

PART D: MISCELLANEOUS

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AGENDA I – SCIENTIFIC COUNCIL MEETING, 5-19 JUNE 2008**I. Opening (Scientific Council Chair: Don Power)**

1. Appointment of Rapporteur
2. Adoption of Agenda
3. Attendance of Observers
4. Plan of Work
5. Presentation and Report of Proxy Votes (by Executive Secretary)
6. Housekeeping issues

II. Review of Scientific Council Recommendations in 2007**III. Fisheries Environment (STACFEN Chair: Gary Maillet)**

1. Opening
 - a) Introduction and Administrative Matters
 - b) Appointment of Rapporteur
2. Invited speaker – "GEOCOD: Integrating Environmental Information and Fisheries Data" by Rodolphe Devillers, MUN, St. John's, NL
3. Marine Environmental Data Service (MEDS) Report for 2007
4. Review of the physical, biological and chemical environment in the NAFO Convention Area during 2007
5. Interdisciplinary studies
6. An update of the on-line annual ocean climate status summary for the NAFO Convention Area
7. Environmental indices (implementation in the assessment process)
8. Formulation of recommendations based on environmental conditions during 2007
9. National Representatives
10. Other Matters
11. Adjournment

IV. Publications (STACPUB Chair: Manfred Stein)

1. Opening
2. Appointment of Rapporteur
3. Adoption of Agenda
4. Review of Recommendations in 2007
5. Report on "pre-STACPUB" meeting, NAFO Headquarters, 4 June 2008
6. Review of Publications,
7. Editorial Matters Regarding JNAFS
 - a) General Editors Report
 - b) Review of Editorial Board
 - c) Publication initiatives
 - d) Short contributions/letters to the editor in JNAFS
 - e) General discussion
8. NAFO Website
9. STATLANT
10. Papers for Possible Publication
11. Other Matters

V. Research Coordination (STACREC Chair: Ricardo Alpoim)

1. Opening
 - a) Appointment of Rapporteur
2. Review of Previous Recommendations
3. Fishery Statistics
 - a) Progress report on Secretariat activities in 2007/2008
 - i) Acquisition of STATLANT 21A and 21B reports for recent years
 - ii) Possible sub-division of the Statistical areas
 - iii) Information collected by the NAFO Secretariat
4. Research Activities
 - a) Biological sampling

- i) Report on activities in 2007/2008
 - 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 2007 (by National Representatives and Designated Experts)
 - ii) Surveys planned for 2008 and early-2009
 - c) Stock assessment spreadsheets – update
 - d) Length and maturity studies
 - e) Consideration of a revisited edition of the Manual of Groundfish Surveys
5. FAO Cooperation
- a) Report of the Fisheries Resources Monitoring System (FIRMS) meetings
 - b) Report of the Coordinating Working Party on Fishery Statistics (CWP)
6. Review of SCR and SCS Documents
7. Other Matters
- a) Tagging activities
 - b) Research activities
 - c) ICES WGFTFB, April 2008 , a ToR referred from NAFO on effort from twin trawls
 - d) Other business
- VI. Fisheries Science (STACFIS Chair: Michael Kingsley)
1. Opening
2. General Review
- a) Review of Recommendations in 2007
 - b) General Review of Catches and Fishing Activity
3. Stock Assessments
- a) Certain Stocks in Subareas 2, 3 and 4; as Requested by the Fisheries Commission with the Concurrence of the Coastal States (Annex 1)
 - i) Thoroughly assessed stocks (Annex 1: Items 1-6):
 - Redfish in Div. 3LN
 - Cod in Div. 3M
 - American plaice in Div. 3M
 - Witch flounder in Div. 3NO
 - Yellowtail flounder in Div. 3LNO
 - Thorny skate in Div. 3LNOPs
 - Greenland halibut in Subarea 2 and Div. 3KLMNO
 - ii) Monitored stocks (Item 2). To be provided in the agreed format (*NAFO Sci. Coun. Rep.*, 2005, Part A, Appendix IV, 2.i):
 - Cod in Div. 3NO
 - Redfish in Div. 3M; Div. 3O
 - American plaice in Div. 3LNO
 - Witch flounder in Div. 2J and 3KL
 - Capelin in Div. 3NO
 - White hake in Div. 3NOPs
 - Northern shortfin squid in Subareas 3 and 4
 - b) Certain Stocks in Subareas 0 and 1, as Requested by Denmark (Greenland) (Annex 3):
 - i) Thoroughly assessed stocks. To be provided in the agreed format (*NAFO Sci. Coun. Rep.*, 2005, Part A, Appendix IV, 2.i):
 - Roundnose grenadier in Subareas 0 and 1 (Item 1)
 - Demersal redfish and other finfish (American plaice (*Hippoglossoides platessoides*), Atlantic wolffish (*Anarhichas lupus*), spotted wolffish (*A. minor*) and thorny skate (*Raja radiata*)) in Subarea 1 (Item 2)
 - Greenland halibut in Div. 1A inshore (Item 4)
 - c) Stocks Overlapping the Fishery Zones in Subareas 0 and 1, as Requested by Canada and by Denmark (Greenland) (Annexes 2 and 3 respectively):
 - i) Thoroughly assessed stocks:

- Greenland halibut in the offshore area of Divisions 0A+LAB and Divisions 0B+IC-F (Annex 2, Item 2; Annex 3, Item 3)
 - d) Other stocks:
 - i) Monitored stocks.
 - Roughhead grenadier in Subareas 2 and 3
 - 4. Other Matters
 - a) 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 the Year 2009
 - i) Greenland halibut in SA 2 and Div. 3KLMNO
 - ii) Northern shrimp in Div. 3M, 3LNO (deferred to SC meeting in Oct/Nov 2008)
 - b) Request for Advice on TACs and Other Management Measures for the Years 2009 and 2010
 - Thorny Skate in Div. 3LNOPs
 - Yellowtail flounder in Div. 3LNO
 - c) Request for Advice on TACs and Other Management Measures for the Years 2009, 2010 and 2011
 - Witch flounder in Div. 3NO
 - Northern short fin squid in SA 3+4
 - American Plaice in Div. 3M
 - Cod in Div. 3M
 - Redfish in Div. 3LN
 - d) Monitoring of Stocks for which Multi-year Advice was provided in 2007
 - American plaice in Div. 3LNO
 - Redfish in Div. 3M
 - White hake in Div. 3NOPs
 - Capelin in Div. 3NO
 - Cod in Div. 3NO
 - Witch flounder in Div. 2J+3KL
 - Redfish in Div. 3O
 - e) Special Requests for Management Advice
 - i) The Precautionary Approach (Item 4-5)
 - ii) Evaluation of Rebuilding and Recovery Plans (Item 6)
 - iii) Review pelagic redfish distribution and stock-affinities (Item 7, also see SC agenda item VII.3.b)
 - iv) Provide certain information on porbeagle shark (*Lamna nasus*) (Item 8)
 - v) Cod bycatch reduction measures (Item 9)
 - vi) Protection of vulnerable marine ecosystem (Item 10)
 2. Coastal States
 - a) Request by Canada for Advice (Annex 2)
 - i) Greenland halibut in SA 2 and Div. 3KLMNO: TAC and Rebuilding Plan (Item 3)
 - b) Request by Denmark (Greenland) for Advice (Annex 3)
 - i) Roundnose grenadier in SA 0 and 1: 2009-2011 (Item 1)
 - ii) Redfish and other finfish in SA 1: 2009-2011 (Item 2)
 - iii) Greenland halibut in Div. 1A inshore: 2009-2010 (Item 4)
 - iv) Northern shrimp in Denmark Strait: 2009+ (Item 5)
 - c) Request by Canada and Denmark (Greenland) for Advice on TACs and Other Management Measures (Annexes 2 and 3)
 - i) Greenland halibut in SA 0 and 1 (Annex 2: Item 1 and 2; and Annex 3: Item 3)
 - ii) Northern shrimp in SA 0 and 1: 2009+ (Annex 2: Item 1; and Annex 3: Item 5 – both deferred to Oct/Nov SC meeting)
 3. Scientific Advice from Council on its own Accord
 - a) Oceanic (pelagic) redfish
 - b) Monitoring of Stocks for which Multi-year Advice was provided in 2007
 - Roughhead grenadier in SA 2 and 3

VIII. Review of Future Meetings Arrangements

1. Scientific Council and Special Session, September 2008
2. Scientific Council, October/November 2008
3. Scientific Council, June 2009
4. Scientific Council, September 2009
5. Scientific Council, October/November 2009
6. ICES/NAFO Joint Groups
 - a) WGHARP, [19-22] August 2008
 - b) NIPAG, October/November 2008
 - c) WGDEC, 2009
 - d) NIPAG, October/November 2009

IX. Arrangements for Special Sessions

1. Progress Report on Special Session in 2008: The Role of Marine Mammals in the Ecosystem in the 21st Century
2. Special Session in 2009
3. Topics for future Special Sessions

X. Meeting Reports

1. Working Group on Reproductive Potential
2. Special Session in 2008: *Reproductive and Recruitment Processes*, Lisbon, Sep 2007
3. NAFO SC Study Group on Evaluation of Management Strategies for Greenland Halibut, Vigo Feb 2008
4. Joint NAFO-ICES Working Group on Deep Water Ecology, Copenhagen, March 2008
5. Ecosystem Approach to Fisheries Study Group, Dartmouth, May 2008
6. Meetings attended by the Secretariat

XI. Review of Scientific Council Working Procedures/Protocol

1. NAFO Scientific Council Observership at ICES ACFM Meetings
2. Rules of Procedure
 - a) Observer Application Process
 - b) Voting
3. Cooperation with COST/FRESH
4. General Plan of Work for Annual Meeting in September
5. Other Matters

XII. Other Matters

1. Designated Experts
2. Meeting Highlights for NAFO Website
3. Classification criteria for NAFO Stocks
4. VMS reporting intervals, speed and course
5. NAFO Reform
6. VMS data analyses
7. Other Business
 - a) Scientific Merit Awards

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

AGENDA II – SCIENTIFIC COUNCIL MEETING, 22–26 SEPTEMBER 2008

I. Opening (Chair: Don Power)

1. Appointment of Rapporteur
2. Adoption of Agenda
3. Attendance of Observers and Guest Experts
4. Plan of Work

II. Review of Scientific Council Recommendations from June 2008

III. Research Coordination (STACREC Chair: Ricardo Alpoim)

1. Opening
2. Fisheries Statistics
 - a) Progress Reports on Secretariat Activities
 - i) Review of STATLANT 21
3. Research Activities
 - a) Surveys Planned for 2008 and Early-2009
 - b) Tagging Studies
4. FAO Cooperation
 - a) Report of the Fisheries Resources Monitoring System (FIRMS) Steering Committee, July 2008
 - b) Report of the Coordinating Working Party on Fishery Statistics Intersessional meeting, July 2008
 - c) ICES-FAO Working Group on Fishing Technology and Fish Behaviour – update of gear manual
5. Other Matters
 - a) Review of SCR and SCS Documents
 - b) Other Business

IV. Fisheries Science (STACFIS Chair: Michael Kingsley)

1. Opening
2. Interim Monitoring Updates
 - a) Northern Shrimp in Div. 3M
 - b) Northern Shrimp in Div. 3LNO
3. Nomination of Designated Experts
4. Other Matters
 - a) Review of SCR and SCS Documents
 - b) FIRMS Classification
 - c) Other Business

V. Special Requests from the Fisheries Commission

1. From September 2007
 - a) Update on Advice for Northern Shrimp in Division 3M
 - b) Update on Advice for Northern Shrimp in Divisions 3LNO
2. From Fisheries Commission Intersessional Meeting, May 2008
 - a) Shrimp biomass distribution in 3LNO
 - b) Review of Existing Fishing Areas
3. *Ad hoc* requests from current meeting

VI. Review of Future Meeting Arrangements

1. Scientific Council Meeting on Shrimp, October 2008
2. Scientific Council Meeting, June 2009
3. Annual Meeting, September/November 2009
4. Scientific Council and NIPAG (Shrimp) Meetings, October-November 2009
5. Working Group on the Ecosystem Approach to Fisheries Management
6. Scientific Council Meeting, June 2010
7. Cooperation with ICES

VII. Future Special Sessions

1. Progress Report on Special Session in 2009 entitled “Rebuilding Depleted Fish Stocks – Biology, Ecology, Social Science and Management.”
2. Topics for Future Special Sessions

VIII. Scientific Council Working Procedures and Protocol

1. Elections of Chairs
2. Timetable and Frequency of Assessments
3. Rules of Procedure
 - a) Voting Procedures
 - b) Observer Application Process
 - c) General Review
4. Review of Structure of Scientific Council

IX. Other Matters

1. Other Business
 - a) Scientific Merit Awards
 - b) *Ad hoc* Working Group of Fisheries Managers and Scientists on Vulnerable Marine Ecosystems

X. Adoption of Reports

1. Committee Reports of STACREC and STACFIS
2. Report of Scientific Council

XI. Adjournment

AGENDA III – SCIENTIFIC COUNCIL MEETING, 22–30 OCTOBER 2008**I. Opening (Chair: Don Power)**

1. Appointment of Rapporteur
2. Adoption of Agenda
3. Attendance of Observers
4. Appointment of Designated Experts
5. Plan of Work

II. Review of Recommendations in 2007 and in 2008 (to include outcome of SC Meeting of 22–26 September 2008)**III NAFO/ICES Pandalus Assessment Group****IV. Formulation of Advice (see Annexes 1, 2 and 3)**

1. Request from Fisheries Commission (to include outcome of Annual Meeting of 22–26 September 2008)
 - a) Northern shrimp (Div. 3M)
 - b) Northern shrimp (Div. 3LNO)
 - c) Coral Concentrations in the NRA
2. Requests from Coastal States
 - a) Northern shrimp (Subareas 0 and 1)
 - b) Northern shrimp (in Denmark Strait and off East Greenland)

V. Other Matters

1. Effort analysis using VMS data
2. Bycatch in the shrimp fishery
3. Stock Classifications
4. Coordination with ICES Working Groups on Shrimp Stock Assessments
5. Meeting of October/November 2009
6. Meeting of October/November 2010
7. Topics for Future Special Sessions
8. Other Business
 - a) Report of WGEAFM, October 2008

VI. Adoption of Scientific Council and NIPAG Reports**VII. Adjournment**

Annex 1a. Fisheries Commission's Request for Scientific Advice on Management in 2009 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 2008 Annual Meeting, provide advice on the scientific basis for the management of the following fish and invertebrate stocks or groups of stocks in 2009:

Northern shrimp in Div. 3M, 3LNO

Greenland halibut in SA 2 and Div. 3KLMNO

Noting that SC will meet in Oct–Nov of 2007, FC requests SC to update its advice for 2008, as well as to provide advice for 2009, for both shrimp stocks referenced above.

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 2008 Annual Meeting, provide advice on the scientific basis for the management of the following fish stocks according to the following assessment frequency:

Two year basis

American plaice in Div. 3LNO
Capelin in Div. 3NO
Redfish in Div. 3M
Thorny skate in Div. 3LNOPs
White hake in Div. 3NOPs
Yellowtail flounder in Div. 3LNO

Three year basis

American plaice in Div. 3M
Cod in Div. 3NO
Cod in Div. 3M
Northern shortfin squid in SA 3+4
Redfish in Div. 3LN
Redfish in Div. 3O
Witch flounder in Div. 2J+3KL
Witch flounder in Div. 3NO

- In 2007, advice was provided for 2008 and 2009 for American plaice in Div. 3LNO, redfish in Div. 3M, white hake in Div. 3NO and capelin in Div. 3NO. These stocks will be next assessed in 2009.
- In 2007, advice was provided for 2008, 2009 and 2010 for redfish in Div. 3LN, redfish in Div. 3O, cod in Div. 3NO and witch flounder in Div. 2J+3KL. These stocks will be next assessed in 2010.

To continue this schedule of assessments, the Scientific Council is requested to conduct the assessment of these stocks as follows:

- In 2008, advice will be provided for 2009 and 2010 for yellowtail flounder in Div. 3LNO, and thorny skate in Div. 3LNOPs. These stocks will be next assessed in 2010.
- In 2008, advice will be provided for 2009, 2010 and 2011 for cod in Div. 3M, American plaice in Div. 3M, witch flounder in Div. 3NO, redfish in Div. 3LN and northern shortfin squid in SA 3+4. These stocks will be next assessed in 2011.
- Despite the advice on redfish in Div. 3LN in 2007, the Fisheries Commission requests a full assessment and advice in 2008 for this stock.

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 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_{2007} in 2009 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 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 2009 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.

4. Noting the Precautionary Approach Framework as endorsed by Fisheries Commission, the Fisheries Commission requests that the Scientific Council provide the following information for the 2008 Annual Meeting of the Fisheries Commission for all stocks under its responsibility requiring advice for 2009:

- 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 overlaid on a plot of the 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.

5. 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 B_{lim} , and F_{lim} and target F reference points selected by managers.

6. 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.

- 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.

7. Regarding pelagic *S. mentella* redfish in NAFO Subareas 1-3, the Scientific Council is requested to review the most recent information available on the distribution and abundance of this resource, as well as any new information 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.

8. With respect to porbeagle shark (*Lamna nasus*) in the NAFO Convention Area, the Fisheries Commission with the concurrence of the Coastal State requests Scientific Council, at a meeting in advance of the 2008 Annual Meeting, to provide the following:

- a) Information on historical and current catches and bycatches of the species in the NAFO Convention Area and NRA, summarized by NAFO Subarea and fishery;
- b) Information on the abundance and distribution of the species in the Convention Area and the NRA;
- c) Identification and delineation of any fishery areas or exclusion zones which might reduce the incidental bycatch of this species in NAFO regulated fisheries.

9. Noting the FC Rebuilding Plan for 3NO cod adopted in September 2007, Fisheries Commission requests Scientific Council to advise, before September 2010, on a range of possible management measures to ensure by-catch of cod is kept at the lowest possible level.

10. Recognizing the initiatives on vulnerable marine ecosystems (VME) Fisheries Commission requests the Scientific Council to:

- a) Develop initial methodologies for the identification of VME and assessment of individual fishing activities, drawing on relevant international information and objective standards and guidelines as may have been developed, as deemed appropriate for this work;
- b) Assess, at least on a preliminary basis, using the best available scientific information and assessment methodology, whether individual bottom fishing activities would have significant adverse impacts on identified vulnerable marine ecosystems, with a view to reporting these findings to the Fisheries Commission and ensuring that additional conservation and management measures, where required, are recommended, through a Working Group of Fishery Managers and Scientists on Ecosystems Management, to the Fisheries Commission at its September 2008 meeting.
- c) Develop appropriate scientific methods for the longer term monitoring of the health of VME.

Annex 1b. Fisheries Commission's Request for Scientific Advice on Management in 2010 and Beyond of Certain Stocks in Subareas 2, 3 and 4 and Other Matters

9. Recognizing the initiatives on vulnerable marine ecosystems (VME), and with a view to completing fishery impact assessments at the earliest possible date, Fisheries Commission requests the Scientific Council to:

- a) Provide, as soon as possible in 2008, delineations, if any, of significant concentrations of corals in the NAFO Regulatory Area, by species, for the identification of VMEs. This should include the size and catch characteristics of corals obtained respectively from commercial fishing vessels and fisheries research vessels and the assessment of significant adverse impacts, with a particular focus on those species which involve interactions with commercial fisheries. The data should include absence/presence of corals as well as density.
- b) Provide, by June 30, 2009, delineations, if any, of significant concentrations of sponges in the Regulatory Area by species, including the size and catch characteristics of sponges obtained respectively from commercial fishing vessels and fisheries research vessels, with a particular focus on those species which involve interactions with commercial fisheries. The data should include absence/presence of sponges as well as density.

c) With respect to corals and sponges in canyons denoted in the Scientific Council's response on the area denoted as "Southern Flemish Pass to Eastern Canyons", provide detailed information as soon as practicable or at least a report on progress by June 30, 2009, with a particular focus on those species which involve interactions with commercial fisheries.

Annex 2. Canadian Request For Scientific Advice On Management In 2009 Of Certain Stocks In Subareas 0 To 4

1. Canada requests that the Scientific Council, at its meeting in advance of the 2008 Annual Meeting of NAFO, subject to the concurrence of Denmark (on behalf of Greenland), provide advice on the scientific basis for management in 2009 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 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 area throughout its range and comment on its management in Subareas 0+1 for 2009, and to specifically:

a) advise on appropriate TAC levels for 2009, 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.

b) 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_{2007} in 2009 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 the NAFO Precautionary Approach 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 F_{lim} (F_{buf}), as per the NAFO Precautionary Approach Framework.

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 NAFO Precautionary Approach 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 the 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 NAFO Precautionary Approach Framework.

d) Presentation of the results should include the following:

a. 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. The biomass graph should indicate the stock trajectory compared to B_{lim} ;
- Graphs and tables of catch options for the year 2009 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.

b. 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 $F_{0.1}$ should be shown. As well, Scientific Council should provide the limit and precautionary reference points as described in the NAFO Precautionary Approach Framework, indicating areas of uncertainty (when reference points cannot be determined directly, proxies should be provided).

3. Regarding Greenland halibut in Subarea 2 + Divisions 3KLMNO, Canada requests the Scientific Council:

- 1) to advise on appropriate TAC levels for 2009, based on biomass distribution, for Greenland halibut in these areas separately: SA 2+Division 3K and Divisions 3LMNO.
- 2) to provide information on the status of Greenland halibut in SA 2+Divisions 3KLMNO in relation to the Greenland Halibut Rebuilding Plan and Strategy, including commentary on progress in relation to the targets described in the Strategy.

Yours sincerely,
David Bevan
Assistant Deputy Minister
Fisheries and Aquaculture Management
DFO
Ottawa, Canada

Annex 3. Denmark (Greenland) request for Scientific Advice on Management in 2009 of Certain Stocks in Subarea 0 and 1

1. In the Scientific Council report of 2005, scientific advice on management of Roundnose grenadier in Subarea 0+1 was given as a 3-year advice (for 2006, 2007 and 2008). Denmark, on behalf of Greenland, requests the Scientific Council to provide advice on the scientific basis for the management of Roundnose grenadier in Subarea 0+1 for 2009-2011.
2. Advice for redfish (*Sebastes spp.*) and other finfish (American plaice (*Hippoglossoides platessoides*), Atlantic wolffish (*Anarhichas lupus*), spotted wolffish (*A. minor*) and thorny skate (*Raja radiata*)) in Subarea 1 was in 2005 for 2006-2007 (also 2006 for 2006-2008). Denmark, on behalf of Greenland, requests the Scientific Council to provide advice on the scientific basis for the management of Redfish (*Sebastes spp.*) and other finfish in Subarea 0+1 for 2009-2011.
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 in Subarea 0 +Division 1A Offshore and Division 1B-1F in 2009, and as many years forward as data allow.
4. Advice for Greenland halibut in Subarea 1A inshore was in 2006 given for 2007-2008. Denmark, on behalf of Greenland, requests the Scientific Council to provide advice on the scientific basis for the management of Greenland halibut in Subarea 1A inshore for 2009-2010.
5. Subject to the concurrence of Canada as regards Subarea 0, Denmark, on behalf of Greenland, further requests the Scientific Council of NAFO before December 2008 to provide advice on the scientific basis for management of Northern shrimp (*Pandalus borealis*) in Subarea 0 and 1 in 2009, and as many years forward as data allow.
6. Further, the Council is requested to provide advice, in co-operation with ICES, on the scientific basis for management of Northern shrimp (*Pandalus borealis*) in Denmark Strait and adjacent areas east of southern Greenland in 2009, and as many years forward as data allow.

On behalf of

The Department of Fisheries, Hunting and
Agriculture

Sincerely

Amalie Jessen

Deputy Minister (acting)

LIST OF RESEARCH AND SUMMARY DOCUMENTS, 2008

Scientific Council Research Documents (SCR)

Doc. No.	Serial No.	Author (s)	Title
08/1	N5483	Campanis,G., A. Thompson, J. Fischer and R. Federizon	The Geographical Distribution of the High-Seas Commercial Greenland Halibut Fishery in the Northwest Atlantic
08/2	N5485	Stein, M. and V. A. Borovkov	The effect of winter cooling on inter-annual changes of near-bottom water temperatures off Southwest Greenland - a forecast option for bottom water temperatures on half year time scales
08/3	N5488	Ribergaard, M.H., S.M. Olsen, and J. M. Mortensen	Oceanographic Investigations off West Greenland 2007
08/4	N5489	Paramonov, V. V.	Migrations of adult beaked redfish (<i>Sebastes mentella</i>) in North Atlantic in 2007
08/5	N5490	Stein, M.	Climatic Conditions Around Greenland - 2007
08/6	N5491	Durán Muñoz, P., F.J. Murillo, A. Serrano, M. Sayago-Gil, S. Parra, V. Díaz del Río, M. Sacau, T. Patrocinio and J. Cristobo	A Case Study of available methodology for the identification of Vulnerable Ecosystems/Habitats in bottom deep-sea fisheries: Possibilities to apply this method in the NAFO Regulatory Area in order to select Marine Protected Areas
08/7	N5498	González-Troncoso, D., E. Román and X. Paz	Results for Greenland halibut and American plaice of the Spanish survey in NAFO Div. 3NO for the period 1997- 2007
08/8	N5499	González-Troncoso, D. and X. Paz	Atlantic cod and Yellowtail flounder indices from the Spanish Survey conducted in Divisions 3NO of the NAFO Regulatory Area
08/9	N5500	González-Troncoso, D. and X. Paz	Biomass and length distribution for Roughhead grenadier, Thorny skate and White hake from the surveys conducted by Spain in NAFO 3NO
08/10	N5501	Murillo, F. J., P. Durán Muñoz, M. Sacau, D. González-Troncoso and A. Serrano	Preliminary data on cold-water corals and large sponges by-catch from Spanish/EU bottom trawl groundfish surveys in NAFO Regulatory Area (Divs. 3LMNO) and Canadian EEZ (Div. 3L): 2005-2007 period
08/11	N5502	Murillo, F. J., P. Durán Muñoz, M. Mandado , T. Patrocinio and G. Fernández	By-catch of cold-water corals from an Experimental Trawl Survey in three seamounts within NAFO Regulatory Area (Divs. 6EFG) during year 2004

Doc. No.	Serial No.	Author (s)	Title
08/12	N5504	Maillet, G., P. Pepin , S. Fraser, T. Shears, G. Redmond, G. Harrison, C. Johnson, E. Head, J. Spry, K. Pauley, H. Maass, M. Kennedy, C. Porter and V. Soukhovtsev	Biological and Chemical Oceanographic Conditions on the Newfoundland and Labrador Shelf, Grand Banks, Scotian Shelf, and the Gulf of Maine During 2007
08/13	N5505	Petrie, B., R. G. Pettipas, W. M. Petrie and V. V. Soukhovtsev	Physical Oceanographic Conditions on the Scotian Shelf and in the eastern Gulf of Maine (NAFO areas 4V,W,X) during 2007
08/14	N5506	Petrie, B., R. G. Pettipas and W. M. Petrie	Air Temperature, Sea Ice and Sea-Surface Temperature Conditions off Eastern Canada during 2007
08/15	N5508	Skryabin I., and O. Smirnov	Length-age composition and sexual maturation rate of Greenland halibut <i>Reinhardtius hippoglossoides</i> (Walbaum) from the commercial catches in the area of the West Greenland (Divs.1AD) in 2003-2007
08/16	N5509	Fock, H. and C. Stransky	Stock Abundance Indices and Length Compositions of Demersal Redfish and Other Finfish in NAFO Sub-area 1 and near bottom water temperature derived from the German bottom trawl survey 1982-2007
08/17	N5510	Jørgensen, O.A.	Survey for Greenland Halibut in NAFO Divisions 1C-1D, 2007
08/18	N5512	Pochtár, M., and O. Smirnov	Length-age composition and sexual maturation rate of Greenland halibut <i>Reinhardtius hippoglossoides</i> (Walbaum) from Russian commercial catches in the area of the Flemish Cap and Grand Newfoundland Banks (Divs. 3LMNO) in 2007
08/19	N5513	Colbourne, E. B., J. Craig, C. Fitzpatrick, D. Senciall, P. Stead and W. Bailey	An Assessment of the Physical Oceanographic Environment on the Newfoundland and Labrador Shelf in NAFO Subareas 2 and 3 during 2007
08/20	N5514	Román, E., C. González-Iglesias, Á. Armesto and D. González-Troncoso	Results for the Spanish Survey in the NAFO Regulatory Area of Division 3L for the period 2003-2007
08/21	N5515	Román, E., Á. Armesto, C. González-Iglesias and D. González-Troncoso	Results for the Atlantic cod, roughhead grenadier, redfish, thorny skate and black dogfish of the Spanish Survey in the NAFO Div. 3L for the period 2003-2007
08/22	N5524	Fuller, S. D., F. J. Murillo Perez, V. Wareham and E. Kenchington	Vulnerable Marine Ecosystems Dominated by Deep-Water Corals and Sponges in the NAFO Convention Area

Doc. No.	Serial No.	Author (s)	Title
08/23	N5521	Morgan, M. J.	Spatial distribution of Div. 3NO cod in Canadian surveys and temporal distribution of bycatch in Canadian fisheries: possible means to decrease bycatch?
08/24	N5522	Devillers, R., M.-J. Fortin, G. Rose and M.-A. Mostafavi	GeoCod: Integrating Fisheries and Environmental data for a better understanding of spatial and temporal changes of four key species in the NW Atlantic region
08/25	N5225	Miller, D. C. M., <i>et al.</i>	Management strategy evaluation for Greenland halibut (<i>Reinhardtius hippoglossoides</i>) in NAFO Subarea 2 and Divisions 3LKMNO
08/26	N5526	Fernandez, C., S. Cerviño, F. Saborido-Rey and A. Vázquez	Assessment of the cod stock in NAFO Division 3M
08/27	N5527	González, F. and H. Murua	A review on roughhead grenadier (<i>Macrourus berglax</i>) biology and population structure on Flemish Cap (NAFO Division 3M) 1991-2007 based upon EU Flemish Cap bottom survey data
08/28	N5528	Nygaard, R. and K. Sünksen and O. A. Jørgensen	Biomass and Abundance of Demersal Fish Stocks off West Greenland Estimated from the Greenland Shrimp Survey, 1988-2007
08/29	N5529	Bradshaw, B.	Integrated Science Data Management NAFO Report 2007
08/30	N5531	Thompson, A. B.	Requirements to estimate fishing effort from VMS transmissions
08/31 (Rev.)	N5532	Orr, D., P. Veitch, D. Sullivan, C. Peters and T. Inkpen	Groundfish by-catch within the Canadian vessel northern shrimp fishery, over the years 2004 – 2007
08/32	N5533	Healey, B. P.	Greenland halibut (<i>Reinhardtius hippoglossoides</i>) in NAFO Subarea 2 and Divisions 3LKMNO: Stock Trends based on annual Canadian Research Vessel survey results during 1978-2007
08/33	N5534	Ávila de Melo, A. M., R. Duarte, D. Power, and R. Alpoim	A Revised ASPIC Based Assessment of Redfish in NAFO Divisions 3LN
08/34	N5535	Vázquez, A. and D. González Troncoso	Results from Bottom Trawl Survey on Flemish Cap of June-July 2007
08/35	N5536	Jørgensen, O.A.	Assessment of the Greenland Halibut Stock Component in NAFO Subarea 0 + Division 1A Offshore + Divisions 1B-1F
08/36	N5537	Campana, S.	Catch and Stock Status of Porbeagle Shark (<i>Lamna nasus</i>) in the Northwest Atlantic to 2007

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08/37	N5538	Nygaard R., H. Fock and C. Stransky	An Assessment of the Greenland Halibut Stock Component in NAFO Division 1A Inshore
08/38	N5539	Lyberth, B. and J. Boje	An Assessment of the Greenland Halibut Stock Component in NAFO Division 1A Inshore
08/39	N5540	Dwyer, K.	Witch flounder in NAFO Divisions 3NO
08/40	N5541	Alpoim, R. and A. M. Ávila de Melo	An Assessment of American Plaice (<i>Hippoglossoides platessoides</i>) in NAFO Division 3M
08/41	N5542	Nygaard, R., H. Fock and C. Stransky	Assessment of Other Finfish in NAFO Subarea 1
08/42	N5543	Dwyer, K.S., B. P. Healey, M. J. Morgan	Part II of American Plaice Div. 3LNO Research Recommendations: Data Explorations with ADAPT Analyses with Varying Natural Mortality
08/43	N5545	Simpson, M.R., C.M. Miri, and C. Busby	Assessment of Thorny Skate (<i>Amblyraja radiata</i> Donovan, 1808) in NAFO Divisions 3LNO and Subdivision 3Ps
08/44	N5546	Maddock Parsons, D. and B. Brodie	Distribution and Abundance of Yellowtail Flounder (<i>Limanda ferruginea</i>) on the Grand Bank, NAFO Divisions 3LNO, from Canadian Bottom Trawl Survey Estimates from 1984-2007
08/45	N5547	Maddock Parsons, D., W. B. Brodie, M. J. Morgan and D. Power	The 2008 Assessment of the Grand Bank Yellowtail Flounder Stock, NAFO Divisions 3LNO
08/46	N5548	Morgan, M. J., P.A. Shelton, D. C. M. Miller and B. P. Healey	Is there any evidence of a stock recruit relationship for Greenland halibut in Subarea 2 + Div. 3KLMNO?
08/47	N5549	Brodie, W. B., D. Power, and B.P.Healey	The Canadian fishery for Greenland halibut in SA 2 + Div. 3KLMNO, with emphasis on 2007.
08/48	N5550	Healey, B.P. and J.-C. Mahé	An Assessment of Greenland Halibut (<i>Reinhardtius hippoglossoides</i>) in NAFO Subarea 2 and Divisions 3KLMNO
08/49	N5552	Hendry, R. M.	Environmental conditions in the Labrador Sea in 2007
08/50	N5556	NAFO Secretariat	Recent Fishing Effort in the NRA
08/51	N5557	Vázquez, A. and R. Piñeiro	Using a size indicator based on survey data to evaluate the state of the Flemish Cap ecosystem
08/52	N5559	González, C., X. Paz and A. Armesto	Daily ration and energy content obtained from the diet of American plaice (<i>Hippoglossoides platessoides</i>) in the Grand Bank and the Flemish Cap

Doc. No.	Serial No.	Author (s)	Title
08/53	N5566	González-Troncoso, D. and X. Paz	Growth features of American plaice <i>Hippoglossoides platessoides</i> in Northwest Atlantic
08/54	N5567	Orr, D.C., P.J. Veitch and D.J. Sullivan	Divisions 3LNO Northern shrimp (<i>Pandalus borealis</i>) – Interim Monitoring Update
08/55	N5568	Casas Sánchez, J. M.	Division 3M Northern shrimp (<i>Pandalus borealis</i>) – Interim Monitoring Update
08/56	N5585	Hvingel, C. and T. Thangstad	The Norwegian fishery for northern shrimp (<i>Pandalus borealis</i>) in the Barents Sea and round Svalbard
08/57	N5586	Kingsley, M. C. S.	The Fishery for Northern Shrimp (<i>Pandalus borealis</i>) off West Greenland, 1970-2008
08/58	N5587	Orr, D. C., P. J. Veitch and D. J. Sullivan	An update of information pertaining to Northern Shrimp (<i>Pandalus borealis</i> , Kroyer) in NAFO Divisions 3LNO
08/59	N5588	Hvingel, C.	An assessment of the shrimp (<i>Pandalus borealis</i>) stock in the Barents Sea 2008
08/60	N5589	Hvingel, C., T. Thangstad and P. Lyubin	Research survey information regarding northern shrimp (<i>Pandalus borealis</i>) in the Barents Sea and Svalbard area
08/61	N5590	Kingsley, M. C. S.	Catch Table Update for the West Greenland Shrimp Fishery
08/62	N5591	Kingsley, M. C. S.	CPU Series for the West Greenland Shrimp Fishery
08/63	N5595	Krogness, M. C. and G. Søvik	An overview of Norwegian investigations of the shrimp stock off East Greenland in 1982-1986
08/64	N5596	Kingsley, M. C. S.	A Provisional Assessment of the Shrimp Stock off West Greenland in 2008
08/65	N5597	Casas, J. M.	The Spanish Shrimp Fishery on Flemish Cap (Division 3M) and Division 3L in 2007
08/66	N5598	Casas, J. M., E. Román and J. Teruel	Northern Shrimp (<i>Pandalus borealis</i> , Krøyer) from Spanish Bottom Trawl Survey 2008 in NAFO Div. 3LNO
08/67	N5599	Casas, J. M.	Assessment of the International Fishery for Shrimp (<i>Pandalus borealis</i>) in Division 3M (Flemish Cap), 1993-2008
08/68	N5600	Casas, J. M.	Northern Shrimp (<i>Pandalus borealis</i>) on Flemish Cap Surveys 2008
08/69	N5601	Sünksen, K.	A preliminary estimate of Atlantic cod (<i>Gadus morhua</i>) biomass in West Greenland offshore waters (NAFO Subarea 1) for 2008 and recent changes in the spatial overlap with Northern shrimp (<i>Pandalus borealis</i>)

Doc. No.	Serial No.	Author (s)	Title
08/70	N5602	Bakanev, S. V.	On the Assessment of the Northern Shrimp Stock in the Barents Sea
08/71	N5603	Ziemer, N. and H. Siegstad	Results of the Greenland Bottom Trawl Survey for Northern shrimp (<i>Pandalus borealis</i>) Off West Greenland (NAFO Sub area 1 and Division 0A), 1988-2008
08/72	N5604	Hammeken Arboe, N. and H. Siegstad	An assessment of the shrimp stock in Denmark Strait / off East Greenland – 2008
08/73	N5605	Thangstad, T. and G. Søvik	The Norwegian Fishery for Northern Shrimp (<i>Pandalus borealis</i>) in Skagerrak and the Norwegian Deep (ICES Divisions IIIa and IVa east), 1970-2008
08/74	N5606	Søvik, G. and T. Thangstad	Results of the Norwegian Bottom Trawl Survey for Northern Shrimp (<i>Pandalus borealis</i>) in Skagerrak and the Norwegian Deep (ICES Divisions IIIa and IVa east) in 2008
08/75	N5607	Eigaard, O. R. and S. Munch-Petersen	LPUE standardisation of The Danish <i>Pandalus</i> fishery in Skagerrak and the Norwegian Deep
08/76	N5608	Munch-Petersen, S., O. Eigaard, G. Søvik and M. Ulmestrand	The Northern shrimp (<i>Pandalus borealis</i>) Stock in Skagerrak and the Norwegian Deep (ICES Divisions IIIa and IVa East)
08/77	N5609	Sirp, S.	Analysis of catch rate of Estonian shrimp vessels in Div. 3M and Div. 3L in 2007 and 2008
08/78	N5610	Kingsley, M. C. S.	Indices of distribution and location of shrimp biomass for the West Greenland research trawl survey
08/79	N5612	Vinnichenko, V. I. and V. V. Skylar	On the issue of areas closure to protect vulnerable marine habitats in the NAFO Regulatory Area

Scientific Council Summary Documents (SCS)

Doc No.	Serial No	Author	Title
SCS 08/1	N5484	FC	FC Request for Advice
SCS 08/2	N5486	Canada	Request for Advice
SCS 08/3	N5487	Greenland	Request for Advice
SCS 08/4	N5492	NAFO Secretariat	Index and List of Documents
SCS 08/5	N5495	Vargas, J., R. Alpoim, E. Santos and A. M. Ávila de Melo	Portuguese Research Report for 2007

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SCS 08/7	N5497	González, F., D. González , A. Vázquez, E. Román, M. Casas and G. Ramilo	Spanish Research Report for 2007
SCS 08/8	N5503	Stein, M. and H. Fock	German Research Report for 2007
SCS 08/9	N5507	Plikshs, M., E. Kruze, M.Vitins	Latvian Research Report for 2009
SCS 08/10	N5511	NWGEAFM	Report of meeting
SCS 08/11	N5516	Siegstad, H.	Greenland Research Report
SCS 08/12	N5517	Richards, D.	Canadian Research Report
SCS 08/13	N5518	NAFO	SC Study Group Report
SCS 08/14	N5519	Soseebee, K.	US Research Report
SCS 08/15	N5523	NAFO Secretariat	List of Biological Sampling Data for 2007
SCS 08/16	N5531	NAFO Secretariat	Tagging Activities Reported for the Northwest Atlantic in 2007 and Early-2008
SCS 08/17	N5544	NAFO Secretariat	Available data from the commercial fisheries related to stock assessment (2007) and inventory of biological surveys conducted in the NAFO Area in 2007 and biological surveys planned for 2007 and early-2008
SCS 08/18	N5551	González Costas, F.	A Report on the Pelagic Redfish ICES Advice and Deliberations of the 2008 North-Western Working Group
SCS 08/19	N5553	NAFO	Report of the June SC Meeting
SCS 08/20	N5554	Trippel, E. and J. Morgan	Report of the WG on Reproductive Potential
SCS 08/21	N5563	NAFO Secretariat	A compilation of Research Vessel Surveys on a Stock by Stock basis
SCS 08/22	N5565	O'Leary, Beth	The Ecosystem Approach to Fisheries Management: High Seas Fisheries Management and the Northwest Atlantic Fisheries Organization
SCS 08/23	N5584	NAFO	Report of the Scientific Council September Meeting
SCS 08/24	N5592	WGEAFM	Report of the Working Group on the Ecosystem Approach to Fisheries Management (WGEAFM) in Response to Fisheries Commission Request 9.a
SCS 08/25	N5593	NIPAG	Report of the NAFO/ICES Pandalus Assessment Group Meeting
SCS 08/26	N5594	NAFO	Report of the Scientific Council Meeting

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- * A = Scientific Council, 5-19 June 2008
 B = Scientific Council, 22-26 September 2008
 C = Scientific Council and NIPAG, 22-30 October 2008

LIST OF RECOMMENDATIONS IN 2008

Scientific Council Meeting 5-19 June 2008

VII. Management Advice and Responses to Special Requests

1. Fisheries Commission (Appendix V, Annex 1)

e) Special Requests for Management Advice

vi) Protection of vulnerable marine ecosystems

c) Methods for monitoring the health of VMEs

VME Data Collection Protocol (pg 51)

Scientific Council **recommended** that *the collection protocol be reviewed and re-drafted, possibly at the Fisheries Commission ad hoc Working Group of Managers and Scientists on VME to take in to account the above issues.*

XI. Review of Scientific Council Working Procedures/Protocol

2. Rules of Procedure

a) Observer Application Process

Scientific Council **recommended** that *the following changes be made to the Scientific Council Rules of Procedure Rule 1 Representation:*

1.3 The Scientific Council may invite any non-Member Government and any ~~international~~, public or private, organization to be represented at meetings of the Scientific Council or its subsidiary bodies by an observer or observers.

In addition, Scientific Council would like to formalize the position of invited experts by the addition of a new rule and **recommended** that *the following rule be added under Representation Rule 1:*

1.4 The Scientific Council Chair may invite one or more “guest experts” to meetings of Scientific Council and its subsidiary bodies. The guest expert(s) would not represent a Party or Organization and would have no status at the meeting other than to provide specific advice and guidance to Scientific Council on particular issues.

XII. Other Matters

3. Classification Criteria for NAFO Stocks

Scientific Council **recommended** that *the FIRMS Stock classification is:*

- *Next considered and updated by STACFIS in June 2008;*
- *not included in the summary sheets, the Scientific Council report, or any other published documentation, and;*
- *managed by the Secretariat and presented to FIRMS for use for search engine purposes only.*

STACPUB

7. Editorial Matters Regarding Scientific Publications

b) Review of Editorial Board

STACPUB **recommended** that *to widen the scope of JNAFS in order to cover the fields of benthic ecology and the Ecosystem Approach, it was agreed to create two new Associate Editor positions and to identify potential candidates to join the Editorial Board.*

STACREC

3. Fishery Statistics

a) Progress report on Secretariat activities in 2007/2008

i) Acquisition of STATLANT 21A and 21B reports for recent years

During 2007 the Secretariat began a review of the accessibility of the STATLANT 21 data on the website and the feasibility of harmonizing the 21A and 21B databases. STACREC noted that there are additional sources of information concerning catches that may be used in the assessments and that this should be indicated on the web site. STACREC **recommended** that *data be easily accessible on the web site in both aggregated (as in 21A) and dis-aggregated (as in 21B) formats*. In addition STACREC **recommended** that *the website contain information on missing data and information on additional sources of catch data, collated on the basis of stock, that are used by Scientific Council*.

STACREC **recommended** that *the Secretariat discuss the following with Contracting Parties: i) dropping the numeric codes for species and using the appropriate alpha codes provided by FAO ASFIS species list;; ii) the harmonization of electronic data submissions*.

iii) Information collected by the NAFO Secretariat

The Secretariat presented a summary of data sources and information that is available upon request from the Secretariat; STATLANT 21, list of biological sampling, list of tagging activities, research vessel surveys, commercial fisheries sampling, biological surveys, provisional catches by month, at-sea inspection reports, port inspection reports, observer reports, VMS, vessel registry and NAFO publications. Some of these data sources contain confidential information and therefore have restrictions placed on their distribution. STACREC noted that not all research activities have been reported to the Secretariat for example research surveys done by non-government parties using commercial vessels.

STACREC **recommended** that *the Secretariat maintain a list of information sources and this list be made more accessible on the web site. In addition STACREC encourages Contracting Parties to continue reporting research activities in the NRA, including those conducted by commercial vessels*.

c) Stock Assessment Spreadsheets – update

Almost nothing has changed since the last meeting with only 10 of 26 stocks having completed spreadsheets. This is still considered to be an important source of information for Scientific Council. STACREC reiterates the importance of maintaining a database of data used in stock assessments and **recommended** that *when there is a change in Designated Expert the Secretariat and Chair of Scientific Council contact the past Designated Experts to ensure that the stock assessment data is submitted to the Secretariat so this data continues to be available to STACFIS and Scientific Council*.

STACFIS

2. General Review of Catches and Fishing Activity

STACFIS noted the advances made by the ad hoc working group on catch estimates by conducting pre-meeting deliberations, thereby enabling finfish catch estimates by stock, Division and Contracting Party to be available soon after the meeting commenced. In order to expedite the work of the Scientific Council, STACFIS **recommended** that *all Contracting Parties take measures to improve the accuracy of their catch estimates and present them as far in advance of future June Meeting as possible*.

III. Stock Assessments

2. Greenland halibut (*Reinhardtius hippoglossoides*) in Div. 1A inshore

e) Research Recommendation

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 reiterated its **recommendation** that *the study to calibrate the gill net surveys, in relation to previous years longline surveys, should be continued in order to allow use of the whole time series for Greenland halibut in Disko Bay.*

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

STACFIS reiterated its **recommendation** that *the discard rate of 'small Greenland halibut' in the Greenland halibut fishery in Div. 1A be investigated.*

3. Demersal Redfish (*Sebastes* spp.) in Subarea 1

f) Research Recommendation

STACFIS **recommended** that *the species composition and quantity of redfish discarded in the shrimp fishery in Subarea 1 be further investigated.*

5. Other Finfish in Subarea 1

f) Research Recommendation

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

STACFIS **recommended** that *the distribution of these species in relation to the main shrimp-fishing grounds in Subarea 1 be investigated, in order to further discover means of reducing the amount of discarded by-catch.*

6. Cod (*Gadus morhua*) in Div. 3M

g) Research recommendations

STACFIS **recommended** that *retrospective analyses be performed as a standard diagnostic of the assessment with the Bayesian model.*

Following from the recommendation made last year, STACFIS **recommended** that *efforts be made to increase the levels of commercial sampling for this stock.*

STACFIS noted that the short term development of this stock will be dependent on recent year classes and therefore it **recommended** that *the stock be fully assessed in 2009.*

7. Redfish (*Sebastes mentella* and *Sebastes fasciatus*) in Div. 3M

d) Current and Future Studies

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 their size distribution.*

STACFIS **recommended** that *an update of the recent Div. 3M golden redfish fishery information be compiled on an annual/fleet basis, including estimated catch and size distribution of the golden redfish catches.*

8. American Plaice (*Hippoglossoides platessoides*) in Div. 3M

f) Research Recommendations

Average F in recent years has been very low relative to M . Therefore in 2006 STACFIS recommended that the utility of the XSA must be re-evaluated and the use of alternative methods (eg. survey based models stock production models) be attempted in the next assessment of Div. 3M American plaice.

Efforts have been made to apply to this stock the survey-based method that was used in previous Div. 3M cod assessments, but so far this task has not yet been completed. At the same time, work was done trying to run an Aspic model, but in order to go further with this more exploratory research of the available data in order to create a CPUE time series must be done.

At this moment the use of other methods than XSA is not expected to change the perception of the 3M American plaice stock due to its very poor condition. Nevertheless STACFIS reiterates this **recommendation** that *the utility of the XSA must be re-evaluated and the use of alternative methods (eg. survey based models stock production models) be attempted in the next assessment of Div. 3M American plaice.*

Because ages below 3 are not well selected in the EU survey series STACFIS also **recommended** that *exploratory runs of the XSA should be done with the input data starting at age 3 or 4.*

14. Capelin (*Mallotus villosus*) in Div. 3N and 3O

e) Research recommendations

STACFIS reiterates its **recommendation** that *initial investigations to evaluate the status of capelin in Div. 3NO utilize trawl-acoustic surveys to allow comparison with the historical time series.*

STACFIS **recommended** that *for Capelin in Div. 3NO investigations be undertaken to incorporate survey sets which do not contain Capelin, including analyses of Capelin distribution.*

16. Thorny Skate (*Amblyraja radiata*) in Div. 3L, 3N, 3O and Subdiv. 3Ps

e) Recommendations

For thorny skate in Div. 3LNOPs, STACFIS **recommended** that *further testing of quantitative models be conducted on this stock.*

For thorny skate in Div. 3LNOPs, STACFIS reiterates its **recommendation** that *further work be conducted for the estimation of reference points.*

19. Witch Flounder (*Glyptocephalus cynoglossus*) in Divisions 2J, 3K and 3L

b) Data Overview

i) Surveys

Abundance at length

In 2007, STACFIS noted that slightly increasing trends in survey biomass and mean weight (kg) per tow indices for the stock area as a whole were not seen in abundance indices, suggesting increasing trends are due to growth and not recruitment. To further investigate recruitment status, STACFIS **recommended** that *length frequency data from the survey be examined.*

20. Greenland Halibut (*Reinhardtius hippoglossoides*) in Subarea 2 and Div. 3KLMNO

STACFIS **recommended** that *research continue on age determination for Greenland halibut in Subarea 2 and Div. 3KLMNO to improve accuracy and precision.*

Previous survey experiments have noted that the depth distribution of Greenland halibut extends beyond 1500m, the maximum depth of the survey information currently available to assess this stock. In addition, fisheries for Greenland halibut have at times fished at depths beyond 1500m. Therefore, STACFIS **recommended** that *exploratory deep-water surveys for Greenland halibut in Subarea 2 and Divisions 3KLMNO be conducted using gears other than bottom trawls to complement existing survey data.*

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Appendix 1 -NAFO Assessed Stocks (by NIPAG)

1. Northern Shrimp (*Pandalus borealis*) on Flemish Cap (NAFO Div. 3M) – NAFO Assessed (pg 273)

e) Research Recommendations

NIPAG **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 2008.*
- *the catch and effort data from other sources, for example VMS and/or Observer data, continue to be investigated to validate commercial data obtained from summarized logbooks or STATLANT data.*
- *the relationship between the recruitment indices and fishable biomass be investigated further.*
- *age composition by sex in the fishery calculated from length distributions in the EU survey and from commercial samples should be compared for years when both were obtained.*

2. Northern Shrimp (Div. 3LNO) – NAFO Assessed

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

- *biological and CPUE data from all fleets fishing for shrimp in the area be submitted to the Designated Expert, in the standard format, by 1 September 2009.*
- *collaborative efforts should be conducted to standardize a means of predicting recruitment to the fishable stock.*

3. Northern shrimp (Subareas 0 and 1) – NAFO Assessed

e) Research Recommendations

NIPAG **recommended** that, for shrimp off West Greenland (NAFO Subareas 0 and 1):

- *onboard sampling of commercial catches – essential for assessing age, size, sex composition, fecundity and frequency of spawning of the stock – should be re-established in Subarea 1.*
- *methods of incorporating weighted CPUE indices into the assessment model, and of adjusting the weighting of the survey series, should be explored.*
- *the impact of other predators on the stock should also be considered for inclusion in the assessment model.*
- *recruitment indices and their relationship to subsequent fishable biomass should be considered for inclusion in the shrimp assessment model.*
- *methods of analyzing survey data should be explored that would allow expressing, in one or two indices, measures of how the stock biomass is distributed.*

4. Northern shrimp (in Denmark Strait and off East Greenland) – NAFO Assessed**d) Research Recommendations**

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

- *a survey be conducted to provide fishery independent data of the stock*
- *ways of getting samples from the fishery that could inform about stock structure and contribute to the assessment should be explored.*
- *the availability and usefulness of size data from commercial landings should be investigated as a source of information on stock structure.*

