

## PART D

### Miscellaneous

#### CONTENTS

	<b>Page</b>
<b>AGENDA I.</b> Scientific Council Meeting, 3-17 June 2004 .....	263
ANNEX 1. Fisheries Commission's Request for Scientific Advice on Management in 2005 of Certain Stocks in Subareas 2, 3 and 4 .....	267
ANNEX 2A. Canadian Request for Scientific Advice on Management in 2005 of Certain Stocks in Subareas 0 to 4 (received 15 March 2004) .....	270
ANNEX 2B. Canadian Request for Scientific Advice on Management in 2005 (received 1 April 2004) .....	271
ANNEX 3. Denmark's (on behalf of Greenland) request for Scientific Advice on Management of Certain Stocks in Subarea 0 and 1 in 2005 .....	272
<b>AGENDA II.</b> Scientific Council Annual Meeting, 13-17 September 2004 .....	273
<b>AGENDA III.</b> Scientific Council Meeting, 27 October-4 November 2004 .....	275
ANNEX 4. Fisheries Commission's Request for Scientific Advice on Management in 2006 of Certain Stocks in Subareas 2, 3 and 4 .....	276
List of Research and Summary Documents, 2004 .....	279
List of Representatives and Advisors/Experts, 2004 .....	285
List of Recommendations in 2004 .....	293



**AGENDA I****SCIENTIFIC COUNCIL MEETING, 3-17 JUNE 2004**

- I. Opening (Chair: M. Joanne Morgan)
  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. Review of Scientific Council Recommendations in 2003
- III. Fisheries Environment (STACFEN Chair: Eugene Colbourne)
  1. Opening
    - a) Introduction and Administrative Details
    - b) Appointment of Rapporteur
  2. Review of Recommendations in 2003
  3. Progress Report on Publication of Proceedings of the Mini-symposium on Hydrographic Variability in NAFO Waters 1991-2000
  4. Invited speaker (Ken Frank, Bedford Institute of Oceanography Dartmouth, Nova Scotia: "Assessment of the State of a Large Marine Ecosystem – the Eastern Scotian Shelf")
  5. Marine Environmental Data Service (MEDS) Report for 2003
  6. Review of the Physical, Biological and Chemical Environment in the NAFO Convention Area for 2003
  7. Interdisciplinary Studies
  8. The NAFO Annual Ocean Climate Status Summary (NAOCSS) for 2003
  9. Environmental Indices (Implementation in the Assessment Process)
  10. Discussion and Formulations of Recommendations Based on Environmental Conditions in 2003
  11. National Representatives
  12. Other Matters
  13. Adjournment
- IV. Publications (STACPUB Chair: Manfred Stein)
  1. Opening
    - a) Appointment of Rapporteur
  2. Review of Recommendations in 2003
  3. Review of Publications
    - a) Journal of Northwest Atlantic Fishery Science
    - b) NAFO Scientific Council Studies
    - c) NAFO Statistical Bulletin
    - d) NAFO Scientific Council Reports
    - e) Index and Lists of Titles
    - f) Other Reviews
  4. NAFO Website
    - a) Web Statistics
    - b) Design of NAFO Website
  5. Promotion and Distribution of Scientific Publications
    - a) Invitational Papers
    - b) Scientific Citation Index (SCI)
    - c) CD-ROM Versions of Reports, Documents
    - d) New Initiatives for Publications
  6. Editorial Matters Regarding Scientific Publications
    - a) Review of Editorial Board
    - b) Progress Report of Publications of Reproductive Potential WG (Journal and Studies)

- c) Progress Report of Publication of 2002 STACFEN Mini-Symposium on Hydrographic Variability
- d) Progress Report of Publication of 2002 Elasmobranch Symposium Proceedings
- e) Preparation for the Publication of 2004 Symposium "The Ecosystem of the Flemish Cap"

- 7. Papers for Possible Publication
- 8. Other Matters

V. Research Coordination (STACREC Chair: Antonio Vazquez)

- 1. Opening
  - a) Appointment of reporter
- 2. Review of Previous Recommendations
- 3. Fishery Statistics
  - a) Progress report on Secretariat activities in 2003/2004
    - i) Acquisition of STATLANT 21A and 21B reports for recent years
  - b) CWP Sessions 2004/2005
    - i) Report of the Intersessional CWP Meeting, Rome, 2-4 February 2004
    - ii) CWP-21<sup>st</sup> Session, Copenhagen 2005
    - iii) Quality of catch statistics as needed for stock assessment
- 4. Research Activities
  - a) Biological sampling
    - i) Report on activities in 2003/2004
    - ii) Report by National Representatives on commercial sampling conducted
    - iii) Report on data availability for stock assessments (by Designated Experts)
  - b) Biological surveys
    - i) Review of survey activities in 2003 (by National Representatives and Designated Experts)
    - ii) Surveys planned for 2004 and early-2005
  - c) Secretariat Stock Assessment Database
- 5. FAO Fisheries Global Information System (FIGIS)
  - a) Fisheries Resources Monitoring System (FIRMS) Steering Committee (FSC) Meeting, Rome, 2-5 February 2004
  - b) Consideration of Proposal for FIRMS/NAFO Arrangement
- 6. NAFO Observer Program
- 7. Review of SCR and SCS Documents
- 8. Other Matters
  - a) Tagging activities
  - b) Comparative fishing between Canada and EU-Spain
  - c) Conversion of Spanish survey length distributions
  - d) Research activities
  - e) Other business

VI. Fisheries Science (STACFIS Chair: Hilario Murua)

- 1. Opening
- 2. General Review
  - a) Review of Recommendations in 2003
  - b) General Review of Catches and Fishing Activity
- 3. STACFIS Working Procedures
- 4. Stock Assessments
  - a) Stocks Within or Partly Within the Regulatory Area, as Requested by the Fisheries Commission with the Concurrence of the Coastal States (Annex 1) (Northern Shrimp in Div. 3M and Div. 3LNO (Item 1) will be Undertaken During Scientific Council Meeting October/November, 2004):
    - i) Cod (Div. 3NO (monitor); Div. 3M)
    - ii) Redfish (Div. 3LN (monitor); Div. 3M (monitor); Div. 3O (monitor, see Annex 2B))
    - iii) American plaice (Div. 3LNO (monitor); Div. 3M)

- iv) Witch flounder (Div. 2J and 3KL (monitor); Div. 3NO)
  - v) Yellowtail flounder (Div. 3LNO)
  - vi) Northern shortfin squid in Subareas 3 and 4
  - vii) Greenland halibut (Subareas 2 and 3)
  - viii) Capelin (Div. 3NO (monitor))
  - ix) Skate (Div. 3LNO)
- b) Stocks Within the 200-mile Fishery Zone in Subareas 0 to 4, as Requested by Canada (Annex 2A)
    - i) Greenland halibut in Subareas 2 and 3 (Item 1)
  - c) Request by Denmark (Greenland) (Annex 3)
    - i) Roundnose grenadier in Subareas 0 and 1 (monitor) (Item 1)
    - ii) Demersal redfish and other finfish in Subarea 1 (monitor) (Item 2)
    - iii) Greenland halibut in Div. 1A inshore (Item 3)
  - d) Stocks Overlapping the Fishery Zones in Subareas 0 and 1 as Requested by Canada and by Denmark (Greenland) (Annexes 2A and 3)
    - i) Greenland halibut (Subareas 0 + Div. 1A Offshore and Div. 1B-1F) (Annex 2A, Item 1; Annex 3, Item 3)
  - e) Assessment of Other Stocks
    - i) Roughhead grenadier in Subareas 2 and 3 (monitor)
5. Other Matters
- a) Nomination of Designated Experts
  - b) Other Business

## VII. Management Advice and Responses to Special Requests

1. Fisheries Commission (Annex 1)(Northern Shrimp in Div. 3M and Div. 3LNO (Item 1) will be Undertaken During Scientific Council Meeting October/November, 2004)
  - a) Request for Advice on TACs and Other Management Measures for the Year 2005
    - i) Greenland halibut in Subarea 2 and Div. 3KLMNO
  - b) Request for Advice on TACs and Other Management Measures for the Years 2005 and 2006
    - i) Cod in Div. 3M
    - ii) American Plaice in Div. 3M
    - iii) Witch Flounder in Div. 3NO
    - iv) Yellowtail Flounder in Div. 3LNO
    - v) Skate in Div. 3LNO (see Item 3)
    - vi) Northern Shortfin Squid in SA 3+4
  - c) Special Requests for Management Advice (see Items 4, 6-10)
    - i) Greenland halibut in Subarea 2 and Div. 3KLMNO Rebuilding Strategy (Item 4)
    - ii) Formulation of advice under the precautionary approach (Items 6 and 7) (note: Report of Limit Reference Point Study Group (LRPSG), 15-20 April, L'Orient, France)
    - iii) Pelagic *S. mentella* (redfish) in Subareas 1-3 and adjacent ICES area (Item 8)
    - iv) White Hake in Div. 3NO (Item 9)
    - v) Redfish in Div. 3LN and 3O (Item 10)
  - d) Monitoring of Stocks for Which Multi-year Advice was Provided in 2003
    - i) Cod in Div. 3NO
    - ii) American plaice in Div. 3LNO
    - iii) Witch flounder in Div. 2J+3KL
    - iv) Redfish in Div. 3M
    - v) Redfish in Div. 3LN
    - vi) Redfish in Div. 3O
    - vii) Capelin in Div. 3NO
2. Coastal States
  - a) Request by Canada and Denmark (Greenland) for Advice on TACs and Other Management Measures (Annexes 2A and 3)
    - i) Greenland halibut in Div. 0A + 1AB and Div. 0B + 1C-F

- b) Request by Canada for Advice (Annex 2A and 2B)
    - i) Greenland halibut in SA 0+1 and SA 2 and 3 (Annex 2A, Item 1)
    - ii) Redfish in Div. 30 (Annex 2B, Items 1-4)
  - c) Request by Denmark (Greenland) for Advice (Annex 3)
    - i) Demersal redfish and other finfish in Subarea 1 (monitor) (Item 2)
    - ii) Roundnose grenadier in Subareas 0 and 1 (monitor) (Item 1)
    - iii) Greenland halibut in Div. 1A Inshore (Item 3)
- VIII. Future Scientific Council Meetings 2004 and 2005
- 1. Scientific Council Meeting and Special Session, September 2004 Dartmouth, Nova Scotia, Canada
  - 2. Scientific Council Meeting, October/November 2004 (Assessment of Shrimp Stocks) Copenhagen, Denmark
  - 3. Scientific Council Meeting, June 2005
  - 4. Scientific Council Meeting and Special Session, September 2005
  - 5. Scientific Council Meeting, October/November 2005 (Assessment of Shrimp Stocks)
- IX. Arrangements for Special Sessions
- 1. Progress Report on Special Session in 2004: The Ecosystem of the Flemish Cap.
  - 2. Topics for Special Sessions in 2005 and 2006.
- X. Reports of Working Groups
- 1. Working Group on Reproductive Potential (Chair: E. A. Trippel)
  - 2. Joint NAFO-ICES Working Group on Harp and Hooded Seals (G. Stenson)
  - 3. Limit Reference Point Study Groups (LRPSG) (Chair: P.A. Shelton)
- XI. Review of Scientific Council Working Procedures/Protocol
- 1. NAFO Scientific Council Observership at ICES ACFM Meetings
  - 2. General Plan of Work for Annual Meeting in September
  - 3. Facilities, Technological and General Secretariat Support
  - 4. Other
- XII. Other Matters
- 1. Report of CWP Intersessional Meeting, Rome, Italy, 2-5 February 2004
  - 2. Report from the FIRMS Steering Committee (FSC) Meeting of 2-5 February 2004
  - 3. The FSC and 21<sup>st</sup> CWP Meeting, Copenhagen, February 2005
  - 4. The FIRMS/NAFO Agreement
  - 5. Meeting Highlights for NAFO Website
  - 6. Other Business
- XIII. Adoption of Committee Reports
- 1. STACFEN
  - 2. STACREC
  - 3. STACPUB
  - 4. STACFIS
- XIV. Scientific Council Recommendations to General Council and Fisheries Commission
- XV. Adoption of Scientific Council Report
- XVI. Adjournment

**ANNEX 1. FISHERIES COMMISSION'S REQUEST FOR SCIENTIFIC ADVICE ON MANAGEMENT  
IN 2005 OF CERTAIN STOCKS IN SUBAREAS 2, 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 2004 Annual Meeting, provide advice on the scientific basis for the management of the following fish and invertebrate stocks or groups of stocks in 2005:

Shrimp (Div. 3M, 3LNO)  
Greenland halibut (Subarea 2 and Div. 3KLMNO)

2. 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 2004 Annual Meeting, provide advice on the scientific basis for the management of the following fish stocks on an alternating year basis:

Cod (Div. 3NO; Div. 3M)  
Redfish (Div. 3M; Div. 3LN; Div. 3O)  
Yellowtail flounder (Div. 3LNO)  
American plaice (Div. 3LNO; Div. 3M)  
Witch flounder (Div. 2J3KL; Div. 3NO)  
Capelin (Div. 3NO)  
Northern Shortfin Squid (Subareas 3 and 4)

- In 2003, advice was provided for 2004 and 2005 for cod in 3NO, American plaice in 3LNO, witch flounder in 2J3KL, redfish in 3M, redfish in 3LN, redfish in 3O and capelin in 3NO. These stocks will next be assessed in 2005.
- In 2004, advice will be provided for 2005 and 2006 for cod in 3M, American plaice in 3M, yellowtail flounder in 3LNO, witch flounder in 3NO and northern shortfin squid in SA 3&4. These stocks will next be assessed in 2005.

The Fisheries Commission requests the Scientific Council to continue to monitor the status of all these stocks annually and, should a significant change be observed in stock status (e.g. from surveys) or in by-catches in other fisheries, provide updated advice as appropriate.

3. The Fisheries Commission with the concurrence of the Coastal State requests Scientific Council, at a meeting in advance of the 2004 Annual Meeting, to provide advice on the scientific basis for the management of skates in Div. 3LNO including recommendations regarding the most appropriate TAC for 2005 and 2006. This stock will be assessed in alternate years thereafter.
4. The Fisheries Commission with the concurrence of the Coastal State requests Scientific Council, at a meeting in advance of the 2004 Annual Meeting, to provide information on the status of the Greenland halibut in SA 2+ Div. 3KLMNO in relation to the Rebuilding Strategy including commentary on progress in relation to targets described in the Strategy.
5. The Commission and the Coastal State request the Scientific Council to consider the following in assessing and projecting future stock levels for those stocks listed above:
  - a) The preferred tool for the presentation of a synthetic view of the past dynamics of an exploited stock and its future development is a stock assessment model, whether age-based or age-aggregated.
  - b) For those stocks subject to analytical-type assessments, the status of the stocks 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  $F_{0.1}$  and  $F_{2003}$  in 2005 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.
  - c) 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 following reference points should be calculated: 1) the level of fishing effort or fishing mortality (F) required to take the MSY catch in the long term; 2) two-thirds of that level; 3) 75% of that level; and 4) 85% of that level.
  - d) For those resources for which only general biological and/or catch data are available, few standard criteria exist on which to base advice. The stock status should be evaluated in the context of management requirements for long-term sustainability and the advice provided should be consistent with the precautionary approach.
  - e) Spawning stock biomass levels 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 reproductive potential of the stock, management options should be offered that specifically respond to such concerns.

- f) Information should be provided on stock size, spawning stock sizes, recruitment prospects, fishing mortality, catch rates and TACs implied by these management strategies for the short and the long term in the following format:
- I. For stocks for which analytical-type assessments are possible, graphs should be provided of all of the following for the longest time-period possible:
    - historical yield and fishing mortality;
    - spawning stock biomass and recruitment levels;
    - catch options for the year 2005 and subsequent years over a range of fishing mortality rates (F) at least from  $F_{0.1}$  to  $F_{max}$ ;
    - spawning stock biomass corresponding to each catch option;
    - yield-per-recruit and spawning stock per recruit values for a range of fishing mortalities.
  - II. For stocks for which advice is based on general production models, the relevant graph of production as a function of fishing mortality rate or fishing effort should be provided. Age-aggregated assessments should also provide graphs of all of the following for the longest time-period possible:
    - exploitable biomass (both absolute and relative to  $B_{MSY}$ )
    - yield/biomass ratio as a proxy for fishing mortality (both absolute and relative to  $F_{MSY}$ )
    - estimates of recruitment from surveys, if available.
  - III. Where analytical methods are not attempted, the following graphs should be presented, for one or several surveys, for the longest time-period possible:
    - time trends of survey abundance estimates, over:
      - an age or size range chosen to represent the spawning population
      - an age or size-range chosen to represent the exploited population
    - recruitment proxy or index for an age or size-range chosen to represent the recruiting population.
    - fishing mortality proxy, such as the ratio of reported commercial catches to a measure of the exploited population.

For age-structured assessments, yield-per-recruit graphs and associated estimates of yield-per-recruit based reference points should be provided. In particular, the three reference points, actual F,  $F_{0.1}$  and  $F_{max}$  should be shown.

6. Noting the progress made by the Scientific Council on the development of a framework for implementation of the Precautionary Approach, the Fisheries Commission requests that the Scientific Council provide the following information for the 2004 Annual Meeting of the Fisheries Commission for stocks under its responsibility requiring advice for 2005, or 2005 and 2006:
- a) the limit and precautionary reference points as described in Annex II of the UN Fisheries Agreement indicating areas of uncertainty (when precautionary reference points cannot be determined directly, proxies should be provided);
  - b) information including medium term considerations and associated risk or probabilities which will assist the Commission in developing the management strategies described in paragraphs 4 and 5 of Annex II in the Agreement;
  - c) information on the research and monitoring required to evaluate and refine the reference points described in paragraphs 1 and 3 of Annex II of the Agreement; these research requirements should be set out in the order of priority considered appropriate by the Scientific Council;
  - d) any other aspect of Article 6 and Annex II of the Agreement which the Scientific Council considers useful for implementation of the Agreement's provisions regarding the precautionary approach to capture fisheries;
  - e) propose criteria and harvest strategies for re-opening of fisheries and for new and developing fisheries; and
  - f) to continue to work toward the harmonization of the terminology and application of the precautionary approach within relevant advisory bodies.
7. In addition, the following elements should be taken into account by the Scientific Council when considering the precautionary approach:
- a) Many of the stocks in the NAFO Regulatory Area are well below any reasonable level of  $B_{lim}$  or  $B_{buf}$ . For these stocks, the most important task for the Scientific Council is to inform on how to rebuild the stocks. In this context and building on previous work of the Scientific Council in this area, the Scientific Council is requested to evaluate various scenarios corresponding to recovery plans with timeframes of 5 to 10 years, or longer as appropriate. This evaluation should provide the information necessary for the Fisheries Commission to consider the balance between risks and yield levels, including information on the consequences and risks of no action at all.

References to "risk" and to "risk analyses" should refer to estimated probabilities of stock population parameters falling outside biological reference points.

- b) Where reference points are proposed by the Scientific Council as indicators of biological risk, they should be accompanied by a description of the nature of the risk incurred if the reference point is crossed (e.g. short-term risk of recruitment overfishing, loss of long-term yield, etc.)
  - c) When a buffer reference point is proposed in order to maintain a low probability that a stock, measured to be at the buffer reference point, may actually be at or beyond the limit reference point, the Scientific Council should explain the assumptions made about the uncertainty with which the stock is measured, and also the level of 'low probability' that is used in the calculation.
  - d) Wherever possible, short and medium term consequences should be identified for various exploitation rates (including no fishing) in terms of yield, stability in yield from year to year, and the risk or probability of moving the stock beyond  $B_{lim}$ . Whenever possible, this information should be cast in terms of risk assessments relating fishing mortality rates to the risks of falling below  $B_{lim}$ , as well as of being above  $F_{lim}$  and, the risks of stock collapse and recruitment overfishing, as well as the risks of growth overfishing and the consequences in terms of both short and long term yields.
  - e) When providing risk estimates, it is very important that the time horizon be clearly spelled out. By way of consequence, risks should be expressed in timeframes of 5, 10 and 15 years (or more), or in terms of other appropriate year ranges depending on stock specific dynamics. Furthermore, in order to provide the Fisheries Commission with the information necessary to consider the balance between risks and yield levels, each harvesting strategy or risk scenario should include, for the selected year ranges, the risks and yields associated with various harvesting options in relation to  $B_{lim}$ , and  $F_{lim}$  and target F reference points selected by managers.
8. Regarding pelagic *S. mentella* redfish in NAFO Subareas 1-3, the Scientific Council is requested to review the most recent information on the distribution of this resource, as well as on the affinity of this stock to the pelagic redfish resource found in the ICES Sub-area XII, parts of SA Va and XIV and to the shelf stocks of redfish found in ICES Sub-areas V, VI and XIV, and NAFO Subareas 1-3.
9. Regarding white hake in Divisions 3NO, the Scientific Council is requested to provide the following:
- a) Information on the fishing mortality on white hake in Divisions 3NO in recent years, as well as information on by-catches of other groundfish in the 3NO white hake fishery;
  - b) Information on abundance indices and the distribution of the stock in relation to groundfish resources, particularly for the stocks which are under moratorium;
  - c) Information on the distribution of white hake in Divisions 3NO, as well as a description of the relative distribution inside and outside the NAFO Regulatory Area;
  - d) Advice on reference points and conservation measures that would allow for exploitation of this resource in a precautionary manner;
  - e) Information on annual yield potential for this stock in the context of (d) above;
  - f) Identification and delineation of fishery areas and exclusion zones where fishing would not be permitted, with the aim of reducing the impact on the groundfish stocks which are under moratorium, particularly juveniles;
  - g) Determination of the appropriate level of research that would be required to monitor the status of this resource on an ongoing basis with the aim of providing catch options that could be used in the context of management by Total Allowable Catch (TAC); and
  - h) Information on the size composition in the current catches and comment on these sizes in relation to the size at sexual maturity.
10. Regarding redfish in Divisions 3L, 3N and 3O, Scientific Council is requested to review all available information and provide advice regarding whether the current management units (3LN and 3O) or any alternative may be the most appropriate.
-

**ANNEX 2A. CANADIAN REQUEST FOR SCIENTIFIC ADVICE ON MANAGEMENT IN 2005  
OF CERTAIN STOCKS IN SUBAREAS 0 TO 4**  
(received 15 March 2004)

1. Canada requests that the Scientific Council, at its meeting in advance of the 2004 Annual Meeting of NAFO, subject to the concurrence of Denmark (on behalf of Greenland), provide advice on the scientific basis for management in 2005 of the following stocks:

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

The Scientific Council has noted previously that there is no biological basis for conducting separate assessments for 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 (on behalf of 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 2005, and to specifically:

- a) advise on appropriate TAC levels for 2005, separately, for Greenland halibut in the offshore area of Divisions 0A+1AB and Divisions 0B+1C-F. The Scientific Council is also asked to advise on any other management measures it deems appropriate to ensure the sustainability of these resources; and
- b) comment on the relationship between Greenland halibut in inshore waters of Cumberland Sound and the offshore waters of Division 0B and advise whether or not a separate management unit would be appropriate for Cumberland Sound Greenland halibut.

The Council also is asked to advise on appropriate TAC levels separately – for Greenland halibut in SA 2+Division 3K and for Divisions LMNO.

Scientific Council has, in the past, advised that fishing effort for Greenland halibut in SA2+3KLMNO should be distributed in relation to biomass. Scientific Council is requested to comment on:

- a) the current distribution of the resource between SA2+3K and 3LMNO and comment on how this compares with the current distribution of quota allocation; and
- b) the appropriate distribution of quota allocation if it was based on the distribution of biomass.

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 Shrimp and Greenland halibut in Subareas 0 and 1:
  - a) For those stocks subject to analytical-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. The implications of no fishing as well as fishing at  $F_{0.1}$ , and  $F_{2002}$  in 2005 and subsequent years should be evaluated in relation to precautionary reference points of both fishing mortality and spawning stock biomass. The present stock size and spawning stock size should be described in relation to those observed historically and those to be expected in the longer term under this range of fishing mortalities, and any other options Scientific Council feels worthy of consideration under a precautionary framework.
 

Opinions of the Scientific Council should be expressed in regard to stock size, spawning stock sizes, recruitment prospects, catch rates and catches implied by these management strategies for the short and long term. Values of  $F$  corresponding to the reference points should be given. Uncertainties in the assessment should be evaluated and presented in the form of risk analyses related to  $B_{lim}$  ( $B_{buf}$ ) and  $B_{target}$ , and  $F_{lim}$  ( $F_{buf}$ ) and  $F_{target}$ .
  - 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. Management options should be within the precautionary framework.
  - c) For those resources for which only general biological advice and/or catch data are available, few standard criteria exist on which to base advice. The stock status should be evaluated in the context of management requirements for long-term sustainability and management options evaluated in the way described above to the extent possible. Management options should be within the precautionary framework.

d) Presentation of the results should include the following:

- I. For stocks for which analytical-type assessments are possible:
  - A graph of historical yield and fishing mortality for the longest time period possible;
  - A graph of spawning stock biomass and recruitment levels for the longest time period possible;
  - Graphs and tables of catch options for the year 2005 and subsequent years over a range of fishing mortality rates (F) at least from F=0 to F<sub>0.1</sub> including risk analyses;
  - Graphs and tables showing spawning stock biomass corresponding to each catch option including risk analyses;
  - Graphs showing the yield-per-recruit and spawning stock per recruit values for a range of fishing mortalities.
- 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 reference points, F=0, actual F, and F<sub>0.1</sub> should be shown.

Yours sincerely,  
 David Bevan  
 Director-General  
 Fisheries Management, DFO  
 Ottawa, Canada

## ANNEX 2B. CANADIAN REQUEST FOR SCIENTIFIC ADVICE ON MANAGEMENT IN 2005

(received 1 April 2004)

Further to our letter of March 15, 2004, we would request that the following questions be submitted to the Scientific Council for its consideration at its June 2004 meeting.

The 2003 Scientific Council report for 3O redfish indicated that, "*Catches have averaged about 13,000 tons since 1960 and over the long term, catches at this level do not appear to have been detrimental.*" Catches of 3O redfish have been around 20,000t for the past three years.

Given the foregoing, we would like the Scientific Council to provide responses to the following questions:

1. Would catches in the range of 13,000-20,000t be detrimental to the 3O redfish stock?
2. Would catches above 20,000t be detrimental to the 3O redfish stock?
3. What is the relative strength of the 1988 year-class in relation to other strong year-classes that have supported this fishery?
4. Considering that there has not been any good recruitment since the 1988 year-class and given the slow growth of redfish, when is the earliest possible time that good recruitment could be expected to enter into this fishery?

Yours sincerely,  
 David Bevan  
 Director-General  
 Fisheries Management, DFO  
 Ottawa, Canada

**ANNEX 3. DENMARK'S (ON BEHALF OF GREENLAND) REQUEST FOR SCIENTIFIC ADVICE ON  
MANAGEMENT OF CERTAIN STOCKS IN SUBAREA 0 AND 1 IN 2005**

1. In the Scientific Council report of 2002, scientific advice on management of Roundnose grenadier in Subarea 0+1 was given as a 3-year advice (for 2003, 2004 and 2005). Denmark, on behalf of Greenland, requests the Scientific Council to continue to monitor status of Roundnose grenadier in Subarea 0+1 annually and, should significant change in stock status be observed (e.g. from surveys), the Scientific Council is requested to provide updated advice as appropriate.
2. In 2003, advice for redfish (*Sebastes spp.*) and other finfish in Subarea 1 was given for 2004 and 2005. Denmark, on behalf of Greenland, requests the Scientific Council in continue to monitor the status of redfish and other finish in Subarea 1 annually and, should significant change in stock status be observed (e.g. from surveys), the Scientific Council is requested to provide updated advice as appropriate.
3. Subject to the concurrence of Canada as regards Subarea 0, the Scientific Council is requested to provide advice on the scientific basis for the management of Greenland halibut in the offshore area of Divisions 0A+1AB and Divisions 0B+1C-F in 2005 and as many years ahead as data allow.

Further, for Subarea 1A inshore, the Council is asked to provide advice on allocation of TACs distributed in the areas of Illulissat, Uummannaq and Upernavik, respectively.

4. Subject to the concurrence of Canada as regards Subarea 0, Denmark, on behalf of Greenland, requests the Scientific Council of NAFO before December 2004 to provide advice on the scientific basis for management of Northern shrimp (*Pandalus borealis*) in Subarea 0 and 1 in 2005, and as many years ahead as data allow.

The Scientific Council is asked to update the information about the distribution of Northern shrimp (*Pandalus borealis*) in Subarea 1 and Division 0A east of 60°W and provide advice on allocation of TACs to Subarea 0A east of 60°W and Subarea 1.

Further, the Council is requested to advise, in co-operation with ICES, on the scientific basis for management of Northern shrimp (*Pandalus borealis*) in the Denmark Strait and adjacent areas east of southern Greenland in 2005, and as many years forward as data allow.

On behalf of  
Greenland Home Rule  
The Department of Fisheries and Hunting  
Best Regards  
Amalie Jessen  
Deputy Minister

---

---

## AGENDA II

### SCIENTIFIC COUNCIL MEETING, 13-17 SEPTEMBER 2004

- I. Opening (Chair: M. Joanne Morgan)
  1. Appointment of Rapporteur
  2. Adoption of Agenda
  3. Attendance of Observers
  4. Plan of Work
  
- II. Review of Scientific Council Recommendations from June 2004
  
- III. Fisheries Science (STACFIS Chair: Hilario Murua)
  1. Opening
  2. Nomination of Designated Experts
  3. Other Matters
    - a) Review of SCR and SCS Documents (if necessary)
    - b) Other Business
  
- IV. Research Coordination (STACREC Chair: Antonio Vázquez)
  1. Opening
  2. Fisheries Statistics
    - a) Progress Reports on Secretariat Activities
      - i) Acquisition of STATLANT 21 data
      - ii) Publication of statistical information
  3. Research Activities in 2004/2005
    - a) Surveys Planned for 2004 and Early-2005
    - b) Consideration of a revisited edition of the Manual of Groundfish Surveys in the Northwest Atlantic (Doubleday, 1981)
  4. NAFO Observer Program
  5. Stock Assessment Database
    - a) Evaluation of the Assessment Data Submission Procedure
    - b) Report of the *Ad hoc* Working Group
  6. Other Matters
    - a) Review of SCR and SCS documents
    - b) Other Business
    - c) Acknowledgements
  
- V. Publications (STACPUB Chairman: Manfred Stein)
  1. Opening
  2. Review of Recommendations from June 2004
  3. Status of Scientific Publications
    - a) Papers from June 2004 Meeting
    - b) Status of the 2002 Symposium proceedings "*Elasmobranch Fisheries: Managing for Sustainable Use and Biodiversity Conservation*"
    - c) Other Publications
  4. NAFO Website
    - a) Web Statistics
    - b) Other Business

5. Report of *Ad hoc* Working Group "Journal Cover"
  6. Editorial Matters Regarding Scientific Publication
  7. Other Business
- VI. Special Requests from Fisheries Commission
1. Update on Advice for Northern Shrimp in Div. 3M (Annex 1, Item 1)
  2. Update on Advice for Northern Shrimp in Div. 3LNO (Annex 1, Item 1)
  3. Pelagic *S. mentella* (Redfish) in Subareas 1-3 and Adjacent ICES Area (Annex 1, Item 8)
- VII. Review of Future Meeting Arrangements
1. Scientific Council Meeting on Shrimp, October/November 2004
  2. Scientific Council Meeting, June 2005
  3. Annual Meeting, September 2005
  4. Scientific Council Meeting on Shrimp, 2005
  5. Scientific Council Meeting, June 2006
- VIII. Future Special Sessions
1. Topics for Special Session in 2006
- IX. Scientific Council Working Procedures and Protocol
1. Timetable and Frequency of Assessments
  2. Catch Estimates
  3. Limit Reference Points
- X. Other Matters
1. Consideration of Application of Southeast Asian Fisheries Development Center (SEAFDEC) to Join CWP
  2. Other Business
- XI. Adoption of Reports
1. Consideration of Report of the Symposium "*The Ecosystem of the Flemish Cap*", 8-10 September 2004
  2. Committee Reports STACFIS, STACREC, STACPUB
  3. Report of Scientific Council
- XII. Adjournment

**AGENDA III****SCIENTIFIC COUNCIL MEETING, 27 OCTOBER-4 NOVEMBER 2004**

(ICES Headquarters, Copenhagen, Denmark)

- I. Opening (Chair: M. Joanne Morgan)
  1. Appointment of rapporteur
  2. Adoption of agenda
  3. Plan of work
  
- II. Fisheries Science (STACFIS Chair: Hilario Murua)
  1. Review of Recommendations in 2003 and in 2004
  2. Review of Catches
  3. General Environmental Review
  4. Stock assessments (Annexes 1, 2, 3 and 4)
    - Northern shrimp (Div. 3M)
    - Northern Shrimp (Div. 3LNO)
    - Northern shrimp (Subareas 0 and 1)
    - Northern shrimp (in Denmark Strait and off East Greenland)
  5. Other Business
  
- III. Formulation of Advice (see Annexes 1, 2, 3 and 4)
  1. Advice for Northern Shrimp
    - a) Request from Fisheries Commission (to include outcome of Annual Meeting of 13-17 September 2004)
      - Northern shrimp (Div. 3M)
      - Northern shrimp (Div. 3LNO)
    - b) Requests from Coastal States
      - Northern shrimp (Subareas 0 and 1)
      - Northern shrimp (in Denmark Strait and off East Greenland)
  
- IV. Other Matters
  1. Meeting of October/November 2005
  2. Meeting of October/November 2006
  3. Coordination with ICES Working Groups on Shrimp Stock Assessments
  4. Other Business
  
- V. Adoption of Reports
  
- VI. Adjournment

**ANNEX 4. FISHERIES COMMISSION'S REQUEST FOR SCIENTIFIC ADVICE ON MANAGEMENT  
IN 2006 OF CERTAIN STOCKS IN SUBAREAS 2, 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 2005 Annual Meeting, provide advice on the scientific basis for the management of the following fish and invertebrate stocks or groups of stocks in 2006:

Shrimp (Div. 3M, 3LNO)  
Greenland halibut (Subarea 2 and Div. 3KLMNO)

2. The Fisheries Commission with the concurrence of the Coastal State as regards shrimp in Div. 3LNO requests Scientific Council, at its meeting of November, 2004 in review of the most recent data to provide advice concerning the scope for an adjustment to the TAC for 2005 from the currently advised level of 13,000 t.
3. 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 2005 Annual Meeting, provide advice on the scientific basis for the management of the following fish stocks on an alternating year basis:

Cod (Div. 3NO; Div. 3M)  
Redfish (Div. 3M; Div. 3LN; Div. 3O)  
Yellowtail flounder (Div. 3LNO)  
American plaice (Div. 3LNO; Div. 3M)  
Witch flounder (Div. 2J3KL; Div. 3NO)  
Skates (Div. 3LNO)  
Capelin (Div. 3NO)  
Northern Shortfin Squid (Subareas 3 and 4)

- In 2004, advice was provided for 2005 and 2006 for cod in 3M, American plaice in 3M, yellowtail flounder in 3LNO, witch flounder in 3NO and northern shortfin squid in SA 3&4. These stocks will next be assessed in 2006.
- In 2005, advice will be provided for 2006 and 2007 for cod in 3NO, American plaice in 3LNO, witch flounder in 2J3KL, redfish in 3M, redfish in 3LN, redfish in 3O and capelin in 3NO. These stocks will next be assessed in 2007. For redfish in Div. 3O the Scientific Council is requested to also provide its advice in the context of the 3-year management plan.

The Fisheries Commission requests the Scientific Council to continue to monitor the status of all these stocks annually and, should a significant change be observed in stock status (e.g. from surveys) or in by-catches in other fisheries, provide updated advice as appropriate.

4. The Fisheries Commission with the concurrence of the Coastal State requests Scientific Council, at a meeting in advance of the 2005 Annual Meeting, to provide advice on the scientific basis for the management of white hake in Div. 3NO including recommendations regarding the most appropriate TAC for 2006 and 2007 in the context of the 3-year management plan. This stock will be assessed in alternate years thereafter.
5. The Fisheries Commission with the concurrence of the Coastal State requests Scientific Council, at a meeting in advance of the 2005 Annual Meeting, to provide information on the status of the Greenland halibut in SA 2+ Div. 3KLMNO in relation to the Rebuilding Strategy including commentary on progress in relation to targets described in the Strategy.
6. The Commission and the Coastal State request the Scientific Council to consider the following in assessing and projecting future stock levels for those stocks listed above:
  - a) The preferred tool for the presentation of a synthetic view of the past dynamics of an exploited stock and its future development is a stock assessment model, whether age-based or age-aggregated.
  - b) For those stocks subject to analytical-type assessments, the status of the stocks 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 F0.1 and F2004 in 2006 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.
  - c) 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 the level of fishing effort or fishing mortality (F) required to take two-thirds MSY catch in the long term should be calculated.

- d) For those resources for which only general biological and/or catch data are available, few standard criteria exist on which to base advice. The stock status should be evaluated in the context of management requirements for long-term sustainability and the advice provided should be consistent with the precautionary approach.
- e) Spawning stock biomass levels 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 reproductive potential of the stock, management options should be offered that specifically respond to such concerns.
- f) Information should be provided on stock size, spawning stock sizes, recruitment prospects, fishing mortality, catch rates and TACs implied by these management strategies for the short and the long term in the following format:
  - I. For stocks for which analytical-type assessments are possible, graphs should be provided of all of the following for the longest time-period possible:
    - historical yield and fishing mortality;
    - spawning stock biomass and recruitment levels;
    - catch options for the year 2006 and subsequent years over a range of fishing mortality rates
    - (F) at least from  $F_{0.1}$  to  $F_{max}$ ;
    - spawning stock biomass corresponding to each catch option;
    - yield-per-recruit and spawning stock per recruit values for a range of fishing mortalities.
  - II. For stocks for which advice is based on general production models, the relevant graph of production as a function of fishing mortality rate or fishing effort should be provided. Age aggregated assessments should also provide graphs of all of the following for the longest time period possible:
    - exploitable biomass (both absolute and relative to  $B_{MSY}$ )
    - yield/biomass ratio as a proxy for fishing mortality (both absolute and relative to  $F_{MSY}$ )
    - estimates of recruitment from surveys, if available.
  - III. Where analytical methods are not attempted, the following graphs should be presented, for one or several surveys, for the longest time-period possible:
    - time trends of survey abundance estimates, over:
      - an age or size range chosen to represent the spawning population
      - an age or size-range chosen to represent the exploited population
      - recruitment proxy or index for an age or size-range chosen to represent the recruiting population.
    - fishing mortality proxy, such as the ratio of reported commercial catches to a measure of the exploited population.

For age-structured assessments, yield-per-recruit graphs and associated estimates of yield-per-recruit based reference points should be provided. In particular, the three reference points, actual F,  $F_{0.1}$  and  $F_{max}$  should be shown.

7. Noting the Precautionary Approach Framework as endorsed by Fisheries Commission, the Fisheries Commission requests that the Scientific Council provide the following information for the 2005 Annual Meeting of the Fisheries Commission for the following stocks under its responsibility requiring advice for 2006: yellowtail flounder in Div. 3LNO, Shrimp in Div. 3M
  - a) the limit and precautionary reference points as described in Annex II of the UN Fisheries Agreement indicating areas of uncertainty (for those stocks for which precautionary reference points cannot be determined directly, proxies should be provided);
  - b) the stock biomass and fishing mortality trajectory over time overlayed on a plot of the proposed PA Framework (for those stocks where biomass and/or fishing mortality cannot be determined directly, proxies should be used);
  - c) information regarding the current Zone the stock is within as well as proposals regarding possible harvest strategies to move the resource to (or maintain it in) the Safe Zone including medium term considerations and associated risk or probabilities which will assist the Commission in developing the management strategies described in paragraphs 4 and 5 of Annex II in the Agreement.
  - d) A description of the advice using the Precautionary Framework differs from advice provided in the traditional manner.

8. The following elements should be taken into account by the Scientific Council when considering the Precautionary Approach Framework:
  - a) References to “risk” and to “risk analyses” should refer to estimated probabilities of stock population parameters falling outside biological reference points.
  - b) Where reference points are proposed by the Scientific Council as indicators of biological risk, they should be accompanied by a description of the nature of the risk associated with crossing the reference point such as recruitment overfishing, impaired recruitment, etc..
  - c) When a buffer reference point is proposed in the absence of a risk evaluation in order to maintain a low probability that a stock, measured to be at the buffer reference point, may actually be at or beyond the limit reference point, the Scientific Council should explain the assumptions made about the uncertainty with which the stock is measured.
  - d) Wherever possible, short and medium term consequences should be identified for various exploitation rates (including no fishing) in terms of yield, stability in yield from year to year, and the risk or probability of maintaining the stock within, or moving it to, the Safe Zone. Whenever possible, this information should be cast in terms of risk assessments relating fishing mortality rates to the trends in biomass (or spawning biomass), the risks of stock collapse and recruitment overfishing, as well as the risks of growth overfishing, and the consequences in terms of both short and long term yields.
  - e) When providing risk estimates, it is very important that the time horizon be clearly spelled out. By way of consequence, risks should be expressed in timeframes of 5, 10 and 15 years (or more), or in terms of other appropriate year ranges depending on stock specific dynamics. Furthermore, in order to provide the Fisheries Commission with the information necessary to consider the balance between risks and yield levels, each harvesting strategy or risk scenario should include, for the selected year ranges, the risks and yields associated with various harvesting options in relation to Blim, and Flim and target F reference points selected by managers.
9. Many of the stocks in the NAFO Regulatory Area are well below any reasonable level of Blim or Bbuf. For these stocks, the most important task for the Scientific Council is to inform on how to rebuild the stocks. In this context and building on previous work of the Scientific Council in this area, the Scientific Council is requested to evaluate various scenarios corresponding to recovery plans with timeframes of 5 to 10 years, or longer as appropriate. This evaluation should provide the information necessary for the Fisheries Commission to consider the balance between risks and yield levels, including information on the consequences and risks of no action at all.
  - a) information on the research and monitoring required to more fully evaluate and refine the reference points described in paragraphs 1 and 3 of Annex II of the Agreement; these research requirements should be set out in the order of priority considered appropriate by the Scientific Council;
  - b) any other aspect of Article 6 and Annex II of the Agreement which the Scientific Council considers useful for implementation of the Agreement's provisions regarding the precautionary approach to capture fisheries; and
  - c) propose criteria and harvest strategies for new and developing fisheries so as to ensure they are maintained within the Safe Zone.
10. Regarding pelagic *S. mentella* redfish in NAFO Subareas 1-3, the Scientific Council is requested to review the most recent information on the distribution of this resource, as well as on the affinity of this stock to the pelagic redfish resource found in the ICES Sub-area XII, parts of SA Va and XIV and to the shelf stocks of redfish found in ICES Sub-areas V, VI and XIV, and NAFO Subareas 1-3.

Regarding redfish in Divisions 3L, 3N and 3O, Scientific Council is requested to review all available information and provide advice regarding whether the current management units (3LN and 3O) or any alternative may be the most appropriate.

---

---

## LIST OF RESEARCH AND SUMMARY DOCUMENTS, 2004

### RESEARCH DOCUMENTS (SCR)

SCR No.	Ser. No.	Author(s) and Title
04/1 <sup>1</sup>	N4937	RIBERGAARD, M.-A., and E. BUCH. Oceanographic investigations West Greenland, 2003. (20 pages)
04/2 <sup>1</sup>	N4942	RIKHTER, V. A. Once more on the stock-recruitment relationship as one of the factors determining the abundance dynamics and fisheries management strategy for some commercial fish species in NAFO Area. (13 pages)
04/3 <sup>1</sup>	N4943	STEIN, M. Climatic Conditions Around Greenland – 2003. (18 pages)
04/4 <sup>1</sup>	N4946	STEIN, M. Transport of juvenile cod ( <i>Gadus morhua</i> ) and haddock ( <i>Melanogrammus aeglefinus</i> ) from Iceland to Greenland – is there environmental forcing? (15 pages)
04/5 <sup>1</sup>	N4947	DWYER, K. Yellowtail flounder ( <i>Limanda ferruginea</i> ) ageing manual. (27 pages)
04/6 <sup>1</sup>	N4951	LISOVSKY, S. F., YU.A.KONDRATYUK and A.A.PAVLENKO. Selectivity of codends with standard 150, 160 and 170 mm mesh size in Greenland halibut trawl fishery in Division 3L of the NAFO Regulatory Area and possible results of mesh size increase in more than 130 mm. (18 pages)
04/7 <sup>1</sup>	N4952	IGASHOV, T. M. Results of comparative age reading of Greenland halibut <i>Reinhardtius hippoglossoides</i> (Walbaum) by scales and otoliths. (3 pages)
04/8 <sup>1</sup>	N4953	VASKOV, A. A. On the issue of redfish management in Division 3O. (13 pages)
04/9 <sup>1</sup>	N4954	GONZÁLEZ TRONCOSO, D., C. GONZÁLEZ and X. PAZ. American plaice biomass and abundance from the surveys conducted by Spain in the NAFO Regulatory Area of Divisions 3NO, 1995–2003. (22 pages)
04/10 <sup>1</sup>	N4955	PAZ, X., D. GONZÁLEZ TRONCOSO, and E. ROMAN. New time series for yellowtail flounder from the comparative experience between the C/V <i>Playa de Menduña</i> and the R/V <i>Vizconde de Eza</i> in the NAFO Regulatory Area of Divisions 3NO, 1995–2003. (19 pages)
04/11 <sup>1</sup>	N4956	GONZALEZ TRONCOSO, D., E. ROMAN, and X. PAZ. Results for Greenland halibut from the surveys conducted by Spain in the NAFO Regulatory Area of Divisions 3NO, 1996–2003. (16 pages)
04/12 <sup>1</sup>	N4957	GONZALEZ TRONCOSO, D, X. PAZ, and C. GONZÁLEZ. Atlantic cod population indices obtained from the spring surveys conducted by Spain in the NAFO Regulatory Area of Divisions 3NO, 1995–2003. (21 pages)
04/13 <sup>1</sup>	N4959	MADDOCK PARSONS, D., and W. B. BRODIE. Update on cooperative Surveys of yellowtail flounder in NAFO Divisions 3LNO, 1996–2003. (25 pages)

---

<sup>1</sup> Scientific Council Meeting, 4-16 June 2004.

SCR No.	Ser. No.	Author(s) and Title
04/14 <sup>1</sup>	N4961	MURUA, H., and F. GONZÁLEZ. A review on roughhead grenadier ( <i>Macrourus berglax</i> ) biology and population structure on Flemish Cap (NAFO Division 3M) 1991– 2003 based upon EU Flemish Cap bottom survey data. (19 pages)
04/15 <sup>1</sup>	N4962	E. B. COLBOURNE, C. FITZPATRICK, D. SENCIAL, P. STEAD, W. BAILEY, J. CRAIG, and C. BROMLEY. An environmental assessment of physical oceanographic conditions in NAFO Sub-areas 2 and 3 for 2003. (26 pages)
04/16 <sup>1</sup>	N4964	GONZÁLEZ, F., D. GARCÍA, and H. MURUA. Standardized CPUE indices for Greenland halibut in NAFO Divisions 3LMNO based on Spanish commercial catch rates. (7 pages)
04/17 <sup>1</sup>	N4965	GORCHINSKY, K. V. Update on Capelin Stock Status in Divisions 3NO. (5 pages)
04/18 <sup>1</sup>	N4966	STORR-PAULSEN, M., and O. A. JØRGENSEN. Biomass and abundance of demersal fish stocks off West Greenland estimated from the Greenland shrimp survey, 1988– 2003. (28 pages)
04/19 <sup>1</sup>	N4967	JØRGENSEN, O. A. Survey for Greenland halibut in NAFO Divisions 1C– 1D, 2003. (26 pages)
04/20 <sup>1</sup>	N4968	TOMLINSON, S. Marine Environmental Data Service Report for 2003. (55 pages)
04/21 <sup>1</sup>	N4969	CASAS, J. M. Results from bottom trawl survey on Flemish Cap of July 2003. (36 pages)
04/22 <sup>1</sup>	N4970	GONZÁLEZ, F., and J. L. DEL RÍO. Analysis of the Spanish catches of white hake ( <i>Urophycis tenuis</i> ) in NAFO Regulatory Area: 2000– 2003. (9 pages)
04/23 <sup>1</sup>	N4971	DEL RIO, J. L., and L. LORENZO. Results of the Spanish experimental fishing in NAFO Subarea 1. (17 pages)
04/24 <sup>1</sup>	N4972	GONZÁLEZ TRONCOSO, D. Thorny skate indices from the Spanish surveys conducted in the NAFO Regulatory Area of Divisions 3NO, 1995– 2003. (18 pages)
04/25 <sup>1</sup>	N4973	PETRIE, B., R. G. PETTIPAS, W. M. PETRIE, and K. F. DRINKWATER. An overview of meteorological, sea ice and sea-surface temperature conditions off eastern Canada during 2003. (33 pages)
04/26 <sup>1</sup>	N4974	B. PETRIE, R. G. PETTIPAS, W. M. PETRIE, V. SOUKHOVTSEV, and K. F. DRINKWATER. Physical oceanographic conditions on the Scotian Shelf and in the Gulf of Maine during 2003. (40 pages)
04/27 <sup>1</sup>	N4976	MAILLET, G. L., P. PEPIN, S. FRASER, and D. LANE. Biological oceanographic conditions in NAFO Subareas 2 and 3 on the Newfoundland and Labrador Shelf during 2003. (39 pages)
04/28 <sup>1</sup>	N4977	RÄTZ, H.-J., and C. STRANSKY. Stock abundance indices and length compositions of demersal redfish and other finfish in NAFO Subarea 1 and near bottom water temperature derived from the Greenland bottom trawl survey, 1982-2003. (27 pages)

---

<sup>1</sup> Scientific Council Meeting, 4-16 June 2004.

SCR No.	Ser. No.	Author(s) and Title
04/29 <sup>1</sup>	N4978	COLBOURNE, E. B., and D. W. KULKA. A preliminary investigation of the effects of ocean climate variations on the spring distribution and abundance of thorny skate ( <i>Amblyraja radiata</i> ) in NAFO Divisions 3LNO and Subdivision 3Ps. (21 pages)
04/30 <sup>1</sup>	N4979	MAILLET, G. L., P. PEPIN, and J. D. C. CRAIG. Assessing phytoplankton and zooplankton taxa from the CPR survey in NAFO Subareas 2 and 3 in the Northwest Atlantic. (22 pages)
04/31 <sup>1</sup>	N4981	ÁVILA DE MELO, A., F. SABORIDO-REY, and R. ALPOIM. Interim monitoring report of beaked redfish ( <i>Sebastes mentella</i> and <i>S. fasciatus</i> ) in NAFO Division 3M. (11 pages)
04/32 <sup>1</sup>	N4982	HENDRY, R. M. Recent changes in the heat and salt content of the Labrador Sea. (10 pages)
04/33 <sup>1</sup>	N4983	BRODIE, W. B., and D. POWER. The Canadian fishery for Greenland halibut in Subarea 2 + Divisions 3KLMNO, with emphasis on 2003. (14 pages)
04/34 <sup>1</sup>	N4984	FRANK, K. T., J. CHOI, and B. PETRIE. Assessment of (i) the state of the Eastern Scotian Shelf ecosystem and (ii) the Northwest Atlantic fisheries. (1 page)
04/35 <sup>1</sup>	N4985	KULKA, D. W., C. M. MIRI, and M. R. SIMPSON. Thorny skate ( <i>Amblyraja radiata</i> Donovan, 1808) on the Grand Banks of Newfoundland. (108 pages)
04/36 <sup>1</sup>	N4986	WALSH, S. J., M. F. VEITCH, W. B. BRODIE, and K. S. DWYER. Canadian bottom trawl survey estimates of the distribution and abundance of yellowtail flounder ( <i>Limanda ferruginea</i> ) on the Grand Banks, in NAFO Divisions 3LNO from 1984-2003. (50 pages)
04/37 <sup>1</sup>	N4988	POWER, D. Standardized Catch Rate Indices for Greenland Halibut in SA2+3KLMNO. (16 pages)
04/38 <sup>1</sup>	N4989	HENDRICKSON, L. C., E. G. DAWE, and M. A. SHOWELL. Assessment of Northern Shortfin Squid ( <i>Illex illecebrosus</i> ) in Subareas 3+4 for 2003. (18 pages)
04/39 <sup>1</sup>	N4990	MORGAN, M. J., and J. BRATTEY. The use of indices of reproductive potential in the setting of reference points and stock. (10 pages)
04/40 <sup>1</sup>	N4991	ALPOIM, R., and J. VARGAS. Length-weight relationships of the Portuguese commercial catches in NAFO Regulatory Area, 1998-2003. (9 pages)
04/41 <sup>1</sup>	N4992	BRODIE, W. B., D. W. KULKA, and D. POWER. The Canadian fishery for yellowtail flounder in NAFO Divisions 3LNO in 2002 and 2003. (16 pages)
04/42 <sup>1</sup>	N4994	MADDOCK PARSONS, D. An update of witch flounder population trends in NAFO Divisions 2J, 3K and 3L. (22 pages)
04/43 <sup>1</sup>	N4995	MADDOCK PARSONS, D. Witch flounder in NAFO Divisions 3NO. (30 pages)

---

<sup>1</sup> Scientific Council Meeting, 4-16 June 2004.

SCR No.	Ser. No.	Author(s) and Title
04/44 <sup>1</sup>	N4996	TREBLE, M. Summary of data from the offshore Canadian commercial fishery for Greenland halibut in Subarea 0. (8 pages)
04/45 <sup>1</sup>	N4997	JORGENSEN, O. A. Assessment of the Greenland Halibut Stock Component in NAFO Subarea 0 + Division 1A Offshore + Divisions 1B-1F. (16 pages)
04/46 <sup>1</sup>	N4998	HEALEY, B. P., W. R. BOWERING, and K. S. DWYER. Greenland Halibut ( <i>Reinhardtius hippoglossoides</i> ) in Subarea 2 and Divisions 3KLMNO: Trends in recruitment based upon research vessel survey data. (14 pages)
04/47 <sup>1</sup>	N5000	DWYER, K. S., and M. J. MORGAN. A stock status update of American plaice in NAFO Div. 3LNO. (24 pages)
04/48 <sup>1</sup>	N5001	DWYER, K. S., and W. R. BOWERING. Greenland Halibut ( <i>Reinhardtius hippoglossoides</i> ) in NAFO Subarea 2 and Divisions 3KLMNO: stock trends based on annual Canadian research vessel survey results during 1978-2003. (62 pages)
04/49 <sup>1</sup>	N5002	DWYER, K. S., M. KOEN-ALONSO, and S. J. WALSH. Finding the magical minimum sample size: a computer-intensive approach to minimize re-ageing effort to construct age-length keys for yellowtail flounder. (11 pages)
04/50 <sup>1</sup>	N5003	ALPOIM, R., and A. ÁVILA DE MELO. An assessment of American plaice ( <i>Hippoglossoides platessoides</i> ) in NAFO Division 3M. (28 pages)
04/51 <sup>1</sup>	N5004	BOJE, J., and B. LYBERTH. An assessment of the Greenland Halibut stock component in NAFO Division 1A Inshore. (22 pages)
04/52 <sup>1</sup>	N5005	DAWE, E. G., P. C. BECK, H. J. DREW, and A. L. PARDY. Biological characteristics of squid ( <i>Illex illecebrosus</i> ) in the Newfoundland area (NAFO Subarea 3) during 2001-2003. (10 pages)
04/53 <sup>1</sup>	N5006	CERVIÑO, S., and A. VAZQUEZ. A survey-based assessment of cod in Division 3M. (10 pages)
04/54 <sup>1</sup>	N5007	BRODIE, W. B., S. J. WALSH, M. J. MORGAN, and K. S. DWYER. An assessment of the Grand Bank yellowtail flounder stock, NAFO Divisions 3LNO, in 2004. (35 pages)
04/55 <sup>1</sup>	N5008	DARBY, C., B. HEALEY, J.-C. MAHÉ. Greenland halibut ( <i>Reinhardtius hippoglossoides</i> ) in Subarea 2 + Divisions 3KLMNO: an assessment of stock status based upon XSA, ADAPT and ASPIC analyses with stochastic projections of potential stock dynamics. (53 pages)
04/56 <sup>1</sup>	N5009	POWER, D. Information relevant to the Canadian request of Scientific Council with respect to redfish in Division 3O. (9 pages)
04/57 <sup>1</sup>	N5011	KULKA, D. W., K. SOSOBEE, C. M. MIRI, and M. R. SIMPSON. The status of white hake ( <i>Urophycis tenuis</i> ) in NAFO Divisions 3L, 3N, 3O and Subdivision 3Ps. (18 pages)

---

<sup>1</sup> Scientific Council Meeting, 4-16 June 2004.

SCR No.	Ser. No.	Author(s) and Title
04/58 <sup>2</sup>	N5018	ROMÁN, E., C. GONZÁLEZ, and E. CEBALLOS. Food and feeding of most abundant fish species in Flemish Cap. (17 pages)
04/59 <sup>2</sup>	N5020	GONZÁLEZ, C., E. ROMÁN, and X. PAZ. Condition and feeding of American plaice ( <i>Hippoglossoides platessoides</i> ) in the North Atlantic with emphasis in Flemish Cap. (20 pages)
04/60 <sup>2</sup>	N5021	ROMÁN, E., C. GONZÁLEZ, and X. PAZ. Condition and feeding of Greenland halibut ( <i>Reinhardtius hippoglossoides</i> ) in Flemish Cap and other areas: 1992-2003. (25 pages revised)
04/61 <sup>2</sup>	N5022	SABORIDO-REY, F., M. J. MORGAN, and R. DOMÍNGUEZ. Estimation of reproductive potential for Flemish Cap cod. (8 pages)
04/62 <sup>2</sup>	N5023	MORGAN, M. J., and W. R. BOWERING. Is there mixing of American plaice populations in the Flemish Cap? (6 pages)
04/63 <sup>2</sup>	N5024	MORGAN, M. J., and G. R. LILLY. The impact of condition of reproduction in Flemish Cap cod. (6 pages)
04/64 <sup>2</sup>	N5025	SKÚLADÓTTIR, U., G. PETURSSON, and S. BRYNJOLFSSON. The biology of northern shrimp ( <i>Pandalus borealis</i> Kr.1838) at Flemish Cap. (16 pages)
04/65 <sup>2</sup>	N5026	ORR, D. C., P.J. VEITCH, and D. J. SULLIVAN. Divisions 3LNO northern pink shrimp ( <i>Pandalus borealis</i> ) – interim monitoring update. (9 pages)
04/66 <sup>2</sup>	N5027	SKÚLADÓTTIR, U. The Icelandic shrimp fishery ( <i>Pandalus borealis</i> Kr.) at Flemish Cap in 1993-2004. (7 pages)
04/67 <sup>2</sup>	N5028	BOWERING, W. R., and D. C. ORR. By-catch of Greenland halibut ( <i>Reinhardtius hippoglossoides</i> , Walbaum) in the Canadian fishery for northern shrimp ( <i>Pandalus borealis</i> , Koyer) in NAFO Subarea 2 and Divisions 3KL. (18 pages)
04/68 <sup>2</sup>	N5029	SKULADOTTIR, U. Assessment of the international fishery for shrimp ( <i>Pandalus borealis</i> ) in Division 3M (Flemish Cap), 1994-2004. (10 pages)
04/69 <sup>2</sup>	N5030	DEL RIO, J. L., J. M. CASAS, and D. GONZÁLEZ TRONCOSO. Revision of the northern shrimp ( <i>Pandalus borealis</i> ) on Flemish Cap in June 2003. (16 pages)
04/70 <sup>3</sup>	N5040	STORR-PAULSEN, M., and K. WIELAND. A preliminary estimate of cod biomass ( <i>Gadus morhua</i> ) in West Greenland offshore waters (NAFO Subareas 0+1) in 2004. (5 pages)
04/71 <sup>3</sup>	N5041	WIELAND, K., and M. STORR-PAULSEN. A comparison of different time series of Atlantic cod ( <i>Gadus morhua</i> ) biomass at West Greenland and their potential use for the assessment of northern shrimp ( <i>Pandalus borealis</i> ) in NAFO Subarea 1. (9 pages)

---

<sup>1</sup> Scientific Council Meeting, 4-16 June 2004.

<sup>2</sup> Scientific Council Meeting, 13-17 September 2004.

<sup>3</sup> Scientific Council Meeting, 27 October-4 November 2004.

SCR No.	Ser. No.	Author(s) and Title
04/72 <sup>3</sup>	N5042	WIELAND, K., P. KANNEWORFF, and B. BERGSTROM. Results of the Greenland bottom trawl survey for northern shrimp ( <i>Pandalus borealis</i> ) off West Greenland (NAFO Subarea 1 and Division 0A), 1988-2004. (31 pages)
04/73 <sup>3</sup>	N5043	WIELAND, K. Abundance, mean size at age and growth of northern shrimp ( <i>Pandalus borealis</i> ) juveniles and males off West Greenland in 1993-2004. (26 pages)
04/74 <sup>3</sup>	N5044	WIELAND, K. Recruitment of northern shrimp ( <i>Pandalus borealis</i> ) off West Greenland in relation to spawning stock size and environmental variation, 1993-2004. (9 pages)
04/75 <sup>3</sup>	N5045	HVINGEL, C. The fishery for northern shrimp ( <i>Pandalus borealis</i> ) off West Greenland, 1970-2004. (24 pages)
04/76 <sup>3</sup>	N5046	HVINGEL, C. An Assessment of the Shrimp Stock off West Greenland. (17 pages)
04/77 <sup>3</sup>	N5047	CASAS, J. M., J. L. DEL RIO and D. GONZALEZ TRONCOSO. Northern shrimp ( <i>Pandalus borealis</i> ) on Flemish Cap surveys 2003 and 2004. (25 pages)
04/78 <sup>3</sup>	N5048	CASAS, J. M., and J. L. DEL RIO. The Spanish shrimp fishery on Flemish Cap (Division 3M) and Divisions 3LN in 2003. (4 pages)
04/79 <sup>3</sup>	N5049	PATROCINIO, T., P. DIAZ, and X. PAZ. Northern shrimp ( <i>Pandalus borealis</i> Krøyer) in Spanish bottom trawl survey 2003 in NAFO Divisions 3LNO. (15 pages)
04/80 <sup>3</sup>	N5050	ORR, D. C., P. J. VEITCH, and D. J. SULLIVAN. OGIVE MAPping (ogmap) as an alternative means of estimating indices and setting TACs. (20 pages)
04/81 <sup>3</sup>	N5051	HVINGEL, C. An Assessment of the shrimp stock in Denmark Strait/off East Greenland. (24 pages)
04/82 <sup>3</sup>	N5052	SIEGSTAD, H. The Greenland Fishery for Northern Shrimp ( <i>Pandalus borealis</i> ) in NAFO Divisions 3M and 3L in 2002-2004. (4 pages)
04/83 <sup>3</sup>	N5053	SKÚLADÓTTIR, U. The Icelandic shrimp fishery ( <i>Pandalus borealis</i> ) in the Denmark Strait in 2004. (4 pages)
04/84 <sup>3</sup>	N5054	SKÚLADÓTTIR, U. An update of the Icelandic shrimp fishery ( <i>Pandalus borealis</i> Kr.) at Flemish Cap in 1993-2004. (22 pages)
04/85 <sup>3</sup>	N5055	COLBOURNE, E., and D. C. ORR. The Distribution and Abundance of Northern Shrimp ( <i>Pandalus borealis</i> ) in Relation to Bottom Temperatures in NAFO Divisions 3LNO based on Multi-Species Surveys from 1995-2004. (22 pages)
04/86 <sup>3</sup>	N5056	ORR, D. C., P. J. VEITCH, and D. J. SULLIVAN. An update of information pertaining to Northern Shrimp ( <i>Pandalus borealis</i> , Krøyer) and Groundfish in NAFO Divisions 3LNO. (45 pages)

---

<sup>3</sup> Scientific Council Meeting, 27 October-4 November 2004.

SCR No.	Ser. No.	Author(s) and Title
04/87 <sup>3</sup>	N5057	COLBOURNE, E. Oceanographic conditions on the Flemish Cap in NAFO Division 3M during the summer of 2004. (13 pages)
04/88 <sup>3</sup>	N5058	BRODIE, W. B. Canadian trawl surveys on Flemish Cap (NAFO Division 3M) from 1949-2004. (12 pages)
04/89 <sup>3</sup>	N5059	SKÚLADOTTIR, U., and Á. GUDMUNDSDOTTIR. An update of the assessment of the international fishery for shrimp ( <i>Pandalus borealis</i> ) in Division 3M (Flemish Cap), 1993-2003 in November 2003. (20 pages)
04/90 <sup>3</sup>	N5068	SKÚLADOTTIR, U. Yield per recruit of shrimp ( <i>Pandalus borealis</i> ) at Flemish Cap. (8 pages)

#### SUMMARY DOCUMENTS (SCS)

SCS No.	Ser. No.	Author(s) and Title
04/1 <sup>1</sup>	N4940	JESSEN, A. Denmark's (on behalf of Greenland) request for scientific advice on management of certain stocks in Subareas 0 and 1 in 2005. (1 page, revised)
04/2 <sup>1</sup>	N4941	BEVAN, D. Canadian request for scientific advice on management in 2005 of certain stocks in Subareas 0 to 4. (2 pages, revised)
04/3 <sup>1</sup>	N4945	SIGAEV, I. K., V.A. RIKHTER, A. A. VASKOV, K. V. GORCHINSKY, T. M. IGASHOV, and S. P. MELNIKOV. Russian Research Report for 2003. (24 pages)
04/4 <sup>1</sup>	N4948	NAFO SECRETARIAT. Provisional index and list of titles of research and summary documents of 2003. (1 page)
04/5 <sup>1</sup>	N4949	VARGAS, J., R. ALPOIM, E. SANTOS, and A. M. ÁVILA DE MELO. Portuguese Research Report for 2003. (50 pages)
04/6 <sup>1</sup>	N4950	NAFO SECRETARIAT. List of biological sampling data for 2003. (1 page)
04/7 <sup>1</sup>	N4957	SOSEBEE, K. A. United States Research Report for 2003. (21 pages)
04/8 <sup>1</sup>	N4960	RICHARDS, D., M. TREBLE, T. SIFERD, and S. COSENS. Canadian Research Report for 2003. (32 pages)
04/9 <sup>1</sup>	N4963	GONZÁLEZ, F., J. L. DEL RIO, A. VÁZQUEZ, H. MURUA, and E. ROMÁN. Spanish Research Report for 2003. (24 pages)
04/10 <sup>1</sup>	N4975	RÄTZ, H.-J., M. STEIN, and C. STRANSKY. German Research Report for 2003. (7 pages)
04/11 <sup>1</sup>	N5069	NAFO SECRETARIAT. Tagging activities reported for the Northwest Atlantic in 2003 and early-2004. (8 pages)

---

<sup>1</sup> Scientific Council Meeting, 4-16 June 2004.

<sup>3</sup> Scientific Council Meeting, 27 October-4 November 2004.

<b>SCS No.</b>	<b>Ser. No.</b>	<b>Author(s) and Title</b>
04/12 <sup>1</sup>	N4980	SHELTON, P. A. Report of the NAFO Study Group on Limit Reference Points, Lorient, France, 15-20 April 2004. (72 pages)
04/13 <sup>1</sup>	N4987	GONZÁLEZ, F., and D. POWER. A report on the deliberations of the ICES North-western Working Group, 2004. (5 pages)
04/14 <sup>1</sup>	N4993	SIEGSTAD, H. Denmark/Greenland Research Report, 2003. (8 pages)
04/15 <sup>1</sup>	N4999	TRIPPEL, E. Report of the 3rd Meeting of the NAFO Working Group on Reproductive Potential. (24 pages)
04/16 <sup>1</sup>	N5010	NAFO. Scientific Council Meeting Report, 3-17 June 2004. (189 pages)
04/17 <sup>2</sup>	N5017	NAFO SECRETARIAT. Available data from the commercial fisheries related to stock assessment (2003) and Inventory of biological surveys conducted in the NAFO Area in 2003 and Biological survey planned for 2004 and early-2005. (8 pages)
04/18 <sup>2</sup>	N5038	NAFO. Scientific Council Meeting Report, 13-17 September 2004. (39 pages)
04/19 <sup>2</sup>	N5032	NAFO. Report of Scientific Council Special Session of " <i>The Ecosystem on the Flemish Cap</i> ". (11 pages)
04/20 <sup>3</sup>	N5061	NAFO. Report of Scientific Council Meeting, 27 October-4 November, Copenhagen, Denmark. (64 pages, revised)

---

<sup>1</sup> Scientific Council Meeting, 4-16 June 2004.

<sup>2</sup> Scientific Council Meeting, 13-17 September 2004.

<sup>3</sup> Scientific Council Meeting, 27 October-4 November 2004.

## APPENDIX VII. LIST OF REPRESENTATIVES AND ADVISERS/EXPERTS, 2004

Meetings\*

## CANADA

## Representatives:

Atkinson, D.Bruce	Science Br., DFO Newfoundland & Labrador, P.O. Box 5667, St. John's, NL A1C 5X1 Phone: + 709-772-2027 – Fax: + 709-772-6100 – E-mail: <a href="mailto:atkinsonb@dfo-mpo.gc.ca">atkinsonb@dfo-mpo.gc.ca</a>	A B
Bowering, W.Ray	Science Br., DFO Newfoundland & Labrador, P.O. Box 5667, St. John's, NL A1C 5X1 Phone: + 709-772-2054 – Fax: + 709-772-4105 – E-mail: <a href="mailto:boweringr@dfo-mpo.gc.ca">boweringr@dfo-mpo.gc.ca</a>	A B
Brodie, W.(Bill).B.	Science Br., DFO Newfoundland & Labrador, P.O. Box 5667, St. John's, NL A1C 5X1 Phone: +709-772-3288 – Fax: +709-772-4105 – E-mail: <a href="mailto:brodieb@dfo-mpo.gc.ca">brodieb@dfo-mpo.gc.ca</a>	A B C

## Advisers/Experts:

Allen, Chris	Senior Advisor, Fisheries Environment & Biodiversity Science Directorate, Dept. of Fisheries & Oceans, 200 Kent Street, 12th Floor, Ottawa, Ontario K1A 0E6 Phone: +613 990 0105 - Fax: +613 954 0807 – E-mail: <a href="mailto:allenc@dfo-mpo.gc.ca">allenc@dfo-mpo.gc.ca</a>	B
Colbourne, Eugene B.	Science Br., DFO Newfoundland & Labrador, P.O. Box 5667, St. John's, NL A1C 5X1 Phone: +709-772-6106 – Fax: +709-772-4105 – E-mail: <a href="mailto:colbourn@dfo-mpo.gc.ca">colbourn@dfo-mpo.gc.ca</a>	A B
Dwyer, Karen S.	Science Br., DFO Newfoundland & Labrador, P.O. Box 5667, St. John's, NL A1C 5X1 Phone: +709-772-0573 – Fax: +709-772-4188 – E-mail: <a href="mailto:dwyerk@dfo-mpo.gc.ca">dwyerk@dfo-mpo.gc.ca</a>	A
Healey, Brian P.	Science Br., DFO Newfoundland & Labrador, P.O. Box 5667, St. John's, NL A1C 5X1 Phone: + 709-772-8674 – Fax: + 709-772-4105 – E-mail: <a href="mailto:healeybp@dfo-mpo.gc.ca">healeybp@dfo-mpo.gc.ca</a>	A
Kulka, David W.	Science Br., DFO Newfoundland & Labrador, P.O. Box 5667, St. John's, NL A1C 5X1 Phone: + 709-772-2064 – Fax: + 709-772-5469 – E-mail: <a href="mailto:kulkad@dfo-mpo.gc.ca">kulkad@dfo-mpo.gc.ca</a>	A
Maddock Parsons, Dawn	Science Br., DFO Newfoundland & Labrador, P.O. Box 5667, St. John's, NL A1C 5X1 Phone: +709-772-2495 – Fax: + 709-772-4188 – E-mail: <a href="mailto:parsonsdad@dfo-mpo.gc.ca">parsonsdad@dfo-mpo.gc.ca</a>	A
Maillet, Gary	Science Br., Dept. of Fish. & Oceans, P.O. Box 5667, St. John's, Nfld. A1C 5X1 Phone: + 709-772-7675 – Fax: + 709-772-4105 – E-mail: <a href="mailto:mailletg@dfo-mpo.gc.ca">mailletg@dfo-mpo.gc.ca</a>	A
Morgan, M. Joanne	Science Br., Dept. of Fish. & Oceans, P. O. Box 5667, St. John's, Nfld. A1C 5X1 Phone: +709-772-2261 – Fax: +709-772-4105 – E-mail: <a href="mailto:morganj@dfo-mpo.gc.ca">morganj@dfo-mpo.gc.ca</a>	A B C
Orr, David K.	Science Br., DFO Newfoundland & Labrador Reg., P. O. Box 5667, St. John's, NL A1C 5X1 Phone: +709-772-7343 – Fax: +709-772-4105 – E-mail: <a href="mailto:orrd@dfo-mpo.gc.ca">orrd@dfo-mpo.gc.ca</a>	C
Power, Don	Science Br., DFO Newfoundland & Labrador, P.O. Box 5667, St. John's, NL A1C 5X1 Phone: +709-772-4935 – Fax: +709-772-4105 – E-mail: <a href="mailto:powerd@dfo-mpo.gc.ca">powerd@dfo-mpo.gc.ca</a>	A
Shelton, Peter A.	Science Br., DFO Nfld. & Labrador Reg., P. O. Box 5667, St. John's, NL A1C 5X1 Phone: +709-772-2341 – Fax: +709-772-4105 – E-mail: <a href="mailto:sheltonp@dfo-mpo.gc.ca">sheltonp@dfo-mpo.gc.ca</a>	A
Stenson, Garry B.	Science Br., DFO Nfld. & Labrador Reg., P.O. Box 5667, St. John's, NL A1C 5X1 Phone: +709-772-5598 – Fax: +709-772-4105 – E-mail: <a href="mailto:stenson@g@dfo-mpo.gc.ca">stenson@g@dfo-mpo.gc.ca</a>	A
Trippel, Ed	Department of Fisheries & Oceans, Biological Station, St. Andrews, NB E5B 2L9 Phone: +506-529-8854 – Fax: +506-529-5862 – E-mail: <a href="mailto:trippele@dfo-mpo.gc.ca">trippele@dfo-mpo.gc.ca</a>	A
Frank, Ken	Science, Oceans Div., Dept. of Fish. & Oceans, BIO, P. O. 1006, Dartmouth, N.S. B2Y 4A2 Phone: +902-426-3498 – Fax: +902-426-6927 – E-mail: <a href="mailto:frank@mar.dfo-mpo.gc.ca">frank@mar.dfo-mpo.gc.ca</a>	A
Hendry, Ross	Dept. of Fisheries & Oceans, BIO, P. O. Box 1006, Dartmouth, N.S. B2Y 4A2 Phone: +902-426-9156 – Fax: +902-426-7827 – E-mail: <a href="mailto:hendryr@mar.dfo-mpo.gc.ca">hendryr@mar.dfo-mpo.gc.ca</a>	A
Petrie, Brian D.	Dept. of Fisheries & Oceans, BIO, P. O. Box 1006, Dartmouth, N.S. B2Y 4A2 Phone: +902-426-3809 – Fax: +902-426-7827 – E-mail: <a href="mailto:petrieb@mar.dfo-mpo.gc.ca">petrieb@mar.dfo-mpo.gc.ca</a>	A
Treble, Margaret A.	Dept. of Fisheries & Oceans, Freshwater Inst., 501 University Cres., Winnipeg, Man. R3T 2N6 Phone: +204-984-0985 – Fax: +204-984-2403 – E-mail: <a href="mailto:treblem@dfo-mpo.gc.ca">treblem@dfo-mpo.gc.ca</a>	A
Tomlinson, Scott	Dept. of Fisheries & Oceans, MEDS, 12W0S2, 200 Kent St., Ottawa, Ontario K1A 0E6 Phone: +613-990-0261 – Fax: +613-993-4658 – E-mail: <a href="mailto:tomlinson@meds-sdmm-dfo-mpo.gc.ca">tomlinson@meds-sdmm-dfo-mpo.gc.ca</a>	A

## Meetings\*

- A Scientific Council Meeting, 3-17 June 2004
- B Scientific Council Annual Meeting, 13-17 September 2004 (Note: Symposium participants are listed with its report).
- C Scientific Council Meeting, 27 October-4 November 2004.

## Meetings\*

## DENMARK (in respect of Faroe Islands and Greenland)

## FAROE ISLANDS

## Representative:

Jákupsstovu, Hjalti í	Faroeese Fisheries Lab., Nóatún 1, P.O.Box 3051, FO110 Tórshavn Phone: +298 35 3900 - Fax: +298 35 3901 - E-mail: <a href="mailto:hjaltij@frs.fo">hjaltij@frs.fo</a>	C
Nicolajsen, Árni	Fiskorannsóknarstovan, Noatun, Postboks 3051, FR-1100, Torshavn Phone: +298 35 3900 - Fax: +298 35 3901 - E-mail: <a href="mailto:arninic@frs.fo">arninic@frs.fo</a>	A

## GREENLAND

## Representative:

Siegstad, H.	Greenland Institute of Natural Resources, P. O. Box 570, DK-3900, Nuuk Phone: +299 36 1200 - Fax: +299 36 1212 - E-mail: <a href="mailto:helle@natur.gl">helle@natur.gl</a>	A B C
--------------	--	-------

## Advisers/Experts:

Bergstrøm, Bo	Greenland Institute of Natural Resources, P. O. Box 570, DK-3900 Nuuk Phone: +299 36 1203 - Fax: +299 36 1212 - E-mail: <a href="mailto:bobe@natur.gl">bobe@natur.gl</a>	C
Hvingel, Carsten	Greenland Institute of Natural Resources, P. O. Box 570, DK-3900 Nuuk Phone: +299 36 1206 - Fax: +299 36 1212 - E-mail: <a href="mailto:hvingel@natur.gl">hvingel@natur.gl</a>	C
Lyberth, Bjarne B.R.	Greenland Institute of Natural Resources, P. O. Box 570, DK-3900, Nuuk Phone: +299 36 1238 - Fax: +299 36 1299 - E-mail: <a href="mailto:bjly@natur.gl">bjly@natur.gl</a>	A
Jørgensen, Ole A.	Danish Institute for Fisheries Research, Department of Marine Fisheries, Charlottenlund Slot DK-2920 Charlottenlund, Denmark Phone: +45 33 96 3300 - Fax: +45 33 96 3333 - E-mail: <a href="mailto:olj@dfu.min.dk">olj@dfu.min.dk</a>	A
Wieland, Kai	Greenland Institute of Natural Resources, P. O. Box 570, DK-3900 Nuuk Phone: +299 37 1248 - Fax: +299 36 1212 - E-mail: <a href="mailto:wieland@natur.gl">wieland@natur.gl</a>	C

## ESTONIA

## Representative:

Raid, Tiit	Estonian Marine Institute of the University of Tartu, Mäealuse 10A, Tallinn EE-12618, Estonia Phone: +372 671 8953 - Fax: +372 671 8900 - E-mail: <a href="mailto:raid@sea.ee">raid@sea.ee</a> , <a href="mailto:tiit.raid@ut.ee">tiit.raid@ut.ee</a>	C
Saat, Toomas	Director, Estonian Marine Institute, University of Tartu, 18b Viljandi Road, 11216, Tallinn Phone: +372 6267 402 - Fax: +372 6267 417 - E-mail: <a href="mailto:tsaat@sea.ee">tsaat@sea.ee</a>	B

## EUROPEAN UNION (EU)

## Representative:

Junquera, Susana	European Commission, General Directorate of Fisheries, Joseph II 99, Brussels, Belgium Phone: +32 2 29 84727 - Fax: +32 2 29 55700 - E-mail: <a href="mailto:susana.junquera@cec.eu.int">susana.junquera@cec.eu.int</a>	A B
------------------	--	-----

## Meetings\*

- A Scientific Council Meeting, 3-17 June 2004
- B Scientific Council Annual Meeting, 13-17 September 2004 (Note: Symposium participants are listed with its report).
- C Scientific Council Meeting, 27 October-4 November 2004.

## Meetings\*

## EUROPEAN UNION (EU) (continued)

Mahé, Jean-Claude	IFREMER, Station de Lorient, 8, Rue François Toullec, 56100 Lorient, France Phone: +33 2 9787 3818 – Fax: +33 2 9787 3801 – E-mail: <a href="mailto:jcmahe@ifremer.fr">jcmahe@ifremer.fr</a>	B
Stein, Manfred	Institut für Seefischerei, Palmaille 9, D-22767 Hamburg, Federal Republic of Germany Phone: +49 40 38905 174 – Fax: +49 40 38905 263 – E-mail: <a href="mailto:manfred.stein@ish.bfa-fisch.de">manfred.stein@ish.bfa-fisch.de</a>	A B
Avila de Melo, Antonio	Inst Instituto Nacional de Investigacao Agrária e das Pescas (INIAP/IPIMAR), Av. de Brasilia, 1449-006 Lisbon, Portugal Phone: +351 21 302 7000 – Fax: +351 21 301 5948 – E-mail: <a href="mailto:amelo@ipimar.pt">amelo@ipimar.pt</a>	A B
Alpoim, Ricardo	Instituto Nacional de Investigacao Agrária e das Pescas (INIAP/IPIMAR), Av. de Brasilia, 1449-006 Lisbon, Portugal Phone: +351 21 302 7000 – Fax: +351 21 301 5948 – E-mail: <a href="mailto:ralpoim@ipimar.pt">ralpoim@ipimar.pt</a>	A B
Casas Sanchez, Jose Miguel	Instituto Español de Oceanografía, P.O. Box 1552, Vigo, Spain Phone: +34 986 49 2111 – Fax: +34 986 49 2351 – E-mail: <a href="mailto:mikel.casas@vi.ieo.es">mikel.casas@vi.ieo.es</a>	C
De Cárdenas, Enrique	Secretaria General de Pesca Maritima, Jose Ortega y Gasset, 57, 28006 Madrid, Spain Phone: +34 91 347 6110 – Fax: +34 91 347 6037 – E-mail: <a href="mailto:edecarde@mapya.es">edecarde@mapya.es</a>	A B
Eigaard, Ole R.	Danish Inst. of Fish. Res. (DIFRES), Charlottenlund Castle, 2920 Charlottenlund, Denmark Phone: +45 33 96 3300 – Fax: +45 33 96 3333 – E-mail: <a href="mailto:ore@dfu.min.dk">ore@dfu.min.dk</a>	C
Gonzalez-Costas, Fernando	Instituto Español de Oceanografía, Aptdo 1552, E-36280 Vigo (Pontevedra), Spain Phone: +34 9 86 49 2111 – Fax: +34 9 86 49 2351 – E-mail: <a href="mailto:fernando.gonzalez@vi.ieo.es">fernando.gonzalez@vi.ieo.es</a>	A B
Munch-Petersen, Sten	Danish Inst. of Fish. Res. (DIFRES), Charlottenlund Castle, 2920 Charlottenlund, Denmark Phone: +45 33 96 3390 – Fax: +45 33 96 3333 – E-mail: <a href="mailto:smp@dfu.min.dk">smp@dfu.min.dk</a>	C
Murua, Hilario	AZTI Foundation, Herrera Kaia, Portualde z/g, 20110 Pasaia, Basque Country, Spain Phone: +34 9 43 00 48 00 – Fax: +34 9 43 00 48 01 – E-mail: <a href="mailto:hmurua@pas.azti.es">hmurua@pas.azti.es</a>	A B C
Vazquez, Antonio	Instituto de Investigaciones Marinas, Eduardo Cabello 6, 36208 Vigo Phone: +34 9 86 23 1930 – Fax: +34 9 86 29 2762 – E-mail: <a href="mailto:avazquez@iim.csic.es">avazquez@iim.csic.es</a>	A B
Darby, Chris D.	Centre for Fisheries & Aquaculture Science (CEFAS), Lowestoft Laboratory, Pakefield Rd., Lowestoft (Suffolk), England NR33 OHT, United Kingdom Phone: +44 1502 524 329 – Fax: +44 1502 513 865 – E-mail: <a href="mailto:c.d.darby@cefasc.co.uk">c.d.darby@cefasc.co.uk</a>	A
Ulmestrand, Mats	Institute of Marine Research, P. O. Box 4, 45321 Lyseki, Sweden Phone: +46 523 18700 – E-mail: <a href="mailto:mats.ulmestrand@fiskeriverket.se">mats.ulmestrand@fiskeriverket.se</a>	C

## ICELAND

## Representative:

Skúladóttir, Unnur	Marine Research Institute, Skúlagata 4, Pósthólf Box 1390, 121 Reykjavik Phone: +354 552 0240 – Fax: +354 562 3790 – E-mail: <a href="mailto:unnur@hafro.is">unnur@hafro.is</a>	B C
--------------------	--	-----

## NORWAY

## Representative:

Aschan, Michaela	Institute of Marine Research, P. O. Box 6404, 9294 Tromsø Phone: +47 77 609742 – Fax: +47 77 609701 – E-mail: <a href="mailto:michaela.aschan@imr.no">michaela.aschan@imr.no</a>	C
------------------	---	---

## Meetings\*

- A Scientific Council Meeting, 3-17 June 2004
- B Scientific Council Annual Meeting, 13-17 September 2004 (Note: Symposium participants are listed with its report).
- C Scientific Council Meeting, 27 October-4 November 2004.

## Meetings\*

## REPUBLIC OF KOREA

## Representative:

Jo, Hyun-su Distant-water Fish. Resources Div., National fisheries Research & Development Institute (NFRDI) B  
 408-1, Shirang-Ri, Gijang-Up, Gijang-Gun, Busan 619-902  
 Phone: +82 51 720 2331 – Fax: +82 51 720 2337 – E-mail: [hsjo@nfrdi.re.kr](mailto:hsjo@nfrdi.re.kr)

## RUSSIAN FEDERATION

## Representatives:

Babayan, Vladimir K. Russian Federal Research Institute of Fisheries & Oceanography (VNIRO), 17, V. Krasnoselskaya A  
 Moscow, 107140  
 Phone: +70 95 264 6983 – Fax: +70 95 264 6983 – E-mail: [vbabayan@vniro.ru](mailto:vbabayan@vniro.ru)  
 Kokovkin, Leonid Rep. Russian Federation on Fisheries, 47 Oceanview Dr., Bedford, N.S., Canada B4A 4C4 A  
 Phone: +902 832-9225 – Fax: +902 832-9608 – E-mail: [rusfish@ns.sympatico.ca](mailto:rusfish@ns.sympatico.ca)  
 Shibanov, Vladimir N. Knipovich Polar Research Institute of Marine Fisheries and Oceanography (PINRO), B  
 6 Knipovich Street, Murmansk 183763  
 Phone: +7 8152 47 26 14 – Fax: +7 8152 47 33 31 – E-mail: [shibanov@pinro.ru](mailto:shibanov@pinro.ru)

## Advisers/Experts:

Berenboim, Boris Knipovich Polar Research Institute of Marine Fisheries and Oceanography (PINRO), C  
 6 Knipovich Street, Murmansk 183763  
 E-mail: [borisber@pinro.ru](mailto:borisber@pinro.ru)  
 Gerber, Efim Atlantic Scientific Research Institute of Marine Fisheries and Oceanography (AtlantNIRO) A  
 5 Dmitry Donskoy Street, Kaliningrad 23600  
 Phone: +70 112 22 5583 – Fax: +70 112 21 9997 – E-mail: [neptun@atlant.baltnet.ru](mailto:neptun@atlant.baltnet.ru)  
 Gorchinsky, Konstantin V. Knipovich Polar Research Institute of Marine Fisheries and Oceanography (PINRO), A B  
 6 Knipovich St., Murmansk 183763  
 Phone: +7 (8152) 47 2532 – Fax: +7 (8152) 47 3331 – E-mail: [inter@pinro.ru](mailto:inter@pinro.ru)  
 Igashov, Taras M. Knipovich Polar Research Institute of Marine Fisheries and Oceanography (PINRO), A  
 6 Knipovich Street, Murmansk 183763  
 Phone: +7 8152 45 0568 – Fax: + ? – E-mail: [taras@pinro.ru](mailto:taras@pinro.ru)

## UKRAINE

## Representative:

Romanov, Evgeny V. Head of Division, Network, Southern Scientific Research Institute of Marine Fisheries B  
 And Oceanography (YugNIRO), 2, Sverdlov St., Kerch, 98300  
 Phone: + 380 6561 2 1065 – Fax: +380 6561 2 1572 – Fax: + – E-mail: [island@crimea.com](mailto:island@crimea.com)

## UNITED STATES OF AMERICA (USA)

## Representative:

Serchuk, Fred M. National Marine Fisheries Service, NEFSC, 166 Water St., Woods Hole, MA 02543 A B  
 Phone: +508-495-2245 – Fax: +508-495-2258 – E-mail: [fred.serchuk@noaa.gov](mailto:fred.serchuk@noaa.gov)

## Meetings\*

- A Scientific Council Meeting, 3-17 June 2004  
 B Scientific Council Annual Meeting, 13-17 September 2004 (Note: Symposium participants are listed with its report).  
 C Scientific Council Meeting, 27 October-4 November 2004.

## Meetings\*

## UNITED STATES OF AMERICA (USA) (continued)

## Advisers/Experts:

Fordham, Sonja	Fish Conserv. Project Manager, The Ocean Conservancy, 1725 DeSales St., NW, Suite 600 Washington, DC 20036 Phone: +202-872-0619 – Fax: +202-429-5609 – E-mail: <a href="mailto:sfordham@oceanconservancy.org">sfordham@oceanconservancy.org</a>	B
Hendrickson, Lisa C.	National Marine Fisheries Service, NEFSC, 166 Water St., Woods Hole, MA 02543 Phone: +508-495-2285 – Fax: +508-495-2393 – E-mail: <a href="mailto:lisa.hendrickson@noaa.gov">lisa.hendrickson@noaa.gov</a>	A B
Mayo, Ralph K.	National Marine Fisheries Service, NEFSC, 166 Water St., Woods Hole, MA 02543 Phone: +508-495-2310 - Fax: +508-495-2393 - E-mail: <a href="mailto:ralph.mayo@noaa.gov">ralph.mayo@noaa.gov</a>	A B
Sosebee, Katherine A.	National Marine Fisheries Service, NEFSC, 166 Water St., Woods Hole, MA 02543 Phone: +508-495-2372 – Fax: +508-495-2393 – E-mail: <a href="mailto:katherine.seosebee@noaa.gov">katherine.seosebee@noaa.gov</a>	A

## OBSERVER

Mogensen, Charlotte B.	World Wildlife Fund, European Policy Office, 39 Avenue de Tervurenlaan Box 12, 1040 Brussels, Belgium Phone: +32 2 743 8800 – Fax: +32 2 743 8819 – E-mail: <a href="mailto:CMogensen@wwfepo.org">CMogensen@wwfepo.org</a> – website: <a href="http://www.panda.org/epo">www.panda.org/epo</a>	B
Rangeley, Robert	Dir., At. Mar. Prog., World Wildlife Fund Can., Duke Towers, 5251 Duke St., Halifax, NS, B3J 1P3 Phone: +902-482-1105 – Fax: +902-482-1107 – E-mail: <a href="mailto:rrangeley@wwfcanada.org">rrangeley@wwfcanada.org</a>	B
Watanabe, Hiromoto	Fishery Liaison Officer, Fishery Policy 7 Planning Div., Fisheries Dept., FAO, Viale delle Terme di Caracalla, 00100, Rome, Italy Phone: +39 06 5705 5252 – Fax: +39 06 5705 6500 – E-mail: <a href="mailto:hiromoto.watanabe@fao.org">hiromoto.watanabe@fao.org</a>	B

## NAFO SECRETARIAT

Johanne Fischer, Executive Secretary	A B
Tissa Amaratunga, Deputy Executive Secretary	A B C
Dorothy Auby, Office Secretary	A B C
Cindy Kerr, Fisheries Information Officer	A
Forbes Keating, Administration Officer & Meeting Coordinator	A
Stan Goodick, Finance Officer	A
Barb Marshall, Information and Web Manager	A C
Ricardo Federizon, Fisheries Scientist	A
Kofi Ankamah (Ghana), Intern – Marine Affair Programme, Dalhousie University	A

## ICES SECRETARIAT

Hans Lassen, Head of Advisory Programme	C
Henrik Sparholt, Fisheries Assessment Scientist	C
Bodil Chemnitz, Web/A	C

## Meetings\*

- 
- A Scientific Council Meeting, 3-17 June 2004
  - B Scientific Council Annual Meeting, 13-17 September 2004 (Note: Symposium participants are listed with its report).
  - C Scientific Council Meeting, 27 October-4 November 2004.



## LIST OF RECOMMENDATIONS IN 2004

The following are the specific **recommendations made by the Scientific Council** at its meetings through 2004 besides those made with respect to scientific advice on stocks considered. The recommendations with respect to stock advice appear in the stock-by-stock Summary Sheets presented in this publication. Recommendations listed under the Standing Committees were **endorsed** by the Scientific Council.

All recommendations listed here were **adopted** by the Scientific Council and are presented as they appear in this publication under the relevant sections and pages mentioned.

### *Scientific Council Meeting, 3-17 June 2004*

#### SCIENTIFIC COUNCIL

**NOTE:** All 4-16 June 2004 recommendations pertaining to the work of the Scientific council, except those related to stocks under STACFIS, were listed in Part A, Sections III, IV and V. These and other recommendations pertaining to all Constituent Bodies of NAFO are presented below under the relevant section and subject headings.

**VII. MANAGEMENT ADVICE AND RESPONSES TO SPECIAL REQUESTS** (see also Section XIV of Scientific Council Report).

#### **Fisheries Commission** (page 9)

Scientific Council has concluded that STACREC is no longer able to fulfill its mandate of statistics compilation with the current situation. As such, Scientific Council **recommended** that *the Chair of Scientific Council formally communicate to the Chair of Fisheries Commission the concerns of Scientific Council regarding the derivation and accuracy of catch information available, and request that for the future, each year prior to the June meeting of Scientific Council, Fisheries Commission conduct its own evaluation of catch information derived from various sources under Rule 5.1 pertaining to STACTIC, and provide Scientific Council with their agreed estimates by Contracting Party/Country to be utilized by Scientific Council in the conduct of stock assessments.*

**X. REPORTS OF WORKING GROUPS** (see also Section XIV of Scientific Council Report)

#### **Limit Reference Point Study Groups (LRPSG)** (page 49)

Considering the progress made by the Limit Reference Point Study Group (LRPSG) which was held in Lorient, France, 15-20 April 2004, the Scientific Council strongly **recommended** that *the Precautionary Approach Framework developed by Scientific Council be endorsed and implemented by the Fisheries Commission without further delay.*

**XII. OTHER MATTERS** (see also Section XIV of Scientific Council Report)

#### **The FSC and CWP 21<sup>st</sup> Meeting, Copenhagen, February 2005** (page 51)

The Council also noted that certain matters from this June 2004 Meeting, and possibly matters to be discussed at the September 2004 Meeting may need to be submitted to the CWP 21<sup>st</sup> Session. Accordingly the Council **recommended** that *the STACREC Chair in consultation with the Secretariat ensure any Scientific Council related matters be submitted to CWP Secretariat for inclusion in the CWP 21<sup>st</sup> Agenda.*

#### **The FIRMS/NAFO Arrangement** (page 51)

The Scientific Council views that the FIRMS/NAFO Arrangement is an institutional arrangement between FAO/FIRMS and NAFO. Accordingly the Scientific Council **recommended** that *the General Council approve the FAO/FIRMS and NAFO Partnership Arrangement.*

### **PUBLICATIONS (STACPUB)**

#### **Journal of Northwest Atlantic Fishery Science** (page 66)

STACPUB **recommended** that *the Secretariat begin the electronic publication of HTML versions of the Journal.*

#### **Design of NAFO Website** (page 68)

STACPUB viewed a presentation of the progress made on the member pages, including a discussion on password options that would allow only Scientific Council members access to information on their secured section of the website.

STACPUB **recommended** that *a second level of password protection be established for the Scientific Council members pages.*

STACPUB **recommended** that *the addition of new information to the web site be highlighted or "advertised" in some way to ensure the members and general public are made aware of these new features.*

STACPUB **recommended** that *a link to a distribution list of e-mail addresses for current Committee and members e-mails be established to facilitate communication of information.*

As more information is added to the web page it is becoming more complex to navigate. STACPUB **recommended** that *a search function be added to the front page.*

#### **New Initiatives for Publications** (page 69)

The Executive Secretary presented several new design options for the NAFO Journal and Studies publications. STACPUB Chair suggested Committee members to review these and provide their comments to the Secretariat. STACPUB **recommended** that *an ad hoc group be formed to deal with the cover issue intersessionally, and report on this to STACPUB at the September 2004 Meeting of the Committee.* The *ad hoc* group consists of A. Nicolajsen, L. Hendrickson, F. Serchuk, M. Stein and M. Treble.

### **RESEARCH COORDINATION (STACREC)**

#### **Fishery Statistics**

##### **Progress Report on Secretarial Activities in 2003/2004** (page 72)

STACREC noted once again that there was a widespread lack of respect of the deadlines for the STATLANT submissions, and particularly for the submissions of the STATLANT 21B and **recommended** that *the General Council be reminded of the importance of these STATLANT data to the work of the Scientific Council.*

##### **Quality of catch statistics as needed for stock assessments** (page 74)

STACREC expressed serious concerns that the alternate sources of information on catches did not include sufficient detail to allow STACREC to evaluate the relative merit of the data from different sources.

In order to minimize this situation into the future, STACREC **recommended** that *Contracting Parties providing data to Scientific Council regarding catch estimates that are alternate to the STATLANT 21A data provide sufficient detail to allow evaluation of the data calculations as well as validation of their accuracy. Detailed information should be provided for the 2005 June Meeting of Scientific Council for both the 2003 catch estimates and the 2004 catch estimates.*

STACREC noted that there is considerable additional information available within the NAFO Secretariat that Scientific Council could utilize in determining the best estimates of catches including such things as numbers of vessels, fishing days, VMS data, etc. STACREC **recommended** that *the Chair of Scientific Council communicate to the Chair of Fisheries Commission the value of these data to Scientific Council in carrying out its work and request that Scientific Council be provided access to these data for its own internal deliberations in support of Fisheries Commission.*

##### **NAFO Observer Program** (page 81)

STACREC **recommended** that *the Secretariat determine the resources required to complete the task of digitizing the observer data to enable its use by Scientific Council, and funding to support this work be requested during the September 2004 Meeting of STACFAD.*

**Review of SCR and SCS Documents** (page 81)

STACREC **recommended** that *SCR Doc. 04/5 on yellowtail flounder (Limanda ferruginea) ageing manual be published in Studies.*

The Council noted three **recommendations** made by STACREC on the issue of catch data (see Appendix III, Section 3a, and 3.b.iii, on quality of catch statistics as needed for stock assessments) were superseded by the Scientific Council recommendation given in Section XIV below (see also Section VII). Accordingly these three STACREC recommendations were **not endorsed** by the Council.

**FISHERIES SCIENCE (STACFIS)****Greenland Halibut (*Reinhardtius hippoglossoides*) in Subarea 0 and Division 1A Offshore and Divisions 1B-1F** (page 94)

STACFIS **recommended** that *the investigations of the by-catch of Greenland halibut in the shrimp fishery in Subareas 0 and 1 should be continued and the results should be made available before the assessment in 2005.*

STACFIS **recommended** that *the CPUE series and catch-at-age for Greenland halibut from Div. 0B should be updated.*

**Greenland Halibut (*Reinhardtius hippoglossoides*) in Division 1A Inshore** (page 99)

It was noted that in 2001 an annual gill net survey with small mesh net was started in the Disko Bay in order to estimate relative year-class strength of pre recruits to the fishery. STACFIS **recommended** that *a study should be conducted to calibrate the gill net survey to the longline survey in order to allow use of the whole time series for Greenland halibut in Disko Bay.*

Voluntary logbooks were introduced in 1999 but have only covered a small proportion of the landings due to poor return rates. STACFIS **recommended** that *authorities consider means to ensure a higher return rate of inshore logbooks from the Greenland halibut commercial fishery in Div. 1A.*

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

STACFIS **recommended** that *the discard rate of 'small Greenland halibut' in Div. 1A be investigated.*

**Demersal Redfish (*Sebastes* spp.) in Subarea 1** (page 103)

STACFIS **recommended** that *the quantity of redfish discarded in the shrimp fishery in Subarea 1 be quantified.*

STACFIS **recommended** that *determination of maturity of redfish caught during surveys in Subareas 1 be carried out.*

**Other Finfish in Subarea 1** (page 104)

STACFIS **recommended** that *the species composition and quantity of other finfish discarded in the shrimp fishery in Subarea 1 be quantified.*

**Redfish (*Sebastes mentella* and *Sebastes fasciatus*) in Divisions 3M** (page 110)

STACFIS **recommended** that *an update of the Div. 3M redfish by-catch information be compiled on an annual basis, including the estimated weights and numbers of redfish caught annually in the Div. 3M shrimp fishery as well as tables showing their size distribution.*

**Redfish (*Sebastes mentella* and *Sebastes fasciatus*) in Divisions 3L and 3N** (page 119)

A genetic study is currently being conducted within Canada that may provide useful results for the determination of the most appropriate management unit(s) in Divisions 3L, 3N and 3O. It is anticipated that the results of this study will be made available to the Scientific Council meeting in June 2005. Accordingly, STACFIS **recommended** that *(1) redfish data in Div. 3LN and Div. 3O be analyzed further to determine if a relationship exists between Div. 3LN and Div. 3O 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.*

STACFIS also **recommended** that *an update of the Div. 3L redfish by-catch information from the shrimp fishery be compiled on an annual basis, including the estimated weights and numbers of redfish caught annually as well as tables showing their size distribution.*

**Witch Flounder (*Glyptocephalus cynoglossus*) in Divisions 3N and 3O** (page 135)

STACFIS **recommended** that *the use of stock production models be attempted in the next assessment of Div. 3NO witch flounder.*

**Capelin (*Mallotus villosus*) in Divisions 3N and 3O** (page 137)

STACFIS **recommended** that *initial investigations be carried out to evaluate the status of capelin in Div. 3NO utilizing trawl acoustic surveys to allow comparison with the historical time series.*

**Redfish (*Sebastes mentella* and *Sebastes fasciatus*) in Division 3O** (page 139)

A genetic study is currently being conducted within Canada that may provide useful results for the determination of the most appropriate management unit(s) in Div. 3L, 3N and 3O. It is anticipated that the results of this study will be made available to the Scientific Council meeting in June 2005. Accordingly, STACFIS **recommended** that *(1) redfish data in Div. 3LN and Div. 3O be analyzed further to determine if a relationship exists between Div. 3LN and Div. 3O 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.*

**Thorny Skate (*Amblyraja radiata*) in Divisions 3L, 3N and 3O** (142)

STACFIS **recommended** that *investigations into length-cohort analyses of commercial catches, standardization of the two research survey series (Engel and Campelen) and non-equilibrium production modeling be carried out for thorny skate in Div. 3LNO.*

**Greenland Halibut (*Reinhardtius hippoglossoides*) in Subarea 2 and Divisions 3KLMNO** (page 168)

STACFIS **recommended** that *all available information on by-catch and discards of Greenland halibut in Subarea 2 and Divisions 3KLMNO be presented for consideration in future assessments.*

STACFIS **recommended** that *age-readers of Greenland halibut in Subarea 2 and Divisions 3KLMNO participate in a 2005 workshop to reach agreement upon common age reading practices and eliminate biases in age interpretation.*

STACFIS **recommended** that *age-disaggregated indices of Greenland halibut in Subarea 2 and Divisions 3KLMNO from the Spanish survey in Div. 3NO be presented for use in future assessments.*

**Northern Shortfin Squid (*Illex illecebrosus*) in Subareas 3 and 4** (172)

For northern shortfin squid in Subareas 3+4, STACFIS **recommended** that *distribution maps of squid abundance from the Canadian multi-species bottom trawl surveys in Div. 2J+3KLNO (September-October) and in Div. 3LNO+Subdiv. 3Ps (April-June) be produced, beginning with 1995, to determine the most appropriate subset of strata to use when deriving relative abundance and biomass indices from these surveys.*

***Scientific Council Annual Meeting, 13-17 September 2004*****SCIENTIFIC COUNCIL****VI. REQUESTS FROM FISHERIES COMMISSION****Pelagic Redfish *Sebastes mentella* in Subareas 1-3 and Adjacent ICES Area** (page 182)

The Scientific Council **recommended** that *Chair of the Scientific Council contact the Chair of ACFM to develop a communications vehicle or protocol (e.g. joint subgroup, email group, etc.) that would efficiently facilitate joint and collaborative consideration by both advisory bodies of all new and forthcoming information on the pelagic *S. mentella* stock in the North Atlantic Ocean.*

## VII. REVIEW OF FUTURE MEETING ARRANGEMENTS

### Annual Meeting, September 2005 (page 183)

Scientific Council **recommended** that *the Chair of Scientific Council convey these concerns to the Chair of General Council and the Executive Secretary. The Council noted that should this matter not be resolved for 2006 and onward, the Council will be forced to consider the possibility of independently holding its annual meeting during different dates.*

## XI. ADOPTION OF REPORTS

### Consideration of Report of the Symposium “*The Ecosystem of the Flemish Cap*”, September 2004 (page 186)

Scientific Council endorsed the importance of this information but expanded on it and **recommended** that *the NAFO/ICES Working Group on harp and hooded seals (WGHARP) provide Scientific Council with updates on the results of seal tagging studies using satellite telemetry tracking, collaborative studies and any other studies that are carried out regarding harp and/or hooded seals in the Northwest Atlantic*

## FISHERIES SCIENCE (STACFIS)

### III. OTHER MATTERS

#### Review of SCR and SCS Documents (SCR Doc. 04/67) (page 200)

STACFIS **recommended** that *all available information on by-catch and discards of Greenland halibut in Subarea 2 and Divisions 3KLMNO shrimp fishery be presented during the October/November 2004 and the June 2005 Meetings of the Scientific Council for consideration in future assessments.*

## RESEARCH COORDINATION (STACREC)

### Research Activities

#### NAFO Observer Program (page 202)

STACREC **recommended** that *the Secretariat should seek permission from the Contracting Parties to have their existing digitized data from the NAFO Observer Program be made available to the Secretariat to increase the efficiency and cost effectiveness of the data digitizing process. In the interim, the NAFO Secretariat should compile a list of available data, and begin the process of digitizing data to better evaluate costs*

## PUBLICATIONS (STACPUB)

### NAFO Website

#### Other Matters (page 204)

STACPUB **recommended** that *STACPUB Chair explore the implications of citations of individual papers in 2 different ways (in electronic html format and the usual hard copy Journal format) and report on this during the June 2005 STACPUB Meeting.*

STACPUB **recommended** that *the Secretariat’s work of placing electronic issues of the Journal on the NAFO website begin immediately, and that any other work needed to complete this in a speedy manner be identified and reported to STACPUB in June 2005.*

#### Report of Ad hoc Working Group "Journal Cover" (page 204)

Following the *ad hoc* Working Group's recommendation that the editorial policy of JNAFS is a premise which shall not be hampered by a “fish-logo”, STACPUB **recommended** that *instead of the redfish and blue bar proposed for the cover of the NAFO Journal (JNAFS), a logo or background figure or typical figure out of the contributions of the given Symposium [see JNAFS Vol. 23 (map with drawings), 27 (the Symposium logo)] be taken, and for “miscellaneous papers” issues of JNAFS, the figure of the satellite picture proposed by the Secretariat be taken.*

**Scientific Council Meeting, 27 October-4 November 2004****FISHERIES SCIENCE (STACFIS)****Research Recommendations** (page 233)

STACFIS **recommended** that, for shrimp in Div. 3M:

- *biological and CPUE data from all fleets fishing for shrimp in the area, be submitted to Designated Experts by 1 September 2005.*
- *indices of female stock size be presented with error bars where possible.*

**Research Recommendations** (page 240)

STACFIS **recommended** that, for shrimp in Div. 3LNO:

- *sensitivity analyses be conducted to determine whether Ogmap is an appropriate method to determine Div. 3LNO shrimp biomass/abundance indices and population adjusted length frequencies from stratified random surveys.*
- *biological and CPUE data from all fleets fishing for shrimp in the area, be submitted to the designated expert, in the standardized format, by 1 September 2005.*

**Research Recommendations** (page 254)

For the shrimp stock in Subarea 1 and Div. 0A east of 60°W, STACFIS **recommended** that:

- *sampling of catches by observers – essential for assessing age, size, sex composition, fecundity and frequency of spawning of the stock – be re-established in Subarea 1.*
- *the time series of cod biomass used as input in the shrimp assessment model be re-evaluated.*
- *time series of recruitment (index of age 2 abundance) and its link to the fishable biomass in a later year be considered for inclusion in the shrimp assessment model*

**Research Recommendations** (page 259)

STACFIS **recommended** that, for shrimp in Denmark Strait and off East Greenland:

- *sampling of catches by observers – essential for assessing age, size, sex composition, fecundity and frequency of spawning of the stock – be re-established in the Greenland EEZ and improved in the Icelandic EEZ.*