

## Contributions to the 1999 Annual Science Conference

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**Requests for additional copies of documents when supplies run out**

Authors have been requested to provide 200 copies of their papers (125 to be sent to Sweden and 75 to the ICES Secretariat). Copies of the various papers are made available in the Documents Room. Participants may help themselves to copies of scientific papers on a first-come-first-served basis. Should supplies of particular papers run out, those wishing to obtain copies should not contact the Secretariat but approach the senior author of the paper concerned (name and address given with Abstracts). It is hoped that authors will send copies to those requesting them once the Annual Science Conference is over.

## GENERAL ASSEMBLY REPORTS AND PAPERS OF GENERAL INTEREST

- Gen:1 Observers' Reports from Cooperating Organisations
- Gen:2 ICES Activities in 1998/1999
- Gen:3 Elections and Appointments of Council Officials at 1999 Annual Science Conference (87th Statutory Meeting) (E+F)
- Gen:4 Report of the Bureau Working Group on Strategic Planning
- Gen:5 Report on ICES Symposia
- Gen:6 1998/1999 Overview of ICES Committees and Subsidiary Groups and their Shadowing by Secretariat Staff, and Schedule of ICES Meetings and List of CM Codes

## DEL - DELEGATES DOCUMENTS

- Del:1 Final Accounts for Financial Year 1997/1998
- Del:2 Preliminary Report on Administration
- Del:3 Possible Change of ICES Financial and Operational Year to Run from 1 January to 31 December
- Del:4 Estimated Accounts for Financial Year 1998/1999
- Del:5 Budget for Financial Year 1999/2000
- Del:6 Forecast Budget for Financial Year 2000/2001
- Del:7 Elections and Appointments of Council Officials at the 1999 Annual Science Conference (87<sup>th</sup> Statutory Meeting)
- Del:8 Appointment of New General Secretary
- Del:9 Elections/Appointments of New Chairs of ACFM and ACME
- Del:10 Report on Accession Process of Lithuania to ICES Convention
- Del:11 Swedish Proposal to Modify the Existing System for Calculating Member Countries' Contributions to ICES
- Del:12 Application by BirdLife International for Observer Status
- Del:13 Progress on Planning and Funding for the ICES Centenary
- Del:14 Report of 19 March 1999 Meeting between ICES Secretariat, and Permanent Secretaries and Delegates from Sweden, Norway and Denmark Concerning ICES Centenary Arrangements
- Del:15 Note Regarding Press Matters for ICES Centenaries
- Del:16 Developing and Agreed Memoranda of Understanding
- Del:17 Report of 25-26 February 1999 Meeting of Joint ICES/Commissions Working Group on Cooperative Procedures
- Del:18 Arrangements for 2000 (88<sup>th</sup> Statutory Meeting; Belgium), 2001 (89<sup>th</sup> Statutory Meeting; Norway), and Subsequent Annual Science Conferences
- Del:19 1999 Mid-Term Report by ICES Historian on Book Project and Budget Proposal for 1999/2000
- Del:20/Gen:4 Report of 1999 Meeting of Bureau Working Group on Strategic Planning
- Del:21 Report of 1999 Meeting of Coordinating Group on ICES Advice
- Addendum to Del:21 Options for Changing the ICES Advisory Structure
- Del:22 1999 Mid-Term Report on Status of ICES/GLOBEC Project Office
- Del:23 Progress with GEF Baltic Sea Regional Project
- Del:24 Possible Establishment of Conference Fee for ICES Annual Science Conference
- Del:25 Actions Following 11<sup>th</sup> Dialogue Meeting
- A:5 Report of 1999 Mid-Term Meeting of Consultative Committee

## FI - FINANCE COMMITTEE

Fi:1\*            Agenda for Finance Committee

## PUB - PUBLICATION COMMITTEE

Pub:1            Agenda for Publications Committee  
Pub:2            Review of ICES Publication Activities in 1998/1999  
Pub:3            *ICES Journal of Marine Science*: Editors' Report for 1998/1999  
Pub:4            *ICES Journal of Marine Science*: Academic Press Publisher's Report for 1998/1999  
Pub:5            *ICES Cooperative Research Report* series: Editor's Report for 1998/1999  
Pub:6            *ICES Identification Leaflets for Plankton*: Editor's Report for 1998/1999  
Pub:7            *ICES Identification Leaflets for Diseases and Parasites of Fish and Shellfish*:  
Editor's Report for 1998/1999  
Pub:8            *ICES Techniques in Marine Environmental Sciences*: Editor's Report for 1998/1999  
Pub:9            Report on the Secretariat's Response to Publication Matters Raised by the Committee  
during the 1998 ASC, with Two Annexes

\* For Finance Committee and Delegates only

## CONSULTATIVE COMMITTEE

- A:1            Agenda for Consultative Committee
- A:2            Minutes from ACFM Meeting 26–29 October 1998
- A:3            Minutes from ACFM Meeting 17–20 May 1999
- A:4            Minutes from ACME Meeting 31 May to 5 June 1999
- A:5            Report of Mid-Term Meeting of the Consultative Committee and the ASC  
Programme Planning Group 8-11 June 1999
- A:6            Compendium of Draft Recommendations

## **FISHERIES TECHNOLOGY COMMITTEE**

- B:1 Working Group on Fishing Technology and Fish Behaviour (WGFTFB)
- B:2 Working Group on Fisheries Acoustics Science and Technology (WGFAST)
- B:3 Joint Session of Working Group on Fishing Technology and Fish Behaviour and Working Group on Fisheries Acoustics Science and Technology (WGFTFB and WGFAST)
- B:4 Study Group on Methods for Measuring the Selectivity of Static Gear (SGMMG)

**REFERENCE PAPERS: G:2, H:7**



## OCEANOGRAPHY COMMITTEE

- C:1 ICES/GLOBEC North Atlantic Regional Coordination Group (RCG)
- C:2 Ref. G Working Group on Recruitment Processes (WGRP)
- C:3 Working Group on Phytoplankton Ecology (WGPE)  
Ref. ACME
- C:4 ICES/IOC Working Group on Harmful Algal Bloom Dynamics (WGHABD)  
Ref. ACME
- C:5 Working Group on Seabird Ecology (WGSE)  
Ref. ACME, E
- C:6 Working Group on Zooplankton Ecology (WGZE)  
Ref. ACME
- C:7 Working Group on Marine Data Management (WGMDM)  
Ref. ACME
- C:8 Working Group on Oceanic Hydrography (WGOH)  
Ref. ACME
- C:9 Working Group on Shelf Seas Oceanography (WGSSO)  
Ref. ACME
- C:10 ICES/GLOBEC Working Group on Cod and Climate Change (WGCCC)
- C:11 Steering Group on the Global Ocean Observing System (SGGOOS)
- C:12 Steering Group for the ICES/GLOBEC North Atlantic Regional Office (SGNARO)
- C:13 Study Group on an ICES/IOC Checklist of Phytoplankton (SGPHYT) (no report)  
(cancelled)  
Ref. ACME
- C:14 Workshop on GOOS (WKGOOS)  
Ref. ACFM,  
ACME
- C:15 Workshop on Gadoid Stocks in the North Sea during the 1960s and 1970s, the  
Ref. ACFM, Fourth ICES/GLOBEC Backward-Facing Workshop (WK6070)  
D, G

**REFERENCE PAPERS: E:1, E:2, ACME:3, ACME:4, ACME:5, ACME:6**

## RESOURCE MANAGEMENT COMMITTEE

- D:1                   Comprehensive Fishery Evaluation Working Group (WGCOMP)  
Ref. ACFM
- D:2 Ref.               International Bottom Trawl Survey Working Group (IBTSWG)  
ACFM, G
- D:3                   Planning Group on Surveys on Pelagic Fish in the Norwegian Sea (PGSPFN)  
Ref. ACFM
- D:4                   Study Group to Evaluate the Effects of Multispecies Interactions (SGEEMI)  
Ref. ACFM, G
- D:5                   Study Group on the Management Performance of Fisheries Systems (SGMPFS)
- D:6                   Workshop on the Evaluation of the Plaice Box (WKEPB)
- D:7 Ref. G             International Bottom Trawl Survey in the North Sea, Skagerrak and Kattegat in  
recoded as D:2       1996: Quarter 2, 3 and 4  
Addendum 1
- D:8 Ref. G             International Bottom Trawl Survey in the North Sea, Skagerrak and Kattegat in  
recoded as D:2       1998: Quarter 1  
Addendum 2

**REFERENCE PAPERS: C:15, G:5, G:7, G:8, H:1, H:3, ACFM:23**

## MARINE HABITAT COMMITTEE

- E:1 Benthos Ecology Working Group (BEWG)  
Ref. ACME, C
- E:2 Marine Chemistry Working Group (MCWG)  
Ref. ACME, C
- E:3 Working Group on Biological Effects of Contaminants (WGBEC)  
Ref. ACME
- E:4 Working Group on Environmental Assessment and Monitoring Strategies  
(WGEAMS)  
Ref. ACME
- E:5 Working Group on the Effects of Extraction of Marine Sediments on the Marine  
Ecosystem (WGEXT)  
Ref. ACME
- E:6 Working Group on Marine Mammal Habitats (WGMMHA)  
Ref. ACME
- E:7 Working Group on Marine Sediments in Relation to Pollution (WGMS)  
Ref. ACME
- E:8 Working Group on Statistical Aspects of Environmental Monitoring (WGS AEM)  
Ref. ACME
- E:9 Joint Meeting of the Working Group on Biological Effects of Contaminants and the  
Working Group on Statistical Aspects of Environmental Monitoring (JBSAEM)  
Ref. ACME
- E:10 Study Group on Marine Habitat Mapping (SGMHM) (progress report)
- E:11 Study Group on Marine Biodiversity (SGMB) (progress report)

**REFERENCE PAPERS: C:5, F:2, F:4, G:3, G:6, G:12, ACME:1, ACME:2, ACME:3, ACME:4, ACME:5, ACME:7, ACME:8**

## MARICULTURE COMMITTEE

- F:1 Working Group on the Application of Genetics in Fisheries and Mariculture (WGAGFM)
- F:2 Working Group on Environmental Interactions of Mariculture (WGEIM)  
Ref. ACME, E
- F:3 Working Group on Marine Fish Culture (WGMAFC) (postponed) (progress report)
- F:4 Working Group on Pathology and Diseases of Marine Organisms (WGPDMO)  
Ref. ACFM,  
ACME, E

### REFERENCE PAPERS: ACME:1

## LIVING RESOURCES COMMITTEE

- G:1 Stock Identification Methods Working Group (SIMWG)
- G:2 Working Group on *Crangon* Fisheries and Life History (WGCRAN)  
Ref. ACFM, B
- G:3 Ref. Working Group on Marine Mammal Population Dynamics and Trophic Interactions  
ACFM, (WGMMPD)  
ACME, E
- G:4 Working Group on Cephalopod Fisheries and Life History (WGCEPH)
- G:5 Working Group on Mackerel and Horse Mackerel Egg Surveys (WGMEGS)  
Ref. D
- G:6 Working Group on Beam Trawl Surveys (WGBEAM)  
Ref. ACFM, E
- G:7 Planning Group for Herring Surveys (PGHERS)  
Ref. D
- G:8 Planning Group for Pelagic Acoustics Surveys in ICES Sub-Areas VIII and IX (PGPAS)  
Ref. D
- G:9 Study Group on Redfish Stocks (SGRS)
- G:10 Study Group on Sea Trout (SGSTR)
- G:11 Study Group on Elasmobranch Fishes (SGEF)  
Ref. ACFM
- G:12 Study Group on the Biology and Life History of Crabs (SGCRAB)  
Ref. E
- G:13 Study Group on Life History of *Nephrops* (SGNEPH)  
Ref. ACFM
- G:14 Workshop on Otolith Ageing of North Sea Whiting (WKOAW)
- G:15 Workshop on the Usefulness of Scale Growth Analyses and Other Measures of Condition in Salmon (WKUS)
- G:16 Horse Mackerel Otolith Workshop (WKHMO)

**REFERENCE PAPERS: C:2, C:15, D:2, D:4, ACFM:2, ACFM:5, ACFM:10**

## BALTIC COMMITTEE

- H:1           Baltic International Fish Survey Working Group (WGBIFS)  
Ref. D
- H:2           Baltic Herring Age-Reading Study Group (BHARSG)
- H:3           Study Group on Baltic Acoustic Data (SGBAD)  
Ref. D
- H:4           Study Group on Baltic Cod Age Reading (SGBCAR)
- H:5           Study Group on Multispecies Model Implementation in the Baltic (SGMMIB)  
Ref. ACFM
- H:6           Second Scale-Reading Workshop on Baltic Salmon (SSRWBS)
- H:7           Workshop on Baltic Trawl Experiments (WKBTE)  
Ref. B

**REFERENCE PAPERS: ACFM:22, ACME:3, ACME:4, ACME:5, ACME:8**

## ACFM

- ACFM:1 Working Group on the Assessment of Northern Shelf Demersal Stocks (WGNSDS)
- ACFM:2 Study Group on the Assessment of Other Fish and Shellfish Species (SGASSO)  
Ref. G
- ACFM:3 Arctic Fisheries Working Group (AFWG)
- ACFM:4 Working Group on the Assessment of Southern Shelf Demersal Stocks (WGSSDS)
- ACFM:5 *Pandalus* Assessment Working Group (WGPAND)  
Ref. G
- ACFM:6 Working Group on the Assessment of Mackerel, Horse Mackerel, Sardine and Anchovy (WGMHSA)
- ACFM:7 Joint ICES/NAFO Working Group on Harp and Hooded Seals (WGHARP)
- ACFM:8 Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak (WGNSSK)
- ACFM:9 Study Group on Future Requirements for Fisheries Assessment Data and Software (SGFADS)
- ACFM:10 Study Group on IIIa Herring (SG3AH)  
Ref. G
- ACFM:11 Study Group on Multiannual Assessment Procedures (SGMAP)
- ACFM:12 Herring Assessment Working Group for the Area South of 62°N (HAWG)
- ACFM:13 Working Group on *Nephrops* Stocks (WGNEPH)
- ACFM:14 Working Group on North Atlantic Salmon (WGNAS)
- ACFM:15 Baltic Fisheries Assessment Working Group (WGBFAS)
- ACFM:16 Baltic Salmon and Trout Assessment Working Group (WGBAST)
- ACFM:17 North-Western Working Group (NWWG)
- ACFM:18 Northern Pelagic and Blue Whiting Fisheries Working Group (WGNPBW)
- ACFM:19 Study Group on Effects of Sandeel Fishing (SGESF)
- ACFM:20 Joint ICES NAFO Working Group on Harp and Hooded Seals (WGHARP)
- ACFM:21 Study Group on the Biology and Assessment of Deep-Sea Fisheries Resources (SGDEEP)
- ACFM:22 Study Group on Baltic Herring Maturity (SGBHM)  
Ref. H
- ACFM:23 Study Group on Market Sampling Methodology (SGMSM)  
Ref. D
- ACFM:24 Joint Meeting of Eurostat Working Group "Fishery Statistics". ICES *Ad Hoc* Working Group of National Statistical Correspondents
- ACFM:25 Workshop on Standard Assessment Tools for Working Groups

**REFERENCE PAPERS: C:14, C:15, D:1, D:2, D:3, D:4, F:4, G:2, G:3, G:6, G:11, G:13, H:5**

## ACME

- ACME:1 Working Group on Introductions and Transfers of Marine Organisms (WGITMO)  
Ref. E, F
- ACME:2 ICES/IOC/IMO Study Group on Ballast Water and Sediments (SGBWS)  
Ref. E
- ACME:3 ICES/HELCOM Steering Group on Quality Assurance of Biological Measurements  
in the Baltic Sea (SGQAB)  
Ref. C, E, H
- ACME:4 ICES/HELCOM Steering Group on Quality Assurance of Chemical Measurements  
in the Baltic Sea (SGQAC)  
Ref. C, E, H
- ACME:5 ICES/OSPAR Steering Group on Quality Assurance of Biological Measurements  
Related to Eutrophication Effects (SGQAE)  
Ref. C, E, H
- ACME:6 Second ICES/HELCOM Workshop and Training Course on Phytoplankton  
(WKPHYT)  
Ref. C
- ACME:7 Workshop on Biological Effects of Methods to be applied to detects 'Combined  
Effects' in Marine Ecosystem (WKCEME)  
Ref. E
- ACME:8 ICES/HELCOM Workshop on Baltic Sea Sediments: Conditions and Contaminants  
(WKBSSED)  
Ref. E, H

**REFERENCE PAPERS: C:3, C:4, C:5, C:6, C:7, C:8, C:9, C:13, C:14, E:1, E:2, E:3, E:4, E:5, E:6, E:7, E:8, E:9, F:2, F:4, G:3**



**Plans for Major International Programmes in the North Atlantic Region over the Next Decade:  
Should ICES Be Involved? (Mini)**

Mini:01	H. Dahlin	GOOS – The Global Ocean Observing System: How ICES might participate as well as benefit as a customer of GOOS products
Mini:02	J. Meincke	CLIVAR – The climate variability and predictability study and its implications for understanding fish stock variability
Mini:03	W.S. Wooster	PICES – Major international programs in an ICES analog
Mini:04	H. Enevoldsen and P. Gentien	GEOHAB – Global Ecology and Oceanography of Harmful Algal Blooms
Mini:05	P. Liss	SOLAS – Surface Ocean – Lower Atmosphere Study
Mini:06	J. Steele	GLOBEC and regime shifts - the environmental context on marine fisheries
Mini:07	Withdrawn	



**THEME SESSION ON APPLICATION OF COUPLED BIO-PHYSICAL MODELS IN STUDIES OF ZOOPLANKTON AND ICHTHYOPLANKTON ADVECTION AND DISPERSION: (K)**

- K:01 W. Fennel On the integration of zooplankton dynamics into circulation models
- K:02 Withdrawn
- K:03 B. Ådlandsvik, A.C. Gundersen, K.H. Nedreaas, A. Stene, and O.T. Albert Modelling the advection and diffusion of eggs and larvae of northeast Arctic Greenland halibut
- K:04 P. Petitgas, S. Mahévas, and P. Lazure Stochastic (Markov) modelling of larval survival condition along tracks of particles in a hydrodynamic model
- K:05 N.L. Shackell, K.T. Frank, Brian Petrie, and J. Shore Dispersal of early life stage haddock (*Melanogrammus aeglefinus*) as inferred from the spatial distribution and variability in length-at-age of juveniles
- K:06 B.J. Rothschild Initial conditions for dynamical productivity models
- K:07 L.S. Incze, F.E. Werner, N. Wolff, and F. Dye Direct and indirect effects of wind-induced turbulence on larval cod feeding: results of a 1-D model for Georges Bank
- K:08 D.R. Lynch, C.E. Naimie, F.E. Werner, D. McGillicuddy, J. Manning, R.A. Luettich Jr, B. Blanton, C. Lewis, C. Davis, R.G. Lough, and C. Flagg Real-time modelling on Georges Bank: assimilation strategy and at-sea implementation
- K:09 F.E. Werner, D. McGillicuddy, D.R. Lynch, C.E. Naimie, C.F. Lewis, J. Manning, B.O. Blanton, R.A. Luettich Jr, R.G. Lough, C. Davis, and C. Flagg Real-time modelling of dispersion and transport in a tidal front: results of forecast experiments at sea
- K:10 D. Brickman, K.T. Frank, and N.L. Shackell Early life history modelling of Browns bank haddock
- K:11 Withdrawn
- K:12 E.M. Acha, M. Pájaro, and R.P. Sánchez The reproductive response of clupeoid fishes to different physical scenarios. Three study cases in the Southwest Atlantic  
Poster

## THEME SESSION ON NORDIC SEAS EXCHANGES (L)

- |      |  |  |
|------|--|--|
| L:01 | W.R. Turrell, B. Hansen, S. Østerhus, S. Hughes, K. Ewart, and J. Hamilton                   | Direct observations of inflow to the Nordic Seas through the Faroe Shetland Channel 1994–1997  |
| L:02 | S.R. Dye, G.R. Bigg, and W.R. Turrell  | Variability of flow through the Faroe-Shetland Channel   |
| L:03 | K.A. Mork and L. Asplin  | Temperature and salinity fluctuations in the Norwegian Sea in relation to wind   |
| L:04 | A.P. Pedchenko   | The Irminger current as an element of subpolar cyclonic circulation of the North Atlantic  |
| L:05 | R. Ingvaldsen, L. Asplin, and H. Loeng   | Short time variability of the Atlantic inflow to the Barents Sea   |
| L:06 | S. Jónsson   | The circulation in the northern part of the Denmark Strait and its variability   |
| L:07 | O.B. Titov   | The influence of water exchange in the Barents Sea on the long-term variability of density characteristics in the Kola section                                   |
| L:08 | Withdrawn  |  |
| L:09 | G. Budéus, G. Krause, S. Ronski, and A. Watson   | Deep water warming and exchange in the Greenland Sea during the recent period of marginal winter convective activity   |
| L:10 | I.H. Harms, J.O. Backhaus, and D. Hainbucher   | Modelling the seasonal variability of circulation and hydrography in the Iceland-Faroe-Shetland overflow area  |
| L:11 | M. Prange and R. Gerdes  | Influence of Arctic river runoff on the circulation in the Arctic Ocean, the Nordic Seas, and the North Atlantic   |
| L:12 | F. Kauker, R. Gerdes, and C. Koeberle  | Propagation of temperature and salinity anomalies in the Nordic Seas as derived from a multidecadal OGCM simulation  |
| L:13 | S.-Aa. Malmberg, J. Mortensen, and H. Valdimarsson   | Decadal-scale climate and hydro-biological variations in Icelandic waters in relation to large-scale ocean-atmospheric conditions in the northern North Atlantic |
| L:14 | S.-Aa. Malmberg and J. Désert  | Hydrographic conditions in North Icelandic waters and annual air temperature in Iceland  |
| L:15 | S.-Aa. Malmberg and H. Valdimarsson  | Satellite tracked surface drifters and "Great Salinity Anomalies" in the Subpolar Gyre and the Norwegian Sea   |
| L:16 | J. Mortensen and H. Valdimarsson   | Thermohaline changes and variability in the Irminger Sea   |
| L:17 | J. Verduin, R. Woodgate, E.J. Fahrbach, J. Meincke, S. Østerhus, U. Schauer, and V. Tverberg | Direct measurements of volume transports across Fram Strait and their variability  |
| L:18 | M. Karcher, J. Brauch, B. Fritsch, R. Gerdes, F. Kauker, C. Koeberle, and M. Prange          | Variability in the Nordic Seas exchanges – Model results 1979-1993   |
| L:19 | S. Østerhus, B. Hansen, R. Kristiansen, P. Lundberg, I. Lake, and K. Borenäs                 | The deep overflow through the Faroe Bank Channel   |

- L:20 S. Østerhus and T. Vinje Fresh water and ice export from the Arctic Ocean to the Nordic Seas
- L:21 B. Hansen, S. Østerhus, and K.M.H. Larsen The Iceland-Faroe inflow of Atlantic water to the Nordic Seas
- L:22 Withdrawn
- L:23 Bert Rudels, E. Fahrbach, and J. Meincke The east Greenland Current from Fram Strait to beyond Denmark Strait in 1998: Observations from R/V Polarstern and R/V Valdivia
- L:24 J. Blindheim Wind driven decadal fluctuations in water mass structure in the Nordic Seas
- L:25 C. Koeberle, R. Gerdes, and F. Kauker Mechanisms determining Fram Strait ice export variability
- L:26 V.L. Buehler, C. Clemmesen, and E. Svendsen Growth of Atlantic herring (*Clupea harengus* L.) in response to climatic long term trends (NAO) and to hydrographical features in the Northern North Sea in the period 1990-1997
- L:27 Irene Lake, Peter Lundberg, and Karin Borenäs On the occurrence of an intermediate water mass in the Faroe-Bank Channel
- L:28 J. Brauch, R. Gerdes, and M. Karcher Response experiments with NAO related forcing
- L:29 K.A. Orvik, Ø. Skagseth, P. Jaccard, and M. Mork Atlantic inflow to the Nordic Seas. Volume fluxes and structure from long-term current measurements in the Svinøy section
- L:30 Ø. Skagseth, K.A. Orvik, and M. Mork On the heat flux associated with the Norwegian Atlantic current
- L:31 J.O. Backhaus, E. Nöst Hegseth, and H. Wehde Phyto-convection in the northern North Atlantic
- L:32 J. Piechura and W. Walczowski Exchanges between the Norwegian Sea and the Greenland Sea  
Poster
- L:33 I.H. Harms, J.O. Backhaus, and D. Hainbucher The circulation in the EU-TASC region during the "Calanus years" 1996/1997  
Poster

## THEME SESSION ON 4-D SAMPLING OF THE OCEANS AT MICRO- TO MESOSCALES (M)

- M:01 P.G. Fernandes and A.S. Brierley Using an Autonomous Underwater Vehicle as a platform for mesoscale acoustic sampling in marine environments
- M:02 D.V. Holliday Multi-frequency acoustics: Implications for ecosystems research
- M:03 O.A. Misund, K.A. Orvik, B. Hoddevik, and L. Nøttestad Influence of sea temperature on herring migrations in the Norwegian Sea in April 1997
- M:04 Withdrawn
- M:05 D.M. Checkley Jr, L. Motos, A. Uriarte, M. Santos, M. Trivedi, and S. Iwamoto Continuous, underway sampling of pelagic fish eggs and the environment: The Bay of Biscay anchovy and machine vision research
- M:06 D.S. Cabell, M.C. Benfield, Peter H. Wiebe, S.M. Gallager, T.K. Stanton, and C.H. Green Real time image analysis: instrument to model
- M:07 P.H. Wiebe, T.K. Stanton, Charles H. Greene, M. Benfield and T. Austin BIOMAPER II: an integrated instrument platform for coupled biological and physical measurements in coastal and oceanic regimes
- M:08 J.F. Grassle and S. Glenn Coastal observations: LEO and others

## THEME SESSION ON MANAGEMENT AND MITIGATION FOR HARMFUL ALGAE (N)

- N:01 D.M. Anderson Monitoring and management of harmful algal blooms: A global perspective
- N:02 S.N. Semionova Toxic phytoplankton of the Pregola-Vistula Lagoon estuary system
- N:03 M. Delgado A new parasite of *Alexandrium catenella* associated to the decay of a toxic red tide in Tarragona harbour (Spain)
- N:04 A.-S. Rehnstam-Holm, L. Edebo, J. Haamer, O. Lindahl, B. Hernroth, and F. Norén Diarrhetic shellfish toxins (DST) in mussels along the Swedish west coast
- N:05 E. Dahl and K. Tangen The life with harmful algae in Norway – management
- N:06 J. Haamer, J. Rodhe, and F. Norén Possibilities to change harmful algae community to less harmful with mussel (*Mytilus edulis*) farms
- N:07 K. Tangen and E. Dahl The life with harmful algae in Norway – mitigation
- N:08 S. Svensson, C. André, A.-S. Rehnstam-Holm and J. Hansson Consistent differences in content of diarrhetic shellfish toxins (DST) among three bivalve species, *Mytilus edulis*, *Ostrea edulis* and *Cerastoderma edule* along the Swedish west-coast

## THEME SESSION ON GLOBAL CHANGE ASPECTS (O)

- |                |  |  |
|----------------|--|--|
| O:01           | O.V. Titov   | Long-term cyclic succession of the Barents Sea ecosystem and prognostication of recruitment of commercial fish populations |
| O:02           | Withdrawn  |  |
| O:03           | S.R. Kydersky and A. Zezera  | Multidecadal changes in the Baltic marine ecosystem under hydroclimatological forcing                                      |
| O:04           | S.-A. Malmberg and S. Jónsson  | Icelandic oceanographic research and greenhouse effect   |
| O:05           | C. Schrum, U. Hübner, and F. Janssen   | Modelling the interannual variability of hydro- and thermodynamics in the North Sea and the Baltic Sea                     |
| O:06           | G.L. Hunt, C.L. Baduini, R.D. Brodeur, K.O. Coyle, J.M. Napp, J.D. Schumacher, P.J. Stabeno, D.A. Stockwell, T.E. Withledge, and S.I. Zeeman | Ecosystem responses of the southeastern Bering Sea to abnormal weather patterns in 1997 and 1998                           |
| O:07           | T. Rossby  | Current switching as a mechanism for rapid climate change  |
| O:08           | K.F. Drinkwater, D.B. Mountain, and A. Herman  | Variability in the slope water properties and their effects on the shelf   |
| O:09           | I.M. Yashayaev, J.R.N. Lazier, R.A. Clarke, and R.M. Hendry  | Decadal changes in deep water properties in the northwest North Atlantic   |
| O:10<br>Poster | A. Alvarez, A. Orfila, G. Vizoso, P. Vélez, S. Montserrat, and J. Tintoré  | Forecasting climate variability for better management of marine resources  |
| O:11<br>Poster | A. Lavín, H. Bryden and G. Parilla   | Mechanisms of heat, freshwater, oxygen and nutrients transport at 24.5° N in the subtropical North Atlantic                |



## THEME SESSION ON SUSTAINABILITY CRITERIA (P)

- P:01 M.V. Bravington, C.M. Sustainable recruitment: the bottom line  
O'Brien, and T. Kevin  
Stokes
- P:02 Withdrawn
- P:03 J.P. Hillis Optimisation versus sustainability as objectives in fisheries  
management
- P:04 F. Thurow On herring biomass in the Baltic Sea during the 20th century
- P:05 D.J. Staples and S. Garcia: An international approach to developing and implementing  
sustainability indicators for marine capture fisheries

## THEME SESSION ON THE LANGUAGE OF FISHERIES SCIENCE AND MANAGEMENT (Q)

- |                |  |  |
|----------------|--|--|
| Q:01           | T. Jakobsen                                | Fisheries management in the Barents Sea  |
| Q:02           | L.J. Richards and A. Mentzelopoulos        | Evolving scientific advisory processes from Pacific Canada   |
| Q:03           | R. O'Boyle, J. Rice, and A. Sinclair       | The peer review of science in the management of living aquatic resources                           |
| Q:04           | M. Stocker                                 | An analysis of DFO's Pacific Scientific Advice Review Committee (PSARC) advisory process           |
| Q:05           | T.P. Smith                                 | The Northeast U.S. Regional Stock Assessment Workshop process: communicating with fishery managers |
| Q:06           | J. Sigurjónsson and J. Jakobsson           | Some notes on communicating science to the Icelandic fisheries community                           |
| Q:07           | O. Tougaard                                | An EU manager's perspective on scientific advice for fisheries management                          |
| Q:08<br>Poster | A.M.P. Santos, L. Oliveira, and J. Aurélio | BASBLACK Project: an example of good collaboration between scientists and fishermen                |
| Q:09           | P.D. Bailey and S. Yearley                 | Discourse in fisheries: constructing vessel monitoring systems and overfishing                     |

**THEME SESSION ON THE RELATIONSHIP BETWEEN FISHING CAPACITY, EFFORT  
AND MORTALITY (R)**

- R:01 N. Madsen, L. Foldager, and R. Holst The escape window as a management option to improve the size selectivity of the Baltic Sea cod fishery
- R:02 V. Tschernij and R. Holst Evidence of factors at vessel-level affecting codend selectivity in Baltic cod demersal trawl fishery
- R:03 J.J. Agar and J.G. Sutinen Bioeconomic implications of modifying the species selectivity properties of fishing gears
- R:04 F.A. van Beek and M. Pastoors Evaluating ICES catch forecasts: The relationships between implied and realized fishing mortality
- R:05 A.D. Rijnsdorp, W. Dol, M. Hooyer, and M.A. Pastoors Effects of fishing power and competitive interactions among vessels on the effort allocation on the trip level of the Dutch beam trawl fleet
- R:06 B.A. Roel and G. Maharaj Fishing effort and fishing capacity in the squid jig fishery off South Africa
- R:07 L. Millischer and D. Gascuel An individual-based approach of fishing efficiency and its dependence to the resource spatial heterogeneity
- R:08 P. Petitgas, J.C. Poulard, and A. Biseau Comparison of commercial and scientific cpue data to analyse catchability: megrim in the Celtic Sea
- R:09 J.P. Hillis The importance of financial costs of inflicting fishing mortality
- R:10 P. Marchal, J. Rasmus Nielsen, H. Hovgård, and H. Lassen Time changes in fishing power in Baltic Sea cod fisheries
- R:11 P. Marchal, M. Pastoors, J.-W. de Wilde, S. Pascoe, H. Hovgård, and J. Andersen A comparison of biological and economic indicators to estimate efficiency creeping in the Dutch flatfish fisheries in the North Sea
- R:12 H. Hovgård, P. Marshal, R. Nielsen, M. Hartmann, and H. Lassen Fisheries management through effort regulation: Problems in relating fishing mortality to effort. Exemplified by data from some fisheries in Kattegat and the Baltic Sea
- R:13 Withdrawn
- R:14 Poster R. Ercoli, J. García, A. Aubone, L. Salvini, and A. Izzo Single-grid sorting device (DEJUPA): selectivity evaluation in the Argentine hake (*Merluccius hubbsi*) fishery with regulatory mesh size in the trawl codend
- R:15 Poster A. Aubone, M. Renzi, R. Ercoli, and J. García The optimal selectivity for biological management objectives in hake (*Merluccius hubbis*) and the selectivity of the single-grid sorting device DEJUPA
- R:16 Poster C. Palma, P. Sousa, J. Ramos, T. Martinho, R. Martins, G. Pestana, P. Barros, and M. Afonso-Dias Multivariate analysis of the Portuguese artisanal fishery: trip types and fishing effort

**THEME SESSION ON EVALUATION OF COMPLETE FISHERIES SYSTEMS: ECONOMIC,  
SOCIAL, AND ECOLOGICAL ANALYSES (S)**

- |                |   |   |
|----------------|---|---|
| S:01           | D. Kolody and K. Patterson  | Evaluation of NE Atlantic Mackerel stock assessment models on the basis of simulated long-term management performance   |
| S:02           | S.V. Prusov, B.F. Prischepa,<br>S.S. Krylova, V.P.<br>Antonova, and V.F. Bugaev                   | Fisheries status of stocks and management of Atlantic salmon in Russia in 1998  |
| S:03           | A.V. Zubchenko, A.G.<br>Potutkin, M.A. Svenning,<br>S.M. Kalyuzhin, and F.<br>Økland              | Salmon rivers of the Kola Peninsula. Some specific features of management of Atlantic salmon stock in the Varzuga river in the light of new information on its in-river migrations (in-river behaviour) |
| S:04           | C. Ulrich, B. Le Gallic, and<br>M.R. Dunn   | Bioeconomic modelling of English Channel fisheries and their technical interactions: presentation of the simulation model BECHAMEL (BioEconomic CHAnnel ModEL)  |
| S:05           | A. López, M.B. Santos, G.J.<br>Pierce, A.F. González, A.F.<br>Guerra, X. Valeiras, and J.<br>Wang | Trends in strandings of marine mammals on the Galician coast during the 1990s   |
| S:06           | A.F. Gonzalez   | Strandings and by-catches of marine mammals on the Spanish and Portuguese coasts from 1996 to 1998  |
| S:07           | J. Freire and A. García-Allut   | Integration of fishers ecological knowledge in fisheries biology and management. A proposal for the case of the artisanal coastal fisheries of Galicia (NW Spain)                                       |
| S:08<br>Poster | L. Silva, J. Gil, and I.<br>Sobrino   | Definition of fleet components in the Spanish artisanal fishery of the Gulf of Cadiz – SW Spain, ICES Division IXa  |

## THEME SESSION ON THE BAYESIAN APPROACH TO FISHERIES ANALYSIS (T)

- T:01 C.M. O'Brien An approach to stock-recruitment modelling based upon GLMs, HGLMs and DLMs
- T:02 C.M. O'Brien Time series models in fish recruitment - a journey from classical statistics to dynamic models and Bayesian forecasting
- T:03 T.R. Hammond and C.M. O'Brien An application of the Bayesian approach to stock assessment model uncertainty
- T:04 S. Kuikka Parameter and structural uncertainties in Bayesian decision analysis
- T:05 M. Bernal, D.L. Borchers, S.T. Buckland, A. Lago de Lanzós, and L. Valdés A new procedure for the assignment of ages to eggs of synchronous spawning fish

**THEME SESSION ON M-74 SYNDROME AND SIMILAR REPRODUCTIVE DISTURBANCES IN MARINE ANIMALS (U)**

- U:01 E. Ikonen and A. Soivio Does the feeding area choice of Atlantic salmon (*Salmo salar* L.) affect M74 mortality?
- U:02 J.D. Fitzsimons, S.B. Brown, L. Vandenbyllaardt, and B. Williston Spatial and temporal variation in the dose-response relationship between egg thiamine and EMS in lake trout (*Salvelinus namaycush*)
- U:03 D.C. Honeyfield Laboratory reproduction of early mortality syndrome in lake trout
- U:04 J.L. Zajicek, G. Wright, J. Fitzsimons, S. Brown, D.C. Honeyfield, and M. Holey Species, age, location, and temporal trends in thiaminolytic activity measured in forage fish of Great Lakes salmonids
- U:05 J. Pickova, P.-O. Larsson, and A. Kiessling Some possible explanations to Baltic Cod (*Gadus morhua* L.) reproduction disturbances with special emphasis on lipids – an overview
- U:06 M. Wolgamood, S.V. Marcquenski, S. Brown, J. Fitzsimons, D.E. Tillitt, and D. Honeyfield Incidence of early mortality syndrome in Lake Michigan coho and chinook salmon in 1998
- U:07 E. Ikonen, L. Karlsson, A. Mitans, and S. Hansson Yolk-sac-fry mortality (M74) in Baltic salmon (*Salmo salar* L.): Indications from where and when they feed
- U:08 L. Karlsson, E. Ikonen, S. Hansson, and A. Mitans Yolk-sac-fry mortality (M74) in Baltic Sea salmon (*Salmo salar* L.): Its relation to thiamine levels during migration and at spawning
- U:09 S. Hansson, L. Karlsson, E. Ikonen, O. Christensen, A. Mitans, D. Uzars, E. Petersson, and B. Ragnarsson Yolk-sac-fry mortality (M74) in Baltic salmon (*Salmo salar* L.): Analyses of its relation to the diet
- U:10 S. Brown, G. Wright, M. Villela, J.L. Zajicek, J. Fitzsimons, D.C. Honeyfield, and D.E. Tillitt Thiamine content in the prey of salmonids from the Great Lakes
- U:11 Withdrawn
- U:12 P.J. Vuorinen, J. Paasivirta, M. Keinänen, T. Vartiainen, and R. Parmanne Organochlorines and thiamine in salmon (*Salmo salar*) and forage species, herring (*Clupea harengus*) and sprat (*Sprattus sparattus*), in connection with the M74 syndrome
- U:13 A.-K. Eriksson and B. Sundelin Reproduction disturbances in amphipods  
Poster
- U:14 C. Hill, S. Nellbring, and B.-E. Bengtsson The FiRe and REDFISH projects: Swedish and Nordic research on reproductive disturbances in Baltic fish  
Poster
- U:15 P. Amcoff, L. Asplund, H. Börjeson, M. Hovén, and L. Norrgren Thiamine levels and experimental induction of M74 in Baltic Salmon (*Salmo Salar*)
- U:16 J. Lundström and L. Norrgren Ultrastructural studies of Baltic salmon yolk sac fry developing M74, a comparison to experimental studies.

**THEME SESSION ON THE NORTH EAST ATLANTIC ENVIRONMENT – THE CURRENT STATUS (V)**

- V:01 R. Boelens and J. Portmann The quality status of the Celtic Seas (Region III)
- V:02 M.V. Angel The quality status report of OSPAR Region V - the Wider Atlantic
- V:03 R. Salchow Towards a first ocean-wide assessment
- V:04 F. van der Valk, L. Enserink, and B. Oudshoorn Regional quality status report 1999 – the current status of the Greater North Sea (Region II)
- V:05 A. Rodriguez de León Quality status report for OSPAR Region IV – the Bay of Biscay and Iberian Coast
- V:06 P.C. Reid, S.R. Carlberg, and G. Verreet The mechanics of QSR 2000
- V:07 L. Valdes Biodiversity and human impact in the OSPAR region IV marine ecosystem (Strait of Gibraltar to Brest): Logistic and results
- V:08 J. Klungøy and P.-E. Iversen Quality status report (QSR) for OSPAR Region I – the Arctic
- V:09 A. Jorge de Silva The physical environment in the Iberian-Biscay area (OSPAR Region IV)  
Poster
- V:10 S. Beddig and J. Sündermann Synthesis and a new conception of North Sea Research (SYCON)  
Poster

## THEME SESSION ON HEALTH AND WELFARE OF CULTIVATED AQUATIC ANIMALS (W)

- W:01 M.-L. Bégout Anras and J. P. Lagardère Effects of stocking densities on swimming characteristics of rainbow trout: applying acoustic telemetry to the culture environment
- W:02 J.D. Domagala and R. Bartel Summer fry-smolt survival of salmon (*Salmo salar*) stocked into River Gowienica
- W:03 P. Martínez, V. Bettencourt, Á. Guerra, and N. Molschaniwskyj How temperature influences muscle and cuttlebone growth under food-stress conditions on juvenile *Sepia elliptica* (Mollusca: Cephalopoda)
- W:04 G. Baeverfjord, T. Åsgård, I. Lein, and M. Rye Egg incubation temperature is a critical factor for normal embryonic development in Atlantic salmon
- W:05 G. Claireaux Metabolic scope: An indicator of welfare in fish?
- W:06 C. Mercier, G. Claireaux, J. Aubin, and C. Lefrançois Cardiac disorders in adult brown trout (*Salmo trutta*) raised in seawater in Brittany (France)
- W:07 C. Lefrançois, C. Mercier, and G. Claireaux Effect of rearing density of metabolic expenditure of farmed rainbow trout (*Oncorhynchus mykiss*)



**THEME SESSION ON SIZE-BASED PROCESSES IN THE SEA (POSTER SESSION) (X)**

- X:01      Withdrawn  
Poster
- X:02      A.V. Dolgov and Yu. A.      Predator size-prey size relationships between cod and its preys in the  
Poster      Kovalev      Barents Sea
- X:03      M. Hjertenes Flyum, Ø.      Length dependent swimming cost and predation risk in herring larvae  
Poster      Fiksen, and A. Folkvord      (*Clupea harengus* L.)
- X:04      S. Jung and E. D. Houde      Diversity, abundance, and biomass size spectra of pelagic fish in  
Poster      Chesapeake Bay
- X:05      Withdrawn  
Poster
- X:06      A.D. Rijnsdorp      The influence of size-selective mortality on growth back-calculation of  
Poster      hard calcified structures such as otoliths
- X:07      C. Michel and M. Gosselin      Significance of phytoplankton size structure for pelago-benthic  
Poster      coupling: contrasted results from the North Water Polynya, High  
Arctic
- X:08      J. Pope      Why size spectra are useful  
Poster

**THEME SESSION ON COD AND HADDOCK RECRUITMENT PROCESSES – INTEGRATING STOCK AND ENVIRONMENTAL EFFECTS (Y)**

- |      |   |  |
|------|---|--|
| Y:01 | P.J. Wright, F.M. Kennedy, I.M. Gibb, J.R.G. Hislop, and W.S. MacDonald   | The significance of age-related differences in spawning time to reproductive success in North Sea haddock  |
| Y:02 | B. Scott, G. Marteinsdottir, P. Wright, and O. Kjesbu   | Sensitivity of potential recruitment to stock structure in the presence of temporally varying survival   |
| Y:03 | F. Thurow   | On the biomass of cod in the Baltic Sea during the 20th century  |
| Y:04 | H.-H. Hinrichsen, U. Böttcher, R. Oeberst, R. Voss, and A. Lehmann  | Drift patterns of cod early life stages in the Baltic: exchange between the western and eastern stock, a physical modelling approach                             |
| Y:05 | T. Baranova and I. Shics  | Reproduction of Eastern Baltic cod ( <i>Gadus morhua callarias</i> L.) and formation of annual growth zones on the otoliths in 1990s                             |
| Y:06 | M. Kvalsund and C.T. Marshall   | Condition and size composition on the simulated relationship between spawner biomass and total egg production for Northeast Arctic cod ( <i>Gadus morhua</i> L.) |
| Y:07 | C. Tara Marshall, O.S. Kjesbu, A. Thorsen, and P. Solemdal  | Spawner quality effects on two measures of reproductive potential: have we been counting our eggs before they've hatched?  |
| Y:08 | R. Oeberst  | Exchanges between the western and eastern Baltic cod stocks using the length distributions of trawl surveys  |
| Y:09 | Withdrawn   |  |
| Y:10 | B. MacKenzie, M.R. Heath, B. Ardlansvik, J. Backhaus, B. Bogstad, A. Gallego, B. Godo, A. Gudmundsdottir, I. Harms, J. Heilemann, S. Jonsson, O. Kjesbu, E. MacKenzie, G. Marteinsdottir, E. Nielsen, B. Scott, G. Strugnell, G. Stefansson, A. Thorsen, A. Visser, and P. Wright | Overview of the EU FAIR Project 'STEREO' (Stock Effects on Recruitment Relationships)  |
| Y:11 | M.R. Heath, A. Gallego, J. R.G. Hislop, C. Needle, B. Scott, and P.J. Wright  | The importance of the late pelagic and demersal settlement phases for recruitment dynamics in North Sea haddock  |
| Y:12 | V.L. Tretyak  | On possibility of the use of the Ricker's model "stock-recruitment" for estimation of recruitment of North-Eastern Arctic cod population                         |
| Y:13 | A. Gallego, M.R. Heath, P. Wright, and G. Marteinsdóttir  | An empirical model of growth in the pelagic early life history stages of North Sea haddock   |
| Y:14 | A. Gallego and M.R. Heath   | Short-term changes in the vertical distribution of haddock larvae as a function of environmental factors   |

- Y:15 N.V. Mukhina The use of Russian ichthyoplankton survey data in the forecasting of recruitment to Arcto-Norwegian cod stock
- Y:16 B.MacKenzie, M. Plikshs, F. Köster, and H.-H. Hinrichsen Does spatial match-mismatch of spawning and environmental conditions affect recruitment in Baltic cod?
- Y:17 B.MacKenzie, R.A. Myers, and K. Bowen Stock-recruitment meta-analyses reveal differences in fish stock productivity between marine ecosystems
- Y:18 R.A. Myers, B.R. MacKenzie, and K. Bowen Empirical models of carrying capacity, maximum reproductive rate, and species interactions using a meta-analytic approach
- Y:19 H.-H. Eikeseth and O. Nakken Maturation in northeast Arctic haddock
- Y:20 K. Helle, B. Bogstad, C.T. Marshall, K. Michalsen, G. Ottosen, and M. Pennington An evaluation of recruitment indices for northeast arctic cod (*Gadus morhua* L.)
- Y:21 Øyvind Fiksen and Arild Folkvord Maternal effects and the benefit of yolk supply in cod larvae in different environments – a simulation model
- Y:22 G. Allain, P. Petitgas, and P. Lazure Environmental and stock effects on the recruitment of anchovy in the Bay of Biscay: a multivariate analysis
- Y:23 L. Tybjerg and J. Tomkiewicz Histological evaluation of gonadal and sexual maturity in Baltic cod (*Gadus morhua*): preliminary results
- Y:24 Withdrawn
- Y:25 J. Tomkiewicz and F.W. Köster Maturation processes and spawning time of cod in the Bornholm Basin of the Baltic Sea: preliminary results
- Y:26 F.W. Köster, H.-H. Hinrichsen, D. Schnack, M.A. St. John, B. MacKenzie, J. Tomkiewicz, and M. Plikshs Stock-recruitment relationships of Baltic cod incorporating environmental variability and spatial heterogeneity
- Y:27 G. Kraus, A. Müller, K. Trella, and F.W. Köster Variability in fecundity of Baltic cod
- Y:28 G.A. Begg and G. Marteinsdóttir Historical spawning distribution and origin of pelagic juvenile cod (*Gadus morhua*) in Icelandic waters
- Y:29 E.I. Karasiova On the possible relation of the cod peak spawning time with the environmental conditions in the Gdansk Deep of the Baltic Sea
- Y:30 K. Thorisson and T.H. Asgeirsson Short term changes in a cod larval patch west of Iceland 1997
- Y:31 M. Plikshs, H.-H. Hinrichsen, F.W. Köster, J. Tomkiewicz, and V. Berzins Baltic cod reproduction in the Gotland Basin: annual variability and possible causes
- Y:32 R. Oeberst and M. Bleil Relations between the year class strength of the western Baltic cod and inflow events in the autumn
- Y:33 Eric P.M. Grist Cod and haddock spatio-temporal dynamics within the multi-species fishery

- Y:34 G. Marteinsdóttir and H. Björnsson Time and duration of spawning among cod in Icelandic waters (*Gadus morhua*)
- Y:35 R.P. Sánchez and J.L. Butler The effect of vital rates on population growth. The application of a  
Poster stage-specific matrix model to the SW Atlantic anchovy

**THEME SESSION ON ECOSYSTEM MANAGEMENT – CAN WE MAKE IT OPERATIONAL? (Z)**

- Z:01 D.E. Duplisea and M.V. Bravington Harvesting a size-structured ecosystem
- Z:02 C.W. Fowler and R.J.M. Crawford Sustainable fisheries management for ecosystems – with examples for seasonal allocation
- Z:03 M. Sinclair, R. O'Boyle, L. Burke, and S. D'Entrement Incorporating ecosystem objectives within fisheries management plans in the maritime region of Atlantic Canada
- Z:04 S. Hansson Ecological aspects on fisheries management
- Z:05 C. Ulrich, D. Gascuel, and M. Dunn Analysis of the impact of fishing activities on exploited marine resources at the ecosystem scale: the case of English Channel fisheries
- Z:06 T. Gytre Operational data acquisition and internet presentation of marine environmental data from ships of opportunity and fixed monitoring stations
- Z:07 J. Rice Ecosystem management: How complex must ecosystem objectives be?
- Z:08 F. Ribeiro, S. Ramos, and P. Santos Evaluation of the amount of undersized sand sole (*Solea lascaris*) (Risso, 1810) caught in the Portuguese fisheries
- Z:09 E.I. Naumenko Trophic chain length of the zooplankton community in the Vistula Lagoon and environment factors impact
- Z:10 R.L.P. Lanfers Basic elements for the implementation of an ecosystem approach in marine management
- Z:11 K. Sherman and A.M. Duda A strategic approach to marine ecosystems management

**THEME SESSION ON MICROPROCESSORS AND THINGS THAT SWIM IN THE OCEAN:  
SMART TAGS IN THE STUDY OF MARINE LIFE: (AA)**

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| AA:01 | J.D. Metcalfe, E. Hunter,<br>B.H. Holford, and G.P.<br>Arnold  | The application of electronic data storage tags to spatial dynamics of fish populations  |
| AA:02 | P. Steingrund  | Studies of vertical migration of wild Faroe Plateau cod using data storage tags  |
| AA:03 | M. Holm, G.P. Arnold, and<br>K.Ø. Midling  | Capture and handling of fish for electronic tagging – a review   |
| AA:04 | Withdrawn  |  |
| AA:05 | L. Karlsson, E. Ikonen, H.<br>Westerberg, and J.<br>Sturlaugsson   | Data storage tag study of salmon ( <i>Salmo salar</i> ) migration in the Baltic: The spawning migration of wild and hatchery-reared fish and a comparison of tagging methods |
| AA:06 | H. Westerberg, J.<br>Sturlaugsson, E. Ikonen, and<br>L. Karlsson   | Data storage tag study of salmon ( <i>Salmo salar</i> ) migration in the Baltic: Behaviour and the migration route as reconstructed from SST data                            |
| AA:07 | H. Westerberg, P. Eveson,<br>D. Welch, L. Karlsson, and<br>E. Ikonen   | Data storage tag study of salmon ( <i>Salmo salar</i> ) migration in the Baltic: The performance of tags   |
| AA:08 | K.D. Friedland, R.V.<br>Walker, N.D. Davies, K.W.<br>Myers, G.W. Boehlert, S<br>Urawa, and Y. Ueno   | Inference on open-ocean orientation of chum salmon during their return migration based on data from data storage tags  |
| AA:09 | Robert V. Walker, K.W.<br>Myers, N.D. Davis, K.Y<br>Aydin, K.D. Friedland, H.<br>R. Carlson, G.W. Boehlert,<br>S. Urawa, Y. Ueno, and G.<br>Anma | Ambient temperatures and diurnal behavior as indicated by data storage tags on salmonids in the North Pacific  |
| AA:10 | Withdrawn  |  |
| AA:11 | Christopher J. Bridger,<br>Richard K Booth, R. Scott<br>McKinley, and David A.<br>Scruton, and R. Lindstrom                                      | Monitoring fish behaviour with a remote, bi-modal (acoustic/radio) biotelemetry system   |
| AA:12 | P. Tyack, M. Johnson, D.<br>Nowacek  | A digital acoustic recording tag for measuring the response of marine mammals to sound   |
| AA:13 | S. Panigada, M. Zanardelli,<br>S. Canese, and M. Jahoda  | Fin whales tracked with Velocity-Time-Depth-Recorder radio tags in the western Mediterranean Sea   |
| AA:14 | E. González-Gurriarán and<br>C. Bernárdez  | Migratory patterns in the spider crab ( <i>Maja squinado</i> ) using telemetry and electronic tags   |
| AA:15 | D.G. Reddin, J.B. Dempson,<br>P. Downton, C.C. Mullins,<br>and K.D. Friedland  | Migration of Atlantic salmon kelts ( <i>Salmo salar</i> L.) in relation to sea water temperature in Newfoundland, 1998   |

## Poster Session

- Post:01 R.P. Briggs, M.J. Armstrong, M. Dickey-Collas, M. Allen, J. Whitmore, and N. McQuaid Estimation of *Nephrops* biomass in the Irish Sea from annual larval production
- Post:02 I.P. Afonso-Dias, C. Reis, and J.P. Andrade Geographic variation of *S. lascaris* in Southwest Iberian waters based on meristic counts and morphometric measurements
- Post:03 G. Ejdung, L. Byrén, R. Elmgren, and H. Cederwall Large and small scale studies of oxygen deficiency on Baltic benthos
- Post:04 P. Lucio Horse mackerel (*Trachurus trachurus* L. 1758) feeding in the Southern Bay Biscay: seasonal and length variations
- Post:05 P. Lucio, I. Quincoces, and M. Santurtún Otolith structure of the Horse mackerel, *Trachurus trachurus* L. 1785, determined by scanning electron microscopy
- Post:06 M. Santurtún, P. Lucio, and I. Quincoces Comparative image techniques for ageing otoliths of hake *Merluccius merluccius* (L. 1758)
- Post:07 I. Quincoces, M. Santurtún, and P. Lucio Photographical study using scanning electron microscopy techniques of illicia of White Anglerfish, *Lophius piscatorius* (L. 1758)
- Post:08 Iñaki Quincoces, Paulino Lucio, and Marina Santurtún The growth structure in Black Anglerfish, *Lophius budegassa* (Spinola 1807) illicia: a photographic approximation
- Post:09 V. Bettencourt and A. Guerra Growth increments and biomineralization process in cephalopod statoliths
- Post:10 M.E. Cunha, P. Lopes and A. dos Santos Sardine (*Sardina pilchardus*) daily egg production in ICES Division IXa (Lat. 41° 50' , 36° 00'N) January 1999 - Methods and estimation