

# ICES



# CIEM

## I N F O R M A T I O N

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

Palægade 2-4, DK-1261 Copenhagen K, Denmark

Issue no. 36  
September 2000

*The City Hall square in the medieval town of Bruges in Belgium, close to the venue of the 2000 ICES Annual Science Conference in September.*

*Photo: Toerisme Brugge*

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## 2000 ASC overview

Immediately preceding the Annual Science Conference an Open Forum will be held on Tuesday, 26 September, to discuss the ICES Strategic Plan.

The 2000 ICES Annual Science Conference in itself offers an Open Lecture by Dr Daniel Pauly on "Fisheries and Conservation. A Programme for Their Reconciliation". As an innovation this year there will be two additional Invited Lectures, one by Dr Patrick Gentien on "The Species-of-Interest Approach in Understanding Harmful Algal Blooms: Implications in Modelling Population Growth of *Gymnodinium mikimotoi*", and the other by Dr Ann E. Gargett on "How Do Extremes of Climate Variability Affect Biological Production in Estuarine Systems?".

The scientific programme will feature the following sessions:

### Mini-Symposium

Mini – Defining the Role of ICES in Supporting Biodiversity Conservation  
*Dr J. Rice and Dr M. Tasker*

### Theme Sessions

#### Marine Habitats

S – Temporal and Spatial Trends in the Distribution of Contaminants and Their Biological Effects in the ICES Area  
*Dr Remi W. P. M. Laane, Dr P. Matthiessen, and Dr T. Lang*

T – Classification and Mapping of Marine Habitats  
*Dr D. de Jong, Dr J. Side, and Dr R. Allee*

U – Marine Biological Invasions: Retrospectives for the 20th Century – Prospectives for the 21st Century  
*Prof. J. Carlton and Dr D. Minchin*

#### Living Resources

Q – Trophic Dynamics of Top Predators: Foraging Strategies and Requirements, and Consumption Models  
*Prof. H. Gislason, K. T. Nilssen, and Dr M. Tasker*

R – Application of Experimental Laboratory Studies to Fisheries Science  
*Dr J. S. Christiansen and Prof. J. G. Pope*

Y – Downturn in North Atlantic Salmon Abundance  
*Dr J. A. Ritter and A. Isaksson*

#### Fisheries Resource Management

V – Medium-Term Forecasts in Decision-Making  
*Dr K. Patterson and P. Sandberg*

W – Cooperative Research with the Fishing Industry: Lessons Learned  
*Dr G. Chouinard and Dr Paul Rago*

X – Development of Reference Points and Management Systems for Fisheries and the Marine Ecosystem  
*Dr J. Horwood, Dr N. A. Nielsen, Dr G. van Balsfoort, and Dr M. Sissenwine*

#### Fisheries Technology and Surveying

J – Efficiency, Selectivity and Impacts of Passive Fishing Gears  
*H. A. Carr and G. Brothers*

K – Incorporation of External Factors in Marine Resource Surveys  
*E. J. Simmonds, Dr P. Petitgas, and Dr S. Walsh*

#### Mariculture

O – Sustainable Aquaculture Development  
*Prof. H. Ackefors and Prof. H. Rosenthal*

P – New Trends in Fish Feeding in Aquaculture  
*J. Castell and Dr S. J. Kaushik*

#### Oceanography and Marine Ecology

L – North Atlantic Processes  
*Dr W. R. Turrell and Prof. T. Rossby*

M – Environment–Plankton–Fish Linkages  
*Dr K. Drinkwater, P. Wiebe, Prof. K. Tande, and Dr J. Runge*

N – Spatial and Temporal Patterns in Recruitment Processes  
*Prof. E. Houde, Dr P. Pepin, P. Munk, and Prof. D. Schnack*

#### Open Session

Z – General Fisheries and Marine Ecology  
*W. Vanhee and J.-J. Maguire*

For more information on the 2000 ICES Annual Science Conference visit the ICES Website at [www.ices.dk/asc/2000](http://www.ices.dk/asc/2000).

## The Belgian Delegates



**Dr Rudy De Clerck** is Director of the Sea Fisheries Department/Ministry of Agriculture (Ostend). He joined the Department in 1967. After working on the quality aspects, handling processes, and industrial processing of fishery products, he became head of the Biological Section in 1969. Since then, he has done research on the population dynamics of commercial fish (particularly flatfish), the production processes of the sea, the relationships between stocks and fishing effort, and the impact of marine pollution on the fish communities in Belgian coastal waters. He is the author or co-author of over 130 papers on these topics.

Dr De Clerck has been an ICES Delegate since 1988. For a long time he was a member of the Advisory Committee on Fishery Management (ACFM), as well as a member of the European Union's Scientific, Technical and Economic Committee for Fisheries (STEF). He was the Vice-Chair of STEFC from 1982 to 1984, and again for the period 1991–1995, and he has been a member and Chair of several ICES Working and Study Groups.

In addition, he has been involved in various international cooperative research

projects financed by, or under the auspices of, the European Union and ICES and is also a visiting lecturer at the University of Ghent and the Free University of Brussels. Dr De Clerck has also been an invited lecturer at several other universities and scientific institutions in both Belgium and other countries.



**Dr Georges Pichot** is in charge of the "Management Unit of the Mathematical Model of the North Sea (MUMM)" of the Belgian Royal Institute of Natural Science. He is also a member of the national Committee on Oceanology of the Royal Academy of Sciences in Belgium and of the ICES Oceanography Committee; he is head of the Belgian delegation to the OSPAR Commission and to the Ministerial Conferences for the Protection of the North Sea; he is responsible for the Belgian implementation of Chapter 17 of Agenda 21 of the Rio Conference; and he is a member of EUROGOOS. His first field of interest was the mathematical modelling of ecological processes and the interactions between marine physics and biology, but now his main concern is to develop the best possible links between marine science of high quality and society's demands of the sea and its resources. He begins his term as one of the Belgian Delegates to ICES this year.

# Welcome to Belgium

*Dr Rudy De Clerck and Dr Georges Pichot look forward to greeting their ICES colleagues at the 2000 ASC (88th Statutory Meeting).*

Belgium has been an ICES member since 1903 – see Jens Smed's article on page 5 – but this is the first time that it has hosted a Statutory Meeting or an ASC, so the occasion really is rather special.

Belgium's history is characterized by many occupations, starting with Caesar, followed by the Franks, the Austrians, the Spaniards, Napoleon, and finally the Dutch. It became an independent kingdom in 1830 although it is no bigger than the State of Maryland in the USA. To some extent it is Europe in a nutshell, multicultural and multilingual, so it is very appropriate that the European Parliament, Council, and Commission all have their headquarters in Brussels. It is best known for its medieval cities, quaint towns, Gothic cathedrals and town halls, castles, and carillons. It is also famous for the more than 350 delicious types of beers and, of course, for the unique chocolate.

The country comprises two regions, Flanders in the north and Wallonia in the south. In the Flanders region there are the three sister cities of Antwerp, Bruges, and Ghent. There is an excursion planned during the 2000 ASC, which will enable people to visit all three.

The ASC itself will be held in Bruges. The city was founded between the 7th and 9th centuries and enjoyed an economic boom, stimulated by the Counts of Flanders, between the 13th and 15th centuries and became one of the richest in the world at that time. Bruges today remains a medieval city of stunning beauty and charm with one of the oldest Gothic city halls (1376-1420). It is rich in other architectural and artistic treasures and graced by quiet canals and waterways.

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*Photo: Toerisme Brugge*



The Open Lecture at the 2000 ASC will be given by

# Daniel Pauly



Dr Daniel Pauly is a French citizen, born in May 1946 in Paris. He grew up in the French-speaking part of Switzerland, but completed high school and university studies in the Federal Republic of Germany, where he acquired a "Diplom" (= MSc) in 1974 and a doctorate in fisheries biology in 1979 at the University of Kiel.

He joined the International Center for Living Aquatic Resources Management

(ICLARM), in Manila, the Philippines, in July 1979 as a Postdoctoral Fellow, and gradually assumed increasing responsibilities as Associate, and Senior Scientist, then Programme and Division Director. In 1985 he obtained, again at the University of Kiel, a 'Habilitation', i.e., the post-doctoral degree similar to a DSc, which is required for teaching in many European universities. In October 1994, he joined the Fisheries Centre, University of British Columbia, Vancouver, Canada, as a tenured Professor, but remained ICLARM's Principal Science Adviser until December 1997.

His scientific output, which is mainly dedicated to the management of fisheries and currently totals some 400 items, comprises authored and edited books, reports, and scientific papers. The concepts, methods, and software he has developed (e.g., ELEFAN for length-frequency analysis), or co-developed (e.g., Ecopath for ecosystem analysis, or Fish-

Base, the computerized encyclopedia on fish) are in use throughout the world. A recent addition to this menagerie is the concept of "fishing down marine food webs", now shown to occur on most of the world's major fishing grounds.

Dr Pauly sits on several journal editorial boards, has helped to organize a dozen fisheries conferences, and has been engaged in numerous consultancy exercises (e.g., for the UN Food and Agriculture Organization and the World Bank) in Africa, Asia, and the Americas. In 1998, he became the principal investigator of the large "Sea Around Us" project, devoted to the basin-scale analysis of fisheries impacts on marine ecosystems, and presently focused on the North Atlantic.

In his spare time Dr Pauly enjoys reading, some scuba diving, and then reading again.

## Welcome to Belgium

*Continued from page 3*

The Belfry (13th century) is widely considered to be Belgium's finest, with a fantastic carillon that has been in use for almost eight centuries. The halls of this 260-foot-high tower (366 steps) with 47 bells that have a total weight of 27 tonnes, have been chosen as the location for the plenary ASC reception on Wednesday, 27 September, when the carillon will play special arrangements for the ASC participants.

The city is justly famous for its impressive art-historical and cultural heritage. There are many museums to visit. The Groeningemuseum offers a unique survey of Dutch and Flemish painting (15th-20th centuries) with very famous masterpieces by the so-called "Flemish Primitives". The Memling Museum has six authentic masterpieces of Hans Memling. In the Arentshuis a representative collection of lace from the city's collection is shown. The

15th century Gruuthuse Museum contains an extensive collection of furniture, silverware, tapestry, lace, ceramics, glass, weaponry, and measuring instruments from that period. A visit to the many medieval chapels and churches is strongly recommended. The "Church of Our Lady" contains a marble statue of the Madonna with Child by Michelangelo and several mausoleums and polychrome tombs from the 13th century. The "Basilica of the Holy Blood" contains the relic of the holy blood that is worshipped every Friday.

The 2000 ASC (88th Statutory Meeting) will be held in the Congress Centre "Oud Sint-Jan", the site of Saint John's Hospital in the medieval quarter of Bruges which has been restored. The Memling Museum occupies the 12th-century section of the building and the conference centre the 19th-century hospital rooms. In the

church and Carmelite Chapel there is a collection of furniture, paintings, and other items, and the Old Dispensary (17th century) next door is also worth a visit.

Bruges is a city in constant evolution. In June 2000 it hosted the European Football Championship, and in 2002 it will proudly hold the title of "Cultural Capital of Europe". Belgium is renowned for its excellent cuisine – Bruges stands for refined gastronomic delights. Hundreds of cosy pubs in medieval style are waiting for your visit. You can also enjoy romantic trips with horse-drawn carriages or in the boats on the city canals.

See you in September!



# The accession of Belgium to ICES

**Jens Smed**

*Former ICES Hydrographer and Chef du Service Hydrographique*

Belgium did not play a part in the first planning meeting for ICES because Professor Otto Pettersson's contact in Belgian scientific circles, Professor W. Spring, in consultation with his colleague Professor Edouard Van Beneden, strongly advised against inviting Belgium to the Stockholm Conference in 1899. They felt that the Belgian Government would not nominate the right representative and would not be able to understand the value of an international project relating to the sea! In their view, if the Government decided to send a Delegate to the Conference it would most likely be a diplomat, an officer from the Ministry of Agriculture, or a shipowner, and this would be quite inappropriate. Professor Spring pointed out in his letter to Pettersson that since the Belgian coastline was so short the participation of the Netherlands could very well make up for the absence of his own country. He and Van Beneden both agreed that every attempt to regulate the fishery in the North Sea would be premature as long as the physical and biological conditions of the sea were unknown, and they therefore strongly approved of the plans for investigations put forward by Pettersson.

The absence of both Belgium and France was noted at the 1899 meeting though, and as proposed by Dr Walther Herwig "The Conference recommends that these resolutions be brought to the knowledge of the governments of France and Belgium". The other participants supported this line which the relevant Foreign Offices could use as a basis for future negotiations. These took place in due time, and the Chair of the Belgian Committee for Mariculture, Professor E. Willegue, who was asked by the Ministry of Agriculture for his committee's view, replied after consultation that it felt that Belgium should join the proposed joint venture. Moderate plans were drawn up, but to everyone's surprise they were not agreed to by the Belgian Minister of Finance. He said he could not favour an industry of secondary importance to the degree suggested because he feared that it would give rise to much greater demands by the main industries of the country.

So the Government decided that Belgium should not join the international organization.

Fortunately, an alternative approach was possible. In 1898 the Director of the Royal Belgian Museum of Natural History, Edouard Dupont, had urged a member of his staff, Gustave Gilson, to gather marine organisms in Belgian coastal waters in order to create documented collections which at that time were missing in the Museum. When Dupont learned of the deplorable decision of the financial authorities he suggested that Gilson, in addition to his work for the Museum, should undertake the work required by the International Scheme. As the apparatus and the existing organization could be used, the only expense for Belgium in taking part in the International Scheme would be the payment of a small contribution to the running of the Central Office. Gilson accepted the arrangement and the Belgian Government agreed to pay the contribution. Consequently, Belgium was represented by Gilson at the Second Preparatory Conference in Kristiania (Oslo), though only on the last day, when he presented a draft programme for the investigations which he intended to undertake as part of the international work. He also signed the report of the Conference together with the other Chief Delegates.

In the exchanges before the Kristiania meeting, Willegue had discussed with Dr P.P.C. Hoek the best site for the headquarters of the Scheme and the candidates for General Secretary. In an "absolutely secret" letter he expressed his opinion that England was highly occupied by other matters and, in any case, not very sympathetic at all for the moment, and France was too far off. Belgium had nothing at all to offer, neither the men, nor the institutions, nor the willingness, and Germany might not be acceptable to France. Sweden was too far away, and Denmark was also too difficult to reach. Willegue thought that his colleague, Van Beneden, had the qualifications to be the General Secretary "but he is stubborn in his Huxleyism and perhaps lacks zeal and energy." Holland to him was the obvious country to house the Headquarters. He changed his mind a little later, suggesting that Belgium really had all that was needed!

In August 1901 the Swedish Government started negotiations with various countries about a final meeting to establish the new organization. By early September several countries had answered positively, but there had been no news from Belgium. When Belgium had still not replied by early 1902, Pettersson wrote directly to Gilson, who confirmed that the Ministry was much in favour of Belgium's accession to the new organization. In principle it had already decided to pay its share of the expenses to be incurred by the organization's Bureau and Laboratory and to make a certain amount available to Gilson for the investigations which would be assigned to him. The great difficulty concerned the construction of a research vessel. This would mean a great expense, and the Minister of Finance had declared that no money was available, adding, however, that in two years' time he would be more inclined to approve a grant. Gilson suggested that it might help overcome this resistance if the Swedish/Norwegian envoy in Brussels approached the Belgian Foreign Minister, explaining how much his Government would appreciate Belgium's joining the Scheme.

Pettersson passed on the suggestion to his Government together with the idea that it might encourage the Belgian authorities if they were informed confidentially that Sweden was proposing to solve the vessel problem initially by equipping the gunboat "Svensksund" for the purpose and placing it at the disposal of Pettersson and his colleagues. He thought something similar might be done in Belgium. The Swedish/Norwegian delegation in Brussels was instructed by the Foreign Minister to follow this line. The reply from the Belgian Government was that the question was still under consideration. The envoy added that the greatest problem obviously was the procurement of a vessel. The budget did not allow for the construction of a suitable vessel, and the existing fishery protection vessels were too small for hydrographic work.

Unfortunately the deliberations in Brussels dragged on, and Belgium was not represented at the constitutive meeting of ICES in July 1902. Strictly speaking, therefore, Belgium is not one of the

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# Belgian marine research over the years

The interest of Belgian scientists in marine matters dates to initiatives undertaken at Belgian universities during the last century. Some of these were:

- In 1842, Pierre Joseph Van Beneden, a Professor at the Catholic University of Louvain, set up a rudimentary laboratory at Ostend to study marine biology. It was the first of its kind in Belgium.
- At Liège University, Professor Edouard Van Beneden pioneered research in marine science. He also established a laboratory at Ostend.
- At Brussels University, Paul Pelseneer, an internationally renowned authority on molluscs, was one of the first to offer a regular course in marine biology.
- Adrien de Gerlache organized an Antarctic scientific expedition in the period 1897–1899 with a multinational team (9 Belgians, 6 Norwegians, 2 Poles, one Romanian, and one American) that used the sailing vessel "Belgica". The research carried out was directed towards geology, meteorology, oceanology, and marine fauna. In 1905, 1907, and 1908 the "Belgica" made Arctic expeditions to the Greenland Sea, and to the Kara and Barents Seas, respectively.

In 1926 Gustave Gilson, a successor of Pierre Joseph Van Beneden, organized the "First International Conference on the Ocean" in Ostend. A year later the "Zeewetenschappelijk Instituut" (ZWI) (Institute for Marine Science) was founded. Over a period of more than 30 years, the institute was occupied mainly with research in the science and statistics



RV "Belgica"

of fisheries. From the early 60's this work was taken over by the Department of Sea Fisheries. The Department is a public research organization depending on, and supervised by the Ministry of Agriculture. In the same period, Ghent University and the Royal Institute for Natural Science began research into oceanic matters.

At the end of 1970, the Belgian Government started a national "Environment/Water" research programme that included the "Sea" project. From 1971 to 1976 about 200 research workers from different universities and scientific institutes cooperated in this project. In 1976, under the aegis of the Ministry of Public Health and the Environment, a unit was established to build a mathematical model of the North Sea and the estuary of the Scheldt (MUMM, the Management Unit of the Mathematical Model of the North Sea). The mission of the unit is to use the scientific results achieved by the "Sea" project in making policy decisions. MUMM is now a department of the Royal Belgian Institute for Natural Sciences, a state scientific institution. Its staff of about 35 people forms a multidisciplinary team that is active in all the matters pertaining to the management of the marine environment. Since 1985 MUMM has had at its disposal not only its own oceanographic research vessel (RV "Belgica") but also an aircraft equipped with a wide

range of sensors and up-to-date computing and data processing facilities. It is involved in many activities related to the sea such as on-site monitoring of the quality of the marine environment, airborne surveillance of pollution and human activities, mathematical modelling (coastal and estuarine hydrodynamic, chemical, and physical processes and accidental and chronic pollution), impact assessment, preparation of legal measures and of emergency plans, and international cooperation.

The present mission of the Sea Fisheries Department is to provide the scientific basis for the rational and sustainable exploitation of living marine resources, the protection of the marine environment, and the quality control and assurance of fishery products. The Department comprises four operational sections: Biology, Monitoring, Gear Technology, and Product Technology, with a total staff of about 45. It is involved in scientific and policy-supporting programmes financed by the Federal Government, the Prime Minister's Services for Scientific, Technical, and Cultural Affairs, the Flemish Government, and the fishing industry. The research by the Department is strongly service-oriented towards industrial scientific organizations and management bodies, the Government, the fishing industry, and consumers.

## Accession of Belgium

*Continued from page 5*

organization's founding countries. In due course, however, the Belgian Government expressed its desire to join. Consequently, at the second Council meeting, in February 1903, Belgium, although not yet an official member, was represented by a

"special delegation" which included Gustave Gilson, who made an announcement about the work that Belgium intended to carry out as its contribution. The meeting agreed "that the Danish Government be requested to take the necessary steps to enable the Kingdom of Belgium to

enter into the international organization on an official footing". A little later Belgium applied for membership, and at the Council meeting in February 1904, Gustave Gilson and Auguste Hamman were welcomed as the official Belgian Delegates for the first time. Belgium's joining

# ICES in the 21st century

**Dr Scott Parsons**  
**President, ICES**

In August 2000 ICES convened a Symposium on "100 Years of Science under ICES" in Helsinki, Finland. The accomplishments and achievements of ICES' first 100 years are numerous and the impacts far-reaching.

ICES is now at a pivotal point in its history, as it approaches the Centenary and embarks upon its second century. It is time to take stock, to reflect on what we have achieved, and where we might be going in the years ahead.

We cannot, of course, forecast the nature of ICES 100 years from now. Indeed, we have little idea of what the world will look like 100 years hence, or ICES' place in it.

During the second half of the 20th century, ICES evolved from a forum for international collaboration in science, to an organization with a very visible and important advisory function, particularly with respect to fisheries management and also for marine environmental issues. One of our major challenges in the coming decades will be to ensure that ICES, in discharging its advisory function, focuses on customer needs, both fisheries and environmental. It also needs to build better mechanisms for dialogue with those (e.g., fishers) who are most directly affected by the management decisions based on the scientific advice.

Recently, pressure has been growing for the provision of advice that integrates

fisheries and environmental perspectives. On both the science and advisory fronts, ICES is moving toward a more integrated, multidisciplinary ecosystem approach to both the science and the provision of advice. During the past year, we have held consultations with both fisheries and environmental customers. Proposals to improve the advisory process will be considered by Delegates at this year's Council meeting in Bruges.

The development and coordination of marine science has become, in many respects, subservient to the powerful advisory role that ICES has assumed. We must ensure that the science programme of ICES is not swamped by the pressures of responding to the growing demands for even more timely and detailed advice. A strong and viable science programme is vital to the future of ICES. Without sound science ICES will be unable to provide quality advice to meet current and emerging needs. ICES must evolve to address broader marine ecosystem issues if it is to survive and flourish in the 21st century. But there are other broader forces that will also influence whether ICES thrives and prospers in the decades ahead.

Geopolitical change could play a major role in shaping the fate of ICES. The EU continues to enlarge. Sweden and Finland have joined. Other countries to the east are seeking membership. And, inevitably the question of membership will be

debated again in Norway and possibly in Iceland. What are the implications for ICES if, at some point in the coming decades, Norway, and possibly Iceland, join the EU?

Since virtually all of ICES' advisory function focuses on the provision of advice pertaining to the Northeast Atlantic and the Baltic (with the exception of NASCO), the future evolution of the EU could play a major role in shaping the destiny of ICES in the 21st century.

Notwithstanding these uncertainties, ICES has the opportunity to build on its existing strengths and grow further as an international marine science organization, with a broad focus on marine ecosystems, including living resources, and their relation to humanity.

ICES has many strengths to build on. It has had a clear focus. It has a broad network of exceptionally capable marine scientists who collaborate in the advancement of understanding and the provision of advice. It has a well-established framework in international collaboration. It has an international reputation for good science and credible advice. It is at the forefront in developing approaches to tackling major new challenges of understanding and providing integrated advice on marine ecosystems.

The founders of ICES had a dream. It's up to us, their successors, to build on that dream and take it further.

ICES was first and foremost due to Gilson's untiring efforts. With very small financial means he carried out much of his country's contribution to the cooperative activities himself, sampling two sections in the southern North Sea and the Channel, viz., Blankenberghe–Orford

Ness, and Cap Gris Nez–Dover, quarterly from a ferry for many years.

(A fuller version of this paper complete with detailed references is available on request from the Editor.)



# 100 Years of Science under ICES

## **Professor Gotthilf Hempel**

*Centre for Tropical Marine Ecology  
Bremen, Germany*

Is ICES like an old man who proudly remembers how good he was in the old days and who is grateful for still being somewhat useful, or is ICES like a well-established company that meets the demands of an ever-changing market? I asked those questions in my summing-up of the recent Symposium on “100 Years of Science under ICES”. Nearly 100 scientists met in Helsinki, Finland, 2–5 August 2000, and 71 papers and 10 posters were presented. The sessions were chaired by the keynote speakers for twelve themes on the development of techniques and concepts in fisheries research and related fields of oceanography (see list in the May issue of the ICES newsletter, No. 35).

Until the 1960s ICES was the leading marine science organization in the world. Since then it has had to share influence and responsibilities with other regional and global bodies, but it is still Number One in fisheries science and advice to fishery management in temperate and cold waters. Very early ICES picked up pollution research and monitoring, and it has participated successfully in marine research on global climate change.

ICES has initiated and coordinated international expeditions and surveys resulting in long time series of physical, chemical,



*Standing, left to right: Dr Robert R. Dickson, Walter Lenz, Dr Tim D. Smith, Orestes Cendrero, Professor Jakob Jakobsson, Professor Eric L. Mills, Jari Helminen, David de G. Griffith. Seated, left to right: Margaret Moody, Kaija Pönni, Dr Emory D. Anderson, Maiju Koivula, Professor Pentti Mälikki*

and biological parameters and of fish stock data. Bob Dickson called those data sets the crown jewels of ICES. Other services by ICES to marine science include its long-standing activities as central laboratory for the development, standardization, and intercalibration of instruments and methods, as data centre, and as scientific publisher of “white” and “grey” literature. Countless methodological workshops and assessment working groups have provided training on the job for generations of young scientists.

My hit list of outstanding talks includes, *inter alia*, Katherine Richardson on plankton and fisheries, Mike Sinclair on the notion that fish form stocks, François

Gerlotto *et al.* on acoustic methods (presented by Paul Fernandez), Rob Stephenson on herring investigations, Sidney Holt on whale research and whaling, and Jens Meincke on fishery oceanography. I was intrigued by the Scandinavian contributions on herring, where the 19th century’s migration concept met with the current stock concept. Many fascinating (hi)stories focused on ICES heroes like the great “outsiders” Hensen, Hardy, Holt, and Steemann Nielsen. The three “looks forward” by Scott Parsons, Warren Wooster, and Jake Rice on the new challenges of ICES all came from across the Atlantic.

What did I miss? More time for in-depth discussions and transatlantic dialogues on the history of key concepts like overfishing, fishery oceanography, and the triad of field observations–experiments–modeling. The hobby-historians of the ICES marine science community would have benefited from a stronger participation by professional historians.

What did I enjoy apart from many of the talks? The arrangements by the host Pentti Mälikki and his staff, and the preparation of the Symposium by its Chair, Emory Anderson. I am looking forward to his stringent editing of the proceedings to be published well in time for the ICES Centenary in 2002. That will be the proper occasion to answer my question about ICES being an old man or a vivid company that is reactive and proactive to demands of marine science and its application to the needs of society.



*Seven ICES Presidents at the ICES History Symposium.*

*Standing, left to right: Professor Gotthilf Hempel (1979-1982), Professor Warren S. Wooster (1982-1985), Ole J. Østvedt (1985-1988), Professor Jakob Jakobsson (1988-1991). Seated, left to right: David de G. Griffith (1991-1994), A. Maucorps (1994-1997), Dr Scott Parsons (1997-2000), Professor Pentti Mälikki (present First Vice-President)*



# Changing States of Large Marine Ecosystems of the North Atlantic and Global Environmental Trends

**Dr Kenneth Sherman**

NMFS/NOAA

Narragansett, Rhode Island, USA

**Hein Rune Skjoldal**

Institute of Marine Research

Bergen, Norway

During the past decade a growing network of marine scientists and resource managers have been reporting on changes in the states of large marine ecosystems at symposia in different areas of the globe. Selected papers from the symposia are published in volumes on the Pacific Rim LMEs, the Indian Ocean LMEs, the US Northeast Shelf LME, and the Gulf of Mexico LME. The geographic range of the LME symposia was extended across the North Atlantic during a symposium held in June 1999 in Bergen, Norway. The results of fourteen studies from North America and Europe were presented by scientists and programme managers from some 20 countries bordering on the North Atlantic. Symposium sponsors included the International Union for the Conservation of Nature (IUCN), the Ministries of the Environment and Fisheries of Norway, the Intergovernmental Oceanographic Commission, the Scientific Committee on Ocean Research, the US National Oceanic and Atmospheric Administration, and ICES.

The interaction between overfishing and ecological change was the focus of Canadian studies of the Newfoundland-Labrador Shelf ecosystem and the Scotian Shelf ecosystem. K. Zwanenberg *et al.* underscored the need for more comprehensive monitoring of key biological and physical elements of the Scotian Shelf ecosystem, whereas J. Rice *et al.* indicated that a major shift in fish species abundance during the mid 1980s into the 1990s on the Newfoundland-Labrador Shelf posed serious questions relating to the management objectives for an ecosystem where there has been lack of any substantial recovery of cod. According to Rice *et al.*, one of the consequences is a change in the trophic structure of the ecosystem, leading to significant increases in shrimp and crab populations and concomitant high price values for these species

approaching the previous total value of the cod catch. This development has serious socio-economic consequences presently under discussion by the Canadian Government.

Case studies for the Northeast Shelf and Southeast Shelf ecosystems off the east coast of the United States showed the principal importance of overfishing in the decline of demersal fish stocks of the Northeast Shelf ecosystem, and the pelagic mackerel stocks and reef fish stocks of the Southeast Shelf ecosystem. For both ecosystems substantial fish stock recovery is under way as a result of substantial decreases in fishing effort mandated by Fishery Management Councils of New England, the mid-Atlantic, and the southeastern states. The management actions were based, in part, on the

results of pertinent multidecadal surveys of the fish communities and oceanographic conditions within the two LMEs.

Results of the case studies for European waters underscored the importance of augmenting and maintaining oceanographic and biological surveys pertinent to changes in fish stocks of the Norwegian Sea (C. Holst), Barents Sea (P. Dalpadado), North Sea, Baltic Sea (J. Thulin), and Biscay-Celtic Shelf (L. Valdes) LMEs. The case for large-scale oceanographic forcing on the North Sea ecosystem was made by J. McGlade, C. Reid, and A. Taylor, based on their observations of changes in plankton productivity and water-column mixing in the southern North Sea, and stratification of the waters

*Continued on page 10*

The Faroe Shelf LME water is separated from surrounding oceanic water by a persistent tidal front. The internal coherence in structure of the Faroe Shelf Large Marine Ecosystem is characterized by the simultaneous fluctuations at several trophic levels in the ecosystem, including primary production, fish recruitment, growth, biomass yield, and seabird demography. The dotted line depicts the typical position of the tidal front separating the shelf from the open ocean (Fig. A).

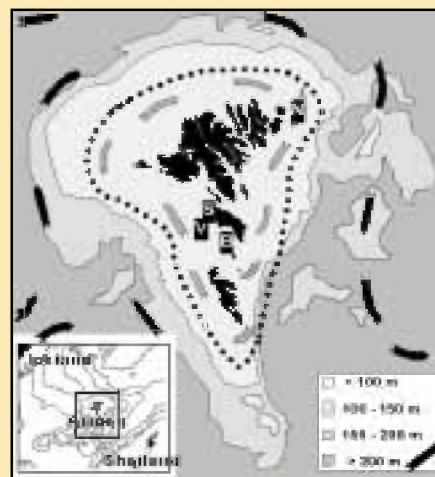


Figure A

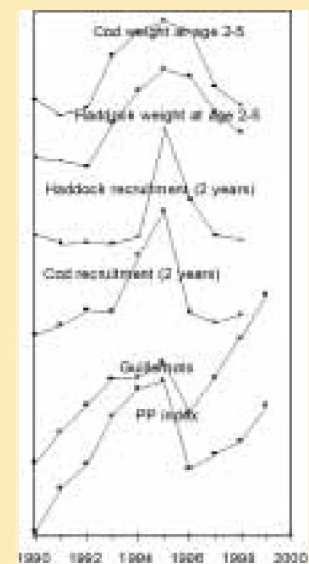


Figure B

Relative variability in primary production, guillemots, 2-year-old cod and haddock recruitment, and mean weight of 2-5 year-old cod and haddock, 1990 to 1999 (Fig. B). (From: E. Gaard, B. Hansen, B. Olsen, and J. Reinert. Ecological features and recent trends in the physical environment, plankton, fish stocks, and seabirds in the Faroe Shelf ecosystem. In *Changing States of the Large Marine Ecosystems of the North Atlantic*. Ed. by K. Sherman and H. R. Skjoldal. Elsevier. [in press].)

# Artificial Reefs and Related Aquatic Habitats

**Dr Josianne G. Støttrup**

*Danish Institute for Fishery Research  
Hirtshals, Denmark*

More than 230 participants from 21 different countries attended the five-day Seventh International Conference on Artificial Reefs and Related Aquatic Habitats (7th CARAH) held in San Remo, Italy, 7–11 October 1999. The objectives of the meeting were:

- To provide an international forum for the exchange of new technical information on all aspects of artificial reefs and related habitats;
- To promote new research, programmes, and policies which advance artificial habitat enhancement and management technologies; and
- To summarize existing programmes on artificial habitat technology, including evaluation of effectiveness at the international level.

The Conference was organized in six thematic areas:

1. Function and ecology of artificial reefs
2. Planning and design of artificial reefs
3. Artificial substrata – artificial reefs
4. Rigs to reefs
5. Aquaculture, FAD, and fisheries
6. Monitoring, mitigation, and assessment

In his opening talk, Dr Antony Jensen reviewed the European development on artificial reefs, which has been on-going for about 30 years, and described the initiation of an EU-funded three-year project, the European Artificial Reef Research Network (EARRN) in 1995. Despite the termination of this EU project,

EARRN continues to function, thus ensuring coordination of European artificial reef research and the organization of thematic workshops or meetings.

William Seaman, Tony Pitcher, and Margaret Miller gave the opening plenum keynote talks. William Seaman emphasized the need to focus research on artificial reefs ensuring well-defined objectives, quantifiable aims, and identification of success criteria, which can be measured. The application of ecosystem models to evaluate the success of deployment of artificial reefs was the main theme of the talk given by Tony Pitcher. His talk centred on the static mass-balanced ecosystem model ECOPATH, which describes the trophic flow among functional groups, and on ECOSPACE, in which spatial modelling of the system linked to defined habitats is driven by movements derived from foraging, predator-avoidance, and dispersal rates. Margaret Miller pointed out the advantages

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## Changing States

*Continued from page 9*

of polysaccharides produced by benthic algae appears to be on the increase in North Sea sediments and, according to J. McGlade, is cause for concern as the effects of polysaccharides on benthic spawning species (e.g., herring) is not very well understood.

The results of multidecadal time series of oceanographic measurements on major shifts in species abundance levels were presented for the East Greenland (Rätz et al.), West Greenland (S. Pedersen and J. Rice), and Iceland Shelf (Astthorsson) ecosystems. Based on 40 years of oceanographic, plankton, marine birds, and fish and fisheries time-series data, a compelling case was made by E. Gaard on the effect of oceanographic forcing on changes in the fishery yields of the Faroe Shelf LME.

In addition to discussions on the science-based studies of changing ecosystem states, and consideration of alternative

hypotheses to account for the reported shifts in species abundance levels, the participants entered into lively debate on the principal objectives of ecosystem-based management, its present status, and prospects for the future. Two activities supported by the Global Environment Facility (GEF), located within the World Bank, were discussed with regard to the management objectives theme. The first activity of the GEF is providing \$7 million to support a Global International Waters Assessment (GIWA) based on 66 global areas, 50 of which are LMEs. According to the GIWA Chief Scientist, Symposium attendee Per Wramner of Sweden, assessment teams will be requested to compile pertinent information and report on the state of the ecosystem in relation to environmental quality and resource sustainability over the next three years. The GIWA effort is expected to identify the "root causes" of environmental degradation and resource depletion, and this information is to be used by the GEF to prioritize LMEs and adjacent countries

most in need of financial grants for projects to improve ecosystem conditions. Approximately \$200 000 000 is available from the GEF to support the successful proposals.

The second activity of the GEF is to collaborate with ICES, the Helsinki Commission, and the International Baltic Sea Fishery Commission to plan and implement a GEF-supported project to introduce ecosystem-based management to the Baltic Sea LME, by providing financial assistance to countries in the eastern Baltic region (Poland, Latvia, Estonia, Lithuania, and Russia).

A comprehensive and incisive summary of the Symposium has been prepared by Professor Gotthilf Hempel. The summary, along with selected case studies, will be published by Elsevier Press in a new Large Marine Ecosystem volume series expected to be available for distribution in early 2001.



of artificial reefs for exploring ecological processes and encouraged their use for manipulative ecological experiments. At the same time care should be taken in interpreting and applying data from artificial reefs to natural ecological processes since the type of data generated from the studies are intrinsically different. Five days of presentations and posters, and three discussion sessions followed. In total, around 90 oral papers run in parallel sessions, and 27 posters were presented at the meeting.

The first thematic area on the function of artificial reefs included 26 oral presentations covering a wide range of usage of artificial reefs. The protection of *Posidonia* meadows from illegal trawling is a relatively inexpensive, but effective form of fisheries management enforcement. Ample evidence was provided for the attraction and enhanced local production of fish or benthos due to artificial reefs, and some on their use to remove nutrients in eutrophicated areas. Although the general application of artificial reefs was often well justified, the potential impact on the ecosystem from the introduction of new habitat, often different from the indigenous habitat, was not examined.

The second thematic area on planning and design of artificial reefs looked at larger-scale environmental, socio-economic, and cost-efficiency properties of these structures. Several of these large-scale artificial reef programmes are an integral part of fisheries-resource management and are often aimed at enhancing local marine resources. On a smaller scale, the structural complexity of the artificial reefs was shown to be important as a fish refuge and for biotic colonization.

The third thematic area comprised four oral presentations devoted to the most controversial subject concerning artificial reefs, and possibly the primary cause for prejudice: material used for artificial reefs. The general conclusion was that such structures composed of coal fly ash, steel slag, or scrap tyres were intended as a positive approach to dealing with a terrestrial waste-disposal problem and

provided effective habitat for fish assemblages. However, it was important to assess the environmental impact of the substances constituting these artificial reefs, their stability, and durability.

Reuse of steel was indirectly also the main theme of the fourth area: rigs to reefs. During their operational period, rigs provide hard substrate on which biotic communities and associated fish assemblages develop. The resource benefits, including providing shelter for fish assemblages often representing species heavily impacted by overfishing and environmental changes, may not be sufficient to prevent these artificial reefs from being regarded as an excuse for solid waste disposal and to prevent rigs from being removed. More information is needed on the environmental benefits of dismantling decommissioned rigs as compared with constructing reefs.

Eleven oral presentations on the fifth theme addressed different aspects of aquaculture, sea ranching, or fish attraction devices (FAD). Environmental amelioration is another function of artificial reefs, which could be combined with production either directly or indirectly by placing these near marine net-cage cultures to mitigate aquaculture environmental impact. The Japanese programmes combine the deployment of artificial reefs with mass release of fish, often hatchery-reared, for enhancing local coastal marine resources.

The sixth thematic area, with 14 oral presentations, focused on monitoring, mitigation, and assessment. Acoustics are useful for estimating abundance and biomass of fish as well as for delimiting the boundaries of artificial reefs and shifts such as relocation, subsidence, or sand burial of artificial reefs, which may impact their function. Within this thematic area, the impact of artificial reefs on the surrounding ecosystem was examined by at least two of the papers with diversified results recalling the need to examine the consequences of deploying reefs, even if these are built and positioned correctly for their purpose. The final paper addressed the main topic of

content within the artificial reef community, the attraction–production controversy, and suggested that the attraction and the production hypotheses are two opposing ends of a continuum influenced by density-dependent factors.

Of the 90 or so presentations and 27 poster papers, around sixty are expected to be submitted for consideration, with approximately fifty being accepted for publication in a special volume of the *ICES Journal of Marine Science*.

Were the objectives met? An excellent forum for the exchange of new technical and scientific information on all aspects of artificial reefs and related habitats was provided. Recommendations for further work were put foreword, including encouragement to use artificial reefs for manipulative ecological experiments. Existing programmes were evaluated and methods for the evaluation of effectiveness of these structures were discussed. However, there is still a need for more work on larger-scale environmental impact of deployment of artificial reefs and for the participation of those working in related fields, such as rehabilitation of natural reefs.

The social events, in particular the visit to Montecarlo Institute of Oceanography and Aquarium, at the special invitation of the Director of the Institute, Professor François Doumenge, deserves a special mention. The bus tour from San Remo to Monaco provided a beautiful scenic drive along the Ligurian coast. Monaco itself was magnificent, and the aquarium was housed in a building of impressive architectural stature. Traditional aquariums were filled with impressive live corals of various forms and sizes, accompanied by a myriad of fish in all forms, sizes, and colour patterns. Thank you again to our Italian hosts.

# Sea change in Irish fisheries science

**John Joyce**

*Marine Institute  
Dublin, Ireland*

There's a major sea change sweeping through Irish fisheries science. In the wake of David Griffith's appointment as ICES General Secretary, the Marine Institute has restructured its Marine Fisheries Science Division (MFSD) into five sections under the leadership of Dr Paul Connolly, its new Director.

In pelagic fisheries, John Molloy is leading projects on herring stocks and spawning grounds in the Irish and Celtic Seas, as well as in ICES Areas VIa and VIIb, supplemented with information supplied by fishermen. Work is also on-going on mackerel and horse mackerel, which includes acoustic surveys, with occasional studies on sprat. MFSD is also involved in two large projects, each coordinated by Spain. The first examines the stock identities of horse mackerel and the second aims to maximize the amount of information gained from multi-annual, international, mackerel egg surveys.

On demersal species, the area of interest extends from Rockall in the north to the Celtic Sea in the south, with specific programmes on haddock, monk, megrim, deepwater sharks, plaice, and the Irish Sea cod. MFSD has been working closely with the industry in developing a recovery plan for the Irish Sea cod in cooperation with all parts of the UK. It is also cooperating with the Irish Sea Fisheries Board (the Irish acronym is BIM) and others to reduce by-catch of cod in the valuable *Nephrops* fishery and to test new selective gear equipped with separator and square mesh panels. Surveys are being carried out, too, with the UK on Irish Sea egg and larval abundance in order to estimate the stock size of plaice and cod.

The Marine Institute is now involved in an ambitious project with the USA's National Oceanic and Atmospheric Administration (NOAA) looking at ways of linking satellite imagery and oceanographic features. The aim is to try to understand the factors that influence



*Irish research vessel "Celtic Voyager" (in foreground) in comparative tow exercise with the Scottish research vessel "Scotia" in the Irish Sea, November 1999*

recruitment of commercial fish stocks off the west and south coasts of Ireland. Surveys to identify "hot spots" of fish larvae and eggs off these coasts are planned for early in 2001 and will be followed by detailed vertical studies, using staff and equipment on loan from the United States.

Having a good working relationship with fishermen is seen as an absolute priority within the Division. In 1999 the FIEFA project (Framework for Improved European Fisheries Assessment) was completed. This project, which was coordinated by Ireland with the participation of the UK, France, Spain, and Portugal, involved the recruitment in Ireland of five Fisheries Assessment Technicians (lovingly known as "FAT's") who have been collecting information on discards both at sea and in ports around the country.

One deliverable of the FIEFA project has been the production of a 30-minute, broadcast-quality video entitled "While Stocks Last" aimed at improving understanding between fishermen and scientists. This video, which featured John Molloy and other staff from MFSD, was shown on national television in Ireland. Earlier this year FIEFA was replaced by a project called SAMFISH, which has

allowed the important work of the FAT's to continue.

Continuing on the theme of communications, MFSD mounted a very successful stand at the recent FISH IRELAND 2000 exhibition in Killybegs, Co. Donegal. The Marine Institute's research vessel "Celtic Voyager" was also tied up alongside there and open to visitors. Prior to the exhibition John Molloy and Ciaran Kelly held a workshop with pelagic fishermen aimed at identifying spawning grounds and improving the flow of information between MFSD and industry in both directions.

Earlier this year the Minister for the Marine and Natural Resources, Frank Fahy, TD, announced that the Marine Institute would be relocated from its base in Dublin to a purpose-built, state-of-the-art facility in Galway in 2003. Also new on the Marine Institute scene is a 65-metre research vessel, which is due for delivery in 2002. She will complement the existing "Celtic Voyager" in deeper waters and add a whole new dimension to Irish marine research.

All in all, an exciting time to be in fisheries research in Ireland.



# The *ICES Journal of Marine Science* in 2000 to date

## **John Ramster, Editor**

The Editors of the *ICES Journal of Marine Science*, see back page, are pleased to be able to report that the backlog of papers waiting to be published this year was cleared by means of a bumper August issue. They know from the number of enquiries received that authors have been hurt and puzzled by the long wait between acceptance and publication after being bruised by the long wait for comments from the refereeing process, but they have been simply unable to help. Some of the delay stemmed from a change of office and staff respectively at our publishers, Academic Press. The main reason for it, however, has been the chaos created by the fact that the papers from ICES Symposia, most notably those from the 1997 Recruitment Dynamics Symposium, did not appear remotely to the time agreed just after the meetings took place. In a foreword to the April issue of the *ICES Journal* the Editor-in-Chief, Dr Niels Daan, wrote:

This issue of the *ICES Journal of Marine Science* represents about half of the contributions stemming from the ICES Symposium on "Recruitment Dynamics of Exploited Marine Populations: Physical-Biological Interactions", held in Baltimore, Maryland, in September 1997, which have been projected for publication. The present volume is neither a random selection of papers nor a personal selection by the Editors; it simply contains all manuscripts delivered to them before 1 January 2000 by the Guest Editor, after the usual peer review process.

We continue to receive many questions from authors not included in this volume about the status of their contributions – but we really do not know the answer to these questions! We have to assume that the manuscripts are some-

where in the pipeline, i.e. with referees, with authors for revision, or with the Guest Editor.

It is clear that ICES staff, the editorial team of the *ICES Journal*, and the members of the Publications Committee feel deep regret and concern that the remaining manuscripts should still be waiting to be published, two and a half years after the Symposium. However, despite attempts to remedy the situation, it appears that little can be done. The smooth running of the scientific programme of ICES depends upon a strong commitment by those involved. Mostly this works, but sometimes it does not. In this case we have not been able to trace the roots of the problems, let alone devise a mechanism by which they might be resolved. The Symposium was a great success. There was a wealth of significant contributions. There was enthusiasm to publish the proceedings. And then things fell silent. Contributors saw their ideas being overtaken by new data, new research, and faster publications. Some decided, and rightly so, to withdraw their manuscripts and submit them elsewhere.

In September 1999, the Publications Committee concluded that there was no other option than to print everything available so far. This issue, which represents Volume I of the Symposium proceedings, reflects that decision.

We hope that it will be followed soon by Volume II. But I can assure everyone within and outside ICES that this is not how the Editors want to conduct the publication of Symposium volumes in the *ICES Journal*.

The absence of these Recruitment papers to time and the plethora of Symposia in recent years meant that if most Sympo-

sia were to be published within eighteen months of the meeting, as is the general idea, then the publication sequence of four "normal" and two "symposia" numbers of the *Journal* in each year had to be broken in 2000. Consequently only the February and August numbers this year carry "normal" papers: April was "Recruitment", June was "Ecosystem Effects of Fishing", October will be "Marine Benthos Dynamics: Environmental and Fisheries Impacts", and December will be "Population Dynamics of *Calanus* in the North Atlantic". We aim to get back to the normal pattern early next year, with the papers approved between June 2000 and about the turn of the year.

Our aim is to publish papers that get a fair wind from referees within a year of receipt. The "fair wind from referees" is the big Factor X, though, and we can appreciate that taking on the refereeing of papers is a non-trivial task these days. We are wondering – and will be discussing in Bruges – whether or not it is reasonable to say to authors that in year Y+1 they should review for us twice the number of papers published under their name in year Y. Something has to be done, anyway, and a little more than just changing "three" to "six" in the present "acknowledgement of receipt" letter, viz. "You may not hear from the editor processing your paper for six months due to the pressure on referees." Do tell us what you think about this when you see us wandering the rooms at the ASC.

# Fishing with a difference – a book review

### Stephen Lockwood

*Coastal Fisheries Conservation and Management*

*Colwyn Bay, Wales, United Kingdom*

*The Hungry Ocean* is a book about fishing. It is a book about the routine preparation of fishing gear on the week-long run out to the fishing grounds. It is a book about the bone-numbing grind and the muscle-wrenching 20+ day demand of 20-hour days when the fishing is too good to stop. It is a book about the joys of a trip with sustained high catch rates and the prospect of fat pay cheques following the run home and "settlement". As ever, the crew's anticipation is heightened by the thoughts of getting drunk and "laid" during their 48 hours ashore.

There is no shortage of such books describing the hardships and horrors of life on the Arctic cod grounds. Many have been written over the years, by professional writers (e.g. Hugh Popham – *Cape of Storms*), by retired skippers (e.g., Arthur Whittleton – *Wooden Ships and Iron Men*), and by academics (e.g., Jeremy Tunstall – *The Fishermen*).

Two things, however, make this book different, indeed, memorable. The first is that despite the familiarity of the underlying story and experience, it is not about the Arctic trawlers. It is an account of a single trip aboard a New England swordfisher working 45°N 45°W. It was written by the skipper – and here is the second difference – Linda Greenlaw! Even in this relatively emancipated era, women as crew to commercial fishing vessels are still rare. The nearest we have had in the UK, for example, to a female skipper-author was probably Dora Brown, who wrote *They Labour Mightily*, describing her life working a Whitby coble in the 1930s.

Like Brown, Greenlaw admits to facing prejudice, if not outright hostility, when she began work and again when she first

became skipper of the *Hannah Boden* ("Moby Dickless" was one of the milder epithets she endured while she perfected her craft). Like Brown, Greenlaw also provided the undeniable response. Success!

If her skill in writing is a measure of her ability to find and catch swordfish, she deserves the discomfort of "the golden horseshoe stuck up her ass"! This is no criticism but the grudging acknowledgment that one swordfish skipper gives to the superior skill (or luck) of another. Greenlaw admits to feeling downhearted when someone else is "suffering" rather than her.

Every aspect of the trip is described in great detail. How a 40-mile swordfish long-line is put together – including electronic coded "bleepers", not dahn buoys, how it is baited with squid and light sticks, set, and then hauled back. Before it is set, however, the skipper must apply his or her knowledge and understanding of physical oceanography – in particular temperature and tides.

Using a pair of towed thermistors, one at the surface and another at 7 fathoms (the "up-bird" and "down-bird"), Greenlaw describes how first she locates "hot" (over 60°F) surface water and then sets the gear along the steep side of its interface with the colder water around it. When the skipper gets it right, the reward is 2 tonnes or more of swordfish per night's fishing. If the hooks drift into colder water the penalty is a catch of blue sharks, tangled gear, and the need to replace lost hooks and damaged snoods.

The whole story is presented with zip and plenty of anecdotes ("*Mug Ups*") along the way to leaven the technicalities. There are also some real insights into the nature of her individual crew, what makes fishermen fish, and some of the stresses of being paid to make the decisions – \$13 712.09 for the trip in question, with \$5 484.84 for each of the crew.

She now makes a rather more modest living, following in Dora Brown's footsteps, working her own inshore lobster boat.

This book may not be about fishing as you know it, but no matter. Read it like a novel, you'll enjoy it.

***The Hungry Ocean* by Linda Greenlaw  
Sceptre paperbacks (Hodder & Stoughton)**

**ISBN 0 340 72896 5 GB£ 6.99**

*(This review first appeared in Fishing News on 14 April and is reproduced with the permission of the Editor.)*



# Around ICES

## Germany

*German Federal Research Board for Fisheries at "EXPO 2000"*

EXPO 2000 is not Hannover only. In Wilhelmshaven, close to the North Sea coast, a special event, "EXPO 2000 at Sea", deals with a broad range of marine affairs in Germany. There, the institutes of the German Federal Research Board for Fisheries have set up a 300-m<sup>2</sup> exhibition hall to inform the public about their work in fisheries and fisheries-related research.

As the visitors move into the exhibition they are "caught" in a trawl and become "virtual fish" as they follow the imaginary life history of a cod on their way round the different exhibits. In doing so they are introduced to the concepts of fish recruitment and ageing, fisheries management and environmental protection, and to fisheries technology. They are also shown the close connection that exists between the Federal Research Board and ICES.

"EXPO 2000 at Sea" will continue until 31 October and is open daily from 10 am to 8 pm.

## Ireland

See John Joyce's article on page 12.

## Spain

*New oceanographic centre*

A new oceanographic centre for the Instituto Español de Oceanografía (IEO) will be ready by the end of 2000 in Gijón (Asturias). The new laboratory will complement the research activities on-going at the existing IEO facilities at Vigo, La Coruña, and Santander on the northern coast of Spain.

## United Kingdom

*Changes*

The maritime interests within Cardiff University in Wales are due to be re-organized as from 1 August 2000. The current Department of Maritime Studies and International Transport will be split into three, and each part will be absorbed into other related interests in the University. "Transport", for example, which includes the port and shipping management interests (including MSc studies in International Transport and Marine Policy, respectively) will transfer to Cardiff Business School, while the Seafarers International Research Centre will join the School of Social Sciences. The Marine Geography group, comprising the BSc in Marine Geography programme and the Marine and Coastal Environment Research Group (MACE), will join the Department of Earth Sciences, where an extended Marine Geo-Science group is being formed.

At the University of Greenwich, England, meanwhile, a Maritime Studies Department similar to that closing at Cardiff has opened for business in superb rooms on the revamped site of the Old Royal Naval College.

## USA

*"New approach" ship at Woods Hole*

Woods Hole Oceanographic Institution (WHOI) recently announced its intention to build a SWATH Coastal Research Vessel. The SWATH (Small Waterplane Area Twin Hull) ship is a relatively recent design development. According to WHOI the submerged hulls do not follow surface wave motion and effectively diminish the ship's pitch and roll, providing a remarkably safe and stable working environment. It should prove seaworthy for critical wintertime operations in the harsh New England conditions and provide a "big ship" capability at a small-ship size, crew, and cost. Scheduled for completion in early 2002 it will have an overall length of 32 m and a beam of 15.5 m and accommodate 16 crew and scientists for up to 15 days at a time. Further information is available from [www.whoi.edu](http://www.whoi.edu).



## Chance-of-a-Lifetime Investment Scheme

We all know when to celebrate on board the old research vessel, but have you never grown tired of drinking your champagne out of a glass that is normally used for stomach sampling specimens? ICES now offers you the chance to invest in your crew's quality time while impressing your fellow ICES Member Countries with your high standards. This month ICES is offering a pair of unique (and in only a hundred years they'll be antique as well) ICES Centenary Champagne Glasses, encased in a handsome complimentary giftbox at the ridiculous low price of **DKK 150** for the pair. As only a limited amount are available we are forced to restrict the number of boxes to 10 (ten) per person.

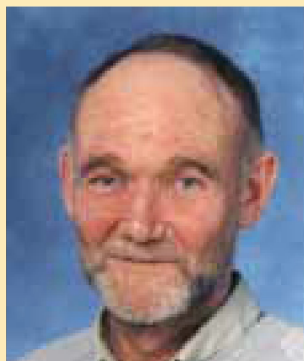
They can be purchased either at the Annual Science Conference in Bruges in September, or through the ICES Secretariat by telephone +45 33 15 42 25, fax +45 33 93 42 15, or by e-mail [inger@ices.dk](mailto:inger@ices.dk).

## ICES Journal of Marine Science

The *ICES Journal* Editorial Team will be circulating during the ASC in Bruges - and look forward to discussing ways in which the *Journal* can continue to meet the expanding needs and interests of its readers. Keep an eye out for them or drop by their office in the Mercator Room. For more contact information see the *Journal* Web page: [www.ices.dk/pubs/journal.htm](http://www.ices.dk/pubs/journal.htm).



John Ramster



John Hislop



Andy Payne



Michael Chadwick



Editor-in-Chief Niels Daan

**Question:** *What is Niels doing?* Emerging from an all-night session with thrilling manuscripts? Escaping from enraged authors? Send your answer to John Ramster and enter the ICES SWEEPSTAKES. You could win a set of ICES Centenary champagne glasses!

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Comments, suggestions, ideas, or questions? Any and all communications are most welcome, so please don't hesitate to get in touch!

## ICES/CIEM Information

Published biannually by the  
International Council for the Exploration of the Sea

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