



SCIENTIFIC COUNCIL MEETING - SEPTEMBER 1988

Report of Scientific Council

Annual Meeting, September 1988

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REPORT OF SCIENTIFIC COUNCIL
Annual Meeting, September 1988

Chairman: J. S. Beckett

Rapporteur: T. Amaratunga

The Scientific Council met at the Ottawa Congress Centre, Ottawa, Ontario, Canada, during 12-16 September 1988, to consider and report on various matters listed in the agenda (see NAFO Circular Letter 88/43). Representatives attended from Canada, Denmark (Greenland), European Economic Community (EEC), Japan, and Union of Soviet Socialist Republics (USSR). Two observers from the United States of America (USA) were present. The Assistant Executive Secretary also attended.

That meeting was preceded by the Special Session on "Impact of Changes in Environmental Conditions in the North Atlantic on Distribution, Availability and Abundance of Marine Species, with Particular Emphasis on the Labrador and Grand Bank Region During Early 1980's", which was held at the Bedford Institute of Oceanography, Dartmouth, Nova Scotia, Canada, during 7 and 8 September 1988, with participation by scientists from Canada, Denmark (Greenland), EEC, Japan, Norway, USA and USSR.

The Chairman first proposed minor changes to the wording in the provisional agenda listed under Item VII, Other Business (see agenda for new wording, Appendix IV). The Chairman then recognized with regret that the present Chairman of STACFIS will step down at the end of this meeting and proposed considering the appointment of a new Chairman at the concluding stages of this meeting.

Regarding agenda Item 11.2(a), stock assessments - cod (Subdiv. 3Ps), it was recognized that this Item was inserted upon the request of the EEC (Annex I - telex from E. Gallagher). However, Canada had stated that for many reasons (Annex II - letter from P. Meyboom) it would not be appropriate for the Council to discuss this Item. After long discussion, it was agreed to delay further consideration of the matter until advice had been received from the General Council. The opportunity to reexamine the June assessment of the Subdiv. 3Ps cod stock was discussed on the basis of using alternative mathematical procedures as described in the SCR Doc. 88/96. A brief oral presentation of this paper, not available to members of the Scientific Council at that moment, was given by the authors. It was decided by a majority vote that there were not large enough differences in the final results to justify a reassessment of the Subdiv. 3Ps cod stock.

Regarding agenda Item 11.2(b), stock assessments - cod (Div. 2J+3KL), the EEC (Annex I) had suggested that the Council, of its own initiative, carry out an assessment of this stock. The Council decided, by vote, not to conduct such an assessment on its own initiative.

The Council then adopted the agenda recognizing that there will be no further discussion on agenda Item 11.2(a) and (b) on cod stocks in Subdiv. 3Ps and Div. 2J+3KL respectively.

The reports of the Standing Committees, as adopted by the Council on 16 September 1988, are given in Appendix I (STACFIS), Appendix II (STACREC) and Appendix III (STACPUB). Brief summaries of these reports and other matters considered (see Appendix IV) by the Council are given below in Sections I to V. The adopted agenda, the list of participants and the list of research (SCR) and summary (SCS) documents are given in Appendix IV, V and VI respectively.

I. FISHERY SCIENCE (APP. I)

1. Special Session on Interaction Between Environment and Fish Stock

At the Special Session which was convened by J. C. Rice (Canada), 20 papers were presented. There were nine presentations on oceanographic conditions in the Northwest Atlantic with consideration given to climatological relationships. Twelve papers dealing with the relationships between distribution and abundance of fish population and anomalies in oceanographic conditions were presented. Regrets were expressed on the lack of papers giving a review of the relevant quantitative methods. The Council endorsed the general discussion leading to the elaboration of a number of recommendations to improve and/or enlarge the collection and processing of environmental data. The Council also agreed with the Committee's suggestions that further consideration, by the Environmental Subcommittee, of the content of the general discussion and of the recommendations made at that time could be worthwhile in order to more precisely define their scope and priorities.

The Council endorses the recommendation that NAFO initiates contact with scientists in charge of the World Ocean Climate Experiment (WOCE) and invites the Chairman of the Environmental Subcommittee to explore the avenues for such contacts.

2. Future Special Sessions

a) Outline for Special Session in September 1989

The Council endorsed the proposal by STACFIS that M. Fogarty (USA) convene the Special Session with the adopted theme "Changes in Biomass, Production and Species Composition of the Fish Populations in the Northwest Atlantic Over the Last 30 Years and Their Possible Causes". The Council noted that the scope and format of the session would be circulated at a later date.

The Council agreed that the Special Session need not be restricted to NAFO Headquarters and recognized that the 1989 Special Session may be held in Brussels.

b) Further Consideration of Proposed Theme for the Special Session in September 1990

The Council adopted the proposal by STACFIS that the theme for the 1990 Special Session be "Management Under Uncertainties Related to Biology and Assessments, With Case Studies on Some North Atlantic Fisheries", and noted that the outgoing Chairman of STACFIS will solicit a convener before the June 1989 Meeting.

3. Other Matters

The Council noted that STACFIS reviewed three SCR Documents (88/03, 95 and 96) and recognized the two previously circulated SCS Documents (88/06 and 21). Based on Document No. 88/96, the Council agreed to the recommendation that various tuning methods for calibrating terminal F-values be considered at the June 1989 Meeting. It was also recognized that STACFIS recommended that adequate computer facilities need to be made available at the June Meeting.

The Secretariat received four SCR Documents (88/97, 98, 99 and 100) after the conclusion of this meeting. The review of these documents is deferred to the June 1989 Meeting.

II. RESEARCH COORDINATION (APP. II)

1. Report from Working Group on Survey Design Procedures

The Council noted that some progress was made by the working group but recognized that further analyses were required and the working group will discuss this work in June 1989.

III. PUBLICATIONS (APP. III)

1. Review of Editorial Board (Associate Editors)

The Council was pleased to note that STACPUB has learned that G. P. Ennis will not resign as Associate Editor for Invertebrates for the present, and that R. K. Mohn is likely to undertake the task of Associate Editor for Biomathematics. The Council endorses the STACPUB decision to defer the appointment of the additional member to the position of Associate Editor for Vertebrate Fisheries Biology.

The Council noted the concerns of STACPUB in the proper usage of the term "Editorial Board" and also its intent to review the tasks of the editorial staff at the June 1989 Meeting.

2. Invitational Papers

The Council noted STACPUB's report that there was no progress on invited papers since June 1988.

3. Further Discussion on Possible Combination of Journal and Studies

The Council endorsed STACPUB views that the importance of Studies series should be explored further at the June 1989 Meeting.

4. Review of Papers for Possible Publication

The Council was encouraged to learn that the Secretariat had responses from authors of 5 of the 11 papers nominated in June, and endorsed STACPUB's nomination of 9 of the 21 research documents examined.

IV. ADOPTION OF REPORTS

1. Provisional Report of Scientific Council, June 1988

For the adoption of its June 1988 Report, the Council then considered the stock-by-stock assessment summaries prepared after the June 1988 Meeting, since the Council had not had an opportunity to discuss this text. Some significant comments were recognized and changes agreed. There were extensive discussions about the exact content of the section (d) on cod stock in Subdiv. 3Ps. This largely involved the question as to whether the report should include a range of management options, as an expression of a minority position raised under Article X(1) of the Convention. There was a discussion as to whether or not the provisions of Article X(1) apply in that case. The question was referred to the General Council for consideration. Nevertheless, after a number of sessions of the Scientific Council, the Council formally approved, with amendments, the summary report of its meeting of 8-23 June 1988.

V. FUTURE SCIENTIFIC MEETINGS

1. Scientific Council Meeting in June 1989

The Council reviewed its earlier decision on dates and agreed to meeting at NAFO Headquarters in Dartmouth, Nova Scotia, during 7-21 June 1989. It was noted that the relocation of NAFO Headquarters in Dartmouth has not been confirmed yet.

The meeting will deal with the usual requests for scientific advice on fisheries management and other fishery-related research and statistical activities.

2. Special Session (6-8 September 1989)

The Council agreed that the Special Session be held in Brussels during 6-8 September 1989.

3. Annual Meeting (11-15 September 1989)

The Council recognized that the Annual Meeting to be held in Brussels during 11-15 September will run concurrently with the General Council and Fisheries Commission Meetings.

4. Tentative Dates for June 1990 Meeting

The Council tentatively agreed to meet during 6-20 June 1990 to deal with fishery science and statistical matters.

VI. OTHER BUSINESS

1. STACPUB Membership

The Council appointed A. Vazquez to fill the vacancy in STACPUB, created by the resignation of R. G. Halliday. STACPUB membership is as follows:

Sv. Aa. Horsted (Chairman)
W. R. Bowering (Canada)
A. Vazquez (EEC)
J. Messtorff (EEC)
S. Kawahara (Japan)
V. A. Rikhter (USSR)

2. Nomination of STACFIS Chairman

There were no nominations presented to the Council to consider for the replacement of A. Maucorps (EEC) upon his resignation as Chairman of STACFIS at the end of the September 1988 Scientific Council Meeting. The Council agreed that the national representatives should be requested to nominate potential candidates to the Chairman of the Scientific Council, before the end of November 1988, and if more than one nomination was forwarded, a vote-by-mail will be held by the Secretariat thereafter.

3. Competence of Scientific Council

The Council deferred discussion on this matter to a future meeting.

4. Format in 1989 of the Scientific Council STACFIS Reports with Respect to Stock Assessment

The Council recognized the value of presenting stock assessments in the form of Summary Sheets (see examples in Annex 2, 3 and 4 of the June 1988 STACFIS Report) and agreed that the Scientific Council Report for the June 1989 Meeting will utilize this format.

VII. ADJOURNMENT

The Chairman thanked participants for their contributions, noted the excellent support given by the Secretariat, and adjourned the meeting.

APPENDIX I. REPORT OF STANDING COMMITTEE ON FISHERY SCIENCE (STACFIS)

Chairman: A. M. Maucorps

Rapporteurs: Various

The Committee met at the Ottawa Congress Centre, Ottawa, Ontario, Canada, during 12-16 September 1988, to consider and report on various fishery-science matters that were referred to it by the Scientific Council. Representatives attended from Canada, Denmark (Greenland), EEC, Japan and USSR.

The meeting was preceded on 7 and 8 September 1988 by the Special Session on environmental conditions in the North Atlantic, which attracted scientists from Canada, Denmark (Greenland), EEC, Japan, Norway, USA and USSR.

The matters which were considered at both meetings are outlined below. Various participants contributed to the preparation of initial drafts of the different sections of this report.

I. SPECIAL SESSION ON ENVIRONMENTAL CONDITIONS

1. Introduction

The Special Session on "Impact of Changes in Environmental Conditions in the North Atlantic on Distribution, Availability and Abundance of Marine Species, with Particular Emphasis on the Northwest Atlantic in the early 1980's", with J. C. Rice (Canada) as convener, was held at the Bedford Institute of Oceanography, Dartmouth, Nova Scotia, Canada, during 7 and 8 September 1988. The session attracted a total of 40 scientists who are conducting research or share an interest in research on the Northwest Atlantic Ocean and other polar and subpolar marine regions. A total of 20 papers were presented (SCR Doc. 88/65 and 88/77 to 88/94) with participation in the session by scientists from Canada, Denmark (Greenland), Federal Republic of Germany, France, Japan, Norway, Portugal, Spain, USA and USSR.

2. Specific Topics of Presentations

a) Oceanographic Conditions - Descriptions and Processes

There were nine presentations on the physical oceanography of the Northwest Atlantic and related areas. Areas considered in the presentations included the southern Grand Bank, the Labrador Sea and Shelf, the USA coastal waters, and the Gulf of St. Lawrence. Oceanographic features investigated included surface and bottom temperatures and salinities, ice cover, currents and temperature profiles. There was also substantial attention given to climatological features which were thought likely to be linked to important oceanographic features. Particular attention was given to the North Atlantic oscillation in this context. The time periods used in these analyses varied. In all cases, however, periods of several months to a few years were commonly found to have consistently large anomalies. However, most presentations stressed that their analyses were not complete, and final explanations of patterns present and processes which caused the patterns had not been determined. Although analyses of data from the Grand Bank, Labrador Sea and Labrador Current found a period in the early 1980's to be anomalously cold, data from some other areas, including the waters off the Northeast USA and in the Gulf of St. Lawrence did not seem to show such a pattern. Several presentations noted that another period of cold conditions occurred in the early 1970's. Attempts were made to link these anomalies to cycles of periods of around a decade and to large scale climatological patterns and processes. Investigations of linkages and lags between events in different areas, from Arctic waters to the southern Grand Bank and even the Northeast Atlantic, were also reported. In addition to analyses at these large space and time scales, many analyses considered evidence for patterns at very local scales of space (10s of meters in depth, 10s of kilometers horizontally) and time (hours to days). These local analyses were also considered important for identifying the level of resolution that would be possible in analyses of patterns on larger scales from the data which were available.

b) Effects of Conditions on Marine Species

There were 12 presentations on this theme. Species considered included capelin, silver hake, Greenland halibut, northern shrimp, redfish, yellowtail flounder, haddock, American plaice, and several cod stocks. Only one presentation directly addressed effects of oceanographic events in a multispecies context, for the Barents Sea. Several of the presentations did suggest that some observed changes in characteristics of fish stocks may be consequences of effects of oceanographic events on lower trophic levels or processes, rather than direct responses of the fish to physical properties of the water bodies. As with many of the physical oceanographic presentations, most contributors stressed that results being presented

were preliminary and further analyses were underway. Several presentations noted that effects of bottom temperature (or other features) on the abundance (or other features) of fish appeared to be qualitative, to a large extent, in that there seemed to be thresholds, below which the species being studied would be unlikely to be present, or activities such as spawning would be unlikely to occur, whereas in a range of conditions past the threshold, little relationship between physical and biological attributes was seen. Several presentations also noted that year-class strengths of various stocks appeared to be associated with environmental conditions, either with strong year-classes occurring only when "favorable" anomalies occurred, or weak year-classes occurring consistently when anomalies were "unfavorable". It was noted several times that few, if any, of the generalizations were inviolate, however. For example, anomalies in the proper direction might be a necessary condition for production of a strong year-class, but would not be a sufficient condition. Similarly, although a stock may appear to avoid water with certain properties, occasionally large catches could be obtained in such waters, especially if the presumed unfavorable conditions were widespread. There was also attention given to differences among species in their preferred conditions; it was noted that patterns of association between abundance and water temperatures often were found to differ between stocks of the same species, or age classes of the same stocks. Several presentations noted that consideration of environmental conditions was at least appropriate in assessment and management contexts; for example in the estimation of expected levels of recruitment or even growth, and might be an essential factor in the conduct of research surveys and analyses and interpretation of survey data.

c) Quantitative Tools for Extracting and Relating Patterns in Data on Fisheries and Oceanography

There were no presentations on this theme of the special session. It was noted in many presentations, however, that investigations of fisheries-environment interactions were hampered by a perceived inappropriateness of available quantitative methods.

3. General Discussion

Following the presentations there was a general discussion of all the papers and the common points emerging from them. Several general points were considered and a number of generalizations, conclusions, and recommendations arose from the discussion.

a) Data and Analysis

Much of the discussion focused on the sources and types of data used to investigate fisheries - oceanography - climatology relationships. Although all participants were impressed with the progress made in these areas in the recent decade, there was a general feeling that much could be done on several fronts. However, disappointment was expressed that more sources of data were not used; particularly for investigations of the fisheries-oceanography linkages; few data other than those from research vessels were considered. It was recommended that scientists be encouraged to investigate other sources of data, such as satellite images from NOAA, in order that more, and different types of data on physical and biological oceanographic properties be available.

It was also noted that most analyses used bottom temperature as the only oceanographic variable. Although it may be the most readily available attribute, there was no compelling evidence that bottom temperature is the single attribute influencing fish populations. It is recommended that scientists use other variables, such as salinity, or change in temperature (as well as absolute temperature) in their investigations of relationships among attributes of fisheries, oceanography and climatology.

In addition to the types of data used, concern was expressed about the amount of data available for these investigations: It was agreed that long-time series of data on oceanography, climate, and fisheries are all essential, in order to identify signals with durations of several years, or periodicities of years to decades; and to give a context to the degree to which specific events deviate from usual conditions. The importance of maintaining the integrity of existing time series was stressed, and it was recommended that every effort be made to ensure collection of high quality data at frequent intervals, at wisely selected sites, and that these data series be kept available for use by the scientific community. Of course these series should be augmented by opportunistic collections of oceanographic data.

It was also recommended that scientists using buoys currently being deployed in the Northwest Atlantic Ocean for long-term climate monitoring seriously consider instrumentation for subsurface data collection. In the context of data from long-term monitoring sites and other time series, it was also noted that some important fundamental analyses have often not been done. In particular, it is important to investigate the sampling interval required to detect

specific patterns in these series, and the power of the data series and the analysis methods to reflect the fairly long-term patterns often sought in the data sets. It was noted that instrumentation to collect oceanographic data has increased in quality and decreased in cost in recent years. Equipping all research vessels with instrumentation to allow accurate collection of at least temperature and salinity data at frequent intervals, should be a high priority for all research units.

Some attention was also given to the appropriate analysis of the data. It was suggested that a more rigorous approach should be followed when partitioning variables into units; whether the variables were spatial (subdividing a large region into areas); temporal (identifying time units for analysis); or attributes of the ocean (creating categories along an axis of temperature or salinity). Care in identifying groups would often lead to much more effective analyses of data; and identification of relationships. It was also noted that relationships are unlikely to be simple and linear. Scientists are encouraged to consider carefully the most appropriate measures of central tendency and distribution, and association between variables. The most familiar tools may not be suitable for many applications in this area.

At the end of the discussion, a project to deploy several moorings in the East Greenland-Labrador Sea area was proposed in conjunction with current programs at East Greenland. The proposal was thought to have merit and was worthy of further consideration. It was agreed that M. Stein of the Federal Republic of Germany would initiate correspondence with participating researchers on the topic. A discussion paper would be prepared for presentation at the June 1989 Meeting of the Environmental Subcommittee, outlining objectives and components of such a project in more detail.

b) The Integration of Oceanography, Fisheries Science, and Climatology

It was stressed several times in the discussions and presentations that although progress is being made at linking fisheries science and oceanography, there is still far to go. Moreover, it is becoming clear that climatology is an important consideration in this field and must be integrated as well. Traditional divisions among disciplines, and organizational separations of specialists in the various fields, was felt still to impede progress in many research centers. The participants endorsed interdisciplinary work among the three fields very strongly, and encouraged further development of interactions among sciences in these fields. There was a particular interest in the progress by oceanographers at modelling oceanographic processes and delineating important features such as water masses and their boundaries. Because of the potential use that fisheries scientists can make of the products of such research, it was felt that such oceanographic work should be especially encouraged. Special mention was also made of the potentially very important implications of the atmospheric blocking in the Arctic, presented in contribution to SCR Doc. 88/77. This work should be pursued further. One consequence of increased interactions among scientists of the various disciplines, is the need for extra efforts to be made by specialists to make their work understandable with a clear definition of goals and priorities of the study to scientists in other fields.

c) Geographic Considerations

In addition to aspects of this topic covered in the section on Data and Analysis, some additional points were raised. Several times during presentations, it was suggested that events in the Northeast Atlantic and Barents Sea may be related to events in the Northwest Atlantic. These global linkages, if documented, would have important implications, particularly for improvements in ability to predict events. It is recommended that contacts be established between scientists working on these problems on the two sides of the Atlantic Ocean. Exchanges of data, models and analysis results should be encouraged, and coordinated research to investigate possible linkages between oceanographic and fisheries events in the East and West Atlantic should be undertaken.

The World Ocean Climate Experiment (WOCE) features work of direct relevance to the issues considered at this session. It is also recommended that NAFO, through an avenue deemed appropriate by the Council, initiate contact with WOCE.

One additional geographic consideration raised at the discussion was the lack of oceanographic work in deeper waters. Important commercial fish stocks occur beyond 500 m, and it is important that oceanographic research include those deeper waters.

d) Research Survey Design and Analysis

There was extended discussion of the implications of the knowledge being accumulated on impacts of oceanography on attributes of fish stocks for how research survey data is

collected and used. As research on interaction between biology and environment progress, it will be necessary to give serious thought to stratification approaches and/or analysis methods which make direct use of oceanographic data. For the present, however, lacking any better guidelines, it is clearly desirable to standardize the time at which research surveys are conducted.

II. FUTURE SPECIAL SESSIONS

1. Outline for Special Session in September 1989

As agreed at the June Meeting, the Chairman of the Scientific Council reports that he approached possible candidates to convene the 1989 Special Session. M. Fogarty (USA) accepted that duty and will circulate scope and format to give a more precise content to the agreed theme "Changes in Biomass, Production and Species Composition on the Fish Populations in the Northwest Atlantic Over the Last 30 Years, and Their Possible Causes".

The Committee agreed that Special Sessions need not necessarily be held each year at NAFO Headquarters. It therefore recognizes that the 1989 Special Session could be held in Brussels in order to attract more scientists from Europe.

2. Further Consideration of Proposed Theme for the Special Session in September 1990

Amongst the three possible themes which were identified at the June 1988 Meeting, the following has been selected for the 1990 Special Session: "Management Under Uncertainties Related to Biology and Assessments, With Case Studies on Some North Atlantic Fisheries". The Chairman of STACFIS offered to approach three possible candidates and the report will be given to the Chairman of the Scientific Council before the June 1989 Meeting.

III. OTHER MATTERS

1. Review of Scientific Papers

a) Distribution of Silver Hake, Other Fish Species and Squid in 1987 on the Scotian Shelf Slopes From the Soviet Observer's Data (SCR Doc. 88/03)

In 1987, the distribution of silver hake and, most likely, of other species differed from that of 1986. It appears that the oceanographic conditions were rather similar to those of 1979-1980 when massive migrations of silver hake occurred in late July-early August.

b) The Proportion of Cod Biomass in the Regulatory Area of Division 3L in Relation to the Whole of Division 3L (SCR Doc. 88/95)

Concentrations of cod in Division 3L during winter tend to be found in deep-warmer water on the slopes. In spring, concentrations on the slope are reduced considerably and move towards shallower waters. The most recent information based on the results of the spring 1988 survey did not change this pattern. In this period the estimated proportion of cod in the Regulatory Area in Division 3L remains at the lower limit (0.4%) of the range previously determined.

c) A New Approach to Subdivision 3Ps Cod Stock Assessment (SCR Doc. 88/96)

The presentation of this paper focused only on the methodological aspects. The tuning technique used is an extension of the conventional VPA in which the fishing mortalities for the final year are inferred through an iterative tuning procedure which makes use of the information brought in by time series of abundance at age from research vessel survey series.

Detailed examination of catchability coefficient by age for each species is conducted, leading to an evaluation of the accuracy of the survey results. The sensitivity of the final diagnosis of the state of the stock in the last year is likely to remain high. It is recommended that the description and evaluation of the merits and limitations of various tuning methods to calibrate terminal F's be considered at the June 1989 Meeting of STACFIS and advanced as a specific item on the agenda. It is also recommended that computing facilities including several microcomputers and a terminal giving access to a (mini or) main frame computer be made available at the June meeting. It is essential that efficiency of various techniques could be tested by different series of data brought to the meeting and the results compared. This will allow the use of tuning techniques in assessments made during the course of the meeting.

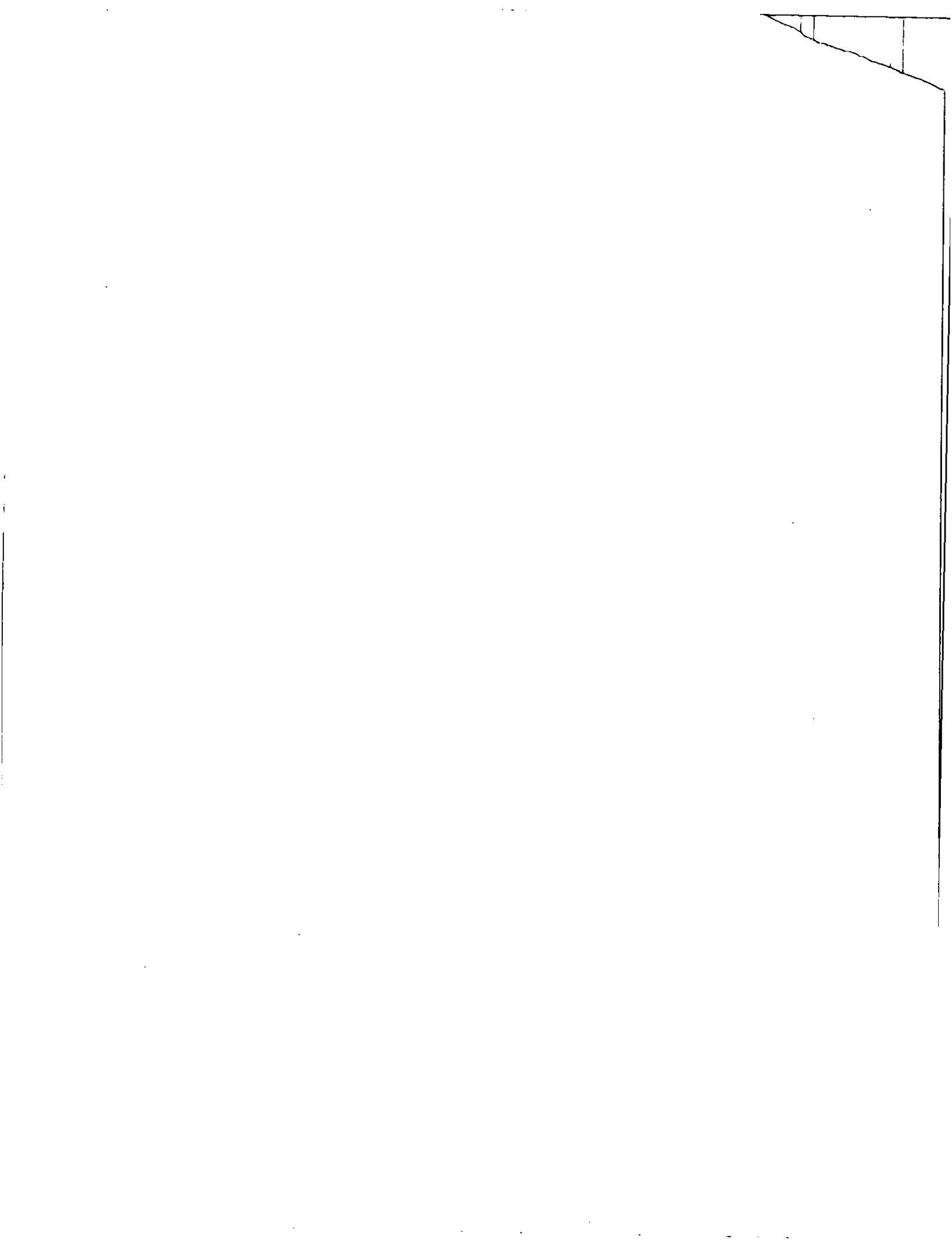
- d) The Chairman of STACFIS drew attention to two papers which were made available but only quoted by title:

Canadian Research Report, 1987 (Gulf Region Section). (SCS Doc. 88/06)

German Democratic Research Report for 1987 (SCS Doc. 88/21)

2. Acknowledgements

There being no further business, the Chairman thanked the participants for their assistance and the NAFO Secretariat for their efficient service during the course of this meeting and the preceding Special Session.



APPENDIX II: REPORT OF STANDING COMMITTEE ON RESEARCH COORDINATION (STACREC)

Chairman: A. Vazquez

Rapporteur: W. B. Brodie

The Committee met at the Ottawa Congress Centre, Ottawa, Ontario, Canada, on 15 and 16 September 1988 to consider and report on various matters referred to it by the Scientific Council, particularly survey design procedures. Representatives attended from Canada, Denmark (Greenland), EEC, Japan and USSR.

1. Report from Working Group on Survey Design Procedures

The working group met in Ottawa, Ontario, Canada, on 15 September 1988 to discuss the comparability of USSR trawl surveys in NAFO Subareas 2 and 3 in the 1967-85 period. It was noted that the estimates of small fish from the young fish surveys of 1967-70 may not be comparable with the estimates of small fish from 1971-82, because of modifications to the grid of stations used in 1967-70. However, the surveys in this time period may provide valuable oceanographic data.

STACREC noted that a preliminary analysis had been conducted on the distribution of sets in the fixed-station surveys from 1971-82. It was noted that there was a great deal of information available from these fixed-station surveys conducted by the USSR and that it would be useful to have abundance estimates from these surveys which were comparable with those from the stratified-random surveys. To determine if such estimates could be derived, it was noted that further analyses were required. Such work should include:

- a) Comparison of results from the fixed-station surveys with the results from other surveys comparable in area and time.
- b) Further analysis of the distribution of the fixed stations.
- c) Application of other statistical techniques to determine their potential usefulness.

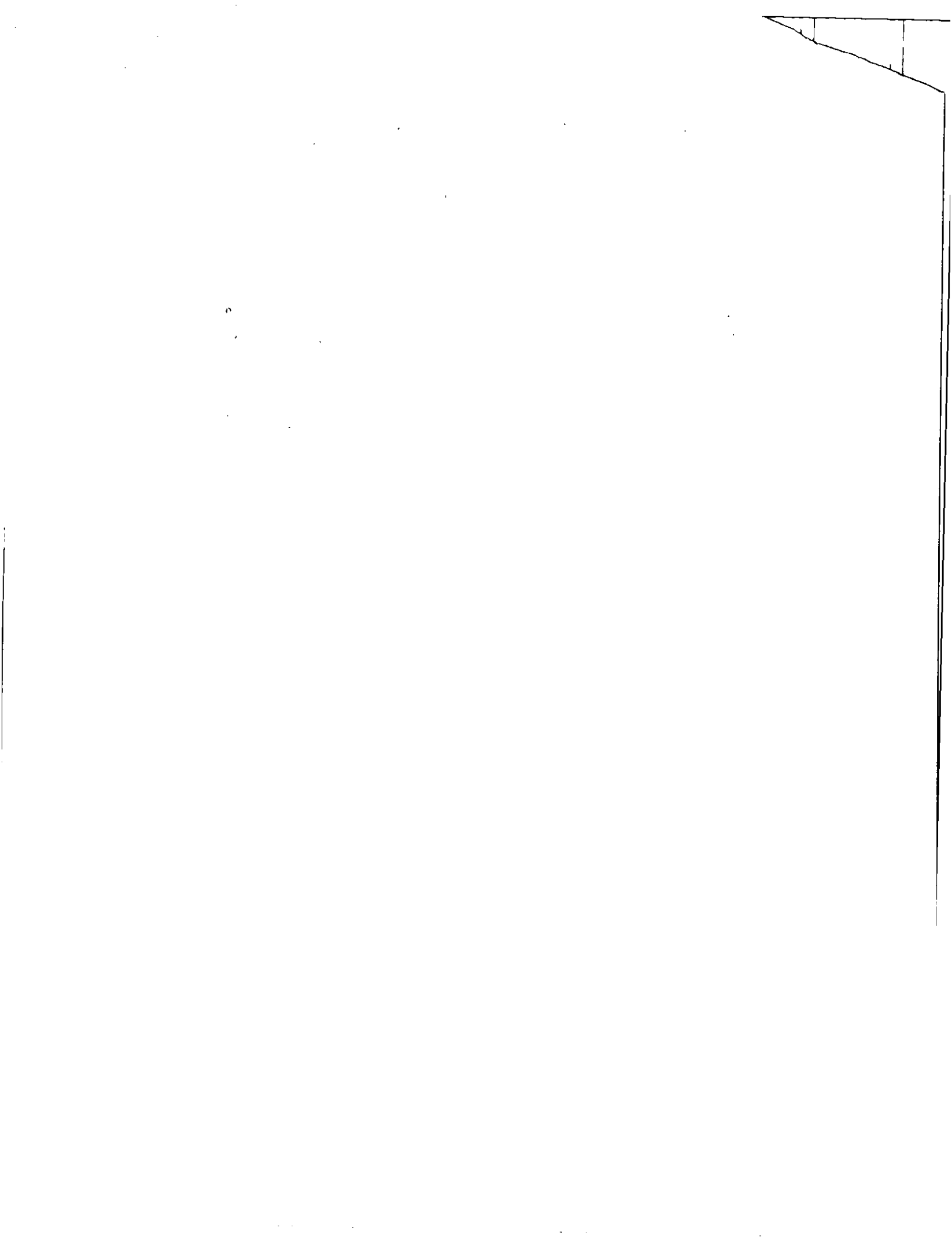
STACREC noted that the convener of the working group agreed to undertake this work initially and that the working group was to meet in June 1989 to discuss this work.

2. Other Matters

No items were discussed under this agenda item.

3. Acknowledgements

There being no other business, the Chairman thanked the participants for their cooperation and then adjourned the meeting.



APPENDIX III. REPORT OF STANDING COMMITTEE ON PUBLICATIONS (STACPUB)

Chairman: Sv. Aa. Horsted

Rapporteur: T. Amaratunga

The Committee met at the Ottawa Congress Centre, Ottawa, Ontario, Canada, on 15 and 16 September 1988. In attendance were Sv. Aa. Horsted (Chairman), W. R. Bowering (Canada), S. Kawahara (Japan), J. Messtorff (EEC), A. Vazquez (EEC) and V. A. Rikhter (USSR). The Assistant Executive Secretary (T. Amaratunga) was also in attendance.

1. Review of Editorial Board (Associate Editors)

The Committee was pleased to hear from the Assistant Executive Secretary that G. P. Ennis had reconsidered his potential resignation as Associate Editor for Invertebrates and conveyed to STACPUB that he was prepared to continue his functions as Associate Editor. The Chairman reported that he had invited R. K. Mohn (Canada) to serve as Associate Editor for Biomathematics, but had not received a reply yet. The Assistant Executive Secretary indicated that Dr. Mohn had verbally expressed interest in undertaking the task as Associate Editor for Biomathematics. Recognizing that Dr. Mohn is stationed in Halifax, the Committee hoped that he would be able to attend the STACPUB Meeting in June 1989.

With respect to the appointment of a member to the remaining position of Associate Editor for Vertebrate Fisheries Biology, the Committee deferred a decision, noting that the present number of Associate Editors was adequately handling the papers currently being considered for publication.

A view was expressed that STACPUB was probably presently using the term "Editorial Board" incorrectly. It was agreed that the Assistant Executive Secretary review the commonly used terminology and if required correct the terminology currently used in the introductory pages of the Journal. The Assistant Executive Secretary expressed concern that during the last three months, he had performed considerably more editorial tasks than was described for the Technical Editor. It was agreed that the whole editorial process would be reviewed at the June 1989 Meeting.

The Chairman informed the Committee that papers in the hands of the resigned Associate Editor for Biomathematics had been returned during this meeting to the Assistant Executive Secretary. The Assistant Executive Secretary was requested to convey regrets on behalf of STACPUB for the delays to date to the authors.

2. Invitational Papers

No progress had been made since the June 1988 Meeting of STACPUB. It was hoped that the Committee will have better results to report at the June 1989 Meeting.

3. Further Discussion on Possible Combination of Journal and Studies

Committee members had given some thought to the possibility of combining the Journal and Studies with a broadened scope. Views were expressed that the Studies fulfilled a very important role carrying papers that did not clearly suit the Journal standards. It was agreed to explore this further at the June 1989 Meeting.

4. Review of Papers for Possible Publication

The Committee was pleased to note that the Secretariat had responses from authors of 5 of the 11 papers nominated in June. Four had indicated intentions of forwarding their papers for the Journal and one had for Studies, in the near future.

The Committee reviewed 21 research documents presented since the June 1988 Meeting and nominated 9 of them. The Assistant Executive Secretary was requested to contact authors of the following documents, expressing the Council's interest in having them submitted in a suitable form for publication in the Journal or Studies: SCR Doc. 88/77, 79, 81, 83, 87, 89, 90, 91 and 93.

5. Microfiche of NAFO Documents

The situation concerning sales of ICNAF microfiche sets has not changed since the June 1988 Meeting and the Committee therefore maintained its view that no specific sum be set aside for the time being for the production of NAFO Documents.

6. Other Matters

a) Appointment of New STACPUB Member

STACPUB recognized with regret Dr. R. G. Halliday's resignation from STACPUB and expressed appreciation of his well wishes in a letter to the Chairman of STACPUB. The Chairman will express this in a letter to Dr. Halliday.

STACPUB welcomed A. Vazquez (EEC) who was appointed by the Scientific Council as the new member of STACPUB.

b) Acknowledgements

There being no further business, the Chairman thanked the participants for their assistance and the NAFO Secretariat for their efficient service during the course of this meeting and the preceding Special Session.

APPENDIX IV. AGENDA FOR SCIENTIFIC COUNCIL MEETING - SEPTEMBER 1988

- I. Opening (Chairman: J. S. Beckett)
 1. Appointment of rapporteur
 2. Adoption of agenda
 3. Plan of work

- II. Fisheries Science (STACFIS Chairman: A. Maucorps)
 1. Report of Special Session on "Impact of Changes in Environmental Conditions in the North Atlantic on Distribution, Availability and Abundance of Marine Species, with Particular Emphasis on the Labrador and Grand Bank Region During Early 1980's" (7-9 September 1988 with J. C. Rice as Convener), which involves the following topics:
 - a) General Theme

The primary intent of the Special Session is to provide a greater understanding of the influence of the extreme oceanographic conditions in the Northwest Atlantic in the early 1980's on the distribution and abundance of fish populations in those waters, and their impact on survey and commercial abundance indices. Although the principal areas of interest are the Northwest Atlantic regions, studies in other areas will be considered. Analyses of data from commercial fisheries, research surveys, and special directed studies in this field will be welcomed.
 - b) Specific Topics
 1. Anomalous Oceanographic Conditions
 2. Distribution and Abundance of Fish Populations
 3. Review of Relevant Quantitative Methods
 2. Stock Assessments (see Annex 1)
 - a) Cod (Subdiv. 3Ps)
 - b) Cod (Div. 2J+3KL)
 3. Future Special Sessions
 - a) Outline for Special Session in September 1989
 - b) Further consideration of proposed theme for Special Session in September 1990.
 4. Other Matters

- III. Research Coordination (STACREC Chairman: A. Vazquez)
 1. Report from Working Group on Survey Design Procedures
 2. Other Matters

- IV. Publications (STACPUB Chairman: Sv. Aa. Horsted)
 1. Review of Editorial Board (Associate Editors)
 2. Invitational papers
 3. Further discussion on possible combination of Journal and Studies
 4. Review of papers for possible publication
 - a) Review of response to proposals from past meetings, including those from the June 1988 Meeting
 - b) Papers for the September 1988 Special Session
 - c) Other contributions
 5. Microfiche of NAFO Documents
 6. Other Matters

V. Adoption of Reports

1. Provisional Report of Scientific Council, June 1988
2. Committee Reports of Present Meeting

VI. Review of Future Meeting Arrangements

1. June 1989 Meeting (confirmed dates are 7-21 June 1989)
2. Special Session (6-8 September 1989)
3. Annual Meeting (11-15 September 1989)
4. Tentative Date for June 1990 Meeting

VII. Other Business

1. STACPUB Membership
2. Nomination of STACFIS Chairman
3. Competence of Scientific Council
4. Format in 1989 of the Scientific Council and STACFIS reports with respect to stock assessment.

VIII. Adjournment

JUL 13 1988

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REF: 18126 13-07-88 000076923 - 000077957

TLX NR. 150559-XIV/UPB-8/209A

019-31475 NORTHWEST ATLANTIC FISHERIES ORGANISATION
NOVA SCOTIA, CANADA

ATTN. CAPT. J.C. ESTEVES CARDOSO, EXECUTIVE SECRETARY

SUBJECT: MEETING OF THE NAFO SCIENTIFIC COUNCIL, SEPTEMBER 1988
- REQUESTED AGENDA ITEMS

IN ANTICIPATION OF THE RECEIPT OF THE REPORT OF THE MEETING OF THE SCIENTIFIC COUNCIL HELD IN DARTMOUTH FROM 8-23 JUNE LAST AND ON THE BASIS OF THE DRAFT REPORT CIRCULATED TO PARTICIPANTS AT THAT JUNE MEETING THE COMMUNITY WISHES THAT THE FOLLOWING ITEMS RELATING TO SCIENTIFIC ADVICE BE INCORPORATED IN THE AGENDA OF THE SCIENTIFIC COUNCIL FOR ITS MEETING IN SEPTEMBER NEXT.

1. THE COMMUNITY REQUESTS FURTHER ANALYSIS OF THE ASSESSMENT AND ADVICE FORMULATED ON COD 3PS BY STACFIS IN JUNE 1988.

IN EFFECT, THIS IS REQUIRED DUE TO THE FACT THAT THE EVALUATION WOULD NOT APPEAR TO HAVE TAKEN ADEQUATE ACCOUNT OF THE COMPLEX NATURE OF THE FISHERIES UNCERTAINTIES ABOUT THE SCIENTIFIC CONCLUSIONS DUE TO LACK OF CLARITY ABOUT THE ASSUMPTIONS UNDERLYING THE PARAMETERS USED AND FINALLY THE RESTRICTION OF THE SCIENTIFIC ADVICE TO A SINGLE MANAGEMENT OPTION.

ARISING FROM THE FOREGOING THE COMMUNITY REQUESTS THAT THE SCIENTIFIC COUNCIL SHOULD IN THEIR RE-EVALUATION OF THE STOCK, INTER ALIA, EXPLAIN THE MAJOR DISCREPANCIES IN TERMS OF YIELD BETWEEN LAST YEAR'S (SCR 88/75) AND THIS YEAR'S ASSESSMENTS.

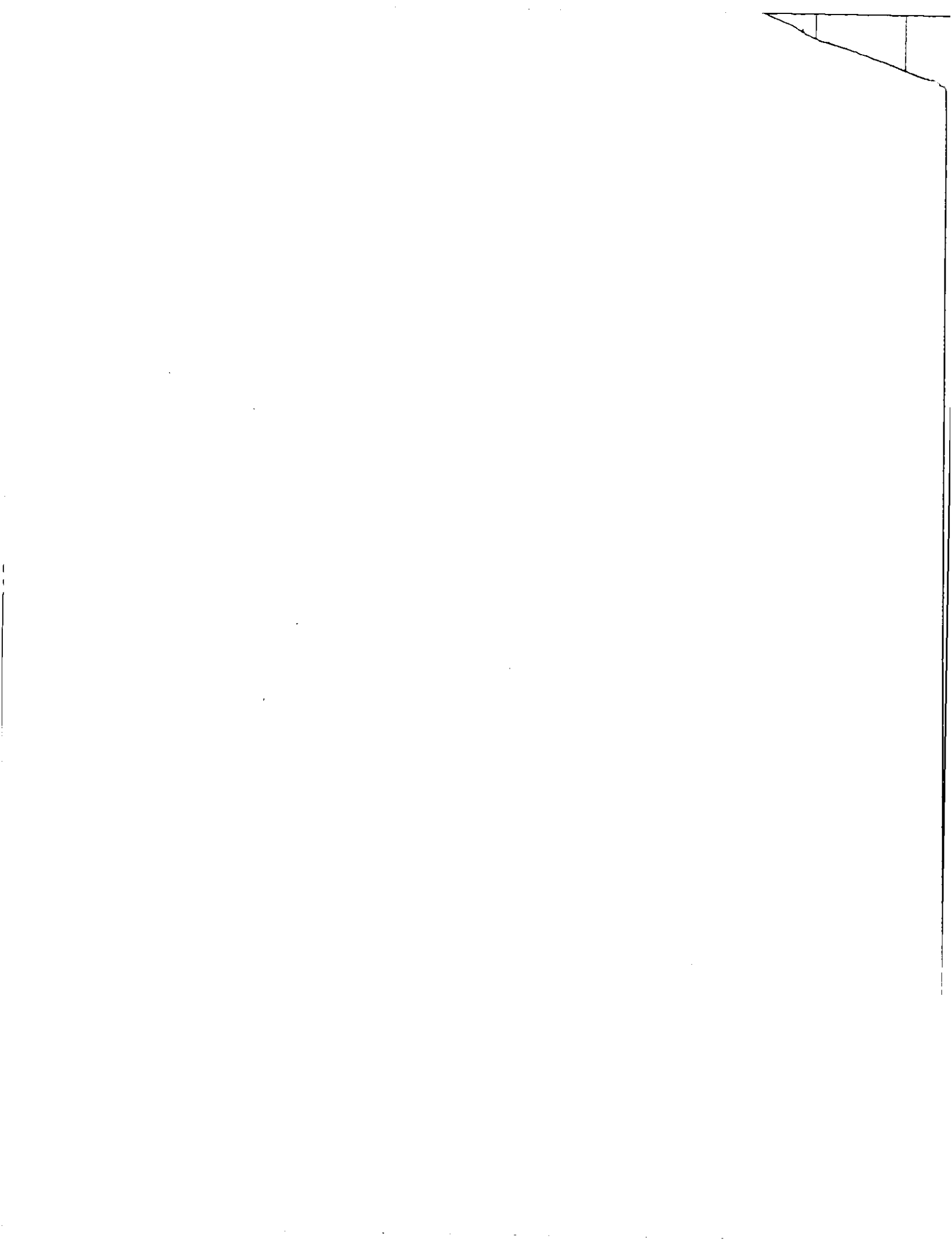
JUSTIFICATION SHOULD BE GIVEN AS TO THE CHOICE OF PARAMETERS, ESPECIALLY FOR THE CALCULATION OF YIELD PER RECRUIT AND THE RECRUITMENT ESTIMATES. THE SENSITIVITY OF CATCH PROJECTIONS TO THE INPUT SHOULD BE GIVEN WHERE APPROPRIATE AND FINALLY CATCH PROJECTIONS SHOULD BE GIVEN OUTLINING A RANGE OF MANAGEMENT OPTIONS.

2. THE COMMUNITY REQUESTS THAT THE SCIENTIFIC COUNCIL SHOULD PROVIDE 'ON ITS OWN INITIATIVE' IN ACCORDANCE WITH ARTICLE VI(D) OF THE CONVENTION SCIENTIFIC ADVICE INCORPORATING A RANGE OF MANAGEMENT OPTIONS ON THE COD 2J+3KL STOCKS.

THE PROVISION OF SUCH ADVICE WILL ENABLE THE FISHERIES COMMISSION TO FULFILL ITS RESPONSIBILITIES FOR THE MANAGEMENT AND CONSERVATION OF THE FISHERY RESOURCES IN THE REGULATORY AREA, IN ACCORDANCE WITH ARTICLE XI OF THE CONVENTION, ON THE BASIS OF ADEQUATE SCIENTIFIC ADVICE.

THE COMMUNITY REQUESTS THAT THESE ITEMS FOR INCLUSION ON THE AGENDA OF THE SCIENTIFIC COUNCIL MEETING IN SEPTEMBER NEXT BE COMMUNICATED TO THE CHAIRMAN OF THE SCIENTIFIC COUNCIL AND STACFIS AS WELL AS TO ALL CONTRACTING PARTIES.

E. GALLAGHER
DIRECTOR GENERAL
COMEUR
NNNN

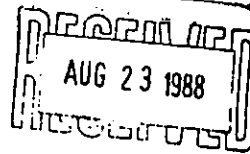




Fisheries
and Oceans

Pêches
et Océans

Deputy Minister Sous-ministre



AUG
AOÛT 19 1988

J.C. Esteves Cardoso (Capt.)
Executive Secretary
Northwest Atlantic Fisheries Organization
P.O. Box 638
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B2Y 3Y9

Subject: Provisional Agenda of NAFO Scientific Council
Meeting of September 12 - 16, 1988

Dear Sir:

I refer to NAFO Circular Letter 88/43 of July 14, 1988 and in particular to Annex 1 to the Provisional Agenda of the Scientific Council for its September 12 - 16, 1988 meeting.

Annex 1 is a letter from Mr. E. Gallagher of the European Community requesting that the Scientific Council conduct assessments at its September meeting of cod in Division 3Ps and cod in Divisions 2J+3KL. The Provisional Agenda of the Scientific Council meeting includes these requests by the European Community as Items II-2 (a) and (b).

Canada objects to the inclusion of Items II-2 (a) and (b) on the Scientific Council's Provisional Agenda and opposes their inclusion on the final agenda.

With respect to cod in Division 3Ps (Provisional Agenda Item II-2 (a)), Canada requested an assessment of this stock at the meeting of the Scientific Council in June 1988. Canada made this request in accordance with Article VII of the NAFO Convention, which entitles Canada as the coastal state to receive advice from the Scientific Council on a fishery resource in waters under Canada's fisheries jurisdiction.

In response to Canada's request, the Scientific Council conducted an assessment of 3Ps cod that was based on all available data and carried out in a professional, scientific manner. The advice provided met fully the terms of reference established by Canada. Canada is entirely satisfied with the advice provided by the Scientific Council. Canada does not consider there are any grounds to justify another assessment of 3Ps cod by the Scientific Council or any additional consideration of the existing assessment.

I would also like to reiterate the point made in my letter of June 7, 1988 (GF/8-129) regarding the authority of the European Community to make any request whatsoever to NAFO with respect to cod in Division 3Ps. It is Canada's understanding that, pursuant to European Council Decision of June 30, 1986 on the association of overseas countries and territories with the European Economic Community (86/283/EEC), that the European

Community no longer has legal status as a coastal state under Article VII of the NAFO Convention with respect to the 3Ps cod stock.

Canada has been formally advised by France that the portion of the 3Ps cod stock that lies within St. Pierre and Miquelon waters is now subject, since the European Council decision in June 1986, to the exclusive jurisdiction of France.

As the European Community is not a "coastal state" under the terms of Article VII of the NAFO Convention for 3Ps cod, Canada considers that the request of the European Community for further analysis of the assessment and advice formulated on 3Ps cod by STACFIS in June 1988 is inconsistent with the terms of the NAFO convention and that the Scientific Council is legally required to disregard it.

The difference between Canada's position and that of the EC involves legal issues which Canada considers outside the mandate of the Scientific Council. The Scientific Council should not be placed in a situation where it must judge between opposing legal views. Canada notes that the General Council will be meeting on September 13. Should the EC insist that this proposal remain on the agenda of the Scientific Council, Canada requests that the General Council provide guidance to the Scientific Council on the issue. The addition of this agenda item to the General Council would be consistent with Rule 4 of the rules of Procedure of the Council. Canada, therefore, proposes that the Scientific Council defer consideration of Item II-2 (a) of its Provisional Agenda until the Scientific Council has obtained the advice of the General Council.

With respect to Item II-2 (b), a stock assessment of cod in Divisions 2J+3KL, I would note the request made to the Scientific Council regarding 2J+3KL cod by the Fisheries Commission when it last met in September 1987. To quote from the Report of the Fisheries Commission at the Ninth Annual Meeting (NAFO/FC DOC. 87/14, Revised, Annex VI) the Fisheries Commission requested, with the concurrence of the coastal state, "that the Scientific Council continue to provide information, if available, on the stock separation in Divisions 2J+3KL and the proportion of the biomass of the cod stock in Division 3L in the Regulatory Area."

The question of whether the Fisheries Commission should request an assessment of the 2J+3KL cod stock was exhaustively discussed at the September 1987 meeting. Eventually, however, the Fisheries Commission decided to request the Scientific Council to provide information on stock separation only. Canada, as the coastal state for the 2J+3KL cod stock, concurred in this request by the Fisheries Commission.

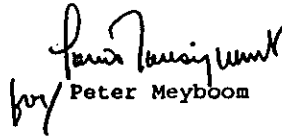
It is Canada's view that the European Community's request in Annex 1 of Circular Letter 88/43 relative to 2J+3KL cod appears to be requesting action contrary to the decisions of the Fisheries Commission. Canada does not consider that Article VI (1)(d) of the NAFO Convention, cited explicitly in the European Community's request regarding 2J+3KL cod, was meant to sanction such an action by the Scientific Council. The purpose of Article VI (1)(d), on the contrary, is to permit scientific experts to initiate investigation by the Scientific Council in cases of serious conservation problems which have otherwise failed to gain the attention of the Fisheries Commission. This is patently not the case now with respect to 2J+3KL cod.

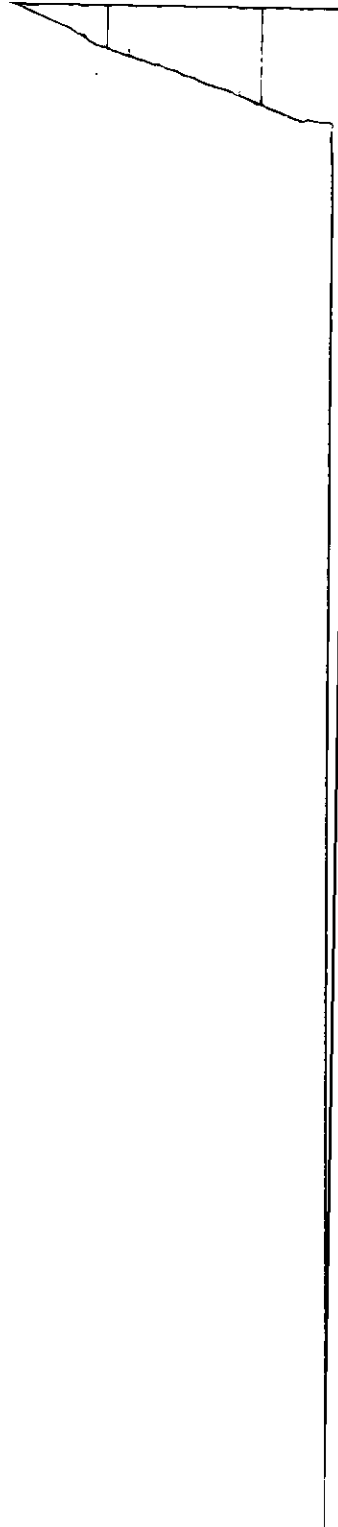
In fact, there is no basis in the NAFO Convention for the request made of the Scientific Council by the European Community for an assessment of cod in Divisions 2J+3KL. Clearly, as set out in Articles VII and VIII of the Convention, only the coastal state and the Fisheries Commission are entitled to refer questions to the Scientific Council.

Canada, therefore, is of the opinion that the Scientific Council is legally required, under the NAFO Convention, to disregard the EC request that it carry out an assessment of cod in Divisions 2J+3KL.

I would be grateful if copies of this letter could be distributed to all Contracting Parties and to the Chairmen of the Scientific Council and STACFIS.

Yours sincerely,


for Peter Meyboom



APPENDIX V. LIST OF PARTICIPANTS

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APPENDIX VI. LIST OF RESEARCH AND SUMMARY DOCUMENTS

RESEARCH DOCUMENTS (SCR)

- | SCR # | Ser. # | |
|--------|--------|--|
| 88/03 | N1438 | <u>RIKHTER, V. A., and V. F. TUROK.</u> Distribution of silver hake, other fish species and squids in 1987 on the Scotian Shelf slopes from the Soviet observers data. (14 pages) |
| 88/77* | N1525 | <u>LAZIER, J. R. N.</u> Lower temperatures in the Labrador Current and in the atmosphere during the early 1970's and 1980's. (19 pages) |
| 88/78* | N1526 | <u>PARSONS, D. G.</u> The effects of changes in environmental temperature on growth and reproduction of the northern shrimp (<u>Pandalus borealis</u>) from Cartwright Channel (Division 2G). (7 pages) |
| 88/79* | N1528 | <u>IKEDA, M.</u> Interannual variabilities in the Arctic ice cover, Labrador Sea salinity and Labrador Shelf ice cover. (13 pages) |
| 88/80* | N1532 | <u>LODER, J. W., and C. K. ROSS.</u> Interannual variability in temperature and salinity on the southeast shoal of the Grand Bank. (22 pages) |
| 88/81* | N1533 | <u>PERRY, R. I., J. S. SCOTT, and R. J. LOSIER.</u> Water mass analysis and groundfish distributions on the Scotian Shelf, 1979-84. (14 pages) |
| 88/82* | N1534 | <u>MYERS, R. A.</u> The role of environmental temperature and seasonal migration on estimates of cod abundance in the NAFO Div. 2J+3KL research surveys. (42 pages) |
| 88/83* | N1535 | <u>LOENG, H.</u> The influence of climate on biological conditions in the Barents Sea. (17 pages) |
| 88/84* | N1536 | <u>WOOD, G., and V. TANG.</u> Sea-surface temperature anomalies off the northeastern U.S.A. during 1981-86. (7 pages) |
| 88/85* | N1537 | <u>INGHAM, M. C., and G. B. WOOD.</u> Air temperature and wind speed anomalies in 1981-1987 at coastal weather stations in the northeastern U.S.A. (11 pages) |
| 88/86* | N1538 | <u>ARMSTRONG, R., V. TANG, and G. WOOD.</u> Sea-surface wind stress anomalies in 1981-87 off the northeastern U.S.A. (14 pages) |
| 88/87* | N1539 | <u>BUGDEN, G. L.</u> Oceanographic conditions in the deeper waters of the Gulf of St. Lawrence in relation to local and oceanic forcing. (36 pages) |
| 88/88* | N1540 | <u>BAIDALINOV, A. P., and V. A. RIKHTER.</u> Correlation between trends to change of sea-surface temperature, biomass and catch-per-unit effort of Scotian Shelf silver hake (Div. 4VWX) in 1977-87. (8 pages) |
| 88/89* | N1541 | <u>CHUMAKOV, A. K., W. R. BOWERING, and P. ERNST.</u> Distribution of Greenland halibut (<u>Reinhardtius hippoglossoides</u> Walbaum) in the Northwest Atlantic depending on bottom temperature. (20 pages) |
| 88/90* | N1542 | <u>CARSCADDEN, J., K. T. FRANK, and D. S. MILLER.</u> Distribution of capelin (<u>Mallotus villosus</u>) in relation to physical features on the Southeast Shoal. (31 pages) |
| 88/91* | N1543 | <u>MYERS, R. A., S. A. AKENHEAD, and K. DRINKWATER.</u> The influence of Hudson Bay runoff and ice-melt on the salinity of the Newfoundland Shelf. (15 pages) |
| 88/92* | N1544 | <u>RUBEC, P. J.</u> Changes in redfish distribution and abundance with reference to changes in bottom temperatures in the Gulf of St. Lawrence from 1983 to 1987. (25 pages) |
| 88/93* | N1545 | <u>FRECHET, A.</u> Investigation of the effect of ice cover on cod catches in the Gulf of St. Lawrence. (22 pages) |
| 88/94* | N1546 | <u>WELLS, R., W. B. BRODIE, C. A. BISHOP, and J. W. BAIRD.</u> Distribution and abundance of three fish species on the Grand Bank in relation to depth and temperature of the water. (177 pages) |

List of Documents (continued)

- 88/95 N1547 WELLS, R., J. W. BAIRD, and C. A. BISHOP. The proportion of cod biomass in the Regulatory Area of Division 3L in relation to the whole of Division 3L. (16 pages)
- 88/96 N1549 BERTRAND, J., A. LAUREC, A. MAUCORPS, and B. MESNIL. A new approach to Div. 3Ps cod stock assessments. (23 pages)
- 88/97 N1554 BOROVKOV, V. A., and I. I. TEVS. Temperature of bottom waters over the Newfoundland Shelf in spring-summer 1972-86. (16 pages)
- 88/98 N1555 SIGAEV, I. K., A. I. SHERSTYUKOV, and N. K. ISTOMINA. Distribution and abundance of 0-group silver hake and thermal conditions of Scotian Shelf waters in October-November 1987. (18 pages)
- 88/99 N1556 ARKHIPKIN, A. I. Types of development and sexual system functioning of cephalopods - approach to creation of general scale for maturity stages. (30 pages)
- 88/100 N1557 SAVVATIMKSY, P. I. Possible reasons for variations in roundnose grenadier catches composition in the Northwest Atlantic in 1971-87. (21 pages)

SUMMARY DOCUMENTS (SCS)

- | SCS # | Ser. # | |
|-------|--------|---|
| 88/21 | N1527 | <u>ERNST, P., and R. EGGERS.</u> German Democratic research report for 1987. (13 pages) |
| 88/22 | N1550 | <u>WITHDRAWN.</u> |
| 88/23 | N1551 | <u>NAFO SECRETARIAT.</u> Report of Scientific Council, Annual Meeting, September 1988. (28 pages) |

* Special Session papers