

PART D

Miscellaneous

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AGENDA I**SCIENTIFIC COUNCIL MEETING, 31 MAY-14 JUNE 2001**

- I. Opening (Chairman: W. B. Brodie)
 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 2000 (see Appendix III)
- III. Fisheries Environment (STACFEN Chairman: M. Stein)
 1. Opening
 2. Chairman's introduction; report on intersessional activities
 3. Review of recommendations in 2000
 4. Invited lecture (G. Wegner, ISH, Hamburg, Germany: "The EU Concerted Action on Stock Assessment and Prediction: Aim, Procedure, Results")
 5. Review of environmental conditions
 - a) Marine Environmental Data Service (MEDS) Report for 2000
 - b) Review of environmental studies in 2000
 - i) Results from physical oceanographic studies
 - ii) Results from interdisciplinary studies
 - c) Overview of environmental conditions in 2000
 6. Long-term environmental indicators
 - a) Review of environmental indicators
 - b) Formulation of recommendations based on environmental conditions
 7. Environmental indices (implementation in the assessment process)
 8. Review of recent trans-Atlantic environmental conditions
 - a) Review of hydrographic and larval studies
 - b) Establishing a study group
 9. Cooperative research programs
 - a) Russian/German data evaluation (ICNAF/NAFO data; status report)
 - b) Other research programs
 10. ICES/NAFO Symposium on Hydrobiological Variability, August 2001, Edinburgh, UK (progress report)
 11. National representatives
 12. Other matters

IV. Research Coordination (STACREC Chairman: R. K. Mayo)

1. Opening
2. Review of recommendations in 2000
3. Fishery statistics
 - a) Progress report on Secretariat activities in 2000/2001
 - i) Acquisition of STATLANT 21A and 21B reports for recent years
 - ii) Publication of statistical information
 - iii) Considerations of internet site for statistical data
 - iv) Interagency data harmonization
 - v) Use of scientific names in STATLANT data
 - vi) Use of GRT *vs.* GT in recording effort data
 - b) CWP Sessions 2001
 - i) Report on the CWP Intersessional Meeting, Rome, 20-21 February 2001
 - ii) CWP 19th Session, July 2001
 - Review of Agenda
 - New proposals
4. Research activities
 - a) Biological sampling
 - i) Report on activities in 2000/2001
 - 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 2000 (by National Representatives and Designated Experts)
 - ii) Surveys planned for 2001 and early-2002
 - iii) Northwest Atlantic Survey Database
5. Report of the Working Group on Biological Information Database Exchange (Cod in Div. 3NO)
6. Report of the *ad hoc* Working Group on NAFO Observer Protocol
 - a) Protocol for scientific data on Pilot Observer Program
 - b) Format of data from Pilot Observer Program for Scientific Council purposes
7. Review of SCR and SCS Documents
8. Other matters
 - a) Tagging activities
 - b) Conversion factors
 - c) Comparative fishing between Canada and EU-Spain
 - d) Research activities
 - e) Other business

V. Publications (STACPUB Chairman: O. A. Jørgensen)

1. Opening
2. Review of recommendations in 2000
3. Review of STACPUB membership
4. Review of scientific publications since June 2000
 - a) Journal of Northwest Atlantic Fishery Science

- b) NAFO Scientific Council Studies
 - c) NAFO Statistical Bulletin
 - d) Scientific Council Reports
 - e) Index and Lists of Titles
 - f) Others
5. Production costs and revenues for Scientific Council publications
 6. Promotion and distribution of scientific publications
 - a) Invitational papers
 - b) Abstracts from Research Documents
 - c) NAFO Website
 - d) Scientific Citation Index (SCI)
 - e) CD-ROM versions of reports, documents
 - f) New initiatives for publications
 7. Editorial matters regarding scientific publications
 - a) Review of Editorial Board
 - b) Progress review of publication of 2000 Workshop Workbook
 - c) Review process for publication of Symposium proceedings
 - d) Review of the Journal editorial process
 8. Papers for possible publication
 - a) Review of proposals resulting from the 2000 Meetings
 - b) Review of contributions to the June 2001 Meeting
 9. Other matters
- VI. Fisheries Science (STACFIS Chairman: H.-J. Rätz)
1. Opening
 2. General review
 - a) Review of recommendations in 2000
 - b) General review of catches and fishing activity
 3. Stock assessments
 - a) Stocks within or partly within the Regulatory Area, as requested by the Fisheries Commission with the concurrence of the Coastal State (Annex 1) (Shrimp in Div. 3M and Div. 3LNO will be undertaken during Scientific Council Meeting 7-14 November, 2001):
 - Cod (Div. 3NO (Item 10); Div. 3M (monitor))
 - Redfish (Div. 3LN; Div. 3M)
 - American plaice (Div. 3LNO (Items 10 and 11), Div. 3M (monitor))
 - Witch flounder (Div. 2J and 3KL (Item 7), Div. 3NO (monitor))
 - Yellowtail flounder (Div. 3LNO) (Items 10 and 11)
 - Squid (Subareas 3 and 4) (Item 3.g)
 - Greenland halibut (Subareas 2 and 3) (Items 10 and 14)
 - Capelin (Div. 3NO)
 - b) Analyses pertaining to other Fisheries Commission requests (Annex 1)
 - Unregulated species in the Regulatory Area (Item 8)
 - Depth distribution of fishable biomass of the main commercial species by maturity and landing size (Item 9)
 - Pelagic redfish in Div. 1F (Item 12)
 - Scientific research methodology for stocks under moratoria (Item 15)

- c) Stocks within the 200-mile fishery zone in Subareas 0 to 4, as requested by Canada (Annex 2)
 - i) Greenland halibut in Subareas 0-3 (Item 1)
 - ii) Cod in Div. 2J and 3KL (Item 3)
 - iii) By-catch of yellowtail flounder in Div. 3LNO (Item 4)
 - iv) By-catch of American plaice in Div. 3LNO (Item 5)
 - v) Redfish in Div. 1F (Item 6)
 - d) Stocks within the 200-mile fishery zone in Subarea 1 and at East Greenland as requested by Denmark (Greenland) (Annex 3) (Northern shrimp in Denmark Strait and off East Greenland will be undertaken during Scientific Council Meeting, 7-14 November 2001):
 - i) Redfish and other finfish in Subarea 1 (Item 1)
 - ii) Roundnose grenadier in Subareas 0 and 1 (monitor) (Item 1)
 - iii) Distribution of biomass of Greenland halibut between Subarea 0 and Subarea 1 (Item 2)
 - iv) Greenland halibut in Div. 1A inshore (Item 2)
 - e) Stocks overlapping the fishery zones in Subareas 0 and 1, as requested by Canada and by Denmark (Greenland) (Annexes 2 and 3) (Northern shrimp in Subareas 0 and 1 will be undertaken during Scientific Council Meeting, 7-14 November 2001):
 - Greenland halibut (Subareas 0 and 1) (Annex 2, Item 1; Annex 3, Item 2)
 - f) Assessment of other stocks:
 - Roughhead grenadier (Subareas 2 and 3 (monitor))
4. Other matters
- a) New Designated Experts
 - b) Other business

VII. Management Advice and Responses to Special Requests

1. Fisheries Commission (Annex 1)
- a) Request for advice on TACs and other management measures for year 2002
 - Redfish in Div. 3M
 - Yellowtail flounder in Div. 3LNO
 - Squid in Subareas 3 and 4 (see also Item 3.g)
 - Greenland halibut in Subareas 2 and 3
 - Capelin in Div. 3NO
 - b) Request for advice on TACs and other management measures for the years 2002 and 2003
 - Cod in Div. 3NO
 - Redfish in Div. 3LN
 - American plaice in Div. 3LNO
 - c) Special requests for management advice (see Annex 1, Items 5-15)
 - i) Formulation of advice under the precautionary approach (Items 5 and 6)
 - ii) Witch flounder in Div. 2J and 3KL (Item 7)
 - iii) Information on unregulated species in the Regulatory Area (Item 8)
 - iv) Distribution of fishable biomass of main commercial species (Item 9)
 - v) Medium term development of several stocks under various assumptions (Item 10)
 - vi) Distribution of juvenile American plaice and yellowtail flounder (Item 11)
 - vii) Redfish in Div. 1F and adjacent ICES area (Item 12)(see also Canadian request Annex 2)
 - viii) Effect of increasing mesh size in Greenland halibut fishery (Item 14)
 - ix) Methodology for scientific research for stocks under moratoria (Item 15)

- d) Monitoring of stocks for which multi-year advice was provided in 2000
 - Cod in Div. 3M
 - American plaice in Div. 3M
 - Witch flounder in Div. 3NO

2. Coastal States

- a) Request by Canada for advice (Annex 2):
 - i) Greenland halibut in Subareas 0-3 (Item 1)
 - ii) Cod in Div. 2J and 3KL (Item 3)
 - iii) By-catch of yellowtail flounder in Div. 3LNO (Item 4)
 - iv) By-catch of American plaice in Div. 3LNO (Item 5)
 - v) Redfish in Div. 1F (Item 6)
- b) Request by Denmark (Greenland) for advice (Annex 3):
 - i) Redfish and other finfish in Subarea 1 (Item 1)
 - ii) Roundnose grenadier in Subareas 0 and 1 (monitor) (Item 1)
 - iii) Distribution of biomass of Greenland halibut between SA 0 and SA 1 (Item 2)
 - iv) Greenland halibut in Div. 1A inshore (Item 2)
- c) Request by Canada and Denmark (Greenland) for advice on TACs and other management measures:
 - Greenland halibut in Subareas 0 and 1

3. Scientific advice from Scientific Council on its own accord

- Roughhead grenadiers in Subareas 2 and 3 (monitor).
- Elasmobranchs

VIII. Future Scientific Council Meetings 2001 and 2002

1. Scientific Council Meeting and Special Session, September 2001
2. Scientific Council Meeting in November 2001 (assessment of shrimp stocks)
3. Scientific Council Meeting, June 2002
4. Scientific Council Meeting and Special Session, September 2002
5. Scientific Council Meeting, November 2002 (assessment of shrimp stocks)

IX. Arrangements for Special Sessions

1. Progress report on Special Session in September 2001: Symposium on "Deep Sea Fisheries"
2. Progress report on ICES/NAFO Symposium on Hydrobiological Variability in August 2001
3. Progress report on Special Session in 2002: the Symposium on "Elasmobranch Fisheries"
4. Topic for Special Session in 2003

X. Reports of Working Groups

1. Working Group on Reproductive Potential (Chairman: E. A. Trippel)
2. Joint NAFO-ICES Working Group on harp and hooded seals

XI. Nomination and Election of Officers

1. Chairs of all Standing Committees (STACFEN, STACPUB, STACREC, STACFIS)
2. Chair and Vice-Chair of Scientific Council

XII. Review of Scientific Council working procedures/protocols

1. Implementation of Precautionary Approach
2. NAFO Scientific Council observership at ICES ACFM meetings
3. Summaries of Standing Committee reports for NAFO Website

4. Website and technology issues
5. Facilitating workload of Scientific Council during Annual Meeting in September

XIII. Other Matters

1. Report on Second Meeting of FAO and Non-FAO Regional Fishery Bodies, Rome, Italy, 20-21 February 2001
2. Report on Second Technical Consultation on Illegal, Unreported and Unregulated Fishing, Rome, Italy, 22-23 February 2001
3. Participation in FAO Committee on Fisheries (COFI)
4. Report on NAFO intersessional meetings
5. Other business

XIV. Adoption of Committee Reports

1. STACFEN
2. STACREC
3. STACPUB
4. STACFIS

XV. Scientific Council Recommendations to General Council and Fisheries Commission

XVI. Adoption of Scientific Council Report

XVII. Adjournment

**ANNEX 1. FISHERIES COMMISSION'S REQUEST FOR SCIENTIFIC ADVICE ON MANAGEMENT
IN 2002 OF CERTAIN STOCKS IN SUBAREAS 3 AND 4, INCLUDING SUPPLEMENTARY
QUESTIONS ON DIVISION 3M SHRIMP FOR 2001**

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 2001 Annual Meeting, provide advice on the scientific basis for the management of the following fish and invertebrate stocks or groups of stocks in 2002:

Redfish (Div. 3M)
Yellowtail flounder (Div. 3LNO)
Squid (Sub-areas 3 and 4)
Shrimp (Div. 3M, 3LNO)
Greenland halibut (Sub-areas 2 and 3KLMNO)
Capelin (Div. 3NO)

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 2001 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. 3LN)
American plaice (Div. 3LNO; Div. 3M)
Witch flounder (Div. 3NO)

To implement this system of assessments in alternating years, all stocks were assessed in 1999 but advice pertained to different time periods to allow the introduction of the new scheme over time. Consequently:

- In 2000, advice was provided for 2001 and 2002 for cod in 3M, American plaice in 3M and witch flounder in 3NO. These stocks will then next be assessed in 2002.
- In 2001, advice will be provided for 2002 and 2003 for American plaice in 3LNO, cod in 3NO and redfish in 3LN. The next assessment of these stocks will thus be conducted in 2003.

The Fisheries Commission requests the Scientific Council to continue to monitor the status of 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 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_{2000} in 2002 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 general reference points should be the level of fishing effort or fishing mortality (F) which is calculated to be required to take the MSY catch in the long term and two-thirds of that effort level.
 - 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 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 2002 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. 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 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.

- g) For squid (Illex) in Sub-areas 3 and 4, the Scientific Council is requested to advise on the level of TAC in high abundance years and on the criteria, which could be reliably used to forecast changes in productivity under an annual management regime. Scientists are encouraged to further analyze available data toward developing other possible indicators that could be used under an in-season management regime for squid, recognizing that the practical use of such indicators would require that they be available as early in the season as possible.
- h) For shrimp in 3M, the Fisheries Commission notes that information to date from the commercial fishery in 2000 is showing relatively high catch rates. In light of this apparent change in stock status, the Scientific Council is requested to review information from the 2000 fishery at its November 2000 meeting and to evaluate the impact on this resource of removals in year 2001 and 2002 corresponding to 25,000 t, 30,000 t, 35,000 t and 40,000 t respectively. Furthermore, the Scientific Council is requested at its November 2000 meeting to evaluate, on the basis of the best data available, whether the provision for a Div. 3M shrimp closure in FC Working Paper 99/16 (Rev.) would be a precautionary approach-based measure and, if so, whether proposed area and timing of the closure are appropriate.
4. The results described in Section 3 should include information about the reliability of the results. To this end, the following information should be included in a synoptic form:
- Parameter uncertainty in assessments, possibly as confidence intervals
 - Robustness of assessments to alternative assumptions or data series
 - Illustration of conflicts in data series

This information may be accompanied by quality statements giving the opinion of the Scientific Council about the reliability of the various data series for particular purposes.

5. 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 2001 Annual Meeting of the Fisheries Commission for stocks under its responsibility requiring advice for 2002, or 2002 and 2003:

- a) the limit and target precautionary reference points 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 to develop 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 work toward the harmonization of the terminology and application of the precautionary approach within relevant advisory bodies.

6. 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 appreciable 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} or B_{buf} . Whenever possible, this information should be cast in terms of risk assessments relating fishing mortality rates to the risks of falling below B_{lim} and B_{buf} , as well as of being above F_{lim} and F_{buf} , 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} (B_{buf}) and B_{target} and F_{lim} (F_{buf}) and F_{target} .

7. The Fisheries Commission, with the concurrence of the Coastal State, requests that the Scientific Council review available information, including any Canadian assessment documentation on the stock status, and provide advice on catch levels for the 2J3KL witch flounder resource for 2002 and 2003. Any information pertaining to the relative distribution of the resource within the stock area, as well as changes in this distribution over time should also be provided.

8. The Scientific Council is requested to review all available information from both research vessel surveys and commercial catches on the relative biomass and geographic distribution of the following unregulated species/stocks occurring within the NAFO Regulatory Area: monkfish (*Lophius americanus*), wolffishes (*Anarhichas lupus*, *A. minor*, *A. denticulatus*), thorny skate (*Amblyraja radiata*), black dogfish (*Centroscyllium fabricii*), eelpouts (*Lycodes* spp.), longfin hake (*Urophycis chesteri*), and orange roughy (*Hoplostethus atlanticus*).

9. The Scientific Council is requested to evaluate the distribution of the fishable biomass of the main commercial species of fish in relation to depth (in 100-m intervals). Separate values should be provided a) for fish above and below the length of 50% maturity and b) for fish above and below the current minimum landing size.
10. The Fisheries Commission also requests, with the concurrence of the Coastal State, that the Scientific Council evaluate the likely future medium-term development for Greenland halibut in 2+3KLMNO, Yellowtail flounder in 3LNO, American plaice in 3LNO (if possible) and cod in 3NO, under the following assumed constraints:
 - a) Closure of targeted Greenland halibut fishery in depths less than 200, 500 and 800 meters or any other depths considered appropriate. These cases, which will have to make a reasonable assumption on the redirection of effort so removed onto the remaining depth strata, should be compared with evaluation of current fishing practices.
 - b) Subject to the above, likely future medium-term consequences (5 to 10 years) for the yield, spawning biomass, exploitable biomass and recruitment, stating the relevant biological assumptions.
 - c) The scenarios should be explored for a range of fishing effort assumptions corresponding to:
 - i) Maintaining overall fishing effort at the same levels as estimated in the last year for which good information is available.
 - ii) Increases or decreases of +/- 30% in fishing effort from this value.
 - iii) Additional scenarios as considered appropriate by the scientific Council.

In these scenarios, the Scientific Council should evaluate whether these fishing strategies provide adequate long-term protection to juvenile fish to allow maintenance of the spawning biomass at an appropriate level.
11. The Scientific Council is requested to review the distribution of juvenile American plaice and update the distribution of yellowtail flounder based on results from comprehensive research surveys. The Scientific Council is also requested to delineate further the areas of juvenile concentration in the Southeast Shoal area and its surroundings.
12. Regarding redfish in NAFO Division 1F, the Scientific Council is requested to review all available information on the distribution of this resource over time, 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 or to the redfish found in NAFO Sub-areas 1-3.
13. With regard to shrimp in Divisions 3LNO, the Fisheries Commission, with the concurrence of the Coastal State, requests that the Scientific Council provide information on the geographical distribution of this resource, as well as describe the relative and seasonal distribution inside and outside the NAFO Regulatory Area.
14. The Fisheries Commission requests the Scientific Council to provide information on the long-term effects of increasing mesh size from 130 mm to 145 mm in yield-per-recruit and stock spawning biomass-per recruit for Greenland halibut in 2+3KLMNO and in reducing by-catch of other species in that fishery. The Scientific Council is also requested to evaluate the medium term consequences in terms of yield and stock size of any such changes in mesh size.
15. The Fisheries Commission requests the Scientific Council to provide advice regarding the methodology for scientific research on fish stocks under moratoria.

**ANNEX 2. CANADIAN REQUEST FOR SCIENTIFIC ADVICE ON MANAGEMENT IN 2002
OF CERTAIN STOCKS IN SUBAREAS 0 TO 4**

1. Canada requests that the Scientific Council, at its meeting in advance of the 2001 Annual Meeting of NAFO, subject to the concurrence of Denmark (on behalf of Greenland), provide advice on the scientific basis for management in 2002 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 2002. In particular, the Council is asked to advise on appropriate

TAC levels separately for SA 0+1, for SA 2+Division 3K and for Divisions 3LMNO, and to make recommendations on the distribution of fishing effort within each of these three geographic areas.

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

2. Canada requests the Scientific Council to consider the following options in assessing and projecting future stock levels for those stocks listed above:

- a) For those stocks subject to analytical-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_{1999} in 2001 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 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 2001 and subsequent years over a range of fishing mortality rates (F) at least from $F = 0$ to $F_{0.1}$ 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 three reference points, $F = 0$, actual F , and $F_{0.1}$ should be shown.

3. For the cod stock in Divisions 2J+3KL, the Scientific Council is requested to report on recent trends in (and the current size of) the total and spawning biomass based on the most recent assessment of the stock.
4. Noting the increase in by-catch of 3LNO yellowtail flounder in other fisheries, in particular the skate fishery, the Scientific Council is requested to comment on the potential impacts of these by-catches on the long-term sustainability of the yellowtail flounder resource.
5. Based on information available to date regarding the 2000 fisheries in the NAFO Regulatory Area, there appears to be significant discrepancies regarding by-catches of American plaice between observer reports and the STATLANT 21A information. Scientific Council is requested to review all available information and provide its best estimate of the actual by-catch removals of American plaice in the NRA. Further, the Scientific Council is requested to comment on the potential impacts of these by-catches on the recovery of this resource. This will require that national scientists analyse their respective observer reports for the 2000 fishery and bring the results to the June Scientific Council meeting for discussion.

6. With regard to redfish in Division 1F the Scientific Council is requested.
- a) to review all available information related to the biology and distribution of oceanic redfish in the north Atlantic and to provide, to the extent possible, commentary on possible links to various shelf stocks in the northwest Atlantic.
 - b) to make recommendations on the most appropriate means of interaction with ICES with regards to this resource.

Canada would also like to put the Scientific Council on notice that we will possibly be asking further questions regarding shrimp later in the year in time for consideration of the shrimp assessment that is now normally conducted in November.

P. S. Chamut
Assistant Deputy Minister
Fisheries Management, Department of Fisheries and Oceans
Ottawa, Canada

**ANNEX 3. DENMARK (GREENLAND) REQUEST FOR SCIENTIFIC ADVICE ON
MANAGEMENT IN 2002 OF CERTAIN STOCKS IN SUBAREAS 0 AND 1**

1. In the Scientific Council report of 1999 scientific advice on management of redfish (*Sebastes* spp.) and other finfish in Subarea 1 was given for 2000 and 2001. Denmark on behalf of Greenland, requests the Scientific Council in advance of the 2001 Annual Meeting, provide advice on the scientific basis for the management of these stocks Subarea 1 for 2002 and 2003.

Advice for Roundnose grenadier in Subareas 0+1 was in 1999 given as a 3year advice (for 2000, 2001 and 2002). Denmark, on behalf of Greenland, requests the Scientific Council to continue to monitor the status of Roundnose greandier in Subareas 0+1 annually and, significant change in stock status be observed, to provide an updated advice as appropriate.

2. Subject to the concurrence of Canada, the Scientific Council is also requested to provide advice on the scientific basis for the management of Greenland halibut overlapping Subareas 0 and 1.

In its 1993 report, the Scientific Council noted that the offshore component of Greenland halibut was distributed equally between Subareas 0 and 1. The Council is asked to update the information on the distribution of Greenland halibut and provide advice on allocation of TACs to Subarea 0 and Subarea 1 offshore.

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

3. Denmark, on behalf of Greenland, further requests the Scientific Council of NAFO before December 2001 to provide advice on the scientific basis for management of Northern shrimp (*Pandalus borealis*) in Subareas 0 and 1 in year 2002, and as many years forward as data allow.

Further, the Council is requested to advise, in cooperation 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 2002, and as many years forward as data allow.

On behalf of The Ministry of Industry
Sincerely
Jørn Birk Olsen

AGENDA II**SCIENTIFIC COUNCIL ANNUAL MEETING, 17-21 SEPTEMBER 2001**

- I. Opening (Chairman: W. B. Brodie)
 1. Appointment of rapporteur
 2. Adoption of agenda
 3. Attendance of observers
 4. Plan of work
- II. Review of Scientific Council Recommendations in 2000 and 2001
- III. Fishery Science (STACFIS Chairman: H.-J. Rätz)
 1. Opening
 2. Results of the International Hydroacoustic Survey on Pelagic Redfish
 3. Nomination of Designated Experts
 4. Other Matters
 - a) Review of SCR and SCS documents (if necessary)
 - b) Other business
- IV. Research Coordination (STACREC Chairman: R. K. Mayo)
 1. Opening
 2. Fisheries Statistics
 - a) Progress reports on Secretariat activities
 - i) Acquisition of STATLANT 21 data
 - ii) Publication of statistical information
 - iii) Internet site for statistical information
 - loading FISHSTAT software
 - b) Report of the 19th CWP session
 3. NAFO Observer Protocol
 - a) Report of the *Ad hoc* Working Group on NAFO Observer Protocol
 - Progress report from June 2001 STACTIC meeting
 - b) Observer Program Data
 4. Other Matters
 - a) Review of SCR and SCS documents (if necessary)
 - b) Other business
- V. Publications (STACPUB Chairman: O. Jørgensen)
 1. Opening
 2. Review of recommendations from June 2001
 3. Review of Scientific Publications
 - a) Papers from June 2001 meeting
 - b) Status of the 2000 workshop workbook
 - c) Information from the 2001 special session
 - d) Status of invitational papers
 - e) Other Reviews
 4. Consideration of NAFO Website
 - a) Status of scanning of papers
 5. Scientific Citation Index (SCI)
 6. Other Matters

- VI. Response to Special Requests from Fisheries Commission (see Annex 1)
1. Information on unregulated species, including elasmobranchs, in the Regulatory Area (Item 8)
 2. Distribution of fishable biomass of main commercial species (Item 9)
 3. Medium term development of several stocks under various assumptions (Item 10)
 4. Update on pelagic *S. mentella* (redfish) in Div. 1F and adjacent ICES area (Item 12)
- VII. Review of Future Meeting Arrangements
1. Special Session and Annual Meeting, September 2002
 2. Scientific Council Meeting on shrimp, November 2002
 3. Scientific Council Meeting, June 2003
 4. Additional meetings
- VIII. Future Special Sessions
1. Progress Report on Symposium in 2002
 2. Proposal for Special Session 2003
- IX. Joint NAFO/ICES Working Groups or Meetings
1. Update on activities of joint NAFO/ICES WG on harp and hooded seals.
 2. Report from joint NAFO/ICES Symposium on Hydrobiological Variability in August 2001.
 3. Proposal for joint meeting on shrimp, November 2002.
- X. Scientific Council Working Procedures and Protocol
1. Timetable and frequency of assessments for the following stocks:
 - Redfish in Div. 3M
 - Short-finned Squid in Subareas 3+4
 - American plaice in Div. 3LNO
 - Yellowtail flounder in Div. 3LNO.
 2. STACPUB working procedures and membership.
 - a) New Initiatives for Publications
 - i) Future publishing policy for the Journal
 - ii) Publishing of GLOBEC proceedings
 - iii) Methods of promotion of the Journal
- XI. Other Matters
1. Report of STACTIC intersessional meeting, June 2001
 2. Workshop on Sequential Population Analysis for Greenland halibut in SA 2 + Div. 3KLMNO
 3. Geostatistics methodology for studying fish stocks
 4. Other business
- XII. Adoption of Reports
1. Consideration of Report of the Symposium on Deep-sea Fisheries, 12-14 September 2001
 2. Committee Reports of Present Meeting (STACFIS, STACREC, STACPUB)
 3. Report of Scientific Council Present Meeting 17-21 September 2001
- XIII. Adjournment

AGENDA III**SCIENTIFIC COUNCIL MEETING, 7-14 NOVEMBER 2001**

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

- II. Fisheries Science (STACFIS Chairman: D. Stansbury)
 1. Review of Recommendations in 2000 and 2001 (see Appendix 3)
 2. General environmental review
 3. Stock assessments (Annexes 1, 2 and 3)
 - Northern shrimp (Div. 3M) (see Item 3.h, Annex 1)
 - Shrimp in Div. 3LNO (see Item 13 in Annex 1)
 - Northern shrimp (Subareas 0 and 1)
 - Northern shrimp (in Denmark Strait and off East Greenland)
 4. Other business

- III. Formulation of Advice (see Annexes 1, 2 and 3)
 1. Advice for Northern Shrimp
 - Northern shrimp (Div. 3M)
 - Northern shrimp (Div. 3LNO)
 - Northern shrimp (Subareas 0 and 1)
 - Northern shrimp (in Denmark Strait and off East Greenland)
 2. Responses to Special Requests
 - Distribution of northern shrimp in Div. 3LNO (see Item 13, in Annex 1)
 3. Formulation of advice under a Precautionary Approach framework

- IV. Other Matters
 1. Meeting of November 2002
 2. Meeting of November 2003

- V. Adoption of Reports

- VI. Adjournment

LIST OF RESEARCH AND SUMMARY DOCUMENTS, 2001

RESEARCH DOCUMENTS (SCR)

SCR No.	Ser. No.	Author(s) and Title
01/1 ^a	N4353	RÄTZ, H.-J., and C. STRANSKY. Distribution patterns and selected stock parameters of pelagic redfish " <i>Oceanic Sebastes mentella</i> " in the NAFO and NEAFC Convention Areas. (14 pages)
01/2 ^a	N4357	BUCH, E., and M. H. NIELSEN. Oceanographic investigations off West Greenland 2000. (23 pages)
01/3 ^a	N4367	STEIN, M. Climatic conditions around Greenland – 2000. (21 pages)
01/4 ^a	N4368	MORGAN, M. J., and W. B. BRODIE. An exploration of virtual population analyses for Divisions 3LNO American plaice. (20 pages)
01/5 ^a	N4370	CROSS, D. Vessel size categories used by the NAFO Scientific Council. (5 pages)
01/6 ^a	N4371	RIKHTER, V. A. On the relation between recruitment dynamics of some fish populations in the Northwestern Atlantic Ocean (NAFO Subareas 2-4). (14 pages)
01/7 ^a	N4373	BOROVKOV, V. A., and M. STEIN. Recruitment of West Greenland cod – modelling different cause-effect regimes. (8 pages)
01/8 ^a	N4374	STEIN, M., and V. A. BOROVKOV. Sixth Report of Joint Russian/German Project "Assessment of short-time climatic variations in the Labrador Sea". (2 pages)
01/9 ^a	N4375	SAVVATIMSKY, P. I., and K. V. GORCHINSKY. By-catch of grenadiers in directed fishery for Greenland halibut in Divisions 3LMN and size, age and sex composition of roughhead grenadier in 2000. (12 pages)
01/10 ^a	N4377	VINNICHENKO, V. I., K. V. GORCHINSKY, and A. M. LEBEDEV. Results of the abundance and biomass assessment of Greenland halibut by the data from Russian trawl surveys in the northern Flemish Pass in 2000. (3 pages)
01/11 ^a	N4378	PAVLOV, V. A. By-catch of snow crab of the genus <i>Chionoecetes</i> in Greenland halibut fishery in Division 3L in 2000. (3 pages)
01/12 ^a	N4379	VINNICHENKO, V. I., K. V. GORCHINSKY, N. V. GNILITSKY, and V. A. RIKHTER. The results of Russian research and fishery on silver hake (<i>Merluccius bilinearis</i>) on the Nova Scotian Shelf in 2000. (6 pages)
01/13 ^a	N4381	IGASHOV, T. M. Comparative analysis of length-age composition of Greenland halibut (<i>Reinhardtius hippoglossoides</i>) from the commercial catches taken by Russia, Spain and Portugal in the Flemish Pass (Divisions 3LM) in 1998-2000. (5 pages)
01/14 ^a	N4382	STRANSKY, C. Preliminary results of a shape analysis of redfish otoliths: comparison of areas and species. (9 pages)

^a Scientific Council Meeting, 31 May-14 June 2001.

SCR No.	Ser. No.	Author(s) and Title
01/15 ^a	N4383	STRANSKY, C. Assessment of redfish in NAFO Subarea 1. (8 pages)
01/16 ^a	N4384	STRANSKY, C., S. GUOMUNDSDÓTTIR, P. SIGUROSSON, S. LEMVIG and K. NEDREAAS. Age readings of <i>Sebastes marinus</i> otoliths: bias and precision between readers and otolith preparation methods. (11 pages)
01/17 ^a	N4385	STRANSKY, C. Assessment of other finfish in NAFO Subarea 1. (6 pages)
01/18 ^a	N4386	GORCHINSKY, K. V. Bathymetrical distribution of American plaice by-catches in the directed fishery for Greenland halibut, thorny skate and beaked redfish in NAFO Divisions 3LMNO in January-July 2000. (6 pages)
01/19 ^a	N4387	VASKOV, A. A. Length-age Composition and Distribution of Beaked Redfish from Commercial Catches Taken on the Flemish Cap Bank in 2000. (12 pages)
01/20 ^a	N4388	MELNIKOV, S. P., A. P. PEDCHENKO, and V. N. SHIBANOV. Results from the Russian investigations on pelagic redfish (<i>Sebastes mentella</i> , Travin) in the Irminger Sea and in NAFO Division 1F. (16 pages)
01/21 ^a	N4389	LISOVSKY, S. F. On optimal mesh size when fishing redfish in the North Atlantic. (13 pages)
01/22 ^a	N4390	SABORIDO-REY, F., and A. VÁZQUEZ. Results from bottom trawl survey on Flemish Cap of July 2000. (56 pages)
01/23 ^a	N4392	JØRGENSEN, O. A. Survey for Greenland halibut in NAFO Divisions 1C-1D, 2000. (20 pages)
01/24 ^a	N4395	CERVIÑO LÓPEZ, S. Hydrographic conditions on Flemish Cap in July 2000 and comparison with those observed in 1999. (10 pages)
01/25 ^a	N4396	STEIN, M. Variation of climatic indices around Greenland during 1991-2000. (17 pages)
01/26 ^a	N4399	MCCALLUM, B. R., and S. J. WALSH. Evaluating the success of the survey trawl standardization program at the Northwest Atlantic Fisheries Centre. (18 pages)
01/27 ^a	N4401	BAKAY, Yu. I., and A. B. KARASEV. Registration of ectolesions of redfish from <i>Sebastes</i> genus in the North Atlantic (methodical guidelines). (7 pages)
01/28 ^a	N4403	DOUGHERTY-POUPORE, T. Marine Environmental Data Service Report for 2001. (45 pages)
01/29 ^a	N4404	MURUA, H. A review on roughhead grenadier (<i>Macrourus berglax</i>) biology and population structure on Flemish Cap (NAFO Division 3M), 1991-2000. (19 pages + corrigendum)
01/30 ^a	N4405	LISOVSKY, S. F., V. V. ESIN, and A. A. PAVLENKO. Selectivity of trawl bags with different mesh size in trawl fishery for Greenland halibut in the NAFO Regulatory Area. (12 pages)

^a Scientific Council Meeting, 31 May-14 June 2001.

SCR No.	Ser. No.	Author(s) and Title
01/31 ^a	N4408	DEL RIO, J. L., and S. JUNQUERA. Spanish skate (<i>Raja radiata</i> Donovan, 1808) fishery in the Grand Bank (NAFO Division 3N): 1997-2000. (10 pages)
01/32 ^a	N4409	COLBOURNE, E. B., and W. R. BOWERING. Recent trends in bottom temperatures and distribution and abundance of yellowtail flounder (<i>Limanda ferruginea</i>) in NAFO Divisions 3LNO during the spring and fall. (17 pages)
01/33 ^a	N4410	LILLY, G. R., P. A. SHELTON, J. BRATTEY, N. G. CADIGAN, B. P. HEALEY, E. F. MURPHY, and D. E. STANSBURY. An assessment of the cod stock in NAFO Divisions 2J+3KL. (129 pages)
01/34 ^a	N4411	JUNQUERA, S., and F. GONZALEZ. Spanish pelagic redfish (<i>Sebastes mentella</i>) fishery in the NAFO Regulatory Area (Div. 1F) in 2000. (6 pages)
01/35 ^a	N4413	ENGELSTOFT, J. J., and O. JØRGENSEN. Biomass and abundance of demersal fish stocks off West Greenland estimated from the Greenland shrimp survey, 1988-2000. (20 pages)
01/36 ^a	N4414	DRINKWATER, K. F., E. COLBOURNE, and D. GILBERT. Overview of environmental conditions in the Northwest Atlantic in 2000. (84 pages)
01/37 ^a	N4415	WEGNER, G. The EU concerted action on stock assessment and predication (SAP): aim, procedure, results. (17 pages)
01/38 ^a	N4416	ALPOIM, A. A stock status update of American plaice (<i>Hippoglossoides platessoides</i>) in NAFO Division 3M. (7 pages)
01/39 ^a	N4417	BOWERING, W. R. Population trends in the Greenland halibut (<i>Reinhardtius hippoglossoides</i>) resource of NAFO Subarea 2 and Divisions 3KLMNO based on Canadian research vessel survey results during 1978-2000. (42 pages)
01/40 ^a	N4418	KULKA, D.W. Distribution of Greenland halibut and by-catch species that overlap the 200-mile limit spatially and in relation to depth – effect of depth restrictions in the fishery. (42 pages)
01/41 ^{a,b}	N4419	TORRES, P., and I. LOUREIRO. Data on the bathymetric distribution of crustaceans and cephalopods in Flemish Cap Bank during summer 2000. (6 pages)
01/42 ^a	N4420	TREBLE, M. A., W. B. BRODIE, W. R. BOWERING, and O. A. JØRGENSEN. Analysis of data from a trawl survey in NAFO Division 0B, 2000. (19 pages)
01/43 ^a	N4421	BRODIE, W. B., and D. POWER. Data from the offshore Canadian commercial fishery for Greenland halibut in Subarea 0. (8 pages)
01/44 ^a	N4422	HEALEY, B. P., N. G. CADIGAN, and W. B. BRODIE. Analysis of pre-recruit data from surveys for Greenland halibut in NAFO Subarea 2 and Divisions 3KLMNO. (16 pages)
01/45 ^a	N4423	ÁVILA DE MELO, A., R. ALPOIM, and F. SABORIDO-REY. A comparative assessment and medium term projections of redfish (<i>S. mentella</i> and <i>S. fasciatus</i>) in NAFO Division 3M. (66 pages)

^a Scientific Council Meeting, 31 May-14 June 2001.

^b Scientific Council Annual Meeting, 17-21 September 2001.

SCR No.	Ser. No.	Author(s) and Title
01/46 ^{a,c}	N4424	ORR, D. C., D. W. KULKA, P. J. VEITCH, and J. HIRTH. Groundfish by-catch within the inshore vessel (<500 ton; <100') shrimp fishery off the east coast of Newfoundland and Labrador during 2000. (25 pages + corrigendum)
01/47 ^a	N4425	KULKA, D. W., and C. M. MIRI. The status of monkfish (<i>Lophius americanus</i>) in NAFO Divisions 2J, 3K, 3L, 3N, 3O and Subdivision 3Ps. (33 pages)
01/48 ^a	N4426	JØRGENSEN, O. A. Assessment of the Greenland halibut stock component in NAFO Subarea 0 + Division 1A Offshore + Divisions 1B-1F. (14 pages)
01/49 ^a	N4427	MORGAN, M. J., and W. R. BOWERING. Further comparisons of estimates of maturity for Greenland halibut from surveys covering different portions of the stock area. (10 pages)
01/50 ^a	N4428	WALSH, S. J., M. F. VEITCH, and W. B. BRODIE. Yellowtail flounder (<i>Limanda ferruginea</i>) distribution and abundance on the Grand Bank, NAFO Divisions 3LNO, 1984-2000. (51 pages, Revised)
01/51 ^a	N4429	DWYER, K., S. J. WALSH, S. E. CAMPANA, and M. F. VEITCH. Analysis of age validation studies in yellowtail flounder. (13 pages)
01/52 ^a	N4430	DWYER, K. S., M. F. VEITCH, and S. J. WALSH. Age and growth of yellowtail flounder in NAFO Divisions 3LNO: an update. (8 pages)
01/53 ^a	N4431	WALSH, S. J., M. J. MORGAN, W. B. BRODIE, K. S. DWYER, and L. MANSFIELD. A new tagging program for yellowtail flounder on the Grand Bank, NAFO Divisions 3LNO. (14 pages)
01/54 ^a	N4432	WALSH, S. J., and J. BURNETT. Report of the Canada-United States yellowtail flounder age reading workshop November 28-30, 2000, St. John's, Newfoundland. (57 pages)
01/55 ^{a,b}	N4433	DEL RIO, J. L., and S. JUNQUERA. Some Aspects of the Thorny Skate (<i>Raja radiata</i> Donovan, 1808) Reproductive Biology in NAFO Div. 3N Regulatory Area. (13 pages)
01/56 ^a	N4434	CERVIÑO, S., and A. VÁZQUEZ. Variability of Abundance Indices and its Progression Through Age-structured Models: an Stochastic Simulation with Flemish Cap Cod. (14 pages)
01/57 ^a	N4435	DAWE, E. G., P. C. BECK, and J. DREW. An update of the fishery for short-finned squid (<i>Illex illecebrosus</i>) in the Newfoundland area during 2000 with descriptions of some biological characteristics. (8 pages)
01/58 ^a	N4436	DURÁN MUÑOZ, P., E. ROMÁN, D. GONZÁLEZ TRONCOSO, and X. PAZ. Abundance and biomass for American plaice from the surveys conducted by Spain in the NAFO Regulatory Area of Divisions 3NO: 1995-2000. (11 pages)
01/59 ^a	N4437	MORGAN, M. J., W. B. BRODIE, B. P. HEALEY, D. MADDOCK PARSONS, D. STANSBURY, and D. POWER. An assessment of American plaice in NAFO Divisions 3LNO. (70 pages)

^a Scientific Council Meeting, 31 May-14 June 2001.

^b Scientific Council Annual Meeting, 17-21 September 2001.

^c Scientific Council Meeting, 7-14 November 2001

SCR No.	Ser. No.	Author(s) and Title
01/60 ^a	N4438	VAZQUEZ, A., and S. CERVIÑO. A review of the status of the cod stock in NAFO Division 3M. (13 pages)
01/61 ^a	N4439	HENDRICKSON, L. C., E. G. DAWE, and M. A. SHOWELL. Assessment of Subareas 3+4 northern short-finned squid (<i>Illex illecebrosus</i>) for 2000. (13 pages)
01/62 ^a	N4440	POWER, D. An assessment of the status of the redfish resource in NAFO Divisions 3LN. (22 pages)
01/63 ^a	N4441	BOWERING, W. R. Stock status update of witch flounder in NAFO Divisions 3NO. (18 pages)
01/64 ^a	N4442	BOWERING, W. R. An update of distribution and population trends of witch flounder in Divisions 2J, 3K, 3L. (14 pages)
01/65 ^a	N4443	BRODIE, W. B., and D. POWER. Canadian fishery for Greenland halibut in SA 2 + Divisions 3KLMNO with emphasis on 2000. (13 pages)
01/66 ^a	N4444	CADIGAN, N. G. QLSPA estimates of Division 3NO cod stock size. (23 pages)
01/67 ^a	N4445	APLOIM, R., A. AVILA DE MELO, and J. VARGAS. Observer catch/effort data and length composition of commercial species by month, depth strata and Division for the 1999-2000 Portuguese fisheries on NAFO Regulatory Area. (21 pages)
01/68 ^a	N4446	SIMONSEN, C. S. An assessment of the Greenland halibut stock component in NAFO Division 1A inshore. (37 pages)
01/69 ^a	N4447	ROMÁN, E., X. PAZ, and P. DURÁN MUÑOZ. Comparative fishing between the R/V <i>Wilfred Templeman</i> and the C/V <i>Playa De Menduiña</i> in the NAFO Divisions 3NO in May 2001. (13 pages)
01/70 ^a	N4448	MADDOCK PARSONS, D., W. B. BRODIE, and M. SIMPSON. Update on cooperative surveys of yellowtail flounder in NAFO Divisions 3NO, 1996-2000, including an expanded survey in Divisions 3LNO in 2000. (28 pages)
01/71 ^a	N4449	KULKA, D. W. Description of the 2000 yellowtail flounder fishery on the Grand Banks with a comparison to the 1998 and 1999 fishery. (23 pages)
01/72 ^a	N4450	STANSBURY, D. E., P. A. SHELTON, E. F. MURPHY, B. P. HEALEY, and J. BRATTEY. An assessment of the cod stock in NAFO Divisions 3NO. (64 pages)
01/73 ^a	N4452	WINGER, P. D., and S. J. WALSH. Temperature and catchability. (7 pages)
01/74 ^a	N4453	WALSH, S. J., X. PAZ, and P. DURÁN. A preliminary investigation of the efficiency of Canadian and Spanish survey bottom trawls on the southern Grand Bank. (18 pages)
01/75 ^a	N4454	JUNQUERA, S., H. MURUA, and K. PATTERSON. Monitoring update of the roughhead grenadier stock assessment in NAFO Subareas 2 and 3. (15 pages)
01/76 ^a	N4455	WALSH, S. J., M. J. MORGAN, D. POWER, and C. DARBY. The complete 2001 assessment of Grand Bank yellowtail flounder stock in NAFO Divisions 3LNO. (59 pages)

^a Scientific Council Meeting, 31 May-14 June 2001.

SCR No.	Ser. No.	Author(s) and Title
01/77 ^a	N4456	MÁHE, J.-C. Greenland halibut in NAFO Subarea 2 and Divisions 3KLMNO – short-term and medium-term projections from an extended survivor analysis. (5 pages)
01/78 ^a	N4457	WALSH, S J., M. SIMPSON, M. J. MORGAN, K. S. DWYER, and D. STANSBURY. Distribution of juvenile yellowtail flounder, American plaice and Atlantic cod on the southern Grand Bank: a discussion of nursery areas and marine protected areas. (49 pages)
01/79 ^a	N4458	POWER, D. Standardized catch rate index for Greenland halibut in SA 2+3KLMNO. (7 pages)
01/80 ^a	N4459	MÁHE, J.-C., and W. R. BOWERING. An analysis of stock status of the Greenland halibut resource in NAFO Subarea 2 and Divisions 3KLMNO based on extended survivors analysis. (18 pages)
01/81 ^a	N4463	DARBY, C. An analysis of the effects of a change in trawl mesh size from 130 to 145 mm, within the Greenland halibut and by-catch species fisheries in Subarea 2 + Divisions 3KLMN. (8 pages)
01/82 ^b	N4469	COSTA, M. E., S. OLIM, C. PAIS, and T. C. BORGES. The importance of by-catch from commercial trawl fisheries off the South Coast of Portugal. (Symposium Poster) (6 pages)
01/83 ^b	N4470	SIGAEV, I. K. Sea-surface temperature and water boundaries in the Northwest Atlantic in 2000. (12 pages)
01/84 ^b	N4471	KULKA, D. W., D. E. THEMELIS, and R. G. HALLIDAY. Distribution and biology of orange roughy (<i>Hoplostethus atlanticus</i> Collett 1889) in the Northwest Atlantic. (Symposium Oral) (23 pages)
01/85 ^b	N4472	CARBONELL, A., M. GARCÍA, P. PEREDA, A. ESTEBAN, G. POMAR, M. GAZA, A. TORRES, and J. L. PERÉZ GIL. The deep-water red shrimp fishery in the Spanish Mediterranean Sea. (Symposium Poster) (8 pages)
01/86 ^b	N4473	GIL, J., and I. SOBRINO. Studies on reproductive biology of the red (blackspot) seabream (<i>Pagellus bogaraveo</i> (Brünnich, 1678)) from the Strait of Gibraltar (ICES IXa/SW Spain). (Symposium Poster) (6 pages)
01/87 ^b	N4474	SOBRINO, I., and J. GIL. Studies on age determination and growth pattern of the red (blackspot) seabream (<i>Pagellus bogaraveo</i> (Brünnich, 1768)) from the Strait of Gibraltar (ICES IXa/SW Spain): application to the species migratory pattern. (Symposium Poster) (5 pages)
01/88 ^b	N4476	PAIS, C., M. E. COSTA, S. OLIM, and T. C. BORGES. Biodiversity as a result of the by-catch from the commercial trawl fisheries off the southern Portuguese Coast. (Symposium Poster) (8 pages)
01/89 ^b	N4477	BORDALO-MACHADO, P., I. FIGUEIREDO, S. REIS, S. SENA-CARVALHO, T. BLASDALE, A. NEWTON, and L. S. GORDO. New findings on the reproductive biology of the black scabbardfish (<i>Aphanopus carbo</i> Lowe, 1839) in the NE Atlantic. (Symposium Poster) (12 pages)

^a Scientific Council Meeting, 31 May-14 June 2001.

^b Scientific Council Annual Meeting, 17-21 September 2001.

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^c Scientific Council Meeting, 7-14 November 2001

SCS No.	Ser. No.	Author(s) and Title
01/8 ^a	N4365	NAFO SECRETARIAT. Provisional index and list of titles of research and summary documents of 2000. (25 pages)
01/9 ^a	N4366	VARGAS, J., R. ALPOIM, E. SANTOS, and A. M. ÁVILA DE MELO. Portuguese research report for 2000. (40 pages)
01/10 ^a	N4369	NAFO SECRETARIAT. Historical nominal catches for selected stocks. (5 pages)
01/11 ^a	N4372	RIKHTER, V. A., I. K. SIGAEV, A. A. VASKOV, K. V. GORCHINSKY, T. M. IGASHOV, V. M. KISELEVA, and S. P. MELNIKOV. Russian research report for 2000. (17 pages)
01/12 ^a	N4376	NAFO SECRETARIAT. List of biological sampling data for 2000. (15 pages)
01/13 ^a	N4380	RÄTZ, H.-J., M. STEIN, and C. STRANSKY. German research report for 2000. (6 pages)
01/14 ^a	N4391	NAFO SECRETARIAT. Provisional nominal catches in Northwest Atlantic, 1999. (40 pages)
01/15 ^a	N4397	PARMITER, D., M. TREBLE, and S. COSENS. Canadian research report for 2000. (15 pages)
01/16 ^a	N4398	NAFO SECRETARIAT. Tagging activities reported for the Northwest Atlantic in 2000. (2 pages)
01/17 ^a	N4400	VALDES, E., and I. RAMOS. Cuban research report for 2000. (3 pages)
01/18 ^a	N4402	JUNQUERA, S., A. VAZQUEZ, H. MURÚA, J. L. DE RÍO, E. ROMÁN, and F. GONZALEZ. Spanish research report for 2000. (24 pages)
01/19 ^a	N4406	SOSEBEE, K., and S. CLARK. United States research report for 2000. (18 pages)
01/20 ^a	N4407	NAFO SECRETARIAT. Notes on acquisition and publications of statistics since June 2000. (2 pages)
01/21 ^a	N4412	SIEGSTAD, H. Denmark/Greenland research report for 2000. (7 pages)
01/22 ^a	N4451	MÁHE, J. C., and D. BRIAND. French research report for 2000. (2 pages)
01/23 ^a	N4460	NAFO/ICES WORKING GROUP. Report of the NAFO/ICES Working Group on harp and hooded seals. (42 pages)
01/24 ^a	N4462	NAFO. Report of Scientific Council Meeting, 31 May-14 June 2001. (216 pages)
01/25 ^b	N4559	NAFO. Report of Scientific Council Meeting, 12-21 September 2001. (75 pages)
01/26 ^c	N4581	NAFO. Report of Scientific Council Meeting, 7-14 November 2001. (46 pages)

^a Scientific Council Meeting, 31 May-14 June 2001.

^b Scientific Council Annual Meeting, 17-21 September 2001.

^c Scientific Council Meeting, 7-14 November 2001

SCS No.	Ser. No.	Author(s) and Title
01/27 ^c	N4583	NAFO SECRETARIAT. A compilation of research vessel surveys on a stock-by-stock basis. (22 pages)
01/28 ^c	N4584	WORKING GROUP ON REPRODUCTIVE POTENTIAL. Report of the 2 nd Meeting of the Working Group on Reproductive Potential. Hosted by the State Research and Design Institute for Fishing Fleet (Giprorybflot), St. Petersburg, Russia, 23-26 October 2001. (6 pages)

^c Scientific Council Meeting, 7-14 November 2001

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Meetings*

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- B Scientific Council Annual Meeting, 17-21 September 2001
- C Scientific Council Meeting, 7-14 November 2001.

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Meetings*

- A Scientific Council Meeting, 31 May-14 June 3 2001
- B Scientific Council Annual Meeting, 17-21 September 2001
- C Scientific Council Meeting, 7-14 November 2001.

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Meetings*

- A Scientific Council Meeting, 31 May-14 June 3 2001
 B Scientific Council Annual Meeting, 17-21 September 2001
 C Scientific Council Meeting, 7-14 November 2001.

LIST OF RECOMMENDATIONS IN 2001

The following are the specific **recommendations made by the Scientific Council** at its meetings through 2001 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, 31 May-14 June 2001

SCIENTIFIC COUNCIL

NOTE: All 31 May-14 June 2001 recommendations pertaining to the work of the Scientific Council, except those related to stocks under STACFIS, were listed in Part A, Sections IV, V and VI. 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

1. Fisheries Commission

c) Special Requests for Management Advice

Redfish in Div. 1F and Adjacent ICES Area (pages 33-34)

- *the pelagic redfish resource in the NAFO Convention Area (NCA) not be referred to as "redfish in Div. 1F" but more specifically as "pelagic S. mentella in the NAFO Convention Area".*
- *the pelagic S. mentella resource should be managed in a compatible manner between NAFO and NEAFC. Scientific Council noted that Fisheries Commission has done this for the 2001 fishing year, but recommends that longer-term arrangements be made.*
- *annually, in advance of the meeting of the North-Western Working Group (next meeting tentatively scheduled for April 2002), Scientific Council members who will be participating identify themselves to the NAFO Secretariat who will work with the Chair of Scientific Council and designate formal representation of NAFO to the Working Group. The designated person(s) shall then report back on the ICES North-Western Working Group deliberations to the subsequent meeting of Scientific Council.*
- *the Chair of Scientific Council will interact with the Chair of the ACFM of ICES as required so that information on approved analyses and recommendations pertaining to the North-Western Working Group is shared and conveyed to NAFO Scientific Council for consideration as necessary*

3. Coastal States

a) Request by Canada for Advice

By-catch of American Plaice in Div. 3LNO (page 38)

- *Fisheries Commission take all possible steps to ensure that by-catches of American plaice are reduced significantly and restricted to true and unavoidable by-catches in fisheries directed for other species.*

IX. ARRANGEMENTS FOR SPECIAL SESSIONS**3. Progress report on Special Session in 2002: the Symposium on "Elasmobranch Fisheries"** (page 51)

- *a sum of \$8 000 from the budget be requested for the Elasmobranch Symposium.*

XIII. OTHER MATTERS**3. Participation in FAO Committee on Fisheries (COFI)** (page 57)

- *in principal the Scientific Council saw the value of being represented at the COFI Meeting in 2003. The Council requested the Assistant Executive Secretary to keep the Council apprised of the progress and plans of COFI, and agreed that the Council will consider this matter at future meetings.*

5. Other Business**b) Sequential Population Analysis for Greenland Halibut** (page 58)

- *a workshop be held with a focus on sequential population analysis for the Greenland halibut stock in Subarea 2 and Div. 3KLMO. To assist with the cost of conducting this workshop, \$3 000 in funding be sought from the NAFO budget.*

RESEARCH COORDINATION (STACREC)**4. Research Activities****b) Biological Surveys****iii) Northwest Atlantic Survey Database** (page 80)

- *Contracting Parties should check to see what interest there is to having their national data included in the Northwest Atlantic Survey Database. Assuming there is interest, Contracting Parties should submit an inventory of applicable data, entailing number of records, data type and formats. Once available, the complete inventory of data will be used to evaluate the complexity and costs of conversion to the database format.*

6. Report of the *ad hoc* Working Group on NAFO Observer Protocol (pages 80-81)

- *the Conservation and Enforcement Measures Part VI, Program for Observers and Satellite Tracking, be amended to formally incorporate the Scientific Council protocols as specified in NAFO SCS Doc. 00/23 and as adopted by the Fisheries Commission in September 2000.*
- *STACREC noted that the Conservation and Enforcement Measures Part VI, Program for Observers and Satellite Tracking (Section 3 d), is inconsistent with the Scientific Council protocols adopted by the Fisheries Commission in 2000 and therefore **recommended** that the Chairman of the Scientific Council contact the Chairman of the Fisheries Commission to develop a means of resolving this inconsistency at the 2001 Fisheries Commission meeting.*
- *the development of a training and operation manual for the collection of scientific data continue, and that the Scientific Council be represented at the September 2001 STACTIC meeting to further pursue this issue.*
- *the observer program Access database developed by Canada be adapted by the NAFO Secretariat to capture data collected under the NAFO Program for Observers and Satellite Tracking, with highest priority given to inclusion of current data and secondary priority given to capturing the historic data.*

PUBLICATIONS (STACPUB)

6. Promotion and Distribution of Scientific Publications

c) **NAFO Website** (pages 88-89)

- *each member of the Secretariat be given an individual e-mail address.*
- *the Secretariat should routinely submit a report in June on the website usage to STACPUB.*
- *an additional agenda item for future meetings should be introduced to include website use summaries and statistics.*
- *a Working Group with representatives from General Council, Fisheries Commission and Scientific Council should be established in order to ensure that all relevant material becomes available on the NAFO website.*

f) **New Initiatives for Publications** (page 89)

- *the collection of papers being prepared by the Working Group on Reproductive Potential be edited by the Working Group Chairman, E. A. Trippel (Canada) and compiled into a single issue of the Journal of Northwest Atlantic Fishery Science during 2002.*
- *the list of tables designed for the inventory of data on reproductive potential for marine fish stocks be compiled into a single issue of the NAFO Scientific Council Studies in 2002 once it has been reviewed by Scientific Council.*

7. Editorial Matters Regarding Scientific Publications

a) **Review of Editorial Board** (page 90)

- *the co-conveners of Symposia be responsible for nominating qualified editors, maintaining the scientific standard of the Journal, and that once the edited papers were received from the editors further editorial problems, if any, with such Symposia submissions will be addressed by STACPUB, while the NAFO Secretariat will only edit for technical aspects.*

FISHERIES SCIENCE (STACFIS)

General Review of Catches and Fishing Activity (page 93)

The Committee encountered significant differences between the catch figures derived from the various sources and was unable to estimate precise catches for some stocks. STACFIS therefore **recommended** that *the tabulation of the STATLANT 21A reported catches against the STACFIS estimates as provided in SCS Doc. 01/5 be updated with the 2000 figures and be made available in advance of the 2002 June Scientific Council meeting.*

A. STOCKS OFF GREENLAND AND IN DAVIS STRAIT

Greenland Halibut (*Reinhardtius hippoglossoides*) in Subarea 0 and Division 1A Offshore and Divisions 1B-1F

Research Recommendations (page 99)

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

Greenland Halibut (*Reinhardtius hippoglossoides*) in Division 1A Inshore**Research Recommendations** (page 104)

Voluntary logbooks were introduced in 1999. However, at present they only account for 2% of the landings. STACFIS **recommended** that *for the Greenland halibut commercial fishery in Div. 1A action should be continued to obtain further effort information from the commercial fishery.*

STACFIS **recommended** that *studies of the longline survey in Div. 1A should be continued to investigate if the observed variation in CPUE is caused by natural behaviour of the Greenland halibut or if it is due to survey design.*

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

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

Roundnose Grenadier (*Coryphaenoides rupestris*) in Subareas 0 and 1**Research Recommendation** (page 111)

STACFIS **recommended** that *studies on maturation and reproduction of demersal redfish in Subarea 1 should be carried out.*

Other Finfish in Subarea 1**Research Recommendation** (page 116)

STACFIS **recommended** that *length disaggregated abundance and biomass data for American plaice, Atlantic wolffish, spotted wolffish and thorny skate, derived from the Greenland shrimp/groundfish survey should be split by recruits and SSB, respectively.*

B. STOCKS ON THE FLEMISH CAP**Redfish (*Sebastes mentella* and *Sebastes fasciatus*) in Division 3M****Assessment Results** (page 123)

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

American Plaice (*Hippoglossoides platessoides*) in Division 3M**Future Studies** (page 125)

Problems related to age determination were presented as a key obstacle to the use of an analytical approach for American plaice in Div. 3M. STACFIS **recommended** that *current initiatives aiming at reconciling age determination from different age readers be continued in an effort to determine the catch-at-age for American plaice in Div. 3M.*

It was noted that, despite these inconsistencies in age determination, the age disaggregated information available appears to be tracking year-classes as well as the information available for many other stocks. Therefore, STACFIS **recommended** that *analytical assessments be attempted in the next assessment of American plaice in Div. 3M.*

C. STOCKS ON THE GRAND BANK

Cod (*Gadus morhua*) in Divisions 3N and 3O

Reference Points (page 129)

In view of the difficulty in determining if the current low productivity will persist in the immediate future, it was **recommended** that *for cod in Div. 3NO the Scientific Council review in detail the biological reference points in the context of the PA framework when the SSB has reached half the current estimate of B_{lim} .*

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

Future Studies (page 138)

STACFIS regards this stock issue to be important as the continuing uncertainties regarding the relationship between redfish in Div. 3LN and Div. 3O have important impacts on interpretations of available data. STACFIS again **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.*

American Plaice (*Hippoglossoides platessoides*) in Divisions 3L, 3N and 3O

Research survey data (page 141)

Survey by EU-Spain. STACFIS noted the progress on presenting the entire time series of survey data in a single document. STACFIS **recommended** that *in future the entire time series of abundance, biomass and length frequencies for American plaice from the surveys conducted by EU-Spain in the Regulatory Area of Div. 3NO continue to be presented in a single document*

Research recommendations (pages 147)

Noting that the current status of the resource is largely driven by the status of that portion of the resource in Div. 3L, STACFIS **recommended** that *studies be initiated to examine the relationship between American plaice in each of Div. 3L, 3N and 3O. These studies should include examination of historical fishery and biological data disaggregated by Division, any tagging information and genetic analyses.*

Yellowtail Flounder (*Limanda ferruginea*) in Divisions 3L, 3N and 3O

Input Data

Research survey data (page 148)

STACFIS **recommended** that *comparative trials between Canada and EU-Spain be continued and a detailed analysis of the 2001 comparative fishing trials results be presented in June 2002.*

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

Potential Reference Points (page 160)

STACFIS reiterated its 2000 **recommendation** that *all data available related to capelin in Div. 3NO to be compiled for the June 2002 Scientific Council Meeting.*

D. WIDELY DISTRIBUTED STOCKS

Short-finned Squid (*Illex illecebrosus*) in Subareas 3 and 4

Research Recommendations (page 182)

STACFIS **recommended** that *for short-finned squid in Subareas 3+4 survey abundance and biomass indices be developed for Subarea 3.*

E. MISCELLANEOUS TASKS

Pelagic Redfish in the NAFO Convention Area (page 183)

Overall, STACFIS concluded that the redfish found in NAFO Div. 1F do constitute a part of the oceanic redfish in the NEAFC Area, and **recommended** that *the oceanic *S. mentella* resource should be managed in a compatible manner between NAFO and NEAFC.* STACFIS noted that Fisheries Commission has done this for the 2001 fishing year, but **recommended** that *longer-term arrangements be made.*

STACFIS **recommended** that *this resource in the NAFO Convention Area not be referred to as "redfish in Div. 1" but more specifically as "pelagic *S. mentella* in the NAFO Convention Area".*

STACFIS **recommended** that *annually, in advance of the meeting of the North-Western Working Group (next meeting tentatively scheduled for April 2002), Scientific Council members who will be participating identify themselves to the NAFO Secretariat who will work with the Chair of Scientific Council and designate formal representation of NAFO to the Working Group. The designated person(s) shall then report back on the ICES North-Western Working Group deliberations at the subsequent meeting of Scientific Council.*

Additionally, all documentation pertaining to pelagic *S. mentella* provided to the North-Western Working Group of ICES should be made available to the Scientific Council.

Further, it is **recommended** that *the Chair of Scientific Council will interact with the Chair of the ACFM of ICES as required so that information on approved analyses and recommendations pertaining to the North-Western Working Group is shared and conveyed to Scientific Council for consideration as necessary.*

Scientific Council Annual Meeting, 17-21 September 2001

SCIENTIFIC COUNCIL

STACPUB Membership (page 218)

The Council after some discussion agreed that appointed STACPUB membership was no longer required and accordingly **recommended** that *the Scientific Council Rules of Procedure be modified by deleting Rule 5.1.(c).(ii).*

Observer Program Database (page 219)

The Scientific Council considers this database to be an effective tool for managing the Observer Program database and, therefore, **recommended** that *the existing database be installed at the NAFO Secretariat in the immediate future to capture current data, and that work should commence to evaluate requirements for entry of the remaining historical data.*

Scientific Council Meeting, 7-14 November 2001

SCIENTIFIC COUNCIL

IV. OTHER MATTERS

Scientific Council Meeting on Northern Shrimp, November 2002 (page 266)

The Council **recommended** that *the Scientific Council Chairman make direct contact with the Chairman of ACFM-ICES and develop any proposals for a joint meeting requirement, and report to the Council at its meeting in June 2002*

STACFIS

Northern Shrimp (*Pandalus borealis*) in Division 3M

Research Recommendations (page 274)

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

- *work on age structured population models should be continued.*
- *biological and CPUE data from fleets, which account for a substantial fraction of the Div. 3M shrimp catch, should be submitted in advance of the November 2002 Scientific Council Meeting .*

Northern Shrimp (*Pandalus borealis*) in Divisions 3LNO

Research Recommendations (page 278)

STACFIS **recommended** that:

- *the numbers of groundfish caught by species in the shrimp fishery in Div. 3L be calculated from the by-catch rates and this information be made available in advance of the June 2002 Scientific Council Meeting.*

Northern Shrimp (*Pandalus borealis*) in Subareas 0 and 1

Research Recommendations (page 286)

For shrimp in Div. 0A and Subarea 1, STACFIS **recommended** that:

- *an analysis of the length-frequency data of shrimp be conducted in order to obtain the age composition.*
- *the effect of recent changes in survey design and execution be further studied.*
- *the assessment approach using Bayesian methods be studied further.*

Northern Shrimp (*Pandalus borealis*) in Denmark Strait and off East Greenland

Research Recommendations (page 290)

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

- *a survey be conducted, to provide fishery independent data of the stock throughout its range.*