

PART D

Miscellaneous

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AGENDA I. SCIENTIFIC COUNCIL MEETING, 5-19 JUNE 1996

- I. Opening (Chairman: W. R. Bowering)
 1. Appointment of rapporteur
 2. Adoption of agenda
 3. Attendance of observers
 4. Plan of work
 5. Report of proxy votes (by Executive Secretary)

- II. Fisheries and Environment (STACFEN Chairman: M. Stein)
 1. Chairman's introduction; report of activities
 2. Invited lecture (Dr. Mojib Latif, Max-Planck-Institut für Meteorologie, Hamburg, title: "A mechanism for decadal climate variability".)
 3. Review of Environmental Conditions:
 - a) Marine Environmental Data Service (MEDS) Report for 1995
 - b) Review of environmental studies in 1995
 - c) Overview of environmental conditions in 1995
 4. Formulation of recommendations based on environmental conditions in 1995
 5. National representatives
 6. Russian/German data evaluation (ICNAF/NAFO data, status report)
 7. Other matters

- III. Fishery Science (STACFIS Chairman: W. B. Brodie)
 1. Opening
 2. General review
 - a) General review of catches and fishery activity
 3. Stock assessments
 - a) Stocks within or partly within the Regulatory Area, as requested by the Fisheries Commission with the concurrence of the Coastal State (Annex 1)(Shrimp in Div. 3M will be undertaken later in the year):
 - Cod (Div. 3NO; Div. 3M)
 - Redfish (Div. 3LN; Div. 3M)
 - American plaice (Div. 3LNO; Div. 3M)
 - Witch flounder (Div. 3NO)
 - Yellowtail flounder (Div. 3LNO)
 - Capelin (Div. 3NO)
 - Squid (Subareas 3 and 4)
 - Greenland halibut (Subareas 2 and 3)
 - b) Stocks within the 200-mile fishery zone in Subareas 2, 3 and 4, as requested by Canada (Annex 2):
 - Roundnose grenadier (Subareas 2 and 3)
 - Silver hake (Div. 4VWX)
 - **[Note also Annex 2, Item 3 concerning cod in Div. 2J+3KL]**
 - c) Stocks within the 200-mile fishery zone in Subarea 1 and at East Greenland as requested by Denmark on behalf of Greenland (Annex 3)(Northern shrimp in Denmark Strait and off East Greenland will be undertaken during a special meeting in November 1996.):

- Redfish (Subarea 1) (by species, if possible)
 - Other finfish and invertebrates (Subarea 1)
- d) Stocks overlapping the fishery zones in Subareas 0 and 1, as requested by Canada and by Denmark on behalf of Greenland (Annexes 2 and 3) (Northern shrimp in Subareas 0 and 1 will be undertaken during a special meeting in November 1996):
- Greenland halibut (Subareas 0 and 1)
 - Roundnose grenadier (Subareas 0 and 1)
4. Ageing techniques and validation studies
- a) Silver hake ageing methodology report
 - b) Report on the ICES redfish ageing workshop, held in December 1995
 - c) Update on joint NAFO/ICES workshop on ageing of Greenland halibut, to be held in Reykjavik, Iceland, 26-29 November 1996 (see also Annex 3)
5. Other matters
- a) Report on Comparative Trawl Surveys
- IV. Research Coordination (STACREC Chairman: D. Power)
1. Opening
2. Fishery statistics
- a) Progress report on Secretariat activities in 1995/96
 - i) Acquisition of STATLANT 21A and 21B reports for recent years
 - ii) Acquisition of statistical information from other NAFO Standing Committees
 - iii) Publication of statistical information
 - iv) Considerations on non-availability of data
 - v) Considerations on documentation of catches used in the assessment process
 - b) Gear codes
 - c) Catches not specified by species (e.g. flounder and grenadier)
 - d) Recording of catch statistics for *Pandalus borealis*
 - e) Catch statistics for seals
 - f) Preparation for the CWP 17th Session, March 1997
3. Biological sampling
- a) Report on activities in 1995/96
 - b) Report by National Representatives on commercial sampling conducted
 - c) Report on data availability for stock assessments (by Designated Experts)
4. Biological surveys
- a) Review of survey activities in 1995 (by National Representatives and Designated Experts)
 - b) Surveys planned for 1996 and early-1997
 - c) Review of stratification schemes
 - d) Update on coordination of surveys

5. Non-traditional fishery resources in the NAFO Area
 - a) Statistics and sampling
 - b) Distribution data from surveys
 6. Review of SCR and SCS Documents
 7. Other matters
 - a) Tagging activities
 - b) Scientific data collection by the new Observer Program
 - c) Other business
 - i) List of fishing vessels
 - ii) Conversion factors
- V. Publications (STACPUB Chairman: H. P. Cornus)
1. Opening
 2. Review of STACPUB membership
 3. Review of scientific publications since June 1995
 4. Production costs and revenues for Scientific Council publications
 - a) Publication costs and revenues
 5. Promotion and distribution of scientific publications
 - a) Invitational papers
 - b) Distribution of Abstracts from Research Documents
 6. Editorial matters regarding scientific publications
 - a) Review of Editorial Board
 - b) Progress report of publication on Shrimp in Div. 3M
 - c) Progress report of publication on West Greenland cod
 - d) Progress review of Journal issue of 1993 Symposium
 - e) Considerations for publishing Symposium proceedings
 - f) Progress review of publication of 1994 Special Session
 - g) Progress review of publication of 1995 Symposium
 7. Papers for possible publication
 - a) Procedures for STACPUB review
 - b) Review of proposals resulting from the 1995 meetings
 - c) Review of contributions to the 1996 meeting
 8. Other matters
- VI. Arrangements for Special Sessions
1. Progress report on Workshop in 1996 (Convenor: H. Lassen)
 2. Progress report on the Special Session in 1997 (Convenor: H. Lassen)
 3. Proposals for Special Session in 1998.
- VII. Future Scientific Council Meetings, 1996 and 1997
1. Annual Meeting in September 1996 (including assessment of Div. 3M shrimp)

2. Special Meeting in November 1996 (assessment of Northern Shrimp in Subareas 0+1 and off East Greenland)
 3. Scientific Council Meeting, June 1997
- VIII. Nomination and Election of Officers
1. Chairmen of STACFIS and STACFEN
- IX. Management Advice and Responses to Special Requests
1. Fisheries Commission (Annex 1)
 - a) Advice for TACs for 1997, and other management measures
 - b) Ongoing requests for management advice on fish and invertebrate stocks as information becomes available
 - i) Stock separation of cod in Div. 2J+3KL and proportion of biomass of the cod stock in Regulatory Area
 - ii) Interrelation between seals and commercial fish stocks
 - iii) Coordinated research on Greenland halibut
 - iv) TAC for Greenland halibut in Subarea 2 + Div. 3K and Div. 3LMNO
 - v) Further measures to protect juvenile fish of regulated species, e.g. area/seasonal closures
 - vi) Optimum minimum fish sizes
 2. Coastal States (Annexes 2 and 3)
 - a) Advice for TACs for 1997, and other management measures
 - b) Special requests for management advice on fish and invertebrate stocks (note Annex 3, item 3)
- X. Other Matters
- a) Proposal for planning and control of research vessels
 - b) Symposium on Fish Otolith Research
 - c) Review of STACPUB membership
- XI. Adoption of Reports and Recommendations
1. STACFIS
 2. STACFEN
 3. STACREC
 4. STACPUB
- XII. Adoption of Scientific Council Report
- XIII. Adjournment

**ANNEX 1. FISHERIES COMMISSION'S REQUEST FOR SCIENTIFIC ADVICE ON
MANAGEMENT IN 1997 OF CERTAIN STOCKS IN SUBAREAS 3 AND 4**

1. The Fisheries Commission with the concurrence of the Coastal State as regards the stocks below which occur within its jurisdiction, requests that the Scientific Council, at a meeting in advance of the 1996 Annual Meeting, provide advice on the scientific basis for the management of the following fish and invertebrate stocks or groups of stocks in 1997:

Cod (Div. 3NO; Div. 3M)
 Redfish (Div. 3LN; Div. 3M)
 American plaice (Div. 3LNO; Div. 3M)
 Witch flounder (Div. 3NO)
 Yellowtail flounder (Div. 3LNO)
 Capelin (Div. 3NO)
 Squid (Subareas 3 and 4)
 Shrimp (Div. 3M)
 Greenland halibut (Subareas 2 and 3)

2. The Commission and the Coastal State request the Scientific Council to consider the following options in assessing and projecting future stock levels for those stocks listed above:

- a) For those stocks subject to analytical dynamic-pool type assessments, the status of the stock should be reviewed and management options evaluated in terms of their implications for fishable stock size in both the short and long term. As general reference points the implications of fishing at $F_{0.1}$, F_{1995} and F_{max} in 1997 and subsequent years should be evaluated. The present stock size and spawning stock size should be described in relation to those observed historically and those expected in the longer term under this range of options.

Opinions of the Scientific council should be expressed in regard to stock size, spawning stock sizes, recruitment prospects, catch rates and TACs implied by these management strategies for 1997 and the long term. Values of F corresponding to the reference points should be given and their accuracy assessed.

- b) For those stocks subject to general production-type assessments, the time series of data should be updated, the status of the stock should be reviewed and management options evaluated in the way described above to the extent possible. In this case, the general reference points should be the level of fishing effort or fishing mortality (F) which is calculated to be required to take the MSY catch in the long term and two-thirds of that effort level.
- c) For those resources of which only general biological and/or catch data are available, no standard criteria on which to base advice can be established. The evidence of stock status should, however, be weighed against a strategy of optimum yield management and maintenance of stock biomass at levels of about two-thirds of the virgin stock.
- d) Spawning stock biomass levels that might be considered necessary for maintenance of sustained recruitment should be recommended for each stock. In those cases where present spawning stock size is a matter of scientific concern in relation to the continuing productive potential of the stock, management options should be offered that specifically respond to such concerns.

- e) Presentation of the result should include the following:

- i) for stocks for which analytical dynamic-pool type assessments are possible:
- a graph of yield and fishing mortality for at least the past 10 years.
 - a graph of spawning stock biomass and recruitment levels for at least the past 10 years.
 - a graph of catch options for the year 1997 over a range of fishing mortality rates (F) at least from $F_{0.1}$ to F_{max} .

- a graph showing spawning stock biomass at 1.1.1998 corresponding to each catch option.
 - graphs showing the yield-per-recruit and spawning stock per-recruit values for a range of fishing mortality.
- ii) for stocks for which advice is based on general production models, the relevant graph of production on fishing mortality rate or fishing effort.

In all cases the three reference points, actual F , F_{max} and $F_{0.1}$ should be shown.

3. The Fisheries Commission with the concurrence of the Coastal State requests that the Scientific Council continue to provide information, if available, on the stock separation in Div. 2J+3KL and the proportion of the biomass of the cod stock in Div. 3L in the Regulatory Area and a projection if possible of the proportion likely to be available in the Regulatory Area in future years. Information is also requested on the age composition of that portion of the stock occurring in the Regulatory Area.
4. Noting that the Scientific Council held a Symposium on Seals in the Ecosystem, the Fisheries Commission requests that studies are continued on the impact of marine mammals on fish populations, together with recommendations on research needed to quantify further interactions.
5. Noting the Scientific Council's recommendations for coordinated research on Greenland halibut in particular the implementation of a large-scale research survey, the Fisheries Commission and the two Coastal States emphasize the urgency of acquiring basic information to study on the distribution and stock status. The Scientific Council is requested to pursue its coordinated efforts and member countries are urged to commit the necessary resources to the research.
6. It is noted that the Scientific Council has provided some advice on the 3 following questions but the Council is requested to keep these questions under review:

a) TAC's for Greenland halibut in SA 2+ Div. 3K and Div. 3LMNO

The Fisheries Commission has subdivided the 1995 TAC for Greenland halibut in SA 2+3 into two TAC's for SA 2 + Div. 3K and Div. 3LMNO. In responding to the Commission's request for advice for the management of Greenland halibut in SA 2+3 for 1996, the Scientific Council should recommend an overall TAC for SA 2+3 and provide advice on dividing the overall TAC into two TAC's for SA 2 + Div. 3K and for Div. 3LMNO.

b) Further measures to protect juvenile fish of regulated species, e.g. area/seasonal closures

Taking into account available information on the geographical and seasonal distribution of regulated species of various sizes, identify, where practical and sufficient information is available, seasonal and area fishery closures which would reduce the proportion of juveniles of regulated species in commercial catches.

c) Optimal minimum fish sizes

Taking into account the implications on conservation of the stocks and long-term harvest of alternative sizes at first entry into the fishery, recommend optimal (in terms of maximum yield per recruit) minimum fish sizes for regulated species in the NRA, and advise on the corresponding minimum mesh sizes for trawls and other gear.

**ANNEX 2. CANADIAN REQUEST FOR SCIENTIFIC ADVICE ON MANAGEMENT IN 1997
OF CERTAIN STOCKS IN SUBAREAS 0 TO 4**

1. Canada requests that the Scientific Council, at its meeting in advance of the 1996 Annual Meeting, provide advice on the scientific basis for the management of the following fish stocks in 1997:

Roundnose grenadier (Subareas 2 and 3)
Silver hake (Div. 4V, 4W and 4X)

It is also suggested that, subject to the concurrence of Denmark (Greenland), the Scientific Council, prior to the 1996 Annual Meeting of NAFO, provide advice on the scientific basis for management of the following fish or invertebrate stocks or groups of stocks in 1997:

Greenland halibut (Subareas 0 and 1)
Roundnose grenadier (Subareas 0 and 1)
Shrimp (Subareas 0 and 1)

The Scientific Council has noted previously there was no biological basis for making two separate assessments for the Greenland halibut throughout Subareas 0-3, but has advised that separate TACs be maintained for different areas of the distribution of Greenland halibut. The Council is asked therefore, subject to the concurrence of Denmark (Greenland) as regards Subarea 1, to provide an overall assessment of status and trends in the total stock throughout its range and comment on its management in Subareas 0+1 for 1997. In particular, the Council is asked to advise on appropriate TAC levels separately for SA 0+1, for SA 2 + Division 3K and for Divisions 3LMNO, and to make recommendations on the distribution of fishing effort within each of these three geographic areas. The Council is asked also to provide information on present harvest patterns in terms of yield per recruit and on distributional variation of the resource in recent years.

With respect to shrimp, it is recognized that the Council may, at its discretion, delay providing advice until later in the year, taking into account data availability, predictive capability, and the logistics of additional meetings.

2. Canada requests the Scientific Council to consider the following options in assessing and projecting future stock levels for those stocks listed above:
- a) For those stocks subject to analytical dynamic-pool type assessments, the status of the stock should be reviewed and implications of fishing at $F_{0.1}$ in 1997 and subsequent years should be evaluated. The present stock size should be described in relation to those observed historically and those to be expected at the $F_{0.1}$ level in both the short and long term. In those cases where present spawning stock size is a matter of scientific concern in relation to the continuing productive potential of the stock, management options should be considered to rebuild the spawning stock. All results should be expressed in terms of stock sizes, catch rates and TACs implied for 1997 and the long term.
 - b) For those stocks subject to general production-type assessments, the status of the stock should be reviewed and management options evaluated in the way described above to the extent possible. In this case, the general reference point should be the level of fishing effort (F) which is two-thirds that calculated to be required to take the MSY catch in the long term.
 - c) For those resources on which only general biological and/or catch data are available, no standard criteria on which to base advice can be established. The evidence on stock status should, however, be weighed against a strategy of optimum yield management and maintenance of stock biomass at levels of about two-thirds that of the virgin stock.
3. The Scientific Council is requested to review the status of the cod stock in Divisions 2J+3KL and to provide estimates of the current size of the total and spawning biomass, together with a description of recent trends. The Council is asked further to provide estimates of the immediate and long-term outlook for the abundance of this stock, including both total and spawning biomass.

William A. Rowat
Deputy Minister
Department of Fisheries and Oceans
Ottawa, Canada

**ANNEX 3. DENMARK (GREENLAND) REQUEST FOR SCIENTIFIC ADVICE ON
MANAGEMENT OF CERTAIN STOCKS IN 1997**

1. Denmark, on behalf of Greenland, requests the Scientific Council of NAFO in advance of the 1996 Annual Meeting, provide advice on the scientific basis for management of the following stocks in Subarea 1 in 1997 and as many years forward as data allow:

- i) Redfish (by species, if possible)
- ii) Any other stock of invertebrates and finfish of commercial interest, for which data allow a status report

It is also suggested that, subject to the concurrence of Canada, advice be given for the following stocks overlapping Subareas 0 and 1:

- i) Greenland halibut
- ii) Roundnose grenadier

2. In the analyses on which management advice will be based, the following should be included:

In its 1993 report, the Scientific Council has noted that the offshore component of **Greenland halibut**, in Subareas 0 and 1, was distributed equally between these Subareas. Further in its 1995 report, the Scientific Council noted that the biomass of the inshore component in Subarea 1 was unknown. The Council is therefore asked to provide further information on following topics.

- a) Allocation of TACs to appropriate Subareas (Subareas 0 and 1).
- b) Allocation of TAC for Subarea 1 inshore areas.

3. Following bilateral consultations Canada and Denmark on behalf of Greenland, requests the Scientific Council of NAFO to provide advice on Greenland halibut in Subareas 0 and 1. Given that the assessment of the stock has been impeded by inconsistencies in age readings both within institutes and among institutes involved in the fishery, the Council is asked to:

establish an exchange program on Greenland halibut otoliths in order to calibrate the age reading methods between readers from the different countries involved in the fishery.

The Greenland halibut stock in Subareas 0 and 1 is at present being exploited by a number of different gears (trawl, long-line and gill net). The Council is asked to provide any new information on:

the impact on the stock composition of different exploitation patterns in terms of yield per recruit, long term sustainable yield and spawning stock biomass.

4. Denmark, on behalf of Greenland, further requests that the Scientific Council of NAFO before December 1996, provide advice on the scientific basis for management of the Northern shrimp (*Pandalus borealis*) in Subareas 0 and 1 in 1997 and as many year forward as data allow.

Further, in cooperation with ICES, the Scientific Council is requested to advise on the scientific basis for management of the Northern shrimp (*Pandalus borealis*) stock in the Denmark Strait.

Brent Buch, Director
On behalf of
Ministry for Fisheries, Hunting & Agriculture
Aslisarnermut, Piniarnermut, Nunalerinermullu Pisortaqarfik
Direktoratet for Fangst, Fiskeri og Landbrug

AGENDA II. SCIENTIFIC COUNCIL ANNUAL MEETING, 7-13 SEPTEMBER 1996

- I. Opening (Chairman: W. R. Bowering)
 1. Appointment of rapporteur
 2. Adoption of agenda
 3. Plan of work

- II. Fisheries Environment (STACFEN Chairman: M. Stein)
 1. Chairman's introduction: report of activities
 2. Review of Oceanographic information from Workshop of 4-6 September 1996
 3. Review of research documents
 4. National representatives
 5. Other matters

- III. Fishery Science (STACFIS Chairman: W. B. Brodie)
 1. Opening
 2. Matters related to stock assessments
 - a) Assessment of shrimp in Division 3M
 3. Arrangements for conducting stock assessments in 1997
 - a) Update list of Designated Experts
 4. Other matters
 - a) Review of SCR Document 96/71, Greenland halibut fishery in Cumberland Sound
 - b) Other business

- IV. Research Coordination (STACREC Chairman: D. Power)
 1. Opening
 2. Fisheries statistics
 - a) Progress report on Secretariat activities in 1996
 - i) Acquisition of STATLANT 21 data
 - ii) Publication of statistical information
 - b) Report of the Inter-Agency Consultation relative to the CWP 17th Session
 - c) Reporting of catches for *Pandalus borealis*
 3. Review of research documents
 4. Other matters

- V. Publications (STACPUB Chairman: H.-P. Cornus)
 1. Review of scientific publications
 - a) Status of papers from September 1993 Symposium
 - b) Status of publication on Div. 3M shrimp
 - c) Status of papers from September 1995 Symposium
 - d) Other publications
 2. Promotion and distribution of scientific publications
 - a) Invitational papers

AGENDA 7-13 Sep

3. Editorial matters
 - a) Future changes in the Editorial Board
 - b) Other considerations
 4. Review of papers for possible publication
 - a) Consideration of material from the Workshop, 4-6 September 1996
 - b) Others papers presented at the September 1996 Meeting
 - c) Papers on Div. 2J+3KL cod deferred from the June 1996 Meeting
 - d) Papers not considered at the June 1996 Meeting
 - e) Papers on environmental data on Germany/Russia project
 5. Other matters
- VI. Management Advice and Responses to Special Requests
1. Shrimp in Division 3M
 2. Special requests from concurrent Fisheries Commission meeting
- VII. Review of Future Meeting Arrangements
1. Scientific Council Meeting on northern shrimp 15-18 November 1996
 2. June 1997 Meeting of Scientific Council
 3. Special Session and Annual Meeting, September 1997
 4. June 1998 Meeting of Scientific Council
- VIII. Future Special Sessions
1. Progress report on Symposium of September 1997
 2. Review of proposal(s) for Special Session in 1998.
- IX. Other Business
- X. Adoption of Reports
1. Consideration of report from the Workshop of 4-6 September 1996
 2. Committee Reports of present meeting (STACFEN, STACFIS, STACREC, STACPUB)
 3. Report of Scientific Council, September 1996
- XI. Adjournment

AGENDA III. SCIENTIFIC COUNCIL SPECIAL MEETING, 15-18 NOVEMBER 1996

- I. Opening (Chairman: W. R. Bowering)
 1. Appointment of rapporteur
 2. Adoption of agenda
 3. Plan of work

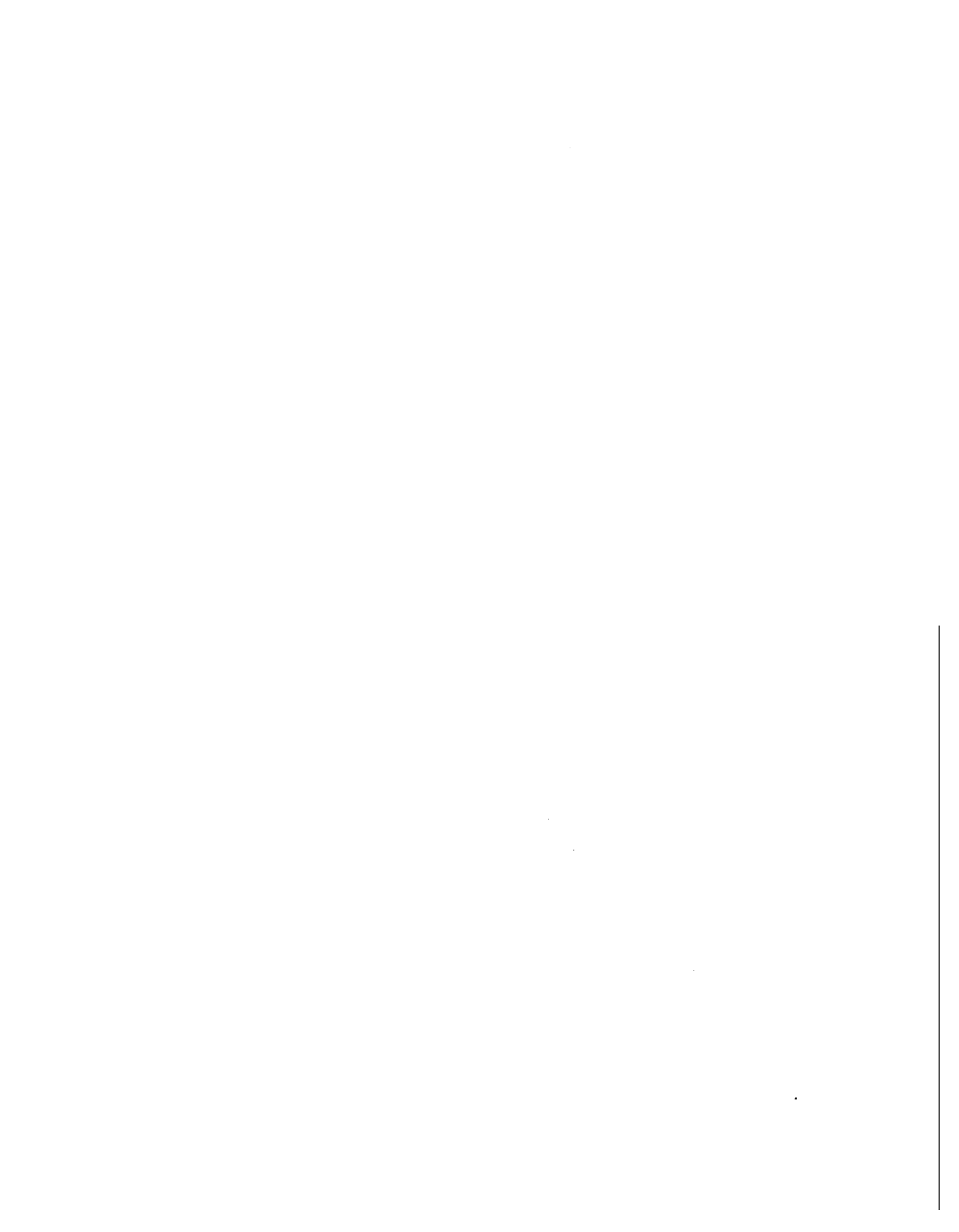
- II. Fishery Science (STACFIS Chairman: W. B. Brodie)
 1. Stock assessments (see Annexes 2 and 3 of Agenda I above)
 - Northern shrimp (Subareas 0 and 1)
 - Northern shrimp (in Denmark Strait and off East Greenland)
 - **[Note:** For northern shrimp in Subareas 0 and 1, the assessment and TAC advice should include, if possible, the areas north of 71°N in Subarea 1 as well as the inshore region of Subarea 1.]
 2. Other business

- III. Formulation of Advice
 1. Northern shrimp (Subareas 0 and 1)
 2. Northern shrimp (Denmark Strait and off East Greenland)

- IV. Other Matters

- V. Adoption of Reports

- VI. Adjournment



LIST OF RESEARCH AND SUMMARY DOCUMENTS

RESEARCH DOCUMENTS (SCR)

SCR No.	Ser. No.	Author(s) and Title
96/1 ^a	N2662	RIKHTER, V. A., and I. P. GOLUBIATNIKOVA. Results of comparison of some biological parameters and abundance dynamics of silver hake (<i>Merluccius bilinearis</i>) from Scotian Shelf and cape hake (<i>Merluccius capensis</i>) from Namibia Area. (13 p.)
96/2 ^a	N2665	RIKHTER, V. A. Once more, and evidently in the last time, on assessment of silver hake natural mortality rate in Scotian area. (3 p.)
96/3 ^a	N2667	RIKHTER, V. A. Trends of silver hake abundance variability in Scotian Shelf area and other gadoids in the north-western Atlantic. (10 p.)
96/4 ^a	N2669	RÄTZ, H.-J. Status of the demersal fish assemblage and near bottom temperature off West Greenland, 1982-95 (Divisions 1B-1F, 0-400 m). (10 p.)
96/5 ^a	N2670	LLORET, J. Population dynamics of American plaice (<i>Hippoglossoides platessoides</i>) off West Greenland (NAFO Divisions 1B-1F), 1982-94. (24 p.)
96/6 ^a	N2671	RÄTZ, H.-J. Redfish Subarea 1 (0-400 m): groundfish survey results, 1982-95 and length structure of German catches, 1962-90. (18 p.)
96/7 ^a	N2673	KISELEVA, V. M. Estimation of cod stock in Div. 3M by data of 1995 trawl survey. (7 p.)
96/8 ^a	N2674	SAVVATIMSKY, P. I., and A. A. VASKOV. Distribution and biological characteristic of Greenland halibut in the Flemish-Pass area and on the Flemish-Cape Bank in May 1995. (7 p.)
96/9 ^a	N2675	VASKOV, A. A. and A. L. KARSAKOV. Assessment of the redfish stock in Div. 3M by the data from the trawl survey in 1995. (6 p.)
96/10 ^a	N2676	GERASIMOVA, O. V. and V. M. KISELEVA. Interannual variations in feeding intensity and structure of trophic links of prespawning cod on the Newfoundland Shelf (Div. 3L). (12 p.)
96/11 ^a	N2678	BENWAY, R. L. and J. W. JOSSI. Surface and bottom temperatures, and surface salinities: New York to the Gulf Stream, Massachusetts to Cape Sable N.S. 1995. (11 p.)
96/12 ^a	N2682	DURÁN, P., J. PAZ and L. RAMILO. By-catch species in the Greenland halibut Spanish (NAFO Divisions 3LM and 3NO): 1991-1994. (36 p.)
96/13 ^a	N2684	GLENN, G. F. Marine Environmental Data Service Report for 1995. (25 p.)
96/14 ^a	N2686	RASMUSSEN, E. B., M.-B. SALHAUGE and J. BOJE. On the use of vertebral numbers to discriminate populations of Greenland halibut (<i>Reinhardtius hippoglossoides</i> , Walbaum) at West Greenland. (5 p. + Corrigendum)
96/15 ^a	N2688	STEIN, M. Climatic conditions around Greenland - 1995. (15 p.)
96/16 ^a	N2689	DRINKWATER, K. F. and G. C. HARDING. The effects of the Hudson Strait outflow on the biology of the Labrador Shelf. (15 p.)

^a Scientific Council Meeting, 5-19 June 1996

SCR No.	Ser. No.	Author(s) and Title
96/17 ^a	N2690	SMITH, S. J., and M. A. SHOWELL. Analysis of catch-per-unit effort data for Scotian Shelf silver hake, 1977-95. (8 p.)
96/18 ^a	N2691	SCHNEIDER, D. C., P. HENNEBURY D. METHVEN, D. INGS, J. HOWELL, S. WHITE, D. PINSENT, and W. BAILEY. Results of the 1995 Flemming survey of demersal juvenile cod in the coastal zone of eastern Newfoundland. (12 p. + Corrigendum)
96/19 ^a	N2692	SCHNEIDER, D. C, E. L. DALLEY, and J. T. ANDERSON. A combined recruitment index for demersal juvenile cod (0, 1 and 2 group) NAFO Divisions 3K and 3L. (9 p.)
96/20 ^a	N2693	BRATTEY, J. Biological characteristics of Atlantic cod (<i>Gadus morhua</i>) from three inshore areas of western Trinity Bay, Newfoundland. (18 p.)
96/21 ^a	N2694	BENTZEN, P., C. T. TAGGART, D. E. RUZZANTE, and D. COOK. Microsatellite polymorphism and the population structure of Atlantic cod (<i>Gadus morhua</i>) in the Northwest Atlantic. (20 p.)
96/22 ^a	N2695	NEIS, B., L. FELT, D. C. SCHNEIDER, R. HAEDRICH, J. HUTCHINGS, and J. FISCHER. Northern cod stock assessment: what can be learned from interviewing resource users? (22 p.)
96/23 ^a	N2696	GREGORY, R. S., J. T. ANDERSON, and E. L. DALLEY. Use of habitat information in conducting assessments of juvenile cod abundance. (14 p.)
96/24 ^a	N2697	STEIN, M., and V. A. BOROVKOV. Climatic variability of deep waters off Greenland and in the Labrador Sea. (21 p.)
96/25 ^a	N2698	BOCHKOV, Yu. A., and F. M. TROYANOVSKY. Present-day climatic variations in the Barents and Labrador Seas and their biological impacts. (24 p.)
96/26 ^a	N2699	COLBOURNE, E. Environmental conditions on the Newfoundland Shelf, spring 1996 with reference to the 1961-1990 normal. (14 p.)
96/27 ^a	N2700	BRODIE, W. B. A description of the 1995 fall groundfish survey in Divisions 2J3KLNO. (7 p.)
96/28 ^a	N2701	WARREN, W. G. Report on the comparative fishing trial between the <i>Gadus Atlantica</i> and <i>Teleost</i> . (16 p.)
96/29 ^a	N2702	YOKAWA, K., I. KOUYA, and O. JORGENSEN. Results of a stratified-random bottom trawl survey off West Greenland in 1995. (12 p.)
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CANADA

Meetings

Representatives:

Bruce, K.	Fisheries Research Branch, 200 Kent Street, Station 1256, Ottawa, Ontario K1A 0E6 Phone: +613-990-0279/80 - Fax: +613-954-0807 - E-mail: Kathryn.Bruce@ncr.ottwpo.dfo-mpo.x400.gc.ca	A B
Powles, H.	Sr. Policy Advisor, Invert. & Pacific Marine Fish, 200 Kent St., Ottawa, Ontario K1A 0E6 Phone: +613-990-0285 - Fax: +613-954-0807 - E-mail: howard.powles@ncr.ottwpo.dfo-mpo.X400.gc.ca	C
Atkinson, D. B.	Northwest Atlantic Fisheries Centre, P. O. Box 5667, St. John's, Newfoundland A1C 5X1 Phone: +709-772-2052 - Fax: +709-772-4188 - E-mail: atkinson@athena.nwafc.nf.ca	A B
Bowering, W. R.	Northwest Atlantic Fisheries Centre, P. O. Box 5667, St. John's, Newfoundland A1C 5X1 Phone: +709-772-2054 - Fax: +709-772-4188 - E-mail: bowering@athena.nwafc.nf.ca	A B C

Advisers/Experts:

Blackwood, G.	Dept. of Fisheries & Aquaculture, (FRCC), Box 8700, St. John's, Newfoundland A1B 4J6 Phone: +709-729-3735 - Fax: +709-729-6082	A
Brodie, W.B.	Northwest Atlantic Fisheries Centre, P. O. Box 5667, St. John's, Newfoundland A1C 5X1 Phone: +709-772-3288 - Fax: +709-772-4188 - E-mail: brodie@athena.nwafc.nf.ca	A B C
Campbell, J.S.	A/Reg. Dir. Sci., Dept. of Fisheries & Oceans, Box 5667, St. John's, Newfoundland A1C 5X1 Phone: +709-772-2051 - Fax: +709-772-6100	A
Colbourne, E.B.	Northwest Atlantic Fisheries Centre, Box 5667, St. John's, Newfoundland A1C 5X1 Phone: +709-772-6106 - Fax: +709-772-3207 - E-mail: colbourne@athena.nwafc.nf.ca	A
Davis, B.	Northwest Atlantic Fisheries Centre, Box 5667, St. John's, Newfoundland A1C 5X1 Phone: +709-772-0560 - Fax: +709-772-4188/6100 - E-mail: davisb@athena.nwafc.nf.ca	A
Lilly, G. R.	Northwest Atlantic Fisheries Centre, Box 5667, St. John's, Newfoundland A1C 5X1 Phone: +709-772-0568 - E-mail: lilly@athena.nwafc.nf.ca	A
Morgan, M.J.	Northwest Atlantic Fisheries Centre, Box 5667, St. John's, Newfoundland A1C 5X1 Phone: +709-772-2261 - Fax: +709-772-4188 - E-mail: morgan@athena.nwafc.nf.ca	A
Murphy, E.F.	Northwest Atlantic Fisheries Centre, Box 5667, St. John's, Newfoundland A1C 5X1 Phone: +709-772-5479 - Fax: +709-772-4188 - E-mail: murphy@athena.nwafc.nf.ca	A
Parsons, D.G.	Northwest Atlantic Fisheries Centre, Box 5667, St. John's, Newfoundland A1C 5X1 Phone: +709-772-2093 - Fax: +709-772-4105 - E-mail: parsons@athena.nwafc.nf.ca	B C
Power, D.	Northwest Atlantic Fisheries Centre, Box 5667, St. John's, Newfoundland A1C 5X1 Phone: +709-772-4935 - Fax: +709-772-4188 - E-mail: power@athena.nwafc.nf.ca	A B
Shelton, P.A.	Northwest Atlantic Fisheries Centre, Box 5667, St. John's, Newfoundland A1C 5X1 Phone: +709-772-2341 - Fax: +709-772-4188 - E-mail: shelton@athena.nwafc.nf.ca	A
Stansbury, D.E.	Northwest Atlantic Fisheries Centre, Box 5667, St. John's, Newfoundland A1C 5X1 Phone: +709-772-0559 - Fax: +709-772-4188 - E-mail: stansbury@athena.nwafc.nf.ca	A
Warren, W. G.	Northwest Atlantic Fisheries Centre, Box 5667, St. John's, Newfoundland A1C 5X1 Phone: +709-772-4835 - Fax: +709-772-3207 - E-mail: warren@mrs-pock.nwafc.nf.ca	A
Walsh, S.J.	Northwest Atlantic Fisheries Centre, Box 5667, St. John's, Newfoundland A1C 5X1 Phone: +709-772-5478 - Fax: +709-772-4918 - E-mail: walsh@athena.nwafc.nf.ca	A
Winter, G.H.	Northwest Atlantic Fisheries Centre, Box 5667, St. John's, Newfoundland A1C 5X1 Phone: +709-772-2001 - Fax: +709-772-4188 - E-mail: winters@athena.nwafc.nf.ca	A
Drinkwater, K.F.	Coastal Oceanog., Dept. of Fish. & Oceans, BIO, P. O. Box 1006, Dartmouth, N.S. B2Y 4A2 Phone: +902-426-2650 - Fax: +902-426-2256 - E-mail: k_drinkwater@bionet.bio.dfo.ca	A
Halliday, R.G.	Marine Fish Div., Dept. of Fish. & Oceans, BIO, P. O. Box 1006, Dartmouth, N.S. B2Y 4A2 Phone: +902-426-3240 - Fax: +902-426-1506 - E-mail: r_halliday@bionet.bio.dfo.ca	A
Showell, M.A.	Marine Fish Div., Dept. of Fish. & Oceans, BIO, P. O. Box 1006, Dartmouth, N.S. B2Y 4A2 Phone: +902-426-3501 - Fax: +902-426-7750 - E-mail: m_showell@bionet.bio.dfo.ca	A B
Simon, J.E.	Dept. of Fisheries & Oceans, P. O. Box 1006, Dartmouth, N.S. B2Y 4A2 Phone: +902-426-4136 - Fax: +902-426-1506 - E-mail: j_simon@bionet.bio.dfo.ca	A

Meetings

Smith, S.J.	Dept. of Fisheries & Oceans, P. O. Box 1006, Dartmouth, N.S. B2Y 4A2 Phone: +902-426-3317 - Fax: +902-426-1506 - E-mail: s_smith@bionet.bio.dfo.ca	A
Glenn, G.F.	Marine Environmental Data Service (MEDS), 200 Kent St., Ottawa, Ontario K1A 0E6 Phone: +613-990-0257 - Fax: +613-993-4658 - E-mail: glenn@ottmed.meds.dfo.ca	A
Rivard, D.	Fisheries Research Branch, DPO, 200 Kent St., 12th Floor, Ottawa, Ontario K1A 0E6 Phone: +613-990-0281 - Fax: +613-954-0807 E-mail: denis.rivard@ncr.ottwpo.dfo-mpo.x400.gc.ca	A
Woodman, F.	Fisheries Resource Conser. Council, P.O. Box 2001, Station D, Ottawa, Ontario K1P 5W3 Phone: +613-998-0433 - Fax: +613-998-1146 - E-mail: info@frcc.x400.gc.ca	A
Savard, L.	Dept. of Fish. & Oceans, Maurice Lamontagne Inst., P.O. Box 1000, Mont-Joli, Quebec G5H 3Z4 Phone: +418-775-0621 - Fax: +418-775-0740	C

DENMARK

GREENLAND

Representative:

Nygaard, K.H.	Greenland Institute of Natural Resources, Box 570, 3900 Nuuk Phone: +299 21095 - Fax: +299 25957 - E-mail: naturins@greennet.gl	A
---------------	--	---

Advisers/Experts:

Bech, G.	Greenland Institute of Natural Resources, Box 570, 3900 Nuuk Phone: +299 21095 - Fax: +299 25957 - E-mail: naturins@greennet.gl	A
Carlsson, D.M.	Greenland Institute of Natural Resources, P. O. Box 2151, Pilestræde DK-1016 Copenhagen N, Denmark Phone: +45 33 14 5524 - Fax: +45 33 13 4250 - E-mail: grfidmc@inet.uni-c.dk	C
Folmer, O.	Greenland Institute of Natural Resources, P. O. Box 570, DK-3900, Nuuk Phone: +299 21095 - Fax: +299 25957 - E-mail: folmer@natur.centadm.gh.gl	B C
Hvingel, C.	Greenland Institute of Natural Resources, P. O. Box 570, DK-3900, Nuuk Phone: +299 21095 - Fax: +299 25957 - E-mail: hvingel@natur.centadm.gh.gl	C
Jørgensen, O.A.	Greenland Institute of Natural Resources, c/o Greenland Home Rule, Pilestrædet 52, Box 2151, DK-1016 Copenhagen N, Denmark Phone: +45 33 145524 Ext. 262 - Fax: +45 33 322024 - E-mail: grfioaj@inet.uni-c.dk	A
Siegstad, H.	Greenland Institute of Natural Resources, P. O. Box 570, DK-3900, Nuuk Phone: +299 21095 - Fax: +299 25957 - E-mail: helle@natur.centadm.gh.gl	B C

FAROE ISLANDS

Representative:

Kristiansen, A.	Froya Landsstyri, P. O. Box 64, FR-110 Torshavn Phone: +298 1 1080 - Fax: +298 1 4942	B C
-----------------	--	-----

Advisers/Experts:

Nicolajsen, A.	Fiskorannsóknarstovan, Fisheries Laboratory, Noatun, Postboks 3051, FR-110 Torshavn Phone: +298 1 5092 - Fax: +298 1 8264 - E-mail: aminic@frs.fo	B C
Hansen, J.E.	FR-360 Sandnagae	B

Meetings

EUROPEAN UNION (EU)

Representatives:

Hagström, O.N.	European Commission DGXIV Unit C-1, Rue de la Loi 200, B-1049 Brussels, Belgium Phone: +32 2 2957812 - Fax: +32 2 2966046 - E-mail: ulle.hagstrom@dg14.cec.be	A
Penas, E.	European Commission DG XIV Unit B-1, Rue de la Loi 200, B-1049 Brussels, Belgium Phone: +322 296 3744 - Fax: +322 2952569	B

Advisers/Experts:

Lassen, H.	Danish Inst. for Fisheries Research, Charlottenlund Slot, DK-2920 Charlottenlund, Denmark Phone: +45 33 96 3352 - Fax: +45 33 96 3333 - E-mail: hl@dfu.min.dk	B
Briand, D.	Institut Francais de Recherche pour l'Exploitation de la Mer, B.P. 4240, F-97500 Saint Pierre St. Pierre et Miquelon Phone: +508 41 3083 - Fax: +508 41 4936	B
Mahé, J.-C.	IFREMER, Station de Lorient, 8, Rue François Toullec, 56100 Lorient, France Phone: +33 97 877310 - Fax: +33 97 834106 - E-mail: jcmahé@ifremer.fr	A
Cross, D.G.	EUROSTAT ((statistical office of the EU), European Commission, Jean Monnet Bldg, Kirchberg, Luxembourg Phone: +352 4301 37249 - Fax: 352 4301 37318 - E-mail: david.cross@eurostat.cec.be	A
Avila de Melo, A.	Inst. Portugues de Investigacao Maritima (IPIMAR), Alges-Praia, 1400 Lisbon, Portugal Phone: +3511 301 7361/0814 - Fax: +351 1301 5948	A B
Godinho, M.L.	Inst. Portugues de Investigacao Maritima (IPIMAR), Alges-Praia, 1400 Lisbon, Portugal Phone: +3511 301 7361/0814 - Fax: +351 1301 5948	A B
Cornus, H.-P.	Institut für Seefischerei, Palmaille 9, D-22767, Hamburg, Republic of Germany Phone: +49 40 38905194 - Fax: +49 40 38905263 - E-mail: internet: 100565.1223@compuserve.com	A B
Stein, M.	Institut für Seefischerei, Palmaille 9, D-22767, Hamburg, Republic of Germany Phone: +49 40 38905174 - Fax: +49 40 3890 5263 - E-mail: internet: 100565.1223@compuserve.com	A B
Rätz, H.-J.	Institut für Seefischerei, Fischkai 35, 27572 Bremerhaven, Republic of Germany Phone: +49 471 73473 - Fax: +49 471 73127	A
Motos, L.	AZTI, Fish & Food Technological Institute, Fisheries Dept., Avda. Satrustegi 8, 20008 Donostia - San Sebastian, (Guipuzkoa), Spain Phone: +34 43 212503 - Fax: +34 43 212162 - E-mail: Lorenzo@rp.azti.es	A B
De Cárdenas, E.	Instituto Español de Oceanografía, Apartado de Correos 240 - Promontorio San Martín, E-39080 Santander, Spain Phone: +34 42 275033 - Fax: +34 42 275072	A B
Junquera, S.	Instituto Español de Oceanografía, Cabo Estay - Canido, Apartado. 1552, E-36280 Vigo (Pontevedra), Spain Phone: +34 86 492111 - Fax: +34 86 49 2351	A B
Vazquez, A.	Instituto de Investigaciones Mariñas, Muelle de Bouzas, Vigo, Spain Phone: +34 86 231930 - Fax: +34 86 292762 - E-mail: avazquez@iim.csic.es	A B
Casey, J.	MAFF, Directorate of Fisheries Research, Fisheries Laboratory, Pakefield Rd., Lowestoft (Suffolk), England NR33 OHT, United Kingdom Phone: +44 150 2524251 - Fax: +44 150 2524511 - E-mail: j.casey@dfr.maff.gov.UK	A B

ICELAND

Advisors/Experts:

Stefansson, G.	Marine Research Institute, Skulagata 4, P. O. Box 1390, 121 - Reykjavik Phone: +354 552 0240 - Fax: +354 562 3790 - E-mail: gunnar@hafro.is	B
Skúladóttir, U.	Marine Research Institute, Skulagata 4, P. O. Box 1390, 121 - Reykjavik Phone: +354 552 0240 - Fax: +354 562 3790 - E-mail: unnur@hafro.is	B C

Meetings

Sigurjonsson, J. Marine Research Institute, Skulagata 4, P. O. Box 1390, 121 - Reykjavik
Phone: +354 552 0240 - Fax: +354 562 3790 - E-mail: johann@hafro.is

B

JAPAN**Representatives:**

Okamura, H National Research Institute of Far Seas Fisheries, 7-1 Orida 5 Chome,
Shimizu-shi, Shizuoka, 424
Phone: +81 543-36-6014 - Fax: +81 543-35-9642 - E-mail: okamura@enyo.affrc.go.jp

Yokawa, K. Distant-water Groundfish Section, National Research Institute of Far Sea Fisheries,
Fishery Agency, 7-1, Orido 5 Chome, Shimizu-shi, Sizuoka, 424
Phone: +81 543 36 6058 - Fax: +81 543 35 9642 - E-mail: yokawa@enyo.affrc.go.jp

B

A B

NORWAY**Representative:**

Godø, O.R. Institute of Marine Research, P. O. Box 1870, N-5024 Bergen
Phone: +47 55 238500 - Fax: +47 55 238387 - E-mail: olavrune@imr.no

B

RUSSIA**Representatives:**

Rikhter, V.A. Atlantic Scientific Research Institute of Marine Fisheries and Oceanography,
5 Dmitry Donskoy Street, Kaliningrad, 23600
Phone: +70 112 21 5645 - Fax: +70 112 21 9997 - E-mail: root@atlant.koenig.su

Shibanov, V.N. PINRO, 6 Knipovich Street, Murmansk, 183763
Phone: +47 789 10423 - Fax: +47 789 10518 - E-mail: pinro@imr.no

Vaskov, A.A. PINRO, 6 Knipovich Street, Murmansk, 183763
Phone/Fax: +47 789 10518 - E-mail: pinro@imr.no

A B

A B

A B

Advisers/Experts:

Gontchar, E.M. Welsford Place, Ste. 2202, 2074 Robie Street, Halifax, Nova Scotia, Canada B3K 5L3
Phone: +902-425-6270 - Fax: +902-423-0943

Goussev, G.V. Fish. Committee of the Russian Fed., 12 Rozhdestvensky Boul., Moscow K-31, 103031
Phone: +70 95 9219594 - Fax: +70 95 9213463

Sigaev, I.K. Atlantic Scientific Research Institute of Marine Fisheries and Oceanography,
5 Dmitry Donskoy St., Kaliningrad, 236000
Phone: +70 112 22 55 47 - Fax: +70 112 21 99 97 - E-mail: root@atlant.koenig.su

Berenboim, B. PINRO, 6 Knipovich Street, Murmansk, 183763
Phone: +47 789 10423 - Fax: +47 789 10518 - E-mail: pinro@imr.no

Borovkov, V. PINRO, 6 Knipovich Street, Murmansk, 183763
Phone: +47 789 10423 - Fax: +47 789 10518 - E-mail: pinro@imr.no

Lisovski, S.F. PINRO, 6 Knipovich Street, Murmansk, 183763
Phone/Fax: +47 789 10518 - E-mail: pinro@imr.no

Moskalenko, V. PINRO, 6 Knipovich Street, Murmansk, 183763
Phone: +47 789 10423 - Fax: +47 789 10518 - E-mail: pinro@imr.no

Troyanovsky, F.M. PINRO, 6 Knipovich Street, Murmansk, 183763
Phone: +47 789 10423 - Fax: +47 789 10518 - E-mail: pinro@imr.no

Volkova, V. PINR), 6 Knipovich Street, Murmansk, 183763
Phone: +47 789 10423 - Fax: +47 789 10518 - E-mail: pinro@imr.no

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B

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B

A B

B

B

B

Meetings**UNITED STATES OF AMERICA (USA)****Representatives:**

Jones, C.M.	Old Dominion University, 1034 W 45th St., Norfolk, Virginia 23529-0456 Phone: +757-683-4497 - E-mail: jones@estuary.amrl.edu	B
Pierce, D.E.	Marine Fisheries Policy & Regulations Specialist/Senior Mar. Fish. Biologist, Massachusetts Div. of Marine Fisheries, 100 Cambridge St., Boston MA 02202 Phone: +617-727-3193 ext. 366 - Fax: +617-727-7988 - E-mail: dpierce@state.ma.us	A B
Sissenwine, M.	National Marine Fisheries Service, NEFSC, 166 Water St., Woods Hole, MA 02543 Phone: +508-548-5123, Fax: +508-548-5124 - E-mail: michael_sissenwine@ssp.nmfs.gov	A B

Advisers/Experts:

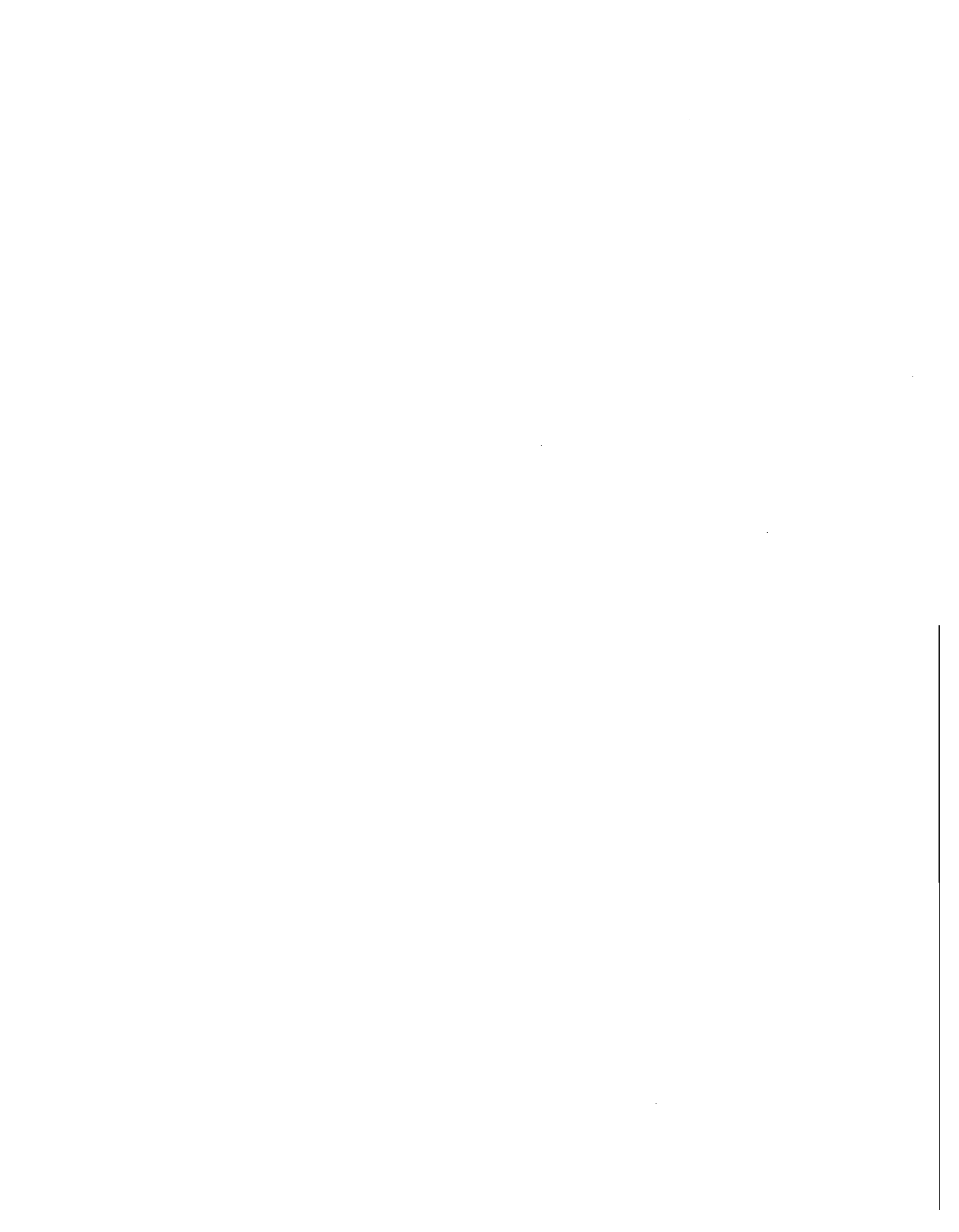
Mayo, R. K.	US Dept of Commerce, NOAA/NMFS, NEFSC, 166 Water St., Woods Hole, MA 02543 Phone: +508-548-5123 - Fax: +508-548-1158 - E-mail: rmayo@whsun1.wh.whoi.edu	A
O'Brien, L	National Marine Fisheries Service, NEFSC, 166 Water St., Woods Hole, MA 02543 Phone: +508 495 2273 - Fax: +508 495 2393 - E-mail: lobrien@whsun1.wh.whoi.edu	B
Overholtz, W. J.	National Marine Fisheries Service, NEFSC, 166 Water St., Woods Hole, MA 02543-1097 Phone: +508-548-5123 - Fax: +508-548-5124 - E-mail: woverholtz@whsun1.wh.whoi.edu	A
Rago, P.	National Marine Fisheries Service, NEFSC, 166 Water St., Woods Hole, MA 02543 Phone: +508 495 2464 - Fax: +508 495 2393 - E-mail: prago@whsun1.wh.whoi.edu	B
Serchuk, F.M.	National Marine Fisheries Service, NEFSC, 166 Water St., Woods Hole, MA 02543 Phone: +508 495 2245 - Fax: +508 495 2258 - E-mail: fserchuk@whsun1.wh.whoi.edu	B
Wigley, S.E.	National Marine Fisheries Service, NEFSC, 166 Water St., Woods Hole, MA 02543-1097 Phone: +508-548-5123 - Fax: +508-548-5124 - E-mail: swigley@whsun1.wh.whoi.edu	A

OBSERVERS

ICES Rep. (Cornus, H.-P.)	Institut für Seefischerei, Palmaille 9, D-22767, Hamburg, Republic of Germany Phone: +49 40 38905194 - Fax: +49 40 38905263 - E-mail: internet: 100565.1223@compuserve.com	B
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NAFO SECRETARIAT

L. Chepel, Executive Secretary
T. Amaratunga, Assistant Executive Secretary
F. D. Keating, Administrative Assistant
S. M. Goodick, Accounting Officer
B. J. Cruikshank, Senior Clerk-Secretary
D. C. A. Auby, Clerk-Secretary
F. E. Perry, Desktop Publishing/Documents Clerk
R. A. Myers, Graphic Arts/Printing Technician
B. T. Crawford, Graphic Arts/Printing Technicaian
G. M. Moulton, Senior Statistical Officer
C. L. Kerr, Statistical Clerk
B. L. Marshall, Statistical Clerk



LIST OF RECOMMENDATIONS IN 1996

PART A

Scientific Council Meeting, 5-19 June 1996

SCIENTIFIC COUNCIL

IV. RESEARCH COORDINATION

2. Preparation for CWP 17th Session, March 1997 (page 10)

The Council noted the recommendation in 1995 that along with the Chairman of STACREC, the Assistant Executive Secretary would represent NAFO at the 17th Meeting of CWP. The Council also **recommended** that *a representative from Japan be requested to attend the meeting to represent the Scientific Council at the 17th Session of the CWP.*

4. Biological Surveys

c) Review of Stratification Schemes (page 10)

In order to provide an accurate position of headland references relative to Div. 3P (NAFO Handbook, 1996, see text with respect to Subarea 3 on pages 43-45), as described in SCR Doc. 96/55, Serial No. N2731, the Council **recommended** to the General Council that *the NAFO Convention text in Annex III relative to Div. 3P be revised as follows:*

- define "Cape Ray" as 47°37.0' north 59°18.0' west
- define "Cape North" as 47°02.0' north 60°25.0' west
- replace "Burgeo Island" with 47°30.7' north 57°43.2' west
- replace 46°50' north 58°50' west with 46°50.7' north 58°49.0' west.

IX. MANAGEMENT ADVICE AND RESPONSES TO SPECIAL REQUESTS

1. Fisheries Commission

b) Interrelation between seals and commercial fish stocks (page 27)

No new data were available for review at the current meeting, however, the Council **recommended** that *any new information, particularly with respect to food consumption of seals and the fish-seal interactions should be made available to the Scientific Council for consideration at its June 1997 Meeting.*

APPENDIX II - FISHERY SCIENCE

Cod in Divisions 3N and 3O

i) Commercial fishery data

Catch-at-age (page 61)

STACFIS **recommended** that *data for by-catch of cod in the Canadian longline fishery in Div. 3NO be presented to the Scientific Council Meeting in June 1997.*

Redfish in Divisions 3L and 3N

1. Introduction (page 73)

The Committee considered that it would be very useful to provide information relative to the distribution of the Portuguese fleet in the area, and therefore, STACFIS **recommended** that *the Portuguese observed data be analyzed and distribution maps provided relative to effort directed towards redfish.*

....., the Committee considered it more appropriate if the Div. 3NO data could be disaggregated and, accordingly, **recommended** that *future analyses of Portuguese observed catch-rate data for redfish be presented separately by Division.*

d) **Future Studies** (page 75)

STACFIS concluded that a further look at survey databases for redfish in Div. 3LN and 3O is warranted and accordingly *recommended* that (1) *data in Div. 3LN and 3O be analyzed further to determine if a relationship exists between Div. 3O and Div. 3LN that may help in the interpretation of the indices of abundance; and (2) data be examined to evaluate the appropriateness of Div. 3LN and Div. 3O as management units for redfish.*

Silver Hake in Divisions 4V, 4W and 4X

1. **Introduction** (page 76)

STACFIS expressed concern that restrictions on the fishery may be affecting silver hake catch rates, and **recommended** that *the effect of regulatory measures introduced in 1994 on Div. 4VWX silver hake catch rates be examined in more detail in future.*

i) **Catch-at-age and weight-at-age data** (page 77)

STACFIS expressed concern that commercial weight-at-age might be affected by the length/weight relationship derived from the July research vessel survey, and **recommended** that *for Div. 4VWX silver hake, the proportion of post-spawning fish in the Canadian July survey data be examined.* It was also **recommended** that *for Div. 4VWX silver hake, the distribution of fish in the Canadian July surveys be examined for interannual variations or temporal trends, and compared to fishery distributions, to investigate the hypothesis of variations in the timing of stock migrations.*

c) **Estimation of Parameters** (page 79)

Sequential population analysis. The appropriateness of the severely dome-shaped partial recruitment pattern imposed in the VPA was raised and STACFIS **recommended** that *the effect of the dome-shaped partial recruitment pattern be thoroughly investigated for Div. 4VWX silver hake.*

American Plaice in Divisions 3L, 3N and 3O

iii) **Biological studies** (page 84)

The results indicated that both juveniles and adults are rather sedentary with little indication of movements beyond 30-50 naut. miles. STACFIS **recommended** that *the data on American plaice tagging in Div. 3LNO be examined in relation to distribution of fishing effort.*

d) **Research Recommendations** (page 84)

STACFIS noted that set positions from surveys would be helpful in comparing the results between surveys and across years and **recommended** that *set locations be mapped and presented wherever possible for surveys of Div. 3LNO American plaice.*

STACFIS **recommended** that *error bars be presented with estimates of biomass and abundance from surveys for Div. 3LNO American plaice to aid in the interpretation of interannual changes.*

STACFIS noted that the abundance-at-age estimated from many of the survey series presented could be analyzed together and **recommended** that *for Div. 3LNO American plaice, multiplicative models be used to estimate relative year-class strength from the 3 main Canadian survey series.*

STACFIS noted that there have been a number of changes in the depth range covered in the Canadian juvenile survey series and **recommended** that *abundance from the juvenile surveys for Div. 3LNO American plaice be examined incorporating only the strata common to every year.*

American Plaice in Division 3M

ii) **Research survey data** (page 86)

The Russian survey series, started in 1983 was interrupted in 1994, but continued in 1995. However no data on American plaice were available. STACFIS **recommended** that *the 1995 data, and data on American plaice from future Russian surveys in Div. 3M, be made available as soon as possible.*

Witch Flounder in Divisions 3N and 3O

d) **Recommendations** (page 89)

It was **recommended** that *where ever possible the most up to date catch-at-age data for witch flounder from the surveys in Div. 3NO be made available for the June 1997 Meeting.*

Yellowtail Flounder in Divisions 3L, 3N and 3O

c) **Assessment Results** (page 93)

It was noted that the stock recruitment relationship was preliminary and used age 7+ abundance as a proxy for SSB. STACFIS **recommended** that *a more detailed investigation of the stock-recruitment relationship for yellowtail flounder in Div. 3LNO be completed for the 1997 assessment.*

Greenland Halibut in Subarea 0 and Divisions 1B-1F

e) **Research Recommendations** (pages 97 and 98)

Neither catch numbers-at-age, weights-at-age data nor CPUE data were available for Div. 0B offshore for 1995, and STACFIS **recommended** that *these data should be presented at the Scientific Council Meeting in June 1997, in order to continue the time series already established.*

The question of whether the Cumberland Sound Greenland halibut stock contributes to the Subareas 0+1 stock needs to be resolved. STACFIS **recommended** that *the tagging program initiated in Cumberland Sound in 1995 to ascertain whether adult Greenland halibut fish move into Davis Strait should be continued.* The degree of spawning activity should be examined at the same time.

The joint Greenland/Japan survey was conducted for the last time in 1995. The survey will be continued with another vessel by Greenland. STACFIS **recommended** that *parallel trawling between the Japanese and Greenlandic vessels should be carried out in order to make it possible to extend the already established time series for Greenland halibut in Subareas 0 and 1.*

STACFIS **recommended** that *the investigations of the by-catch of Greenland halibut in the shrimp fishery in Subareas 0 and 1 should be continued.*

Greenland Halibut in Division 1A

d) **Research Recommendations** (page 102)

STACFIS **recommended** that *measures of effort from the commercial fishery be analyzed to obtain estimates of total mortality for Greenland halibut in Div. 1A.*

Roundnose Grenadier in Subareas 0 and 1

ii) **Research survey data** (page 108)

USSR and GDR conducted surveys covering both Subareas in 1987, 1988 and 1990, and STACFIS **recommended** that *the biomass estimates for roundnose grenadier in Subareas 0+1 from the USSR and GDR surveys in 1987, 1988 and 1990 should be presented at the June Meeting in 1997.*

Other Finfish in Subarea 1d) **Recommendations** (page 114)

STACFIS **recommended** that *the examination of the by-catch of Subarea 1 other finfish in the shrimp fishery be continued.*

STACFIS noted that time series of abundance and biomass indices of important by-catch species which could be derived from the Greenland shrimp surveys and the Greenland-Japan groundfish surveys were not available and **recommended** that *these should be presented at the June Meeting in 1997 on a species by species, as well as a length disegregated basis.*

V. OTHER MATTERSb) **Comparative Fishing Trial** (page 116)

To resolve the high discrepancy between survey estimates from EU-Spain and Canada for several species, STACFIS **recommended** that *comparative fishing trials between EU-Spain and Canada take place in May 1997 while both countries are conducting their surveys in the Regulatory Area of Div. 3NO.*

APPENDIX III. RESEARCH COORDINATION

Fisherles Statisticsi) **Acqilsition of STATLANT 21A and 21B reported for recent years** (page 119)

It was noted that the submission deadlines of May 15 (STATLANT 21A) and June 30 (STATLANT 21B) were adopted into the Rules of Procedure for the Scientific Council and therefore part of the Convention. Accordingly, STACREC **recommended** that *the Scientific Council inform the General Council that submission of data has not improved but in fact the situation has deteriorated, and emphasised that the Scientific Council work is seriously stifled by the lack of fishing data in time for the June Meeting.*

v) **Considerations on documentation of catches used in the assessment process** (page 120)

STACREC **recommended** that *a special note be appended to the appropriate sections of all documents reporting STATLANT data, indicating that users of the data should note that the actual catches for some species/stocks may differ from those reported in the document.*

With regard to previously published Statistical Bulletins, STACREC also **recommended** that *a special note be circulated to recipients of previous issues of the Statistical Bulletin indicating that the Scientific Council had in some years used estimated catches from other sources of data to determine actual catch levels for stock assessment purposes.*

f) **Preparation for CWP 17th Session, March 1997** (page 121)

With respect to national representation, STACREC at this meeting **recommended** that *a representative from Japan be requested to attend the meeting to represent the Scientific Council at the 17th Session of the CWP.*

Biological Surveysc) **Review of Stratification Schemes** (page 129)

....., in order to provide an accurate position of headland references relative to Div. 3P (NAFO Handbook, 1996, see text with respect to Subarea 3 on pages 43-45), as described in SCR Doc. 96/55, Serial No. N2731, STACREC **recommended** that *the Scientific Council address the issue of revising NAFO Convention text in Annex III relative to Div. 3P as follows:*

- *define "Cape Ray" as 47°37.0' north 59°18.0' west*
- *define "Cape North" as 47°02.0' north 60°25.0' west*
- *replace "Burgeo Island" with 47°30.7' north 57°43.2' west*
- *replace 46°50' north 58°50' west with 46°50.7' north 58°49.0' west.*

Other Mattersa) **Tagging Activities** (page 131)

STACREC **recommended** that *scientists undertaking any tagging activities inform the Secretariat in order that the information may be widely circulated, and hence better returns may be obtained.*

c) **Other Business**i) **List of Fishing Vessels** (page 132)

The Secretariat reported that through discussions with other NAFO Standing Committees and representatives, there was not much interest (in the *List of Fishing Vessels* publication). Based on this response, STACREC **recommended** that *the Secretariat discontinue the soliciting and publication of such information, and discontinue the List of Fishing Vessels.*

APPENDIX IV. PUBLICATIONS

Review of Scientific Publications Since June 1995e) **List of Fishing Vessels** (page 134)

STACPUB **recommended** that *the publication of the "List of Fishing Vessels" be discontinued.*

Promotion and Distribution of Scientific Publicationsb) **Distribution of Abstracts from Research Documents** (page 135)

STACPUB discussed the uneven distribution of abstracts from research documents to literature databases, particularly to ASFA. STACPUB **recommended** that *abstracts of SCR Doc. and SCS Doc. be propagated to ASFA through the national ASFA representative.*

PART B**Scientific Council Annual Meeting, 7-13 September 1996**

SCIENTIFIC COUNCIL

IV. RESEARCH COORDINATIONb) **Report of the Inter-Agency Consultation Relative to the CWP 17th Session** (page 145)

The Council agreed with STACREC that it would be preferable for the NAFO Secretariat to create and maintain an independent WWW site rather than participate in a collaborative effort with other agencies, and, **recommended** that *the Secretariat prepare a report on technical and financial considerations in creating and maintaining a web site for statistical data, for consideration at the June 1997 Meeting of the Scientific Council.*

a) **Descriptions of Fishing Effort** (page 146)

The Council agreed that the current definition of fishing effort for gillnets (fixed) in NAFO STATLANT 21B forms required change to reflect soak time and, accordingly, **recommended** that *the definition of the fishing effort measures for gillnets (fixed) be changed to read 'length of net expressed in 100 meter units multiplied by the number of soak days per haul'.*

APPENDIX II. FISHERY SCIENCE

Shrimp in Division 3Md) **Research Recommendations** (page 166)

For shrimp in Div. 3M, it was **recommended** that:

- *A single, catch and effort data set should be developed to standardize the CPUE, addressing differences in fleets, seasons, areas, depths, trawl types, etc.*
- *Catch in numbers and weight and by sex and/or age should be estimated by all nations fishing shrimp in Div. 3M. These criteria also apply to research survey data.*
- *A directed research survey for shrimp on Flemish Cap should be initiated with a primary goal of obtaining a reliable recruitment index, given that the EU survey does not provide reliable estimates of shrimp at age 2. The survey would also provide extensive data on the distribution and demography of the shrimp stock throughout the area. Hydrographic information should be collected, including data on currents, in conjunction with the survey.*

APPENDIX III. RESEARCH COORDINATION

Fisheries Statisticsc) **Reporting of Catches for *Pandalus borealis*** (page 172)

STACREC **recommended** that *statistical agencies report the catches by species, as follows: *Pandalus borealis* (Northern prawn, PRA, code 632), or *Pandalus montagui* (Aesop shrimp, AES, code 633). In situations where identification to the species level is unknown, then *Pandalus* spp. (Pandalid shrimps, PAN, code 639) be used.*

Others Mattersa) **Descriptions of Fishing Effort** (page 173)

STACREC **recommended** that *the definition of the fishing effort measure for gillnets (fixed) be changed to read 'length of net expressed in 100 meter units multiplied by the number of soak days per haul'.*

PART C**Scientific Council Special Meeting, 15-18 November 1996**

APPENDIX II. FISHERY SCIENCE

Shrimp in Subareas 0 and 1d) **Research Recommendations** (page 189)

For shrimp in Div. 0A and Subarea 1, STACFIS **recommended** that *for consideration at the November 1997 Meeting of the Scientific Council, sampling of the commercial fishery be improved to cover all components of the fishery by area and month.*

Shrimp in Denmark Straitd) **Research Recommendations** (page 192)

For shrimp in the Denmark Strait, STACFIS **recommended** that *the annual survey be expanded to cover the whole distribution of shrimp in this area.*

