

PART D

Miscellaneous

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AGENDA I. SCIENTIFIC COUNCIL MEETING, 4-19 JUNE 1997

- I. Opening (Chairman: W. R. Bowering)
 1. Appointment of rapporteur
 2. Adoption of agenda
 3. Attendance of observers
 4. Plan of work
 5. Report of proxy votes (by Executive Secretary)
- II. Fisheries and Environment (STACFEN Chairman: M. Stein)
 1. Opening
 2. Chairman's introduction; report of activities
 3. Invited lecture (Dr. J. Fischer, Memorial University of Newfoundland)
 4. Review of environmental conditions:
 - a) Marine Environmental Data Service (MEDS) Report for 1996
 - b) Review of environmental studies in 1996
 - i) Results from physical oceanographic studies
 - ii) Results from interdisciplinary studies
 - c) Overview of environmental conditions in 1996
 5. Formulation of recommendations based on environmental conditions in 1996
 6. National representatives
 7. Russian/German data evaluation (ICNAF/NAFO data, status report)
 8. Other matters
- III. Fishery Science (STACFIS Acting Chairman: H. P. Cornus)
 1. Opening
 2. General review
 - a) General review of catches and fishing activity
 3. Stock assessments
 - a) Stocks within or partly within the Regulatory Area, as requested by the Fisheries Commission with the concurrence of the Coastal State (Annex 1)(Shrimp in Div. 3M will be undertaken later in the year):
 - Cod (Div. 3NO; Div. 3M) (see also Annex 1, item 7)
 - Redfish (Div. 3LN; Div. 3M)
 - American plaice (Div. 3LNO; Div. 3M) (see also Annex 1, item 6)
 - Witch flounder (Div. 3NO)
 - Yellowtail flounder (Div. 3LNO)

- Capelin (Div. 3NO)
 - Squid (Subareas 3 and 4)
 - Greenland halibut (Subareas 2 and 3) (see also Annex 1, item 9)
 - [Note also Annex 1, item 3 concerning cod in Div. 2J+3KL]
 - [Note also Annex 1, item 8 concerning witch flounder in Div. 2J+3KL]
- b) Stocks within the 200-mile fishery zone in Subareas 2, 3 and 4, as requested by Canada (Annex 2):
- Roundnose grenadier (Subareas 2 and 3)
 - Silver hake (Div. 4VWX)
 - [Note also Annex 2, Item 3 concerning cod in Div. 2J+3KL]
- c) Stocks within the 200-mile fishery zone in Subarea 1 and at East Greenland as requested by Denmark on behalf of Greenland (Annex 3)(Northern shrimp in Denmark Strait and off East Greenland will be undertaken during a special meeting in November 1997.):
- Redfish (Subarea 1) (by species, if possible)
 - Other finfish and invertebrates (Subarea 1)
- d) Stocks overlapping the fishery zones in Subareas 0 and 1, as requested by Canada and by Denmark on behalf of Greenland (Annexes 2 and 3) (Northern shrimp in Subareas 0 and 1 will be undertaken during a special meeting in November 1997):
- Greenland halibut (Subareas 0 and 1)
 - Roundnose grenadier (Subareas 0 and 1)

4. Ageing techniques and validation studies

- a) Joint NAFO/ICES workshop on ageing of Greenland halibut, to be held in Reykjavik, Iceland, 26-29 November 1996

5. Other matters

- a) Report on Comparative Trawl Surveys

IV. Research Coordination (STACREC Chairman: D. Power)

1. Opening

2. Fishery statistics

- a) Progress report on Secretariat activities in 1996/97
- i) Acquisition of STATLANT 21A and 21B reports for recent years
 - ii) Publication of statistical information
 - iii) Considerations on internet site for statistical data

- b) Report of the CWP 17th Session, March 1997

3. Biological sampling

- a) Report on activities in 1996/97
- b) Report by National Representatives on commercial sampling conducted
- c) Report on data availability for stock assessments (by Designated Experts)

4. Biological surveys

- a) Review of survey activities in 1996 (by National Representatives and Designated Experts)
- b) Surveys planned for 1997 and early-1998

5. Non-traditional fishery resources in the NAFO Area
 - a) Distribution data from surveys
 6. Review of SCR and SCS Documents
 7. Other matters
 - a) Tagging activities
 - b) Development of protocol for scientific data collection by Pilot Observer Program
 - c) Conversion factors
 - d) Description of fishing effort
 - e) Other business
- V. Publications (STACPUB Acting Chairman: M. Stein)
1. Opening
 2. Review of STACPUB membership
 3. Review of scientific publications since June 1996
 4. Production costs and revenues for Scientific Council publications
 - a) Review of costs and revenues
 - b) Proposal for publication of 1997 Symposium proceedings
 5. Promotion and distribution of scientific publications
 - a) Invitational papers
 - b) Distribution of Abstracts from Research Documents
 - c) New initiatives for publications
 - d) NAFO Website
 6. Editorial matters regarding scientific publications
 - a) Review of Editorial Board
 - b) Progress report of publication on Shrimp in Div. 3M
 - c) Considerations for publishing Symposium proceedings
 - d) Progress review of publication of 1995 Symposium
 - e) Publication of 1996 Special Session Workbook
 7. Papers for possible publication
 - a) Review of SCR Doc formats
 - b) Procedures for STACPUB review
 - c) Review of proposals resulting from the 1996 Meetings
 - d) Review of contributions to the 1997 Meeting
 8. Other matters
- VI. Arrangements for Special Sessions
1. Progress report on the Special Session in 1997 (Convenor: H. Lassen)
 2. Progress on Special Session in 1998 (Convenors: E. Aro, J. Burnett, J. Morgan)
 3. Proposals for Special Session in 1999

VII. Future Scientific Council Meetings, 1997 and 1998

1. Annual Meeting in September 1997 (including assessment of Div. 3M shrimp)
2. Special Meeting in November 1997 (assessment of Northern Shrimp in Subareas 0+1 and off East Greenland)
3. Scientific Council Meeting, June 1998
4. Scientific Council Meeting and Symposium, September 1998

VIII. Nomination and Election of Officers

1. Chairman and Vice-Chairman of Scientific Council and Chairmen of STACFIS, STACREC and STACPUB

IX. Management Advice and Responses to Special Requests

1. Fisheries Commission (Annex 1)
 - a) Advice for TACs for 1998, and other management measures
 - b) Precautionary measures and criteria for reopening fisheries
2. Coastal States (Annexes 2 and 3)
 - a) Advice for TACs for 1998, and other management measures
 - b) Special requests for management advice on fish and invertebrate stocks (note item 3, Annex 3)

X. Other Matters

XI. Adoption of Reports and Recommendations

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

XII. Adoption of Scientific Council Report

XIII. Adjournment

**ANNEX 1. FISHERIES COMMISSION'S REQUEST FOR SCIENTIFIC ADVICE ON
MANAGEMENT IN 1998 OF CERTAIN STOCKS IN SUBAREAS 3 AND 4**

1. The Fisheries Commission with the concurrence of the Coastal State as regards the stocks below which occur within its jurisdiction, requests that the Scientific Council, at a meeting in advance of the 1997 Annual Meeting, provide advice on the scientific basis for the management of the following fish and invertebrate stocks or groups of stocks in 1998:

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

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

- a) For those stocks subject to analytical type assessments, the status of the stock should be reviewed and management options evaluated in terms of their implications for fishable stock size in both the short and long term. As general reference points the implications of fishing at $F_{0.1}$, F_{1996} and F_{max} in 1998 and subsequent years should be evaluated. The present stock size and spawning stock size should be described in relation to those observed historically and those expected in the longer term under this range of options.

Opinions of the Scientific Council should be expressed in regard to stock size, spawning stock sizes, recruitment prospects, catch rates and TACs implied by these management strategies for 1998 and the long term. Values of F corresponding to the reference points should be given. Uncertainty in the assessment should be evaluated.

- b) For those stocks subject to general production-type assessments, the time series of data should be updated, the status of the stock should be reviewed and management options evaluated in the way described above to the extent possible. In this case, the general reference points should be the level of fishing effort or fishing mortality (F) which is calculated to be required to take the MSY catch in the long term and two-thirds of that effort level.
- c) For those resources of which only general biological and/or catch data are available, no standard criteria on which to base advice can be established. The evidence on the stock should be evaluated in the context of management requirements for the long-term sustainability.
- d) Spawning stock biomass levels that might be considered necessary for maintenance of sustained recruitment should be recommended for each stock. In those cases where present spawning stock size is a matter of scientific concern in relation to the continuing productive potential of the stock, management options should be offered that specifically respond to such concerns.
- e) Presentation of the results should include the following:
- i) for stocks for which analytical type assessments are possible:
- a graph of yield and fishing mortality for at least the past 10 years.
 - a graph of spawning stock biomass and recruitment levels for at least the past 10 years.
 - a graph of catch options for the year 1998 over a range of fishing mortality rates (F) at least from $F_{0.1}$ to F_{max} .
 - a graph showing spawning stock biomass at 1/1/1999 corresponding to each catch option.
 - graphs showing the yield-per-recruit and spawning stock per-recruit values for a range of fishing mortality.

- ii) for stocks for which advice is based on general production models, the relevant graph of production on fishing mortality rate or fishing effort.

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

3. The Fisheries Commission with the concurrence of the Coastal State requests that the Scientific Council continue to provide information, if available, on the stock separation in Div. 2J+3KL and the proportion of the biomass of the cod stock in Div. 3L in the Regulatory Area. Information is also requested on the age composition of that portion of the stock occurring in the Regulatory Area.
4. The Fisheries Commission requests that the Scientific Council comment on Article 6 and Annex II of the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks; and provide the following information for the 1997 Annual Meeting of the Fisheries Commission, a report that includes for all stocks under the responsibility of the Fisheries Commission (i.e. cod in 3M and 3NO, American plaice in 3M and 3LNO, yellowtail flounder in 3LNO, witch flounder in 3NO, redfish in 3M and 3LN, Greenland halibut in SA 2+ 3, capelin in 3NO, shrimp in 3M and squid in SA 3+4):
 - a) recommendation for the limit and target precautionary reference points described in Annex II indicating areas of uncertainty;
 - b) information including medium term consideration and associated risk or probabilities which will assist the Commission to develop the management strategies described in paragraphs 4 and 5 of Annex II in the Agreement;
 - c) information on the research and monitoring required to evaluate and refine the reference points described in paragraphs 1 and 3 in the Agreement Annex II; these research requirements should be set out in order of priority considered appropriate by the Scientific Council; and,
 - d) any other aspect of Article 6 and Annex II of the Agreement which the Scientific Council considers useful for the implementation of the Agreement's provisions regarding the precautionary approach to capture fisheries.
5. The Fisheries Commission requests that the Scientific Council develop criteria to be evaluated during any consideration of possible fisheries reopenings.
6. The Fisheries Commission requests that, in 1997, the Scientific Council carry out a thorough analysis of the time series of juvenile abundance and other relevant biological data of American plaice in 3LNO and 3M, with a view to assessing the possibility to reopen the fishery.
7. The Fisheries Commission requests that, in 1997, the Scientific Council will carry out a thorough analysis of all the relevant biological data of cod in Div. 3M with a view to the possible closure of this fishery.
8. The Fisheries Commission requests that Scientific Council review available information, including any Canadian assessment documentation, and provide advice on the status of the 2J3KL witch flounder resource. Any information pertaining to the relative distribution of the resource within the stock area, as well as changes in this distribution over time should also be provided.
9. The Scientific Council is requested to assess possible changes in yield and spawning stock biomass of Greenland halibut in Subarea 2 and Div. 3KLMNO based on the assumption of a dome-shaped exploitation pattern and a different age of maturity and mortality rates for males and females, for the following scenarios:
 - a) the current situation, and
 - b) a minimum landing size of 60 cm.

**ANNEX 2. CANADIAN REQUEST FOR SCIENTIFIC ADVICE ON MANAGEMENT IN 1998
OF CERTAIN STOCKS IN SUBAREAS 0 TO 4**

1. Canada requests that the Scientific Council, at its meeting in advance of the 1997 Annual Meeting, provide advice on the scientific basis for the management of the following fish stocks in 1998:

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

It is also suggested that, subject to the concurrence of Denmark (Greenland), the Scientific Council, prior to the 1997 Annual Meeting of NAFO, provide advice on the scientific basis for management in 1998 of the following stocks:

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

The Scientific Council has noted previously there was no biological basis for making two separate assessments for the Greenland halibut throughout Subareas 0-3, but has advised that separate TACs be maintained for different areas of the distribution of Greenland halibut. The Council is asked therefore, subject to the concurrence of Denmark (Greenland) as regards Subarea 1, to provide an overall assessment of status and trends in the total stock throughout its range and comment on its management in Subareas 0+1 for 1998. In particular, the Council is asked to advise on appropriate TAC levels separately for SA 0+1, for SA 2 + Division 3K and for Divisions 3LMNO, and to make recommendations on the distribution of fishing effort within each of these three geographic areas. The Council is asked also to provide information on present harvest patterns in terms of yield per recruit and on distributional variation of the resource in recent years.

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

2. Canada requests the Scientific Council to consider the following options in assessing and projecting future stock levels for those stocks listed above:
- a) For those stocks subject to analytical dynamic-pool type assessments, the status of the stock should be reviewed and implications of fishing at $F_{0.1}$ in 1998 and subsequent years should be evaluated. The present stock size should be described in relation to those observed historically and those to be expected at the $F_{0.1}$ level in both the short and long term. In those cases where present spawning stock size is a matter of scientific concern in relation to the continuing productive potential of the stock, management options should be considered to rebuild the spawning stock. All results should be expressed in terms of stock sizes, catch rates and TACs implied for 1998 and the long term.
 - b) For those stocks subject to general production-type assessments, the status of the stock should be reviewed and management options evaluated in the way described above to the extent possible. In this case, the general reference point should be the level of fishing effort (F) which is two-thirds that calculated to be required to take the MSY catch in the long term.
 - c) For those resources on which only general biological and/or catch data are available, no standard criteria on which to base advice can be established. The evidence on stock status should, however, be weighed against a strategy of optimum yield management and maintenance of stock biomass at levels of about two-thirds that of the virgin stock.
3. The Scientific Council is requested to review the status of the cod stock in Divisions 2J+3KL and to provide estimates of the current size of the total and spawning biomass, together with a description of recent trends. The Council is asked further to provide estimates of the immediate and long-term stock outlook for the abundance of this stock, including both total and spawning biomass.

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

**ANNEX 3. DENMARK (GREENLAND) REQUEST FOR SCIENTIFIC ADVICE ON
MANAGEMENT OF CERTAIN STOCKS IN 1998**

1. Denmark, on behalf of Greenland, request the Scientific Council of NAFO in advance of the 1997 Annual Meeting, provide advice on the scientific basis for management of the following stocks in Subarea 1 in 1998 and as many years forward as data allow:
 - i) Redfish (by species, if possible)
 - ii) Any other stock of invertebrates and finfish of commercial interest, for which data allow a status report

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

- i) Greenland halibut
 - ii) Roundnose grenadier
2. In the analyses on which management advice will be based, the following should be included:

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

- a) Allocation of TACs to appropriate Subareas (Subareas 0 and 1).
 - b) Allocation of TAC for Subarea 1 inshore areas.
3. Denmark, on behalf of Greenland, further requests that the Scientific Council of NAFO before December 1997, provide advice on the scientific basis for management of the Northern shrimp (*Pandalus borealis*) in Subareas 0 and 1 in 1998 and as many years forward as data allow. The advice should be in accordance with a strategy of maintaining the shrimp stock at the level of recent years.

Further, in cooperation with ICES, the Council is requested to advise on the scientific basis for management of the Northern shrimp (*Pandalus borealis*) in the Denmark Strait and adjacent areas east of southern Greenland.

4. The Scientific Council should feel free to report on other invertebrates and finfish stocks in Subarea 1 and on other scientifically based management options for the above-mentioned Subarea 1 stocks, as it feels applicable.

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

AGENDA II. SCIENTIFIC COUNCIL MEETING, 7-19 SEPTEMBER 1997

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

- II. Fishery Science (STACFIS Chairman: R. Mayo)
 1. Opening
 2. Matters related to stock assessments
 - a) Assessment of shrimp in Division 3M (see Annex 1 of Agenda I above) (see also Notes 1 and 2)
 3. Arrangements for conducting stock assessments in 1998
 - a) Update list of Designated Experts
 4. Other matters
 - a) Review of SCR and SCS Documents (see also Note 2)
 - b) Non-traditional Resources
 - c) Other business

- III. Research Coordination (STACREC Chairman: D. Power)
 1. Opening
 2. Fisheries statistics
 - a) Progress report on Secretariat activities in 1997
 - i) Acquisition of STATLANT 21 data
 - ii) Publication of statistical information
 - b) Update on the establishment of NAFO Internet Website
 - c) Definitions of fishing effort
 3. Review of SCR and SCS Documents.
 4. Other matters

- IV. Publications (STACPUB Chairman: H.-P. Cornus)
 1. Opening
 2. Review of scientific publications
 - a) Status of papers from September 1997 Symposium
 - b) Status of publication on Div. 3M shrimp
 - c) Other publications
 3. Promotion and distribution of scientific publications
 - a) Invitational papers
 - b) Considerations of ASFA Abstracts
 - c) NAFO Website status report
 - d) Possibilities of using new technologies for publications and distribution

4. Review of papers for possible publication
 - a) Papers presented at the September 1997 Meeting
 - b) Papers not considered at the June 1997 Meeting
5. Other matters
- V. Management Advice and Responses to Special Requests
 1. Shrimp in Division 3M
 2. Special requests from concurrent Fisheries Commission meeting
- VI. Review of Future Meeting Arrangements
 1. Scientific Council Meeting on northern shrimp 14-18 November 1997
 2. Workshop on Precautionary Measures, 17-27 March 1998
 3. June 1998 Meeting of Scientific Council
 4. Special Session and Annual Meeting, September 1998
- VII. Future Special Sessions
 1. Progress report on Symposium of September 1998
 2. Progress report on Symposium in 1999
- VIII. Other Matters
 1. Update on Precautionary Approach
 2. Other business
- IX. Adoption of Reports
 1. Consideration of report from the Symposium of 10-12 September 1997
 2. Committee Reports of present meeting (STACFIS, STACREC, STACPUB)
 3. Report of Scientific Council, 7-19 September 1997
- X. Adjournment

NOTE 1. At its meeting of 4-19 June 1997, STACFIS noted that the method of presentation of redfish by-catch information from the shrimp fishery (in Div. 3M) continues to be variable, and recommended that *in future the estimated numbers caught as well as tables showing their size distribution be presented*. This will enable STACFIS to better evaluate possible impacts on a regulator basis.

NOTE 2. At its meeting of 4-19 June 1997, STACFIS deferred considerations of SCR Doc. 97/2 titled "Northern shrimp in Russian catches from Flemish Cap Bank (Div. 3M) in 1995-1996", and SCR Doc. 97/32 titled "Evaluations of offshore closed areas as a fisheries management tool, with emphasis on two case studies".

AGENDA III. SCIENTIFIC COUNCIL MEETING, 14-17 NOVEMBER 1997

- I. Opening (Chairman: H.-P. Cornus)
 1. Appointment of rapporteur
 2. Adoption of agenda
 3. Plan of work

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

 2. Other Business
 - Information on other shrimp stocks

- III. Precautionary Approach for Northern Shrimp Stocks

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

- V. Other Matters
 1. Progress report of 1999 Symposium on shrimp
 2. Timing of November Shrimp Meeting

- VI. Adoption of Reports

- VII. Adjournment

LIST OF RESEARCH AND SUMMARY DOCUMENTS, 1997

RESEARCH DOCUMENTS (SCR)

SCR #	Serial #	Author(s) and Title
97/1 ^a	N2826	RIKHTER, V. A. On reliability 4VWX silver hake abundance and biomass estimates, obtained by Canadian scientists in 1985 and 1996.
97/2 ^a	N2827	SAFRONOV, A. M., and V. J. ANIKEEV. Northern shrimp in Russian catches from Flemish Cap Bank (NAFO Division 3M) in 1995-1996.
97/3 ^a	N2828	RIKHTER, V. A. On probable relation between Scotian cod, haddock, pollock recruitment and silver hake abundance in the area.
97/4 ^a	N2829	STEIN, M. Climatic conditions around Greenland - 1996.
97/5 ^a	N2830	RÄTZ, H.-J. Structures and changes of the demersal fish assemblage off Greenland and trends in near bottom temperature, 1982-96.
97/6 ^a	N2833	BENWAY, R. L., and J. W. JOSSI. Surface and bottom temperatures, and surface salinities: New York to the Gulf Stream, Massachusetts to Cape Sable, N.S., 1996.
97/7 ^a	N2834	KISELEVA, V. M. Assessment of cod stock on the Flemish Cap from data of trawl survey in 1996.
97/8 ^a	N2835	VASKOV, A. A. Stock assessment of redfish in Division 3M by data from 1996 Russian trawl survey. (+ Corrigendum)
97/9 ^a	N2836	IGASHOV, T. M., and A. A. VASKOV. Assessment of <i>Sebastes marinus</i> stock in Division 3M by Russian research trawl surveys in 1987-1996.
97/10 ^a	N2837	SAVVATIMSKY, P. I., and A. A. VASKOV. Results of Russian surveys on assessment of Greenland halibut stock in the Flemish Pass and on the Flemish Cap in 1996.
97/11 ^a	N2838	SAVVATIMSKY, P. I. Results from the assessment of roundnose grenadier stocks in NAFO Subareas 0 and 1 by the data from the Russian bottom surveys in 1986-1992.
97/12 ^a	N2842	STEIN, M., and V. A. BOROVKOV. Fourth Report of Joint Russian/German Data Evaluation of Oceanographic Data from ICNAF/NAFO Standard Sections in the Davis Strait/Labrador Region.
97/13 ^a	N2843	BOROVKOV, V. A., and M. STEIN. Variability of the warm water supply off West Greenland and Labrador during four decades - 1950 to 1989.
97/14 ^a	N2841	DOUGHERTY-POUPORE, T. Marine Environment Data Service report for 1996.
97/15 ^a	N2844	PAZ, X., and E. ROMÁN. Length/weight relationships for some species of fish encountered in the North West Atlantic (NAFO Regulatory Area: Divisions 3L, 3M and 3NO).
97/16 ^a	N2845	ROMÁN, E., and X. PAZ. Length/weight relationships for Greenland halibut, <i>Reinhardtius hippoglossoides</i> , from Northwest Atlantic (NAFO Regulatory Area: Divisions 3L, 3M and 3NO).
97/17 ^a	N2847	CERVIÑO, S., and R. PREGO. Hydrographic conditions on the Flemish Cap in July 1996.

^a Scientific Council Meeting, 4-19 June 1997.

- 97/18^a N2848 SABORIDO-REY, F. Sexual maturity and spawning biomass of the cod stock on Flemish Cap (Division 3M).
- 97/19^a N2849 MURUA, H., and L. MOTOS. Length at first maturity of roughhead grenadier, *Macrourus berglax*, in NAFO Divisions 3MNL.
- 97/20^a N2850 MURUA, H., and L. MOTOS. Reproductive biology of roughhead grenadier, *Macrourus berglax*, in NAFO Divisions 3MNL.
- 97/21^a N2851 JØRGENSEN, O. A. Results of the joint Japan/Greenland bottom trawl surveys at West Greenland during 1987-95 Greenland halibut (*Reinhardtius hippoglossoides*, Walbaum).
- 97/22^a N2852 JØRGENSEN, O. A. Results of the joint Japan/Greenland trawl surveys at West Greenland during 1987-1995, roundnose grenadier (*Corphaenoides rupestris* Gunnerus). (+ Corrigendum)
- 97/23^a N2853 YOKAWA, K., and M. SATANI. Results of a stratified random bottom trawl survey in NAFO Divisions 2GH in 1996.
- 97/24^a N2855 DURÁN, P., and X. PAZ. Witch flounder (*Glyptocephalus cynoglossus*) in the Spanish fishery in NAFO Regulatory Area (Divisions 3LM and 3NO) 1991-1994.
- 97/25^a N2856 PAZ, J., P. DURÁN, and E. E. CÁRDENAS. Preliminary results from the 97 Spanish bottom trawl survey in the NAFO Regulatory Area for Divisions 3NO.
- 97/26^a N2858 THOMPSON, G. G., and P. M. MACE. The evolution of precautionary approaches to fisheries management, with focus on the United States.
- 97/27^a N2859 GORCHINSKY, K. V. Spatial and temporal variations in Greenland halibut females ratio at age in NAFO Divisions 0B, 2GH, 3K and 3LM.
- 97/28^a N2860 VAZQUEZ, A. Results from bottom trawl survey of Flemish Cap in July 1996.
- 97/29^a N2861 COLBOURNE, E. Environmental conditions on the Newfoundland Shelf, spring 1997 with reference to the 1961-1990 normal.
- 97/30^a N2862 BRODIE, W. B., W. R. BOWERING, and D. ORR. Comparison of results for Greenland halibut from Canadian and Japanese research vessel surveys in Divisions 2GH in 1996.
- 97/31^a N2863 BRODIE, W. B., S. J. WALSH, and D. ORR. Results of surveys directed at yellowtail flounder in NAFO Divisions 3NO, conducted on a Canadian commercial trawler.
- 97/32^a N2864 BISHOP, C. A., and W. B. BRODIE. Evaluation of offshore closed areas as a fisheries management tool, with emphasis on two case studies.
- 97/33^a N2865 DE CÁRDENAS, E., and L. MOTOS. Yield per recruit for Greenland halibut in Subareas 2 and 3, considering a dome shaped exploitation pattern and differences in natural mortality (M) between sexes. (Revised)
- 97/34^a N2866 DE CÁRDENAS, E. Influence of latitude on the catchability of Greenland halibut.
- 97/35^a N2867 GIL, J., E. DE CÁRDENAS, and E. RODRÍGUEZ-MARÍN. Evolution of yields and mean lengths of the catch of Greenland halibut in Divisions 3LMNO of the NAFO Regulatory Area.
- 97/36^a N2868 GIL, J., M. RUIZ, E. DE CÁRDENAS, and E. RODRÍGUEZ-MARÍN. Contrast between day and night Greenland halibut yields from catches by Spanish commercial fleet, during the period 1991-1994 in NAFO Divisions 3LMN.

^a Scientific Council Meeting, 4-19 June 1997.

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- 97/42^a N2876 BRODIE, W. B., M. J. MORGAN, and E. F. MURPHY. Results for selected species from a Canadian research vessel survey on Flemish Cap, NAFO Div. 3M, in 1996.
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- 97/45^a N2879 DE CÁRDENAS, E., and M. L. GODINHO. An assessment on American plaice in Division 3M.
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- 96/49^a N2883 BRATTEY, J., and D. PORTER. An acoustic survey of Atlantic cod (*Gadus morhua*) in three inshore areas of western Trinity Bay (NAFO Division 3L).
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- 97/51^a N2885 HALLIDAY, R. G., and C. G. COOPER. The effect of codend separator grates on silver hake otter trawl catch rate.
- 97/52^a N2886 BRODIE, W. B., W. R. BOWERING, D. POWER, and D. ORR. An assessment of Greenland halibut in NAFO Subarea 2 and Divisions 3KLMNO.
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- 97/59^a N2893 MURPHY, E. F., D. E. STANSBURY, P. A. SHELTON, J. BRATTEY, and G. R. LILLY. A stock status update for NAFO Divisions 2J+3KL cod.
- 97/60^a N2894 MORGAN, M. J., W. B. BRODIE, S. J. WALSH, and D. ORR. An assessment of Divisions 3LNO American plaice.
- 97/61^a N2895 BOWERING, W. R. A review of the status of witch flounder in Divisions 2J, 3KL.
- 97/62^a N2896 LILLY, G. R. Size and condition of cod in Divisions 2J+3KL during 1978-1996.
- 97/63^a N2897 DRINKWATER, K. F., E. COLBOURNE, and D. GILBERT. Overview of environmental conditions in the Northwest Atlantic in 1996.
- 97/64^a N2898 POWER, D. Redfish in NAFO Divisions 3LN.
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- 97/66^a N2900 WALSH, S. J., and B. R. McCALLUM. Observations on the varying fishing powers of Canadian survey vessels and trawls.
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- 97/71^a N2905 MORGAN, M. J., and S. J. WALSH. Observations on maturation, recruitment and spawning stock biomass in yellowtail flounder on the Grand Bank.
- 97/72^a N2906 WALSH, S. J., W. B. BRODIE, M. J. MORGAN, W. R. BOWERING, D. ORR, and M. VEITCH. An assessment of the Grand Bank yellowtail flounder stock in NAFO Divisions 3LNO.
- 97/73^a N2907 STANSBURY, D. E. Conversion factors for cod from comparative fishing trials for Engel 145 otter trawl and Campelen 1800 shrimp trawl used on research vessels.
- 97/74^a N2908 POWER, D. Roundnose grenadier (*Coryphaenoides rupestris*) in NAFO Subareas 2+3.
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- 97/85^b N2931 SKÚLADÓTTIR, U. The Icelandic shrimp fishery (*Pandalus borealis* Kr.) at the Flemish Cap in 1993-1997.
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^b Scientific Council Annual Meeting, 7-19 September 1997.

^c Scientific Council Meeting, 14-17 November 1997.

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^c Scientific Council Meeting, 14-17 November 1997.

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A = Scientific Council Meeting, 4-19 June 1997.

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B = Scientific Council Annual Meeting, 7-19 September 1997.

C = Scientific Council Meeting, 14-17 November 1997.

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A = Scientific Council Meeting, 4-19 June 1997.

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LIST OF SCIENTIFIC COUNCIL RECOMMENDATIONS IN 1997

The following are the specific recommendations made by the Scientific Council at its meetings through 1997, besides those made with respect to scientific advice on stocks considered.

The recommendations with respect to stock advice appear in the stock-by-stock summary sheets presented in this publication.

All recommendations listed here are as they appear in this publication under the relevant sections and pages mentioned.

SCIENTIFIC COUNCIL MEETING, 4-19 JUNE 1997

SCIENTIFIC COUNCIL

IV. RESEARCH COORDINATION

Other Matters

b) Development of Protocol for Scientific Data Collection by Pilot Observer Program (Page 11)

The Council noted under STACREC discussions of data availability from the NAFO Pilot Observer Program that not all data were available at the Secretariat. The Council considered that such data would be extremely valuable for the work of the Council and the Council **recommended** that *the issue of scientific data availability from the Pilot Observer Program be raised with the Fisheries Commission.*

IX. MANAGEMENT ADVICE AND RESPONSES TO SPECIAL REQUESTS

Advice for TACs for 1998, and Other Management Measures

b) Special Requests for Management Advice on Fish and Invertebrate Stocks

i) Responses to Request by Denmark (Greenland) (Page 69)

Concerning b), 99% of the inshore catches in Subarea 1 are taken in Div. 1A inshore areas. The Council **recommended** (see assessment report on Greenland halibut in Div. 1A), that *with respect to Greenland halibut in Div. 1A, separate TACs be considered for each inshore area (Disko Bay, Uummannaq and Upernavik) but could not calculate appropriate levels.* The stocks in Disko Bay and Uummannaq appear to be growth overfished.

STACFIS

Cod in Divisions 3N and 3O

b) Input Data

i) Commercial fishery data (Page 85)

Catch-at-age. Very limited biological sampling data from by-catches were available from Canada only. Consequently, an estimate of the total removals-at-age could not be derived. STACFIS **recommended** that *data from by-catches of cod in Div. 3NO be presented in June 1998.*

Redfish in Divisions 3L and 3Nd) **Future Studies** (Page 90)

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

Redfish in Division 3Me) **Research Recommendations** (Page 95)

It is **recommended** that *in future the estimated numbers of redfish by-catch in Div. 3M shrimp fishery, as well as their length-frequency distribution be presented to STACFIS.*

STACFIS **recommended** that *in addition to age determinations, length frequency distribution for redfish in Div. 3M should also be provided.*

Witch Flounder in Divisions 3N and 3Od) **Research Recommendations** (Page 106)

It was **recommended** that *wherever possible the most up to date catch-at-age data for witch flounder from the surveys in Div. 3NO be made available for the June 1998 Meeting.*

Yellowtail Flounder in Divisions 3L, 3N and 3Od) **Research Recommendations** (Page 110)

STACFIS **recommended** that *1) comparative fishing studies should be carried out between the new Canadian research survey gear and the Spanish survey gear in the Regulatory Area to determine similarities in catchability and 2) comparative fishing studies should be carried out between the Canadian research survey gear and the DFO/fishing industry trawl to determine similarities in catchability.*

Silver Hake in Divisions 4V, 4W and 4Xe) **Future Studies** (Page 127)

There remains concern among members of the Committee that variation in the timing of the spawning period may be affecting estimates of weight at length (condition) measured by the July survey, and it was again **recommended** that *for Div. 4VWX silver hake the proportion of post-spawning fish in the Canadian July survey data be examined.*

Therefore, STACFIS **recommended** that *the basis of a domed-shaped partial recruitment pattern in Div. 4VWX silver hake be further investigated and, in particular, that the distribution of silver hake in the Canadian July surveys be examined for differential patterns in availability among ages in areas where the fishery has traditionally operated.*

Greenland Halibut in Subarea 0 and Divisions 1B-1Fe) **Research Recommendations** (Page 133)

STACFIS **recommended** that *a survey covering both SA0 and SA1 should be conducted in order to allow for a more complete evaluation of the stock status.*

The question of whether the Cumberland Sound Greenland halibut stock contributes to the Subareas 0+1 stock needs to be resolved. STACFIS **recommended** that *the tagging program in Cumberland Sound should be continued in 1998 to ascertain whether adult Greenland halibut fish move into Davis Strait should be continued.*

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

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

Redfish in Subarea 1

d) Research Recommendations (Page 140)

STACFIS **recommended** that *the redfish by-catch taken by the shrimp fishery in Subarea 1 should be assessed based on the Greenland bottom trawl survey results reflecting the catch composition of a commercial shrimp trawl on the shrimp fishing grounds and that the results should be presented at the June Meeting in 1998 on a length disaggregated basis.*

Other Finfish in Subarea 1

d) Research Recommendations (Page 142)

STACFIS **recommended** that *the finfish by-catch taken by the shrimp fishery in Subarea 1 should be assessed based on the Greenland bottom trawl survey results reflecting the catch composition of a commercial shrimp trawl on the shrimp fishing grounds and that the results should be presented at the June Meeting in 1998 on a species by species, as well as a length disaggregated basis.*

Greenland Halibut in Division 1A

e) Research Recommendations (Page 147)

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

STACFIS **recommended** that *the impact of the commercial shrimp fishery on small Greenland halibut in Div. 1A be investigated.*

STACREC

Fishery Statistics

a) Progress report on Secretariat activities in 1996/97

i) Acquisition of STATLANT 21A and 21B reports for recent years (Page 154)

In view of the importance of the STATLANT data, STACREC **recommended** that *Scientific Council, draw the attention of the Fisheries Commission to the deficiencies in data submissions, along with a presentation to the Standing Committee on International Control (STACTIC) during 24-26 June 1997.*

iii) Considerations on internet site for statistical data (Page 154)

STACREC **recommended** that *a NAFO website be established to facilitate the dissemination of STATLANT and other statistical data and that the following points be considered with regard to its set up and maintenance:*

- i) Appropriate expertise be initially sought from outside sources to develop the basic construction of the site.*
- ii) Consideration should be given to training a member of the NAFO Secretariat in the maintenance of the website.*

- iii) *The website should be written in English.*
- iv) *Relevant disclaimers would have to be clearly stated in the website to denote those data that were considered preliminary in nature.*

Report of the CWP 17th Session, March 1997 (Page 155)

STACREC concurred with the recommendations of the CWP that the Atlantic agencies meet to reconcile the differences between statistics held by the different agencies, and STACREC **recommended** that *activity on the elimination of discrepancies in agency databases be conducted at an intersessional meeting in mid-1998.*

Biological Sampling

a) Report on Activities in 1996/97 (Page 156)

STACREC recognised that with the improvements in data acquisition and transfer there should be no need for this to be the case and **recommended** that *for the June 1998 Meeting of the Scientific Council, an SCS document containing biological sampling data for 1997 be prepared in addition to that containing the 1996 data.*

Non-traditional Fishery Resources in the NAFO Area

a) Distribution Data from Surveys (Page 162)

There was no documentation tabled to address the distribution and abundance of non-traditional species in the NAFO Area, accordingly, STACREC **recommended** that *distribution and abundance of non-traditional species data analyses be carried out and the results presented to STACREC as soon as possible.*

Other Matters

a) Tagging Activities (Page 163)

The Secretariat compiled the list of tagging activities in 1996 (SCS Doc. 97/15). STACREC **recommended** that *scientists undertaking any tagging activities inform the Secretariat in order that the information may be widely circulated and hence better returns may be obtained.*

d) Fishing Effort (Page 166)

STACREC **recommended** that *members examine current fishing effort definitions and notify the Chairman of STACREC of any suggested changes.* Proposals will be discussed at the September 1997 Meeting of STACREC.

STACPUB

Production Costs and Revenues for Scientific Council Publications

b) Proposal for Publications of 1997 Symposium Proceedings (Page 169)

STACPUB **recommended** that *the volume of the Journal with the papers from the 1997 Symposium be published with a special cover which could include some figures related to the Symposium.*

STACPUB also **recommended** that *documents distributed outside the main sessions during the 1997 Symposium not be included in the special issue of the Journal, but that those papers be individually considered with peer-review for publication in the Journal or Studies.*

Promotion and Distribution of Scientific Publications

c) New Initiatives for Publications (Page 170)

STACPUB recommended that *the Journal be open to accept colour figures to improve its presentation capacities.*

d) NAFO Website (Page 170)

STACPUB recommended that *an Internet Website be established at the Secretariat.*

Editorial Matters Regarding Scientific Publications

c) Considerations for Publishing Symposium Proceedings (Page 170)

STACPUB recommended that *proceedings of the Symposia organised by the Scientific Council in St. John's, Newfoundland in 1997 on 'What Future for Capture Fisheries', and in Lisbon, Portugal in 1998 on 'Variations in Maturation, Growth, Condition and Spawning Stock Biomass Production in Groundfish', be published in special issues of the Journal.*

Papers for Possible Publication

a) Review of SCR Document formats (Page 171)

STACPUB recommended that *a common format be developed for uniform presentation of the most important information in the assessments, particularly catch tables, to ensure their relevance to the assessment.*

SCIENTIFIC COUNCIL ANNUAL MEETING, 7-19 SEPTEMBER 1997

STACFIS

Shrimp in Division 3M

d) Research Recommendations (Pages 208 and 209)

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

- *Because there are no plans for the directed surveys in 1996 and 1997 to be continued, the recommendation from 1996 for the initiation of surveys to obtain a reliable recruitment index needs to be repeated;¹*
- *Stomach content data from the 10 main groundfish species on Flemish Cap should be investigated for consumption of shrimp and possible development of a recruitment index.*
- *Age composition of the EU survey results should be estimated to provide insights into mortality and year-class strengths.*
- *Contracting Parties contribute to the catch and effort dataset according to the format specified in SCS Doc. 96/19. A standardized database for biological samples should be considered, as well.*
- *Estimates of overpack should be obtained for all nations fishing for shrimp in Div. 3M and these estimates be included in the catch statistics.*

¹ Note: The 1996 recommendation (see Scientific Council Reports, 1996, p.166) is as follows:
"A directed research survey for shrimp on Flemish Cap should be initiated with a primary goal of obtaining a reliable recruitment index, given that the EU survey does not provide reliable estimates of shrimp at age 2. The survey should also provide extensive data on the distribution and demography of the shrimp stock throughout the area. Hydrographic information should be collected, including data on currents, in conjunction with the survey."

Non-traditional Resources (Page 212)

STACFIS considered that further work describing changes in biomass and distribution over time would be required before any conclusions could be drawn regarding the status of these stocks. STACFIS, therefore, **recommended** that *the data regarding non-traditional species derived from research vessel surveys should be examined, and that analyses be undertaken to evaluate trends in biomass and distribution of these species and reported at the June 1998 Meeting.*

Other Business (Page 212)a) **Arrangements for Acquisition of Length Composition Information on Shrimp in Div. 3M by the Designated Expert**

STACFIS, therefore, **recommended** that *information on catch and length composition data with respect to shrimp in Div. 3M be sent from each national laboratory to the Designated Expert in an agreed format at least 15 days before the next assessment meeting.*

STACREC

Fisheries Statisticsa) **Progress Report on Secretariat Activities in 1997**i) **Acquisition of STATLANT 21 data** (Page 213)

The Committee discussed and agreed that a more direct approach be taken in requesting data. Noting that a method similar to that recently adopted by STACFEN would be useful, STACREC **recommended** that *the Scientific Council nominate representatives of each Contracting Party to ensure their respective national statistical agencies be notified to submit STATLANT data as outlined in the Rules of Procedure.*

ii) **Publication of statistical information** (Page 213)

In the event that the Faroe Islands data cannot be obtained in the near future, STACREC **recommended** that *the Secretariat proceed with publication of the 1993 Statistical Bulletin, and the Faroes Islands data be given as an addendum to a subsequent issue of the Bulletin upon receipt of data.*

b) **Update on the Establishment of NAFO Internet Website** (Page 213)

STACREC **recommended** that *the Secretariat prepare a report for the June 1998 Meeting outlining further development of the website, including any anticipated resource requirements for development and maintenance of the website.*

Other Mattersa) **Division 3M Shrimp Survey - Coordination for 1998 and Onwards** (Page 215)

STACREC **recommended** that *with respect to surveys for shrimp in Div. 3M the following proposal be forwarded to the Fisheries Commission as it relates to logistics, coordination and standardization:*

(i) *The survey should be carried out with the joint effort of shrimp biologists.*

(ii) *The survey would require 10-12 fishing days, preferably in July, and conduct 60 daytime stations that would cover a depth range from 150-600 m using a Campelen 1800 trawl with a 13 mm liner.*

d) **CWP Intersessional Meeting** (Page 215)

STACREC **recommended** that *the Assistant Executive Secretary attend the CWP Intersessional meeting in early 1998 to address all issues of interagency harmonization of data, and that the results be made available at the June 1998 Meeting.*

STACPUB

Review of Scientific Publicationsa) **Status of Papers from September 1997 Symposium** (Page 217)

The Committee **recommended** that *the book on the 10-12 September 1997 Symposium Proceedings will contain an introduction page by the convener and a page on the editorial work by the Assistant Executive Secretary.*

c) **Other Publications** (Page 217)

The Committee **recommended** that *the Proceedings of the 1995 Symposium on 'The Role of Marine Mammals in the Ecosystem' be published in one single volume with the new deadline set for 15 December 1997.*

Promotion and Distribution of Scientific Publicationsd) **Possibilities of Using New Technologies for Publications and Distribution** (Page 218)

After considerable discussion the Committee **recommended** that *posters displayed during the June meeting will be considered by STACPUB for further presentation at the Annual Meeting.* Authors of selected posters would be requested to suitably revise them for viewing by all delegates at the Annual Meeting. The Committee further **recommended** that *specific poster topics will be defined for Annual Meeting presentations, and that environmental results as well as assessment results be topics for display in a suitable form.*

Other Matterse) **Incoming Chairman** (Page 219)

Noting that incoming Chairmen to STACPUB often have not had exposure to the working procedures of STACPUB, and in order to ensure some continuity to the usual procedures of the Committee, STACPUB **recommended** that *each incoming Chairman be invited to attend any STACPUB Meetings that take place prior to officially taking office.*

SCIENTIFIC COUNCIL MEETING, 14-17 NOVEMBER 1997

STACFIS

Shrimp in Subareas 0 and 1d) **Research Recommendations** (Page 235)

For shrimp in Div. 0A and Subarea 1, STACFIS **recommended** that *for consideration at the November 1998 Meeting of the Scientific Council, sampling of the commercial fishery be improved to cover all components of the fishery by area and month.*

Shrimp in Denmark Straitd) **Research Recommendation** (Page 238)

For shrimp in Denmark Strait, STACFIS **recommended** that:

- *the Greenlandic survey be expanded to include the southern part of the stock area (south of 65°),*
 - *an analysis of the distribution of the shrimp stock in relation to environmental conditions be conducted,*
 - *commercial catch sampling of the shrimp fishery be improved to fully cover seasonal and spatial variation, so that size and sex composition of the catch can be accurately described,*
 - *a study be conducted to compare length and age at sex reversal in northern and southern areas of the shrimp stock, and*
 - *all available logbook data be analyzed for trends in CPUE (both standardized and unstandardized).*
-