PART F: MISCELLANEOUS

AGENDA I - SCIENTIFIC COUNCIL MEETING, 1-14 JUNE 2012

I. Opening (Scientific Council Chair: Carsten Hvingel)
   1. Appointment of Rapporteur
   2 Presentation and Report of Proxy Votes
   3. Adoption of Agenda
   4. Attendance of Observers
   5. Appointment of Designated Experts
   6. Plan of Work
   7. Housekeeping issues

II. Review of Scientific Council Recommendations in 2011

III. Fisheries Environment (STACFEN Chair: Gary Maillet)
   1. Opening
   2. Appointment of Rapporteur
   3. Adoption of Agenda
   4. Review of Recommendations in 2011
   5. Invited speakers
   6. Integrated Science Data Management (ISDM) Report for 2011
   7. Review of the physical, biological and chemical environment in the NAFO Convention Area during 2011
      Contributions from:
   8. Interdisciplinary studies
   9. An update of the on-line annual ocean climate status summary for the NAFO Convention Area
   10 Formulation of recommendations based on environmental conditions during 2011
   11. National Representatives
   12. Other Matters
   13. Adjournment

IV. Publications (STACPUB Chair: Margaret Treble)
   1. Opening
   2. Appointment of Rapporteur
   3. Adoption of Agenda
   4. Review of Recommendations in 2011
   5. Review of Publications
      a) Annual Summary
         i) Journal of Northwest Atlantic Fishery Science (JNAFS)
         ii) Scientific Council Studies
         iii) Scientific Council Reports
   6. Other Matters
      a) Update on digitization of NAFO historical documents
      b) Alternative cover designs for JNAFS
      c) Consistency of formatting styles in JNAFS
      d) Performance Assessment Recommendation / Growing size of SC Reports
   7. Adjournment

V. Research Coordination (STACREC Chair: Don Stansbury)
   1. Opening
   2. Appointment of Rapporteur
   3. Review of Recommendations in 2011
   4. Fishery Statistics
      a) Progress report on Secretariat activities in 2011/2012

i) STATLANT 21A and 21B

5. Research Activities
   a) Biological sampling
      i) Report on activities in 2011/2012
      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 2011 (by National Representatives and Designated Experts)
      ii) Surveys planned for 2012 and early 2013
         - The international bottom trawl survey (organized by EU-Spain)
         - Other surveys
   c) Tagging activities
   d) Other research activities
6. Review of SCR and SCS Documents
7. Other Matters
   a) Review of the updated CWP Handbook
   b) Summary of progress on previous recommendations
8. Adjournment

VI. Fisheries Science (STACFIS Chair: Jean-Claude Mahé)

1. Opening
2. General Review
   a) Review of Recommendations in 2011
   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 (Item 2, Annex 1):
         - Cod in Div. 3M
         - Redfish in Div. 3LN
         - American plaice in Div. 3LNO (item 9)
         - Thorny skate in Div. 3LNOPs
      ii) Monitored stocks[1] (Item 2, Annex 1):
         - American plaice in Div. 3M
         - Capelin in Div. 3LNO
         - Cod in Div. 3NO
         - Redfish in Div. 3M
         - Redfish in Div. 3O
         - Witch flounder in Div. 2J3KL
         - Witch flounder in Div. 3NO
         - Yellowtail flounder in Div. 3LNO
         - White hake in Div. 3NOPs
         - Northern shortfin squid in Subarea 3+4

[1] Monitored stocks to be provided in the agreed format (NAFO Sci. Coun. Rep., 2005, Part A, Appendix IV, 2.i)

b) Certain Stocks in Subareas 0 and 1, as Requested by Denmark (Greenland) (Annex 3):
   i) Thoroughly assessed stocks
      - Greenland halibut in Div. 1A inshore
   ii) Monitored stocks:
      - Demersal redfish and other finfish in SA 1
      - Roundnose grenadier in SA0+1

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+lC-F (Annex 2, Item 1; Annex 3, Item 3)

4. Stocks under a Management Strategy Evaluation (FC Item 4a)
   a) Greenland halibut in SA 2 and Div. 3KLMNO
5. Other Matters
   a) FIRMS Classification for NAFO Stocks
   b) Other Business
6. Adjournment

VII. Management Advice and Responses to Special Requests

1. Fisheries Commission (Annex 1)
   a) Request for Advice on TACs and Other Management Measures (Item 2, Annex 1))
      For 2013 and 2014
      - Cod in Div. 3M
      - American Plaice in Div. 3LNO
      - Redfish in Div. 3LN
      - Thorny skate in Div. 3LNOPs
   b) Monitoring of Stocks for which Multi-year Advice was provided in 2010 or 2011 (Item 2)
      - Cod in Div. 3NO
      - Redfish in Div. 3M
      - Redfish in Div. 3O
      - Witch flounder in Div. 2J3KL
      - Witch flounder in Div. 3NO
      - Yellowtail flounder in Div. 3LNO
      - White hake in Div. 3NOPs
      - Northern shortfin squid in SA 3 + 4
   c) Special Requests for Management Advice
      i) Harvest Control Rules for Greenland halibut (Item 4a)
      ii) Exceptional circumstances in the Greenland halibut management strategy (Item 4b)
      iii) Consequences resulting from a decrease in mesh size in the mid-water trawl fishery for redfish in Div. 3LN to 90mm or lower (Item 5)
      iv) Review and Update Reference points for Div. 3LNO American plaice, Div. 3NO cod (Item 6)
      v) Review of rebuilding plans for American plaice in Div. 3LNO and Cod in Div. 3NO (Item 7)
      vi) Evaluation of the proposed harvest control rule for Cod in Div. 3NO (Item 8)
      vii) Full assessment of Div. 3LNO American plaice in accordance with the rebuilding plan (Item 9)
      viii) Examine links between decline of shrimp and recovery of cod and reduction of redfish in Div. 3M (Item 10)
      ix) Definition of MSY reference points and a prospective harvest control rule for cod in Div. 3M (Item 11)

x) Review of bycatch information (Item 12)
xi) Trends in biomass and state of the stock for cod in Div. 2J+3KL (Item 13)
xii) Variability in indicators of stock status and recruitment for Witch flounder in Div. 3NO (Item 14)
xiii) Detailed list of VME Indicator species (Item 15)
xiv) GIS modeling of sponge encounters using VMS data (Item 16)
xv) Encounter thresholds and move on rules (Item 17)
xvi) Mapping of VME indicator species and elements (Item 18)
xvii) Development of a work plan for reassessment of VMEs (Item 19)

2. Coastal States
   a) Request by Canada for Advice on Management in 2013 (Annex 2)
      i) Greenland halibut in Div. 0B + Div. 1C-1F (Item 1)
      ii) *Pandalus borealis* in Subareas 0 and 1 (Item 2)
   b) Request by Denmark (Greenland) for Advice on Management in 2013 (Annex 3)
      i) Roundnose grenadier in SA 0+1 (Item 1)
      ii) Redfish and other finfish in SA 1 (Item 2)
      iii) Greenland halibut in the offshore area of Div. 0A and Div. 1A plus Div. 1B (Item 3a)
      iv) Greenland halibut in Div. 0B + Div. 1C-1F (Item 3b)
      v) Greenland halibut in inshore areas of Div. 1A (Item 4)
      vi) *Pandalus borealis* in SA 0 + 1 (Item 5)
      vii) *Pandalus borealis* east of Greenland and in the Denmark Strait (in conjunction with ICES). (Item 5)
3. Scientific Advice from Council on its own Accord
   a) Roughhead grenadier in SA2+3 (monitor)

VIII. Review of Future Meetings Arrangements
1. Scientific Council, Sep 2012
2. Scientific Council, Oct 2012
3. Scientific Council, Jun 2013
4. Scientific Council, Sep 2013
5. Scientific Council, Oct/Nov 2013
6. NAFO/ICES Joint Groups
   a) NIPAG, 17-25 Oct 2012
   b) NIPAG, 2013
7. WGEAFM
8. WGDEC
9. WGRP
10. WGHARP

IX. Arrangements for Special Sessions
1. Topics for future Special Sessions
   a) Joint ICES – NAFO Gadoid Symposium
   b) SISAM Conference
   c) Observer Scheme Conference, Chile.
   d) ICES IMR Bottom Trawl Symposium, Tromso, Norway

X. Meeting Reports
1. Working Group on EAFM, Dec 2011
2. Ad hoc Working Group on Exceptional Circumstances, Jan – Mar 2012
3. Report from WGDEC, Mar 2012
4. WGRP

5. WGHARP
6. WGNARS
7. Meetings attended by the Secretariat:
    a) GIS Symposium
    b) FAO VME Database
    c) CWP
    d) FIRMS
    e) Science and Sustainability Forum
    f) World Fisheries Congress

XI. Review of Scientific Council Working Procedures/Protocol

1. Performance assessment recommendations to Scientific Council (Annex 4)
2. Issues arising from the GC Working Group on the Plan of Action
3. General Plan of Work for September 2012 Annual Meeting
4. Other Matters
    a) ICES invitation to participate in GHL benchmark meetings
    b) Scientific Council position on ICES advice relating to Cod in SA1(inshore).

XII. Other Matters

1. Designated Experts
2. Stock Assessment spreadsheets
3. Meeting Highlights for NAFO Website
4. Scientific Merit Awards
5. Budget items
6. Other Business

XIII. Adoption of Committee Reports

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

XIV. Scientific Council Recommendations to General Council and Fisheries Commission

XV. Adoption of Scientific Council Report

XVI. Adjournment

AGENDA II - SCIENTIFIC COUNCIL MEETING, 27 AUGUST – 7 SEPTEMBER 2012

I. Opening (Chair: Carsten Hvingel)

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

II. Fisheries Science (STACFIS Chair: Jean-Claude Mahé)

1. Opening
2. Interim Monitoring Updates
   a) Northern Shrimp in Div. 3M
   b) Northern Shrimp in Div. 3LNO

III. Special Requests from the Fisheries Commission

1. From September 2011
   a) Update on Advice for Northern Shrimp in Division 3M (Item 1)
   b) Update on Advice for Northern Shrimp in Divisions 3LNO (Item 1)
   c) PA Reference Points for shrimp in Div. 3LNO (Item 3)

IV. Adoption of Reports

1. Committee Report of STACFIS
2. Report of Scientific Council

V. Adjournment

AGENDA III. SCIENTIFIC COUNCIL MEETING, 17-21 SEPTEMBER 2012

I. Plenary Session
   1. Opening
   2. Appointment of Rapporteur
   3. Adoption of Agenda
   4. Plan of Work

II. Review of Scientific Council Recommendations

III. Research Coordination
   1. Opening
   2. Fisheries Statistics
      a) Progress Reports on Secretariat Activities
      b) Review of STATLANT21
   3. Research Activities
      a) Surveys Planned for 2012 and early 2013
   4. Other Matters
      a) Review of SCR and SCS Documents
      b) Other Business

IV. Fisheries Science
   1. Opening
   2. Any matter outstanding from the WebEx SC meeting, 7 September.
      a) Northern Shrimp in Div. 3M and Div. 3LNO
   3. Nomination of Designated Experts
   4. Other Matters
      a) Review of SCR and SCS Documents
      b) Other Business

V. Special Requests from the Fisheries Commission
   1. *Ad hoc* Requests from Current Meeting

VI. Meeting Reports
   1. Fisheries Commission WGFMS-CPRS
   2. Fisheries Commission WGFMS-VME
   3. Meetings Attended by the Secretariat

VII. Review of Future Meeting Arrangements

VIII. Future Special Sessions
   1. ICES/NAFO Gadoid Symposium
   2. World Conference on Stock Assessment Methods

IX. Other Matters
   1. Matters Arising from the NAFO Performance Assessment
   2. Report of the Peer Review of STACFIS Catches
   3. Report of the Joint FC/SC Meeting
   4. Merit Award Nominations

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

XI. Adjournment

AGENDA IV - SCIENTIFIC COUNCIL MEETING, 17-24 OCTOBER 2012

I. Opening (Chair: Carsten Hvingel)

1. Appointment of Rapporteur
2. Adoption of Agenda[1]
3. Attendance of Observers
4. Plan of Work

II. Review of Recommendations in 2011 and in 2012

III. NAFO/ICES *Pandalus* Assessment Group (Co-chairs Jean-Claude Mahé and Peter Shelton)

IV. Formulation of Advice (see Annexes 1–3 of Appendix I)

1. Request from Fisheries Commission (Items 3, 4 and 5 of Annex I)
   a) Northern shrimp (Div. 3M)
   b) Northern shrimp (Div. 3LNO)
2. Requests from Coastal States (Items 1 and 2 of Annex II, item 5 of Annex IIIa, Annex IIIb and IIIc)
   a) Northern shrimp (Subareas 0 and 1)
   b) Northern shrimp (in Denmark Strait and off East Greenland)

V. Other Matters

1. Scheduling of Future Meetings
2. Topics for Future Special Sessions
3. Items arising from the NAFO Performance Assessment
4. Other Business

VI. Adoption of Scientific Council and NIPAG Reports

VII. Adjournment

[1] Agenda to include relevant outcomes of the SC Shrimp Advice Update Meeting and the NAFO Annual Meeting on 17–21 September 2012.

AGENDA V - NIPAG MEETING, 17–24 OCTOBER 2012

I. Opening (Co-chairs: Jean-Claude Mahé and Peter Shelton)

1. Appointment of Rapporteur
2. Adoption of Agenda[1]
3. Plan of Work

II. General Review

1. Review of Recommendations in 2010 and in 2011
2. Review of Catches

III. Stock Assessments

- Northern shrimp (Division 3M)
- Northern Shrimp (Divisions 3LNO)
- Northern shrimp (Subareas 0 and 1)
- Northern shrimp (in Denmark Strait and off East Greenland)
- Northern shrimp in Skagerrak and Norwegian Deep (ICES Divisions IIIa and IVa East)
- Northern Shrimp in Barents Sea and Svalbard area (ICES Sub-areas I & II)
- Northern shrimp in Fladen Ground (ICES Division IVa)

IV. Other Business

V. Adjournment

[1] Agenda to include relevant outcomes of the Scientific Council Shrimp Advice Update Meeting and the NAFO Annual Meeting on 17–21 September 2012.

Annex 1. Fisheries Commission's Request for Scientific Advice on Management in 2013 and Beyond of Certain Stocks in Subareas 2, 3 and 4 and Other Matters

1. The Fisheries Commission with the concurrence of the Coastal State as regards to the stocks below which occur within its jurisdiction ("Fisheries Commission") requests that the Scientific Council provide advice in advance of the 2012 Annual Meeting, for the management of Northern shrimp in Div. 3M, 3LNO in 2013. The advice should be provided as a range of management options and a risk analysis for each option (rather than a single TAC recommendation).

   Noting that Scientific Council will meet in October of 2011 for 2013 TAC advice, Fisheries Commission requests the Scientific Council to update its advice on shrimp stocks in 2012 for 2013 TAC.

   Fisheries Commission further requests that SC provide advice in accordance to Annex 1.

2. Fisheries Commission requests that the Scientific Council provide advice for the management of the fish stocks below according to the following assessment frequency (unless Fisheries Commission requests additional assessments):

Two year basis	Three year basis
American plaice in Div. 3LNO	American plaice in Div. 3M
Capelin in Div. 3NO	Cod in Div. 3NO
Cod in Div. 3M	Northern shortfin squid in SA 3+4
Redfish in Div 3LN	Redfish in Div. 3O
Redfish in Div. 3M	Witch flounder in Div. 2J+3KL
Thorny skate in Div. 3LNOPs	Witch flounder in Div. 3NO
White hake in Div. 3NOPs	
Yellowtail flounder in Div. 3LNO	

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

   In 2012, advice should be provided for 2013 and 2014 for Redfish in Div. 3LN and Thorny skate in Div. 3LNOPs and for 2013, 2014 and 2015 Northern shortfin squid in SA 3+4.

   In addition, advice should be provided in 2012 for cod Div. 3M.

   The advice should be provided as a range of management options and a risk analysis for each option (rather than a single TAC recommendation). Additionally, Fisheries Commission requests that SC provide advice in accordance to Annex 1.

   The Fisheries Commission also 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 bycatches in other fisheries, provide updated advice as appropriate.

3. With respect to Northern shrimp (*Pandalus borealis*) in Div. 3LNO, noting the NAFO Framework for Precautionary Approach and recognizing the desire to demonstrate NAFO's commitment to applying the precautionary approach, Fisheries Commission requests the Scientific Council to:

   a) identify F_{msy}

   b) identify B_{msy}

c) provide advice on the appropriate selection of an upper reference point for biomass (e.g. B_{buf})

4. The Fisheries Commission adopted in 2010 an MSE approach for Greenland halibut stock in Subarea 2 + Division 3KLMNO (FC Working Paper 10/7). This approach considers a survey based harvest control rule (HCR) to set a TAC for this stock on an annual basis for the next four year period. The Fisheries Commission requests the Scientific Council to:

   a) Monitor and update the survey slope and to compute the TAC according to HCR adopted by the Fisheries Commission according to Annex 1 of FC Working Paper 10/7.

   b) Advise on whether or not an exceptional circumstance is occurring.

5. Fisheries Commission requests the Scientific Council to examine the consequences resulting from a decrease in mesh size in the mid-water trawl fishery for redfish in Div. 3LN to 90mm or lower.

6. The Fisheries Commission adopted in September 2011, conservation plans and rebuilding strategies for 3NO cod and 3 LNO American plaice and "recognizing that further updates and development of the plans may be required to ensure that the long term objectives are met". The Fisheries Commission requests the Scientific Council to:

   a) Provide advice on the addition of a new intermediate reference point (i.e. B_{isr}) in the NAFO precautionary approach framework to delineate an additional zone between B_{lim} and B_{msy} as proposed by the proposed by the working group

   b) Taking into consideration the new reference point B_{isr}, provide advice on an updating NAFO PA framework and provide a description for each zone.

   c) Provide advice on an appropriate selection of the B_{isr} value for Div. 3NO cod and Div. 3 LNO American plaice.

   d) Review B_{msy} and F_{msy} provided in 2011 for both stocks and quantify uncertainty surrounding these estimates.

7. Fisheries Commission requests the Scientific Council to review the conservation and rebuilding plans of 3LNO American Plaice (NAFO/FC Doc. 11/4, Annex 4) and 3NO Cod (NAFO/FC Doc. 11/4, Annex 5). Through projections and a risk based approach, evaluate the performance of the present rebuilding plans in terms of expected time frames (5 / 10 / 15 years) and associated probabilities to reach indicated limit and target biomass levels and catches. Projections should assume appropriate levels of recruitment and the status quo fishing mortality (3-year average scaled and unscaled) until reaching biomass levels above Blim.

8. Fisheries Commission requests the Scientific Council to evaluate the Harvest Control Rule (HCR) indicated below as an alternative to the HCR of the 3LNO American Plaice (NAFO/FC Doc. 11/4, Annex 4, item 4) and 3NO Cod (NAFO/FC Doc. 11/4, Annex 5, item 4) Conservation Plans and Rebuilding Strategies. Through projections and a risk based approach, evaluate the performance of this HCR in terms probabilities associated with maintaining Biomass above B_{lim} and ensuring continuous SSB growth. SC should provide SSB and associated catch trajectories for 5 / 10 / 15 years. Projections should assume appropriate levels of recruitment and the status quo fishing mortality (3-year average scaled and unscaled) until reaching biomass levels above B_{lim}.

Harvest Control Rule:

a) When SSB is below B_{lim}:

   i. no directed fishing, and
   ii. bycatch should be restricted to unavoidable bycatch in fisheries directing for other species

b) When SSB is above B_{lim}:

   If P y+1 > 0.9 Then Fy+1 = F0.1 * Py+1

   Else

   Fy+1 = 0

   TACy+1 = B y+1 * Fy+1

   Where:

   Fy+1 = Fishing mortality to project catches for the following year.

   Py+1 = Probability of projected Spawning Stock Biomass to be above B_{lim}.

   B y+1 = Exploitable biomass projected for the following year.

9. The Fisheries Commission requests the Scientific Council to conduct a full assessment of 3LNO American Plaice and provide advice in accordance to the rebuilding plan currently in place.

10. On the Flemish Cap, there seems to be a connection between the most recent decline of the shrimp stock, the recovery of the cod stock and the reduction of the redfish stock. The Fisheries Commission requests the Scientific Council to provide an explanation on the possible connection between these phenomena. It is also requested that SC advises on the feasibility and the manner by which these three species are maintained at levels capable of producing a combined maximum sustainable yield, in line with the objectives of the NAFO Convention.

11. Fisheries Commission requests the Scientific Council to define B_{msy} for cod in Division 3M and to propose a Harvest Control Rule (HCR) consistent with the NAFO Precautionary Approach Framework. It also requests the Scientific Council to define the estimated timeframe to reach B_{msy} under different scenarios, consistent with the proposed HCR.

12. Scientific Council is asked to provide, where available, qualitative and quantitative information including possible comparisons on bycatches of various species in directed fisheries on stocks under NAFO management.

13. For the cod stock in Divisions 2J+3KL, the Scientific Council is requested to comment on the trends in biomass and state of the stock in the most recent Science Advisory Report from the Canadian Science Advisory Secretariat.

14. Taking note that recent point estimates for 3NO Witch flounder of the Canadian Autumn survey are 2-3 times higher than in 1994 when the moratorium was first implemented and are among the highest in the times series ,

and while more variable the recent point estimates of the Canadian Spring survey are abut 50% higher than in 1994:

a) What are the relative strengths and weaknesses of all the indices of abundance of witch?

b) What are plausible reasons for different abundance trends in the spring and autumn surveys of the SAME STRATA, and what are the rationales to support either set of results over the other?

c) How might the confidence intervals around the point estimates over the time series affect the interpretations of stock trend and current status?

d) What evidence exists (if any) to indicate whether any changes in natural mortality have occurred since the early 1990's, e.g. condition of the fish?

e) Is it plausible there may be a different survey catchability for younger/smaller fish relative to older/larger fish (applicable to witch flounder), and how might this affect our interpretation of stock trends and status?

f) What might be reasonable options for reference point proxies, with associated rationale, including those based on one or a combination of survey indices?

15. As per the recommendation outlined in the report of the Working Group of Fishery Managers and Scientists on Vulnerable Marine Ecosystems adopted in September 2011, the Fisheries Commission requests the Scientific Council to produce a detailed list of VME indicator species and possibly other VME elements.

16. Given the progress made by Scientific Council on the development of the GIS model for the evaluation of bycatch thresholds for sponges as requested by Fisheries Commission in its 2010 Annual Meeting, and mindful of the need for further refining this modelling framework, as well as exploring its potential utility for its application to other VME-defining species, Fisheries Commission requests the Executive Secretary to provide to the Scientific Council anonymous VMS data in order to further develop the current sponge model as requested by the Fisheries Commission in 2010 and to assess the feasibility of developing similar models for other VME-defining species(e.g. corals).

17. Fisheries Commission requests the Scientific Council to make recommendations for encounter thresholds and move on rules for groups of VME indicators including sea pens, small gorgonian corals, large gorgonian corals, sponge grounds and any other VME indicator species that meet the FAO Guidelines for VME and SAI. Consider thresholds for 1) inside the fishing footprint and outside of the closed areas and 2) outside the fishing footprint in the NRA, and 3) for the exploratory fishing area of seamounts if applicable.

18. Noting Article 4bis (now Article 12 in the 2012 NCEM) - Assessment of bottom fishing of the NAFO Conservation and Enforcement measures. " The Scientific Council, with the co-operation of Contracting Parties, shall identify, on the basis of best available scientific information, vulnerable marine ecosystems in the Regulatory Area and map sites where these vulnerable marine ecosystem are known to occur or likely to occur and provide such data and information to the Executive Secretary for circulation to all Contracting Parties".

    The Fisheries Commission requests the Scientific Council to produce a comprehensive map of the location of VME indicator species and elements in the NRA as defined in the FAO International Guidelines for the Management of Deep Sea Fisheries in the High Seas. This includes canyon heads and spawning grounds and any other VME not protected by the current closures to protect coral and sponge. This will be used by Contracting Parties to complete impact assessments

19. As stated in the "Reassessment of the Impact of NAFO Managed Fisheries on known or Likely Vulnerable Marine Ecosystems" (NAFO FC WP 11/24), the Scientific Council in collaboration with the Working Group of Fishery Managers and Scientists on Vulnerable Marine Ecosystem will conduct a reassessment of NAFO bottom fisheries by 2016 and every 5 years thereafter. In preparation for reassessments, the Fisheries Commission requests the Scientific Council to develop a workplan for completing the initial reassessment and identifying the resources and information to do so.

Annex1 – Additional guidance in regards to questions 1 and 2.

Mindful of the desire to move to a risk-based approach in the management of fish stocks, Fisheries Commission requests the Scientific Council to provide a range of management options as well as a risk analysis for each option as outlined in the provisions below, rather than a single TAC recommendation.

1. The Fisheries Commission request the Scientific Council to consider the following in assessing and projecting future stock levels for those stocks listed above. These evaluations should provide the information necessary for the Fisheries Commission to consider the balance between risks and yield levels, in determining its management of these stocks:

    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 catch 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_{2011} in 2013 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 catch 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, defined in relation to both long-term productivity regimes, and current productivity regimes to the extent these may differ. In those cases where present spawning stock size is a matter of scientific concern in relation to the continuing reproductive potential of the stock, 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 catches 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 2013 and subsequent years over a range of fishing mortality rates (for as many years as the data allow)
- (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.

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

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 which would 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.

3. 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 identified 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}.

Annex 2. Canadian Request for Scientific Advice on Management in 2013 of Certain Stocks in Subareas 0 to 4

Canada requests that the Scientific Council, at its meeting in advance of the 2012 Annual Meeting of Northwest Atlantic Fisheries Organization, subject to the concurrence of Denmark (on behalf of Greenland), provide advice on the scientific basis for management in 2013 of the following stocks:

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 Total Allowable Catch be maintained for different areas of the distribution of Greenland halibut.

a) 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 2013, and to specifically advise on appropriate Total Allowable Catch levels for 2013, 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) Recognizing that only general biological advice and/or catch data are available, few standard criteria exist on which to base advice and risk implications. The stock status should be evaluated in the context of the management requirements for long-term sustainability and management options should be provided in risk-based terms. The Scientific Council is therefore asked to provide risk implications, to the extent possible, for a range of total allowable catch options, from -5% to +15% of the current total allowable catch.

c) Presentation of the results should include the following:

- a graph of historical catch for the longest time period possible;
- a graph of the biomass index for the longest time period possible; and
- any other graph the Scientific Council feels is relevant.

2. Shrimp (Divisions 0A and Subarea 1)

Canada requests the Scientific Council to consider the following options in assessing and projecting future stock levels for Shrimp in Subareas 0 and 1:

a) The status of the stock should be reviewed and management options evaluated in terms of their implications for fishable stock size, spawning stock size, recruitment prospect, catch rate and catch in both the short and long term. The implications of catch options ranging from 50,000 t to the catch corresponding to Z_{msy}, in 10,000 t increments, should be forecast for 2013 through 2017 if possible, and evaluated in relation to precautionary reference points of both mortality and fishable stock biomass. The present stock size and fishable 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.

b) Management options should be provided within the Northwest Atlantic Fisheries Organization Precautionary Approach Framework. Uncertainties in the assessment should be evaluated and presented in the form of risk analyses related to the limit reference points of B_{lim} and Z_{MSY}.

c) Presentation of the results should include the following:

- a graph and table of historical yield and fishing mortality for the longest time period possible;
- a graph of biomass relative to B_{msy},and recruitment levels for the longest time period possible.

- a graph of the stock trajectory compared to B_{lim} and/or B_{MSY} and Z_{MSY};

- graphs and tables of total mortality (Z) and fishable biomass for a range of projected catch options (as noted in 2 a) for the years 2013 to 2017 if possible. Projections should include both catch options and a range of cod biomass levels considered appropriate by SC. Results should include risk analyses of falling below B_{MSY} and B_{lim}, and of exceeding Z_{MSY};

- a graph of the total area fished for the longest time period possible; and

- any other graph or table the Scientific Council feels is relevant.

NOTE**:** 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.

Annex 3. Denmark (Greenland) Request for Scientific Advice on Management in 2013 of Certain Stocks in Subarea 0 and 1

Denmark (on behalf of Greenland) request Advice from Scientific Council on Management in 2013 of Certain Stocks in Subarea 0 and 1

1. For Roundnose grenadier in Subarea 0 + 1 advice was in 2011 given for 2012-2014. Denmark (on behalf of Greenland) requests the Scientific Council to continue to monitor the status of Roundnose grenadier in Subareas 0 and 1 annually and, should significant changes in the stock status be observed (e.g. from surveys), the Scientific Council is requested to provide updated advice as appropriate.

2. Advice for golden redfish (*Sebastes marinus*), demersal deep-sea redfish (*Sebastes mentella*), American plaice (*Hippoglossoides platessoides*), Atlantic wolfish (*Anarhichas lupus*), spotted wolfish (*A. minor*) in Subarea 1 was in 2011 given for 2012-2014. Denmark (on behalf of Greenland) requests the Scientific Council to continue to monitor the status of these species annually, and should significant change in stock status be observed, the Scientific Council is requested to provide updated advice as appropriate.

3. Subject to the concurrence of Canada as regards Subareas 0 and 1, the Scientific Council is requested to provide advice on appropriate TAC levels for 2013 separately for Greenland halibut in:

a) The offshore area of NAFO Division 0A and Division 1A plus Division 1B

b) NAFO Division 0B plus Divisions 1C-1F. The Scientific Council is also asked to advise on any other management measures it deems appropriate to ensure the sustainability of these resources.

4. Advice for Greenland halibut in Division 1A inshore was in 2010 given for 2011-2012. Denmark (on behalf of Greenland), requests the Scientific Council for advice for Greenland halibut in Division 1A inshore for 2013-2014.

5. Subject to the concurrence of Canada as regards Subarea 0 and 1, Denmark (on behalf of Greenland) further requests the Scientific Council, before December 2012, provide advice on the scientific basis for management of Northern shrimp (Pandalus borealis) in Subarea 0 and 1 in 2013 and for as many years ahead as data allows for.

6. Furthermore, the Scientific Council is in cooperation with ICES requested to provide advice on the scientific basis for management of Northern shrimp (Pandalus borealis) in Denmark Strait and adjacent waters east of southern Greenland in 2013 and for as many years ahead as data allows.

Additional Request

7. With respect to a condition imposed by the Marine Stewardship Council on its certification of the Northern shrimp (*Pandalus borealis*) fishery, Scientific Council is requested to include in its advisory document a summary that shows how the harvest control rule specified in the management plan is being applied to generate the desired exploitation consistent with NAFO advice.

Annex 4. ICES ToRs for NIPAG

From 2011 ACOM and ACOM Expert Group ToR's
(http://ices.dk/iceswork/recs/2011%20Resolutions/ACOM%20Resolutions%202011.pdf)

Generic ToRs for Regional and Species Working Groups The following ToRs apply to: AFWG, HAWG, NWWG, NIPAG, WGWIDE, WGBAST, WGBFAS, WGNSSK, WGCSE, WGDEEP, WGHMM, WGEF and WGHANSA.

The working group should focus on:

ToRs a) to g) for stocks that will have advice (or biennial first year),

ToRs b) to d) and f) for stocks with biennial advice in the second year

a) Produce a first draft of the advice on the fish stocks and fisheries under considerations according to ACOM guidelines and implementing the generic introduction to the ICES advice (Section 1.2).

b) Update, quality check and report relevant data for the working group:

   i) Load fisheries data on effort and catches (landings, discards, bycatch, including estimates of misreporting when appropriate) in the INTERCATCH database by fisheries/fleets. Data should be provided to the data coordinators at deadlines specified in the ToRs of the individual groups. Data submitted after the deadlines can be incorporated in the assessments at the discretion of the Expert Group chair;

   ii) Abundance survey results;

   iii) Environmental drivers.

   iv) Propose specific actions to be taken to improve the quality of the data (including improvements in data collection). Where relevant suggest improvement for the revision of the DCF.

c) Produce an overview of the sampling activities on a national basis based on the INTERCATCH database and report the use of InterCatch;

d) In cooperation with the Secretariat, update the description of major regulatory changes (technical measures, TACs, effort control and management plans) and comment on the potential effects of such changes including the effects of newly agreed management and recovery plans. Describe the fleets that are involved in the fishery.

e) For each stock update the assessment by applying the agreed assessment method (analytical, forecast or trends indicators) as described in the stock annex. If no stock annex is available this should be prepared prior to the meeting.

f) Produce a brief report of the work carried out by the Working Group. This report should summarise for the stocks and fisheries where the item is relevant:

   i) Input data (including information from the fishing industry and NGO that is pertinent to the assessments and projections);

   ii) Where misreporting of catches is significant, provide qualitative and where possible quantitative information and describe the methods used to obtain the information;

   iii) Stock status and catch options for next year;

   iv) Historical performance of the assessment and brief description of quality issues with the assessment;

   v) Mixed fisheries overview and considerations;

   vi) Species interaction effects and ecosystem drivers;

   vii) Ecosystem effects of fisheries;

   viii) Effects of regulatory changes on the assessment or projections;

g) In the autumn, where appropriate, check for the need to reopen the advice based on the summer survey information and the guidelines in AGCREFA2 (2012 report).

NIPAG – Joint NAFO/ICES Pandalus Assessment Working Group

2011/2/ACOM15 The **Joint NAFO/ICES *Pandalus* Assessment Working Group** (NIPAG), chaired by Peter Shelton, Canada (ICES) and Jean-Claude Mahé, France (NAFO), will meet at IMR in Tromsø, Norway, 17–24 October 2012 to:

a) Address generic ToRs for Fish Stock Assessment Working Groups (see table below);

b) Consider shrimp stocks as decided by NAFO Sc. C.

c) Compile, update, analyse and document time-series of bycatches in the shrimp fishery

The assessments will be carried out on the basis of the stock annex in National Laboratories, prior to the meeting. This will be coordinated as indicated in the table below. Material and data relevant for the meeting must be available to the group no later than 14 days prior to the starting date.

NIPAG will report by 29 **October 2012 on the ICES shrimp stocks for the attention of** ACOM.

Fish Stock	Stock Name	Stock Coordinator	Assessment Coord. 1	Assessment Coord. 2	Perform assessment	Advice
pand-barn	Northern Shrimp (*Pandalus borealis*) in Subareas I and II (Barents Sea)	Norway	Norway	Norway	Y	Update
pand-sknd	Northern shrimp (*Pandalus borealis*) in Division IIIa West and Division IVa East (Skagerrak and Norwegian Deeps)	Denmark	Norway	Sweden	Y	Update
pand-flad	Northern shrimp (*Pandalus borealis*) in Division IVa (Fladen Ground)	Denmark	Denmark	Denmark	Y	Same advice as last year

LIST OF RESEARCH AND SUMMARY DOCUMENTS, 2012

SCR Documents

Doc No.	Serial No	Author	Title
SCR 12/001	withdrawn		
SCR 12/002	N6017	Mads Hvid Ribergaard	Oceanographic Investigations off West Greenland 2011
SCR 12/003	N6020	O.A. Jørgensen	Survey for Greenland Halibut in NAFO Divisions 1C-1D, 2011
SCR 12/004	N6026	D. Hebert, R. G. Pettipas and B. Petrie	Physical Oceanographic Conditions on the Scotian Shelf and in the eastern Gulf of Maine (NAFO areas 4V,W,X) during 2011
SCR 12/005	N6029	Heino Fock and Christoph 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 1982-2011
SCR 12/006	N6030	Esther Román, Ángeles Armesto and Diana González-Troncoso	Results for the Spanish Survey in the NAFO Regulatory Area of Division 3L for the period 2003-2011
SCR 12/007	N6031	G. Maillet, P. Pepin, C. Johnson, B. Casault, C. Caverhill, S. Fraser, G. Harrison, H. Maass, C. Porter, G. Redmond, T. Shears, J. Spry	Biological and Chemical Oceanographic Conditions on the Newfoundland and Labrador Shelf, Grand Banks, Scotian Shelf, and the Gulf of Maine During 2011
SCR 12/008	N6032	A. Akimova and B. Cisewski	Hydrographic conditions off West Greenland in 2011.
SCR 12/009	N6033	E. B. Colbourne, 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 2011
SCR 12/010	N6034	Esther Román, Concepción González-Iglesias and Diana 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 2003-2011
SCR 12/011	N6035	J. Brattey, B. P. Healey, D. Parsons, E. Murphy, D. Power, M. J. Morgan, and K. Dwyer	Update on trends in biomass and state of the stock of northern (2J+3KL) cod
SCR 12/012	N6036	Diana González-Troncoso, Esther Román and Xabier Paz	Results for Greenland halibut, American plaice and Atlantic cod of the Spanish survey in NAFO Div. 3NO for the period 1997-2011
SCR 12/013	N6037	Bruce Bradshaw, Luc Bujold, Diana Cardoso, Graham Glenn, Claude Guay, Mathieu Ouellet, Krista Sun	Integrated Science Data Management NAFO Report 2012
SCR 12/014	N6038	Diana González-Troncoso, Elena Guijarro-Garcia and Xabier Paz	Yellowtail flounder, redfish (*Sebastes* spp) and witch flounder indices from the Spanish Survey conducted in Divisions 3NO of the NAFO Regulatory Area
SCR 12/015	N6039	Diana González-Troncoso, Elena Guijarro and Xabier Paz	Biomass and length distribution for roughhead grenadier, thorny skate and white hake from the surveys conducted by Spain in NAFO 3NO

SCR 12/016	N6040	Rasmus Nygaard and Ole A. Jørgensen	Biomass and Abundance of Demersal Fish Stocks off West Greenland Estimated from the GINR Shrimp Fish Survey, 1988-2011.
SCR 12/017	N6041	K.S. Dwyer, B.P. Healey, and M.J. Morgan, and R. M. Rideout	Investigations into ADAPT formulations for estimation of F_{ratio} (F between plus group and the last true age) for American plaice in Div. 3LNO
SCR 12/018	N6042	I. Yashayaev and B.J.W. Greenan	Environmental Conditions in the Labrador Sea during 2011
SCR 12/019	N6043	B.P. Healey, W.B. Brodie, D.W. Ings, and D.J. Power	Performance and description of Canadian multi-species surveys in NAFO subarea 2 + Divisions 3KLMNO, with emphasis on 2009-2011.
SCR 12/020	N6044	Fernando González-Costas and Diana González-Troncoso	Biological Reference Points for Cod 3NO
SCR 12/021	N6045	Fernando González-Costas	Spanish fisheries in NAFO Subarea 3
SCR 12/022	N6046	Paramonov V.V., Korzun Yu.V., Rebik S.T., Kukharev N. N.	On historical experience of the Ukraine fishery in the Northwest Atlantic
SCR 12/023	N6047	M. A. Treble	Analysis of data from a trawl survey in NAFO Division 0B
SCR 12/024	N6050	M. Joanne Morgan Dolores Garabana and Fran Saborido-Rey	Distribution of spawning and sex ratio in Greenland halibut
SCR 12/025	N6051	Adriana Nogueira Gassent, Xabier Paz and Diana González-Troncoso	Persistence and Variation on the Groundfish Assemblages on the Southern Grand Banks (NAFO Divisions 3NO): 2002-2011
SCR 12/026	N6052	Antonio Vázquez	Results from Bottom Trawl Survey on Flemish Cap of July 2011
SCR 12/027	N6053	González Iglesias, C., González–Costas, F and González–Troncoso, D.	Atlantic cod predation on redfish in Flemish Cap
SCR 12/028	N6054	M.R. Simpson and C.M. Miri	Assessment of Thorny Skate (*Amblyraja radiata* Donovan, 1808) in NAFO Divisions 3LNO and Subdivision 3Ps
SCR 12/029	N6055	Carina Gjerdrum, Karel Allard, and François Bolduc	Pelagic seabird monitoring and research in the northwest Atlantic
SCR 12/030	N6056	B. P. Healey	Greenland halibut (*Reinhardtius hippoglossoides*) in NAFO Subarea 2 and Divisions 3KLMNO: Stock Trends based on annual Canadian Research Vessel survey results during 1978-2011
SCR 12/031	N6057	O.A. Jørgensen and M. A. Treble	Assessment of the Greenland Halibut Stock Component in NAFO Subarea 0 + Division 1A Offshore + Divisions 1B-1F
SCR 12/032	N6059	A. M. Ávila de Melo, R. Alpoim, and Diana González Troncoso	An ASPIC Based Assessment of Redfish (S. mentella and S. fasciatus) in NAFO Divisions 3LN (can a surplus production model cope with bumpy survey data?)
SCR 12/033	N6060	K.S. Dwyer, M.J. Morgan, D. Maddock Parsons, W.B. Brodie, B.P. Healey, and R. Rideout	An assessment of American plaice in NAFO Div. 3LNO

SCR 12/034	N6061	M. Joanne Morgan	Bayesian surplus production models applied to American plaice in NAFO Div. 3LNO
SCR 12/035	N6062	Antonio Vázquez and Mónica Mandado	A stochastic VPA of the Flemish Cap cod stock
SCR 12/036	N6063	Rasmus Nygaard and Jesper Boje	An Assessment of the Greenland Halibut Stock Component in NAFO Division 1A Inshore
SCR 12/037	N6064	Diana González-Troncoso1,Carsten Hvingel, Antonio Vázquez and Fran Saborido	Assessment of the Cod Stock in NAFO Division 3M
SCR 12/038	N6065	Vinnichenko V.I., Fomin K.Yu., Pochtar M.V.,	Some Results from Russian Studies on Diet of Redfishes (*Sebastes* spp.) and Cod (*Gadus morhua*) on the Flemish Cap
SCR 12/039	N6066	Antonio Vázquez	On recruitment of the Flemish Cap cod stock
SCR 12/040	N6069	D. Maddock Parsons	Update on the distribution and abundance of witch flounder (*Glyptocephalus cynoglossus)* on the Flemish Cap and in the Flemish Pass based on Canadian and EU research vessel surveys 2003-2011
SCR 12/041	N6070	M. Joanne Morgan and P.A. Shelton	Evaluation of an alternative harvest control rule for 3LNO American plaice
SCR 12/042	N6075	J.M. Casas Sánchez	Division 3M Northern shrimp (*Pandalus borealis*) – Interim Monitoring Update
SCR 12/043	N6076	D.C. Orr and D.J. Sullivan	Divisions 3LNO Northern Shrimp (*Pandalus borealis*) – Interim Monitoring Update
SCR 12/044	N6099	Michael C.S. Kingsley, Helle Siegstad and Kai Wieland	The West Greenland trawl survey for Pandalus borealis, 2012, with reference to earlier results
SCR 12/045	N6106	Michael C.S. Kingsley and Nanette Hammeken Arboe	Catch Table Update for the West Greenland Shrimp Fishery
SCR 12/046	N6107	Michael C. S. Kingsley	A Provisional Assessment of the Shrimp Stock off West Greenland in 2012
SCR 12/047	N6108	D. C. Orr and D. J. Sullivan	The 2012 assessment of the Northern Shrimp (*Pandalus borealis*, Kroyer) resource in NAFO Divisions 3LNO
SCR 12/048	N6109	Nanette Hammeken Arboe	The Fishery for Northern Shrimp (*Pandalus borealis*) off West Greenland, 1970–2012
SCR 12/049	N6111	C. Hvingel	Shrimp (*Pandalus borealis*) in the Barents Sea – Stock assessment 2012
SCR 12/050	N6112	C. Hvingel and T. Thangstad	Research survey information regarding northern shrimp (*Pandalus borealis*) in the Barents Sea and Svalbard area 2004-2012
SCR 12/051	N6113	Carsten Hvingel and Trude Thangstad	The Norwegian fishery for northern shrimp (Pandalus borealis) in the Barents Sea and round Svalbard 1970-2012
SCR 12/052	N6114	J. M. Casas	Assessment of the International Fishery for Shrimp (*Pandalus borealis*) in Division 3M (Flemish Cap), 1993-2012

SCR 12/053	N6115	J. M. Casas	Northern Shrimp (*Pandalus borealis*) on Flemish Cap Surveys 2012
SCR 12/054	N6116	J. M. Casas	The Spanish Shrimp Fishery on NAFO area (Division 3L) in 2011
SCR 12/055	N6117	González Iglesias, C. and Casas, J. M.	Atlantic Cod Predation on Northern shrimp in Flemish Cap (NAFO Div. 3M)
SCR 12/056	N6118	Casas, J.M., E. Román, J. Teruel, and G. Ramilo	Northern Shrimp (*Pandalus borealis*, Krøyer) from Spanish Bottom Trawl Survey 2012 in NAFO Div. 3LNO
SCR 12/057	N6119	Anja Retzel	A preliminary estimate of Atlantic cod (*Gadus morhua*) biomass in West Greenland offshore waters (NAFO Subarea 1) for 2012 and recent changes in the spatial overlap with Northern shrimp (*Pandalus borealis*)
SCR 12/058	N6120	Silver Sirp	Estonian Shrimp Fishery in 3L in 2010-2012
SCR 12/059	N6121	G. Søvik and T. Thangstad	Results of the Norwegian Bottom Trawl Survey for Northern Shrimp (*Pandalus borealis*) in Skagerrak and the Norwegian Deep (ICES Divisions IIIa and IVa east) in 2012
SCR 12/060	N6122	Zakharov D.V. and Lyubin P.A.	Results of Russian investigations of the northern shrimp in the Barents Sea in 2004-2012
SCR 12/061	N6123	Anders Nielsen, Sten Munch-Petersen, Ole Eigaard, Sovik Guldborg, and Mats Ulmestrand	A stochastic length-based assessment model for the Pandalus stock in Skagerrak and the Norwegian Deep
SCR 12/062	N6124	Helle Siegstad	Results of the Greenland Bottom Trawl Survey for Northern shrimp (*Pandalus borealis*) Off East Greenland (ICES ubarea XIV b), 2008-2012
SCR 12/063	N6125	Nanette Hammeken Arboe and Helle Siegstad	The Fishery for Northern Shrimp (*Pandalus borealis*) in Denmark Strait / off East Greenland – 2012
SCR 12/064	N6126	G. Søvik and T. Thangstad	The Norwegian Fishery for Northern Shrimp (Pandalus borealis) in Skagerrak and the Norwegian Deep (ICES Divisions IIIa and IVa east), 1970-2012
SCR 12/065	N6127	M. Ulmestrand, O. Eigaard, G. Søvik and Sten Munch-Petersen	The Northern shrimp (Pandalus borealis) Stock in Skagerrak and the Norwegian Deep (ICES Divisions IIIa and IVa East)
SCR 12/066	N6128	Carsten Hvingel	North Sea Pandalus benchmark stock assessment - a Bayesian surplus production model
SCR 12/067	N6135	Pepin	Ecoregions
SCR 12/068	N6136	Francisco Saborido-Rey and Alfonso Pérez-Rodríguez	Food consumption of Flemish Cap cod *Gadus morhua* and redfish *Sebastes* sp. using generic bioenergetic models

SCS Documents

Doc No.	Serial No	Author	Title
SCS 12/01	N6009		FC Request for Advice
SCS 12/02	N6010		Report of the NAFO ad hoc Working Group on Exceptional Circumstances, January – April 2012
SCS 12/03	N6012		Greenland Request for Advcie
SCS 12/04	N6013		Canada Request for Advcie
SCS 12/05	N6018	M. Pochtar and K. Fomin	Russian Research Report for 2011
SCS 12/06	N6019	S.Sirp	Estonian Research Report for 2011
SCS 12/07	N6021	K.A. Sosebee	United States Research Report for 2011
SCS 12/08	N6022	J. Vargas, R. Alpoim, E. Santos and A. M. Ávila de Melo	Portuguese Research Report for 2011
SCS 12/09	N6023	F. González-Costas, D. González-Troncoso, G. Ramilo, E. Román, J. Lorenzo, M. Casas, C. Gonzalez, A. Vázquez, and M. Sacau	Spanish Research Report for 2011
SCS 12/10	N6024	Greenland Institute of Natural Resources	Denmark/Greenland Research Report for 2011
SCS 12/11	N6025	NAFO Secretariat	Biological Sampling for 2011
SCS 12/12	N6027		Report of the catch estimation working group meeting
SCS 12/13	N6028	H. O. Fock and A. Akimova	German Research Report for 2011
SCS 12/14	6048	N. D. Templeman, Margaret Treble, Tim Siferd and Bill Brodie	Canadian Research Report
SCS 12/15	N6049	NAFO Secretariat	Tagging
SCS 12/16	N6058		Report of the NAFO Scientific Council Working Group on Reproductive Potential
SCS 12/17	N6067	Garry B. Stenson	Report of the Joint NAFO/ICES Working Group on Harp and Hooded Seals (WGHARP)
SCS 12/18	N6068	Odd Aksel Bergstad	Report to the NAFO Scientfic Council - ICES/NAFO Joint Working Group on Deep-water Ecology (WGDEC)
SCS 12/19	N6072	NAFO	Report of the Scientific Council, 1-14 June 2012
SCS 12/20	N6077	NAFO	Report of the Scientific Council, 27 August – 7 September 2012
SCS 12/21	N6079		Available Data from the Commercial Fisheries Related to Stock Assessment (2010) and Inventory of Biological Surveys Conducted in the NAFO Area in 2010 and Biological Surveys Planned for 2011 and Early-2012
SCS 12-22	N6100	NAFO	Report of the Scientific Council, 17-21 September 2012
SCS 12/23	N6132	NAFO	Report of NIPAG, 17-24 October 2012

SCS 12/24	N6133	NAFO	Report of the Scientific Council, 17-21 October 2012
SCS 12/25	N6134		Year-to-Year Survey Information
SCS 12/26	N6137	WGEAFM	Report of the WGEAFM Meeting, 21-20 November 2012

LIST OF REPRESENTATIVES, ADVISERS, EXPERTS AND OBSERVERS, 2012

		Meetings*			
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LIST OF RECOMMENDATIONS

Scientific Council 1-14 June 2012

FISHERIES ENVIRONMENT

The Council **adopted** the Report of the Standing Committee on Fisheries Environment (STACFEN), as presented by the Chair, Gary Maillet. The full report of STACFEN is in Appendix I.

The recommendations made by STACFEN for the work of the Scientific Council as **endorsed** by the Council, are as follows:

STACFEN **recommended** *input from Scientific Council for development of new time series and data products and to identify candidate species that could be evaluated in relation to the environment*.

STACFEN **recommended** that *consideration of support for one invited speaker to address emerging issues and concerns for the NAFO Convention Area during the June Meeting*.

PUBLICATIONS

The Council **adopted** the Report of the Standing Committee on Publication (STACPUB) as presented by the Chair, Margaret Treble. The full report of STACPUB is in Appendix II.

The recommendations made by STACPUB for the work of the Scientific Council as **endorsed** by the Council, are as follows:

STACPUB **recommended** that *an obituary be included in Volume. 44 of the Journal of the Northwest Atlantic Fishery Science for Spanish scientist, Dr. Laranneta, in English and Spanish*.

STACPUB **recommended** that the *Secretariat make further enquiries into how authorship is assigned (i.e. actual vs. corporate) when entering NAFO SC documents into the ASFA database in order to ensure that they can be located when searching using the actual authors name.*

STACPUB **recommended** that *digitizing the Sampling Yearbooks would be necessary, but not urgent*.

STACPUB **recommended** that *the Secretariat look to see if options for the current map projection are available and bring this to the next June meeting*.

STACPUB **recommended** that *a comprehensive and concise style sheet be followed for the Journal of Northwest Atlantic Fishery Science.*

STACPUB **recommended** that *the Secretariat initiate a review of the Scientific Council Reports format and to present to Scientific Council in September 2012 examples of format changes and information on whether a two volume approach would be a reasonable option to address concerns about the growing size of the Report.*

X. MEETING REPORTS

1. Working Group on EAFM, December 2011

Scientific Council **recommended** that *before design of survey sampling schemes are changed, more work be conducted in order to examine the trade-off between scientific sampling needs and potential impact on VMEs.*

STACFIS

4. Redfish in SA 1

d) Research Recommendations

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

STATUS: No progress in 2011. This recommendation is reiterated.

5a. Wolffish in Subarea 1

d) Research Recommendation

Noting the change in the request for other finfish STACFIS **recommended** that *the species composition and quantity of wolffish discarded in the shrimp fishery in SA1 be further investigated*.

STATUS: No progress

Noting the change in the request for other finfish STACFIS **recommended** that *the distribution of wolffish in relation to the main shrimp-fishing grounds in SA1 be investigated, in order to further discover means of reducing the amount of discarded bycatch*.

STATUS: No progress and this recommendation is reiterated.

5b. American plaice in Subarea 1

d) Research Recommendation

STACFIS **recommended** that *the species composition and quantity of American plaice and other fish species discarded in the shrimp fishery in SA1 be further investigated.*

STATUS: No progress and this recommendation is reiterated.

STACFIS **recommended** that *the distribution of these species in relation to the main shrimp-fishing grounds in SA1 be investigated, in order to further discover means of reducing the amount of discarded bycatch*.

STATUS: No progress

6. Cod in Div. 3M

j) Research recommendations

For Cod in Div. 3M STACFIS **recommended** that *an age reader comparison exercise be conducted*.

STATUS: No progress and this recommendation is reiterated.

For Cod in Div. 3M STACFIS **recommended** that *the most recent catch at age figures be revised*.

7. Redfish in Div. 3M

d) Research recommendations

For redfish in Div. 3M STACFIS reiterated its **recommendation** that *the important line of ecosystem research based on the feeding sampling routine of the EU survey catch be done on an annual basis*.

8. American plaice in Div. 3M

d) Research Recommendations

STACFIS **recommended** that *the utility of the XSA must be re-evaluated and the use of alternative methods (for eg. survey based models stock production models) continue to be attempted in the next assessment of Div. 3M American plaice.*

For Div. 3M American plaice, some common ages in the catch are outside of the F_{bar} range, therefore STACFIS **recommended** that *others ranges of ages in F_{bar} be explored.*

For Div. 3M American plaice, due to the recent good recruitment at low SSB, STACFIS **recommended** *to explore the Stock/Recruitment relationship and B_{lim}.*

STATUS (for all): Work is been done but no progress to report. All recommendations will be addressed during the next full assessment

10. Redfish in Div. 3LN

e) Research Recommendations

For redfish in Div. 3LN STACFIS **recommended** that, *in order to prevent increasing unfitness of the ASPIC model to most recent survey data, alternate age based models be explored with the existing data. To undertake such type of assessment Div. 3LN redfish age length keys for the 1990s and 2000s should be provided*.

For redfish in Div. 3LM STACFIS also **recommended**, *in order to allow the fitness of the ASPIC model to the full length of the main survey series, the review of appropriate methods to recalculate survey indices*.

13. Witch flounder in Div. 3NO

d) Research Recommendation

STACFIS **recommended** *further investigation of recruitment trends for witch flounder in Div. 3NO. This should include analysis of trends in abundance in the survey series, as well as examination of areal distribution of small witch flounder, particularly in years where deeper strata are covered by surveys*. STACFIS noted that analyses of recruitment will rely on length frequency data, as no ageing has been conducted on this stock since the early 1990s.

STATUS: Some analysis has been started, but there is no progress to report at this time. This recommendation is reiterated.

14. Capelin in Div. 3NO

f) Research recommendations

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

17. White hake in Div. 3NOPs

d) Research Recommendations

STACFIS **recommended** that *the genetic analyses of Div. 3NO versus Subdiv. 3Ps be continued; in order to help determine whether Div. 3NOPs White Hakes comprise a single breeding population*.

STATUS: Genetic studies are completed and results will be presented during the next full assessment therefore this recommendation is reiterated.

For White hake in Div. 3NO and Subdiv. 3Ps STACFIS **recommended** that *age determination should be conducted on otolith samples collected during annual Canadian surveys (1972-2011+); thereby allowing age-based analyses of this population*.

STATUS: Otoliths are being collected but have yet to be aged. This recommendation is reiterated

For White hake in Div. 3NO and Subdiv. 3Ps STACFIS **recommended** that *survey conversion factors between the Engel and Campelen gear be investigated for this stock*.

STATUS: No progress to date. This recommendation is reiterated.

For White hake in Div. 3NO and Subdiv. 3Ps STACFIS **recommended** that *the maturity time series be analyzed to investigate any potential annual changes in maturity*.

STATUS: No progress to date. This recommendation is reiterated.

18. Roughhead grenadier in SA 2+3

d) Research Recommendation

In 2010 STACFIS recommended that *further investigation on recruitment indices for roughhead grenadier in Subarea 2 and 3 will be carried out.*

STATUS: New information was not available in this matter.

In 2011 STACFIS recommended *to study the possibility of including in future assessments all surveys series for roughhead grenadier before 1995.*

STATUS: New information was not available in this matter.

Both recommendations will be addressed next year during the full assessment.

20. Greenland halibut in SA 2 + Div. 3KLMNO

f) Research Recommendations

STACFIS **recommended** *ongoing investigations into the assessment methods used*. This should include further explorations with the statistical catch at age model.

STATUS: No Progress. This recommendation is reiterated.

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

STATUS: Research ongoing, and this issue is also discussed further in the STACREC Report. This recommendation is reiterated.

There is no synoptic survey which covers the full range of this stock. In addition, very few age 10+ fish are captured in either commercial fisheries or in trawl surveys. STACFIS **recommended** *expansion of surveys to cover the entire stock distribution and/or exploratory surveys be conducted with gears other than those currently deployed to complement the existing survey data.*

Tagging experiments could provide information on movement, growth rates and validate the current aging methods. STACFIS **recommended** that *tagging experiments of Greenland Halibut in Sub-Area 2 and Divisions 3KLMNO be conducted*.

STATUS: A tagging experiment was conducted by Canada during early 2012, and additional experiments are planned for 2013. This recommendation is reiterated.

21. Northern shortfin squid in SA 3+4

d) Research Recommendation

In 2010, STACFIS **recommended** that *abundance and biomass indices from the Canadian multi-species bottom trawl surveys conducted during spring and autumn in Div. 3LNO, beginning with 1995, be derived using the two subsets of strata listed in SCR Doc. 06/45 in order to improve the precision of the indices.*

STATUS: No progress has been made. This recommendation is reiterated.

SEPTEMBER

IX. OTHER MATTERS

2. Report of the Peer Review of STACFIS Catches

Scientific Council received the progress report prepared by the Peer Review of STACFIS Catches. The issues raised can be broken into short- and longer term objectives.

Two perspectives:

3. Long term solution: secure that reliable catch data are submitted to Scientific Council.

4. Short term solution: provide fix to secure that 2013 stock assessment can be performed and management advice derived.

Ad. 1. Scientific Council has discussed various options which they intend to promote through the peer review group on the method of catch estimation for NAFO stocks.

Ad. 2. The only option at this stage is to assume that the STATLANT data represents an inaccurate estimate of catch for some stocks. When used in the assessment this will translate into increased uncertainty which will be reflected in the assessment results and hence requires more precaution in the advice.

Scientific Council **recommended** that *DE's meet with the chairs of STACFIS and STACREC to prepare a way to deal with these challenges in advance of the June Scientific Council meeting*.

NIPAG

3. Northern shrimp off West Greenland (NAFO Subareas 0 and 1),

NIPAG **recommended** that:

- *Given that the CPUE series for the Greenland sea-going and coastal fleets continue to agree while neither agrees with changes in the survey estimates of biomass since 2002, possible causes for change in the relationship between fishing efficiency and biomass should be investigated.*

- *More robust methods of including biomass index series in the quantitative assessment model should be investigated.*