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FIFTH ANNUAL MEETING - SEPTEMBER 1983

Report of Scientific Council

Leningrad, USSR, 14-23 September 1983

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REPORT OF THE SCIENTIFIC COUNCIL

Annual Meeting, September 1983

Chairman: R. Wells Rapporteur: V. M. Hodder

The Scientific Council and its Standing Committees on Fishery Science (STACFIS) and on Publications (STACPUB) met at the Pribaltiyskaya Hotel, Leningrad, USSR, during 14-23 September 1983 to consider and report on various matters listed in the Agenda (Appendix III). Representatives attended from Bulgaria, Canada, Cuba, European Economic Community (Denmark, Federal Republic of Germany, France, Netherlands, and the Commission), German Democratic Republic, Japan, Norway, Poland, Spain, and Union of Soviet Socialist Republics (USSR) (See Appendix IV). The participants included scientists who presented papers to the Special Session on Trophic Relationships in Marine Fishes Relevant to Fisheries Management in the Northwest Atlantic on 14-16 September 1983.

The reports of the Standing Committees, as adopted by the Council at this meeting, are at Appendix I (STACFIS) and Appendix II (STACPUB). Brief summaries of these reports and other matters considered by the Council are given below.

I. FISHERIES SCIENCE (APP. I)

1. Special Session on Trophic Relationships in Marine Fishes

The Special Session took place on 14-16 September 1983 with V. A. Rikhter (USSR) and G. R. Lilly (Canada) as co-conveners. The session focussed on factors influencing the feeding intensity and diet spectrum of many marine species in the Northwest Atlantic, on specific predator-prey interactions and on the potential and methodology of multispecies virtual population analysis (MSVPA) models. When reviewing the 21 scientific contributions, discussion centered on the merits of MSVPA, on the feeding behavior of commercial species, on the dynamics of the ecosystems supporting these species, and on the predator-prey factors influencing mortality of larvae and juveniles of commercial species and thus year-class success.

2. Environmental Research

The Council, noting the valuable contributions made by the Subcommittee on Environmental Research, endorsed the conclusions of STACFIS regarding its future work and agreed that the Subcommittee should continue to provide an annual update of all relevant oceanographic data and to relate these oceanographic conditions to the norms of the base periods established in the over-

view presented at the June 1983 Meeting. The Subcommittee is further requested to advise on the effects of environmental factors on the distribution and movements of marine fishes in the Northwest Atlantic.

3. Other Scientific Documents

The Council noted that 30 research documents were presented at this meeting, 21 of which were reviewed at the Special Session. Of the remaining 9 documents, 6 were reviewed by STACFIS and 3 were deferred to the June 1984 Meeting.

4. Presentation of Assessment Material for STACFIS Reports

The Council noted the conclusions of STACFIS concerning the sections dealing with stock assessments in its report, and endorsed the recommendations of STACFIS to introduce a standard list of contents for mandatory use by authors, to cite page references for information and analyses referred to in its report, and to produce a STACFIS research document at the time of the meeting for all data and analyses considered but not included in its report or in other published form.

5. Conveners for Special Sessions in September 1984

The Council endorsed the recommendation of STACFIS regarding the appointment of Mr. T. Rowell (Canada) and Dr. Ch. M. Nigmatullin (USSR) as co-conveners for the Special Session on "Biology and ecology of squids, *Illex illecebrosus* and *Loligo pealei*, in the Northwest Atlantic" to be held in September 1984.

II. PUBLICATIONS (APP. II)

1. Status of Publications

The Council was very pleased to note, that Volume 4 of the *Journal of Northwest Atlantic Fishery Science*, containing a comprehensive "Guide to Early Stages of Marine Fishes in the Western North Atlantic" (425 p.), was recently completed.

Editing of papers for Volume 5 is in progress and Vol. 5(1) is expected to be ready for publication in December 1983 or January 1984.

NAFO Scientific Council Studies, Number 6, is expected to be completed for printing at the end of 1983.

Publication and distribution of Volume 31 of the *NAFO Statistical Bulletin*, containing 1981 fishery statistics, is expected about mid-October 1983.

2. Editorial Matters

The Council was pleased to note, that the Editorial Board to the Journal is now again complete by the appointment of R. G. Halliday (Canada) and M. D. Grosslein (USA) as Associate Editors for Vertebrate Fisheries Biology.

The Council noted that the quality of the Scientific Council Report, as approved at the Scientific Council Meeting, has suffered from editorial errors such that an undue workload has been placed on the Assistant Executive Secretary in editing the Report afterwards, and therefore endorses the recommendation of STACPUB that the Scientific Council and its Standing Committees, Subcommittees and Working Groups substantially improve the quality of their reports at the time of their approval by reviewing in detail the reports for ambiguities and editorial errors and any other aspects that will ensure the high quality worthy of such a scientific body.

3. Utilization of Microfiche

The Council noted that production of approximately 600 fiches would be required if all scientific research related documents in the ICNAF series, as referred to in the STACPUB Report, are to be reproduced.

National representatives to the Scientific Council are requested to now approach their appropriate national authorities and/or institutions to obtain clear expressions of interest in the purchase of sets of copies. The results of their enquiries should be communicated to the Executive Secretary by 31 March 1984 so that appropriate estimates can be included in the budget projections for 1985, which must be circulated 90 days prior to the September 1984 Meeting of the General Council.

The Executive Secretary is requested to provide all National Representatives with the background material which has been provided to members of STACPUB and to inform them of the decisions and resolutions made at this meeting of the Council, upon his return to headquarters. The Executive Secretary is requested, based on replies received from Representatives by the deadline, and in consultation with the Chairman of STACPUB, to decide on the number of copies to be produced and hence on the appropriate budgetary estimate.

4. Papers for Possible Publication

The Council noted that STACPUB had reviewed the scientific papers presented to this meeting. With regard to documents presented at the Special Session on Trophic Relationships it was noted that these papers should not be published

as a compendium but each document should be considered on its own merits. The Council therefore endorses the recommendation of STACPUB concerning this matter.

Altogether STACPUB recommended 14 papers for possible publication in one of the Council's publication series, subject to revision by the authors and acceptance by the Editor.

III. FUTURE SCIENTIFIC MEETINGS

1. Mid-term Meeting for Assesment of Shrimp Stocks

The appropriate time for a mid-term meeting to assess the shrimp stocks in Subareas 0 and 1 and off East Greenland was discussed. The significance of including data from the current year's fishery and precruit surveys in the analysis of the present status of a stock and the determination of prospects for the following year varies from species to species and from stock to stock. At one extreme is the squid (*Illex illecebrosus*) stock, in which the individuals to be harvested in 1984 are not yet born and hence no abundance indices can be derived from research surveys and the commercial fishery in 1983. In the case of redfish, the year-classes which will comprise the majority of the 1984 catch have been studied and exploited for several years, and cumulative information on their abundance from the commercial fishery and research surveys to the end of 1982 provides useful indication of their abundance in 1984. Redfish year-classes which were too young to be present in commercial catches and research surveys in 1982 will make no significant contribution to the 1984 fishery. Consequently, it is possible to give useful advice on management of the fishery in 1984 without including analysis of 1983 data. Analysis of the shrimp stocks in Subareas 0 and 1 and at East Greenland is an intermediate case. The year-classes supporting the 1982 fishery will not contribute significantly to the fishery in 1984, but shrimp recruiting to the 1983 fishery and young shrimp observed in 1983 research surveys will sustain the fishery in 1984. Therefore, the inclusion of shrimp data collected in 1983 is particularly important in the provision of useful advice. Catch and effort data will be forthcoming from the fishery still being prosecuted in August and September. A further important source of information about the Davis Strait stock, including estimates of the abundance of recruiting shrimp, is the photographic survey conducted by Denmark.

The Scientific Council, at its June 1983 Meeting, deferred to the September 1983 Meeting its final decision on the timing of the meeting to assess the shrimp stocks, pending the receipt of proposals from interested parties. At that time, the Council concurred with the proposal of STACFIS that the best time for a meeting to assess the shrimp stocks would be in early 1984. Information received at this meeting indicates that scientists from France and Norway can be prepared for a meeting in mid-November, whereas scientists from Canada and Denmark have indicated that adequate preparation of their data implies a meeting not earlier than January 1984. In its desire to provide appropriate advice based on adequate analysis of data, the Scientific Council therefore plans a meeting for the assessment of northern shrimp on 18-23 January 1984 at the Bedford Institute of Oceanography, Dartmouth, Canada.

The Council noted the invitation put forward by the EEC representative that the shrimp meeting in 1984 should take place in Copenhagen in late November at a date to be confirmed later. The Scientific Council therefore requests STACFIS at its meeting in January 1984 to consider this invitation and to advise the Scientific Council accordingly on the appropriate timing of a meeting to provide advice on the Davis Strait stock for 1985.

2. Regular Meeting in June 1984

As agreed at the June 1983 Meeting, the Scientific Council, together with its Standing Committees, Subcommittees and Working Groups, will meet at the Bedford Institute of Oceanography, Dartmouth, Nova Scotia, Canada, during 6-21 June 1984.

3. Annual Meeting in September 1984

The Scientific Council agreed that its meeting will begin on Wednesday in the week preceding the meetings of the General Council and Fisheries Commission in September 1984. The theme for the Special Session at that meeting is "Biology and ecology of the squids, *Illex illecebrosus* and *Loligo pealei*, in the Northwest Atlantic.

4. Regular Meeting in June 1985

The Council tentatively agreed to meet during 5-20 June 1985 at the Bedford Institute of Oceanography, Dartmouth, Canada.

5. Theme for Special Session at the 1985 Annual Meeting

The Council noted that the theme for the 1985 Annual Meeting will be "Design and Evaluation of Biological Surveys in Relaton to Stock Assessments".

IV. OTHER MATTERS

1. Procedures for Reporting Sampling Data to the Secretariat

The appropriateness of the current formats for reporting sampling data was discussed at the June 1983 Meeting. The matter was deferred to this meeting so that the Secretariat could obtain from representatives the time periods and areas appropriate for stock assessment purposes. Time was insufficient to complete the work prior to this meeting, and the matter was deferred for consideration at the June 1984 Meeting.

2. Provisional Report of Scientific Council, June 1983

The Council reviewed and adopted, with some additions and amendments (Addenda and Corrigenda to SCS Doc. 83/VI/21), its Report of the June 1983 Meeting (SCS Doc. 83/VI/21).

V. ELECTION OF OFFICERS FOR 1984-85

The Council was pleased to confirm, as a result of votes submitted to the Executive Secretary following the lack of a quorum at the June 1983 Meeting, the election of the following officers to serve from the end of the present meeting until the end of the 1985 Annual Meeting:

a) Scientific Council

V. A. Rikhter (USSR) - Chairman

J. Messtorff (EEC) - Vice Chairman

b) Standing Committees

J. Carscadden (Canada) - Chairman of STACFIS

J. Moller Jensen (EEC) - Chairman of STACREC

J. Messtorff (EEC) - Chairman (*ex officio*) of STACPUB

VI. ADJOURNMENT

The Scientific Council was saddened to hear of the passing away of Dr. K. G. Konstantinov. His contributions to ICNAF and NAFO, and to the scientific community in general, have been great.

The Chairman expressed his thanks to the Chairmen and rapporteurs of STACFIS and STACPUB and to the working groups including the Special Session on trophic relationships in marine species, to the rapporteur of the Scientific Council and to all participants for their cooperation and support during the course of the meeting. He made note of the unfailing and indispensible assistance of the NAFO Secretariat and the support staff for the Secretariat made available by the Soviet Union.

Dr. J. Messtorff, on behalf of all members of the Scientific Council, expressed appreciation for the excellent guidance rendered by the Chairmen of the Council and its Committees during the last two years.

This Scientific Council meeting has been even more pleasant than usual because of the opportunity to see the delightful city of Leningrad.

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

Chairman: J. P. Minet Rapporteurs: various

The Committee met at the Pribaltiyskaya Hotel, Leningrad, USSR, during 14-19 September 1983 to consider and report on various matters referred to it by the Scientific Council. The Special Session on "Trophic Relationships in Marine Species Relevant to Fisheries Management in the Northwest Atlantic", the future of the Subcommittee on Environmental Research, appointment of conveners for the September 1984 Special Session, proposed changes in the presentation of its report, adoption of outstanding section of the June 1983 report and review of scientific documents were successively considered by STACFIS.

Scientists attended from Bulgaria, Canada, Cuba, EEC (Denmark, Federal Republic of Germany, France, Netherlands, and the Commission), German Democratic Republic, Japan, Norway, Poland and USSR.

I. SPECIAL SESSION ON TROPHIC RELATIONSHIPS IN MARINE SPECIES RELEVANT TO FISHERIES MANAGEMENT IN THE NORTHWEST ATLANTIC

1. Introduction

The Special Session, convened by V. A. Rikhter (USSR) and G. R. Lilly (Canada), was held at thePribaltiyskaya Hotel, Leningrad, on 14-16 September 1983. Twenty-one scientific contributions were presented. Two of the papers were keynote presentations: S. R. Kerr (Canada) on fisheries studies in freshwater and their relevance to marine systems, and N. Daan (The Netherlands) on the aims, organization and preliminary results of the ICES stomach sampling project in the North Sea. The various reports considerably increased our knowledge of the spatial, temporal and size-related factors influencing the feeding intensity and diet spectrum of many species in continental shelf and slope areas of the Northwest Atlantic. There were also examinations of specific predator-prey interactions and discussions of the potential and methodology of multispecies virtual population analysis (MSVPA) models.

2. General Considerations

There was considerable discussion of the merits of the multispecies virtual population analysis (MSVPA) models being developed for the North Sea. While application of similar models to Georges Bank might be rewarding, it was generally felt that such models might not be applicable to more northern areas, such as eastern Newfoundland, where most of the food of major predators is composed of invertebrates and other taxa which are not assessed by virtual population analysis (VPA) and therefore must be included in the "other food" component of current

MSVPA's. Further complicating factors are the extensive annual migrations undertaken by some species and the division of certain species into several stocks, each with its own vital rates and migrations patterns.

It was clear that much more information was needed on the feeding behavior of species of commercial interest, and indeed on the dynamics of the whole ecosystem supporting these species. Large-scale marine systems are difficult to manipulate experimentally, but considerable insight into their structure might be derived from long-term monitoring of the abundance of predators and prey, the food of the predators, and a few carefully selected environmental parameters.

Considerable insight into the structure of marine ecosystems and the consequences of management decisions may be derived from a review of studies conducted in bodies of fresh water, or even in the coastal areas of the ocean, where it is usually easier to measure important aspects of the physical environment, to examine the physiological basis of empirical observations, and to conduct comparative studies and experimental manipulations. There was a suggestion that a comparison of trophic interactions in similar environmental conditions at various locations in the North Atlantic might reveal fresh insights into the structure of the ecosystems. For example, the Georges Bank region might be compared with the North Sea, and the area off eastern Newfoundland might be compared with the West Greenland, Iceland and western Barents Sea areas.

The high mortality rates reported for juvenile fish in the North Sea and on Georges Bank indicate that large-scale studies (such as the Flemish Cap Project), whose goal is to elucidate the factors influencing year-class success, should place greater emphasis on mortality of juveniles. There should also be greater attention directed to the role of predation by invertebrates and small fish in the mortality of larvae.

As in earlier symposia, the need for intensive study of the rate of evacuation of food from predator stomachs, particularly at low temperatures (< 3°C) was emphasized. Such data are required to enable the calculation of feeding rate from stomach content weight.

The Committee

recommends

that STACPUB consider the publication of the contributions to the Special Session on Trophic Relationships in Marine Species relevant to Fisheries Management in the Northwest Atlantic.

3. Papers Presented

The following documents were considered at the Special Session on Trophic Relationships: SCR Doc. 83/IX/69-83, 86-89, 92, 93 (see List of Documents).

II. ENVIRONMENTAL RESEARCH

1. Future of Subcommittee on the Environmental Research

The future of this Subcommittee, established by the Scientific Council in September 1981, was discussed at the June 1983 Meeting of STACFIS (SCS Doc. 83/VI/21, p. 48). At that time, in view of the apparent lack of interest in the work of the Subcommittee (small participation of scientists, particularly oceanographers, and small amount of documentation presented), the question of discontinuing its existence was briefly discussed. However, it was agreed to defer the discussion on this matter to the present meeting because scientists wished to contact other scientists in their laboratories before taking a firm decision.

This question was therefore discussed again during this meeting of STACFIS. It was generally agreed that, even if difficulties presently exist, the Subcommittee on Environmental Research should be maintained within the framework of STACFIS. It was recognized that the definition of its mandate had to be refined to encourage a larger input of scientific contributions, participation and discussion, and to strengthen the links between oceanographers and fishery biologists.

STACFIS agreed that the task of the Subcommittee to gather annually all relevant oceanographic data should be continued in order to provide, on a regular basis, a better understanding of the environmental conditions in the Northwest Atlantic. Furthermore, the Committee agreed that more specific goals had to be defined in order to relate environmental factors to the dynamics of exploited populations. When discussing specific goals that could be referred to the Subcommittee, STACFIS recognized again the importance of environmental conditions on recruitment of various species. However, in view of the intractability of this problem, STACFIS proposed that the Subcommittee on Environmental Research should focus its work as soon as possible on the influence of environmental factors on the distribution, movements and migrations of marine species in the Northwest Atlantic. STACFIS also agreed that, at the June 1984 Meeting, the Subcommittee should meet in the middle of the period allocated for stock assessment work in order to insure a larger participation of fishery biologists.

In closing the discussion on this matter, STACFIS reiterated its confidence in the present Chairman of the Subcommittee (Dr. R. Trites, Canada) to conduct this difficult task.

2. Future Updating of the Overview of Environmental Conditions in 1982 (SCR Doc. 83/VI/23)

At its June 1983 Meeting, STACPUB had already noted the usefulness of the analysis presented in this overview for 1982. The need for updating these time series, on a yearly basis, was recognized by the Committee at the present meeting. It was noted that, even when scientists carrying out oceanographic research in the different areas of the Northwest Atlantic could not present detailed research documents on a yearly basis, specific data sets for the considered year should be included in the national reports.

STACFIS requests the Subcommittee on Environmental Research to select those data sets which are considered useful, to coordinate their collection among participating parties, and to propose a standard format of presentation.

III. OTHER SCIENTIFIC DOCUMENTS

Of 30 research documents available to the Committee at this meeting, 21 were presented and discussed during the Special Session on Trophic Relationships in Marine Species. Three of the 9 remaining documents (SCR Doc. 83/IX/66, 67, 68) were deferred for review at the June 1984 STACFIS Meeting. The other 6 are briefly summarized below.

1. Morphometric Classification Between Golden Redfish (*Sebastes marinus*) and Beaked Redfishes (*S. mentella and S. fasciatus*) (SCR Doc. 83/IX/94)

Morphometric characters were investigated to provide criteria for species identification of redfishes in the Northwest Atlantic. Standard length was utilized as a covariate to adjust morphometric values because specimens of *S. marinus* were larger than those of beaked redfishes. Discriminant analysis with covariance was performed on 17 morphometric variables and resulted in an 11-variable discriminant function which explained 65% of the total variability. The discriminant function with two traditional discriminators, orbit width and length of symphysial tubercle explained 56% of the total variability. The discriminant analysis on 15 morphometrics excluding the two traditional discriminant resulted in a 10-variable function which explained 58% of the total variability. The result demonstrated good (87-90%) separation of the golden redfish (*Sebastes marinus*) from beaked redfishes (*S. mentella* and *S. fasciatus*

combined). Orbit width, interorbital width, length of symphysial tubercle (beak), depth of caudal peduncle, width of fleshly attachment of pectoral fins and body depth at the level of the pectoral fins were determined as good morphometric discriminators.

2. Metazoan Parasites of Northwest Atlantic Redfishes (*Sebastes* spp.) (SCR Doc. 83/IX/95)

A total of 443 redfishes (209 *Sebastes fasciatus*, 123 *S. marinus* and 111 *S. mentella*) obtained from NAFO Div. 2H, 2J, 3K, 3L, 3M, 3O and 3Ps during 1980-82 were examined for metazoan parasites, with 182 (87.1%) *S. fasciatus*, 120 (97.6%) *S. marinus* and 103 (92.8%) *S. mentella* being infected. Seventeen species of parasites were recovered (12 from *S. fasciatus*, 16 from *S. marinus* and 11 from *S. mentella*), with 22 instances of new host records. Quantitative data, including prevalence and intensity of infection, are given for each parasite by host species and NAFO Division.

3. Bottom-trawl Selection Characteristics Relative to Several Fishes in the Northwest Atlantic (SCR Doc. 83/IX/84)

This document summarizes results of experimental work on selective properties of trawl codends of different mesh sizes with respect to beaked redfish, Greenland halibut, roundnose grenadier, American plaice and yellowtail flounder. The results show that, in some cases, an increase in the mesh size had practically no effect on the retention and escapement of small fish. It is recommended that studies on the selectivity of trawl codends in relation to different fish species be continued and the results presented to the next meeting, with special emphasis on the short-term losses and long-term changes.

4. Greenland Halibut By-catch in the Roundnose Grenadier Fishery in Subareas 0, 1, 2 and Div. 3K (SCR Doc. 83/IX/91)

Information on the ratio of Greenland halibut and roundnose grenadier in commercial catches derived from USSR trawl fishery statistics for Subareas 0, 1, 2 and Div. 3K were presented. Analysis of the data shows that, due to overlap in the areal distribution of these deepwater species on the continental slope, the by-catch of Greenland halibut is higher than 10% established for directed fishing of other species and that this 10% limit hinders the specialized fishery for roundnose grenadier in Subarea 2.

To make it possible for STACFIS to provide advice on a possible change in the 10% by-catch allowance, the Committee suggested that USSR scientists pre-

pare for the next meeting a more detailed paper on the by-catch of Greenland halibut by areas, incorporating recent data on by-catches when there has been a directed fishery for roundnose grenadier only.

5. *Maurolicus muelleri* Eggs in the North Atlantic (SCR Doc. 83/IX/85)

An extensive data base obtained from USSR ichthyoplankton surveys indicates that *Maurolicus muelleri* eggs are widespread in the North Atlantic. Spawning occurs in March-May in the northern areas and in February-November in more southern portions of the North Atlantic. Most intensive spawning occurs to the northeast of the Flemish Cap Bank, to the west and northwest of the Irish shelf, in the Irminger Sea, and in the Central East Atlantic. The egg structure as well as its development and the development of larvae of this species indicate that spawning and earlier stage development take place at depths greater than 50 m and the larvae do not feed extraneously for some time after hatching.

6. Length-age Composition and State of Cod Stock on the Flemish Cap in 1976-1982 (SCR Doc. 83/IX/90)

Length and age composition for the period 1976-82 as well as biomass estimates for 1980-82 were presented for cod on the Flemish Cap. Two (sometimes one) relatively strong year-classes occurred every 3 years. The biomass of cod in the area in 1982 was estimated at about 30,000-35,000 tons. It was not possible to deal adequately with the matter of age validation and discrepancies between Soviet and Canadian age compositions due to the absence of Dr. Postolaky.

IV. PRESENTATION OF ASSESSMENT MATERIAL FOR STACFIS REPORTS

1. Introduction

At the June 1983 meeting of STACFIS, it was noted that reconstruction of stock assessment calculations using the STACFIS report was often difficult due to modification via working papers and discussion at the meeting, of original assessments contained in research documents. These changes are often not fully documented in the STACFIS report. Accordingly STACFIS established an *ad hoc* working group to address the problem by developing an appendix to the STACFIS report which would contain all basic data and details of calculations in a standard format. The working group was to (i) examine the feasibility of producing such an appendix, and (ii) develop a standard format for the presentation of the required information. The Working Group was convened by Dr. W. G. Doubleday (Canada), and participants

were Dr. A. K. Chumakov, Dr. J. Messtorff, Dr. J. P. Minet, Mr. R. Wells, Mrs. N. V. Yanovskaya, and the Assistant Executive Secretary.

2. Feasibility of Documenting STACFIS Assessments to Permit Reconstruction of Calculations

STACFIS reviewed its most recent assessments relating to 22 stocks. Of these, eleven were found to be age-structured analytical assessments (including shrimp in SA 0+1). The remaining eleven were assessed on general biological information. Some of the latter eleven had previously been assessed using general production models. For stocks which were not subject to assessment by analytical or general production methods, only the background or "input" data need be documented. Inclusion of all input data in an appendix to the STACFIS report would add about two pages per stock or forty pages to the report, approximately doubling the length of the report. In the case of stocks assessed by analytical methods, the underlying model must be specified together with methods of estimation of parameters as well as the parmeter estimates themselves and the results of projections and other calculations. Much of this information could be reported in about one printed page, but detailed intermediate calculations and output from VPA and catch projections could take up several pages per stock. The Committee noted that inclusion of all input data and detailed calculations in an appendix to the STACFIS report would greatly lengthen the report and would increase the workload of STACFIS due to duplication of results presented in research documents.

It was recognized that the current policy of STACFIS is to ensure complete documentation of assessments either in the Research Document series or in the STACFIS report. Effective implementation of this policy would obviate the need for a detailed appendix to the STACFIS report itself. In practice revised documents are not always promptly submitted and in some cases do not fully document the STACFIS assessment. Accordingly, means were sought to improve the control of this process without the additional workload involved in producing a comprehensive appendix.

The Committee considered that a more systematic presentation of its report would considerably improve the documentation of the stock assessments. STACFIS therefore

recommends

i) Introduction of a standard list of contents and checklist for mandatory use by authors of the STACFIS report.

ii) Citation of page references for information and analyses referred to

in the STACFIS report but not included in the report, and

iii) Analyses considered by STACFIS that are too lengthy for inclusion in the STACFIS report and do not occur in Research Documents available at the time of the meeting or in some other published form should be bound together as a Research Document by STACFIS rather than be included as revisions to Research Documents submitted after the STACFIS report is approved by STACFIS.

3. Format of the STACFIS Report

A standard table of contents for STACFIS stock assessments and a checklist for their documentation is given in Annex 1. STACFIS recommends that this be used as a guide to the presentation of its report, with relevant sections to be adhered to by authors unless they can provide convincing reasons to do otherwise. The checklist should be distributed to authors at every STACFIS meeting and drafts should be verified against the checklist before acceptance.

V. OTHER MATTERS

1. Conveners for Special Session on Squids in September 1984

For its next Special Session on "Biology and Ecology of the Squids *Illex illecebrosus* and *Loligo pealei*, in the Northwest Atlantic", which will be held at the September 1984 Annual Meeting, STACFIS agreed that two conveners should be appointed, as this has worked well for the present symposium. Mr. T. Rowell (Canada) and Dr. Ch. M. Nigmatullin (USSR) were nominated as Co-conveners for the 1984 Special Session. Since that meeting will be held at Halifax, Canada, the Committee requests Mr. Rowell to take the lead in organizational arrangements.

2. Outstanding Section of June 1983 STACFIS Report

The outstanding section of the STACFIS Report of the June 1983 Meeting (Part I-Fishery Trends) was prepared by the Secretariat after the meeting due to incomplete reports in the 1982 catch statistics. This section was presented to the Committee and adopted at this September Meeting.

VI. ADJOURNMENT

The chairman of STACFIS expressed his appreciation to Dr. G. R. Lilly and Dr. V. A. Rikhter who convened the Special Session on Trophic Relationships in Marine Species, to Dr. W. G. Doubleday who convened the *Ad Hoc* Working Group on presentation of the STACFIS reports, to the rapporteurs and participants for their keen interest and cooperation during the various sessions. The chairman also acknowledged the Secretariat for their usual efficient work both in preparing for and during this meeting.

ANNEX 1. GUIDELINES FOR REPORTING STACFIS ASSESSMENTS

A. Introduction

The introduction should review qualitatively the most recent year of fishing puting recent events in the context of trends over the most recent decade. Ancilliary information not explicitly used in the assessment should be documented in this section. Only relevant items are to be included in each section of the report.

a) Description of fishery - dates
- location
- changes in area fished during the year
- composition of fishing fleets
- gears
- regulations affecting gear, by-catch, etc.

b) Nominal catches - annual
- monthly
- by gear and/or country

c) Anecdotal information relevant to the assessment

B. Input Data

Both the data used in the assessment and the methods by which they are calculated should be documented in the STACFIS report or in cited literature. The survey designs, sampling methods, grouping and other combination of data must be unambiguously described. The years and weighting factors used in averaged data should be stated.

a) Commercial fishery data

- Fishing effort and CPUE
- Length composition
- Age composition
- Biological information useful for assessments
  - sex ratios
  - maturity stages
  - stomach contents
  - parasites
- Discarded catches - weights
  - length distribution
- By-catches - weight by species
  - length distribution by species

b) Research data

- Distribution, movements, migrations
- Tagging experiments
- Abundance estimates from surveys
  - trawling surveys
  - acoustic surveys
  - photographic surveys
- Other research surveys
  - recruit-prerecruit (eggs, larvae, 0-group)
  - experimental fishing
- Selectivity studies
- Length and age composition of research catches
- Biological data - sex ratio
  - maturity, fecundity
  - food, feeding
  - multispecies association
  - ecological data (communities, ecosystem, ...)
  - parasitism

c) Environmental data - temperature, salinity, clines
- winds, currents
- ice conditions

C. Estimation of Parameters

In all cases the underlying mathematical model must be stated or cited The method of estimation (e.g. unweighted least squares regression) must be unambiguously stated or cited together with the input data (see Section II above).

a) VPA

- partial recruitment values
- natural mortality (and any immigration or emigration rates)
- F for the last year and oldest age
- correlations of various assessment parameters with survey data and other independent estimates of abundance (commercial catch rates, survey catch rates, survey biomass estimates, etc.)

b) General production model

- model parameters and their standard errors

c) Growth curve

- model parameters and standard errors

d) Yield per recruit

- partial recruitment values
- natural mortality rates
- weights-at-age
- other model parameters

e) Pooling of abundance indices

- formula used including weighting factors
- resulting index

f) Mark and recapture estimates

- mortality rates of marked animals
- catchabilities of marked and unmarked animals
- rates of tag loss, immediate and long-term
- mixing of marked and unmarked animals
- non-reporting of tags
- stock abundance

D. Assessment Results

Detailed results of assessment calculations must be reported in Research Documents or in the STACFIS report. Where results may be of direct interest to commissioners, results should be in summary tables and graphs where feasible in addition to the detailed tables.

a) Virtual population analysis

- population numbers of age
- fishing mortality at age
- biomass at age
- total biomass and biomass of exploitable stock (specify date)
- recruiting year-class: numbers and calculation of geometric mean, if required for prognosis input

b) Yield-per-recruit

- F_{max} and $F_{0.1}$
- yield per recruit and exploitable biomass per recruit for a systematic series of F values including F_{max} and $F_{0.1}$

c) General production analysis

- maximum sustainable yield and fishing effort
- yield at 2/3 MSY effort and associated fishing effort

E. Catch Projections and Prognoses

Relevant conclusions, projections and general prognoses should be clearly stated and without reference to technical terms, wherever possible.

a) General biological information

- future implications of observed trends in catches and catch rates
- implications of biological information regarding year-class sizes, exploitation rates and stock abundance at present and in future
- implications of observed trends in fishing effort, fleet composition, etc. on future exploitation rates
- implications of research data regarding recent exploitation rates and current and future stock abundance

b) General production model

- current fishing effort in relation to f_{MSY} and 2/3 f_{MSY}
- projected catch at f_{MSY} and 2/3 f_{MSY}
- implications of supplementary information on interpretation of model calculations (e.g. strong recruitment forecast from young fish surveys)

c) Catch projections

- table of input parameters

Age	Number (initial year)	Catch or F (initial year)	Weight (initial and subsequent years)	Partial Recruitment

- F or catch for projection years (input)
- recruitment for projection years (input)
- table of catch at age in numbers and weight for each year
- table of population at age in numbers and weight for each year
- total catch in weight
- total population biomass (and other biomasses as relevant)
- average fishing mortality rate by year (specify weighting scheme)

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

Chairman: J. Messtorff Rapporteur: A. T. Pinhorn

The Committee met at the Pribaltiyskaya Hotel, Leningrad, USSR on 19-20 September 1983 to consider and report on various matters referred to it by the Scientific Council In attendance were J. Messtorff, and J. P. Minet (EEC), R. G. Halliday and A. T. Pinhorn (Canada) and S. Kawahara (Japan). The Chairman of the Scientific Council (R. Wells), the Executive Secretary (Capt. J. C. E. Cardoso), the Administrative Assistant (H. Champion) and the Assistant Executive Secretary (V. M. Hodder) also attended the session. Absent was V. A. Rikhter (USSR), Chairman of STACPUB, who was unable to attend this meeting, and Dr. Messtorff agreed to act as Chairman.

1. Status of Publications

a) Journal of Northwest Atlantic Fisheries Science

i) Volume 4, containing "Guide to the Early Stages of Marine Fishes in the Western North Atlantic, Cape Hatteras to the Southern Scotian Shelf by M. P. Fahay (425 p.), was recently completed, and copies were mailed on 9 September 1983. STACPUB expressed its appreciation to the Assistant Executive Secretary and the Administrative Assistant for the successful production of this outstanding volume in a most effective and timely manner.

ii) Volume 5: 32 papers are currently in various stages of processing; 6 of these have been formally accepted and 5-6 others are expected to be ready for publication in Vol. 5(1) in December 1983 or January 1984.

b) NAFO Scientific Council Studies

i) Number 6: Publication of this volume was delayed for 5-6 months due to emphasis being placed on editing and printing of Vol. 4 of the Journal. However, 4 contributions have been processed, and the editing of 3-4 other papers should be completed in time for printing in November or December 1983.

c) NAFO Statistical Bulletin

i) Volume 31: The outstanding 1981 fishery statistics for the United States were received in July 1983, preparation of the material for printing was completed in early September, and distribution is expected about mid-October 1983.

2. Editorial Matters

a) Editorial Board

With the recent (1 July 1983) appointment of two scientists as Associate Editors for Vertebrate Fisheries Biology, the Editorial Board consists of the following:

Editor: V. M. Hodder, NAFO, Dartmouth, N.S., Canada

Associate Editors:

- Biological Oceanography: A. J. Lee, Lowestoft, United Kingdom
- Biomathematics: W. G. Doubleday, Ottawa, Ontario, Canada
- Invertebrate Fisheries Biology: E. J. Sandeman, St. John's, Newfoundland, Canada
- Vertebrate Fisheries Biology: R. G. Halliday, Dartmouth, N.S., Canada
  : M. D. Grosslein, Woods Hole, Mass., USA

b) Scientific Council Report

The report of Scientific Council Meetings held in each calendar year are published annually in a red-covered volume called *NAFO Scientific Council Reports*. Recently, the quality of the Scientific Council Reports, as approved at Scientific Council Meetings, has suffered from editorial errors. This has placed an undue workload on the Assistant Executive Secretary, who has the task of editing the Report after the completion of the Scientific Council Meeting. STACPUB considers that it is the responsibility of the Scientific Council to ensure that the quality of it reports are of a high standard, and therefore

recommends

that the Scientific Council and all its Standing Committees, Subcommittees and Working Groups substantially improve the quality of their reports at the time of their approval by reviewing in detail the report for ambiguities and editorial errors and any other aspect that will ensure the high quality worthy of such a scientific body.

To achieve this end, chairmen of Standing Committees, Subcommittees and Working Groups must ensure when scheduling meetings that sufficient time be allocated at the end of the meeting for report approval in the detail outlined above and they must discipline themselves and the members of their committee to ensure that such detailed report approval takes place and must further ensure that relevant members of all bodies are present up to and

including the time of complete report approval. The Assistant Executive Secretary should have only minor editorial changes to execute and this should serve to reduce his already heavy workload.

3. Utilization of Microfiche

In accordance with Recommendation (a), Section III, Item 4 of the June 1983 Scientific Council Report, the Executive Secretary provided STACPUB with technical and financial information on production of microfiche copies of historical documents. It was not possible, due to time constraints, to distribute this information prior to the meeting. Thus, Recommendations (b) and (c) could not be implemented.

The Executive Secretary noted that microfiche can be obtained in "positive" and "negative" formats and examples of both were made available to STACPUB members. Copies are available for all national delegations to the Scientific Council. Positive format produces better hard copies but, on inspection of samples of copies made from both positive and negative fiche, that from negative fiche was judged to be of satisfactory quality. Negative format is easier to read in a microfiche reader and it was agreed that this would be the more suitable format to use.

The Executive Secretary provided members with literature on readers and reader/printers and their costs (in Canada). He indicated that the Secretariat would require a reader/printer with a current cost of $9,500 to produce copies of suitable quality. Non-printing readers are available at a cost of $300 to $600.

STACPUB noted that production of approximately 600 fiches would be required if all scientific research related documents in the ICNAF series are to be reproduced. This includes all Meeting Documents (1951-64), all Research Documents (1965-79), all Summary Documents (1973-79) and selected Commissioner's Documents (1965-72), selection to be based on the same criteria as was used for separation of Summary and Commissioner's Documents subsequent to 1972.

Present cost for production of a master fiche is $13.30 (Can.) and each copy costs $0.48. Based on these costs (including a reader/printer for the Secretariat), production and sale of 10 or more sets of copies will result in a price of $2,000 or less per set.

It is recommended that Scientific Council representatives now approach their appropriate national authorities and/or institutions to obtain clear expressions

of interest in the purchase of sets of copies, the cost of which will be a maximum of $2,000 per set. The results of their enquiries should be communicated to the Executive Secretary by 31 March 1984 so that appropriate estimates can be included in the budget projections for 1985. (Budget projections must be circulated 90 days prior to the September 1984 meeting of the General Council.)

4. Papers for Possible Publication

It was considered that the documents presented at the Special Session on Trophic Relationships should not be published as a compendium but each document should be considered on its own merits. STACFIS therefore recommends

that papers nominated for publication from the Trophic Relationships Symposium of September 1983 be published in regular issues of the Journal or Studies as merited by content and as they become available.

STACPUB reviewed the research (SCR) documents presented at the September 1983 Meeting and requested the Editor to invite the authors of the following documents to submit suitably revised manuscripts for possible publication in the Journal or Studies series: SCR Doc. 83/IX/73, 74, 75, 78, 79, 80, 81, 82, 83, 85, 87, 88, 94, 95. It was noted that SCR Doc. 83/IX/66, 67, 68 were deferred to the June 1984 meeting and were therefore not considered for possible publication at present.

5. Acknowledgements

The Chairman thanked all members for their active participation in the meetings and the Executive Secretary, Assistant Executive Secretary and Administrative Assistant for their efficient job in support of the Committee's work. The Committee was grateful to Dr. Messtorff for successfully chairing the STACPUB meeting at such short notice.

APPENDIX III. SCIENTIFIC COUNCIL AGENDA, SEPTEMBER 1983

I. Opening (Chairman: R. Wells)

1. Appointment of rapporteur
2. Adoption of agenda
3. Plan of work

II. Fishery Science (STACFIS Chairman: J. P. Minet)

1. Special Session on Trophic Relationships in Marine Species Relevant to Fisheries Management in the Northwest Atlantic (SCS Doc. 83/VI/20).

   a) Spatial and temperal variability in species interactions; influence of biotic and abiotic factors.

   b) Feeding behavior: preference and switching; functional and aggressive numerical responses.

   c) Variability in prey mortality induced by changes in abundance and size structure of predators and prey.

   d) Response of predators (migration pattern, growth, reproduction, mortality) to changes in prey distribution and abundance.

   e) Estimation of feeding and digestion rates.

   f) Mathematical modelling (e.g. multispecies virtual population analysis).

   g) Other considerations.

2. Stock Assessments (if required).

   a) No stock assessments were deferred from the June 1983 Meeting to this Annual Meeting. Further elaboration of the assessments given in the STACFIS Report will only be considered if requested by the Fisheries Commission.

3. Environmental Research

   a) Future of Environmental Research Subcommittee.

   b) Further consideration of SCR Doc. 83/VI/23 (Overview of Environmental Conditions in 1982 within the NAFO Convention Area) and the matter of future updating.

4. Other Matters

   a) Appointment of convener(s) for Special Session on "Biology and Ecology of the Squids, *Illex illecebrosus* and *Loligo pealei*, in the Northwest Atlantic", to be held at the Annual Meeting in September 1984.

   b) Proposed change in the presentation of STACFIS reports to be considered by an *ad hoc* Working Group of assessment experts.

   c) Adoption of outstanding section in STACFIS Report of the June 1983 Meeting.

   d) Review of other scientific documents

III. Publications (STACPUB Chairman: V. A. Rikhter)

1. Review of editorial matters re Scientific Council publications
2. Review of progress on proposal to microfiche historical scientific meeting documents
3. Papers for possible publication
4. Other matters

IV. Adoption of Reports

1. Standing Committee on Fishery Science
2. Standing Committee on Publications
3. Provisional Report of June 1983 Meeting of Scientific Council (SCS Doc. 83/VI/21)

V. Review of Future Meeting Arrangements

1. Assessment of Shrimp Stocks (deferred from June 1983 Meeting)
2. Further assessment of capelin stocks, if required
3. Meeting of Scientific Council and its Committees in June 1984
4. Conveners for Special Session on squids at the September 1984 Meeting

VI. Other Matters

1. Further consideration of procedures for reporting sampling data to the Secretariat, by a small *ad hoc* working group.

VII. Election of Officers for 1984-85

VIII. Adjournment

APPENDIX IV. LIST OF PARTICIPANTS IN SCIENTIFIC COUNCIL MEETINGS, SEPTEMBER 1983

BULGARIA

P. Kolarov	Institute of Fisheries, Boul. Chervenoarmeisky 4, 9000 Varna

CANADA

G. R. Lilly	Northwest Atlantic Fisheries Center, P.O. Box 5667, St. John's, Nfld.
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R. Wells	" " " " " " "
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D. Waldron	Marine Fish Div., BIO, P.O. Box 1006, Dartmouth, N. S.
W. G. Doubleday	Atlantic Fisheries Service, Dept. of Fisheries and Oceans, 240 Sparks Street, Ottawa, Ontario
P. Béland	Pêches & Oceans, 310 Ave des Ursulines, Rimouski, Quebec

CUBA

R. Dominguez	Flota Cubana de Pesca, Desamparados Esq Mercado, Habana Vieta, Habana

EUROPEAN ECONOMIC COMMUNITY (EEC)

R. Noé	Commission of the European Communities, 200 rue de la Loi, 1049 Brussels, Belgium
P. Sparre	Danish Institute for Fisheries and Marine Research, Charlottenlund Slot 2920, Denmark
J. P. Minet	Institut Scientifique et Technique des Peches Maritimes, 8 rue Francois Toullec, F-56100 Lorient, France
J. Messtorff	Institut fur Seefischerei, Fischkai, D-2850 Bremerhaven 29, Federal Republic of Germany
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JAPAN

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L. G. Nazarova	" " " " " "
Y. B. Riazantsev	" " " " " "
V. P. Serebryakov	" " " " " "
I. N. Somova	" " " " " "
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A. K. Chumakov	Polar Research Institute of Marine Fisheries and Oceanography (PINRO), 6 Knipovich Street, Murmansk
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Yu. M. Froerman	Atlantic Research Institute of Marine Fisheries and Oceanography (AtlantNIRO), 5 Dmitry Donskoy Street, Kaliningrad 236000
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SECRETARIAT

Capt. J. C. E. Cardoso, Executive Secretary, NAFO
Mr. V. M. Hodder, Assistant Executive Secretary, NAFO
Mr. W. H. Champion, Administrative Assistant, NAFO
Mr. F. D. Keating, Finance and Publications Clerk-Steno, NAFO
Mrs. B. J. Cruikshank, Senior Secretary, NAFO
Mrs. D. C. A. Auby, Clerk-Typist, NAFO

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V. A. Rigin	" " " " "
G. V. Sizova	" " " " "
L. A. Vorontsova	" " " " "
A. Oleinikova	Central Telegraph, Leningrad, USSR
M. Mishina	" " "

APPENDIX V. LIST OF RESEARCH AND SUMMARY DOCUMENTS, SEPTEMBER 1983

A. RESEARCH DOCUMENTS (SCR)[1]

(S) = Special Session Contribution

SCR Doc.	Serial		
83/IX/66	N731	Zooplankton-larval herring relations in the eastern coastal Gulf of Maine, Fall 1982. (7 pages)	D. W. Townsend J. J. Graham D. K. Stevenson
83/IX/67	N732	Larval herring surveys in Maine (USA) and New Brunswick (Can.) waters of the eastern Gulf of Maine, 1982. (8 pages)	J. J. Graham D. W. Townsend D. K. Stevenson
83/IX/68	N733	Fecundities of Atlantic herring spawning populations from coastal Maine and Jeffrey Ledge. (11 pages)	K. H. Kelly D. K. Stevenson
83/IX/69 (S)	N734	Structure of the Georges Bank ecosystem. (30 pages)	M. P. Sissenwine E. B. Cohen M. D. Grosslein
83/IX/70 (S)	N735	The feeding habits of demersal fish species in Icelandic waters. (31 pages)	Olafur K. Pálsson
83/IX/71 (S)	N736	Legion analysis game and simulation program (LAGS). (49 pages)	Per Sparre
83/IX/72 (S)	N738	Capelin as a forage species: a review of selected studies. (7 pages)	J. E. Carscadden
83/IX/73 (S)	N739	Predation on fish larvae as a regulatory force illustrated in enclosure experiments with large groups of larvae. (10 pages)	Victor Øiestad
83/IX/74 (S)	N740	Predation of short-finned squid (*Illex illecebrosus*) in Newfoundland inshore waters. (16 pages)	E. G. Dawe G. R. Lilly H. J. Drew
83/IX/75 (S)	N741	Main trophics relationships of redfishes in the Northwest Atlantic. (24 pages)	Yu. V. Konchina
83/IX/76 (S)	N742	Feeding of ocean pout (*Macrozoarces americanus*) in the Northwest Atlantic. (10 pages)	Buzulutskaya
83/IX/77 (S)	N743	Trophic relationships between some fish species of the North Sea. (12 pages)	V. N. Feldman V. I. Malyshev I. P. Golubyatnikova
83/IX/78 (S)	N744	Food links of some fishes and invertebrates on the Flemish Cap Bank. (24 pages)	K. G. Konstantinov T. N. Turuk N. V. Plekhanova
83/IX/79 (S)	N745	Feeding of Greenland halibut in the Northwest Atlantic. (22 pages)	A. K. Chumakov
83/IX/80 (S)	N746	Food relationships between silver and red hakes and other fish species on Georges Bank and in adjacent waters. (21 pages)	V. I. Vinogradov
83/IX/81 (S)	N747	Feeding of roundnose grenadier, *Coryphaenoides rupestris* Gunn., and its position in the trophic system of the North Atlantic. (14 pages)	A. V. Gushchin

[1] SCR Doc. 83/I/1 to 83/I/9 were presented at the Special Meeting in January 1983, and SCR Doc. 83/VI/10 to 83/VI/65 were presented at the June 1983 Meeting of the Scientific Council.

SCR Doc.	Serial		
83/IX/82 (S)	N748	Feeding spectrum and food relationships of short-finned squid (*Illex illecebrosus* Lesueur 1821). (22 pages)	Yu. M. Froerman
83/IX/83 (S)	N749	Food relations of long-finned squid, *Loligo pealei* Lesueur, in the Northwest Atlantic and its position in ecosystem. (20 pages)	A. N. Vovk
83/IX/84	N750	Some parameters of bottom-trawl selective characteristics from data of instrumental observations carried out relative to beaked redfish, Greenland halibut, American plaice, yellowtail flounder and roundnose grenadier in the fishing areas of the Northwest Atlantic. (14 pages)	K. N. Nikeshin V. G. Kovalenko A. S. Gorshkova
83/IX/85	N751	*Maurolicus muelleri* eggs in the North Atlantic. (13 pages)	V. P. Serebryakov S. S. Grigoriev V. A. Sedletskaya
83/IX/86 (S)	N752	Fisheries studies in freshwater and their relevance to marine systems. (10 pages)	S. R. Kerr
83/IX/87 (S)	N753	Food of Atlantic cod (*Gadus morhua*) on the northern Grand Bank in spring. (35 pages)	G. R. Lilly J. C. Rice
83/IX/88 (S)	N754	Predation on shrimp (*Pandalus boreallis*) by Greenland halibut (*Reinhardtius hippoglossoides*) and Atlantic cod (*Gadus morhua*) off coastal Labrador (Div. 2H and 2J). (26 pages)	W. R. Bowering D. G. Parsons G. R. Lilly
83/IX/89 (S)	N755	Food sources for deep-sea fishes of the Newfoundland continental slope. (26 pages)	Kimberly A. Houston
83/IX/90	N756	Length-age composition and state of cod stocks on the Flemish Cap in 1976-1982. (9 pages)	A. I. Postolaky
83/IX/91	N757	On the Greenland halibut by-catch in the directed fishery for roundnose grenadier on the Labrador continental slope and in Davis Strait (NAFO Subareas 0, 1, 2 and 3K) (14 pages)	A. K. Chumakov
83/IX/92 (S)	N758	Factors influencing Scotian Shelf finfish and squid interactions with special reference to silver hake. (28 pages)	D. E. Waldron
83/IX/93 (S)	N759	The ices stomach sampling project in 1981: aims, outline and some results. (24 pages)	Niels Daan
83/IX/94	N762	Morphometric classification between golden redfish (*Sebastes marinus*) and beaked redfishes (*S. mentella* and *S. fasciatus*). (10 pages)	D. J. Power I-H. Ni
83/IX?95	N763	Metazoan Parasites of Northwest Atlantic redfishes (*Sebastes* sp.) (12 pages)	C. E. Bourgeois I-H. Ni.

B. SUMMARY DOCUMENTS (SCS)[2]

SCS Doc.	Serial		
83/IX/22	N737	Provisional nominal catches in the Northwest Atlantic, 1982. (47 pages)	NAFO Secretariat
83/IX/23	N761	German Democratic Republic Research Report for 1982.	P. Ernst
83/IX/24	N767	Report of Scientific Council, Annual Meeting, September 1983	NAFO Secretariat

[2] SCS Doc. 83/I/1 pertained to the Special Meeting in January 1983, and SCS Doc. 83/VI/2 to 83/VI/21 to the September 1983 Meeting of the Scientific Council.