for the attention of ACFM (October 2005).

C.Res. 2004/2ACFM13

The **Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak** [WGNSSK] (Chair: Coby Needle, UK) will meet at ICES Headquarters from 6–15 September 2005 to:

- a) assess the status of and provide management options for the following stocks: 1) cod in Subarea IV and Division IIIaN (Skagerrak), and in Division VIIId, 2) haddock in Subarea IV and Division IIIa, 3) whiting and 4) plaice, both in Subarea IV, Division IIIa, and Division VIIId, 5) saithe in Subarea IV, Subarea VIa, and Division IIIa, 6) sole in Subarea IV and Division VIIId, for Norway pout and sandeel stocks in Subarea IV and Divisions IIIa and VIa, and 7) *Nephrops* stocks: Functional Units 3, 4, 5, 6, 7, 8, 9, 10, 32, and 33;
- b) quantify the species and size composition of bycatches taken in the fisheries for Norway pout and sandeel in the North Sea and adjacent waters, and make this information available to the Working Group on Ecosystem Effects of Fishing Activities;
- c) provide the data required to carry out multispecies assessments (quarterly catches and mean weights-at-age in the catch and stock for 2004 for all species in the multispecies model that are assessed by this Working Group);
- d) for the stocks mentioned in a) perform the tasks described in C.Res. 2ACFM01.

WGNSSK will report by 17 September 2005 for the attention of ACFM.

C.Res. 2004/2ACFM14

The **Working Group on the Assessment of Mackerel, Horse Mackerel, Sardine and Anchovy** [WGMHSA] (Chair: Ciaran Kelly, Ireland) will meet in Vigo, Spain, from 6–15 September 2005 to:

- a) assess the status of and provide management options for 2006 for the stocks of mackerel and sardine in Divisions VIIIc and IXa, western horse mackerel, southern horse mackerel, and anchovy in Subarea VIII, and anchovy in Division IXa;
- b) carry out in-depth exploratory assessments for western horse mackerel and anchovy in Subarea VIII;
- c) for the stocks mentioned in a) perform the tasks described in C.Res. 2ACFM01.

WGMHSA will report by 16 September 2005 for the attention of ACFM.

C.Res. 2004/2ACFM15

The ***Pandalus* Assessment Working Group** [WGPAND] (Chair: S. Munch-Petersen, Denmark) will meet in Halifax, Canada, from 26 October to 4 November 2005 to:

- a) assess the status of and provide management options for 2006 for the stocks of *Pandalus borealis* in the Barents Sea, the North Sea, Skagerrak, and Kattegat and, taking predation mortality on *Pandalus* stocks into account;
- b) for the stocks mentioned in a) perform the tasks described in C.Res. 2ACFM01.

TORs to be decided after the meeting in November 2004 back-to-back with NAFO Sc.C./STACFIS *Pandalus* meeting.

WGPAND will report by 21 November 2005 for the attention of ACFM.

C.Res. 2004/2ACFM16

The **ICES/NAFO Working Group on Harp and Hooded Seals** [WGHARP] (Chair: T. Haug, Norway) will meet in the Northwest Atlantic Fisheries Centre, St. John's, Canada, from 30 August to 3 September 2005 to:

- a) further develop the biological reference points for harp and hooded seals;
- b) review the results of intersessional modelling studies to look at sensitivity analyses and comparisons among models;
- c) review the results of the proposed pup production surveys in the NW Atlantic.

WGHARP will report by 12 September 2005 for the attention of ACFM, as well as the Resource Management and the Living Resources Committees.

C.Res. 2004/2ACFM17

The **Workshop on Sampling Design for Fisheries Data** [WKSDFD] (Chair: Joël Vigneau, France) will meet in Pasajes, Spain, from 1–3 February 2005 to:

- a) analyse the estimates of precision of the basic fisheries assessment data by country;
- b) on the basis of this analysis advise on sampling strategies, including stratification and sampling effort.

WKSDFD will report by 21 February 2005 for the attention of ACFM.

C.Res. 2004/2ACFM18

A **Working Group on the Assessment of New MoU Species** [WGNEW] (co-Chairs: Henk Heessen, Netherlands, and Jean-Claude Mahé, France) will meet at ICES Headquarters from 13–15 December 2005 to:

- a) consider the possibilities for fish stock assessments of the following species: sea bass, flounder, common dab, lemon sole, brill, turbot, gurnards, red gurnards, and red mullet through 1) review of knowledge on stock structure, 2) existing monitoring and abundance programmes including the EU Data Collecting programme, and 3) existing databases useful for fish stocks assessment. The aim is to compile and publish the findings as a *Cooperative Research Report* and as a database in CD form;
- b) evaluate the status of the stocks as appropriate on the basis of existing information;
- c) develop a strategy that will further enable appropriate future assessment of these species, separated into a number of biologically defined stocks.

WGNEW will report by 18 December 2005 to ACFM and the Living Resources Committee.

C.Res. 2004/2ACFM19

The **ICES/NSCFP Study Group on the Incorporation of Additional Information from the Fishing Industry into Fish Stock Assessments** [SGFI] (Chairs: H. Andersson, Sweden, and Nils Hammer, Germany) will meet in Stavanger, Norway, from 14–15 March 2005 to:

- a) consider how the future cooperation should be between the fishing industry and ICES regarding the fishery research and advice in the North Sea, taking into account the evolving RAC-structure;
- b) consider possible ways of cooperating on sampling and analysing discards data;
- c) further evaluate CPUE data;
- d) make an inventory containing options on possible improvement in data quality, starting from the EC-logbook system and focussing on a few major species from the North Sea (plaice, cod). In addition suggestions should be made on how to expand the logbooks with information that is useful for the assessment work (position, haul duration, etc.).

SGFI will report by 1 April 2005 for the attention of ACFM.

C.Res. 2004/2ACFM20

The **Planning Group on Commercial Catch, Discards, and Biological Sampling** [PGCCDBS] (Chair: Jørgen Dalskov, Denmark) will meet in Oostende, Belgium, from 1–4 March 2005 to:

- a) review the recommendations of the EU Regional Data Collection Coordination Meetings and address the future of the Planning Group in light of the role and involvement of non-EU countries;
- b) propose sampling methodology for fleet-/fishery-based data collection;
- c) review existing information and propose sampling strategies for recreational fisheries;
- d) review national descriptions of small-scale fleets by country and evaluate the strategies used by different countries to obtain basic information for management purposes;
- e) review the possibilities of using shared ALKs;
- f) review the reports from the age-reading exchanges and workshop and identify the candidate stocks and species requiring improved ageing.

PGCCDBS will report by 1 April 2005 for the attention of ACFM.

C.Res. 2004/2ACFM21

The **Study Group on Management Strategies** [SGMAS] (co-Chairs: Dankert Skagen, Norway, and John Simmonds, Scotland, UK) will meet at ICES Headquarters from 31 January to 4 February 2005 to:

- a) define a framework based on long-term considerations for management strategy evaluations in a Precautionary Approach context. The framework will replace the existing PA framework. The framework shall include both context analysis and evaluation of management plans (including harvest control rules and effort regulations as possible elements of management plans) and provide for both recovery plans and management of a stock under sustainable exploitation;
- b) describe the framework in a separate document (eventually to become an element in the quality handbook) providing a description of the approach and operational guidelines for implementation of management strategy evaluations by ICES;
- c) provide operational guidance for working groups in 2005 to explore and present options for management strategies, including harvest control rules and targets;
- d) as a component in practical guidance review available software that can be used to evaluate various variants of harvest control rules within the framework defined under a). It has priority to identify software that directly or with realistic modifications can be implemented by the fisheries assessment working groups in the 2005 assessment round.

SGMAS will report by 4 February 2005 for the attention of ACFM, as well as the Resource Management and the Living Resources Committees.

C.Res. 2004/2ACFM22

The **Annual Meeting of Assessment Working Group Chairs** [AMAWGC] (Chair: P. Degnbol, Denmark) will meet jointly with WGRED at ICES Headquarters from 14 February to 18 February 2005 to:

- a) review the Table of Contents for the ICES Advisory Report for 2005 and for each chapter identify the contributing Groups;
- b) review and plan the implementation of long-term management simulations and evaluations of recovery plans and harvest control rules as presented by the Study Group on Management Strategies (SGMAS);
- c) arrange for the inclusion of the work of the Working Group on Regional Ecosystem Description (WGRED) in the ICES advisory process regarding fisheries;
- d) plan further the implementation of fisheries-based advice by the assessment working groups and integration of fisheries technology expertise;
- e) review developments in stock assessment methodology in relation to the implementation in the assessment working groups.

AMAWGC will report by 31 March 2004 for the attention of ACFM.

C.Res. 2004/2ACFM23

The **Fishery Statistics Liaison Working Group** [WGSTAL] (Chair: David Cross, Eurostat) will meet in Luxembourg from 2–3 May 2005 to:

- a) review the cooperation between ICES and Eurostat and detailing the future procedures;
- b) review progress with the FIGIS/FIRMS project (for information);
- c) review the catch database for assessment;
- d) discuss the statistical programmes which should deal with information on non-reported landings;
- e) review the outcome of the CWP 22 meeting in January 2005;
- f) review the progress with adoptions by IBSFC, ICES, and NEAFC of a finer breakdown of fishing areas for the reporting of catches (STATLANT 27A and EU legislation);
- g) review progress on the development of sustainability indicators.

WGSTAL will report by 25 May 2005 for the attention of ACFM.

C.Res. 2004/2ACFM24

The **Study Group on Ageing Issues in Baltic Cod** [SGABC] (Chair: Johan Modin, Sweden) will meet in Kleipeda, Lithuania, from 17–20 May 2005 to:

- a) review intersessional work on Baltic cod age readings and suggest further studies based on the intersessional results;
- b) review progress in developing approaches to estimating age distributions from otolith biometrics;
- c) develop a robust statistical method to correct historical age distributions by nation, year, season, and area;
- d) plan and organise an update of historical age and otolith weight data for at least the past 10 years;
- e) review progress of the exchange validation program and investigate its usefulness for an update of historical data.

SGABC will report by 6 June 2005 for the attention of ACFM, as well as for the Baltic and the Living Resources Committees.

C.Res. 2004/2ACFM25

The **Study Group on the Bycatch of Salmon in Pelagic Trawl Fisheries** [SGBYSAL] (Chair: Marianne Holm, Norway) will meet in Bergen, Norway, from 8–11 February 2005 to:

- a) work with the Working Group on the Assessment of Mackerel, Horse Mackerel, Sardine, and Anchovy, HAWG, and WGNPBW as well as national laboratories to make available disaggregated data on the commercial catches of mackerel and herring in the Norwegian Sea (ICES Divisions IIa and Vb), the Northern North Sea (Division IVa), and west of Ireland and Scotland (Divisions VI a & b; VII b,c,j & c) by ICES Division and standard week 16–36;
- b) work with the Working Group on the Assessment of Mackerel, Horse Mackerel, Sardine, and Anchovy, HAWG and WGNPBW well as national laboratories to make available disaggregated data on the number of boats and gear types used in the commercial fishery of mackerel, herring, and horse mackerel in the Norwegian Sea (ICES Divisions IIa and Vb), the Northern North Sea (Division IVa), and west of Ireland and Scotland (Divisions VI a & b; VII b,c,j & k) by ICES Division and standard week 16–36;
- c) explore new data available for estimating bycatches of Atlantic salmon in the pelagic fisheries in the Northeast Atlantic and where possible give an assessment of their reliability;
- d) explore analytical methods to allow catch rates of salmon in research surveys to be extrapolated to catch rates in commercial fisheries;
- e) review any new methods used for intensive screenings of pelagic research hauls for the presence of post-smolts (small salmon in their first year at sea, generally < 45 cm) and older salmon.

SGBYSAL will report by 6 March 2005 for the attention of ACFM, as well as for the Diadromous Fish and the Living Resources Committees.

C.Res. 2004/2ACFM26

A **Workshop on *Nephrops* Stocks** [WKNEPH] (Chair: I. Tuck, UK) will meet at ICES Headquarters from 24–27 January 2006 to:

- a) review feedback on *Nephrops* assessments from the area-based working groups (WGNSSK, WGNSDS, WGSSDS, and WGHMM) and follow up with recommendations for future action;
- b) review progress made on the identification of *Nephrops* métiers and fisheries and consider the implications for measurement of directed effort and the likely consequences for stock assessments;
- c) review progress made on the calculation of precision levels for the *Nephrops* landings and discard sampling programmes, and the consequences this may have for the design of these programmes;
- d) review new information on reporting levels for landings and examine the implications for assessments and advice;
- e) consider the application of fishery-independent methods in stock assessment and the provision of catch options;
- f) review progress made on the updates of sexual maturity parameters;
- g) continue the working groups' investigations on the applicability of alternative and current assessment techniques, focussing in particular on length-structured approaches and spatially-structured models and examining robustness to the particular features of *Nephrops* biology;
- h) evaluate the effects of mesh size regulations on the catchability of small *Nephrops*.

WKNEPH will report by mid-February 2006 for the attention of ACFM, as well as for the Resource Management, Fisheries Technology, and Living Resources Committees.

C.Res. 2004/2ACFM27

The **Working Group Elasmobranch Fishes** [WGEF] (Chair: Maurice Clarke, Ireland) will meet in Lisbon, Portugal, from 14–21 June 2005, to:

- a) update the description of elasmobranch fisheries (including those on deepwater sharks) in the ICES area and compile landings and discard statistics by ICES Subarea and Division;
- b) conduct and report on investigations of spatial dynamics of survey data for shelf-based species and investigate data from IBTS and other surveys;
- c) continue preparations to summarise status and changes in elasmobranch fish species distribution in the North Sea for the period 2000–2004, for input to the Regional Ecosystem Study Group for the North Sea in 2006;
- d) start the process of making assessments of spurdog, skates and rays, lesser spotted dogfish, deepwater sharks, and porbeagle.

WGEF will report to ACFM by 15 August 2005 and make its report available for the attention of the Living Resources Committee.

Advisory Committee on the Marine Environment (ACME)

C. Res. 2004/2ACME01

The **Advisory Committee on the Marine Environment** [ACME] (Chair: P. Keizer, Canada) will meet:

A) at ICES Headquarters from 13 June to 17 June 2005 at Council expense to:

- a) prepare the scientific advice and information on the status and outlook for the marine environment, including contaminants, requested by the environmental Commissions (OSPAR, HELCOM, EC), other regulatory agencies, and Member Countries of ICES, and any other advice which the Committee or Council may consider relevant;
- b) contribute, as required, to the preparation of advice to other regulatory bodies in collaboration with the Advisory Committee on Ecosystems (ACE) and the Advisory Committee on Fishery Management (ACFM);
- c) establish and review working procedures for ACME and propose Terms of Reference for ACME, its subsidiary groups and other relevant Council groups;
- d) review reports of ICES groups as defined in Council resolutions;
- e) provide advice and guidance to the Science Committees on future scientific needs and priorities related to the work of ACME.

With the approval of the General Secretary, the Chair of the Advisory Committee on the Marine Environment may invite relevant experts to attend specific parts of the meetings at Council expense.

B) for **Consultations** to be held at national expense during the 2005 ASC to:

- a) prepare Terms of Reference, dates, and venues for meetings of groups reporting to ACME in 2005;
- b) conduct other business related to the functioning of ACME.

The Consultations will be open to Delegates, the Chair of the Consultative Committee, ACME members and their alternates, *ex officio* members, Chairs of groups reporting to ACME or

their designates, Observers to ACME, and other experts at the invitation of the Chair of ACME.

C.Res. 2004/2ACME02

The **ICES/HELCOM Steering Group on Quality Assurance of Biological Measurements in the Baltic Sea** [SGQAB] (Chair: A. Ikauniece, Latvia) will meet at ICES Headquarters from 22–25 February 2005 to:

- a) review the progress of the HELCOM project group on harmonization of COMBINE and the Water Framework Directive MON-PRO and, in particular, the QA requirements for the WFD;
- b) outline the plan of QA activities for the HELCOM area;
- c) review activities of the HELCOM Phytoplankton expert group;
- d) review the outcomes and developments of updating HELCOM coastal fish monitoring guidelines;
- e) elaborate data validation guidelines and update the COMBINE Manual with them;
- f) review and update the changes made to the COMBINE Manual by the zooplankton expert network;
- g) revise and update the COMBINE Manual with the information received from SGQAC;
- h) review the progress with primary production issues – guidelines and data reporting formats;
- i) review the progress with bacterioplankton monitoring issues – development of guidelines;
- j) review the progress of cooperation with international agencies;
- k) review the progress in BSRP activities relevant to QA issues;
- l) meet in joint sessions with ICES/HELCOM SGQAC and ICES/OSPAR SGQAE.

SGQAB will report for the attention of the ACME, and for the Baltic, Marine Habitat, and Oceanography Committees by 11 March 2005. **Note:** The merge of SGQAB and SGQAE is still open – approval is needed from HELCOM MONAS in October 2004.

C.Res. 2004/2ACME03

The **ICES/HELCOM Steering Group on Quality Assurance of Chemical Measurements in the Baltic Sea** [SGQAC] (Chair: Michael Gluschke, Germany) will meet at ICES Headquarters from 22–25 February 2005 to:

- a) prepare a review of nutrient control sample data, SD, and RSD values in a 3-year period;
- b) review and finalise the technical note on co-factor determination;
- c) harmonise the technical notes on contaminant determination in fish with the technical notes on the determination of persistent organic pollutants in biota;
- d) review and finalise the technical note on method validation with respect to the limit of detection and limit of determination;
- e) review and finalise the technical note on control charts;
- f) review the draft technical note on mercury determination in biota and sediments;
- g) review the technical note on method validation with respect to detection limit and limit of determination;
- h) harmonise the technical notes on organic pollutants determination in biota;
- i) meet with SGQAB for the discussion of the technical note on co-factor analyses and the examples of control chart use for biological analyses;

- j) review the progress of the HELCOM project group on harmonization of COMBINE and the Water Framework Directive MON-PRO and, in particular, the QA requirements for the WFD;
- k) review and revise the quality assurance section of the PLC Guidelines to be consistent with the quality assurance section of the COMBINE Manual.

SGQAC will report by 11 March 2005 for the attention of ACME and for the Baltic, Marine Habitat, and Oceanography Committees.

C.Res. 2004/2ACME04

The **ICES/OSPAR Steering Group on Quality Assurance of Biological Measurements in the Northeast Atlantic** [SGQAE] (Chair: Jon Davies, UK) will meet at ICES Headquarters from 22–25 February 2005 to:

- a) finalise the guidelines for biological sampling and analytical practices required by the CEMP and EcoQO monitoring programmes;
- b) review and evaluate the status of implementation and the practical use of OSPAR/ICES quality assurance guidelines in marine monitoring and assessment programmes in the OSPAR/ICES/HELCOM area and provide guidance for future assessment programmes;
- c) develop guidelines for quality assurance for monitoring of EcoQOs;
- d) evaluate and report on the outcome of relevant workshops/intercalibration exercises/ring tests, and document future events, including progress with the implementation of phase II of the BEQUALM scheme;
- e) review the progress with, and offer further advice on the development of QA of biological measurements in relation to OSPAR JAMP products;
- f) in relation to guidelines on frequency and spatial coverage of monitoring for nutrients and eutrophication parameters (phytoplankton, zoobenthos, phytobenthos), together with SGQAE and MCWG examine any proposals developed by OSPAR for guidelines on the frequency and spatial coverage of monitoring and provide draft advice on the statistical validity of the guidelines and make proposals for their improvement [OSPAR 2005/2];
- g) review progress in the development and use of the ICES Biological Community Database;
- h) review the quality assurance measures being adopted in the marine monitoring and assessment aspects of the EC Water Framework Directive.

In relation to the above work, meet jointly with the ICES/HELCOM Steering Group on Quality Assurance of Biological Measurements in the Baltic Sea and the ICES/HELCOM Steering Group on Quality Assurance of Chemical Measurements in the Baltic Sea.

SGQAE will report for the attention of the ACME and for the Marine Habitat and Oceanography Committees by 4 March 2005, as well as to the 2005 meeting of the OSPAR Working Group on Concentrations, Trends and Effects of Substances in the Marine Environment (SIME).

C.Res. 2004/2ACME05

The **ICES/IOC/IMO Working Group on Ballast Water and Other Ship Vectors** (WGBOSV) (Chair: S. Gollasch, Germany) will meet in Arendal, Norway, from 14–18 March 2005 to:

- a) consider the scientific aspects of risk management of ballast water [OSPAR 2005/5] by:
 - i) comparing and evaluating existing risk assessment and management approaches applicable to ballast water and their interlinkages, as exemplified by GloBallast risk assessments, the Australian DSS, the EMBLA system be-

ing developed by Det Norske Veritas (Norway), and the Slovenian risk assessment approach,

ii) considering how to develop:

1. criteria for the ranking of risks, i.e. to enable the determination of the likelihood of organisms transferred from one marine area surviving if transferred to another marine area (e.g. from tropical waters to the North Sea), or the likelihood of organisms surviving in ballast water/ballast tanks (for the duration of a voyage or between exchanges of ballast water/cleaning of ballast tank sediment). Ultimately this should provide criteria for identifying “high-risk” ballast water,
2. techniques for the rapid detection of non-indigenous species and for the possible containment/eradication of organisms transferred through ballast water and by other vectors. In this respect consideration should be given to sampling techniques and strategies;

b) prepare draft responses for the CONSSO Issue Group on Sustainable Shipping (IGSS) on:

- i) What is the most appropriate geographical approach for a Ballast Water Management Strategy (EU, ICES, OSPAR, HELCOM),
- ii) Review and comment on a preliminary version of the Scoping Study prepared under IGSS,
- iii) Draft scientific advice for ACME regarding the IGSS for the “post-scoping study” phase;

c) draft a Code of Best Practice for Ballast Water Management;

d) In the short term, to critically review and report on the status of ballast water research ,including: 1) the ballast water treatment and management, and the limitations thereof, 2) risk assessment approaches dealing with ship-mediated invasions.

WGBOSV will report by 8 April 2005 for the attention of the Marine Habitat Committee and ACME .

C.Res. 2004/2ACME06

The **Working Group on Introductions and Transfers of Marine Organisms** [WGITMO] (Chair: S. Gollasch, Germany) will work by correspondence in 2005 to:

- a) synthesise and evaluate national reports, particularly focusing on risk assessment approaches and treatment and management approaches;
- b) advance the discussion with the aim to prepare a draft report for rapid response and control options (such as decision trees and regulations) by 2006;
- c) Prepare data (in excel spreadsheet format) which quantifies the distribution and densities of species introductions. This should where possible be based on ICES rectangles and for the period 1984–2004 where possible, and include any seasonal observations if available. The data should be submitted to the REGNS secure website in preparation for the REGNS integrated assessment workshop in 2005 (deadline date missing). ;
- d) plan Aliens Species Alert report including evaluation of impacts and increasing public awareness;
- e) develop risk assessment guidelines for:
 - i) accidental and intentional introductions,
 - ii) control options,
 - iii) rapid response plans,
 - iv) current Code of Practice (reviewed in the light of new initiatives on risk assessment, impact assessment protocols, and developmental practices.

WGITMO will report by 30 April 2005 for the attention of the Marine Habitat Committee and ACME.

Advisory Committee on Ecosystems

C.Res. 2004/2ACE01

The **Advisory Committee on Ecosystems** [ACE] (Chair: Simon Jennings, UK) will meet at:

- (A) ICES Headquarters from 26–31 May 2005 at Council expense to:
- a) prepare scientific advice and information, as requested by the Commissions (OSPAR, HELCOM), other regulatory agencies, and Member Countries of ICES, and any other advice which the Committee or Council may consider relevant;
 - b) contribute, as required, to the preparation of advice to other regulatory bodies in collaboration with the Advisory Committee on the Marine Environment (ACME) and the Advisory Committee on Fishery Management (ACFM);
 - c) establish and review working procedures for ACE and propose Terms of Reference for ACE, its subsidiary groups and other relevant Council groups;
 - d) review reports of ICES groups as defined in Council resolutions;
 - e) provide advice and guidance to the Science Committees on future scientific needs and priorities related to the work of ACE.

With the approval of the General Secretary, the Chair of the ACE may invite relevant experts to attend specific parts of the meetings at Council expense.

- (B) For **Consultations** at national expense during the ASC 2005 week to:

- a) prepare Terms of Reference, dates, and venues for meetings of groups reporting to ACE in 2005;
- b) conduct other business related to the functioning of ACE.

The Consultations will be open to Delegates, ACE members and their alternates, *ex officio* members, Chairs of groups reporting to ACE or their designates, Observers to ACE, and other experts at the invitation of the Chair of ACE.

C.Res. 2004/2ACE02

The **Study Group on Management of Integrated Data** (SGMID) (co-Chairs: Peter Wiebe, USA, and Christopher Zimmermann, Germany), will meet at IPIMAR, Lisbon, Portugal, from 11–13 April 2005 to:

- a) contribute to the revision of the Data Policy. The proposal will be developed by the *ad hoc* Bureau working group on IT issues;
- b) report on the development within ICES towards integrated databases of oceanographic, environmental, and fisheries data;
- c) identify data sources relevant to (b), not yet integrated into the ICES databases;
- d) review and report on existing integrated data systems for fisheries/environmental data and review data integration work in existing projects inside and outside of ICES;
- e) propose strategies and technical solutions for integrating available data, including the possibility that data are not physically located in one site;
- f) evaluate and recommend the level of integration and aggregation of data in connection with management issues from an ecosystem perspective, including the use of GIS systems;
- g) evaluate problems associated with the accessibility of data;
- h) report the progress of integrating the ICES database system into networks, e.g. SeaSearch II.

The Group will report for the attention of ACE by 1 May 2005.

C.Res. 2004/2ACE03

A Working Group on Deepwater Ecology [WGDEC] (Chair: Mark L. Tasker, UK) will be established and will meet at ICES Headquarters from 8–11 March 2005 to:

- a) review and evaluate the available information and references on threats to, and/or decline in the OSPAR area of, seamount habitats. Identify to the extent possible whether these threats are introduced by human activities or whether they are caused by natural events;
- b) evaluate and report on new information on the distribution and status of cold water corals in the North Atlantic (including consideration of large slow-growing octocorals) and factors that might alter their status;
- c) evaluate and report on the sensitivity of other deepwater habitats (including soft bottom habitats) in the North Atlantic to fishing and other anthropogenic activities, and where possible describe their occurrence;
- d) Commence the preparation of a prioritised workplan that would fill the information gaps identified under ToRs b) and c).

WGDEC will report by 8 April 2005 for the attention of ACE as well as the Marine Habitat and the Living Resources Committees.

C.Res. 2004/2ACE04

A Workshop co-sponsored by OSPAR on Time-series Data relevant to Eutrophication Ecological Quality Objectives [WKEUT] (Conveners: T. Smayda, USA, and G. Ærtebjerg, Denmark) will be held in Brorfelde, Denmark, from 7–11 November 2005 to:

- a) examine long-term time-series data sets available for European and relevant North American coastal sites and evaluate specific issues relevant to EcoQO premises and standards through a comparative analysis of the regional and temporal variations exhibited in long-term time-series observatories;
- b) examine the correlations between the patterns in nutrient levels and cycles together with:
 - i) changes in the abundance, composition, primary production, and dynamics of phytoplankton,
 - ii) changes in blooms of harmful and novel species, and
 - iii) changes in oxygen patterns and other water quality parameters. This comparative, regional analysis will seek to establish the properties of nutrient-regulated behaviour of plankton dynamics, regionally and temporally, and potential mitigation of undesirable changes where they occur.

WKEUT will report to ACE, MHC, and OCC by 15 December 2005.

C.Res. 2004/2ACE05

The Working Group on Marine Mammal Ecology [WGMME] (Chair: Gordon T. Waring, USA) will meet in Savonlinna, Finland, from 9–12 May 2005 to:

- a) report on the populations of seals and harbour porpoise in the Baltic marine area, including the size and structure of the populations, distribution, migration pattern, reproductive capacity, effects of contaminants on the health status, and additional mortality owing to interactions with commercial fisheries by sub-region (bycatch, intentional killing);
- b) develop further the response to the European Commission's standing request regarding fisheries that have a significant impact on small cetaceans and other marine mammals:

- i) review any new information on population sizes, bycatches, or mitigation measures and suggest relevant advice,
 - ii) review the usefulness of available prey data to quantify marine mammal-prey interactions for multispecies modelling purposes, and provide recommendations for future sampling schemes for quantification of marine mammal-prey interactions;
- c) for each marine mammal species affected by fishing, compile data (in excel spreadsheet format) which quantifies the seasonal distribution and abundance at spatial scales, where possible, that correspond to ICES rectangles for the North Sea. The data will be submitted to REGNS secure website in preparation for the REGNS integrated assessment workshop from 9–13 May 2005. These data should, where possible, be for the period 1984–2004 to assess trends. Also where possible, provide information on diet and variation/change of this for all species described;
- d) start preparations to summarize the size, distribution, and incidental catches of marine mammal populations in the ICES areas (VII–X);
- e) begin preparations for a future Workshop (associated with WGMME meeting) on health and immune status, disease agents, and links to environment quality;
- f) develop a *Cooperative Research Report* on threats to marine mammal populations based on a compilation of prior reports of this and former marine mammal working/study groups.

The Group will report to ACE by 18 May 2005.

C.Res. 2004/2ACE06

The **Working Group on Ecosystem Effects of Fishing Activities (WGECO)** (Chair: S. Rogers, UK) will meet at ICES Headquarters from 12–19 April 2005 to:

- a) informed by the results of the Rotterdam meeting in November 2004 and subsequent developments, commence the planning for further involvement of the ICES science community in the European Marine Strategy;
- b) informed by the proposals for changes to the approach to provision of advice within ICES, particularly initiatives to undertake development and evaluation of management strategies for fisheries (e.g. from the Study Group on Management Strategies (SGMS)), consider and report on the nature and form of ecosystem information, inputs, and advice which would best contribute to putting such work in an integrated ecosystem perspective;
- c) review and report on the available data contributions made to the REGNS process by other WGs and describe their value to an integrated assessment, in time for the REGNS workshop in May 2005;
- d) review and report on the analytical work on ecosystem indicators and objectives undertaken during past meetings of WGECO, and evaluate their potential roles in supporting the new ICES advisory capacity being developed in ToRs a) and b);
 - i) in the context of fisheries effects on the ecosystem, continue the identification of fish and invertebrate taxa which are appropriate to use as indicators of habitat quality. Criteria should include those used in past WGECO meetings and adopted by ACE;
- e) commence the development of a framework for contributing to a Strategic Environmental Assessment for a fishery;
- f) informed by the outputs of the SGEH, advise on the setting of reference levels for EcoQ elements that reflect associated EcoQOs for eutrophication, hazardous substances, impacts of fishing, and loss of biodiversity (including xenodiversity and habitat destruction) in the Baltic Sea.

WGECO will report for the attention of ACE by 25 April 2005.

C.Res. 2004/2ACE07

The **Working Group for Regional Ecosystem Description** [WGRED] (Chair: Jake Rice, Canada) will meet jointly with AMAWGC at ICES Headquarters from 14–18 February 2005 to:

- a) review and revise as necessary a report template for the ecosystem description in the advisory reports. This template will be provided by the Secretariat. The template will propose a bioregion structure (ecosystems). The Secretariat will in developing this template *inter alia* consider RAC's and European Marine Strategy Bioregions;
- b) review and propose any revisions to the proposed Table of Contents (ToC) for the ICES Advisory Report for 2005. This ToC proposal will be drafted by the Chairs of the advisory committees for consideration at the MCAP January 2005 meeting;
- c) Using a) and b) on an ecosystem basis to:
 - i) Identify sections in the ICES advisory report (ToC defined under b)) for which information on ecosystem characteristics and linkages – on the basis of existing knowledge – can be incorporated in the ICES advisory report,
 - ii) Review available information sources regarding ecosystem characteristics and major events, important environmental drivers for ecosystem productivity, and important human impacts on the ecosystems,
 - iii) Compile information identified above. This compilation is intended for inclusion in the ICES advisory report 2005 or be used by fisheries and relevant science expert groups to support their input to the ICES advisory process;
- d) Consider ways to develop regional assessments based on an incremental approach, taking on board existing knowledge and incorporating integrated assessments when such become available.

The Working Group will report by 7 March 2005 for the attention of ACE, ACFM, and ACME. The report of this Group and information compiled will be made available to relevant fisheries and ecosystem assessment groups.

Fisheries Technology Committee (B)

C.Res. 2004/2B01

A **Workshop on Unaccounted Fishing Mortality** [WKUFM] (Chair: M. Breen, UK) will be held in Aberdeen, UK, from 25–27 September 2005 to:

- a) identify measurable components of unaccounted fishing mortality; and
- b) define indices for assessing their relative impacts in key fisheries, for different capture methods.

WKUFM will report by 11 October 2005 for the attention of the Fisheries Technology Committee, the Study Group on Unaccounted Fishing Mortality (SGUFM), and the Working Group on Fishing Technology and Fish Behaviour (WGFTFB).

C.Res. 2004/2B02

Study Group on Survey Trawl Gear for the IBTS Western and Southern Areas [SGSTG] will be renamed the **Study Group on Survey Trawl Standardisation** [SGSTS] (Chair: David Reid, UK) and will meet in Rome, Italy, from 16–18 April 2005 to:

- a) review and report on the current status of survey trawl design, recent developments in design, and new technologies which could be suitable for application in revised survey trawl designs, aiming to reduce trawl performance variability or for use in absolute abundance estimation, for example;

- b) design and discuss the implementation of a generic ICES survey trawl standardization programme for all survey bottom trawls inside and outside the ICES areas;
- c) design and discuss the implementation of a quality control programme for survey trawl procurement, construction, rigging, repair, and maintenance;
- d) define the operational requirements to be used in intercalibration studies;
- e) develop protocols to be followed when changes are made to the survey gear;
- f) develop an outline for an *ICES Cooperative Research Report* on Standardization and Quality Control Protocols for Bottom Survey Trawls.

SGSTS will report by 21 May 2005 for the attention of the Fisheries Technology Committee, the Living Resources Committee, and the Resource Management Committee and will make its report available to WGFTFB and WGIBTS.

C.Res. 2004/2B03

The **Study Group on Collection of Acoustic Data from Fishing Vessels** [SGAFV] (Chair: Bill Karp, USA) will meet in Rome, Italy, from 17–18 April 2005 to:

- a) update, summarize, and report on information on research which involves collection of scientific acoustic data from commercial vessels;
- b) develop recommendations for methods and guidelines for collection of acoustic data to address specific ecosystem monitoring, stock assessment, and management objectives, including: acoustic system calibration and performance monitoring, characterization of radiated vessel noise, comparability of results, survey design, biological sampling, data interpretation and analysis, and data storage and management; and
- c) prepare background material, guidelines, methods and recommendations for possible publication in the *Cooperative Research Report* series.

SGAFV will report by 21 May 2005 for the attention of the Fisheries Technology Committee and will make its report available to WGFASST.

C.Res. 2004/2B04

The **ICES/FAO Working Group on Fishing Technology and Fish Behaviour** (WGFTFB) (Chair: Norman Graham, Norway) will meet at FAO in Rome, Italy, from 18–22 April 2005 to:

- a) review and report on bycatch in shrimp trawl fisheries, i.e.:
 - i) to review and evaluate recent technical developments in bycatch reduction,
 - ii) to estimate global usage of bycatch reduction in shrimp fisheries,
 - iii) to review implementation plans in shrimp fisheries,
 - iv) to assess adequacy of size selection in shrimp fisheries.

(Topic leaders: Thomas Moth-Poulsen, Mass. Div. Marine Fish, USA; Wilfried Thiele, FAO Rome, and Norman Graham, IMR, Bergen);

- b) review issues concerning legislation on technical conservation measures relating to fishing gear design.

(Topic leaders: Dick Ferro, FRS, Aberdeen, and Dominic Rihan, BIM, Dublin);

- c) review and report on work done, identify information gaps, and recommend research priorities on interaction between fishing gear and
 - i) pipelines and other sub-sea structures,
 - ii) cuttings piles.

(Topic leader: Dick Ferro, FRS, Aberdeen);

- d) review and report on the use of multiple size selection devices in towed gears to include the following topic:
 - i) recent trawl size selection experiments where multiple selection systems have been assessed, e.g., square mesh panels, grids, etc., considering the impact on the target and bycatch species,
 - ii) developments in modelling multiple selection data,
 - iii) practical issues relating to additional technical measures such as onboard handling and material strength of the multiple selective devices and fisheries enforcement issues.

(Topic Leaders: Norman Graham, IMR, Bergen, and Barry O'Neill FRS, Aberdeen *will work by correspondence, meet at the 2005 WGFTFB meeting, and report to the WG in 2006*);

- e) explore the potential for alternative fishing gears for traditional species, gears that are environmentally friendly and promote a responsible fishing method.

(Topic Leader: Bjarti Thomsen, Faroe Islands, Denmark and an *interested subgroup will work by correspondence, meet at the 2005 WGFTFB meeting, and report their findings either at the 2006 WGFTFB or at the ICES Symposium on Fishing Technology in the 21st Century*);

- f) consider a recommendation for the adoption of the OMEGA mesh gauge and measuring protocol to replace the existing ICES mesh gauge as the new standard gauge in accordance with the 2002 recommendation of the former ICES Study Group on Mesh Measurement Methodology (SGMESH);
- g) in a joint session with the Working Group on Fisheries Acoustics and Technology [WGFAST] on 21 April, 2005 review and report on:
 - i) advances in survey strategy, design, and gear (including observational techniques such as sonar, video, cameras, and longlines),
 - ii) techniques for validating multi-frequency acoustical species methods, with attention to appropriate time, space, and scale (e.g., longlines, gill nets, plankton nets, survey trawls, CUFES, cameras, video, and u-tow), and
 - iii) methods for integrating multi-disciplinary data to elucidate forcing functions of fish abundance and behaviour (e.g., environmental conditions, fishing pressure, and vessel noise),
 - iv) review and discuss the reports of AMAWGC (ACFM) and WGRED (ACE) and the role of WGFTFB/WGFAST/FTC in the implementation of fisheries/ecosystem advice by ACFM and ACE.

WGFTFB will report by 21 May 2005 for the attention of the Fisheries Technology Committee and FAO.

C.Res. 2004/2B05

The **Working Group on Fisheries Acoustics Science and Technology** [WGFAST] (Chair: David Demer, USA) will meet in Rome, Italy, on 19, 20, and 22 April 2005 to:

- a) examine and report on the work in the following research areas:
 - i) measuring underwater radiated noise from survey vessels and its effects on fish,
 - ii) technologies for remote species identification (low-frequency, Doppler, multi-frequency, broadband, data integration, optical sensors),
 - iii) alternative technologies (small-craft, buoys, rovs, auvs, gliders, fishing vessels, multi-beam sonar, acoustic cameras), with special attention to shallow water and near-boundary assessments (coastal, riverine, demersal and epipelagic species, and bottom typing), and
 - iv) target strength (modelling and measurements);
- b) review and report on the reports of the:
 - i) Planning Group on the HAC (PGHAC) common data exchange format,

- ii) Study Group on Baltic Herring TS (SGTSEB), and
- iii) Study Group on Collection of Acoustic Data from Fishing Vessels (SGAFV);
- c) in a joint session with the Working Group on Fishing Technology and Fish Behaviour [WGFTFB] on 21 April 2005, review and report on:
 - i) methods for integrating multi-disciplinary data to elucidate forcing functions of fish abundance and behaviour (e.g. environmental conditions, fishing pressure, and vessel noise),
 - ii) review and discuss the reports of AMAWGC (ACFM) and WGRED (ACE) and the role of WGFTFB/WGFAST/FTC in the implementation of fisheries/ecosystem advice by ACFM and ACE.

WGFAST will report by 21 May 2005 for the attention of the Fisheries Technology Committee.

C.Res. 2004/2B06

The **Study Group on Acoustic Seabed Classification** [SGASC] (Chair: John Anderson, Canada) will meet in Rome, Italy, from 23–24 April 2005 to:

- a) review, evaluate, and report on the progress in:
 - i) data and methodologies for classification of seabed properties in relation to scientific theory,
 - ii) the development of standardized procedures for data collection, interpretation, and reporting, including a glossary of terms and conditions,
 - iii) the existing commercial data classification systems,
 - iv) the utilization of acoustic seabed classification products in habitat mapping and other marine activities;
- b) evaluate and report on progress towards publishing a *Cooperative Research Report* on “Acoustic Seabed Classification in Marine Environments”.

SGASC will report by 21 May 2005 for the attention of the Fisheries Technology and Marine Habitat Committees and make its report available to WGFAST.

C.Res. 2004/2B07

A **Workshop on Survey Design and Data Analysis** [WKSAD] (co-Chairs: P. G. Fernandes, UK, and M. Pennington, Norway) will be held in Sète, France, from 9–13 May 2005 to:

- a) evaluate alternate analyses of estimates of the abundance, associated variance, and density maps, from surveys of a simulated fish population whose abundance is known and then expand this to several actual survey datasets;
- b) review the state of knowledge regarding the effect of trawl duration on fish catch rate with a view to considering a reduction in sample trawl duration;
- c) evaluate analyses of covariate data which could provide improved precision of abundance estimates;
- d) review methods for combining surveys of the same resource using different methods;
- e) evaluate the sensitivity of methods to estimate biological parameters in terms of analytical assumptions and measurement error.

WKSAD will report by 20 June 2005 for the attention of the Fisheries Technology Committee, the Living Resources Committee and the Resource Management Committee.

C.Res. 2004/2B08

A **Study Group on Unaccounted Fishing Mortality** [SGUFM] (Chair: Mike Breen, UK) will continue to work by correspondence in 2005 to:

- a) conduct and report on a comprehensive literature review, building upon the work of the previous Study Group on issues relating to the sources of fishing mortality other than those that can be accounted for by the reported catch;
- b) review and evaluate the report of the February–March 2005 Aberdeen Workshop on Unaccounted Fishing Mortality and incorporate its recommendations where applicable;
- c) collate available data on sources of unaccounted fishing mortality (2005) and produce a comparative summary of their relative impacts, for different capture methods in key fisheries (2006);
- d) review and make recommendations on methods used to estimate escape mortality from towed fishing gears.

SGUFM will report by 31 July 2005 to the Fisheries Technology Committee and make its report available to WGFTFB.

C.Res. 2004/2B09

The **Planning Group on the HAC Data Exchange Format** [PGHAC] (Chair: L. Berger, France) will continue to work by correspondence in 2005 to:

- a) coordinate the further development of the HAC standard data exchange format;
- b) provide information on the changes in the format and its evolution;
- c) share information between manufacturers and users on the way acoustic data are processed and stored;
- d) review and report on the new collated HAC specification manual;
- e) review and report on the development of tuples for multi-beam echosounders.

PGHAC will report by 31 July 2005 for the attention of the Fisheries Technology Committee and will make its report available to WGFAST.

C.Res. 2004/2B10

The **Study Group on Target Strength Estimation in the Baltic Sea** [SGTSEB] (Chair: Bo Lundgren, Denmark) will continue to work by correspondence in 2005 to:

- a) prepare a final report on the work of the Study Group for possible publication in the *ICES Cooperative Research Report* series.

SGTSEB will make its draft report available by 21 May 2005 for the attention of the Fisheries Technology Committee and the Baltic Committee and make its report available to WGFAST.

Oceanography Committee (C)

C.Res. 2004/2C01

The **Working Group on Phytoplankton Ecology** [WGPE] (Chair: F. Rey, Norway) will meet in Oldenburg, Germany, from 16–18 March 2005 to:

- a) critically review the work undertaken by WGPE and prepare a clear set of guidelines for the future direction of this Working Group in relation to other relevant WGs, and take action to encourage wider participation to the Group;
- b) start assessing satellite remote sensing data and numerical modelling results for revealing new information on phytoplankton dynamics;
- c) review and report on information on the impact of climate variability on phytoplankton dynamics and phytoplankton-zooplankton-fish interactions;

- d) evaluate and report on annual Phytoplankton Summary Reports and the standardization of the data sets;
- e) review the Phytoplankton Checklist compiled intersessionally and compare if species from checklist fit into ITIS structure to report phytoplankton data to ICES;
- f) plan a workshop in Bergen 2007 devoted to the evaluation of new methods of PP measurements;
- g) continue preparations to summarise status and trends of phytoplankton communities in the North Sea (biomass, species and size composition, spatial distribution) for the period 1984–2004, and any trends over recent decades in these communities; for input to REGNS initial assessment in 9–11 May 2005, and final assessment in 2006.

WGPE will report by 29 April 2005 for the attention of the Oceanography Committee, ACME, and ACE.

C.Res. 2004/2C02

The **Working Group on Zooplankton Ecology** [WGZE] (Chair: Steve Hay, UK) will meet in Lisbon, Portugal, from 4–7 April 2005 to:

- a) update the annual plankton status report. It is planned to extend it to new sites and include concurrent hydrographic data, phytoplankton series, and advances in monitoring technologies;
- b) provide future development and collaborative approaches in plankton time-series measurements and interpretation, including collaboration with global synthesis attempts and regional comparisons;
- c) review geographic and seasonal patterns across the range of plankton monitoring sites in the ICES area with emphasis on key species;
- d) develop a workplan to deliver relevant data sets to the North Sea ecosystem assessment to be completed by REGNS in 2006;
- e) consider multivariate statistical methods and other models as means to evaluate and assess zooplankton population and community dynamics in relation to environmental factors, ocean climate changes, and fisheries assessment;
- f) review preparations and progress towards:
 - i) a workshop on enzymatic and other biochemical and molecular methods to measure or assess rate processes in zooplankton,
 - ii) the 4th International Zooplankton Production Symposium to be held in Japan 2007,
 - iii) a “virtual” workshop to further the collaborative comparison and analyses of plankton time-series and other zooplankton data in the North Sea areas,
 - iv) a further taxonomic workshop to advance the *ICES Identification Leaflets for Plankton*, and also to encourage the training and retention of plankton taxonomic skills. This should focus to a large extent on gelatinous plankton taxonomy;
- g) review and consider the role of meroplankton in pelagic shelf seas ecosystems and their contribution to productivity in these areas;
- h) discuss requirements for data management in ICES and provide input to SGMID.

WGZE will report by 6 May 2005 for the attention of the Oceanography Committee, ACME, and ACE.

C.Res. 2004/2C03

The **ICES/IOC Working Group on Harmful Algal Bloom Dynamics** [WGHABD] (Chair J. L. Martin, Canada) will meet in Flødevigen, Norway, from 4–7 April 2005 to:

- a) review the dynamics of toxin-producing phytoplankton and associated toxins in shellfish, related to phytoplankton abundance, and phytoplankton community structure with reference to HAB population dynamics. In 2005 the focus will be on PSP toxin-producing phytoplankton and associated toxins in shellfish (Canada, Spain, Scotland, US, Denmark);
- b) consider the status of knowledge concerning biologically active specific chemicals, their chemical nature, presence, and production in algae and their effects on individuals and population dynamics, as well as their impacts on ecosystems;
- c) discuss new findings that pertain to HAB dynamics, and define the main processes regulating the initiation, development, and decay of individual HABs;
- d) review planning progress for the proposed Workshop on New and Classic Techniques for the Determination of Numerical Abundance and Bio-volume of HAB-species;
- e) prepare data on the distribution and number of harmful algal blooms in the North Sea for the period 1984 to 2004 (where available), and submit the data to the secure REGNS website in excel spreadsheet format in preparation for the REGNS Integrated Assessment Workshop to be held from 9–11 May 2005. The data should be averaged and presented in ICES grid spatial scale, indicating where no observations have been recorded;
- f) collate and assess national reports and update the decadal mapping of harmful algal events for the IOC-ICES harmful algal database, HAE-DAT, on a regional, temporal, and species basis;
- g) review progress in computerised production of decadal maps from country reports, including the revision of reports already in the database, covering the last 10 years and the web interface;
- h) propose types of analyses that should be performed using the IOC-ICES HAE-DAT dataset and identify problems and gaps in this dataset that must be rectified before the analyses can be conducted.

WGHABD will report by 2 May 2005 for the attention of the Oceanography Committee and ACME.

C.Res. 2004/2C04

The **Working Group on Modelling Physical/Biological Interactions** [WGPBI] (Chair: C. Hannah, Canada) will meet in Hamburg, Germany, from 7–8 April 2005 to:

- a) present and discuss new results related to developments and validation in modelling PBI;
- b) create a WGPBI website for information exchange;
- c) discuss draft review, prepared intersessionally, on nutrient load reduction;
- d) prepare a review of the state-of-the-art in larval fish modelling;
- e) receive report from the Numerical Experiment subgroup;
- f) cooperate with SGBEM to explore ecosystem models;
- g) cooperate with WGRP to enhance the use of physical-biological models for prediction of fisheries recruitment.

WGPBI will report by 9 May 2005 for the attention of the Oceanography Committee.

C.Res. 2004/2C05

The **ICES-EuroGOOS Planning Group on the North Sea Pilot Project (NORSEPP)** [PGNSP] (co-Chairs: Martin Holt, EuroGOOS, and H. R. Skjoldal, Norway) will meet in Brussels, Belgium, preferably together with relevant EuroGOOS-NOOS members, from 11–13 April 2005 to:

- a) produce a summary product from NORSEPP operational deliverables;
- b) submit a Strategic Support Activity to Framework 6 for NORSEPP support, including a full-time coordinator;
- c) plan how to disseminate the NORSEPP operational deliverables and information to the ICES community;
- d) review and deliver components of NORSEPP to support the 2005 and 2006 work of the Regional Ecosystem Study Group for the North Sea;
- e) review lessons learned from preparation of NORSEPP operational deliverables and recommend on transition to fuller operational status;
- f) complete review of present operational North Sea observing programmes using the EDIOS meta-database in relation to the requirements of NORSEPP and produce recommendations for possible improvements.

PGNSP will report by 1 May 2005 for the attention of the Oceanography, the Living Resources, the Resource Management, the Marine Habitat, and the Advisory Committees.

C.Res. 2004/2C06

The **Working Group on Oceanic Hydrography [WGOH]** (Chair: A. Lavin, Spain) will meet in Rhode Island, USA, from 11–14 April 2005 to:

- a) update and review results from Standard Sections and Stations;
- b) consolidate inputs from Member Countries and NORSEPP into the ICES Annual Ocean Climate Status Summary (IAOCSS);
- c) review national monitoring programmes and OSPAR's Coordinated Environmental Monitoring Programme (CEMP), in order to improve climate monitoring activities;
- d) review and improve relations with international climate monitoring programmes;
- e) undertake an isopycnal analysis of *in situ* data;
- f) WGOH will provide summary datasets on the physical properties of the North Sea (to include salinity, temperature, tidal vectors, peak surface, mid- and bottom currents, maximum annual and 50-year significant wave heights). The data should be time-averaged (annual average, seasonal cycles, and annual peaks) for the period 1984 to 2004 (where available) and spatially averaged at the scale of ICES rectangles. The data should be submitted to the secure REGNS website in preparation for the REGNS Integrated Assessment Workshop from 9–11 May 2005;
- g) discuss requirements for data management in ICES and provide input to SGMID;
- h) review website developments.

WGOH will report by 2 May 2005 for the attention of the Oceanography Committee, ACME, and ACE.

C.Res. 2004/2C07

The **Working Group on Marine Data Management [WGMDM]** (co-Chairs: Michèle Fichaut, France, and Helge Sagen, Norway) will meet in Sopot, Poland, from 9–11 May 2005 to:

- a) identify and compare existing quality control and quality assurance procedures for physical, chemical and biological data in use at WGMDM member organiza-

tions, and recommend common standards and procedures to ICES and IOC/IODE;

- b) improve usefulness of the Integrated Taxonomic Information System (ITIS) to the marine community and actively promote ITIS within the ICES and IOC communities;
- c) critically assess the data management practices in place in WGMDM member organisations in support of Operational Oceanography;
- d) based on the final report and results of the SGXML, make recommendations regarding adoption of the use of XML in the oceanographic community;
- e) review the report of the Study Group on the Management of Integrated Data (SGMID), and recommend strategies and solutions for data integration, distributed database systems, and data distribution policy at the ICES Secretariat;
- f) critically examine the use of GIS in marine data systems in WGMDM member countries, and make recommendations as to the use of GIS.

WGMDM will report by 5 June 2005 for the attention of the Oceanography Committee, ACE, and ACME.

C.Res. 2004/2C08

A Workshop on the Impact of Zooplankton on Cod Abundance and Production [WKIZC] (co-Chairs: Ø. Fiksen, Norway, J. Runge, USA, and Christian Möllmann, Denmark) will meet at ICES Headquarters from 7–9 June 2005 to:

- a) to determine the zooplankton species in the diets of cod, their temporal and spatial changes;
- b) to determine the variability in zooplankton populations and their relationships to cod;
- c) to examine the vital rates (growth, reproduction, mortality, recruitment) of zooplankton which are relevant to cod life histories (“stock assessment” of zooplankton);
- d) to determine how the timing of zooplankton production and spatial dynamics (including patchiness) of *nauplii* relates to the spawning, distribution, and survival of early stages of cod;
- e) to establish the links between zooplankton and later stages of cod.

This will be carried out using a combination of statistical data analyses, process studies, and a variety of modelling approaches.

WKIZC will report by 1 July 2005 for the attention of the Oceanography Committee.

C.Res. 2004/2C09

The **ICES-IOC Steering Group on GOOS [SGGOOS]** (co-Chairs: W. G. Harrison, Canada, and Antonio Bode, Spain) will meet in Brest, France, from 10–11 June 2005 to:

- a) develop global and regional linkages between ICES and GOOS bodies:
 - i) collate national/regional reports on GOOS activities within ICES and from IOC members,
 - ii) review progress with 2004 ICES/IOC SGGOOS Action Points, and prepare 2005/2006 Actions;
- b) identify and/or develop components and activities by ICES that may contribute to the Global Ocean Observing System:
 - i) review, through presentations, relevant national/regional observations, monitoring or modelling programmes relevant to ICES and GOOS,
 - ii) review ecosystem indicators currently under development (IOC, COOP-GOOS, ICES Status Reports, and previous reports of WGECO), and current

- methods for ecosystem indicator integration and their use in GOOS pilot projects,
 - iii) discuss feasibility of an ICES CTD/VOS system which may provide real-time or near-real time delivery of environmental data from ICES coordinated research vessel surveys;
- c) develop regional ICES and GOOS pilot projects to demonstrate the benefits of taking a GOOS approach in the ICES context:
 - i) review, through presentations, progress in developing and implementing NORSEPP,
 - ii) review, through presentations, progress in developing and implementing other regional pilot projects, including GoMA-GOOS, PICES, etc.,
 - iii) review and steer progress towards the 2005 Theme Session “Comparing and contrasting the scientific strategies and output of regional ecosystem pilot projects and operational oceanography”;
- d) develop appropriate outreach activities to disseminate information about the programme:
 - i) review progress with ICES-PICES coordination of GOOS activities,
 - ii) update the ICES GOOS flyer.

SGGOOS will report by 1 July 2005 for the attention of the Oceanography Committee, ACME, and ACE.

C.Res. 2004/2C10

A Workshop on New And Classic Techniques for the Determination of Numerical Abundance and Biovolume of HAB-Species – Evaluation of the Cost, Time-Efficiency and Intercalibration Methods [WKNCT] (co-Chairs: Bengt Karlson, Sweden, and Caroline Cusack, Ireland) will be held in Kristineberg, Sweden, from 22–27 August 2005 to:

- a) compare traditional methods for concentrating, preserving, and counting common HAB species using light microscope techniques;
- b) compare molecular probe-based methods for cell enumeration with the traditional techniques;
- c) make recommendations for further research and development efforts targeted at identified inaccuracies or deficiencies in the methods being evaluated;
- d) identify, where possible, a reference counting method against which other methods can be calibrated;
- e) assess the usefulness and cost efficiency of the available numerical methods in routine monitoring.

WKNCT will report by 30 August 2005 for the attention of the Oceanography Committee and the Baltic Committee.

C.Res. 2004/2C11

The **ICES/GLOBEC Working Group on Cod and Climate Change [WGCCC]** (Chair: G. Ottersen, Norway) will work by correspondence in 2005 to:

- a) review and evaluate the progress on the synthesis activities, including:
 - i) publication of the book on cod,
 - ii) publication of the *Cooperative Research Report* on the life history aspects of cod stocks throughout the North Atlantic,
 - iii) publication of the proceedings of the Symposium on the Influence of Climate Change on North Atlantic Fish Stocks;
- b) plan and prepare the Workshop on the Impact of Zooplankton on Cod Abundance and Production;

- c) plan the back-to-back Workshops on the Decline and Recovery of Cod Stocks Throughout the North Atlantic and on the Influence of Climate on Trophodynamics of Cod Ecosystems;
- d) initiate plans for a Workshop on Cod and Future Climate Change and discuss other workshops;
- e) review and evaluate the results from the Workshop on the Transport of Cod Larvae;
- f) plan the Theme Sessions on Cod in a Changing Climate (ASC 2005) and Physics Relevant to Marine Ecosystems (ASC 2006).

WGCCC will report by 31 May 2005 for the attention of the Oceanography Committee.

C.Res. 2004/2C12

The **Working Group on Recruitment Processes** [WGRP] (co-Chairs: R. D. M. Nash, Norway, and T. Miller, USA) will work by correspondence during 2005 to:

- a) prepare a synthesis of multidisciplinary projects relevant to the understanding of recruitment processes and highlight unresolved issues which deserve further consideration;
- b) report on recent meetings that concern recruitment in fish populations (e.g., Climate Change – Bergen) so that information or progress relevant to the status or assessment of stocks in the ICES area can be highlighted;
- c) assess the role of spatial and temporal variability in the distribution and abundance of organisms together with the implications of these sources of variability on the design of sampling programmes and inferences drawn from them;
- d) review the development of new approaches or techniques used in the study of factors and processes that influence the development and survival of fish eggs and larvae in relation to recruitment of the formation of year-class strength;
- e) critically review the work undertaken by WGRP and prepare a clear set of guidelines for the future direction of this Working Group in relation to the other current WGs.

WGRP will report by 31 May 2005 for the attention of the Oceanography Committee.

C.Res. 2004/2C13

The **Steering Group for the ICES/GLOBEC North Atlantic Programme and Regional Office** [SGNARO] (co-Chairs: K. Drinkwater, Norway, and F. Köster, Denmark) will work by correspondence in 2005, and meet as appropriate at national expense, to:

- a) review and advise on the further evolution of the ICES/GLOBEC North Atlantic Programme and the workplan of the ICES/GLOBEC office, taking into account:
 - i) the strategic goals for ICES/GLOBEC research and the strategic approach for the ICES/GLOBEC office as agreed by the Council,
 - ii) developments in the international GLOBEC programme, and
 - iii) available funding;
- b) review and advise on the action plan of the Working Group on Cod and Climate Change.

The Group will include the General Secretary, the GLOBEC Coordinator, the Chair of the Oceanography Committee, the Chair of WGCCC, and a representative of the international GLOBEC Scientific Steering Committee, and will be open to participants in the ICES/GLOBEC programme. Member countries not participating directly in the ICES/GLOBEC programme are also entitled to designate representatives to participate in the work of this group, should they so choose.

SGNARO will report by 31 May 2005 for the attention of the Oceanography Committee and the Bureau.

Resource Management Committee (D)

C.Res. 2004/2D01

The **Study Group on Redfish Stocks** [SGRS] (Chair: Christoph Stransky, Germany) will meet at ICES Headquarters from 27–29 January 2005 and from 25–27 July 2005 to:

- a) review the survey design of the international trawl/acoustic surveys in the Irminger Sea and adjacent waters (January meeting);
- b) to advise on the required frequency, number of vessels needed, and the timing of the future surveys (January and July meeting);
- c) plan the international trawl/acoustic survey of redfish to be carried out in the Irminger Sea and adjacent waters in June/July 2005 (January);
- d) prepare the report on the outcome of the 2005 survey (July).

SGRS will report by 15 March 2005 (January meeting) and 15 August 2005 (July meeting) for the attention of the Resource Management Committee, North Western Working Group, and ACFM.

C.Res. 2004/2D02

A **Workshop on Advanced Fish Stock Assessment Techniques** [WKAFAT] (co-Chairs: D. Skagen, Norway; and E. Hjørleifsson, Iceland) will be held at ICES Headquarters from 24 February to 1 March 2005 to:

- a) teach a course covering stock assessment methodology, including evaluation of data consistency, estimation of the state of a stock, projection of stock status, uncertainty evaluation, and risk assessment.

Participants will each pay a contribution of DKK 2000 towards the running expenses of the Workshop.

WKCFAT will report by 31 March 2005 for the attention of the Resource Management and Living Resources Committees, and ACFM.

C.Res. 2004/2D03

The **International Bottom Trawl Survey Working Group** [IBTSWG] (Chair: J.-C. Mahé, France) will meet in Hamburg, Germany, from 29 March to 1 April 2005 to:

- a) coordinate and plan North Sea and North-Eastern Atlantic surveys for the next twelve months;
- b) further develop protocols and criteria to ensure standardization of all sampling tools and survey gears and review institutional checking lists;
- c) investigate the adequacy of some fishing protocol defined in the IBTS manual from ancient studies with respect to the most recent data available from modern monitoring of gear performances;
- d) review the GOV specifications with respect to the actual material available for construction;
- e) review the progress made in the Norwegian survey trawl project;
- f) review and comment on the new DATRAS database;
- g) review the outcome of the Survey Design and Data Analysis Workshop (WKSAD) to be held in Aberdeen, June 2005;
- h) make a detailed check of the age/length/sex/maturity data for the last 3 years from the ICES database per roundfish area;
- i) review the progress made in defining a stratification scheme for the Eastern Atlantic and the Skagerrak.

IBTSWG will report by 15 April 2005 for the attention of the Resource Management Committee.

C.Res. 2004/2D04

The **Study Group on Multispecies Assessment in the North Sea** [SGMSNS] (co-Chairs: M. Vinther, Denmark, and E. D. Bell, UK) will meet at ICES Headquarters from 5–8 April 2005 to:

- a) prepare a ‘definitive’ and fully-revised 4M model key-run, incorporating any revisions in consumption rates or other available data;
- b) re-evaluate the importance of mackerel as an MSVPA predator in the North Sea;
- c) incorporate the biomass data, consumption rates, and diet compositions provided by the Working Group on Seabird Ecology (WGSE) and the Working Group on Marine Mammal Ecology (WGMME) for marine mammals and seabirds. Evaluate the importance of newly-introduced predators (e.g., harbour seals), and whether these affect 4M outputs;
- d) re-examine the issue of whether 0-group fish can be adequately modelled using the 4M or other multispecies modelling approaches;
- e) address ‘applied’ and specific questions posed intersessionally by ACFM;
- f) perform a data-fitting exercise using the North Sea 1991 EwE model. The fitting exercise will require input (survey CPUE) and output data (MSVPA estimated biomasses) from the updated 4M key-run (Term of Reference a);
- g) examine the need within ICES and develop a strategy for multispecies stock assessment and subsequent multispecies advice on management issues;
- h) prepare a draft resolution for a new expert group, should the outcome of g) identify the need for this.

SGMSNS will report by 18 April 2005 for the attention of the Resource Management and Living Resources Committees, ACFM, and ACE.

C.Res. 2004/2D05

The **Working Group on Fishery Systems** [WGFS] (Chair: Martin Pastoors, Netherlands) will meet at ICES Headquarters from 9–13 May 2005 to:

- a) present and review results of the ongoing analysis of fishery systems and elements of those systems;
- b) coordinate work on ongoing case studies;
- c) include a workshop on studies of monitoring, control, and surveillance (with external experts invited);
- d) review the outcomes of the two groups SGMS and AMAWGC parented by ACFM.

WGFS will report by 23 May 2005 for the attention of the Resource Management Committee, ACFM, and ACE.

C.Res. 2004/2D06

The **Regional Ecosystem Study Group for the North Sea** [REGNS] (Chair: A. Kenny, UK) will meet at ICES Headquarters from 9–13 May 2005 to:

- a) hold a workshop to produce a preliminary “proof of concept” integrated ecosystem assessment for the North Sea;
 - i) Compile and synthesise material from the twenty identified “source” working groups, which have been requested to provide data, information, and indicators,

- ii) Produce summary presentations of the material as an overview (e.g., using methods for re-scaling and reducing dimensionality, “traffic lights”, etc.),
- iii) Identify gaps in the material provided and the subjects covered,
- iv) Review patterns and interactions among the indicators. Preliminary description of system behaviour (e.g., evidence of “regime shift” in the late 1980s) and strength of attribution of causes of observed changes;
- b) comment on how to measure impacts of past management actions at the system level;
- c) consider and comment on issues of predictability and impact of future management actions;
- d) advise on future monitoring and modelling required for improved integrated ecosystem assessment;
- e) advise on designing the scientific and institutional requirements in order to facilitate the continuation of integrated ecosystem assessments within ICES.

REGNS will report by 20 May 2005 for the attention of the Resource Management Committee.

C.Res. 2004/2D07

The **Planning Group on Northeast Atlantic Pelagic Ecosystem Surveys** [PGNAPES] (Chair: J. A. Jacobsen, Faroe Islands) and will meet in Galway, Ireland, from 16–18 August 2005 to:

- a) Critically evaluate the surveys carried out in 2005 in respect of their utility as indicators of trends in the stocks, both in terms of stock migrations and accuracy of stock estimates in relation to the stock-environment interactions;
- b) review the 2005 survey data and provide the following data for the Northern Pelagic and Blue Whiting Working Group:
 - i) stock indices of blue whiting and Norwegian spring-spawning herring,
 - ii) zooplankton biomass for making short-term projection of herring growth,
 - iii) hydrographic and zooplankton conditions for ecological considerations,
 - iv) aerial distribution of such pelagic species as mackerel;
- c) describe the migration pattern of the Norwegian spring-spawning herring and blue whiting stocks in 2005 on the basis of biological and environmental data;
- d) plan and coordinate the surveys on the pelagic resources and the environment in the Northeast Atlantic in 2006, including the following:
 - i) the international acoustic survey covering the main spawning grounds of blue whiting in March–April 2006,
 - ii) the international coordinated survey on Norwegian spring-spawning herring, blue whiting, and environmental data in May–June 2006,
 - iii) Russian investigations on pelagic fish and the environment in May–July 2006,
 - iv) Icelandic investigations on pelagic fish and the environment in June–July 2006,
 - v) Norwegian investigations on pelagic fish and the environment in August 2006;
- e) evaluate the proposed protocol to ensure standardisation of all sampling tools, procedures, and survey gears;
- f) plan intensive screening of pelagic research hauls for the presence of post-smolts (small salmon, generally < 45 cm) and older salmon.

PGNAPES will report by 15 September 2005 for the attention of the Resource Management and the Living Resource Committees, as well as ACFM and ACE.

Marine Habitat Committee (E)

C.Res. 2004/2E01

The **Working Group on Marine Sediments in Relation to Pollution** [WGMS] (Chair: F. Smedes, Netherlands) will meet in Nantes, France, from 28 February to 4 March 2005 to:

- a) review the report of the OSPAR MON assessment in relation to sediments and evaluate the use of BCs and BACs;
- b) review the outcome of the ICES/OSPAR Workshop on Integrated Monitoring of Contaminants and their Effects in Coastal and Open Sea Areas (WKIMON) to resolve any outstanding issues and, together with MCWG, WGSAM, and WGBEC, finalise a draft set of guidelines for integrated monitoring for OSPAR [OSPAR 2005/6];
- c) in relation to joint work with WGBEC on (bio)availability measurement, develop plans for work on the evaluation of bioavailability using 1) passive samplers or organisms, 2) extraction techniques for screening assays (organic extraction, pore water), taking into account the potential influence of the effects of freezing/thawing of sediment samples, homogenization, redox changes, etc.;
- d) review the proposed work (coordinated by Germany) for the annex to the sediment monitoring guidelines that provides guidance on the interpretation of sediment trend monitoring data, taking into account sediment dynamics and also taking into consideration additional contributions from other member countries;
- e) review any new information on the development of indicators of sediment contamination and consider a contribution to the OSPAR/ICES Workshop on Indicators;
- f) assess the data sources and availability of data, following the OSPAR MON meeting in December 2004, and compile data of sediment chemistry for the North Sea by ICES rectangle for the time period 1984 to 2004, where available, and submit this to the secure REGNS website in preparation for the REGNS Integrated Assessment Workshop to be held from 9–11 May 2005;
- g) continue collaboration with the Working Group on the Statistical Aspects of Environmental Monitoring [particularly in relation to the assessment of temporal trends of contaminants in sediments and the derivation and use of BCs/BACs];
- h) with MCWG and WGSAM, develop draft advice on appropriate strategies for undertaking one-off surveys to provide new information about the following chemicals identified by OSPAR for Priority Action: 2,4,6 tri-tert butylphenol (exploratory one-off survey to establish whether the substance is actually found in sediments in the OSPAR area), endosulphan, (exploratory one-off survey and a hot-spots survey to establish whether the substance is actually found, and to define “hot-spots” of the substance, in sediments of the OSPAR area), and short-chained chlorinated paraffins (baseline survey to establish baseline in sediments in the OSPAR area against which to measure progress on the substance towards the goals of the OSPAR Hazardous Substances Strategy), according to specific OSPAR requests, taking into account sources and modes of dispersion/transport. The specific questions to be addressed for each substance (or groups of substances) under consideration are:
 - i) indicate where there is any new information available on presence in the marine environment that has not already been taken into account in the relevant OSPAR background document as updated by the OSPAR lead country,
 - ii) indicate whether the matrix (sediment, biota, water) proposed to be sampled is appropriate or whether an additional or more appropriate matrix should be included in the survey,
 - iii) identify whether analytical techniques are available for the relevant matrices,
 - iv) identify achievable detection limits, and reference materials, and

- v) determine how many stations/samples from each part of the OSPAR Convention area are necessary to address the objectives of the one-off surveys proposed, taking into account that more than one one-off survey may be required [OSPAR 2005/1];
- i) report on the feasibility of merging WGMS and MCWG.

WGMS will report by 10 March 2005 for the attention of the Marine Habitat Committee and ACME [The OSPAR advice is needed by the time of the SIME meeting on 15 March].

C.Res. 2004/2E02

The **Working Group on Statistical Aspects of Environmental Monitoring** [WGSAEM] (Chair: R. Fryer, UK) will meet in Nantes, France, from 28 February to 4 March 2005 to:

- a) work with BEWG to investigate the utility of various statistical methods, including multidimensional scaling and other ordination and multivariate techniques, for producing standard data products for routine monitoring assessments of biological community data, using specific data sets such as the 1986 North Sea Benthos Survey data;
- b) on the basis of a review of the results of the OSPAR MON temporal trend assessment of contaminants in biota and sediments, provide further advice on methods for temporal and spatial assessments of contaminants in biota and sediments;
- c) continue work on statistical aspects in the development of environmental indicators and classifications;
- d) review the outcome of the OSPAR/ICES Workshop on Guidance on Input Trend Assessment and Adjustment of Loads, and draft advice on the application of the agreed methodology;
- e) in relation to guidelines on frequency and spatial coverage of monitoring for nutrients and eutrophication parameters (phytoplankton, zoobenthos, phytobenthos), together with SGQAE and MCWG examine any proposals developed by OSPAR for guidelines on the frequency and spatial coverage of monitoring and provide draft advice on the statistical validity of the guidelines and make proposals for their improvement [OSPAR 2005/2];
- f) continue to develop a methodology for joint assessments of input data and data on contaminants in biota and sediments;
- g) review the outcome of the ICES/OSPAR Workshop on Integrated Monitoring of Contaminants and their Effects in Coastal and Open-Sea Areas [WKIMON] to resolve any outstanding issues and, together with MCWG, WGBEC, and WGMS, finalise a draft set of guidelines for integrated monitoring for OSPAR [OSPAR 2005/7];
- h) provide statistical advice in relation to the sampling design for 1) an exploratory one-off survey to establish whether 2,4,6-tri-*tert* butylphenol is actually found in sediments in the OSPAR maritime area, 2) a baseline survey to establish a baseline for short-chained chlorinated paraffins in sediments in the OSPAR maritime area against which to measure progress on the substance towards the goals of the OSPAR Hazardous Substances Strategy, and 3) an exploratory one-off survey and a hot-spots survey to establish whether endosulphan is actually found, and to define “hot-spots” of the substance, in sediments in the OSPAR maritime area, in association with contributions on this request from MCWG and WGMS. This should concern how many stations/samples from each part of the OSPAR Convention area are necessary to address the objectives of the one-off surveys proposed, taking into account that more than one one-off survey may be required [OSPAR 2005/1];
- i) evaluate the Integrated Assessment method employed by the Canadians for the Eastern Scotian Shelf and assess its suitability in respect of the REGNS Integrated Assessment of the North Sea.

WGSAEM will report by 10 March 2005 for the attention of the Marine Habitat Committee and ACME [OSPAR advice on h) is needed for SIME on 15 March].

C.Res. 2004/2E03

The **Marine Chemistry Working Group** [MCWG] (co-Chairs: Robin Law, UK, and Jacek Tronczynski, France) will meet in Vigo, Spain, from 7–11 March 2005 to:

- a) continue to provide guidance and assistance relating to the development of a series of data products to illustrate eutrophication status within the ICES area;
- b) examine any proposals developed by OSPAR for guidelines on the frequency and spatial coverage of monitoring for nutrients and eutrophication parameters and provide draft advice on the statistical validity of the guidelines and make proposals for their improvement [OSPAR 2005/2];
- c) continue to report on new information on tris(4-chlorophenyl)methanol (TCPM) and tris(4-chlorophenyl)methane(TCPMe) in flatfish;
- d) continue to report on new information on the use of membrane systems for sampling;
- e) with WGMS and WGSAEM, develop draft advice on appropriate strategies for undertaking one-off surveys to provide new information about the following chemicals identified by OSPAR for Priority Action: 2,4,6 tri-tert butylphenol (exploratory one-off survey to establish whether the substance is actually found in sediments in the OSPAR area), endosulphan, (exploratory one-off survey and a hot-spots survey to establish whether the substance is actually found, and to define “hot-spots” of the substance, in sediments of the OSPAR area), and short-chained chlorinated paraffins (baseline survey to establish baseline in sediments in the OSPAR area against which to measure progress on the substance towards the goals of the OSPAR Hazardous Substances Strategy) according to specific OSPAR requests; taking into account sources and modes of dispersion/transport. The specific questions to be addressed for each substance (or groups of substances) under consideration are:
 - i) indicate whether there is any new information available on presence in the marine environment that has not already been taken into account in the relevant OSPAR background document as updated by the OSPAR lead country,
 - ii) indicate whether the matrix (sediment, biota, water) proposed to be sampled is appropriate or whether an additional or more appropriate matrix should be included in the survey,
 - iii) identify whether analytical techniques are available for the relevant matrices,
 - iv) identify achievable detection limits, and reference materials, and
 - v) determine how many stations/samples from each part of the OSPAR Convention area are necessary to address the objectives of the one-off surveys proposed, taking into account that more than one one-off survey may be required [OSPAR 2005/1];
- f) continue to report on the mechanism for generating an updated list of relevant certified reference materials for use in marine monitoring programmes, and their availability via the ICES website;
- g) report on any new annexes on Quality Assurance from the ICES/HELCOM Steering Group on Quality Assurance of Chemical Measurements in the Baltic Sea;
- h) continue to determine priorities for assistance from the Working Group on the Statistical Aspects of Environmental Monitoring (WGSAEM) with statistical analyses and develop with WGSAEM a plan for the necessary collaboration;
- i) compile data (notably winter nutrients) for the North Sea (in Excel spreadsheet format) for marine chemistry, taking account of the work already being undertaken by WGMS in response to the OSPAR MON request/meeting in December 2004. The data should be compiled (averaged) for ICES rectangles where possi-

ble, for the period 1984 to 2004 and submitted to the secure REGNS website in preparation for the REGNS Integrated Assessment Workshop to be held from 9–11 May 2005;

- j) continue to report on new information concerning polybrominated diphenylethers (PBDEs) and other brominated flame retardants;
- k) continue to report on new information concerning the analysis of dioxins and the preparation of reference materials for these compounds;
- l) continue to report on new information on the monitoring and analysis of toxaphene;
- m) continue to report on developments within the UNEP Global POPs Monitoring Network;
- n) continue to report on new information on the impact of alkylphenols from produced water;
- o) report on new information on contaminant concentrations in marine fish and other marine food products;
- p) report on new information regarding perfluorinated compounds;
- q) in relation to guidelines on frequency and spatial coverage of monitoring for nutrients and eutrophication parameters (phytoplankton, zoobenthos, phytobenthos), together with WGSaEM examine any proposals developed by OSPAR for guidelines on the frequency and spatial coverage of monitoring and provide draft advice on the statistical validity of the guidelines and make proposals for their improvement [OSPAR 2005/2];
- r) with WGBEC, consider the current developments within OECD/EU regarding endocrine disruptors and whether this is adequate for the marine environment, and draft advice on any further work considered necessary to address issues specific to the marine environment [OSPAR 2005/8];
- s) with BEWG and WGBEC, contribute to an assessment of the long-term impact of oil spills on marine and coastal life, based on a list of issues from OSPAR [OSPAR 2005/7];
- t) review the outcome of the ICES/OSPAR Workshop on Integrated Monitoring of Contaminants and their Effects in Coastal and Open-Sea Areas (WKIMON) to resolve any outstanding issues and, together with WGBEC and WGSaEM, finalise a draft set of guidelines for integrated monitoring for OSPAR [OSPAR 2005/6];
- u) report on the feasibility of merging WGMS and MCWG.

MCWG will report by 11 March 2005 on item e) for ACME and generally on 1 April 2005 for the attention of the Marine Habitat and Oceanography Committees and ACME.

C.Res. 2004/2E04

The **Study Group on the North Sea Benthos Project 2000** [SGNSBP] (Chair: H. Rees, UK) will meet at ICES Headquarters from 12–15 April 2005 to:

- a) review the outcome of an intersessional Workshop held at CEFAS, Burnham-on-Crouch, UK, from 3–5 November 2004 to:
 - i) finalise the draft of an overview paper on benthic communities of the North Sea 2000, including comparisons with 1986 NSBS data,
 - ii) progress analyses/interpretation of the ICES NSBP 2000 data on the following themes:
 - fishing activities/impacts
 - natural and human impacts (other than fishing)
 - functional properties – in particular feeding types
 - comparison of epifaunal and infaunal community patterns
 - benthos/habitat linkages

- NSBP 2000 data management,
 - iii) assess/report on the status of physico-chemical data for sediments sampled as part of the NSBP 2000,
 - iv) review the suitability of biomass data for North Sea-wide *versus* sectoral appraisal,
 - v) identify/locate additional information sources (data/maps),
 - vi) identify specific questions(s) regarding statistical analyses of NSBP 2000 data (e.g., formal tests for similarities in patterns) for consideration by WGSaEM 2005;
- b) conduct further analysis of the NSBP 2000 data in relation to fishing activities, natural and other human influences, functional properties and epifaunal/infaunal patterns, and draft texts for publication;
- c) report on the distributions of sub-sets of opportunistic and sensitive species identified by the ICES Study Group on EcoQOs for opportunistic and sensitive species, and examine the utility of the recommended metrics;
- d) apply biotic/diversity indices to NSBP 2000 data;
- e) consider the scope for contributing to North Sea spatial models, through liaison with experts;
- f) identify products suitable for habitat mapping;
- g) commence preparation of an *ICES Cooperative Research Report* on the ICES NSBP 2000 survey;
- h) identify additional analytical/reporting ideas relevant to ICES/OSPAR interests;
- i) review the cost/benefits of a repeat ICES North Sea Benthos Survey in 2007–2010;
- j) liaise with the ICES Database Manager regarding the future operational interface with the NSBP 2000 database.

SGNSBP will report by 26 April 2005 for the attention of the Marine Habitat, ACME, and ACE Committees.

C.Res. 2004/2E05

The **Working Group on Marine Habitat Mapping** [WGMHM] (Chair: D. Connor, UK) will meet in Bremerhaven, Germany, from 5–8 April 2005 to:

International programmes (Baltic, MESH North-West Europe, North Sea)

- a) discuss and propose a strategy for implementing the development of a habitat classification framework and habitat maps for the Baltic Sea [HELCOM 2004];
- b) develop a benthic/pelagic habitat map for the North Sea to EUNIS level 4 or similar, based on data sources compiled or made available to the Working Group and compiled into a GIS, and to assess future data requirements and issues arising from the process;
- c) compare international habitat mapping methodologies, and work towards a best practice approach;
- d) review progress of international mapping programmes (e.g., MESH, EEA, Baltic, ICES);

National programmes (National Status Reports)

- e) present and review National Status Reports on habitat mapping activity during the preceding year according to the standard reporting format (presentations limited to 10 minutes per country).

Mapping strategies and survey techniques

- f) review progress on intercalibration and quality control of mapping techniques. To construct a habitat mapping decision tree that can be applied to various management issues, identify base requirements and evaluate the incremental values of

mapping techniques (primer document to be circulated 3 months prior to meeting);

- g) to review the activities of the SGASC relating to acoustic seabed classification;

Protocols and standards for habitat mapping

- h) develop a working definition of the terms habitat and marine landscape/seascape for the purposes of mapping;
- i) further progress of the development of guidelines for habitat mapping, including the review of developments of protocols and standards for habitat mapping within the MESH project and other relevant initiatives (a report of the MESH project should be circulated prior to the meeting);
- j) report on progress in the development of metadata standards for marine habitat mapping;

Uses of habitat mapping in a management context (human activities; implementation of Directives and Conventions)

- k) review the application of and needs for habitat maps in a management context, including case studies to illustrate particular applications;

Relevance of habitat mapping to other aspects of marine ecosystems (fisheries, pelagic)

- l) extract and compile habitat mapping data at EUNIS level 4 or above at the scale of the ICES rectangle across the North Sea area, and submit this data (in excel spreadsheet format) to the secure REGNS website in preparation of the REGNS Integrated Assessment Workshop in 2005. Also provide maps of sediment characteristics at the scale of the ICES rectangle across the North Sea area.

WGMHM will report by 25 April 2005 for the attention of the Marine Habitat and the Fisheries Technology Committees, as well as ACE.

C.Res. 2004/2E06

The **Working Group on the Effects of Extraction of Marine Sediments on the Marine Ecosystem** [WGEXT] (Chair: S. Boyd, UK) will meet in San Sebastian, Spain, from 5–8 April 2005 to:

- a) review data on marine extraction activities, developments in marine resource mapping, information on changes to the legal regime (and associated environmental impact assessment requirements) governing marine aggregate extraction;
- b) review scientific programmes and research projects relevant to the assessment of environmental effects of the extraction of marine sediments;
- c) provide a summary of data on marine sediment extraction for the OSPAR region that seeks to fulfil the requirements of the OSPAR request for extraction data to be provided by ICES, and take into account any feedback or comments from OSPAR on the information submitted by WGEXT 2003;
- d) compile and collate drafts of individual contributions to the *ICES Cooperative Research Report* and review drafts of text provided by WGEXT members inter-sessionally, with the aim of producing an advanced draft for 2006;
- e) continue work in summarising the effects of extraction of marine sediments from the North Sea for the period 1984–2004, and outline any trends in these effects over recent decades, taking into account any feedback from ICES REGNS. The available information will be submitted to the secure REGNS website in Excel spreadsheet format in preparation for the REGNS Integrated Workshop to be held from 9–11 May 2005.

WGEXT will report by 25 April 2005 for the attention of the Marine Habitat Committee and the ACME.

C.Res. 2004/2E07

The **Benthos Ecology Working Group** [BEWG] (Chair: H. Rumohr, Germany) will meet at ICES Headquarters from 18–22 April 2005 to:

- a) review the state of benthic communities at seamounts as presented by MarEco and other projects and provide input to WGDEC in relation to the provision of advice to OSPAR on the evidence for the threats to, and/or decline in, seamount habitats and their populations in the OSPAR regions where seamounts occur [OSPAR 2005/3];
- b) recognizing the ongoing importance of indicator development and its applications, review the status of indicator metrics for 2004, including the phytobenthos and hard-substrate benthos;
- c) work with WGSaEM on testing the use of different statistical methods on specific data sets (for example, the 1986 North Sea Benthos Survey data);
- d) work with WGSaEM to investigate the power of different monitoring programmes and their specific sampling schemes, including the questions of substrate and change of methods;
- e) identify sources of available data on the North Sea Ecosystem by Expert Groups contributing to the REGNS process. This information should be submitted to the REGNS website in preparation for the Integrated Assessment Workshop to be held from 9–11 May 2005;
- f) review the results of intersessional work on the compilation of biological criteria for the selection of dredged material disposal sites, to support the formulation of new biological criteria;
- g) further review the environmental studies at wind energy locations at sea and make recommendations on means for a harmonized European approach to benthic ecosystem studies;
- h) with MCWG and WGBEC, contribute to an assessment of the long-term impact of oil spills on marine and coastal life, based on a list of issues from OSPAR [OSPAR 2005/7].

BEWG will report by 6 May 2005 for the attention of the Marine Habitat and the Fisheries Technology Committees, as well as ACE and ACME.

C.Res. 2004/2E08

The **Working Group on Biological Effects of Contaminants** [WGBEC] (Chair: John Thain, UK) will meet in Reykjavik, Iceland, from 18–22 April 2005 to:

- a) review progress with publication and electronic dissemination of biological effects techniques in the *ICES TIMES* series;
- b) consider progress with activities:
 - i) the EU FIRE project,
 - ii) the ENDIS-RISK project,
 - iii) BEQUALM,
 - iv) other relevant projects;
- c) assess the amount of biological effects data submitted to the ICES database and develop means to encourage further submissions as well as use of these data;
- d) evaluate activities following the “Prestige” oil spill;
- e) evaluate the report from the ICES/OSPAR Workshop on Integrated Monitoring of Contaminants and their Effects in Coastal and Open-Sea Areas (WKIMON) to resolve any outstanding issues and, together with MCWG and WGSaEM, finalise a draft set of guidelines for integrated monitoring for OSPAR [OSPAR 2005/6];
- f) assess final reports from:
 - i) BECPeLAG,

- ii) BEEP;
- g) evaluate procedures in different countries for sediment and dredged material risk assessment;
- h) review the use of background responses in biological effects;
- i) assess the development of CEMP guidelines;
- j) review the state of knowledge on adaptation processes associated with chronic exposure to contaminants;
- k) with BEWG and MCWG, contribute to an assessment of the long-term impact of oil spills on marine and coastal life, based on a list of issues from OSPAR [OSPAR 2005/7];
- l) with MCWG, consider the current developments within OECD/EU regarding endocrine disruptors and whether this is adequate for the marine environment, and draft advice on any further work considered necessary to address issues specific to the marine environment [OSPAR 2005/8];
- m) compile data on biological effects (notably imposex data) for the North Sea (in Excel spreadsheet format) by ICES rectangle for the time period 1984 to 2004 where available, and submit this to the secure REGNS website in preparation for the REGNS Integrated Workshop to be held from 9–11 May 2005.

WGBEC will report by 6 May 2005 for the attention of the Marine Habitat Committee and ACME.

C.Res. 2004/2E09

The **Study Group on Information Needs for Coastal Zone Management** [SGINC] will be renamed the **Working Group on Integrated Coastal Zone Management** [WGICZM] (Chair: J. Støttrup, Denmark) and will meet at ICES Headquarters from 20–22 April 2005 to:

- a) update and report on activities of relevant ICES working and study groups to identify information pertaining to coastal zone and evaluate this information relative to ICZM needs;
- b) update and report on ICZM activities in different ICES countries, and in different international organisations;
- c) update report on available information relevant for ICZM, including list of data products required and list on gaps in knowledge;
- d) report on progress in valuable component or management tools (e.g., Essential or Critical Species Habitats, GIS, Coastal Protected Areas, coastal EcoQOs);
- e) report on the development of a framework for integrated evaluation of human impacts in the coastal zone and how to integrate this information for CZM, identifying ICES' role in the application of the WFD in the coastal zone.

WGICZM will report by 6 May 2005 for the attention of the Marine Habitat Committee, ACME, and ACE.

Mariculture Committee (F)

C.Res. 2004/2F01

The **Working Group on the Application of Genetics in Fisheries and Mariculture** [WGAGFM] (Chair: E. Kenchington, Canada) will meet in Silkeborg, Denmark, from 3–6 May 2005 to:

- a) document the evolutionary ability of fish stocks to respond to climate change by reviewing the information on the nature and rates of environmental change;
- b) evaluate methods and provide recommendations on the application of mixed-stock and assignment analysis to elucidate stock components, with an emphasis on marine fishes and fisheries;
- c) synthesize the evidence and methods for detecting local (genetic) adaptation in marine fishes;
- d) evaluate the usefulness of probabilistic maturation reaction norms as ecological quality objectives (EcoQOs) as an early warning signal for the negative impact of fishing and other anthropogenic activities;
- e) evaluate the evidence for genetic erosion and changes in life history characteristics of local stocks due to mariculture activity.

WGAGFM will report by 20 May 2005 for the attention of the Mariculture and Diadromous Fish Committees, ACME, and ACE (WGECO).

C.Res. 2004/2F02

The **Working Group on Pathology and Diseases of Marine Organisms** [WGPDMO] (Chair: T. Lang, Germany) will meet in La Tremblade, France, from 8–12 March 2005 to:

- a) produce an update on new disease trends in wild and cultured fish, molluscs, and crustaceans, based on national reports;
- b) assess information available from ICES Member Countries on the role of plankton organisms in gill-related mortality in farmed fish;
- c) review current information on the continued increase of heart and skeletal muscle inflammation affecting farmed salmon;
- d) compile information on the distribution, causes, and significance of the Summer Mortality in the Pacific oyster (*Crassostrea gigas*) and in other bivalve species;
- e) provide guidance on the applicability of the various available ‘health indices’ for the interpretation of data obtained from biological effects monitoring activities and associated research studies using pathology and disease endpoints;
- f) update and assess the current information on the effects of contaminants on the immune system in fish and shellfish;
- g) evaluate the availability of data for a risk assessment pilot study on population effects due to diseases in wild fish, using epidemiological methods and population dynamics modelling;
- h) produce an update of current information on sea lice interactions between wild and farmed fish and examine progress made in related management control methods in ICES Member Countries;
- i) assess the results of the ICES/OSPAR Workshop on Integrated Monitoring of Contaminants and their Effects in Coastal and Open-Sea Areas (WKIMON) to resolve any outstanding issues and, together with WGMS, MCWG, and WGSAM, finalise a draft set of guidelines for integrated monitoring for OSPAR [OSPAR 2005/6];
- j) to prepare data on the prevalence and type of fish diseases by ICES rectangle for the period 1984 to 2004 where available. The data should be submitted to the secure REGNS website in preparation for the REGNS Integrated Assessment Workshop from 9–11 May 2005;

- k) produce updated ICES publications on pathology and diseases of marine organisms:
 - i) web-based report on diseases and parasites of wild and farmed marine fish and shellfish as part of the *ICES Environmental Status Report*,
 - ii) ICES Identification Leaflets for Diseases and Parasites of Fish and Shellfish,
 - iii) WGPDMO website.

WGPDMO will report by 25 March 2005 for the attention of the Mariculture Committee and ACME.

C.Res. 2004/2F03

The Working Group on Marine Fish Culture [WGMAFC] (Chair: Anders Mangor-Jensen, Norway) will meet by correspondence in 2005 to:

- a) report on the status of fish welfare policies in the different ICES countries and on the development of EU policy on fish welfare;
- b) initiate work on developing guidelines for “Fish Welfare in Mariculture” aimed at publishing the completed work as an *ICES Cooperative Research Report*. The guidelines will address different species, life stages, and rearing systems, and include topics such as:
 - Spawning,
 - Egg production,
 - Feeding,
 - Environmental parameters such as water quality,
 - Rearing technology,
 - Husbandry techniques,
 - Health management and biosecurity;
- c) compile information on the current state-of-the-art of microdiets as a replacement for live food for larval fish.

WGMAFC will report by 25 May 2005 for the attention of the Mariculture and the Diadromous Fish Committees and ACME.

C.Res. 2004/2F04

The Working Group on Environmental Interactions of Mariculture [WGEIM] (Chair: F. O’Beim, Ireland) will meet in Ottawa, Canada, from 11–15 April 2005 to:

- a) prepare a publication on the “state of knowledge” of the potential impacts of escaped aquaculture marine (non-salmonid) finfish species on local native wild stocks and complete the risk analyses of escapes of non-salmonid farmed fish (cod, sea bass, sea bream, halibut, turbot);
- b) work with GESAMP WG 31 to develop aquaculture risk analysis methodologies;
- c) update the report on developments in implementation of WFD and EU Strategy for sustainable aquaculture;
- d) evaluate the recent developments over the last 5 years in carrying capacity models for shellfish with a view to proposing an ICES theme session or co-sponsored symposium in this area;
- e) consider and evaluate the possibility for developing a “sustainability index” concerning environmental interactions of mariculture;
- f) consider and evaluate the current state of development of integrated culture systems (e.g. fish–invertebrate–seaweed co-culture) with a view to assessing the potential of polyculture to mitigate the environmental effects of mariculture.

WGEIM will report by 30 April 2005 for the attention of the Mariculture and Diadromous Fish Committees and ACME.

C.Res. 2004/2F05

The **Working Group on Marine Shellfish Culture** [WGMASC] (Chair: A. Bodoy, France) will meet in La Rochelle, France, from 13–15 May 2005 to:

- a) update the synthesis and prepare a publication on the development of shellfish hatcheries within ICES countries. This will examine the technical infrastructure and methods (water treatment, broodstock conditioning, feeding schedules, etc.) of the different hatcheries, the proportion of cultured animals to wild conspecifics being used as broodstock and the application of genetic tools (e.g., triploids) to develop hatchery strains;
- b) prepare a state-of-knowledge report comparing and contrasting the standard methods used to measure stress indicators in shellfish and provide a discussion of how they would be used to diagnose incidents of cultured shellfish mortality;
- c) assess and provide a critique of the standard methodologies used to estimate shellfish performance indices as related to examining the carrying capacity of the growing area. This will include a review of the effects of HABS, disease, and pollution in relation to the performance and carrying capacity of shellfish culture.

WGMASC will report by 1 June 2005 for the attention of the Mariculture and Living Resources Committees and ACME.

Living Resources Committee (G)

C.Res. 2004/2G01

A **Study Group on Stock Identity and Management Units of Whiting** [SGSIMUW] (Chair: Phil Kunzlik, UK) will be established and will meet in Aberdeen, UK, from 15–17 March 2005 to:

- a) review all reported material on the stock identity of whiting in the North Sea and adjacent waters in order to identify the most likely definition of biological stocks of whiting as well as suggest practical management units;
- b) agree a data exchange format to provide (i) survey data and (ii) commercial landings and discard data, disaggregated by ICES statistical rectangle and quarter for the year to Study Group members. This will be done to provide spatially-structured catch data to which appropriate biological characteristics are or can be attributed (e.g., age compositions) in order to compile assessment datasets nominally derived from the stock definitions determined under ToR (a);
- c) define an evaluation protocol under which the consequences of assessing multiple stocks or stock sub-units as a single stock can be determined, and allocate responsibilities, as required, between Study Group members.

SGSIMUW will report by 1 May 2005 for the attention of the Living Resources Committee, SIMWG, and the Resource Management Committee.

C.Res. 2004/2G02

The **Planning Group for Herring Surveys** [PGHERS] (Chair: B. Couperus, Netherlands) will meet in Bergen, Norway, from 24–28 January 2005 to:

- a) combine the 2004 survey data to provide indices of abundance for the population within the area;
- b) coordinate the timing, area and effort allocation, and methodologies for acoustic and larvae surveys for herring and sprat in the North Sea, Divisions VIa and IIIa, and Western Baltic in 2005;

- c) review and update the PGHERS manual for acoustic surveys to address standardization of all sampling tools and survey gears;
- d) review the results of an exchange exercise on herring maturity staging, and comment on the implications of the conclusions of the sprat age-reading exchange and Workshop for the Acoustic Surveys;
- e) evaluate the results of the investigations of survey overlaps between vessels in the North Sea acoustic survey;
- f) to conduct an Echogram Scrutiny Workshop aiming at further harmonisation of scrutiny procedures.

PGHERS will report by 7 February 2005 for the attention of the Living Resources and Resource Management Committees, and to HAWG.

C.Res. 2004/2G03

The **Working Group on Fish Ecology** [WGFE] (Chair: J. Ellis, UK) will meet in Santander, Spain, from 21–26 February 2005 to:

High priority:

- a) continue the development of EcoQOs for the fish communities by:
 - i) conducting further studies on size-based indicators,
 - ii) developing a suite of indicators that address specific issues of the fish communities on the relevant spatial scales;
- b) continue the descriptions of essential fish habitat, to support studies on threatened, commercial, and selected non-target species;
- c) with reference to the request from REGNS for data on fish individual abundance-at-length, weight-at-length, age-at-length, and maturity-at-length, for all species (both commercial and non-commercial), discards data for all gear types and all fleets, effort data for all gear types and all fleets based on logbook data at the scale of ICES rectangle across the North Sea for the period 1984–2004. Further to this, extract and compile all available stomach content data for diet analysis:
 - i) determine what parts of the data request can be met within the time frame specified by REGNS,
 - ii) identify data gaps and impediments to data access,
 - iii) interact with the Bureau Working Group on Data and IT issues with a view to contributing to developing a longer-term strategy to address issues on data gaps and impediments to data access;
- d) working with the Working Group on Elasmobranch Fishes and the Working Group on the Assessment of Demersal Stocks in the North Sea, explore the feasibility of estimating gear-specific catchability (for example with the methods reported by WGFE 2004) to various species of skates, rays, and sharks in the North Sea. Use the results to provide estimates of maximum gear-specific effort levels that can be exerted without exceeding the sustainable mortality rates for those species or species groups. Coordination of the work and presentation of the results should be led by WGEF;
- e) continue studies on the relative catchability of fishes, including the effects of fish size, in survey gears, and examine the implications of gear effect on:
 - i) descriptions of the structure and function of fish assemblages, and
 - ii) associated fish community metrics;

Lower priority:

- f) undertake analyses to examine abundance-range size relationships in marine fishes, including:
 - i) the effect of sampling issues on the form of the abundance-occupancy relationship,

- ii) intra- and interspecific abundance-occupancy relationships of marine fishes,
- iii) the processes and mechanisms underlying marine abundance-range size patterns, and
- iv) explore the utility of abundance-occupancy relationships in fisheries and ecosystem management issues;
- g) evaluate the decline criteria used by existing nature conservation organisations, and address any upcoming nature conservation issues for marine fishes;
- h) continue studies on food rations and prey composition of North Sea fishes by:
 - i) re-evaluating predation mortalities of the MSVPA prey fish populations, and examine the consequences by relevant runs of MSVPA/FOR when using food rations of MSVPA predators obtained by application of a new mechanistic gastric evacuation model rather than food rations used at present by the ICES, and
 - ii) estimate food rations and prey compositions of grey gurnard, horse mackerel, and mackerel in the North Sea, applying new information about gastric evacuation rates;
- i) review existing literature and available data sources for the diet, feeding habits, and foraging behaviour of target and non-target fishes in the North Sea and adjacent waters;
- j) initiate studies on the broadscale temporal changes in fish assemblages along the European continental shelf of the eastern North Atlantic (ICES Divisions VI–IX);
- k) review the updated IBTS Manual and assess whether the protocols and quality assurance procedures of IBTS data are sufficiently robust to provide the data appropriate to examine the various issues relating to fish communities.

WGFE will report by 30 April 2005 for the attention of the Living Resources, the Resource Management, and the Diadromous Fish Committees, as well as ACE.

C.Res. 2004/2G04

The **Study Group on Regional Scale Ecology of Small Pelagic Fish** [SGRESP] (Chair: P. Petitgas, France) will meet from 28 February to 2 March 2005 in Plymouth, UK (GLOBEC IPO), to:

- a) identify gaps in the data inventory and continue to assemble data on life history stages (adult, egg, larva, juvenile) of pelagic fish (mackerel, sardine, anchovy, sprat, herring, and horse mackerel) in ICES waters at regional scale and in a long-term perspective;
- b) continue to characterize habitats of life cycle stages (spawning, nursery, feeding, and wintering grounds) with particular attention to physical meso-scale processes and multi-species context, evidence of interannual changes, and reconstruct long-term history of the spatial pattern of populations;
- c) assemble long-term series of environmental indices using survey data, meteorological data, and model outputs at basin-scale and meso-scale in order to reconstruct long-term history of environmental changes at different scales;
- d) review and update adult fish behaviour in relation to oceanographic and ecosystem features and characterize how adult fish migration, feeding, and spawning impact the environment-population interaction;
- e) identify situations which have potential impact on the assessment, projection, or management processes: update the relevant assessment working groups and survey planning groups with the information through working documents and provide these groups with quantitative information on fishery-ecosystem interactions;
- f) liaise with WGMHSA to identify the means by which Management Strategies could be developed based on WGRES findings.

SGRESP will report by 31 March 2005 for the attention of the Living Resources Committee, ACFM, and ACE.

C.Res. 2004/2G05

The **Working Group on Seabird Ecology** [WGSE] (Chair: Stefan Garthe, Germany) will meet in Texel, Netherlands, from 29 March–1 April 2005 to:

- a) for each seabird species that occurs regularly in the North Sea, compile data (in Excel spreadsheet format) which quantifies the seasonal distribution and abundance at spatial scales, where possible, that correspond to ICES rectangles in the North Sea. The data should be submitted to the REGNS secure website in preparation for the REGNS Integrated Assessment Workshop, 9–13 May 2005. These data should, where possible, cover the period 1984–2004 on an annual basis in order to assess trends. In addition, where possible, provide information on diet and variation/change of this for all species;
- b) develop EcoQOs for seabird populations;
- c) review the impacts of recent major oil spills on seabirds (“Erika”, “Prestige”, “Tricolor”) and contribute to the assessment of the long-term impact of oil spills on marine and coastal life for OSPAR [OSPAR 2005/7];
- d) review the consequences for foraging conditions of sea ducks of the *Spisula* decline in the southern North Sea;
- e) examine the foodweb relationships of seabirds indicated by food consumption estimates in the Northeast and Northwest Atlantic regions.

WGSE will report by 29 April 2005 for the attention of the Living Resources Committee (who will be parent), as well as ACME and ACE.

C.Res. 2004/2G06

The **Baltic International Fish Survey Working Group** [WGBIFS] (Chair: R. Oeberst, Germany) will meet in Rostock, Germany, from 4–10 April 2005 to:

- a) combine and analyse the results of the 2004 acoustic surveys and experiments and report to WGBFAS;
- b) update the hydroacoustic databases BAD1 and BAD2 for the years 1991 to 2004;
- c) plan and decide on acoustic surveys and experiments to be conducted in 2005 and 2006;
- d) discuss the results from BITS surveys performed in autumn 2004 and spring 2005;
- e) plan and decide on demersal trawl surveys and experiments to be conducted in spring and autumn 2006;
- f) update and correct the Tow database;
- g) continue to study the proposed model for estimating the conversion factors between new and old survey trawls under inclusion of the new intercalibration experiments;
- h) update, if necessary, the Baltic International Trawl Survey (BITS) Manual;
- i) update, if necessary, the Baltic International Acoustic Survey (BIAS) Manual;
- j) study the vertical distribution of the cod during the BITS survey in a situation with oxygen deficiency close to the bottom.

WGBIFS will report by 30 April 2005 for the attention of the Living Resources, the Baltic, and the Resource Management Committees.

C.Res. 2004/2G07

The **Working Group on Mackerel and Horse Mackerel Egg Surveys** [WGMEGS] (Chair: D. Reid, UK) will meet in Bergen, Norway, from 4–8 April 2005 to:

- a) analyse and evaluate the results of the 2004 mackerel and horse mackerel egg surveys of the western and southern areas;
- b) calculate the total seasonal stage 1 egg production estimates for mackerel and horse mackerel separately for the western and southern areas;
- c) analyse and evaluate the results of the mackerel and horse mackerel fecundity and mackerel atresia sampling in the western and southern areas;
- d) evaluate the results of studies on horse mackerel fecundity determination and proxies on the basis of data collected during the 2004 surveys and in other relevant work;
- e) provide estimates of the spawning stock biomass of mackerel, using stage 1 egg production estimates and the estimates of fecundity and atresia, separately for the western and southern areas;
- f) evaluate the quality and reliability of the 2004 survey in the light of the previous surveys.

WGMEGS will report by 1 June 2005 for the attention of the Living Resources and the Resource Management Committees.

C.Res. 2004/2G08

The **Study Group on the Biology and Life History of Crabs** [SGCRAB] (Chair: O. Tully, Ireland) will meet in Galway, Ireland, from 9–11 May 2005 to:

- a) compile existing data on landings, discards, effort, and catch rates (CPUE) for the important crab fisheries in the ICES area;
- b) standardise methods for the acquisition, analysis, and interpretation of CPUE, size frequency, and research survey data;
- c) define stock structure/management units for crab stocks;
- d) assess environmental effects including diseases on crab fisheries;
- e) assess the interaction between net/dredge fisheries, other anthropogenic activities, and crab stocks;
- f) assess the effects of fishing on the biological characteristics of crab stocks;
- g) review the methods for estimating recruitment in crab stock.

SGCRAB will report by 30 June 2005 for the attention of the Living Resources and the Resource Management Committees.

C.Res. 2004/2G09

The **Planning Group on North Sea Cod and Plaice Egg Surveys in the North Sea** [PGEGGS] (Chair: Clive Fox, UK) will meet in Lowestoft, UK, from 10–12 May 2005 to:

- a) compile data from the surveys undertaken in 2004;
- b) produce a survey report for the 2005 Annual Science Conference;
- c) plan for a Workshop where detailed spatio-temporal analyses of the data from the surveys will be completed and where a feasibility study of undertaking stock biomass assessments of main North Sea commercial stocks using egg production methods in future years will be undertaken.

PGEGGS will report by 1 September 2005 for the attention of the Living Resources and the Resource Management Committees.

C.Res. 2004/2G10

The **Working Group on Beam Trawl Surveys** [WGBEAM] (Chair: R. Millner, UK) will meet in Lowestoft, UK, from 7–10 June 2005 to:

- a) prepare a progress report summarising the results of the 2004 beam trawl surveys;

- b) calculate population abundance indices by age-group for sole and plaice in the North Sea, Division VIIa, and Divisions VIId–g;
- c) further coordinate offshore and coastal beam trawl surveys in the North Sea and Divisions VIIa and VIId–g;
- d) describe and evaluate the current methods for calculating population abundance indices and consider possibilities of delivering improved indices;
- e) continue the work on developing relative catchabilities of the different gears used in the surveys;
- f) continue the work on developing and standardising an international database of beam trawl survey data and coordinate such activities with those of the IBTSWG in particular on the compliance to DATRAS, the bottom trawl database at ICES;
- g) continue the work on collating information on the epibenthic invertebrate bycatch during beam trawl surveys into a common database and discuss which summary results should be reported;
- h) develop protocols and criteria to ensure standardisation of all sampling tools and surveys gears.

WGBEAM will report by 29 July 2005 for the attention of the Living Resources and the Resource Management Committees, as well as ACFM.

C.Res. 2004/2G11

The **Planning Group on Aerial and Acoustic Surveys for Mackerel** [PGAAM] (Chair: E. Shamray, Russia) will meet in Bergen, Norway, in conjunction with WGMEGS, from 5–7 April 2005 to:

- a) coordinate the timing, area allocation, and methodologies for acoustic and aerial surveys for mackerel in the northeast Atlantic;
- b) collate and evaluate the data collected by the aerial surveys, fishing, and research vessels in the Norwegian Sea during the summer and autumn of 2004;
- c) coordinate acoustic surveys in the northern North Sea-Shetland area to ensure full coverage and appropriate areas and timing;
- d) combine the 2004 survey data to determine the abundance and distribution of mackerel within the North Sea-Shetland area;
- e) identify participants to contribute to the aerial surveys for mackerel in the Norwegian Sea and coordinate collaboration between vessels;
- f) combine the summer 2004 aerial survey data with vessel data to determine the distribution of mackerel in the Norwegian Sea;
- g) seek survey time for northward extension of acoustic surveys in ICES Subareas VIII and IX;
- h) consider the latest findings from the SIMFAMI project;
- i) identify surveys which are not targeted at mackerel, but which may have potential use for the estimation of mackerel distribution and abundance;
- j) maintain protocols and criteria to ensure standardisation of all sampling tools and survey gears.

PGAAM will report by 1 June 2005 for the attention of the Living Resources Committee, ACFM, and the Fisheries Technology Committee.

C.Res. 2004/2G12

The **Working Group on Acoustic and Egg Surveys for Sardine and Anchovy in ICES Areas VIII and IX** [WGACEGG] (Chair: M. Bernal, Spain) will be established and will meet in Vigo, Spain, from 24–28 October 2005 to:

- a) plan and coordinate egg surveys in ICES Areas VIII and IX and standardise analysis procedures;

- b) plan and coordinate acoustic surveys in ICES Areas VIII and IX and standardise analysis procedures;
- c) develop a framework to cross-validate egg production and acoustic methods for the estimation of Spawning Stock Biomass and its distribution;
- d) explore the possibilities to integrate egg production and acoustic-based Spawning Stock Biomass estimates;
- e) finalise new egg production procedures and associated software developed under SGSBSA;
- f) integrate biological/environmental information from surveys and additional sources to study the relationships between sardine and anchovy and the pelagic community in ICES Areas VIII and IX.

WGACEGG will report by 31 December 2005 for the attention of the Living Resources Committee, and ACFM.

C.Res. 2004/2G13

The **Working Group on Cephalopod Fisheries and Life History** [WGCEPH] (Chair: Joao Pereira, Portugal) will work by correspondence in 2005 to:

- a) update and refine available landing statistics at relevant time-scales, compile available information on fishing effort of selected fleets, on discards, and on selectivity, and explore resource survey databases for information about sampled cephalopods in the ICES area;
- b) compile methods and results available for stock identification and estimation of population size of fished cephalopods;
- c) identify possible precautionary approaches to the management of these cephalopod resources; evaluate management options and consider socio-economic issues;
- d) compile available data and identify relationships between abundance and environmental conditions, factors affecting recruitment, migration, and distribution patterns of juveniles and adults, trophic interactions, and contaminants bioaccumulation;
- e) review cephalopod culture techniques and results and their interest in the understanding of biological phenomena;
- f) update the bibliographic database of cephalopod literature relevant to fisheries, including grey literature.

WGCEPH will report by 30 June 2005 for the attention of the Living Resources Committee, ACFM, and ACE.

C.Res. 2004/2G14

The **Stock Identification Methods Working Group** [SIMWG] (co-Chairs: K. D. Friedland, USA, J. Waldman, USA, and S. Cadrin, USA) will work by correspondence in 2005 to:

- a) advise on the need for future meetings of the SIMWG, and prepare appropriate Terms of Reference if required;
- b) liaise with SGSIMUW on developments in stock identity studies in North Sea whiting.

SIMWG will report by 31 May 2005 for the attention of the Living Resources Committee.

Baltic Committee (H)

C.Res. 2004/2H01

A Study Group on Baltic Ecosystem Health Issues in Support of the BSRP [SGEH] (Chair: E. Andruliewicz, Poland) will meet in Vilnius, Lithuania, from 2–5 November 2004 to:

- a) report on new developments regarding ecosystem-based approaches to management of the marine environment, with particular reference to progress in ICES, HELCOM, and OSPAR;
- b) further develop the Baltic ecosystem health concept in relation to the main ecological problems: eutrophication, hazardous substances, overfishing, loss of biodiversity (including xenodiversity and habitat destruction);
- c) discuss and propose in cooperation with HELCOM MONAS, reference levels for a set of ecological quality elements (EcoQ elements) that reflect associated ecological quality objectives (EcoQOs) for eutrophication, hazardous substances, impacts of fishing, loss of biodiversity (including xenodiversity and habitat destruction), and report findings to WGECO;
- d) evaluate scientific contributions of the BEEP EU project for the Baltic ecosystem health assessment;
- e) update and finalize the Workplan and a schedule of deliverables for the Study Group's activities during the next two years;
- f) identify potential contributions to the 2006 Theme Session on Regional Integrated Assessments;
- g) organize a BSRP Workshop in 2005 with participation of experts from HELCOM and US EPA on the topic of ecosystem health indicators in the Baltic Sea;
- h) plan its meeting in 2005 or 2006 as a joint or overlapping meeting with at least one other Study Group (e.g., SGGIB, SGPROD) in order to promote the development of integrated ecosystem knowledge and the integration of work across expert groups.

SGEH will report by 5 December 2004 for the attention of the Baltic Committee and ACE.

C.Res. 2004/2H02

The Study Group on Baltic Sea Productivity Issues in Support of the BSRP [SGPROD] (Chair: Bärbel Müller-Karulis, Latvia) will meet in Juodkrante, Lithuania, from 2–4 December 2004 to:

- a) describe networks of trophic transfers for the Baltic Sea ecosystem in selected areas and analyse the importance of individual compartments and flows for the functioning of the ecosystem;
- b) continue the development of a system of indicators that characterize productivity at different trophic levels in the Baltic Sea, taking into account the work already undertaken by ACE and the EEA, the importance of individual trophic transfers for the functioning of the Baltic Sea ecosystem, as well as the evidence for links between land-based nutrient inputs and long-term changes of productivity and biodiversity in eutrophied areas of the Baltic Sea;
- c) continue to study the feasibility and efficiency of automated methods for productivity data collection (e.g., satellite imagery, ships of opportunity, profiling instrument platforms, etc.), in collaboration with BOOS;
- d) identify gaps in and suggest improvements to the data collection strategy in the productivity module of the BSRP with respect to addressing relevant trophic transfers and with regard to providing suitable information on productivity indicators;
- e) organize a BSRP Training Workshop together with US NOAA on the application of Ecopath modelling methods for the Baltic Sea;

- f) plan its meeting in 2006 as a joint or overlapping meeting with at least one other Baltic SG (e. g., SGGIB, SGEH) in order to promote the development of integrated ecosystem knowledge and the integration of work across expert groups.

SGPROD will report by 15 January 2005 for the attention of the Baltic Committee.

C.Res. 2004/2H03

The **Study Group on Baltic Ecosystem Model Issues in Support of the BSRP** [SGBEM] (Chair: W. Fennel, Germany) will meet in Gdansk, Poland, from 14–16 February 2005 to:

- a) report on and synthesize existing community models for the Baltic ecosystems and new developments also in the Baltic and other areas through cooperation with, and active participation in the WGPBI;
- b) identify data sets of high priority for modelling issues and ensure a bi-directional exchange of information with the other ICES-BSRP study groups;
- c) report on and synthesize knowledge of the effects of fish acting down the food web to nutrients, and to which extent variations in nutrients may act up the food web to fish;
- d) discuss and initiate attempts to bridge the gap between fish stock models and ecosystem models for the Baltic;
- e) provide input and specific contributions to the Theme Session on Regional Integrated Assessments in 2006;
- f) plan its next meeting as a joint or overlapping meeting with at least one other Baltic SG (e.g., SGGIB, SGEH) in order to promote the development of integrated ecosystem knowledge and the integration of work across expert groups.

SGBEM will report by 16 March 2005 for the attention of the Baltic Committee.

C.Res. 2004/2H04

The **ICES/IOC/SCOR Study Group on GEOHAB Implementation in the Baltic** [SGGIB] (Chair: Markku Viitasalo, Finland) will meet in Flødevigen, Norway, from 7–8 April 2005 to:

- a) report and discuss new findings on HABs and HAB modelling in the Baltic;
- b) report observations on 2004 distribution of HABs in the Baltic; prepare the HAEDAT reports for ICES use;
- c) update the checklist of the harmful species of the Baltic Sea;
- d) compile existing observations on concentrations of nodularin and other HAB toxins in different compartments of the Baltic ecosystem;
- e) summarise observed toxicological effects in the Baltic biota;
- f) report on existing information on long-term trends in HABs in the Baltic;
- g) continue planning an open-sea field study and workshop for summer 2005;
- h) update and review the GEOHAB implementation plan for the Baltic;
- i) plan its 2006 meeting as a joint or overlapping meeting with at least one other Baltic SG (e.g., SGPROD, SGEH, SGFFI) in order to promote the development of integrated ecosystem knowledge and the integration of work across expert groups.

SGGIB will report by 8 May 2005 for the attention of the Baltic Committee.

C.Res. 2004/2H05

The **Study Group on Baltic Fish and Fisheries Issues in the BSRP** [SGBFFI] (co-Chairs: Maris Plikshs, Latvia, and Henn Ojaveer, Estonia) will meet in Riga, Latvia, from 9–13 June 2005 to:

- a) finalise the inventory on available time-series on zooplankton abundance, hydrography, and mean weights-at-age, start a meta-analysis of growth changes of Bal-

tic herring and sprat, and suggest possible ways of growth modelling for stock development forecasts;

- b) produce a status summary on and identify gaps in operational models for use in stock projections for eastern Baltic cod, sprat, and herring, which include ecosystem variability;
- c) produce a status summary on and identify ways to promote progress in compiling and computerising historic data from research vessels surveys, commercial catches, fish stomach analyses, and otolith biometric studies;
- d) update status of and identify gaps in compiling meta-databases of coastal fish:
 - i) for commercial sampling by country, region, species, years, parameters measured, and calculated indices,
 - ii) for experimental sampling by country, region, purpose of the study, species, years, parameters measured, and calculated indices;
- e) update existing knowledge on environmental processes affecting dynamics of coastal fish species;
- f) summarize and identify gaps in knowledge of population structure of non-assessed commercial stocks;
- g) compile and summarize available information on the environmental condition of herring spawning grounds, with particular emphasis on loss of spawning habitat and population subcomponents;
- h) plan its meeting in 2005 or 2006 as a joint or overlapping meeting with at least one other Baltic Study Group (e. g., SGPROD, SGGIB, SGBEM, SGMAB).

SGBFFI will report by 13 July 2005 for the attention of the Baltic Committee, ACFM, and ACE.

C.Res. 2004/2H06

The **Study Group on Multispecies Assessment in the Baltic** [SGMAB] (co-Chairs: E. Aro, Finland, and F. Köster, Denmark) will meet in Riga, Latvia, from 13–17 June 2005 to:

- a) continue the implementation of multispecies interactions in the assessment of Baltic fish populations by updating the multispecies key runs up to 2004 in both the Western and Eastern Baltic, and by appropriate units;
- b) review, revise, and update the multispecies database (i.e., catch in numbers, maturity ogives, mean weight-at age, stomach data, etc.) and explain historical trends and changes in mean weight-at-age of key species;
- c) report on available information on environmental processes, which are affecting the temporal and spatial changes in Baltic herring population dynamics;
- d) develop, apply, and validate ecosystem models for assessment and prediction of fish stock dynamics, including:
 - i) prediction of weight-at-age and proportion of maturation-at-age, potentially depending on a feedback loop on prey availability and environmental conditions, and
 - ii) recruitment success in relation to parental stock status and environmental conditions;
- e) validate the revised consumption rates (by quarter of years), which presently contain interannual and spatial variability in stomach content, predator weight, and ambient temperature, but ignore an impact of reduced oxygen concentrations;
- f) consider how the results of the Study Group on Fish and Fisheries Issues in the BSRP (SGFFI) can be incorporated into the work programme of this Study Group;
- g) prepare a workplan, including a schedule for deliverables for the next two years;
- h) propose contributions to the 2006 Theme Session on Regional Integrated Assessments, as described in the 2003 report of the Regional Ecosystem Study Group for the North Sea;

- i) plan a meeting in 2006 as a joint or overlapping meeting with at least one other Baltic SG (e.g., SGPROD, SGGIB, SGBEM) in order to promote the development of integrated ecosystem knowledge and the integration of work across expert groups;
- j) based on an assessment of the multispecies interactions between cod, herring, and sprat in ICES Subdivisions 25–32 to provide mortality estimates to be used in stock assessments, and to contribute, through estimates of the mortality on cod eggs and larvae, to an improvement of the stock-recruitment relationship. The interactions should include an account of the variable physical forcing conditions.

SGMAB will report by 13 July 2005 for the attention of the Baltic Committee.

Diadromous Fish Committee (I)

C.Res. 2004/2I01

The **ICES/EIFAC Working Group on Eels** [WGEEL] (Chair: W. Dekker, Netherlands) will meet in Galway, Ireland, from 22–26 November 2004 to:

- a) report on appropriate rebuilding goals for the recovery of eel stocks/populations and advise on the factors which would affect their implementation;
- b) specify practical monitoring requirements to evaluate progress towards the objectives of a stock recovery plan;
- c) specify the scientific and management actions needed for the implementation of a stock recovery plan;
- d) assess trends in recruitment, stock, and fisheries indicative for the status of the stock;
- e) continue work to expand the databases and knowledge on eels in Europe and North America, to provide a more complete basis for recovery of these stocks/populations.

WGEEL will report by 17 December 2004 for the attention of the Diadromous Fish Committee, the Living Resources Committee, and ACFM.

C.Res. 2004/2I02

A **Study Group on the Status of Diadromous Fish Species** [SGSDFS] (Chair: Niall Ó Maoiléidigh) will work by correspondence in 2005 to:

- a) examine the existing information on:
 - i) distribution of diadromous fish species in ICES areas,
 - ii) the status of these species;
- b) update the report on the current status of each of these species by country;
- c) provide information on current threats faced by these species.

SGSDFS will report by 30 September 2005 for the attention of the Diadromous Fish Committee, ACFM, and ACE.

C.Res. 2004/2I03

The **Study Group on Salmon Scale-Reading Problems** [SGSSR] (Chair: Jari Raitaniemi, Finland) will work by correspondence in 2005 to:

- a) review available image analysis systems, in particular those which are in use for age determination of salmon;
- b) evaluate the status of analysis of Baltic salmon otoliths, and in particular the possibilities to increase the resolution to facilitate interpretation of otolith microstructure;

- c) review preliminary results of an investigation which studied possibilities to assess post smolt survival rate on the basis of scale growth pattern;
- d) carry out a preliminary evaluation of the results of a scale-reading blind test;
- e) prepare a workplan describing the Group's cooperation with the BSRP groups and the work required to finalise the Group's activities;
- f) discuss opportunities for networking with EFAM (European Fish Ageing Network).

SGSSR will report at the ASC in September 2005 for the attention of the Diadromous Fish Committee and the Baltic Committee.

Other Resolutions Requiring Action

C.Res. 2004/4PUB01

The membership of the Publications Committee will be changed as follows.

- a) the members of the Publications Committee shall be appointed by Delegates. Each Member Country may appoint two members. The Chair shall be appointed in accordance with Rule 30(x);
- b) rule 27(ii) shall be deleted, with effect from 1 January 2005;
- c) Delegates are invited to appoint members of the Publications Committee to take office on 1 January 2005. The Publications Committee shall elect a new Chair during the 2005 Annual Science Conference, who shall take office immediately upon election. From 1 January 2005 until that time, an interim Chair shall be appointed by the President.

C.Res. 2004/4ACE02

The ICES Secretariat, with input from the Chair of REGNS, will submit an application for Strategic Support Action entitled "Supporting European Marine Integrated Ecosystem Assessments" to the EU Framework 6 Specific Programme for Research, Technological Development and Demonstration: "Integrating and Strengthening the European Research Area".

C.Res. 2004/4C03

The ICES Secretariat and data managers will extend the ICES website to include facility for a "virtual workshop". This is to allow secure, password-protected data and data analysis holding/storage and message exchange for North Sea plankton and other data to be worked on by Working Group members at meetings and intersessionally.

C.Res. 2004/4D04

The inventory of data and information for estimating reproductive potential of North Atlantic fish stocks should be placed on the ICES website and maintained as a resource for use in stock assessments and research.

C.Res. 2004/4H05

- a) The ICES General Secretary shall write to the European Commission (DG Research with copies to DG Fish and DG Environment) urging that priority should be given to marine research in the forthcoming 7th Framework Programme. The letter should draw attention to programmes (ERA-NET BONUS, MARINERA, MARIFISH) with which it would be mutually advantageous for the 7th Framework Programme to establish working links.

The deadline for submission of the letter to the EU's *An Open Consultation* is 15 October 2004. Submission is possible on the following website: (<http://europa.eu.int/comm/research/future>).

- b) Delegates shall request their national contacts to the EU to support marine research in the 7th Framework Programme.

C.Res. 2004/4DEL06

An *ad hoc* Bureau Working Group on Financial Procedures (Chair: Chair of the Finance Committee) will be established and will work by correspondence to:

- a) develop financial rules for the ICES budget and financial affairs;
- b) consider i) established practices as laid down in various ICES documents and ii) relevant rules of comparable international organizations;
- c) develop a strategy to bring overall cost recovery for the Advisory Process closer to 100%, in accordance with Council policy.

The *ad hoc* Bureau Working Group will consist of the Chair of MCAP and four Delegates: Joe Horwood (UK), Gerd Hubold (Germany), Georges Pichot (Belgium), and Serge Labonté (Canada).

The General Secretary will participate in the work of the *ad hoc* Bureau Working Group. The Group will report to the Bureau in 2005.

If deemed necessary, the Group may meet for up to three days at Council expense, with the approval of the Bureau.

C.Res. 2004/4DEL07

The following procedures will apply to registration fees and exhibitor fees for Annual Science Conferences:

- a) the registration fee will be 105 Euros unless it is deemed necessary to increase it by an amount not to exceed 25% in order to enhance arrangements for the Conference and to provide benefits to participants. An increase above 105 Euros must be approved by the Bureau. The fee may occasionally be adjusted to take account of inflation;
- b) income and expenditures arising from registration fees and exhibitor fees will be reflected in the regular budget of ICES, subject to review and action by the Finance Committee, the Bureau, and the Council;
- c) Committee members and students will be entitled to a 50% reduction in registration fees; the registration fee shall be waived for conveners of scientific sessions; Delegates and Bureau members will pay the full registration fee;
- d) registration fees will be allocated one-third to enhance the scientific program, one-third to support arrangements for the meeting that would otherwise have been the responsibility of the host, and one-third as income to ICES;
- e) exhibitor fees will be allocated half to support arrangements for the meeting that would otherwise have been the responsibility of the host, and half as income to ICES.

The Consultative Committee is invited to develop a plan for enhancing participation of “young” scientists in Annual Science Conferences with a view towards utilizing ICES share of income from registration fees and exhibitor fees, as well as the possibility of utilizing a portion of the income to enhancing the scientific program, and other sources of funds that might be identified.

C.Res. 2004/4DEL08

An *ad hoc* Bureau Working Group on Data Development (Chair: First Vice-President) will meet for 2–4 February 2005 (back-to-back with MCAP) at Council expense to:

- a) outline the data needed for ICES to produce the current advice and the type of advice, which is likely to be requested during the next five years;
- b) outline the database and software tools necessary to support efficient QA procedures and workflows;
- c) plan documentation and material to be available to the meeting suggested in STEP 1 of Document Del04/11/1;
- d) discuss and amend as appropriate STEP 1 to 4 in Del04/11/1;
- e) discuss and suggest priorities for ICES Secretariat work plan 2005 with regard to the IT and database work;
- f) develop a synopsis for an ICES IT strategy and business plan to be developed in collaboration with the ICES Secretariat before June 2005.

In addition to the Chair, the Group will consist of the Chairs of ACFM, ACE, ACME, and CONC, the co-chairs of SGMID, the Data Centre Manager, and one additional member with expertise in database development and handling.

The Group will work in close consultation with relevant Client Commissions, and will report on their view on data coordination mechanisms, IT needs, and financing in relation to any proposed strategy.

The Group will take note of constraints of Member Countries' national IT systems.

Part III

ICES Administrative Report

Introductory note

This note summarises keynote facts about ICES. More extensive information is available on the ICES Website <http://www.ices.dk>.

Function

The environment of the North Atlantic and adjacent seas has been a prime concern of the International Council for the Exploration of the Sea (ICES) since its inception in 1902. As the oldest intergovernmental marine science organisation in the world, ICES has long recognised the mutual interdependence of the living marine resources and their physical and chemical environment. Although the Council's original statutes have undergone occasional modification to adjust for changing conditions, challenges, and priorities, its main focus has continued to be on international cooperative studies. Article 1 of the 1964 ICES Convention formally identifies the Council's principal functions as:

- a) to promote and encourage research and investigations for the study of the sea, particularly related to the living resources thereof;
- b) to draw up programmes required for this purpose and to organise, in agreement with the Contracting Parties, such research and investigations as may appear necessary;
- c) to publish and otherwise disseminate the results of research and investigations carried out under its auspices or to encourage the publication thereof.

In addition, since the 1950s (with regard to fisheries) and the 1970s (regarding the marine environment), a major task for ICES has involved the provision of scientific information and advice to intergovernmental regulatory commissions and the governments of ICES Member Countries, for purposes of fisheries conservation and the protection of the marine environment.

The work of ICES encompasses the broad areas of fisheries, oceanography, and environmental sciences including marine pollution, and is organised and carried out by scientists from its Member Countries.

Membership

ICES currently has 19 Member Countries:

Belgium, Canada, Denmark, Estonia, Finland, France, Germany, Iceland, Ireland, Latvia, the Netherlands, Norway, Poland, Portugal, Russia, Spain, Sweden, the United Kingdom, and the United States of America.

Affiliate status has been granted to Australia (CSIRO), Chile (Instituto de Fomento Pesquero (IFOP)), Greece (Institute of Marine Biology of Crete), New Zealand (National Institute of Water and Atmospheric Research), Peru (Instituto del Mar del Peru (IMARPE)), and South Africa (Sea Fisheries Research Institute).

Organisation

The principal decision- and policy-making body of ICES is the Council, comprising two Delegates appointed by each Member Country, in addition to the President. Meetings of the Council are chaired by the President, who is elected from among the Delegates for a three-year period. The President, together with the First Vice-President and five ordinary Vice-Presidents (also elected for three years from among the Delegates) constitute the Bureau, the executive committee of ICES. The General Secretary, the Chair of the Consultative Committee, and the Chair of the Management Committee on the Advisory Process (MCAP) are *ex officio* members. The Bu-

reau is responsible, together with the General Secretary, for overseeing the daily operations of ICES, convening the Annual Science Conference, and preparing budgets. The Bureau forms the link between Delegates and the ICES Secretariat. The Finance Committee advises the Council and the Bureau on financial matters.

The General Secretary—the chief executive officer of ICES—heads a group of Professional and General Service staff currently numbering 38 people, who together form the ICES Secretariat, based at ICES Headquarters in Copenhagen (Denmark). The Secretariat provides the administrative, secretarial, editorial, and publication services for the Council, and serves as the communications link for the approximately 1600 scientists involved in ICES activities located in the Member Countries, the growing number of Affiliates, as well as with other relevant international organisations. More than 700 scientists annually attend meetings at ICES Headquarters, supported by the staff and in-house facilities. The Secretariat is also responsible for organising the Annual Science Conference, Symposia, and Dialogue Meetings in Denmark and abroad.

The supervision of the Council's work programme resides mainly in various committees. On the scientific side, there are eight Science Committees providing a wide coverage of the main facets of marine science, two Advisory Committees, the Consultative Committee, and the Management Committee on the Advisory Process (MCAP). MCAP oversees the advisory process. The Consultative Committee, consisting of the Chairs of the Science Committees and the Advisory Committees, plus a Chair and Vice-Chair elected by the Committee, oversees all aspects of the Council's scientific work. The primary means by which the actual work is planned, coordinated, conducted, appraised, and reported on for subsequent peer-review, are the large number of Study, Working, Planning, and Steering Groups and Workshops. These Expert Groups are established as needed by the Council, on the recommendation of the respective Committees, and maintained for as long as necessary to address the questions and terms of reference assigned to them. Each Expert Group has a parent Committee to which it reports progress and from which it receives instructions, as necessary, for further work. All Member Countries and Affiliates are entitled to appoint members to any of these groups. With the exception of meetings of 1) fish-stock assessment Working Groups, whose members must be appointed by Delegates or approved by the General Secretary for special purposes (e.g. facilitating Third World development), and 2) groups whose members might be restricted to particular experts appointed by the Council, observers from non-Member Countries and international scientific organisations may be invited to join Expert Group meetings.

ICES currently has more than 100 Working, Study, Planning, and Steering Groups and Workshops forming the basis for its annual work programme. Subjects include such wide-ranging fields as marine chemistry; sediments; physical oceanography; environmental impact of mariculture; ecosystem effects of fishing; fish diseases, fish behaviour, and genetics; ecology of benthos, plankton, fish, seabirds, and marine mammals; biological effects of contaminants; trend monitoring; marine data management and statistics; single- and multispecies fish-stock assessments; fishing technology; and surveys for fish eggs, larvae, juveniles, and adults.

Scientific and Advisory Functions

1. Fisheries

An important responsibility of ICES is the coordination of fisheries-related scientific research. This comprises monitoring the abundance and composition of fish stocks in the Northeast Atlantic, including developing appropriate methods to estimate fish-stock abundance, collecting statistics on fish catches, fishing effort, relevant biological data on the various life stages of fish, recruitment to fish stocks, multispecies interactions and their effects on individual fish stocks.

ICES is the official scientific advisory body to the following Commissions:

- North-East Atlantic Fisheries Commission (NEAFC);

- International Baltic Sea Fishery Commission (IBSFC);
- North Atlantic Salmon Conservation Organization (NASCO);
- Commission of the European Union (EC).

These commissions and the governments of ICES Member Countries formulate requests to ICES for information and advice related to the management of specific stocks of fish. The ICES Advisory Committee on Fishery Management (ACFM) meets twice a year (summer and autumn) to prepare its advice, which is published annually in the *ICES Advice* series.

2. Marine Environment

ICES also provides scientific information and advice on matters related to the marine environment through its Advisory Committee on the Marine Environment (ACME) and the Advisory Committee on Ecosystems (ACE) to Member Country governments and the following Commissions:

- OSPAR Commission for the Protection of the Marine Environment of the North-East Atlantic;
- Helsinki Commission – Baltic Marine Environment Protection Commission (HELCOM, Convention for the Protection of the Marine Environment of the Baltic Sea Area).
- Commission of the European Union (EC)

ACME and ACE meet annually and publish their advice in the *ICES Advice* series.

3. Management of the Advisory Process

Through Council Resolution CM 2000/4DEL01, overall responsibility for managing the production and delivery of scientific advice rests with the Management Committee for the Advisory Process (MCAP). Membership of MCAP consists of the Chairs of ACFM, ACME, ACE, and the Consultative Committee. The General Secretary is an *ex officio* member.

4. Oceanography

Oceanographic investigations form an integral part of the ICES programme of multidisciplinary work aimed at understanding the features and dynamics of water masses and their ecological processes. Special emphasis is placed on the influence of changes in the environment on the distribution, abundance, and population dynamics of utilised fish resources. This theme is an important element of the project of the International Geosphere-Biosphere Programme, called GLOBEC (Global Ocean Ecosystem Dynamics), in which ICES plays a key implementation role via the North Atlantic Regional Office of GLOBEC which is located in the ICES Secretariat. Oceanographic investigations are also directly relevant to marine pollution studies in view of the influence oceanographic conditions have on the distribution and transport of contaminants in the marine environment. ICES promotes the development and calibration of oceanographic equipment and the maintenance of appropriate standards of quality and intercomparability of oceanographic and environmental data.

Data Centre

Data serve as the foundation for objective assessments of the status of the marine environment and its living resources. The ICES Secretariat maintains some of the world's largest and longest databases on oceanography, contaminants/pollution, and fisheries. Much of the data is quality controlled directly by ICES and/or by the data submitter using an ICES data checking system.

ICES maintains oceanographic data supplied by Member Countries dating back to the early 1900s. The oceanographic database is supplemented by an inventory of cruise information,

based on Reports of Scientific Cruises and Oceanographic Programmes (ROSCOP), which summarises all cruise activities in Member Countries related to physical oceanographic, marine biological, pollution, fisheries, and geophysical research.

ICES is the oldest international data centre for marine contaminants, including data from its Co-operative Monitoring Studies Programme, and from the Oslo and Paris Commissions' Joint Monitoring Programme covering contaminants in biota, sea water, and sediments. ICES also served as the centre for environmental and biological data used in the work of the North Sea Task Force, and has a formal agreement with the Arctic Monitoring and Assessment Programme (AMAP) to act as its thematic data centre for the marine component.

In the area of fisheries, ICES maintains a database containing detailed information relevant to fish-stock assessment, data from quarterly International Bottom Trawl Surveys and catch statistics for the Northeast Atlantic.

ICES is working towards readily accessible, multi-disciplinary databases to ensure expedient data compatibility and to strengthen support of the ecosystem approach.

Coordination of Cooperative Programmes

Baltic Sea Regional Project: In partnership with HELCOM, ICES is a key player in the implementation of the GEF Baltic Sea Regional Project (BSRP), in cooperation with the World Bank and UNDP.

The objective of the BSRP is to introduce ecosystem-based assessments to strengthen the management of Baltic Sea coastal and marine environments through regional cooperation and targeted, transboundary marine and watershed activities. The ultimate aim is to reduce impacts from non-point sources of pollution and to increase sustainable biological production. Within the overall project (under HELCOM's co-ordination), ICES is responsible for the component entitled Baltic Sea Large Marine Ecosystem Activities.

ICES/GLOBEC Office: The Office, which is housed within the ICES Secretariat in Copenhagen, coordinates and helps to implement the GLOBEC programme within the ICES area. The GLOBEC programme aims to improve forecasts of the responses of the marine ecosystem to physical forcing and global change by developing our understanding of its structure and functioning under varying physical conditions. The research provides the basis for a wider ecosystem approach to issues in fisheries management and environmental protection. Within ICES this requires close cooperation between physical, chemical and biological oceanographers on the one hand, and fisheries and environmental assessment scientists on the other.

GLOBEC is a core project of the IGBP (International Geosphere Biosphere Programme) and is sponsored by the International Oceanographic Commission and the Scientific Committee on Ocean Research.

Publications

Since its inception, ICES has published well over a thousand periodicals and monographs.

As part of its function of publishing and disseminating results of research, the Council organises scientific symposia and other meetings that are open to participants from both Member and non-Member Countries. The following series are available to the scientific community and the general public:

- ICES Journal of Marine Science
- ICES Marine Science Symposia (Symposium proceedings formerly published in this series now usually appear as special numbers of the ICES Journal, above)
- ICES Cooperative Research Reports

- ICES Fisheries Statistics
- ICES Oceanographic Data Lists and Inventories (now available on the Internet at <http://www.ices.dk>)
- ICES Identification Leaflets for Plankton
- ICES Identification Leaflets for Diseases and Parasites of Fish and Shellfish
- ICES Techniques in Marine Environmental Sciences
- ICES Annual Report
- ICES/CIEM Newsletter

Collaboration with Other International Organisations

More than 40 international organisations have observer status and cooperative relations with ICES. Of the United Nations agencies, ICES works actively with the Fisheries Department of the Food and Agriculture Organization (FAO), the Intergovernmental Oceanographic Commission of UNESCO (IOC), the International Maritime Organization (IMO), the World Meteorological Organization (WMO), and the United Nations Environment Programme (UNEP). ICES also carries out cooperative scientific activities with many intergovernmental marine science organisations, particularly the North Pacific Marine Science Organization (PICES) and the Northwest Atlantic Fisheries Organization (NAFO). Among the non-governmental organisations with which ICES has active links, one of the most important is the Scientific Committee on Oceanic Research (SCOR), which promotes and coordinates international oceanographic activities. ICES also has cooperative agreements with other eminent organisations such as the Arctic Monitoring and Assessment Programme (AMAP), the World Wide Fund for Nature (WWF), and BirdLife International.

Progress Report on Administration

1 The Council and its Members

1.1 Country Membership

The number of Contracting Parties remained at nineteen.

1.2 Payment of National Contributions

By 31 December 2004 the following national contributions from 18 Contracting Parties for the financial year 2005 had been paid: Belgium, Denmark, Estonia, Finland, France, Germany, Iceland, Ireland, Latvia, Netherlands, Norway, Poland, Portugal, Russia¹, Spain, Sweden, United Kingdom, and USA.

1.3 National Delegates

The General Secretary was informed of the following changes to the list of national Delegates during 2004:

- a) Carlos Costa Monteiro, IPIMAR, Lisbon, was appointed to replace Marcelo Vasconcelos as Delegate of Portugal.
- b) Ronald Fonteyne, Sea Fisheries Department, Oostende, was appointed to replace Rudy De Clerck as Delegate of Belgium.
- c) Lucas L.F. Janssen, RIKZ, The Hague, was appointed to replace Ineke van der Hee as Delegate of the Netherlands.
- d) Carmela Porteiro, IEO, Vigo and Luis Valdés, IEO, Gijón were appointed to replace Concepción Soto and Eduardo Lopes-Jamar as Delegates of Spain.
- e) Steve Murawski, National Marine Fisheries Service, Woods Hole, was appointed to replace Mike Sissenwine as Delegate of the USA, following Mike Sissenwine's election as President of ICES.
- f) Tore Nepstad, Institute of Marine Research, Bergen, was appointed to replace Roald Vaage as Delegate of Norway.
- g) Fritz W. Köster, Danish Institute for Fishery Research, Lyngby, was appointed to replace Mogens Schou as Delegate of Denmark.

2 Cooperation with Other International Organisations

The Council has continued its active cooperation with other international organisations, including those to which it provides scientific information and advice in the areas of fisheries management (IBSFC, NASCO, NEAFC, and the European Commission (DG-Fisheries)) and marine environmental protection (HELCOM, OSPAR, and EC DG-Environment).

Meetings during the period since 1 January 2004 of the above-named and other organisations at which ICES was represented are included in **Annex 1**. Observers reports on some of these meetings were issued at the 2004 Annual Science Conference as Doc. C.M. 2004/Gen:1.

¹ Russia paid in full her national contribution on 21 March 2005.

2.1 OSPAR

ICES was represented at the following meetings of the OSPAR Commission and its subsidiary bodies:

- a) The Biodiversity Committee (BDC), Bruges, Belgium, 16–20 February 2004 (ICES Representative: Environment Adviser).
- b) The Working Group on Concentrations, Trends, and Effects of Substances in the Marine Environment (SIME) held at the OSPAR Secretariat, London, 24–26 February 2004 (ICES Representative: Environment Adviser).
- c) The Environmental Assessment and Monitoring Committee (ASMO) held in Stockholm, Sweden, 29 March to 2 April 2004 (ICES Representatives: Environment Adviser, and Head of the Advisory Programme).
- d) A Workshop on Environmental Impact of CO₂ in Geological Structures in the Maritime Area held in Trondheim, Norway, 26–27 October 2004 (ICES Representative: Data Centre Manager).
- e) Eutrophication Task Group held in London, UK, 2–3 November 2004 (ICES Representative: Data Centre Manager).

Sections of the 2004 Report of ACE containing responses to relevant OSPAR requests were considered at the meetings of the Eutrophication Task Group (ETG) in November 2004, the Eutrophication Committee in December 2004, and the Biodiversity Committee in February 2004.

During the year, substantial effort was spent by the Secretariat on assisting the OSPAR-MON group on its thematic assessment of trends and hazardous substances in the OSPAR area. OSPAR-MON met at ICES Headquarters at the beginning of December 2004, and the Group successfully completed its tasks. The assessments are to be reviewed in 2005. The support for MON included data processing within the OSPAR-ICES contract on data handling and assisting OSPAR-MON in developing relevant data products.

2.2 Helsinki Commission (HELCOM)

The ICES advice (from ACME) to HELCOM in response to requests regarding monitoring and assessment issues was presented at the main MONAS meeting in Tallinn, Estonia, on 25–29 October 2004 (ICES Representative: Environment Adviser). ICES advice (from ACE) in response to requests regarding biodiversity and ecosystem requests were considered at the meeting of HELCOM HABITAT (Helsinki, Finland, 24–28 May 2004 (ICES not represented)).

ICES was represented at a HELCOM MONAS Indicator Workshop in Helsinki, Finland on 12–14 May 2004 by Programmer H. Kjems-Nielsen.

The contract for handling data from the COMBINE programme was renewed in mid-2004 for another 3-year period (1 June 2004 to 30 June 2007).

Members of the HELCOM and ICES Secretariats met in December 2004 to discuss long-term arrangements for the work. HELCOM indicated that it would become more involved in the scientific process within ICES.

2.3 North-East Atlantic Fisheries Commission (NEAFC)

The Fisheries Adviser (now Head of Advisory Programme) visited NEAFC headquarters on 11 February 2004 to discuss progress, and in particular the progress with the special requests and the revision of the geographical breakdown of the fisheries statistics (see also EURO-

STAT). The proposal was subsequently adopted at the Annual Meeting of NEAFC in November 2004.

The Chair of ACFM presented advice on redfish at a one-day meeting of NEAFC in October 2004, and then presented the full range of advice at the Annual Meeting of NEAFC in November. The Assessment Scientist and the Advisory Programme Officer also took part in the meeting.

2.4 North Atlantic Salmon Conservation Organisation (NASCO)

On 7 May 2004 ICES provided NASCO with advice in accordance with the MoU between NASCO and ICES, and in response to the NASCO request for advice. This was presented in detail by the Chair of the Working Group on North Atlantic Salmon (Walter Crozier, UK) at the NASCO Annual Meeting in Reykjavik in June.

2.5 International Baltic Sea Fishery Commission (IBSFC)

In accordance with the request for information from IBFSC ICES provided advice, on 1 February 2004, on in-year revision of the TAC for Baltic cod and later, on 16 April 2004, on possible closures of cod spawning areas. The Head of the Advisory Programme presented the advice on Baltic salmon to the IBSFC Salmon Action Plan Surveillance Group in June 2004 and the full range of advice to the Annual Meeting of IBSFC in September 2004.

2.6 European Union (EU)

2.6.1 European Commission (EC)

DG-Fisheries and Maritime Affairs

The General Secretary and the Chair of ACFM participated in the meeting of the DG-Fisheries Working Group on Strategic Goals and Objectives, held in Brussels, Belgium, on 17 February 2004.

The General Secretary participated in a meeting of Directors of EU Fisheries and Aquaculture Research Organisations (EFARO) on 13 and 14 May in Galway, Ireland.

On 5 March 2004 the ICES Secretariat replied to a DG-Fisheries request by providing an overview of the status of fish stocks in the period 1995–2002.

During August and September 2004 the Chair of ACFM presented the ICES fisheries advice to several EU groups, and the Head of the Advisory Programme made a presentation to the EC ACFA (Working Group of the EC Advisory Committee for Fisheries and Aquaculture) in October 2004.

DG-Environment

Several activities have been initiated by DG-Environment to further develop the European Marine Strategy. These include the establishment of an Inter-Organisational Consultation Forum and several Working Groups to prepare aspects of the Marine Strategy.

ICES collaborated with DG-Environment on the development of an ecosystem approach to marine management in relation to the European Marine Strategy. This work was carried out to provide input to the EC's Working Group on an Ecosystem Approach to the Management of Human Activities (EAM), which is co-chaired by the EC and ICES (Jake Rice). The EC Working Group concluded its work by the end of April, based on input from the DG-Environment/ICES group that had developed the draft document.

Under the same heading on the development of a European Marine Strategy, ICES is represented in the “Strategic Group” by the General Secretary.

Another group established for the Marine Strategy is the Working Group on European Monitoring and Assessment (EMMA) (Lead: EC, Co-Lead: EEA). The first meeting of EMMA was held on 9 October 2003 in Copenhagen (ICES Representative: Environment Adviser). One outcome of this meeting was the request that ICES work with the EEA and the regional Commissions, utilising ICES as their data centre for environmental monitoring data, to develop a proposal for a test of the ReportNet software as a tool for exchanging monitoring data. The second meeting of EMMA was held on 5–6 February 2004 (ICES Representative: Environment Adviser). The paper (prepared by EEA with some input from ICES) containing a proposal for a test of the ReportNet software was not accepted, and no alternative was provided at that meeting. However, the ICES representative, jointly with a representative of the JRC, developed a paper for the improvement of the cooperation on research in relation to marine environmental monitoring and assessment. This paper was considered at the EMMA meeting on 23 to 24 June 2004, and was subsequently revised and issued as an input to EMMA.

EUROSTAT

The first meeting under the EUROSTAT/ICES partnership arrangement was held on 3–4 May 2004 at EUROSTAT in Luxembourg, with the participation of the ICES Head of Advisory Services. The meeting discussed a proposal developed by ICES on changing the statistical divisions used to collect fisheries catch statistics in the North-East Atlantic. The meeting recommended that EUROSTAT and ICES adopt the proposed changes. EUROSTAT, at its meeting of the Agriculture Statistics Committee adopted the proposal on 5–6 May 2004. This proposal was approved by the Delegates in September 2004, and NEAFC approved the proposal in November 2004. The EU legislation had to be changed; this was accomplished in March 2005.

Joint Research Centre (JRC)

In addition to the collaborative work described in the immediately preceding paragraph, a representative of the JRC took part in the meetings of three ICES Expert Groups – the Baltic Fisheries Assessment Working Group, the North-Western Working Group, and the Study Group on Stock Identity and Management Units of Redfishes – on the invitation of the General Secretary. The JRC input consisted of valuable experimental data obtained from satellite-based radar observations on fishing vessel distribution.

The Data Centre Manager met with JRC representatives on 4 November 2004, to discuss common data issues and identify areas of possible future collaboration.

2.6.2 European Environment Agency (EEA)

The Data Centre continually supports the EEA by data deliveries.

2.7 United Nations (UN)

2.7.1 Food and Agriculture Organisation of the UN (FAO)

ICES continues to collaborate with FAO within the framework of the 1996 ICES/FAO Memorandum of Understanding. The Secretariat continues to develop the presentation of information on fish stock status and trends in the FIRMS programme. The partnership agreement covering this cooperation has been finalised and was signed on 2 February 2004 at FAO in Rome. At this inaugural meeting the following organisations presented a signed partnership agreement: FAO, IATTC, ICCAT, ICES, IOTC, and CCSBT.

The next FIRMS Steering Committee meeting is planned for 25–26 February 2005 at ICES Headquarters.

2.7.2 Coordinating Working Party on Fisheries Statistics (CWP)

CWP held an inter-sessional half-day meeting on 3 February 2004 at FAO in Rome. The agenda for CWP-20 was finalised. CWP-20 will take place in February–March 2005 at ICES headquarters.

2.7.3 United Nations Environment Programme (UNEP)

In relation to the ICES participation in the UNEP development of a Global Network on Monitoring of Chemicals on Persistent Organic Pollutants (POPs), the Environment Adviser continued to provide advice and support to UNEP's development of a Global POPs Monitoring Programme to support the effectiveness evaluation of the Stockholm Convention which went into effect on 17 May 2004.

In early June, in response to a UNEP request, an extensive review of the ICES area, which had been prepared by ICES scientists and the Secretariat, was submitted to the Global International Water Assessment project (GIWA).

2.8 North Sea Commission Fisheries Partnership (NSCFP)

The Fishery Assessment Scientist participated in a joint ICES/NSCFP meeting (SGFI) held in the Netherlands from 6–7 February 2004. The meeting discussed the outcome of the Fishermen's Survey.

The now regular review of the assessments of the North Sea cod, plaice, and whiting took place in October 2004 at ICES headquarters.

2.9 QUASIMEME

QUASIMEME provides intercalibration information to laboratories. The information can be considered as a data quality indicator. ICES is represented on QUASIMEME's Advisory Board. This year it was held in Berlin, Germany, 8–9 October 2004 (ICES Representative: Data Centre Manager).

2.10 SeaSearch

SeaSearch is a Pan-European organisation that seeks to ensure wide accessibility to oceanographic data. SeaSearch's geographic area overlaps that of ICES, and SeaSearch provides some of the same services, e.g. on-line Cruise Summary database. SeaSearch does not, however, directly handle data but rather provides links and guidance to its members' data, advocating distributed databases. SeaSearch's EU funding ceases in 2005, but expects to continue under the SeaDataNet project which will be submitted for funding under the 6th Framework Programme.

ICES attended the SeaSearch meeting in Hamburg, Germany, 2–3 December 2004 (ICES Representative: Data Centre Manager).

2.11 IOC

Following the visit of a high-level ICES Delegation to IOC in June 2003, a new and extended Memorandum of Understanding (MoU) between ICES and IOC was developed. The text having been approved by both organisations, the MoU was signed by the ICES President Mike Sissenwine and IOC Chair David Pugh at the ICES Annual Science Conference in Vigo, 28 September 2004.

3 Meetings and Other Activities Organised by the Council

3.1 Symposia

2004: ICES Symposium on “The Influence of Climate Change on North Atlantic Fish Stocks, Bergen, Norway, was held from 11–14 May 2004. Co-Conveners: Robin Cook (UK), K. Drinkwater (Canada), and Harald Loeng (Norway).

2004: ICES Symposium on “Gadoid Mariculture: Development and Future Challenges”, will be held in Bergen, Norway, from 13–16 June 2004. Co-Conveners: Olaf S. Kjesbu (Norway), Geir L. Taranger (Norway), and Edward A. Trippel (Canada).

A Scientific Steering Group including Lawrence Buckley (USA), Lesley McEnvoy (UK), Anne Berit Skiftesvik (Norway), and Josianne Støttrup (Denmark) was established to assist the Co-Conveners in planning the Symposium. The Co-sponsors of this Symposium are the Institute of Marine Research, Bergen, Norway, the Research Council of Norway, the National Oceanic and Atmospheric Administration (NOAA), USA, and Fisheries and Oceans, Canada.

2004: ICES was the Co-Organiser of the Ocean Biodiversity Information Conference, held from 29 November to 1 December 2004 in Hamburg, Germany.

2005: ICES/FAO Symposium on the “Precautionary Approach to Fisheries Management: Lessons Learned and Future Directions” will be held in Chile for four days in 2005 with Frans van Beek (Netherlands), Jorge Csirke (FAO), and Olle Hagström (EC, DG-Fish) as Co-Conveners.

There has been no response from Chile (IFOP) and on the recommendation of the Consultative Committee, the Symposium has been cancelled. It has been replaced by one entitled “Management Strategies: Case Studies of Innovation” which will be held in Galway for four days in late 2006 with Paul Connolly (Ireland) and Jake Rice (Canada) as Conveners and with Mike Armstrong (UK) and Doug Wilson (Denmark) as Co-Conveners. Additional members of a Steering Group will be sought.

3.2 Bureau

The Bureau (Chair: Mike Sissenwine, President of ICES) met in Copenhagen on 29 and 30 January 2004. The main agenda items were the ICES Secretariat Workplan for 2004, the Draft Budget for 2005, the Draft Forecast Budget for 2006 (including Programmatic Budgets), and the Restructuring of the ICES Secretariat.

The mid-term meeting of the Bureau was held in Copenhagen on 24–25 June, where the main issues were the arrangements for selecting and appointing a new General Secretary to succeed David Griffith, the report of the mid-term meeting of the Consultative Committee, and the Reports of MCAP.

3.3 Advisory Committees

The Chairs of ACE and ACFM have worked on the development of the format for an ICES advice under an Ecosystem Approach. This format will be implemented during 2004–2005.

WGCOOP-MICC

The ICES/Commissions Working Group on Cooperative Procedures among Commission (WGCOOP) was changed to a meeting of MCAP at which all Commissions (EC [DG-Fisheries, DG-Environment], HELCOM, IBSFC, NASCO, NEAFC, and OSPAR) were pre-

sent together with most of the MCAP members (CONC and ACFM Chairs were unable to participate).

Implementing the ICES Advisory Series

Following a PUBCOM recommendation in September 2003, the ICES advice will be published as a new series, and the aim is to have one advisory report including all advice whether produced by ACME, ACE, or ACFM. The main consideration is that Clients have no practical interest in the internal ICES structure, and should be able to find all advice related to a particular issue without intimate knowledge of the ICES organisational setup. This has become an increasing problem as many more organisations and individuals take an interest in the ICES advice. Also, the development of advice under an Ecosystem Approach means that the full advice on a particular issue will be developed by more than one Advisory Committee, e.g. ACE has prepared various parts of advice on fisheries management whereas other considerations on management of the same fisheries has been prepared by ACFM.

Integrated Advice under an Ecosystem Approach

The Study Group on Advisory Working Procedures (SGAWWP) recognised that ICES must develop advice under an Ecosystem Approach and that such advice must be integrated with inputs from many scientific disciplines. ACE and ACFM have developed a first proposal on how such a framework might look, and agreed that this should be implemented stepwise. Starting from the format for the extension of the ACFM report, now part of the ICES advisory report, ACE and ACFM developed a proposal for such an integrated advisory report. The proposal was discussed in detail by MCAP in January 2004 and a revised version was presented for discussion at a meeting with the Clients in March. This meeting led to further revisions in the format. ACFM started to fill in its parts of this format in May 2004 and ACE continued in June 2004. The 13th Dialogue Meeting discussed the implementation of an Ecosystem Approach, and supported the proposed incremental implementation strategy advocated. Plans for furthering this work were prepared for discussion at the ASC, and the Advisory Committees supported these developments.

ACFM

ACFM met from 28 May to 3 June and 7–13 October 2004 at ICES Headquarters (Chair Poul Degnbol). The meetings were held under the new arrangements, with review groups meeting separately from ACFM. The review groups are charged with controlling the technical parts of the assessments, while ACFM concentrates on preparing fisheries advice based on already reviewed assessments. The ACFM meetings were shortened from the usual 10 days down to 7 days. The format of the advice was changed in two respects: (i) by providing advice on fisheries rather than on stocks and (ii) by initiating advice under an Ecosystem Approach. ACFM had developed a new format for advice based on fisheries, which was an elaboration of the format introduced in the ACFM autumn 2003 report. The basic feature is to split the advice into two: 1) consideration of the status of the individual stocks and 2) considering the species mix in fisheries where this is appropriate. The format for the other extension – advice under an Ecosystem Approach – was prepared in cooperation with ACE. The present version of the Table of Contents provides for input from both ACE and ACME, i.e. the report is intended to discuss the impacts of fisheries on ecosystem components other than fish stocks, and also the ecosystem impacts on the fisheries. This is not the final format of the ICES advisory report, but some form of practical test seemed to be required to further the discussions.

NAFO ScC/STACFIS (Shrimp) and the ICES *Pandalus* Working Group met jointly from 27 October to 5 November 2004 at ICES Headquarters. The NAFO Scientific Council met towards the end of the period to advise on the NAFO stocks, while advice on the ICES shrimp stocks were prepared through an e-mail procedure within ACFM. The 2005 meeting of these

groups will take place at NAFO Headquarters and the NAFO Secretariat will provide the administrative support for this meeting.

ACME

ACME (Chair: Stig Carlberg) met from 8–12 June 2004 to address advice in response to requests from the OSPAR Commission and HELCOM, and to provide information and advice on other relevant issues.

Stig Carlberg completed his term of office by the end of 2004 and ACME nominated Paul Keizer (Canada) as their next Chair. This nomination was approved by the Council.

ACE

ACE (Chair: Simon Jennings) met from 14–18 June 2004 to address advice in response to requests from EC DG-Fish, OSPAR, and HELCOM, and to provide information and advice on other relevant issues.

3.4 Working/Study Group Meetings and Workshops

A list of the meetings of Working, Study, and other Groups and Workshops specified in the Council Resolutions from the 2003 Statutory Meeting which have been taking place during the intersessional period is given in **Annex 2**.

4 Secretariat Matters

4.1 Staffing

The maximum number of people employed in the ICES Secretariat during 2004 was 39. They occupied 16 posts at the Professional level and 23 posts at the General Service level.

Following Bureau approval in January 2004, the Secretariat was restructured to make it more efficient in meeting modern requirements and to provide a full suite of products to the ICES scientific community, Member Country Governments and Client Commissions, in a timely and cost-effective manner. The former independent sections of Oceanography, Environment, and Fisheries have been restructured into a Science Programme section and an Advisory Programme section, while their separate data handling functions have been merged into a common Data Centre.

Harry Dooley (formerly Hydrographer/Scientific Coordinator) took over the post of Head of Science Programme until he relinquished his post in May 2004. Harry joined the Secretariat in 1984 as Hydrographer, and brought to ICES the skills and experience of a renowned physical oceanographer.

Jesper Heldbo (Denmark) was employed from 17 May to 1 October 2004 as Acting Head of Science Programme.

Adolf Kellermann (Germany) was appointed to the post of Head of Science Programme with effect from 1 October 2004, following an open recruitment process.

Hans Lassen (formerly Fisheries Adviser) became Head of the Advisory Programme.

Janet Pawlak (Environment Adviser) left the Secretariat on 31 October 2004, after 28 years of dedicated service. Her wide knowledge of the scientific programmes and procedures of the Environmental Commissions, as well as her long experience within ICES, enabled her to give valued support and guidance to the Study Groups, Working Groups, Science Committees, Advisory Committees, and the Commissions.

Julie Gillin (USA) took up the position of Data Centre Manager on 1 June 2004, following an open recruitment process.

Judith Rosenmeier retired as Senior Technical Editor at the ICES Secretariat at the end of July 2004, after 27 years of service which were distinguished by her charm, her artistic skills and her quiet but sparkling sense of humour.

William (Bill) Anthony (USA) took up the position of Technical Editor on 6 September 2004, following an open recruitment process.

Hans Mose (Denmark) was employed from 2 February to 31 December to work on environmental contaminant data.

Foppe Smedes (The Netherlands) was employed from 26 July to 31 December to assist in work on trend assessments of contaminants in sediments.

Solveig Lund (Denmark) took up employment with ICES on 30 November 2003 as Temporary Office Assistant/Library Assistant. As from 1 July 2004 she has been employed in a permanent post as the ICES Receptionist.

5 Publications

5.1 ICES Journal of Marine Science (*Journal du Conseil*)

In Volume 61, Number 1, Andrew I. L. Payne began his three-year appointment as Editor-in-Chief with an editorial in which he thanked Niels Daan for “six years of sterling service”, and outlined his vision for the *Journal's* future.

The contract with publisher Elsevier will expire at the end of December 2005. The process for soliciting tenders will commence in the spring of 2005.

Verena Trenkel (IFREMER, Nantes) joined the editors corps of the ICES *Journal* from 1 January 2004.

Editor Chris L. J. Frid tendered his resignation with effect from the end of 2004, for personal reasons related to a current high level of commitment to research and university responsibilities. He has been a solid, reliable, and industrious member of the editorial team and will be missed.

Chosen to replace him from a field of seven applicants was Audrey Geffen, currently working in the Department of Biology at the University of Bergen. Her research has addressed various aspects of larval fish ecology, focusing mainly on the effects of environmental variables on growth and survival. Before moving to Norway, she worked for 15 years as a research fellow at the Port Erin Marine Laboratory in the Isle of Man. She has ample experience at both ends of the editorial pencil as a prolific author and an editor.

In 2004, *Journal* editors received 227 papers, a record number, indicating that the *Journal* continues to be seen by marine scientists as a crucial outlet for their studies. Acceptance rate of submitted manuscripts averages 57%. With such an abundance of excellent papers to choose from, the question must be raised, whether an increase in the page budget is justified. Further, if the submission level is maintained, an increase in the number of *Journal* editors might be considered.

Of the papers accepted for publication, most (70%) are published in the calendar year following the year of submission, although there is a slowly increasing proportion published in the same calendar year (now 6%).

Bill Turrell, Chair of the Publications Committee tendered his resignation effective at the end of 2004. Pierre Pepin was unanimously elected as Chair effective January 2005.

The following numbers have been published since the 2004 ICES Annual Science Conference / 92nd Statutory Meeting:

Volume 61, Number 6, pages 871–1027 (September 2004).

Volume 61, Number 7, pages 1029–1242 (October 2004) titled *Fish behaviour in exploited ecosystems*. The articles stem from The Second ICES Symposium on Fish Behaviour, Bergen, Norway, 23–26 June 2003. This number is also designated as *ICES Marine Science Symposia (MSS)* Volume 221.

Volume 61, Number 8, pages 1243–1452 (December 2004). This number contained a special section titled, “Mixed and Multi-Stock Fisheries”, with ten representative articles presented during the Theme Session V at the 2003 ICES Annual Science Conference held in Tallinn, Estonia.

Volume 62, Number 1, pages 1–143 (February 2005).

Volume 62, Number 2, pages 145–305 (April 2005).

Volume 62, Number 3, pages 307–614 (May 2005) titled *Quantitative ecosystem indicators for fisheries management* will appear in May 2005 as scheduled.

Starting in 2006, each annual volume of the *ICES Journal of Marine Science* will contain nine issues, three of which will be dedicated to the proceedings of ICES symposia.

The total page budget for 2006 is set at 1030 pages standard issue pages, allocated as required among the regular issues, plus 750 pages allocated among the three symposium issues. Flexibility is observed in page allocation per issue and in the distribution of colour figures.

For 2004, the institutional rates for Volume 61 are € 848, USD 735, or JPY 91 600, and the personal rates are € 245, USD 231, or JPY 26 500.

Institutional subscriptions for Volume 62, which will include nine issues, are priced at € 895 for European countries, USD 794, or JPY 96 600. Personal subscriptions were set at respectively € 240, USD 255, or JPY 27 600.

Institutional subscriptions also continue to be available in different combinations of Web and paper versions (at varying rates determined by criteria established by Elsevier), with electronic versions playing an ever greater role in the proportion of the revenue received.

Subscribers can download full-text versions of articles, usually several weeks before paper versions are off press, and non-subscribers can access tables of contents and abstracts of articles at www.ScienceDirect.com. As the world’s largest scientific full-text database, ScienceDirect has greatly increased the outreach of the *ICES Journal*.

Due to a bookkeeping error on the part of Elsevier, the net profit for 2002 from the ICES / Elsevier joint account for the *ICES Journal* was overstated in the amount GBP 89 601, about double the correct amount. Elsevier did not require a refund. For 2003, payable in May 2004, the net profit was calculated as being GBP 29,485.24, which was received by ICES in February 2005.

5.2 ICES Marine Science Symposia (*Actes du Symposium*)

Since Volume 200, numbers of *ICES Marine Science Symposia* have been included in the series *ICES Journal of Marine Science*, but retain a place in the consecutive numbering system of *ICES Marine Science Symposia (MSS)*.

Volume 221 titled *Fish behaviour in exploited ecosystems* was issued in October 2004. The articles stem from The Second ICES Symposium on Fish Behaviour, Bergen, Norway, 23–26 June 2003. This number is also designated as *ICES Journal of Marine Science*, Volume 61, Number 7 (October 2004).

Volume 222 titled *Quantitative ecosystem indicators for fisheries management* will appear in May 2005 in *ICES Journal of Marine Science*, Volume 62, Number 3.

5.3 ICES Cooperative Research Report (*Rapport des Recherches Collectives*)

The following numbers in the *ICES Cooperative Research Report* series have been published since the 2003 ICES ASC / Statutory Meeting:

- No. 261: Report of the ICES Advisory Committee on Fishery Management, 2003 (Parts 1–3), dated December 2003.
- No. 262: Report of the ICES Advisory Committee on Ecosystems, 2003, dated December 2003.
- No. 263: Report of the ICES Advisory Committee on the Marine Environment, 2003, dated December 2003.
- No. 264: Alien Species Alert: *Rapana venosa* (veined whelk), dated February 2004.
- No. 265: Trends in important diseases affecting the culture of fish and molluscs in the ICES Area, 1998–2002, dated February 2004.
- No. 266: Mesh Size Measurements Revisited, dated August 2004.
- No. 267: Report of the Thirteenth ICES Dialogue Meeting: Advancing scientific advice for an ecosystem approach to management: collaborating amongst managers, scientists, and other stakeholders, Dublin, Ireland, 26–27 April 2004, dated August 2004.
- No. 268: The DEPM Estimation of Spawning-Stock Biomass for Sardine and Anchovy, dated August 2004.
- No. 269: The Annual ICES Ocean Climate Status Summary 2003/2004, dated August 2004.
- No. 270: The *Nephrops* fisheries of the Northeast Atlantic and Mediterranean – a review and assessment of fishing gear design, dated August 2004.

5.4 ICES Fisheries Statistics (*Bulletin Statistique des Pêches Maritimes*)

Together with NEAFC and EUROSTAT, ICES has worked on revisions to the statistical areas system used for reporting fisheries catch statistics. Revisions have been worked out in consultation with the NEAFC Secretariat and the Working Group on Deepwater Fisheries, to meet the need for more detailed statistics for deepwater fisheries, and for splitting the catch statistics in- and outside the EEZ as required by NEAFC. Revisions have also been made to separate the Gulf

of Riga fisheries from other fisheries in the Central Baltic. The proposals were adopted by EU-ROSTAT on 5 May 2004, and NEAFC intends to implement them in 2005.

5.5 ICES Identification Leaflets for Plankton (*Fiches d'Identification du Plankton*)

Two leaflets, No. 186 on Dendrobranchiata and No. 187, entitled “Numerical and Taxonomic Index of ICES Plankton Identification Leaflets, 1939–2001”, were issued in November 2001. Although no other manuscripts are in hand, several have been promised, including one on *Clausocalanus*. During an ICES Zooplankton Taxonomy Workshop held in Plymouth, the need for both new and revised leaflets was discussed.

The entire series (1939–2001), incorporating older leaflets published under other series titles, was made available during the autumn of 2003 at ICES website, with the precise address <http://www.ices.dk/products/fiche/plankton/start.pdf>. It will later be published on CD-ROM as well, with an Introduction by the Editor, J. Alistair Lindley, and become part of the ICES Electronic Document Collection.

5.6 ICES Identification Leaflets for Diseases and Parasites of Fish and Shellfish (*Fiches d'Identification des Maladies et Parasites des Poissons, Crustacés et Mollusques*)

The most recent publications in this series are Nos. 51–56 on respectively *Stephanostomum tenue*, Gaffkemia, *Diplostomum spathaceum*, Pasteurellosis, *Flexibacter maritimus*, and Streptococcosis, issued in September 1999. Four new manuscripts on, respectively, SPX disease, brown ring disease, M-47 disease, and salmon pancreas disease have been announced as nearly ready for publication. Revisions of earlier manuscripts are in the pipeline, and several new titles have been proposed, as well as other candidates for updating; prospective authors have been approached in all cases. Plans for digitizing the “Disease Leaflets” are at a preliminary stage, but like the “Plankton Leaflets” these publications are also scheduled to become part of the ICES Electronic Document Collection. Stephen W. Feist was appointed Editor of the series during the spring of 2004, succeeding Sharon E. McGladdery on her completion of two three-year terms (1998–2003).

5.7 ICES Techniques in Marine Environmental Sciences

The following publications have been issued since the last update on this series:

- No. 32: Biological monitoring: General guidelines for quality assurance, dated March 2004.
- No. 33: Recruitment studies: Manual on precision and accuracy of tools, dated March 2004.
- No. 34: Biological effects of contaminants: Quantification of δ -aminolevulinic acid dehydratase (ALA-D) activity in fish blood, dated March 2004.
- No. 35: Chemical measurements in the Baltic Sea: Guidelines on quality assurances, dated November 2004.
- No. 36: Biological effects of contaminants: Measurement of lysosomal membrane stability, dated November 2004.
- No. 37: Biological effects of contaminants: Use of intersex in the periwinkle (*Littorina littorea*) as a biomarker of tributyltin pollution, dated November 2004.
- No. 38: Biological effects of contaminants: Use of liver pathology of the European flatfish dab (*Limanda limanda* L.) and the flounder (*Platichthys flesus* L.) for monitoring, dated November 2004.

A number of other manuscripts approved by Council Resolutions are in different stages of preparation by the authors or the Secretariat.

5.8 ICES Annual Report

The *ICES Annual Report for 2003* was issued in May 2004. It was accompanied by a CD-ROM containing most of the ICES 2003 CM documents on which the Annual Report was based.

5.9 ICES CIEM Newsletter

Secretariat work which would normally have been allocated to the Newsletter scheduled to appear in spring 2004 was allocated to the preparation of the UNEP/GIWA project to provide material for a report on the status of the Northeast Atlantic Ocean. This project, which was initiated by a special request from the Executive Director of UNEP, was supported by the Bureau and the Consultative Committee. The 2005 Newsletter was published in September.

Annex 1: Meetings at which ICES was Represented by Observers (January to September 2004)

ACFA. Meeting of the Working Group of the EC Advisory Committee for Fisheries and Aquaculture, Brussels, Belgium, 27 October 2004. ICES Representatives: Head of Advisory Programme and Advisory Programme Officer.

Census of Marine Life. International Scientific Steering Committee, Paris, France, 1–12 December 2004. ICES Representative: Head of Science Programme.

EC DG-Fisheries. Meeting of the Working Group on Strategic Goals and Objectives, Brussels, Belgium, 17 February 2004. ICES Representatives: General Secretary and Chair of ACFM.

EC-DG-Fisheries. Consultation Meeting, Brussels, Belgium, 17 February 2004. ICES Representative: General Secretary.

Meeting of Directors of EU Fisheries and Aquaculture Research Organisations (EFARO), Galway, Ireland, 13–14 May 2004. ICES Representative: General Secretary.

EUROSTAT/ICES Meeting on Fisheries Statistics (WGSTAL), 3–4 May 2004, EUROSTAT, Luxembourg. ICES Representative: Head of Advisory Services.

FASS. For a Sustainable Seamangeum Workshop and Steering Committee. Seoul, Korea, 25–29 October 2004. ICES Representative: Head of Science Programme.

FIRMS. Steering Committee (1st Meeting), 2–5 February 2004, FAO, Rome, Italy. ICES Representative: Fisheries Adviser.

HELCOM. 25th Meeting of HELCOM, Helsinki, Finland, 2–3 March 2004. ICES Representative: General Secretary.

HELCOM. Meeting of Baltic Sea Steering Group (of the GEF Baltic Sea Regional Project), Helsinki, Finland, 10 May 2004. ICES Representative: General Secretary.

HELCOM. MONAS Indicator Workshop, Helsinki, Finland, 12–14 May 2004. ICES Representative: H. Kjems Nielsen.

HELCOM. 15th Meeting of the Heads of Delegation, Helsinki, Finland, 14–15 June 2004. ICES Representatives: General Secretary and Data Centre Manager.

HELCOM. Second Meeting of the Baltic Sea Steering Group, ICES Headquarters, 11 October 2004. ICES Representative: General Secretary.

HELCOM. 16th meeting of heads of Delegations, Helsinki, Finland, 4–5 November 2004. ICES Representative: General Secretary.

IEEF Meeting on Sustainable Fisheries, Brussels, Belgium, 10–12 November 2004. ICES Representative: Head of Advisory Programme.

IFREMER. 20th Anniversary of IFREMER, Paris, France, 23 November 2004. ICES Representative: General Secretary.

NEAFC. Consultation Meeting, London, UK, 11 February 2004. ICES Representatives: General Secretary and Fisheries Adviser.

International Conference on Biodiversity (OBI), Hamburg, Germany, 29 November to 1 December 2004. ICES Representative: Data Centre Manager.

Norwegian Ministry of Fisheries, Oslo, Norway, 20 February 2004. ICES Representatives: Chair of ACFM and Head of Advisory Services.

QUASIMEME Advisory Board, Berlin, Germany, 8–9 October 2004. ICES Representative: Data Centre Manager.

OSPAR Secretariat Consultation Meeting, London, UK, 10 February 2004. ICES Representatives: General Secretary and Fisheries Adviser.

OSPAR Biodiversity Committee (BDC), Bruges, Belgium, 16–20 February 2004. ICES Representative: Environment Adviser.

OSPAR Working Group on Concentrations, Trends, and Effects of Substances in Marine Environment (SIME), London, UK, 24–26 February 2004. ICES Representative: Environment Adviser.

OSPAR Environmental Assessment and Monitoring Committee (ASMO), Stockholm, Sweden, 30 March–2 April 2004. ICES Representatives: Environment Adviser and Head of Advisory Services.

Meeting of OSPAR Commission, Reykjavik, Iceland, 28 June to 2 July 2005. ICES Representative: General Secretary.

Royal Commission on Environmental Pollution, London, UK, 6 May 2004. ICES Representative: General Secretary.

OSPAR Workshop on Environmental Impact of CO₂ in Geological Structures in the Maritime Area, Trondheim, Norway, 26–27 October 2004. ICES Representative: Data Centre Manager.

OSPAR Eutrophication Task Group, London, UK, 2–3 November 2004. ICES Representative: Data Centre Manager.

SeaSearch, Hamburg, Germany, 2–3 December 2004. ICES Representative: Data Centre Manager.

Stakeholder Conference on the European Marine Strategy, Rotterdam, Netherlands, 10–12 November 2004. ICES Representatives: General Secretary, Head of Advisory Process, and Head of Science Programme.

Training session on the introduction of FIRMS Technology to ICES, FAO, Rome, Italy, 19–23 April. ICES Representatives: Bodil Chemnitz (Administration and Web Assistant) and Head of Advisory Services (19–20 April 2004).

13th Dialogue Meeting, Dublin, Ireland, 26–27 April 2004. ICES Representatives: General Secretary, Special Adviser, Head of Advisory Services, Louise Scharff (Scientific Secretary), and GEF Coordinator.

Symposium on the Influence of Climate Change on North-Atlantic Fish Stocks, Bergen, Norway, 11–12 May 2004. ICES Representative: General Secretary.

Meeting on Ocean Strategy, Reykjavik, Iceland, 2–4 June 2004. ICES Representative: General Secretary.

Annex 2: ICES Working/Study/Steering Group Meetings and Workshops (January–September 2004)

Management Committee on the Advisory Process

Study Group on Quality Assurance

(C.Res. 2003/2MCAP02)

Chair: M. Waldock

Held at ICES Headquarters, 10–11 March 2004

Countries represented: UK: 11, Chairs of ACE, ACME, Fisheries Assessment Scientist, Data Scientist

Report available as Doc. C.M. 2004/MCAP:01

Advisory Committee on Fishery Management

Planning Group on Commercial Catch, Discards and Biological Sampling

(C.Res. 2003/2ACFM23)

Chair: J. Dalskov

Held in Mallorca, Spain, 2–5 March 2004

Countries represented: Belgium: 1, Denmark: 3, Estonia: 3, Finland: 2, France: 3, Germany: 3, Greece: 3, Italy: 3, Netherlands: 2, Norway: 1, Poland: 1, Portugal: 2, Spain: 7, UK: 4, USA: 1

Report available as Doc. C.M. 2004/ACFM:13

Study Group on Closed Spawning Areas of Eastern Baltic Cod

(C.Res. 2003/2ACFM26)

Co-Chairs: H.H. Hinrichsen and Fritz Köster

Held in Charlottenlund, Denmark, 9–12 March 2004

Countries represented: Denmark: 5, Finland: 2, Germany: 3, Latvia: 2, Poland: 1, Russia: 1

Report available as Doc. C.M. 2004/ACFM:17

Herring Assessment Working Group for the Area South of 62°N

(C.Res. 2003/2ACFM03)

Chair: E. Torstensen

Held at ICES Headquarters, 9–18 March 2004

Countries represented: Denmark: 3, Germany: 3, Ireland: 1, Netherlands: 1, Norway: 2, Sweden: 1, UK: 3

Report available as Doc. C.M. 2004/ACFM:18

Working Group on *Nephrops* Stocks

(C.Res. 2003/2ACFM04)

Chair: M. Bell

Held in Lisbon, Portugal, 29 March to 1 April 2004

Countries represented: Belgium: 1, Denmark: 1, France: 1, Ireland: 1, New Zealand: 1, Norway: 2, Portugal: 2, Spain: 3, Sweden: 1, UK: 5

Report available as Doc. C.M. 2004/ACFM:19

Working Group on North Atlantic Salmon

(C.Res. 2003/2ACFM05)

Chair: W. Crozier

Held in Halifax, Canada, 29 March to 8 April 2004

Countries represented: Canada: 1, Denmark: 1, Finland: 1, Iceland: 1, Ireland: 1, Norway: 1, Russia: 1, UK: 4, USA: 3

Report available as Doc. C.M. 2004/ACFM:20

Baltic Fisheries Assessment Working Group

(C.Res. 2003/2ACFM06)

Chair: T. Gröhsler

Held at ICES Headquarters, 13–22 April 2004

Countries represented: Denmark: 10, Estonia: 1, Finland: 2, Germany: 3, Italy: 1, Latvia: 3, Lithuania: 1, Poland: 1, Russia: 4, Sweden: 3

Report available as Doc. C.M. 2004/ACFM:22

Baltic Salmon and Trout Working Group

(C.Res. 2003/2ACFM07)

Chair: I. Perä

Held in Tartu, Estonia, 21–30 April 2004

Countries represented: Denmark: 2, Estonia: 3, Finland: 5, Latvia: 2, Lithuania: 1, Poland: 3, Russia: 1, Sweden: 3

Report available as Doc. C.M. 2004/ACFM:23

Northern Pelagic and Blue Whiting Fisheries Working Group

(C.Res. 2003/2ACFM08)

Chair: A. Gudmundsdóttir

Held at ICES Headquarters, 27 April to 4 May 2004

Countries represented: Denmark: 2, Ireland: 1, Netherlands: 1, Norway: 4, Iceland: 3, Russia: 5, Spain: 2

Report available as Doc. C.M. 2004/ACFM:24

North-Western Working Group

(C.Res. 2003/2ACFM09)

Chair: E. Hjørleifsson

Held at ICES Headquarters, 27 April to 6 May 2004

Countries represented: Denmark: 7, Germany: 2, Iceland: 6, Italy: 1, Russia: 1

Report available as Doc. C.M. 2004/ACFM:25

Fishery Statistics Liaison Working Group

(C.Res. 2003/2ACFM27)

Chair: David Cross

Held at EUROSTAT, Luxembourg, 3–4 May 2004

Attended by 54 participants from all the EU Fishing Nations (except Netherlands and Portugal), Croatia, and Faroe Islands, and two international observers

Report available as Doc. C.M. 2004/ACFM:26

Working Group on the Assessment of Northern Shelf Demersal Stocks

(C.Res. 2003/2ACFM11)

Chair: R. Officer

Held at ICES Headquarters, 4–13 May 2004

Countries represented: Belgium: 1, Ireland: 3, UK: 7, Russia: 1

Report available as Doc. C.M. 2004/ACFM:27

Arctic Fisheries Working Group

(C.Res. 2003/2ACFM10)

Chair: Y. Kovalev

Held at ICES Headquarters, 4–13 May 2004

Countries represented: Canada: 1, Germany: 1, Norway: 13, Russia: 10, Spain: 1

Report available as Doc. C.M. 2004/ACFM:10

Study Group on Ageing Issues in Baltic Cod

(C.Res. 2003/2ACFM28)

Chair: J. Modin

Held in Riga, Latvia, 11–14 May 2004

Countries represented: Denmark: 3, Germany: 2, Latvia: 4, Lithuania: 1, Poland: 1, Sweden: 4

Report available as Doc. C.M. 2004/ACFM:21

Working Group on the Assessment of Southern Shelf Stocks of Hake, Monk, and Megrin

(C.Res. 2003/2ACFM12)

Chair: V. Trujillo

Held at ICES Headquarters, 12–21 May 2004

Countries represented: France: 2, Ireland: 1, Portugal: 2, Spain: 9, UK: 2

Report available as Doc. C.M. 2004/ACFM:12

Working Group on the Assessment of Southern Shelf Demersal Stocks

(C.Res. 2003/2ACFM13)

Chair: S. Flatman

Held in Oostende, Belgium, 29 June to 8 July 2004

Countries represented: Belgium: 3, France: 3, Ireland: 3, UK: 3

The Report will be available in 2005

Study Group on Stock Identity and Management Units of Redfishes

(C.Res. 2003/2ACFM29)

Chair: Kjell Nedreaas

Held in Bergen, Norway, 31 August to 3 September 2004

Countries represented: Canada: 1, Denmark: 2, Germany: 2, Iceland: 4, Norway: 6, Russia: 3,

Spain: 1, USA: 1

The Report will be available in 2005

Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak

(C.Res. 2003/2ACFM14)

Chair: C.L. Needle

Held in Bergen, Norway, 7–16 September 2004

Countries represented: Belgium: 1, Denmark: 5, France: 2, Germany: 2, Netherlands: 4, Norway: 2, Sweden: 2, UK: 6

The Report will be available in 2005

Working Group on the Assessment of Mackerel, Horse Mackerel, Sardine, and Anchovy

(C.Res. 2003/2ACFM15)

Chair: C. Kelly

Held at ICES Headquarters, 7–16 September 2004

Countries represented: Denmark: 1, France: 1, Ireland: 2, Netherlands: 2, Norway: 1, Russia: 1, Spain: 4, UK: 2

The Report will be available in 2005

Pandalus Assessment Working Group

(C.Res. 2003/2ACFM16)

Chair: Sten Munch-Petersen

Held at ICES Headquarters, 27 October to 5 November 2004

Countries represented: Denmark: 2, Norway: 1, Russia: 1, Sweden: 1

The Report will be available in 2005

Advisory Committee on the Marine Environment

ICES/IMO/IOC Study Group on Ballast Water and Other Ship Vectors

(C.Res. 2003/ACME04)

Chair: Stephan Gollasch

Held in Cesenatico, Italy, 22–24 March 2004

Countries represented: Australia: 1, Belgium: 1, Brazil: 1, Canada: 1, Denmark: 1, Finland: 1, Germany: 5, Greece: 4, Ireland: 1, Israel: 1, Italy: 5, Japan: 1, Netherlands: 1, New Zealand: 1, Russia: 2, Spain: 2, UK: 7, USA: 3, Representatives from IOC: 1, and IMO: 2

Report available as Doc. C.M. 2004/ACME:04

Working Group on Introductions and Transfers of Marine Organisms

(C.Res. 2003/2ACME05)

Chair: Stephan Gollasch

Held in Cesenatico, Italy, 25–26 March 2004

Countries represented: Australia: 1, Belgium: 1, Finland: 1, France: 1, Germany: 1, Ireland: 1, Italy: 1, Japan: 1, Netherlands: 1, Russia: 1, Sweden: 1, UK: 2, USA: 2

Report available as Doc. C.M. 2004/ACME:05

Advisory Committee on Ecosystems

Study Group on Ecological Quality Objectives for Sensitive and for Opportunistic Benthos Species

(C.Res. 2003/2ACE02)

Chair: K. Essink

Held at ICES Headquarters, 22–24 March 2004

Countries represented: Belgium: 1, Germany: 1, Netherlands: 1, Norway: 1, Spain: 1, Sweden: 3, UK: 3

Report available as Doc. C.M. 2004/ACE:01

Working Group on Marine Mammal Ecology

(C.Res. 2003/2ACE03)

Chair: G.T. Waring

Held in Pasajes, Spain, 22–25 March 2004

Countries represented: Denmark: 1, France: 1, Germany: 1, Norway: 3, Poland: 1, Spain: 4, Sweden: 1, UK: 1, USA: 1

Report available as Doc. C.M. 2004/ACE:03

Study Group on Management of Integrated Data

(C.Res. 2003/2ACE06)

Co-Chairs: P. Wiebe and C. Zimmermann

Held in Hamburg, Germany, 31 March to 2 April 2004

Countries represented: Canada: 1, Denmark: 1, Germany: 5, Norway: 1, Spain: 1, UK: 3, USA: 3

Report available as Doc. C.M. 2004/ACE:05

Regional Ecosystem Study Group for the North Sea

(C.Res. 2003/2ACE07)

Chair: A. Kenny

Held in Lowestoft, UK, 5–7 April 2004

Countries represented: Denmark: 1, Germany: 2, Norway: 1, UK: 7

Report available as Doc. C.M. 2004/ACE:06

Working Group on Ecosystem Effects of Fishing Activities

(C.Res. 2003/2ACE04)

Chair: C. Frid

Held at ICES Headquarters 14–21 April 2004

Countries represented: Canada: 1, Denmark: 3, Ireland: 1, Netherlands: 2, Norway: 1, Portugal: 1, Russia: 1, Sweden: 1, UK: 7

Report available as Doc. C.M. 2004/ACE:03

Study Group to Review Ecological Quality Objectives for Eutrophication

(C.Res. 2003/2ACE05)

Co-Chairs: T. Smayda and G. Ærtebjerg

Held at ICES Headquarters, 17–19 May 2004

Countries represented: Denmark: 1, Finland: 1, Germany: 1, Norway: 3, Spain: 1, UK: 1, USA: 2

Report available as Doc. C.M. 2004/ACE:04

Fisheries Technology Committee

Study Group on Collection of Acoustical Data from Fishing Vessels

(C.Res. 2003/2B02)

Chair: W. Karp

Held in Gdynia, Poland, 16–17 April 2004

Countries represented: Australia: 3, Canada: 2, Chile: 1, New Zealand: 1, Norway: 3, Russia: 2, Spain: 1, UK: 1, USA: 11

Report available as Doc. C.M. 2004/B:02

Planning Group on the HAC Data Exchange Format

(C.Res. 2003/2B04)

Chair: D. Reid

Held in Gdynia, Poland, 17 April 2004

Countries represented: Canada: 2, France: 2, Norway: 1, UK: 1

Report available as Doc. C.M. 2004/B:04

Study Group on Acoustic Seabed Classification

(C.Res. 2003/2B03)

Chair: J. Anderson

Held in Gdynia, Poland, 18–19 April 2004

Countries represented: Australia: 3, Canada: 4, Denmark: 2, France: 2, New Zealand: 1, Poland: 4, Russia: 2, Sweden: 1, UK: 4, USA: 6

Report available as Doc. C.M. 2004/B:03

Working Group on Fisheries Acoustics Science and Technology

(C.Res. 2003/2B06)

Chair: D. Demer

Held in Gdynia, Poland, 20–23 April 2004

Countries represented: Australia: 3, Canada: 6, Denmark: 3, France: 7, Iceland: 1, Ireland: 1, Latvia: 1, Netherlands: 1, New Zealand: 1, Norway: 1, Poland: 8, Russia: 3, Spain: 2, Sweden: 3, UK: 6, USA: 14

Report available as Doc. C.M. 2004/B:06

ICES/FAO Working Group on Fishing Technology and Fish Behaviour

(C.Res. 2003/2B05)

Chair: N. Graham

Held in Gdynia, Poland, 20–23 April 2004

Countries represented: Belgium: 2, Canada: 2, Denmark: 6, France: 1, Germany: 22, Iceland: 1, Ireland: 1, Italy: 2, Netherlands: 1, Norway: 5, Poland: 3, Russia: 1, Spain: 1, Sweden: 3, UK: 5, USA: 5, FAO: 1

Report available as Doc. C.M. 2004/B:05

Workshop on Survey Design and Data Analysis

(C.Res. 2003/2B07)

Co-Chairs: P.G. Fernandes and M. Pennington

Held in Aberdeen, UK, 21–25 June 2004

Countries represented: Belgium: 1, Canada: 1, Denmark: 1, France: 1, Germany: 1, Iceland: 1, Ireland: 1, Norway: 2, Portugal: 1, UK: 7, USA: 6

Report available as Doc. C.M. 2004/B:07

Oceanography Committee

Workshop on Future Directions in Modelling Physical-Biological Interactions

(C.Res. 2003/2C02)

Co-Chairs: F. Peters and C. Hannah

Held in Barcelona, Spain, 8–9 March 2004

Countries represented: Belgium: 3, Canada: 4, Denmark: 4, Estonia: 1, Finland: 1, France: 3, Germany: 6, Italy: 4, Netherlands: 1, Norway: 7, Spain: 31, Sweden: 3, UK: 8, USA: 5

Report available as Doc. C.M. 2004/C:02

Working Group on Modelling of Physical/Biological Interactions

(C.Res. 2003/2C03)

Chair: C. Hannah

Held in Barcelona, Spain, 10–11 March 2004

Countries represented: Canada: 3, Denmark: 2, Estonia: 1, Finland: 1, France: 1, Germany: 6, Norway: 2, Spain: 3, Sweden: 3, UK: 2, USA: 3

Report available as Doc. C.M. 2004/C:03

ICES/EuroGOOS Planning Group on the North Sea Pilot Project (NORSEPP)

(C.Res. 2003/2C04)

Chair: Martin Holt

Held in Southampton, UK, 24–26 March 2004

Countries represented: Belgium: 1, Norway: 1, Sweden: 1, UK: 3

Report available as Doc. C.M. 2004/C:04

Working Group on Oceanic Hydrography

(C.Res. 2003/2C06)

Chair: A. Lavín

Held in Southampton, UK, 29 March to 1 April 2004

Countries represented: Canada: 2, Denmark: 1, Finland: 1, Germany: 3, Iceland: 1, Ireland: 1, Netherlands: 1, Norway: 1, Poland: 1, Spain: 2, UK: 4, USA: 1

Report available as Doc. C.M. 2004/C:06

Working Group on Seabird Ecology

(C.Res. 2003/2C05)

Chair: R.W. Furness

Held in Aberdeen, UK, 29 March to 2 April 2004

Countries represented: Canada: 1, Denmark: 1, Germany: 2, Netherlands: 1, Norway: 2, UK: 4

Report available as Doc. C.M. 2004/C:05

Working Group on Recruitment Processes

(C.Res. 2003/2C09)

Co-Chairs: R.D.M. Nash and T. Miller

Held at ICES Headquarters, 5–7 April 2004

Countries represented: Denmark: 3, Netherlands: 2, Norway: 1, Poland: 1, Spain: 1, UK: 2, USA: 1

Report available as Doc. C.M. 2004/C:09

ICES-IOC Working Group on Harmful Algal Bloom Dynamics

(C.Res. 2003/2C08)

Chair: J.L. Martin

Held in Corsica, France, 5–8 April 2004

Belgium: 1, Bulgaria: 1, Canada: 1, Denmark: 1, Egypt: 1, France: 1, Germany: 3, Norway: 1, Sweden: 2, Tunisia: 1, UK: 2, USA: 1, IOC: 2

Report available as Doc. C.M. 2004/C:08

Working Group on Zooplankton Ecology

(C.Res. 2003/2C07)

Chair: S. Hay

Held in Hamburg, Germany, 5–8 April 2004

Countries represented: Belgium: 2, Canada: 1, Denmark: 1, Germany: 5, Iceland: 1, Norway: 1, Spain: 1, UK: 4, USA: 4

Report available as Doc. C.M. 2004/C:07

ICES/IOC Steering Group on GOOS

(C.Res. 2003/2C10)

Co-Chairs: W.R. Turrell and W.G. Harrison (IOC)

Held on Tenerife, Spain, 20–21 April 2004

Countries represented: Canada: 1, Spain: 3, Sweden: 1, UK: 1, IOC: 1, PICES: 1

Report available as Doc. C.M. 2004/C:10

Working Group on Marine Data Management

(C.Res. 2003/2C11)

Co-Chairs: M. Fichaut and H. Sagen

Held in Brussels, Belgium, 3–5 May 2004

Countries represented: Belgium: 7, Canada: 1, Denmark: 2, Estonia: 1, Finland: 2, France: 1, Germany: 3, Iceland: 1, Netherlands: 1, Norway: 1, Poland: 2, Portugal: 1, Russia: 1, Spain: 1, Sweden: 2, UK: 4, USA: 2

Report available as Doc. C.M. 2004/C:11

ICES-IOC Study Group on the Development of Marine Data Exchange Systems using XML

(C.Res. 2003/2C12)

Co-Chairs: R. Gelfeld and A. Isenor

Held in Oostende, Belgium, 6–7 May 2004

Countries represented: Austria: 1, Belgium: 3, Canada: 1, Finland: 1, France: 1, Germany: 1, Japan: 1, Netherlands: 1, Norway: 1, Russia: 3, Sweden: 1, UK: 5, USA: 2, IOC: 1

Report available as Doc. C.M. 2004/C:12

ICES/GLOBEC Working Group on Cod and Climate Change

(C.Res. 2003/2C13)

Co-Chairs: K. Drinkwater and G. Ottersen

Held in Bergen, Norway, 9–10 May 2004

Countries represented: Canada: 1, Denmark: 1, Germany: 1, Iceland: 2, Norway: 3, Spain: 1, USA: 3, GLOBEC: 1

Report available as Doc. C.M. 2004/C:13

Workshop on New and Classic Techniques for the Determination of Numerical Abundance and Biovolume of HAB-species – evaluation of the cost, time-efficiency and intercalibration methods

(C.Res. 2003/2C14)

Chair: K.O. Lindahl

Held in Kristineberg, Sweden, 22–28 August 2004

No Report available

Resource Management Committee

Workshop on Advanced Fish Stock Assessment Techniques

(C.Res. 2003/2D04)

Co-Chairs: D. Skagen, E. Hjørleifsson, and L. Kell

Held at ICES Headquarters, 3–10 March 2004

Countries represented: Belgium: 1, Canada: 1, Denmark: 6, Germany: 2, Iceland: 1, Ireland: 1, Latvia: 2, Netherlands: 1, Norway: 3, Poland: 1, Portugal: 1, Russia: 3, Spain: 2, Sweden: 2, UK: 1, USA: 2

Report available as Doc. C.M. 2003/D:04

International Bottom Trawl Survey Working Group

(C.Res. 2003/2D05)

Chair: J.-C. Mahé

Held in Lisbon, Portugal, 23–26 March 2004

Countries represented: Denmark: 2, France: 2, Germany: 1, Ireland: 1, Netherlands: 3, Norway: 1, Portugal: 2, Spain: 1, Sweden: 1, UK: 4

Report available as Doc. C.M. 2004/D:05

Working Group on Fishery Systems

(C.Res. 2003/2D06)

Chair: M. Pastoors

Held at Lowestoft, UK, 26–30 April 2004

Countries represented: Denmark: 3, Netherlands: 2, Norway: 3, UK: 5, USA: 3

Report available as Doc. C.M. 2004/D:06

Planning Group on Northeast Atlantic Pelagic Ecosystem Surveys

(C.Res. 2003/2D08)

Chair: J.A. Jacobsen

Held in Murmansk, Russia, 24–27 August 2004

Countries represented: Denmark: 5, Iceland: 1, Ireland: 1, Netherlands: 1, Norway: 5, Russia: 5

Report available as Doc. C.M. 2004/D:07

Marine Habitat Committee

Working Group on Statistical Aspects of Environmental Monitoring

(C.Res. 2003/2E02)

Chair: R. Fryer

Held at ICES Headquarters, 1–5 March 2004

Countries represented: Denmark: 1, France: 1, Germany: 2, Norway: 1, Sweden: 2, UK: 3

Report available as Doc. C.M. 2004/E:01

Working Group on Marine Sediments in Relation to Pollution

(C.Res. 2003/2E03)

Chair: F. Smedes

Held in Stockholm, Sweden, 1–5 March 2004

Countries represented: Denmark: 1, France: 1, Netherlands: 1, Norway: 1, Portugal: 1, Spain: 1, Sweden: 2, UK: 2

Report available as Doc. C.M. 2004/E:03

Marine Chemistry Working Group

(C.Res. 2003/2E04)

Chair: R. Law

Held in Nantes, France, 15–19 March 2004

Countries represented: Belgium: 2, Canada: 1, Denmark: 1, France: 3, Germany: 5, Ireland: 1, Netherlands: 2, Norway: 1, Portugal: 1, Spain: 2, UK: 3

Report available as Doc. C.M. 2004/E:04

Working Group on Biological Effects of Contaminants

(C.Res. 2003/2E05)

Chair: K. Hylland

Held in Oostende, Belgium, 22–26 March 2004

Countries represented: Belgium: 3, Denmark: 1, Finland: 2, France: 1, Germany: 4, Iceland: 1, Netherlands: 2, Norway: 1, Portugal: 1, Spain: 2, Sweden: 2, UK: 4

Report available as Doc. C.M. 2004/E:05

Study Group on the North Sea Benthos Project 2000

(C.Res. 2003/2E06)

Chair: H. Rees

Held in Wilhelmshaven, Germany, 29 March to 1 April 2004

Countries represented: Belgium: 3, Germany: 2, Netherlands: 2, UK: 2

Report available as Doc. C.M. 2004/E:06

Working Group on the Effects of Extraction of Marine Sediments on the Marine Ecosystem
(C.Res. 2003/2E08)

Co-Chairs: Jon Side and S. Boyd

Held on the Isle of Vilm, Germany, 30 March to 2 April 2004

Countries represented: Belgium: 3, Canada: 1, Denmark: 1, Estonia: 1, Germany: 4, Ireland: 1, Netherlands: 4, Norway: 1, Spain: 2, Sweden: 1, UK: 7

Report available as Doc. C.M. 2004/E:07

Working Group on Marine Habitat Mapping

(C.Res. 2003/2E07)

Chair: D. Connor

Held in Brest, France, 30 March to 2 April 2004

Countries represented: Belgium: 1, Canada: 2, Denmark: 3, France 11, Germany: 2, Ireland: 2, Netherlands: 2, Norway: 2, Poland: 1, Spain: 1, Sweden: 1, UK: 8

Report available as Doc. C.M. 2004/E:06

Study Group on Information Needs for Coastal Zone Management

(C.Res. 2003/2E09)

Chair: J.G. Støttrup

Held in Heraklion, Greece, 19–21 April 2004

Countries represented: Denmark: 2, Germany: 1, Netherlands: 1, Norway: 2, Sweden: 1, UK: 2

Report available as Doc. C.M. 2004/E:08

Benthos Ecology Working Group

(C.Res. 2003/2E10)

Chair: H. Rumohr

Held in San Sebastian, Spain, 19 to 22 April 2004

Countries represented: Belgium: 1, Germany: 3, Netherlands: 3, Norway: 1, Spain: 3, Sweden: 4, UK: 2

Report available as Doc. C.M. 2004/E:09

Study Group on the North Sea Benthos Project 2000

(C.Res. 2003/2ACE01)

Chair: H. Rees

Held at ICES Headquarters, 14–18 June 2004

Countries represented: Belgium: 4, Germany: 3, Netherlands: 1, UK: 2

Report available as Doc. C.M. 2004/MCAP:03

Mariculture Committee

Working Group on Pathology and Diseases of Marine Organisms

(C.Res. 2003/2F01)

Chair: T. Lang

Held in Åbo, Finland, 9–13 March 2004

Countries represented: Denmark: 1, Finland: 2, France: 2, Germany: 3, Ireland: 1, Norway: 1, Poland: 1, Russia: 3, Spain: 1, UK: 2, USA: 2

Report available as Doc. C.M. 2004/F:01

Working Group on Environmental Interactions of Mariculture

(C.Res. 2003/2F02)

Chair: E. Black

Held in Galway, Ireland, 5–9 April 2004

Countries represented: Canada: 2, France: 1, Ireland: 3, Norway: 1, Spain: 1, UK: 1, USA: 1

Report available as Doc. C.M. 2004/F:02

Working Group on Marine Fish Culture

(C.Res. 2003/2F03)

Chair: A. Mangor Jensen

Held in Vigo, Spain, 27–29 April 2004

Countries represented: Denmark: 1, Norway: 2, Spain: 6, UK: 1

Report available as Doc. C.M. 2004/F:03

Working Group on the Application of Genetics in Fisheries and Mariculture

(C.Res. 2003/2F04)

Chair: E. Kenchington

Held in Hamburg, Germany, 3–5 May 2004

Countries represented: Austria: 1, Belgium: 1, Canada: 1, Denmark: 3, Finland: 1, France: 2, Germany: 4, Ireland: 1, Norway: 3, UK: 2

Report available as Doc. C.M. 2004/F:04

Working Group on Marine Shellfish Culture

(C.Res. 2003/2F05)

Chair: A. Bodoy

Held in Portland, Maine, USA, 13–15 May 2004

Countries represented: Canada: 2, France: 1, Ireland: 1, Netherlands: 1, UK: 1, USA: 2

Report available as Doc. C.M. 2004/F:05

Living Resources Committee

Baltic International Fish Survey Working Group

(C.Res. 2003/2G08)

Chair: R. Oeberst

Held in Rostock, Germany, 29 March to 2 April 2004

Countries represented: Denmark: 1, Estonia: 1, Latvia: 1, Lithuania: 1, Germany: 6, Poland: 1, Russia: 3, Sweden: 2

Report available as Doc. C.M. 2004/G:08

Working Group on Fish Ecology

(C.Res. 2003/2G09)

Chair: J. Ellis

Held at ICES Headquarters, 2–7 April 2004

Countries represented: Belgium: 1, Canada: 2, Denmark: 1, Germany: 2, Netherlands: 2, Norway: 1, Portugal: 1, Sweden: 1, UK: 5

Report available as Doc. C.M. 2004/G:09

Study Group on the Estimation of Spawning Stock Biomass of Sardine and Anchovy

(C.Res. 2003/2G03)

Chair: Y. Stratoudakis

Held in San Sebastian, Spain, 11–13 November 2004

Countries represented: Portugal: 4, Spain: 12

The Report will be available in 2005

Baltic Committee

Study Group on Baltic Fish and Fisheries Issues

(C.Res. 2003/2H03)

Chair: Wolfgang Fennel

Held in Warnemünde, Germany, 12–14 January 2004

Countries represented: Denmark: 3, Estonia: 1, Finland: 1, Germany: 4, Latvia: 2, Poland: 3

Report available as Doc. C.M. 2004/H:03

Study Group on Baltic Ecosystem Model Issues in Support of the BSRP

(C.Res. 2003/2H04)

Chair: Maris Pliksh

Held in Riga, Latvia, 3–5 February 2005

Countries represented: Denmark: 2, Estonia: 2, Finland: 1, Latvia: 5, Lithuania: 2, Poland: 3,

Sweden: 3

Report available as Doc. C.M. 2004/H:04

ICES/IOC/SCOR Study Group on GEOHAB Implementation in the Baltic

(C.Res. 2003/2H05)

Chair: M. Viitasalo

Held in Helsinki, Finland, 1–2 April 2004

Countries represented: Estonia: 1, Finland: 28, Latvia: 1, Poland: 1

Report available as Doc. C.M. 2004/H:05

Diadromous Fish Committee

Study Group on the Bycatch of Salmon in Pelagic Trawl Fisheries

(C.Res. 2003/2I03)

Chair: M. Holm

Held in Bergen, Norway, 9–12 March 2004

Countries represented: Ireland: 1, Norway: 3, Russia: 1, UK: 1

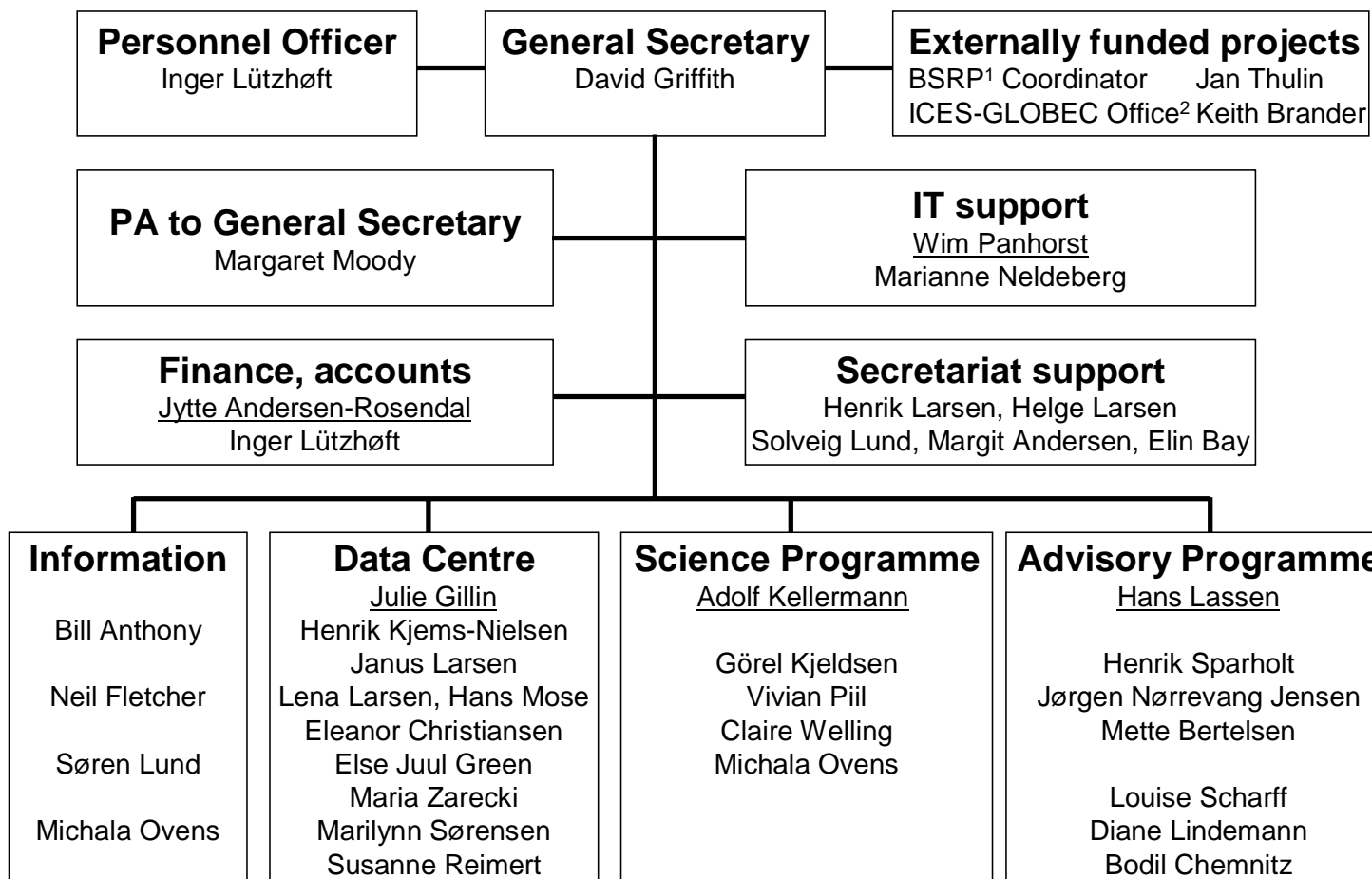
Report available as Doc. C.M. 2004/I:01

Table 1 Numbers of participants in Expert Groups established under the various Committees of ICES, 2004

Member Countries	MCAP*	ACFM*	ACME*	ACE*	Fish Technology (B)	Oceanography (C)	Resource Management (D)	Marine Habitat (E)	Mariculture (F)	Living Resources (G)	Baltic (H)	Dia-dromous (I)	TOTAL all Groups
Belgium		8	2	1	3	17	1	17	1	1			51
Canada		6	1	2	18	16	1	5	5	2			56
Denmark		40	1	7	12	16	16	9	5	2	5		113
Estonia		7				3		1		1	4		16
Finland		12	2	1		6		2	3		30		56
France		12	1	1	13	7	2	17	6				59
Germany		21	6	10	23	30	3	26	7	8	4		138
Iceland		12			3	5	3	1					24
Ireland		13	2	1	3	1	2	4	6			1	33
Latvia		11			2		4			1	8		26
Netherlands		10	2	3	1	7	5	18	1	2			49
Norway		32		10	12	21	12	10	7	1		3	108
Poland		7		1	15	3	1	1	1	1	7		37
Portugal		6		1	1	1	3	3		5			20
Russian Federation		29	3	1	8	4	8		3	3		1	60
Spain		27	2	7	5	43	3	10	8	12			117
Sweden		15	1	5	7	13	3	13		3	3		63
United Kingdom	11	36	9	22	24	39	10	35	7	5		1	199
USA		5	5	5	42	22	5		5				89
Non-members**		13	17		16	15			1	1	1		64
Total participants	11	322	54	78	208	269	82	172	66	48	62	6	1378
No. of Groups	1	11	2	6	6	12	4	10	5	3	3	1	64
	* Participants in the Advisory Committee meetings NOT included												
**Non-member country participants (Affiliates in bold), and other participants:		New Zealand 1 Greece 3 FAO 1 Italy 5 Lithuania 3	Australia 2 New Zealand 1 Greece 4 Brazil 1 Italy 6 Israel 1 Japan 2		Australia 9 Chile 1 New Zealand 3 Italy 2 FAO 1	Austria 1 Bulgaria 1 Egypt 1 Italy 4 Japan 1 Tunisia 1 GLOBEC 1 IOC 4 PICES 1			Austria 1	Lithuania 1	Lithuania 1		

ICES Secretariat, Organisation Chart

The ICES Secretariat



¹ Baltic Sea Regional Project; ² Cod and Climate Change Programme

PART IV

Overview of ICES Membership, Organisation, and International Collaboration

OFFICIALS OF THE COUNCIL/ ADMINISTRATEURS DU CONSEIL

(as per 1 January 2005/dès du 1er janvier 2005)

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Editors of Council Publications/

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(as per 1 January 2005/dès du 1er janvier 2005)

<i>ICES Fisheries Statistics</i>	Fisheries Adviser/ <i>Conseiller des Pêches</i>
<i>ICES Cooperative Research Report</i>	General Secretary/ <i>Secrétaire Général</i>
<i>ICES Identification Leaflets for Plankton</i>	J. Alistair Lindley ¹
<i>ICES Identification Leaflets for Diseases and Parasites of Fish and Shellfish</i>	Stephen Feist ²
<i>ICES Journal of Marine Science</i>	Andrew I. L. Payne ³ , Editor-in-Chief/ <i>Rédacteur-en-Chef</i> Editors: Audrey Geffen ⁴ Bernard Megrey ⁵ Pierre Pépin ⁶ Verena Trenkel ⁷ John W. Ramster ⁸
<i>ICES Marine Science Symposia</i>	Editor specially appointed for each volume/ <i>un rédacteur est spécialement désigné pour chaque volume</i>
<i>ICES Techniques in Marine Environmental Sciences</i>	Head of Science Programme/ <i>Directeur du Programme Scientifique</i>

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Chair of the Advisory Committee on the Marine Environment/ <i>Président du Comité d'Avis sur l'Environnement Marin</i>	Paul Keizer
Chair of the Advisory Committee on Ecosystems/ <i>Président du Comité d'Avis sur les Ecosystèmes</i>	Simon Jennings

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Membership of each of the Advisory Committees below (ACFM, ACME, and ACE) will consist of the Chairs of such other Committees as the Council decides, and of one scientist nominated by each delegation who so wishes, and subsequently appointed by the Council. Membership of the Advisory Committees will be reviewed by the Delegates in response to the Terms of Reference of each session, which shall be circulated to Delegates in a timely manner. Delegates may choose to send an alternate for the national member of a particular Advisory Committee, taking into account the agenda and the need for the participation to be tailored to match the scientific needs for specific types of advice.

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Scientists nominated by the Delegates (see above)

Advisory Committee on the Marine Environment/ Comité d'Avis sur l'Environnement Marin

Chair/Président	Paul Keizer
Chair of the Mariculture Committee/ <i>Président du Comité sur la Mariculture</i>	Tom Sephton
Chair of the Marine Habitat Committee/ <i>Président du Comité sur l'Habitat Marin</i>	Heye Rumohr
Chair of the Oceanography Committee/ <i>Président du Comité sur l'Océanographie</i>	Einar Svendsen

Scientists nominated by the Delegates (see above)

Advisory Committee on Ecosystems/Comité d'Avis sur les Ecosystèmes

Chair/Président	Simon Jennings
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Scientists nominated by the Delegates (see above)

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Chairs of ICES Expert Groups Assigned to a Parent Committee/ Présidence des groupes subsidiaires CIEM affectés à leur comité de source

The membership lists for the following Working/Study Groups, workshops and other groups are not provided here, but are available on request from the ICES Secretariat, the National Delegates to ICES (an overview of their names and addresses is provided on pp. 286–289), or from the Chairs themselves (postal and e-mail addresses provided on pp. 316–322).

Consultative Committee/Comité Consultatif

Study Group on ICES Publications Practices regarding Ethical Concerns on the use of animals in scientific research (SGPPE)

Tom Sephton (Canada)

Groupe de travail sur les pratiques dans les publications du CIEM par rapport aux inquiétudes concernant l'utilisation des animaux dans la recherche scientifique

Management Committee for the Advisory Process Comité de gestion pour le processus d'avis

Study Group on Quality Assurance (SGQUA)

Mike Waldock (UK)

Groupe d'étude sur l'assurance qualité

Advisory Committee on Fishery Management Comité d'avis sur la gestion de la pêche

Joint ICES/NAFO Working Group on Harp and Hooded Seals (WGHARP)

Tore Haug (Norway)

Groupe de travail CIEM/NAFO conjoint sur les phoques du Groenland et les phoques à capuchon

Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak (WGNSSK)

Coby Needle (UK)

Groupe de travail sur l'évaluation des stocks démersaux dans la Mer du Nord et le Skagerrak

Working Group on the Assessment of Mackerel, Horse Mackerel, Sardine, and Anchovy (WGMHSA)

Ciaran Kelly (Ireland)

Groupe de travail sur l'évaluation des stocks de maquereaux, de chinchards, de sardines et d'anchois

Working Group on the Assessment of Northern Shelf Demersal Stocks (WGNSDS)

Rick Officer (Ireland)

Groupe de travail sur l'évaluation des stocks démersaux du plateau continental du nord

North-Western Working Group (NWWG)

Einar Hjorleifsson (Iceland)

Groupe de travail nord-ouest

Northern Pelagic and Blue Whiting Fisheries Working Group (WGNPBW)

Asta Gudmundsdóttir (Iceland)

Groupe de travail sur la pêche pélagique du nord et du merlan bleu

Baltic Salmon and Trout Assessment Working Group (WGBAST)

Ingemar Perä (Sweden)

Groupe de travail sur l'évaluation des stocks de saumon et de truite dans la Baltique

Baltic Fisheries Assessment Working Group (WGBFAS) <i>Groupe de travail sur l'évaluation de la pêche dans la Baltique</i>	Thomas Gröhsler (Germany)
Working Group on North Atlantic Salmon (WGNAS) <i>Groupe de travail sur le saumon de l'Atlantique Nord</i>	Walther Crozier (UK)
Arctic Fisheries Working Group (AFWG) <i>Groupe de travail sur la pêche de l'Arctique</i>	Yuri Kovalev (Russia)
Working Group on the Assessment of Southern Shelf Demersal Stocks (WGSSDS) <i>Groupe de travail sur l'évaluation des stocks démersaux du plateau continental du sud</i>	Wim Demare (Belgium)
Working Group on the Assessment of Southern Shelf Stocks of Hake, Monk, and Megrin (WGHMM) <i>Groupe de travail sur l'évaluation des stocks de merlu, de baudroies et de cardines du plateau continental du sud</i>	Valentin Trujillo (Spain)
Pandalus Assessment Working Group (WGPAND) <i>Groupe de travail sur l'évaluation du pandalus</i>	Sten Munch Petersen (Denmark)
Herring Assessment Working Group for the Area South of 62°N (HAWG) <i>Groupe de travail sur l'évaluation des stocks de hareng pour la zone au sud de 62°N</i>	Mark Dickey-Collas (Netherlands)
Working Group on the Biology and Assessment of Deep-Sea Fisheries Resources (WGDEEP) <i>Groupe de travail sur la biologie et l'évaluation des stocks de ressources halieutiques des grands fonds</i>	Odd Aksel Bergstad (Norway)
Fisheries Statistics Liaison Working Group (WGSTAL) <i>Groupe de liaison sur les statistiques de pêche</i>	David Cross (EUROSTAT)
Working Group on Assessment of New Species (WGNEW) <i>Groupe de travail pour l'estimation des stocks de nouvelles espèces</i>	Henk Heessen (Netherlands) and Jean-Claude Mahé (France)
Study Group on Elasmobranch Fishes (WGEF) <i>Groupe d'étude sur les poissons élamobranches</i>	Maurice Clarke (Ireland)
ICES/NSCPF Study Group on the Incorporation of Additional Information from the Fishing Industry into Fish Stock Assessments (SGFI) <i>Groupe d'étude CIEM/NSCPF sur la prise en compte dans les évaluations de stocks d'information complémentaires provenant de l'industrie des pêches</i>	Hugo Andersson [NSCFP] and Cornelius Hammer (Germany)
Study Group on Ageing Issues in Baltic Cod (SGABC) <i>Groupe d'étude sur les problèmes de détermination d'âge de la morue de la mer Baltique</i>	Johan Modin (Sweden)
Study Group on the Bycatch of Salmon in Pelagic Trawl Fisheries (SGBYSAL) <i>Groupe d'étude sur les captures accessoires de saumon dans les pêcheries au chalut pélagique</i>	Marianne Holm (Norway)
Study Group on Management Strategies (SGMAS) <i>Groupe d'étude sur les stratégies de gestion</i>	Dankert Skagen (Norway) and John Simmonds (UK)

Planning Group on Commercial Catch, Discards, and Biological Sampling (PGCCDBS)
Groupe de planification sur les captures commerciales, les rejets et l'échantillonnage biologique

Jørgen Dalskov (Denmark)

Workshop on Sampling Design for Fisheries Data (WKSDFD)
Atelier sur les plans d'échantillonnages des données sur les pêches

Joël Vigneau (France)

Workshop on Nephrops Stocks (WGNEPH)
Atelier sur le stocks de Nephrops

I. Tuck (UK)

Workshop on Advanced Fish Stock Assessment Techniques (WKAFAT)
Atelier sur les techniques perfectionnées d'évaluation des stocks

Dankert Skagen (Norway) and
Einar Hjørleifsson (Iceland)

Advisory Committee on the Marine Environment *Comité d'avis sur l'environnement marin*

Working Group on Introductions and Transfers of Marine Organisms (WGITMO)
Groupe de travail sur les introductions et les transferts d'organismes marins

Stephan Gollasch (Germany)

ICES/IOC/IMO Working Group on Ballast Water and Other Ship Vectors (WGBOSV)
Groupe de travail CIEM/COI/OMI sur les eaux de ballast et autres modes d'introduction par les navires

Stephan Gollasch (Germany)

ICES/HELCOM Steering Group on Quality Assurance of Chemical Measurements in the Baltic Sea (SGQAC)
Groupe directeur CIEM/HELCOM sur l'assurance de qualité des mesures chimiques dans la mer Baltique

Michael Gluschke (Germany)

ICES/HELCOM Steering Group on Quality Assurance of Biological Measurements in the Baltic Sea (SGQAB)
Groupe directeur CIEM/HELCOM sur l'assurance de qualité des mesures biologiques dans la mer Baltique

Anda Ikauniece (Latvia)

Joint ICES/OSPAR Workshop on Integrated Monitoring of Contaminants and their Effects in Coastal and Open Sea Areas (WKIMON)
Atelier CIEM/OSPAR sur la surveillance intégrée des contaminants et leurs effets en zone côtière et en mer ouverte

Kjetil Hylland (Norway) and
Robin Law (UK)

Advisory Committee on Ecosystems *Comité d'avis sur les ecosystems*

Working Group on Marine Mammal Ecology (WGMME)
Groupe de travail sur l'écologie des mammifères marins

Gordon Waring (USA)

Working Group on Ecosystem Effects of Fishing Activities (WGECO)
Groupe de travail sur les effets écologiques des activités de pêche

Stuart Roger (UK)

Working Group on Deep-Water Ecology (WGDEC)
Groupe de travail sur l'écologie des eaux profondes

Mark Tasker (UK)

Working Group for Regional Ecosystem Description (WGRED)

Groupe de travail pour la description des écosystèmes régionaux

Jake Rice (Canada)

Study Group on Management of Integrated Data (SGMID)

Groupe d'étude sur la gestion des données intégrées

Peter Wiebe (USA) and
Christopher Zimmermann
(Germany)

Workshop on Time Series Data relevant to Eutrophication Ecological Quality Objectives (WKEUT)

Atelier sur les séries chronologiques appropriées pour les objectifs de qualité écologique d'eutrophisation

Ted Smayda (USA) and
Gunni Ærtebjerg (Denmark)

**Fisheries Technology Committee
*Comité sur la technologie de pêche***

Working Group on Fisheries Acoustics Science and Technology (WGFAST)

Groupe de travail sur l'étude de la science et la technologie acoustique de la pêche

Dave Demer (USA)

ICES/FAO Working Group on Fishing Technology and Fish Behaviour (WGFTFB)

Groupe de travail CIEM/ONUAA sur la technologie de pêche et le comportement des poissons

Norman Graham (Norway)

Study Group on Target Strength Estimation in the Baltic Sea (SGTSEB)

Groupe d'étude sur l'estimation des index de réflexion dans la mer Baltique

Bo Lundgren (Denmark)

Study Group on Survey Trawl Standardisation (SGSTS)

Groupe d'étude sur la standardisation des chaluts

David Reid (UK)

Study Group on Acoustic Seabed Classification (SGASC)

Groupe d'étude pour la classification des fonds marins par acoustique

John Anderson (Canada)

Study Group on Collection of Acoustic Data from Fishing Vessels (SGAFV)

Groupe d'étude sur la collecte des données acoustiques des navires de pêche

William Karp (USA)

Study Group on Unaccounted Fishing Mortality (SGUFM)

Groupe d'étude sur les mortalités par pêche non prises en compte

Mike Breen (UK)

Planning Group on the HAC Data Exchange Format (PGHAC)

Groupe de planification sur le format d'échange des données HAC

Laurent Berger (France)

Workshop on Survey Design and Data Analysis (WKSAD)

Atelier sur la stratégie d'échantillonnage et l'analyse des données des campagnes scientifiques

Paul G. Fernandes (UK) and
Michael Pennington (Norway)

Workshop on Unaccounted Fishing Mortality (WKUFM)

Atelier sur la mortalité par pêche non prises en compte

Mike Breen (UK)

Oceanography Committee
Comité sur l'océanographie

Working Group on Recruitment Processes (WGRP) <i>Groupe de travail sur les processus de recrutement</i>	Tom Miller (USA) and Richard Nash (UK)
ICES/GLOBEC Working Group on Cod and Climate Change (WGCCC) <i>Groupe de travail CIEM/GLOBEC sur la morue et les changements du climat</i>	Ken Drinkwater (Canada) and Geir Ottersen (Norway)
Working Group on Oceanic Hydrography (WGOH) <i>Groupe de travail sur l'hydrographie océanique</i>	Alicia Lavín (Spain)
Working Group on Marine Data Management (WGMDM) <i>Groupe de travail sur la gestion des données marines</i>	Michèle Fichaut (France) and Helge Sagen (Norway)
Working Group on Zooplankton Ecology (WGZE) <i>Groupe de travail sur l'écologie du zooplancton</i>	Steve Hay (UK)
Working Group on Phytoplankton Ecology (WGPE) <i>Groupe de travail sur l'écologie du phytoplancton</i>	Lars Edler (Sweden) and Francisco Rey (Norway)
ICES-IOC Working Group on Harmful Algal Bloom Dynamics (WGHABD) <i>Groupe de travail CIEM-COI sur la dynamique des éclosions planctoniques nuisibles</i>	Jennifer Martin (Canada)
Working Group on Modelling of Physical/Biological Interactions (WGPBI) <i>Groupe de travail sur le modelage des interactions physiques/biologiques</i>	Charles Hannah (Canada)
ICES/IOC Steering Group on GOOS (SGGOOS) <i>Groupe directeur CIEM/COI sur GOOS</i>	W. R. Turrell (UK) and W. H. Harrison (Canada) [IOC Representative]
Steering Group for the ICES/GLOBEC North Atlantic Programme and Regional Office (SGNARO) <i>Groupe directeur CIEM/GLOBEC pour le programme de la région atlantique nord</i>	Ken Drinkwater (Canada) and Fritz Köster (Denmark)
ICES-EuroGOOS Planning Group on the North Sea Pilot Project (PGNSP) <i>Groupe de planification CIEM-EuroGOOS du projet pilote de la mer du Nord</i>	Anthony Richardson (UK) and Martin Holt (EuroGOOS)
Workshop on the Impact of Zooplankton on Cod Abundance and Production (WKIZC) <i>Atelier sur l'impact du zooplancton sur l'abondance de la morue et sa production</i>	Ø. Fiksen (Norway) and J. Runge (USA)
Workshop on New and Classic Techniques for the Determination of Numerical Abundance and Biovolume of HAB-species – evaluation of the cost, time-efficiency and intercalibration methods (WKNCT) <i>Atelier sur les méthodes nouvelles et classique pour la détermination de l'abondance numérique et du biovolume des espèces HAB – l'évaluation des coûts, l'efficacité par rapport au temps et les méthodes d'étalonnage</i>	Bengt Karlson (Sweden) and Caroline Cusack (Ireland)

Resource Management Committee
Comité sur la gestion des ressources

International Bottom Trawl Survey Working Group (IBTSWG)

Groupe de travail sur les campagnes internationales de chaluts de fond

Jean Claude Mahé (France)

Working Group on Fishery Systems (WGFS)

Groupe de travail sur les systèmes de pêche

Martin Pastoors (Netherlands)

Working Group on Methods of Fish Stock Assessment (WGMG)

Groupe de travail sur les méthodes d'évaluation des stocks de pêche

Carl O'Brien (UK)

Regional Ecosystem Study Group for the North Sea (REGNS)

Groupe régional d'étude des écosystèmes pour la mer du Nord

Andrew Kenny (UK)

Study Group on Age-Length Structured Assessment Models (SGASAM)

Groupe d'étude sur les méthodes d'évaluation structurées en âge et longueur

Helen Dobby (UK)

Study Group on Multispecies Assessments in the North Sea (SGMSNS)

Groupe d'étude sur l'évaluation multispécifique dans la mer du Nord

Morten Vinther (Denmark) and
E. D. Bell (UK)

Study Group on Redfish Stocks (SGRS)

Groupe de planification sur les stocks de sébastes

Christoph Stransky (Germany)

Planning Group on Northeast Atlantic Pelagic Ecosystem Surveys (PGNAPES)

Groupe de planification sur les campagnes des écosystèmes pélagiques de l'Atlantique nord-est

Jan Arge Jacobsen (Faroe Islands)

Marine Habitat Committee
Comité sur l'habitat marin

Benthos Ecology Working Group (BEWG)

Groupe de travail sur l'écologie de la faune benthique

Heye Rumohr (Germany)

Working Group on the Effects of Extraction of Marine Sediments on the Marine Ecosystem (WGEXT)

Groupe de travail sur les effets d'extraction des sédiments marins sur l'écosystème marin

Jon Side (UK)

Working Group on Biological Effects of Contaminants (WGBEC)

Groupe de travail sur les effets biologiques des contaminants

John Thain (UK)

Working Group on Statistical Aspects of Environmental Monitoring (WGSAEM)

Groupe de travail sur les aspects statistiques de la surveillance de l'environnement

Rob Fryer (UK)

Working Group on Marine Sediments in Relation to Pollution (WGMS)

Groupe de travail sur les sédiments marins par rapport à la pollution

Foppe Smedes (Netherlands)

Marine Chemistry Working Group (MCWG)

Groupe de travail sur la chimie marine

Robin Law (UK) and
Jacek Tronczynski (France)

Working Group on Marine Habitat Mapping (WGMHM)

Groupe travail sur la cartographie de l'habitat marin

David Connor (UK)

Working Group on Integrated Coastal Zone Management (WGICZM)

Groupe de travail sur la gestion intégrée de la bande côtière

Josianne G. Støttrup (Denmark)

Study Group on the North Sea Benthos Project 2000 (SGNSBP)

Groupe d'étude sur le projet 2000 de la faune benthique en mer du Nord

Hubert Rees (UK)

ICES/OSPAR Steering Group on Quality Assurance of Biological Measurements in the Northeast Atlantic (SGQAE)

Groupe directeur CIEM/OSPAR sur l'assurance de qualité des mesures biologiques dans l'Atlantique nord-est

Jon Davies (UK)

Mariculture Committee
Comité sur la mariculture

Working Group on Marine Fish Culture (WGMAFC)

Groupe de travail sur la culture marine des poissons

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International Organisations having Affiliate Status, Observer Status, and Cooperative Relations with ICES

1. Arctic Monitoring and Assessment Programme (AMAP)
2. Atlantic Salmon Trust
3. Arctic Ocean Science Board (AOSB)
4. Baltic Marine Biologists (BMB)
5. Baltic Marine Environment Protection Commission (HELCOM)
6. BirdLife International
7. Comisión Técnica Mixta del Frente Marítimo
8. Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR)
9. Commission Internationale pour l'Exploration Scientifique de la Mer Méditerranée (CIESM)
10. Commonwealth Scientific and Industrial Research Organization (CSIRO) (Australia)
11. Danish Institute for Fisheries Economics Research
12. European Commission
 - 12.1. Directorate-General for Fisheries (DG-Fish)
 - 12.2. Directorate-General for Science, Research and Development (DG-Environment)
13. European Environment Agency (EEA)
14. European Inland Fisheries Advisory Commission (EIFAC)
15. European Aquaculture Society
16. European Association of Fisheries Economists
17. European Association for Marine Science and Technology
18. European Global Ocean Observing System (EuroGOOS)
19. European Science Foundation
 - 19.1. European Marine and Polar Science Board (EMaPS)
20. Fisheries Society of the British Isles
21. Global Environment Facility (GEF)
22. Global International Water Assessment (GIWA)
23. Global Ocean Ecosystem Dynamics (GLOBEC)
24. Global Ocean Observing Systems (GOOS)
25. Institute for Fisheries Research and Development (INIDEP) (Argentina)
26. Institute of Marine Biology of Crete (Greece)
27. Instituto de Fomento Pesquero (IFOP) (Chile)
28. Instituto del Mar del Peru (IMARPE)
29. International Arctic Science Committee (IASC)
30. International Association for Biological Oceanography (IABO)

31. International Baltic Sea Fishery Commission (IBSFC)
32. International Center for Living Aquatic Resource Management (ICLARM)
33. International Commission for the Conservation of Atlantic Tunas (ICCAT)
34. International Council of Scientific Unions (ICSU)
35. International Institute of Fisheries Economics & Trade (IIFET)
36. International Maritime Organization (IMO)
 - 36.1. London Convention on Dumping
37. International Pacific Halibut Commission (IPHC)
38. International Union for the Conservation of Nature and Natural Resources (IUCN)
39. International Whaling Commission (IWC)
40. National Institute of Water and Atmospheric Research (NIWA) (New Zealand)
41. Nordic Council of Ministers
42. North Atlantic Marine Mammal Commission (NAMMCO)
43. North Atlantic Salmon Conservation Organization (NASCO)
44. North-East Atlantic Fisheries Commission (NEAFC)
45. North Pacific Anadromous Fish Commission (NPAFC)
46. North Pacific Marine Science Organization (PICES)
47. North Sea Commission Fisheries Partnership (NSCFP)
48. Northwest Atlantic Fisheries Organization (NAFO)
49. Organization for Economic Cooperation and Development (OECD)
50. Oslo and Paris Commissions (OSPAR)
51. Scientific Committee on Oceanic Research (SCOR)
52. Sea Fisheries Research Institute (South Africa)
53. Statistical Office of the European Communities (EUROSTAT)
54. United Nations Educational, Scientific and Cultural Organization (UNESCO)
 - 54.1. Intergovernmental Oceanographic Commission (IOC)
55. United Nations Environment Programme (UNEP)
56. United Nations Food and Agriculture Organization (FAO) Fisheries Department
57. World Wide Fund for Nature (WWF)

Part V

Annexes

List of Participants

The List of Participants will be placed on the ICES website www.ices.dk/asc/2004 and on the ICES CM Documents 2004 CD-ROM.

List of Acronyms in the Annual Report

Abbreviation	Title
ACE	Advisory Committee on Ecosystems
ACFM	Advisory Committee on Fishery Management
ACME	Advisory Committee on the Marine Environment
ASC	ICES Annual Science Conference
ASLO	American Society of Limnology and Oceanography
AUV	Autonomous underwater vehicles
BAD1	Hydroacoustic database
BAD2	Acoustic database
BASECOEX	Capelin and herring in the Barents Sea – coexistence or exclusion
BATS	Bermuda Atlantic Time-Series Study
BCC	Baltic Committee
BECAUSE	Critical Interactions BETWEEN Species and their Implications for a PreCAUTIONary FiSheries Management in a Variable Environment – a Modelling Approach
BECPELAG	ICES/IOC Workshop on the Biological Effects of Contaminants in Pelagic Ecosystems
BEEP	Biological Effects of Environmental Pollution in Marine Coastal Ecosystems
BEQUALM	Biological Effects Quality Assurance in Monitoring Programmes
BIAS	Baltic International Acoustic Survey
BIM	Irish Sea Fisheries Board (Board Iascaigh Mhara)
BITS	Baltic International Trawl Survey
BONUS	BONUS for the Baltic Sea Science – Network of Funding Agencies (ERA-NET)
BSRP	Baltic Sea Regional Project
CATEFA	Combining Acoustic and Trawl Data for Estimating Fish Abundance
CD-ROM	Compact Disc-Read Only Memory
CEFAS	The Centre for Environment, Fisheries & Aquaculture Science (UK)
CEMP	Coordinated Environmental Monitoring Programme (OSPAR)
CEPHSTOCK	Cephalopod Stocks in European Waters: Review, Analysis, Assessment and Sustainable Management
CITES	Convention on International Trade in Endangered Species of Wild Flora and Fauna
CLIVAR	Climate Variability and Predictability
CM	ICES Council Meeting
COMBINE	Cooperative Monitoring in the Baltic Marine Environment
CoL	Census of Marine Life
CONC	Consultative Committee
CPUE	Catch per unit of effort
CRR	ICES Cooperative Research Report
CTD	Conductivity/temperature/depth
VS	Voluntary observing ship
CUFES	Continuous underway fish egg sampler
CWP	The Coordinating Working Party on Fishery Statistics
DATRAS	Database Trawl Surveys
CZM	Coastal zone management
DEL	Delegate
DEPM	Daily egg production method
DFC	Diadromous Fish Committee
DG	Directorate-General
DIFRES	Danish Institute for Fisheries Research
DKK	Danish Kroner
DPSIR	Driving Forces, Pressures, State, Impacts, and Responses Framework
DSS	Decision support systems
DSOW	Denmark Strait Overflow Water

EAF	Ecosystem approach to fisheries
EAS	European Aquaculture Society
EC	European Commission
EcoQO	Ecological Quality Objective
EEA	European Environment Agency
EFAM	European Fish Ageing Network
EG	Expert Group
EMBLA	Ballast Water Decision Support and Management
ENDIS-RISK	Endocrine Disruption in the Scheldt Estuary: Distribution, Exposure and Effects
EPA	Environmental Protection Agency
EU	European Union
EU BEEP	EU Research Program. BEEP – Biological Effects of Environmental Pollution in Marine Coastal Ecosystems
EUNIS	European Nature Information System
EuroGOOS	European Association Fostering European Co-operation on GOOS
EUROSTAT	Statistical Office of the European Communities
EVARES	Evaluation of research surveys in relation to management advice
FACE	Free Air CO ₂ Enrichment
FAD	Fish aggregating devices
FAO	Food and Agriculture Organization of the United Nations
FTC	Fisheries Technology Committee
GADGET	Globally Applicable Area Disaggregated General Ecosystem Toolbox
GAM	General algebraic modelling system
GEF	Global environment facility
GEOHAB	Global Ecology and Oceanography of Harmful Algal Blooms
GLM	Glucosamine-6-phosphate activated ribozyme
GLOBEC	Global Ocean Ecosystem Dynamics Programme
GODAE	Global Ocean Data Assimilation Experiment
GOMA	Gulf of Maine Area-Global Ocean
GOOS	Global Ocean Observing System
HAB	Harmful algal blooms
HAC	Hydro acoustic
HAE-DAT	Harmful Algae Event Data Base
HELCOM	Helsinki Commission (Baltic Marine Environment Protection Commission)
HERGEN	Conservation of diversity in an exploited species: spatio-temporal variation in the genetics of herring (<i>Clupea harengus</i>) in the North Sea and adjacent areas
HOMSIR	Horse Mackerel Stock Identification Research
IAOCSS	ICES Annual Ocean Climate Status Summary
IBMs	Individual-based models
IBSFC	International Baltic Sea Fishery Commission
IBTS	International Bottom Trawl Survey
ICES	International Council for the Exploration of the Sea
IFREMER	Institut Français de Recherche pour l'Exploitation de la Mer (France)
IJMS	<i>ICES Journal of Marine Science</i>
IMARPE	Instituto del Mar del Peru
IMBER	Integrated Marine Biogeochemistry and Ecosystem Research project
IMR	Institute of Marine Research
INTEREG	Interregional co-operation between regional and other public authorities across the entire EU territory
IOC	Intergovernmental Oceanographic Commission
IODE	International Oceanographic Data and Information Exchange
IOW	Institut für Ostseeforschung Warnemünde (Germany)
IPIMAR	Instituto de Investigação das Pescas e do Mar (Portugal)
ITIS	Integrated taxonomic information system
IWC	International Whaling Commission
JAMP	Joint Assessment and Monitoring Programme

LRC	Living Resources Committee
MARBEF	Marine Biodiversity and Ecosystem Functioning
MAR-ECO	Mid-Atlantic Ridge Ecosystem Project
MBES	Multibeam echosounder systems
MCAP	Management Committee for the Advisory Process
MCC	Mariculture Committee
METACOD	The Role of Sub-stock Structure in the Maintenance of Cod Meta Populations
MHC	Marine Habitat Committee
MIQES	The use of multivariate data for improving the quality of survey-based stock estimation in the North Sea
MIR	Sea Fisheries Institute, Gdynia (Poland)
MMED	Multiple Marine Ecological Disturbances
MONAS	Monitoring and Assessment Group
MoU	Memorandum of Understanding
MPA	Marine protected areas
MSS	<i>ICES Marine Science Symposia</i>
MSVPA	Multi-species virtual population analysis
NACW	North Atlantic Central Water
NAFO	Northwest Atlantic Fisheries Organization
NAO	North Atlantic Oscillation
NASCO	North Atlantic Salmon Conservation Organization
NEAFC	North-East Atlantic Fisheries Commission
NGO	Non-governmental organisation
NIOO	Netherlands Institute for Ecology
NIVA	Norwegian Institute for Water Research
NMFS	National Marine Fisheries Service (USA)
NOAA	National Oceanic and Atmospheric Administration (USA)
NORSEPP	ICES-EuroGOOS North Sea Ecosystem Pilot Project
NPZ	Nickel-plated zircaloy
NSBS	North Sea Benthos Survey
NSCFP	North Sea Commission Fisheries Partnership
OECD	Organisation for Economic Co-operation and Development
OMEGA	Development and Testing of an Objective Mesh Gauge (EC Project)
OSPAR	Oslo and Paris Commissions
PAC	Polycyclic aromatic compounds
PBDES	Polybrominated diphenylethers
PCA	Principal components analysis
PCB	Polychlorinated biphenyls (PCBs)
PFA	Pre-fishery abundance
PICES	North Pacific Marine Science Organization
PINRO	Polar Research Institute of Marine Fisheries and Oceanography (Russia)
POP	Persistent Organic Pollutants
PUBCOM	Publications Committee
QA	Quality assurance
RA	Risk assessment
RAC	Regional Advisory Councils
REGNS	Regional Ecosystem Study Group for the North Sea
RMC	Resource Management Committee
RNA/DNA	Ribonucleic acid/deoxyribonucleic acid
ROV	Remotely operated vehicle
SACW	South Atlantic Central Water
SALMODEL	A coordinated approach towards development of a scientific basis for management of wild Atlantic salmon in the North-East Atlantic
SBES	Single-beam echosounders
SCOR	Scientific Committee on Oceanic Research
SG	Study Group

SIMFAMI	Species Identification Methods from Acoustic Multifrequency Information
SME	Small and Medium-sized Enterprises
SMHI	Swedish Meteorological and Hydrological Institute
SPACC	The Small Pelagic and Climate Change Program
SSS	Sidescan sonar systems
SST	Sea surface temperature
STEREO	Solar Terrestrial Relations Observatory
TAC	Total allowable catch
TBT	Tributyl tin
TCPMe	Tris(4-chlorophenyl)methane
TIE	Toxicity identification evaluation
TIMES	<i>ICES Techniques in Marine Environmental Sciences</i>
ToRs	Terms of reference
TS	Target strength
UNEP	United Nations Environment Programme
VMS	Vessel monitoring systems
WAS	World Aquaculture Society
WFD	Water framework directive
WG	Working Group
WWW	World Wide Web
XML	Extended Mark-up Language