

# INTERNATIONAL COMMISSION

FOR THE

NORTHWEST ATLANTIC FISHERIES



PROCEEDINGS  
OF THE  
SPECIAL COMMISSION MEETING  
JANUARY 1973  
AND THE  
23<sup>rd</sup> ANNUAL MEETING  
JUNE 1973

Dartmouth • Canada  
November, 1973









Serial No. 2934  
(B.v.)

Proceedings No. 2

SPECIAL COMMISSION MEETING - JANUARY 1973

Report of First Plenary Sessions

Tuesday, 16 January, 1000 hrs  
 Wednesday, 17 January, 1500 hrs  
 Thursday, 18 January, 1430 hrs  
 Friday, 19 January, 1435 hrs  
 Monday, 22 January, 0930 hrs  
 Tuesday, 23 January, 1435 hrs  
 Wednesday, 24 January, 0905 hrs  
 Thursday, 25 January, 0915 hrs  
 Friday, 26 January, 0915 hrs

- Item 1. Opening. The opening Plenary Session of the Special Commission Meeting was called to order by the Chairman, Mr K. Løkkegaard (Denmark). He welcomed delegates from 14 of the 16 Member Governments, and Observers from the European Economic Community (EEC), the International Council for the Exploration of the Sea (ICES), and the Food and Agriculture Organization of the United Nations (FAO) (Appendix I).

The Chairman led in a silent tribute to Captain T. de Almeida, Portuguese Commissioner from 1952 to 1971 and Chairman of the Commission from 1955 to 1957, who died on 24 October 1972.

The Chairman introduced Mr F. E. Popper, Assistant Director-General (Fisheries), FAO, who addressed the participants (Appendix II). The Chairman thanked Mr Popper on behalf of the Commission and its participants for his kind words of encouragement and asked that he present the Commission's compliments and appreciation to the Director General of FAO for again providing excellent meeting arrangements and accommodation.

The Chairman drew attention to the requirements of the 1972 Annual Meeting to consider the establishment of catches and their national allocation for 1973 for the Nova Scotia, Gulf of Maine and Georges Bank herring stocks at an extraordinary meeting of the Commission - the second in the Commission's history - to be held early in 1973. He further noted that the Member Governments had agreed to a US proposal to have the extraordinary meeting consider measures to reduce total fishing effort in the Convention Area and drew attention to the Memorandum by US Commissioners on the regulation of fishing effort which had been presented for discussion to the Meeting as Commissioner's Document 73/3.

- Item 2. Agenda. The Agenda was approved without change (Appendix III).
- Item 3. Rapporteur. The Executive Secretary was appointed Rapporteur.
- Item 5 and 6. Review of Present Herring Conservation Measures. 6. Further Conservation Requirements for Herring. These Items were referred to Joint Panels 4 and 5.
- Item 7. Consideration of Measures to Reduce Total Fishing Effort in the Convention Area. This Item was referred to STACREM. The Plenary agreed that the USA should prepare a specific proposal for regulation of fishing effort in Subarea 5 and Statistical Area 6 for consideration by STACREM.
- Item 4. Report of STACRES. The Chairman then invited Dr A. S. Bogdanov (USSR), the Chairman of STACRES, to present a summary of the Report of STACRES. The summary highlighted the results of consideration by the Assessments Subcommittee, under the chairmanship of Mr D. J. Garrod (UK), of (1) the problem of regulation of mixed fisheries as raised by the US memorandum on the regulation of fishing effort in Subarea 5 and Statistical Area 6 (Comm.Doc. 73/3) and the related Canadian questions (Comm.Doc. 73/4), and (2) the status of other resources (except herring) in the Convention Area. Also highlighted was the work of the Herring Working Group, under the chairmanship of Mr T. D. Iles (Canada), which reviewed the state of the herring stocks in the Convention

Area and presented answers to questions relating to possible conservation measures for herring in 1973 asked in the Commission's Resolution of Herring Research Program (1972 Special Meeting Proc. 4, Appendix VI).

The Chairman of the Commission thanked the Chairman of STACRES, the Assessments Subcommittee and the Herring Working Group and their members for their hard work and valuable advice.

The Plenary recessed at 1115 hrs.

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From Wednesday, 17 January through Friday, 26 January, the Plenary reconvened for short periods on eight occasions to hear reports on the progress of deliberations of STACREM on effort limitation and of the Joint Panels 4 and 5 and the *ad hoc* Committee on Herring Quotas and their Allocations.

The Final Plenary Sessions were convened at 1125 and 1430 hrs, Friday, 26 January (1973 Special Commission Meeting Proceedings No. 6).

Serial No. 2934  
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Appendix I

SPECIAL COMMISSION MEETING - JANUARY 1973

List of Participants

Chairman: Mr K. Løkkegaard, Ministry of Fisheries, Copenhagen, Denmark

CANADA

Commissioners:

Dr A.W.H. Needler, Huntsman Marine Laboratory, St. Andrews, N.B.  
Mr K. Henriksen, H.B. Nickerson & Sons Ltd., P.O. Box 130, North Sydney, N.S.

Advisers:

Mr J.E. Creeper, Environment Canada, Fisheries Service, Maritimes Region, P.O. Box 550, Halifax, N.S.  
Dr R.G. Halliday, Fisheries Research Board of Canada, Biological Station, St. Andrews, N.B.  
Mr T.D. Iles, Fisheries Research Board of Canada, Biological Station, St. Andrews, N.B.  
Mr D.A. MacLean, Environment Canada, Fisheries Service, P.O. Box 550, Halifax, N.S.  
Mr D.A. MacLean, Jr, Black's Harbour, N.B.  
Dr F.D. McCracken, Atlantic Coast Fisheries Research Board Directors Committee, P.O. Box 159, Halifax, N.S.  
Mr M. Matthews, Wilson's Beach, Campobello, N.B.  
Mr D.S. Miller, Fisheries Research Board of Canada, Biological Station, St. Andrews, N.B.  
Mr R.M. Pattullo, Sealife Fisheries Ltd., R.R. #1, P.O. Box 5, Lower East Pubnico, N.S.  
Mr A.T. Pinhorn, Fisheries Research Board of Canada, Biological Station, St. John's, Newfoundland  
Dr M.P. Shepard, Environment Canada, Fisheries Service, Resource Management Branch, Fontaine Bldg., Ottawa,  
Ontario, K1A 0H3  
Mr W.A. Titus, Westport, Digby County, N.S.  
Mr E.B. Young, Environment Canada, International Fisheries Service, Sir Charles Tupper Bldg., Ottawa,  
Ontario, K1A 0H3

DENMARK

Commissioners:

Mr K. Løkkegaard, Ministry of Fisheries, Copenhagen  
Mr E. Nolsøe, Minister of Fisheries of the Faroe Islands, Torshavn, Faroe Islands

Advisers:

Mr J. Djurhuus, Government of the Faroe Islands, Torshavn, Faroe Islands  
Mr Sv.Aa. Horsted, Grønlands Fiskeriundersøgelse, Jaegersborg Allé 1B, DK-2920 Charlottenlund  
Mr T. Johansen, Via XX Settembre 1, Rome, Italy

FRANCE

Commissioners:

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Mr R. Letaconnoux, Institut des Pêches Maritimes, B.P. 1049, Nantes F.44037

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Mr A. Dezeustre, French Ship Owners' Union, 59 rue des Mathurins, Paris 8  
Mr A. Parres, French Ship Owners' Union, 59 rue des Mathurins, Paris 8  
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FEDERAL REPUBLIC OF GERMANY

Commissioners:

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Dr J. Messtorff, Bundesforschungsanstalt für Fischerei, Institut für Seefischerei, Bremerhaven  
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Advisers:

Dr J. Genschow, Association of German Trawler Owners, Preussenstr. 3, Bremerhaven  
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ICELAND

Commissioners:

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Dr J. Jonsson, Marine Research Institute, Reykjavik

JAPAN

Commissioners:

Mr K. Ando, Ministry of Agriculture and Forestry, Embassy of Japan, Via Virginio Orsini 18, 00192, Rome, Italy  
Mr S. Nishida, Economic Affairs Bureau, Ministry of Foreign Affairs, Tokyo

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Mr K. Raasok, Ministry of Fisheries, Oslo  
Mr A. Aasbø, Directorate of Fisheries, Bergen

Adviser:

Mr Ø. Ulltang, Institute of Marine Research, Bergen

POLAND

Commissioners:

Dr R. Pietraszek, Ministry of Shipping, Warsaw  
Mr M. Fila, Ministry of Shipping, Warsaw  
Mr W. Kalinowski, International Cooperation Department, Fisheries Central Board, Odrowaza 1, Szczecin

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Mr A. Wistocki, Urząd Rady Ministrów, al Ajaz Dowskie 1/3, Warsaw

PORTUGAL

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Commissioner:

Mr O.R. Ernest, Ministry of Agriculture, Food and Water Management, Bucharest

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SPAIN

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Mr V.M. Nikolaev, Central Research Institute of Fisheries Information and Technical-Economic Investigations  
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Commissioners:

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Mr C.J. Dandy, Great Westminster House, London S.W.1

Mr D.J. Garrod, Fisheries Laboratory, Ministry of Agriculture, Fisheries and Food, Lowestoft, Suffolk

Mr C.P. Hudson, 36 Herringby Road, Herringby, East Yorkshire

Mr B.B. Parrish, Marine Laboratory, P.O. Box 101, Torry, Aberdeen, AB98DB, Scotland

Mr J.G. Pope, Fisheries Laboratory, Ministry of Agriculture, Fisheries and Food, Lowestoft, Suffolk

UNITED STATES OF AMERICA

Commissioners:

Mr W.M. Terry, International Affairs, National Oceanic and Atmospheric Administration, Department of  
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Mr E.J. MacLeod, Kennebec Fish Corporation, Gloucester, Mass., 01930

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Mr R.E. Reed, Maine Sardine Council, Augusta, Maine  
Mr C.B. Stinson, Stinson Canning Company, Prospect Harbor, Maine, 04669  
Mr W.L. Sullivan, Jr, Assistant Coordinator of Ocean Affairs for Marine Science Affairs, Department of State, Washington, D.C., 20520

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SECRETARIAT

Mr L.R. Day, Executive Secretary  
Mr V.M. Hodder, Assistant Executive Secretary  
Mrs V.C. Kerr, Secretary  
Mrs E.R. Cornford, Clerk-Stenographer

SECRETARIAT ASSISTANCE

Miss S. Campbell, FAO, Rome, Italy  
Miss M. Piaser, FAO, Rome, Italy

SPECIAL COMMISSION MEETING - JANUARY 1973

Address by Mr F.E. Popper, Assistant Director-General (Fisheries), FAO,  
to ICNAF Special Commission Meeting - Rome, 16 January 1973

"Mr Chairman, Gentlemen,

"It is with considerable pleasure that I welcome you for the second time to a Special Meeting of the Commission here in FAO Headquarters. Your meeting here last year was one of the most significant ever to be held by an international fisheries Commission. You reached agreement - though it is true with some difficulty and argument - on the limit on the total catch taken in some of the major fisheries in the ICNAF region, and also agreed on how this total catch would be divided between member countries. This considerable success was followed at the regular session of the Commission by similar agreements concerning many of the other important stocks of fish in the region. These agreements represented very considerable progress in the rational management of fish stocks, and have been watched with pleasure and appreciation by those of us who believe that the best use of the fishery resources of the ocean can be ensured if there is close co-operation between all nations with interests in those resources.

"However, these agreements by themselves do not guarantee the perfect management of the resources, and certain shortcomings of the current quota systems are the main reason for your session here today. They are set out in detail in papers before you and have also been examined by your Research and Statistics Committee, so I will not mention them in detail now. However, I should emphasize that the problems are not confined to the ICNAF region. Indeed, the problems of the rational management of a complex fishery operating on a wide range of different species occur even more forcefully in the tropical and sub-tropical regions of the world in which FAO is particularly closely concerned. Equally, the problems of excess fishing capacity, of highly mobile fleets, and of ensuring that the regulations agreed upon are not only obeyed, but seen by all participants to be obeyed, are of vital interest to FAO in relation to our responsibilities in many parts of the world. I and my staff will therefore be following your deliberations with great interest. I hope your session will prove another example of the ways in which close collaboration between our two organizations has been of mutual benefit. In this connection I note with pleasure that among the background documents mentioned in your annotated agenda, in addition to the Report of the Joint Bio-economics Working Group, in which FAO and ICNAF collaborated, is included a background document submitted by FAO staff to your Commission Meeting in 1970.

"We in FAO, in turn, hope to benefit from the results of your deliberations when we come to hold our Technical Conference on Fishery Management and Development in Vancouver, Canada, next month - where, incidentally, I hope to see several of those in this room today. That Conference will, among other things, study, on a regional basis, the state of resources, of their exploitation, the management mechanism and requirements and perspectives for fishery development. One section will be devoted to the experience in the North Atlantic and out of the discussions as a whole we hope that there will emerge a better understanding of management problems world-wide as well as some guidance towards their solution. I am looking forward to your contribution to that - both as individuals and as a group.

"In conclusion, Mr Chairman, may I wish you all a pleasant stay in Rome, for however long it may prove necessary, and a successful conclusion to your discussion."

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Appendix III

SPECIAL COMMISSION MEETING - JANUARY 1973

Agenda

1. Opening
2. Adoption of Agenda
3. Election of Rapporteur
4. Report from mid-term meetings of the Herring Working Group (Chairman: D. Iles), Assessments Subcommittee (Chairman: D.J. Garrod), and STACRES (Chairman: A.S. Bogdanov)
5. Review of present herring conservation measures
6. Further conservation requirements for herring
7. Consideration of measures to reduce total fishing effort in the Convention Area
8. Other business
9. Adjournment



Serial No. 2935  
(B.e. 73)

Proceedings No. 3

SPECIAL COMMISSION MEETING - JANUARY 1973

Report of Joint Meetings of Panels 4 and 5

Tuesday, 16 January, 1500 hrs  
 Wednesday, 17 January, 0900 hrs  
 Thursday, 18 January, 0915 hrs  
 Thursday, 25 January, 1715 hrs and 2255 hrs  
 Friday, 26 January, 1105 hrs

1. The Executive Secretary of the Commission opened the Joint Meeting of Panels 4 and 5 which was convened at the request of the Plenary (1973 Sp. Comm. Mtg. Proc. No. 2) to give detailed consideration to Plenary Agenda Item 4 "Report from Mid-Term Meeting of the Herring Working Group" (1973 Sp. Comm. Mtg. Proc. No. 1, App. II), to Plenary Item 5 "Review of Present Herring Conservation Measures" and Plenary Item 6 "Further Conservation Requirements for Herring". Dr A.W.H. Needler (Canada) was elected Chairman. The Executive Secretary was appointed Rapporteur. Delegates from Canada, Denmark, France, Fed. Rep. Germany, Iceland, Japan, Norway, Poland, Portugal, Spain, USSR, UK, and USA were present, with Observers from the European Economic Community (EEC), the Food and Agriculture Organization of the United Nations (FAO), and the Council for the Exploration of the Sea (ICES).
2. The Report of the Mid-Term Meeting of the Herring Working Group (1973 Sp. Comm. Mtg. Proc. No. 1, App. II) was presented by the Chairman, Mr T.D. Iles (Canada). Mr Iles reported that the total herring catch in the ICNAF Area, including Statistical Area 6, declined from 729,000 metric tons in 1971 to about 475,000 metric tons in 1972, about one-half of the peak catch in 1968. The 1972 herring catch quotas resulted in a decline of about 34% at the beginning of 1973 in the Georges Bank spawning stocks (240,000 to 158,000 tons), and in the Gulf of Maine spawning stocks (70,000 to 50,000 tons). Regarding the allowable catch for 1973 for the Georges Bank stock, the Herring Working Group noted that, if the 1970 year-class is as good as the 1966 year-class, the 1973 catch, equivalent to the MSY, would be 135,000 tons. This would give a stock increase to the level at the beginning of 1972 (240,000 tons). However, if the 1970 year-class is only 75% as good as the 1966 year-class, the 1973 catch would be 115,000 tons. This would result in a stock level 85% of the stock size at the beginning of 1972 (204,000 tons). To regain the 1972 stock level of 240,000 tons would require a 1973 catch of only 83,000 tons. Regarding the allowable catch for 1973 for the Gulf of Maine stock, the 1973 catch, equivalent to MSY, would be 27,500 tons for the higher level of recruitment and 24,500 for the lower level of recruitment. Regarding the Nova Scotia Bank stock, it was judged to be in good condition in 1972 with good recruitment expected from both the 1969 and 1970 year-classes in 1973. No change from the 1972 catch quota level of 65,000 tons was suggested. A strong plea was made for more support for research programs, especially the juvenile and larval surveys, to help develop a predictive capability.
3. At the suggestion of the Chairman, the Joint Panels agreed to proceed as follows: first, to consider the total allowable catches (TAC's) for 1973 for each of the Georges Bank, Gulf of Maine and Nova Scotia Bank herring stocks; second, discuss the US suggestion (Comm.Doc. 73/2) and its implications that the 1974 herring catch quotas be set at the 1973 Annual Meeting of the Commission; third, determine the national allocation of total allowable catches for 1973 in the fisheries for each of the three herring stocks.
4. Proposed Total Allowable Catches (TAC's) for Herring. Of the TAC's recommended by STACRES for the Georges Bank stock, Canada preferred 135,000 tons. USSR, Fed. Rep. Germany, Poland and Japan could agree to retaining the 1972 TAC of 150,000 tons. However, USA pointed out that there had been a decrease of 34% in stock size to the end of 1972, that paragraph 5 of the 1972 herring proposals required that the Commission set the herring catch in 1973 at a level which will neither further reduce spawning stocks nor reduce productivity by lowering the yield per recruit and that it would be dangerous to accept that the 1970 year-class would be as large as the 1966 year-class. Therefore, USA preferred a TAC of 115,000 tons or even 83,000 tons which would increase the stock to the level at the beginning of 1972. For the Gulf of Maine stock, USSR, supported by Japan, preferred to retain the 1972 catch limit of 30,000 tons. However, USA suggested that, to prevent a further decline in the stock size and to get back to the stock size at the beginning of 1972, a TAC of about 20,000 tons would be required. This TAC was agreed to generally, subject

to looking at TAC's for all three stocks, and their allocations. For the Nova Scotia Bank stock, USSR suggested retaining the 1972 catch limit of 65,000 tons. Canada, on the basis of information, other than that brought out by the Herring Working Group, to the effect that the Nova Scotia Bank stock was in a very healthy state compared to the state of the Georges Bank and Gulf of Maine stocks and that the 1969 and 1970 year-classes should provide strong recruitment to the 1973 fisheries, suggested an increase in TAC to 90,000 tons. Following a suggestion that this additional information be assessed, the Herring Working Group reconvened and reported on the 1970 and 1969 year-class strengths as they would affect the Div. 4XW stock size using the same approach as in the Georges Bank and Gulf of Maine year-class level comparisons (1973 Sp. Comm. Mtg. Proc. No. 1, App. II, Suppl. No. 1). The report pointed out that, if the 1969 year-class in the Nova Scotia Bank stock was one-half the strength of the strong 1966 year-class, a TAC of 90,000 tons would maintain stock size in 1973. This, with the additional evidence of strong recruitment from the 1970 year-class, resulted in tentative agreement to a TAC of 90,000 tons from the Nova Scotia Bank stock, subject to looking at TAC's and their allocations for all three stocks. Returning to consideration of the TAC for the Georges Bank stock, Canada and USA supported a TAC of 135,000 tons which according to their interpretation of the Herring Working Group Report would not decrease the stock size as required in paragraph 5 of the 1972 herring quota proposal. Poland, USSR, Fed. Rep. Germany and Japan supported a TAC of 150,000 to 175,000 tons justified on the basis of evidence from the Herring Working Group Report of good recruitment in 1973 from a strong 1970 year-class. With disagreement resulting in deadlock, the Joint Panels agreed to set up an *ad hoc* Committee on Herring Quotas and their Allocation with representation from USSR, Poland, Fed. Rep. Germany, Japan, USA and Canada to give detailed consideration to possible TAC's and their allocation for all three stocks and report back to the Joint Panels 4 and 5.

5. Scheduling Consideration of Herring Conservation Measures. USA presented a proposal (Comm.Doc. 73/2) to consider the possibility of setting the 1974 herring catch quotas at the 1973 Annual Meeting and thus eliminate the need for a second Commission meeting each year. The Joint Panels noted that, if the data were available for the scientific assessments by the time of the 1973 Annual Meeting, there would be no difficulty in setting the 1974 quotas and having them become effective under the normal procedure from 1 January 1974. If, however, the data were not available, it was recognized that some mechanism should be agreed by which the Commission could take decisions in principle at the 1973 Annual Meeting and insert the 1974 quota figures when the data became available later in 1973. USA contended that paragraph 5 of the 1972 herring proposals already solved the 1973 herring proposal situation and that only a technical decision was necessary about the 1973 herring quota figures to be inserted and the proposals would become effective immediately. Others contended that such a provision could not be binding and would prejudice future decisions and the power to object and that the 1973 herring proposals must go through the normal 6-month waiting period before they become effective. After considerable discussion, the Joint Panels agreed that the 1974 herring quotas should be set in 1973 but that there should be no commitment at this time to any particular plan of procedure for setting 1974 quotas. Further consideration would be given to possible procedures at the 1973 Annual Meeting.

6. The Joint Panels 4 and 5 recessed on 18 January, to await the Report of the *ad hoc* Committee on Herring Quotas and their Allocation.

7. The Joint Panels 4 and 5 reconvened at 1715 hrs, Thursday, 25 January, under the chairmanship of Dr A.W.H. Needler (Canada) to consider a recommendation from STACREM (1973 Sp. Comm. Mtg. Proc. No. 4) that Panels 4 and 5 should, as an interim measure, consider the establishment of TAC's and national catch quotas for 1973 for mackerel, pollock (including catches in Div. 4X of Subarea 4), redfish and other flounders (excluding yellowtail) in Subarea 5 and Statistical Area 6. Members of Panels 4 and 5 agreed that it was correct to proceed with the Panel 4 and Panel 5 items in the meeting of Joint Panels 4 and 5.

8. TAC's for Mackerel, Pollock, Redfish and Flounders Other than Yellowtail. Subject to agreement on their national allocation, Joint Panels 4 and 5 unanimously accepted TAC's proposed by a special meeting of the Assessments Subcommittee (1973 Sp. Comm. Mtg. Proc. No. 4, App. IV) of 50,000 tons for pollock in Subarea 5 and Div. 4X of Subarea 4, 30,000 tons for redfish in Subarea 5 and Statistical Area 6, 25,000 tons for flounders other than yellowtail in Subarea 5 and Statistical Area 6. Because of the lack of adequate data, the Assessments Subcommittee was unable to agree on a 1973 level of mackerel catch that could be related to a level of exploitation that might form the objective of the Commission. This led the Joint Panels to agree to a pre-emptive TAC for mackerel of 450,000 tons from Subarea 5 and Statistical Area 6 in an attempt to slow down the exploitation of a rapidly developing fishery. Countries fishing mackerel agreed that further data, which would allow assessment of the present state of the resource and of the level of fishing to achieve the MSY of mackerel, would be made available at the 1973 Annual Meeting. It was further agreed that a similar resolution to that adopted in 1972 (1972 Mtg. Proc. 16, App. I) was necessary to ensure the application of these TAC's and their national allocation to the fisheries in Statistical Area 6 and in the territorial waters of the coastal states.

9. National Allocation of TAC's for Mackerel, Redfish, Pollock and Flounders Other than Yellowtail. The Joint Panels discussed the applicability of the Canadian formula of 40% each for historic performance over the past three years and 10 years, 10% for coastal states and 10% for new entrants and non-members for

national allocation of the TAC's agreed for mackerel, pollock, redfish and flounders other than yellowtail. However, most members of the Joint Panels could not agree to the use of this formula. A USSR suggestion to prorate the TAC for each of the four species against their 1971 catches allowing a percentage for the coastal states and also for new entrants and non-members where the stocks were in good condition was acceptable without precedent, and resulted in the following proposed national allocations:

a) 450,000 tons TAC for mackerel in Subarea 5 and Statistical Area 6

Bulgaria	33,000 tons
Canada	22,500
Germany, Fed. Rep.	3,500
Japan	1,500
Poland	130,000
Romania	5,300
USSR	148,000
USA	26,200
New Entrants and Non-Members	80,000

These allocations were proposed on the basis of a 10% coastal state preference shared by Canada and USA and the remainder of the TAC (405,000 tons) prorated against the 1971 catches which totaled 348,744 tons.

Following a request from Romania, the Joint Panels agreed to increase the Romanian allocation to 20,000 tons by taking 14,700 tons from the New Entrants and Non-Members allocation. Japan's request to have her allocation of 1,500 tons included with the New Entrants and Non-Members allocation was agreed.

b) 30,000 tons TAC for redfish in Subarea 5

Canada	350 tons
Poland	100
USSR	4,500
USA	24,950
New Entrants and Non-Members	100

These allocations were calculated by prorating the TAC (30,000 tons) against the 1971 catches which totaled 20,034 tons. USA agreed to give 400 tons to increase the New Entrants and Non-Members allocation which is symbolic.

c) 50,000 tons TAC for pollock in Subarea 5 and Div. 4X of Subarea 4

Canada	21,760 tons
Germany, Fed. Rep.	1,125
Spain	450
USSR	2,970
USA	11,275
New Entrants and Non-Members	12,420

These allocations were calculated by prorating the TAC (50,000 tons) against the 1971 catches which totaled 24,035 tons.

d) 25,000 tons TAC for flounders other than yellowtail in Subarea 5 and Statistical Area 6

Canada	100 tons
Romania	500
USSR	2,600
USA	21,700
New Entrants and Non-Members	100

These allocations were calculated by prorating the TAC (25,000 tons) against the 1971 catches which totaled about 27,500 tons with some preference for the coastal state. The allocation to New Entrants and Non-Members is symbolic.

10. Following these proposals, Panels 4 and 5 agreed to recommend

that the Commission transmit to the Depositary Government for joint action by the Contracting Governments, proposal (4) for international quota regulation of the fishery for flounders other than yellowtail from the Southern New England stocks found in Subarea 5 and waters to the west and south (Appendix IV); proposal (5) for international quota regulation of the fishery for mackerel from the Southern New England stock found in Subarea 5 and waters to the west and south

(Appendix V); proposal (6) for international quota regulation of the fishery for pollock in Subarea 5 and Div. 4X of Subarea 4 (Appendix VI); and proposal (7) for international quota regulation of the fishery for redfish in Subarea 5 (Appendix VII).

11. The Joint Meeting of Panels 4 and 5 recessed at 2330 hrs, Thursday, 25 January.

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12. The Joint Meeting of Panels 4 and 5 reconvened at 1105 hrs, Friday, 26 January, under the chairmanship of Dr A.W.H. Needler (Canada) with all Member Countries of Panels 4 and 5 represented, except Italy. The Joint Meeting considered three proposals from the Report of Meetings of the *ad hoc* Committee on Herring Quotas and their Allocation (1973 Sp. Comm. Mtg. Proc. No. 5) for conservation in the fisheries on stocks of herring in Subareas 4 and 5, and a resolution relating to 1973 proposals for the conservation of herring, flounder, mackerel, pollock and redfish stocks in Subareas 4 and 5. On the advice of Depositary Government, the Joint Meeting agreed that votes on the Panel 4 and Panel 5 proposals would be taken in the Joint Meeting of Panels 4 and 5.

13. Panels 4 and 5 agreed to recommend<sup>1</sup>

that the Commission transmit to the Depositary Government for joint action by the Contracting Governments, proposal (1) for international quota regulation of the fishery for herring from the Georges Bank stock (Appendix I); proposal (2) for international quota regulation of the fishery for herring in Division 5Y of Subarea 5 (Appendix II); proposal (3) for international quota regulation of the fishery for herring in Division 4X and part of Division 4W of Subarea 4 (Appendix III);

and agreed to recommend to the Commission the resolution relating to the 1973 proposals for the conservation of herring, flounder, mackerel, pollock and redfish stocks in Subareas 4 and 5 (Appendix VIII).

14. Participants in the meetings of Joint Panels 4 and 5 congratulated Dr Needler on his excellent efforts as Chairman.

15. The Joint Panels 4 and 5 adjourned at 1120 hrs, Friday, 26 January.

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<sup>1</sup> Proposals (1) and (2) were accepted unanimously. Proposal (3) had 7 Member Countries vote Yes, 2 abstentions (France and Portugal), and 1 absent.



SPECIAL COMMISSION MEETING - JANUARY 1973(1) Proposal for International Quota Regulation of the Fishery for Herring from the Georges Bank Stock

Panel 5 recommends that the Commission transmit to the Depositary Government the following proposal for joint action by the Contracting Governments:

- "1. That the Contracting Governments take appropriate action to regulate the catch of herring, *Clupea harengus* L., by persons under their jurisdiction fishing on the Georges Bank stock found in Division 5Z of Subarea 5 and in the adjacent waters to the west and south so that the aggregate catch of herring by vessels taking herring from this stock shall not exceed 150,000 metric tons in 1973.
- "2. That Competent Authorities from each Contracting Government listed below shall limit in 1973 the catch of herring taken by persons under their jurisdiction to the amount listed from the above-mentioned stock:

Canada	5,050 metric tons
Federal Republic of Germany	31,600 " tons
Japan	1,200 " tons
Poland	49,400 " tons
Romania	1,300 " tons
USSR	48,200 " tons
USA	5,250 " tons
Others	8,000 " tons

- "3. That each Contracting Government mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of the date in which its vessels have ceased a specialized fishery for herring. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary if its vessels engage in a specialized fishery for herring, together if possible with an estimate of the projected catch. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of specialized or incidental catches of herring in increments of 100 tons. The Executive Secretary shall promptly inform all other Contracting Governments of such notifications. The Executive Secretary shall notify each Contracting Government of the date on which accumulated catch and estimated catch of herring, the quantity estimated to be taken before closure could be introduced, and the likely incidental catch for the remainder of the year equal 100 percent of the allowable catch designated as for "Others" in paragraph 2 above. Within 10 days of receipt of such notification from the Executive Secretary, each Contracting Government not mentioned by name in paragraph 2 above shall prohibit the catching of herring from the Georges Bank stock by persons under its jurisdiction, except for small incidental catches.
- "4. That the Contracting Governments take appropriate action to ensure that all vessels under their jurisdiction which take herring, record their catches on a daily basis according to position, amount, date, type of gear, amount of effort, i.e., number of sets (or hooks) x time gear on the bottom (otter trawl) or fishing (midwater trawl, lines, other gear), discards and disposition of catch.
- "5. That the Commission establish (a) the level of catch for 1974 which will result in the restoration of the adult stock to at least 225,000 metric tons by the end of 1974, it being understood that in any event the level of catch for 1974 will not be increased above that for 1973 unless the adult stock size at the end of 1973 has reached a level which will provide the maximum sustainable yield by the end of 1974, and (b) the allocation of that catch for 1974, both of which will be substituted for the catch and the allocation thereof in paragraphs 1 and 2 above, respectively.
- "6. That the allocations in paragraph 2 above are without prejudice to future allocations of catches for this or other stocks. Nothing in this proposal shall prejudice the future possibility of the Contracting Governments entering into mutual arrangements for the management of the allocations of herring catches or re-allocating the allocations of herring catches given in paragraph 2 above by such agreements as they may enter into, all such arrangements and re-allocations to be reported to all other Contracting Governments through the Executive Secretary.
- "7. This proposal shall become effective only at such times as the herring quota proposals adopted 26 January 1973 by Panels 4 and 5 for Division 4X and part of Division 4W of Subarea 4 and Division 5Y of Subarea 5 become effective."

SPECIAL COMMISSION MEETING - JANUARY 1973(2) Proposal for International Quota Regulation of the Fishery for Herring in Division 5Y of Subarea 5

Panel 5 recommends that the Commission transmit to the Depository Government the following proposal for joint action by the Contracting Governments:

"1. That the Contracting Governments take appropriate action to regulate the catch of herring, *Clupea harengus* L., by persons under their jurisdiction fishing on the stock found in Division 5Y of Subarea 5 so that the aggregate catch of herring by vessels taking herring from this stock shall not exceed 25,000 metric tons in 1973.

"2. That Competent Authorities from each Contracting Government listed below shall limit in 1973 the catch of herring taken by persons under their jurisdiction to the amount listed from the above-mentioned stock:

Canada	4,000 metric tons
Federal Republic of Germany	1,000 " tons
USA	19,750 " tons
Others	250 " tons

"3. That each Contracting Government mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of the date on which its vessels have ceased a specialized fishery for herring. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary if its vessels engage in a specialized fishery for herring, together if possible with an estimate of the projected catch. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of specialized or incidental catches of herring in increments of 100 tons. The Executive Secretary shall promptly inform all other Contracting Governments of such notifications. The Executive Secretary shall notify each Contracting Government of the date on which accumulated catch and estimated catch of herring, the quantity estimated to be taken before closure could be introduced, and the likely incidental catch for the remainder of the year equal 100 percent of the allowable catch designated as for "Others" in paragraph 2 above. Within 10 days of receipt of such notification from the Executive Secretary, each Contracting Government not mentioned by name in paragraph 2 above shall prohibit the catching of herring in Division 5Y of Subarea 5 by persons under its jurisdiction, except for small incidental catches.

"4. That the Contracting Governments take appropriate action to ensure that all vessels under their jurisdiction which take herring, record their catches on a daily basis according to position, amount, date, type of gear, amount of effort, i.e., number of sets (or hooks) x time gear on the bottom (otter trawl) or fishing (midwater trawl, lines, other gear), discards and disposition of catch.

"5. That the Commission establish (a) the level of catch for 1974 which will result in the restoration of the adult stock to at least 60,000 metric tons by the end of 1974, it being understood that in any event the level of catch for 1974 will not be increased above that for 1973 unless the adult stock size at the end of 1973 has reached a level which will provide the maximum sustainable yield by the end of 1974, and (b) the allocation of that catch for 1974, both of which will be substituted for the catch and the allocation thereof in paragraphs 1 and 2 above, respectively.

"6. That the allocations in paragraph 2 above are without prejudice to future allocations of catches for this or other stocks. Nothing in this proposal shall prejudice the future possibility of the Contracting Governments entering into mutual arrangements for the management of the allocations of herring catches or re-allocating the allocations of herring catches given in paragraph 2 above by such agreements as they may enter into, all such arrangements and re-allocations to be reported to all other Contracting Governments through the Executive Secretary.

"7. This proposal shall become effective only at such times as the herring quota proposals adopted 26 January 1973 by Panels 4 and 5 for Division 4X and part of Division 4W of Subarea 4 and Division 5Z of Subarea 5 become effective."

SPECIAL COMMISSION MEETING - JANUARY 1973(3) Proposal for International Quota Regulation of the Fishery for Herring in Division 4X and Part of Division 4W of Subarea 4

Panel 4 recommends that the Commission transmit to the Depositary Government the following proposal for joint action by the Contracting Governments:

- "1. That the Contracting Governments take appropriate action to regulate the catch of herring, *Clupea harengus* L., by persons under their jurisdiction fishing in that portion of Division 4W south of 44°52'N latitude and in Division 4X of Subarea 4 so that the aggregate catch of herring by vessels taking such herring shall not exceed 90,000 metric tons in 1973.
- "2. That Competent Authorities from each Contracting Government listed below shall limit in 1973 the catch of herring taken by persons under their jurisdiction to the amount listed from the above-mentioned stock:

Canada	57,000 metric tons
Japan	1,350 " tons
USSR	31,050 " tons
Others	600 " tons

- "3. That each Contracting Government mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of the date on which its vessels have ceased a specialized fishery for herring. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary if its vessels engage in a specialized fishery for herring, together if possible with an estimate of the projected catch. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of specialized or incidental catches of herring in increments of 100 tons. The Executive Secretary shall promptly inform all other Contracting Governments of such notifications. The Executive Secretary shall notify each Contracting Government of the date on which accumulated catch and estimated catch of herring, the quantity estimated to be taken before closure could be introduced, and the likely incidental catch for the remainder of the year equal 100 percent of the allowable catch designated as for "Others" in paragraph 2 above. Within 10 days of receipt of such notification from the Executive Secretary, each Contracting Government not mentioned by name in paragraph 2 above shall prohibit the catching of herring in the area mentioned in paragraph 1 by persons under its jurisdiction, except for small incidental catches.
- "4. That the Contracting Governments take appropriate action to ensure that all vessels under their jurisdiction which take herring, record their catches on a daily basis according to position, amount, date, type of gear, amount of effort, i.e., number of sets (or hooks) x time gear on the bottom (otter trawl) or fishing (midwater trawl, lines, other gear), discards and disposition of catch.
- "5. That the allocations in paragraph 2 above are without prejudice to future allocations of catches for this or other stocks. Nothing in this proposal shall prejudice the future possibility of the Contracting Governments entering into mutual arrangements for the management of the allocations of herring catches or re-allocating the allocations of herring catches given in paragraph 2 above by such agreements as they may enter into, all such arrangements and re-allocations to be reported to all other Contracting Governments through the Executive Secretary.
- "6. This proposal shall become effective only at such times as the herring quota proposals adopted 26 January 1973 by Panel 5 for Divisions 5Y and 5Z of Subarea 5 become effective."

SPECIAL COMMISSION MEETING - JANUARY 1973(4) Proposal for International Quota Regulation of the Fishery for Flounders (except Yellowtail) from the Southern New England Stocks

Panel 5, having in mind the STACREM Report, recommends that the Commission transmit to the Depository Government the following proposal for joint action by the Contracting Governments:

- "1. That the Contracting Governments take appropriate action to regulate the catch of flounders<sup>1</sup> by persons under their jurisdiction fishing in the Southern New England stock found in Subarea 5 and in the adjacent waters to the west and south so that the aggregate catch of flounders by vessels taking flounders from this stock shall not exceed 25,000 metric tons in 1973.
- "2. That Competent Authorities from each Contracting Government listed below shall limit in 1973 the catch of flounders taken by persons under their jurisdiction to the amount listed from the above-mentioned stock:

Canada	100	metric tons
Romania	500	" tons
USSR	2,600	" tons
USA	21,700	" tons
Others	100	" tons

- "3. That each Contracting Government mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of the date on which its vessels have ceased a specialized fishery for flounders. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary if its vessels engage in a specialized fishery for flounders, together if possible with an estimate of the projected catch. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of specialized or incidental catches of flounders in increments of 100 tons. The Executive Secretary shall promptly inform all other Contracting Governments of such notifications. The Executive Secretary shall notify each Contracting Government of the date on which accumulated catch and estimated catch of flounders, the quantity estimated to be taken before closure could be introduced, and the likely incidental catch for the remainder of the year equal 100 percent of the allowable catch designated as for "Others" in paragraph 2 above. Within 10 days of receipt of such notification from the Executive Secretary, each Contracting Government not mentioned by name in paragraph 2 above shall prohibit the catching of flounders from the Southern New England stock by persons under its jurisdiction, except for small incidental catches.
- "4. That the Contracting Governments take appropriate action to ensure that all vessels under their jurisdiction which take flounders, record their catches on a daily basis according to position, amount, date, type of gear, amount of effort, i.e., number of sets (or hooks) x time gear on the bottom (otter trawl) or fishing (midwater trawl, lines, other gear), discards and disposition of catch.
- "5. That the allocations in paragraph 2 above are without prejudice to future allocations of catches for this or other stocks."

<sup>1</sup> Includes American plaice, *Hippoglossoides platessoides* (Fab.);  
summer flounder, *Paralichthys dentatus* (L.);  
winter flounder, *Pseudopleuronectes americanus* (Walb.);  
wiltch, *Glyptocephalus cynoglossus* (L.).

SPECIAL COMMISSION MEETING - JANUARY 1973(5) Proposal for International Quota Regulation of the Fishery for Mackerel from the Southern New England Stock

Panel 5, having in mind the STACREM Report, recommends that the Commission transmit to the Depository Government the following proposal for joint action by the Contracting Governments:

- "1. That the Contracting Governments take appropriate action to regulate the catch of mackerel, *Scomber scombrus* L., by persons under their jurisdiction fishing in the Southern New England stock found in Subarea 5 and in the adjacent waters to the west and south so that the aggregate catch of mackerel by vessels taking mackerel from this stock shall not exceed 450,000 metric tons in 1973.
- "2. That Competent Authorities from each Contracting Government listed below shall limit in 1973 the catch of mackerel taken by persons under their jurisdiction to the amount listed from the above-mentioned stock:

Bulgaria	33,000	metric tons
Canada	22,500	" tons
Federal Republic of Germany	3,500	" tons
Poland	130,000	" tons
Romania	20,000	" tons
USSR	148,000	" tons
USA	26,200	" tons
Others	66,800	" tons

- "3. That each Contracting Government mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of the date on which its vessels have ceased a specialized fishery for mackerel. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary if its vessels engage in a specialized fishery for mackerel, together if possible with an estimate of the projected catch. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of specialized or incidental catches of mackerel in increments of 100 tons. The Executive Secretary shall promptly inform all other Contracting Governments of such notifications. The Executive Secretary shall notify each Contracting Government of the date on which accumulated catch and estimated catch of mackerel, the quantity estimated to be taken before closure could be introduced, and the likely incidental catch for the remainder of the year equal 100 percent of the allowable catch designated as for "Others" in paragraph 2 above. Within 10 days of receipt of such notification from the Executive Secretary, each Contracting Government not mentioned by name in paragraph 2 above shall prohibit the catching of mackerel from the Southern New England stock by persons under its jurisdiction, except for small incidental catches.
- "4. That the Contracting Governments take appropriate action to ensure that all vessels under their jurisdiction which take mackerel, record their catches on a daily basis according to position, amount, date, type of gear, amount of effort, i.e., number of sets (or hooks) x time gear on the bottom (otter trawl) or fishing (midwater trawl, lines, other gear), discards and disposition of catch.
- "5. That the allocations in paragraph 2 above are without prejudice to future allocations of catches for this or other stocks."

SPECIAL COMMISSION MEETING - JANUARY 1973(6) Proposal for International Quota Regulation of the Fishery for Pollock in Subarea 5 and Division 4X of Subarea 4

Panels 4 and 5, having in mind the STACREM Report, recommend that the Commission transmit to the Depository Government the following proposal for joint action by the Contracting Governments:

- "1. That the Contracting Governments take appropriate action to regulate the catch of pollock, *Pollachius virens* (L.), by persons under their jurisdiction fishing in Subarea 5 and Division 4X of Subarea 4 so that the aggregate catch of pollock by vessels taking pollock from this stock shall not exceed 50,000 metric tons in 1973.
- "2. That Competent Authorities from each Contracting Government listed below shall limit in 1973 the catch of pollock taken by persons under their jurisdiction to the amount listed from the above-mentioned stock:

Canada	21,760	metric tons
Federal Republic of Germany	1,125	" tons
Spain	450	" tons
USSR	2,970	" tons
USA	11,275	" tons
Others	12,420	" tons

- "3. That each Contracting Government mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of the date on which its vessels have ceased a specialized fishery for pollock. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary if its vessels engage in a specialized fishery for pollock, together if possible with an estimate of the projected catch. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of specialized or incidental catches of pollock in increments of 100 tons. The Executive Secretary shall promptly inform all other Contracting Governments of such notifications. The Executive Secretary shall notify each Contracting Government of the date on which accumulated catch and estimated catch of pollock, the quantity estimated to be taken before closure could be introduced, and the likely incidental catch for the remainder of the year equal 100 percent of the allowable catch designated as for "Others" in paragraph 2 above. Within 10 days of receipt of such notification from the Executive Secretary, each Contracting Government not mentioned by name in paragraph 2 above shall prohibit the catching of pollock in Subarea 5 and Division 4X of Subarea 4 by persons under its jurisdiction, except for small incidental catches.
- "4. That the Contracting Governments take appropriate action to ensure that all vessels under their jurisdiction which take mackerel, record their catches on a daily basis according to position, amount, date, type of gear, amount of effort, i.e., number of sets (or hooks) x time gear on the bottom (otter trawl) or fishing (midwater trawl, lines, other gear), discards and disposition of catch.
- "5. That the allocations in paragraph 2 above are without prejudice to future allocations of catches for this or other stocks."

SPECIAL COMMISSION MEETING - JANUARY 1973(7) Proposal for International Quota Regulation of the Fishery for Redfish in Subarea 5

Panel 5, having in mind the STACREM Report, recommends that the Commission transmit to the Depository Government the following proposal for joint action by the Contracting Governments:

- "1. That the Contracting Governments take appropriate action to regulate the catch of redfish, *Sebastes marinus* (L.), by persons under their jurisdiction fishing in Subarea 5 so that the aggregate catch of redfish by vessels taking redfish from this stock shall not exceed 30,000 metric tons in 1973.
- "2. That Competent Authorities from each Contracting Government listed below shall limit in 1973 the catch of redfish taken by persons under their jurisdiction to the amount listed from the above-mentioned stock:

Canada	350 metric tons
Poland	100 " tons
USSR	4,500 " tons
USA	24,550 " tons
Others	500 " tons

- "3. That each Contracting Government mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of the date on which its vessels have ceased a specialized fishery for redfish. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary if its vessels engage in a specialized fishery for redfish, together if possible with an estimate of the projected catch. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of specialized or incidental catches of redfish in increments of 100 tons. The Executive Secretary shall promptly inform all other Contracting Governments of such notifications. The Executive Secretary shall notify each Contracting Government of the date on which accumulated catch and estimated catch of redfish, the quantity estimated to be taken before closure could be introduced, and the likely incidental catch for the remainder of the year equal 100 percent of the allowable catch designated as for "Others" in paragraph 2 above. Within 10 days of receipt of such notification from the Executive Secretary, each Contracting Government not mentioned by name in paragraph 2 above shall prohibit the catching of redfish in Subarea 5 by persons under its jurisdiction, except for small incidental catches.
- "4. That the Contracting Governments take appropriate action to ensure that all vessels under their jurisdiction which take redfish, record their catches on a daily basis according to position, amount, date, type of gear, amount of effort, i.e., number of sets (or hooks) x time gear on the bottom (otter trawl) or fishing (midwater trawl, lines, other gear), discards and disposition of catch.
- "5. That the allocations in paragraph 2 above are without prejudice to future allocations of catches for this or other stocks."

SPECIAL COMMISSION MEETING - JANUARY 1973

Resolution Relating to 1973 Proposals for the Conservation of Herring,  
Flounders (except Yellowtail), Mackerel, Pollock and Redfish Stocks in Subareas 4 and 5

Panels 4 and 5 recommend the following draft resolution for adoption by the Commission:

The Commission

Noting Article VI, paragraph 1; Article VIII, paragraph 2(a); Article IX, Article XII and Article XIII of the Convention, 1949,

Having Considered measures for the conservation of the stocks of herring, flounders<sup>1</sup>, mackerel, pollock and redfish found in Subareas 4 and 5 of the Convention Area and having adopted seven proposals for the conservation of these stocks,

Being Aware that some stocks of herring, flounders, mackerel, pollock and redfish found in Subarea 5 extend westward and southward into an area designated by the Commission as Statistical Area 6 and are exploited there,

Considering that some stocks are exploited within territorial waters and the measures which have been taken for their conservation by coastal states,

Noting that non-members of the Commission participate in the exploitation of the stocks of herring, flounders, mackerel, pollock and redfish in the Convention Area and Statistical Area 6,

Holding the View that measures for the conservation of the stocks shall be applied also to Statistical Area 6 and to the territorial waters of the coastal states, where part of the stocks are found,

Being Aware of the time period before the proposals referred to above may enter into effect pursuant to the provisions of Article VIII of the Convention as amended, the desirability of taking appropriate steps for the implementation of measures for the conservation of herring, flounders, mackerel, pollock and redfish prior to the effective date of the proposals referred to above and the desirability of reducing the time period before these proposals take effect,

1. Invites the attention of all Contracting Governments to the above matters,
2. Urges the coastal states to ensure that appropriate conservation measures are undertaken within territorial waters to protect the stocks and limit the catch,
3. Requests all Contracting Governments fishing for herring, flounders, mackerel, pollock and redfish to anticipate the coming into effect of the above-mentioned proposals later in 1973 and to institute appropriate measures as soon as possible to ensure the effectiveness of the proposals when they become effective under the terms of the Convention,
4. Further Requests all Contracting Governments fishing the stocks of herring, flounders, mackerel, pollock and redfish found in Subarea 5 and Statistical Area 6 to ensure the effectiveness of the Commission's proposals for those stocks, either by further international agreements or on a national basis,
5. Calls On the Contracting Governments to invite the attention of non-members of the Commission fishing for herring, flounders, mackerel, pollock and redfish in the above-mentioned areas to these matters, and
6. Urgently Requests all Contracting Governments to notify promptly, if possible before 15 April 1973, the Depositary Government of their acceptance of the above-mentioned proposals and their willingness to be bound by them at an earlier date than provided under the normal procedure.

<sup>1</sup> Includes American plaice, *Hippoglossoides platessoides* (Fab.);  
summer flounder, *Paralichthys dentatus* (L.);  
winter flounder, *Pseudopleuronectes americanus* (Walb.);  
witch, *Glyptocephalus cynoglossus* (L.).





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Proceedings No. 4

SPECIAL COMMISSION MEETING - JANUARY 1973

Report of Meetings of Standing Committee on Regulatory Measures (STACREM)

Wednesday, 17 January, 1515 hrs  
Thursday, 18 January, 1445 hrs  
Monday, 22 January, 0945 hrs  
Wednesday, 24 January, 0915 hrs  
Thursday, 25 January, 0930 hrs

1. The Standing Committee on Regulatory Measures (STACREM) met during the Special Commission Meeting held at FAO, Rome, 16-26 January 1973, at the request of the Plenary (1973 Sp. Comm. Mtg. Proc. 2). Mr J. Graham (UK) was elected Chairman of the STACREM. The Executive Secretary acted as Rapporteur. Representatives were present from all Member Countries, except Bulgaria and Italy. Observers were present from the European Economic Community (EEC), Food and Agriculture Organization of the United Nations (FAO), and International Council for the Exploration of the Sea (ICES).

2. Under Plenary Agenda Item 7, "Consideration of Measures to Reduce Total Fishing Effort in the Convention Area", the STACREM considered the technical questions raised in the US proposal for effort regulation in Subarea 5 and Statistical Area 6 (Comm.Doc. 73/3). A general summary of the results of studies carried out by the Assessments Subcommittee of STACRES, in response to the US proposal on effort regulation (Comm.Doc. 73/3) and the Canadian questions relating to it (Comm.Doc. 73/4), was presented by the Subcommittee Chairman (Comm.Doc. 73/5). Details of the US proposal were elaborated in the further paper submitted by the USA (Appendix I) in the light of the Assessments Subcommittee report which was endorsed by the STACRES (1973 Sp. Comm. Mtg. Proc. 1).

3. In the oral presentation of their proposal, the US delegation made the following points. The most recent assessment of the status of fisheries indicated that the total yield in 1971 was at or above the maximum sustainable yield (MSY), and the total effort was significantly beyond the MSY point. The assessment also indicated that there were no large finfish resources not now under exploitation. It appeared, therefore, that the total finfish resource was being overfished, with marked declines in the biomass. The effect of catch quotas already introduced was to reduce the effort on regulated stocks which had been diverted to other stocks in the area. It was, therefore, necessary to reduce the overall effort to a level which the biomass could support. This could be done by regulating effort or catch or both. Because of the existence of mixed fisheries a total limit must be less than the sum of the limits for the individual species and should be fixed so as to reduce fishing mortality by 25% below the 1971 level. Owing to the absence of complete information about some stocks, it was difficult to know what the limit should be in terms of catch, whereas the effort reduction needed could be estimated with some certitude. Moreover, a restriction on effort would guarantee that fishing mortality was, in fact, reduced, whereas the effect of catch quotas on mortality was problematical, being heavily dependent on fluctuations in recruitment. USA accepted that overall effort limitation would not dispense with the need for other regulations (and were not proposing this) and considered that it might improve the effectiveness of some, e.g. mesh regulations. With regard to enforcement, the US delegation considered that an overall effort limitation expressed in terms of "days on ground" could be much more effectively enforced than a catch limitation which depended on the statistical controls of member states, and would thus reassure fishermen disposed to doubt whether regulations were enforced on others. With a view to allocating the total effort allowed among Member Countries, USA proposed a system of standardization under which coefficients would be established to relate the effort of each class of vessel to that of a US side trawler 0-50 tons (taken as standard). In the original US memorandum (Comm.Doc. 73/3), a single coefficient was applied to vessels of all countries of the same class but in the second US paper (Appendix I) separate coefficients were calculated for vessels of each class in each country. Countries which had already reduced their effort in the area should not be subject to further reductions. Finally, USA felt strongly that a measure of effort limitation was urgently necessary and that the Commission would be failing in its duty if it did not take immediate action.

4. US concern about the present situation was shared, and there was no opposition in principle to effort regulation. While there was some support for the US view that effort regulation had definite advantages, biological or economic, it was also felt that the details of the proposal needed more study

and it was pointed out that the problem of standard units of effort would be examined in May 1973 by an ICES Working Group to which ICNAF had been invited to send representation; and it was felt that it would be necessary, in any case, to see the effect of the catch quotas agreed for 1973 before proceeding to a direct limitation of effort.

In the course of discussion of the detailed proposals in the US memorandum (Comm.Doc. 73/3), the following points were made:

- (a) Effort limitation would not overcome the by-catch problem any better than catch limitation; and while effort limitation could take account of fluctuations in stocks, changes in patterns of fishing could seriously distort its effect on fishing mortality. Moreover, there were not enough effort data over a period of years to provide an adequate historical basis and it would be unfair to allocate effort quotas between countries by reference to a single year.
- (b) If an effort limitation were introduced, it should apply to the whole Convention Area since otherwise, diversion of effort would create problems elsewhere.
- (c) There were some stocks, e.g. squid, saury, etc. in Subarea 5 and Statistical Area 6, which were not generally fished and were capable of further exploitation in which by-catches of regulated species would be quite insignificant.
- (d) With regard to enforcement, the existence of an overall effort limitation would not dispense with the need to enforce the species catch quotas, and the impressions formed by individual fishermen did not enable them to judge how effectively restrictions were being enforced.
- (e) An effort limit might prevent some countries from achieving their catch quotas.
- (f) The proposals on standardization presented many difficulties which required further study.
- (g) It was questionable whether effort restrictions could be fixed with any greater confidence than further catch quotas.

5. The detailed doubts of the Portuguese delegate regarding the proposed scheme of effort regulation are recorded at Appendix II. The general view of the Committee delegates was that more detailed study of effort regulation was necessary and the Committee adopted a list of questions on which it felt that it would be helpful to have further technical advice from STACRES (Appendix III).

6. In the meantime, the general feeling of the Committee was that the adoption of catch quotas for additional species, possibly supplemented by an overall catch quota, offered the best immediate prospect of achieving, at least in part, the objectives of the US proposal. The Assessments Subcommittee was accordingly asked to provide their best estimates of the figures needed for this purpose (Appendix IV).

After considering these figures, the Committee recommended that the appropriate Panels should, as an interim measure, consider the establishment of TAC's and national catch quotas for 1973 for stocks of mackerel, pollock (including catches in Div. 4X of Subarea 4), redfish and other flounders in Subarea 5 and Statistical Area 6. These arrangements would be subject to review at the 1973 Annual Meeting in the light of revised assessments based on the fuller information which could by then be available.

7. In order to enable the Commission to be in a position to take definitive action at the 1973 Annual Meeting, the US delegation offered to provide facilities at the Northeast Fisheries Center, National Marine Fisheries Service, Woods Hole, Massachusetts, for a special meeting of experts to consider the questions listed in Appendix III, and related matters concerning the establishment of effort limitation schemes. Representatives at this meeting would include not only scientists, but economists and other experts to cover the various aspects of the problem.

8. The Committee expressed its appreciation of the US invitation. As delegates were not in a position to commit their Governments to definite arrangements, it was agreed that the date of the meeting, which it was suggested should take place at the end of March, should be fixed at the initiative of USA in consultation with Governments.

9. In conclusion, the Committee wished to place on record its appreciation of the great assistance it had received from members of the Assessments Subcommittee.

SPECIAL COMMISSION MEETING - JANUARY 1973Comments by the USA on the Proposalto Regulate Fishing Effort in Subarea 5 and Statistical Area 6Summary

*In summary, the specifics of the US proposal are:*

1. *That the reduction of fishing intensity required to obtain the maximum sustainable yield (MSY) is 25% below 1971.*
2. *USA proposes that the total allowable effort be expressed in terms of days on ground.*
3. *Taking into account the different principles of allocation discussed in this paper, the allowable fishing effort by countries for calendar year 1974 in terms of standardized US small otter trawler days on ground or its equivalent (see Table 2) is as follows:*

<i>Federal Republic of Germany (FRG)</i>	<i>10,180</i>
<i>Japan</i>	<i>7,716</i>
<i>Poland</i>	<i>45,829</i>
<i>Romania</i>	<i>2,750</i>
<i>Spain</i>	<i>3,250</i>
<i>USSR</i>	<i>80,868</i>
<i>Bulgaria</i>	<i>9,386</i>
<i>German Democratic Republic (GDR)</i>	<i>20,122</i>

4. *Furthermore, given the urgency of this situation, USA proposes that the total effort expended by each country listed in paragraph 3 in the period 1 September to 31 December 1973 be one third of the figures listed in paragraph 3 above.*
5. *USA proposes that the existing regime of ICNAF conservation measures be maintained (individual species quotas, minimum mesh size regulation, closed areas, minimum fish sizes).*
6. *USA proposes that, should new entrants or non-members not mentioned in paragraph 3 above become a significant factor in the fishery, then adjustments should be made in the allocated effort similar to that which has been done with the catch quotas.*
7. *Fisheries developed specifically for invertebrates with gear not capable of capturing finfish are to be excluded from the total effort regulations proposed herein.*

USA conducts extensive research into the status of fisheries and works closely with STACRES to provide advice to ICNAF on the state of the fisheries. USA has a vital interest in the stocks of fish off its coast specifically, but also is concerned with developments elsewhere. US scientists and the ICNAF Assessments Subcommittee have advised over the last few years that the magnitude of fishing intensity in general in the ICNAF Area has been rapidly approaching the point where further increases will not provide significant increases in catch in the long run; indeed, they have pointed out that some stocks have been rather severely overfished. The studies have shown that the situation in Subarea 5 and Statistical Area 6 is particularly serious. The variety of species makes assessment difficult and, in the past, the corrective actions have come too late, i.e., a severe reduction in catch is involved, with the possible exception of cod. All of the major finfish resources were heavily exploited by the beginning of 1971. The coastal fisheries have suffered a significant drop in catch of 46% over the last 10 years. Most of the resources of direct interest to coastal fishermen have suffered rather severe declines as indicated in the Assessments Subcommittee Report.

Because of these serious and alarming trends, USA believes that the overall fishing intensity needs to be regulated to maintain good yields, particularly in Subarea 5 and Statistical Area 6. USA proposes that the total fishing effort be regulated to achieve this. US reasons for choosing this means of regulation have been outlined and a reasonably specific method for framing the regulations has been proposed (Comm.Doc. 73/3).

The Assessments Subcommittee of STACRES has now studied the problem and evaluated most of the items relating to the US proposal (1973 Sp. Comm. Mtg. Proc. 1, App. I). USA would like now to review a more

detailed proposal which has been prepared along the lines of its original proposal (Comm.Doc. 73/3) taking into account the Assessments Subcommittee's advice.

I. The US memorandum states that fishing effort be reduced to the level which corresponds to that required to provide the total maximum sustainable yield of finfish (Comm.Doc. 73/3, Section I, Paragraph 1)

The objective of the Commission has long been to regulate fisheries in order to maximize the long-term yield. The Assessments Subcommittee of STACRES has concluded that the 1971 catch was at or beyond the MSY and the 1971 effort was significantly beyond the MSY level. It has also concluded that there are no large finfish resources now under exploitation. Therefore, there would be no missed opportunities for expansion with some overall effort limit. USA fully agrees with the merit of the individual species quotas which the Commission has set in the past. However, the Assessments Subcommittee has concluded that, because of the by-catch problem, this approach would tend to generate over-exploitation, and this can only be prevented by total catch or effort regulation.

In choosing the type of regulation, both biological and practical matters must be considered. A total catch quota is set to regulate the effective fishing intensity. Therefore, to achieve the correct level of fishing intensity, the quotas must be adjusted for changes in recruitment and growth which lead to changes in the stock abundance. The annual adjustments to quotas needed to maintain fishing intensity at the right level would require a very large amount of assessment work; much greater than we now put forward in ICNAF. This would mean not only many more manhours of assessment work but also much additional statistical and biological data. On the other hand, fixing the fishing intensity directly means that catches can be allowed to vary according to changes in abundance. While vessel controls will not eliminate entirely the need for quotas, and we are not suggesting that the effort regulation USA has proposed be substituted for the existing quotas, the regulation of effort will decrease the need for frequent adjustment in quotas. In either case, later adjustments may have to be made because of changing objectives, or because the initial status was not correctly assessed.

Another factor to be taken into account is the relative status of fisheries. The Assessments Subcommittee concluded that most of the finfish stocks are now overfished, i.e., the 1971 point of catch and effort is above and to the right of the MSY point on the total yield curve. The 1972 effort is even greater. If the effort were left at this level, the catch per unit of effort (CPE) and, hence, total catch would drop until stabilized at a new level, lower than MSY. Although this is a long-term phenomenon, in the interim, as now when we are considering regulation, the CPE will fall.

The quota must be set at the point on the yield curve corresponding to that catch of the current year's yield-effort curve. Yet we do not know the 1972 status nor can we predict the effect of fishing in the time period before the total quota comes into effect. The events in the interim period make no difference to the correctness of the effort level judged as of 1971, but could have a significant effect on the correctness of the quota set as of 1971.

The Assessments Subcommittee concluded that the mixed fisheries problem can only be dealt with by some overall limitation of fishing intensity. It also indicated that the by-catch problem itself was not solved by using a total catch or total effort regulation. Although we cannot eliminate the problem, we could alleviate it by preventing further increases in effort. Total effort limitation seems to take care of the situation best, in that it does prevent increases in effort. Quota regulations, even a total quota, do not accomplish this in a predictable way. As mentioned above, variations in stock abundance will cause changes in fishing intensity, unless they are adequately measured and the quota adjusted. Thus, the opportunity exists for increased effort, particularly when stocks decrease in abundance. The Commission can probably not observe, assess and take action quickly enough to prevent such increased effort.

The economic advantages of controlling effort that have been made obvious by earlier studies in ICNAF should be emphasized. The importance of effective enforcement to an effective management scheme should also be emphasized. A management program which includes many quotas and many changes will be very difficult to enforce.

Not only must a management program be administratively feasible in order to regulate effectively, but adherence must be self-evident to the participating fishermen. Because they are mixed fisheries, one cannot infer what species are caught from observations of vessel occurrence.

However, observations on the occurrence and time in the area of vessels would provide the opportunity for fishermen to see for themselves the effects of effort regulation. Also, Governments can mount observation programs to monitor adequately the number, type and activity of the fleet components. This would also, in addition, provide for much improved fishery statistics.

II. The US memorandum states that the allowable amount of effort as recommended by STACRES should be expressed as a percentage reduction of 1971 effort because that is the last year for which complete statistics are available (Comm.Doc. 73/3, Section 1, Paragraph II)

STACRES has accepted the Assessments Subcommittee's advice of a 20-30% cutback to achieve MSY. USA proposes that a value of 25% be used. The STACRES Report also stated that effective effort in 1972 had increased in excess of 10% from that in 1971. The US estimate of increase was 25%, based on US vessel overflight observations and calculations. Although this increase accentuates the problem by increasing the extent to which the stocks are being overfished, it does not have to be considered as the effort reduction can be calculated from 1971 reported effort levels.

III. Problems of standardizing effort (Comm.Doc. 73/3, Section 1, Paragraph III)

The Assessments Subcommittee has reported that, of the units of effort most regularly reported, "days fished" adequately relates effort to fishing intensity for management purposes and that "days on ground" is a feasible unit to use to regulate fishing effort. USA proposes, therefore, that the actual regulation of fishing effort be accomplished on the basis of "days on ground".

There are many problems involved in standardizing effort; USA welcomes further research and refinement of the measures of relative catchability. However desirable this is, the time for action is now. The Assessments Subcommittee has stated that a reduction in effort in the neighbourhood of 30% is required for proper management of the stocks. Therefore, the question is whether standardization is adequate for assuring a reduction in fishing mortality in 1973. The ratios between catch rates of various vessel classes within each country, based on 1971 reported statistics, are pertinent to this question. As computed from the 1971 ICNAF Statistical Bulletin tables, these ratios reflect differences in fishing patterns among such vessels, as well as different fishing power. The Federal Republic of Germany and Japan apparently fished with the same pattern for all their vessel classes. Polish side trawlers concentrated on herring to a greater extent than on mackerel, while the reverse was true for the stern trawlers. There was less indication of this tendency for the USSR vessels. In addition, the larger USSR vessels concentrated to a greater extent on hake. Changes in these patterns would affect the relative catchabilities to some degree, depending on relative availabilities of the different species. Changes in patterns would not appear, however, to be of major significance in the effectiveness of effort reduction. Of greater concern is possible future improvement in efficiency, particularly in the way a country deploys effort, relative to the "days fished" and "days on ground" as reported to ICNAF. It is unlikely that efficiency will decrease. Thus, using present values errs, if anything, in the direction of not achieving the desired effort reduction and, accordingly, effort should probably be reduced more than that recommended by the Assessments Subcommittee.

The only place in the computations where between-country coefficients are used is in the determination of the percentage reductions which will be applied to individual countries to achieve a 25% overall reduction. This depends, of course, on the proportion of effort eliminated relative to that being reduced. The greater the amount eliminated, the greater will be the percentage reduction on the remaining countries. Since most of the effort eliminated was US effort, it is appropriate to discuss these consequences. The Assessments Subcommittee discussions pointed out that the relative abundance of groundfish and pelagic stocks would influence their relative catchabilities based on standard US gear. If the pelagic stocks were in greater abundance than the groundfish stocks, the proportion of US effort would be underestimated relative to the distant-water fleets and thus, the percent reduction of the countries affected would be less, and might be too low to achieve a 25% overall reduction of effort.

A significant fishery for invertebrates exists at the present time and may develop further in the future. The US proposal is not intended to limit effort on such species so long as the gear used does not catch significant quantities of finfish as a by-catch. Thus, the US proposal excludes specific fisheries now in existence for lobster, shrimp, scallops, and other shellfish, except squid.

The current small fishery for squid takes significant quantities of finfish as a by-catch. The effort directed to squid has been included in the allocations. Should future development of this fishery include gear that does not take a by-catch of finfish, the USA would expect the Commission to exempt the fishery from the total effort regulation. Separate quotas and effort regulation would have to be developed for these various independent fisheries depending on needs.

IV & V. Factors in allocation of effort among nations (Comm.Doc. 73/3, Section 1, Paragraphs IV and V)

In determining the allocation of total effort among participants, some of the same factors considered in applying quota management programs should be taken into account. Traditional fishing patterns, as reflected by average effort levels over a period of selected years and expressed in terms of standard fishing units, should provide a partial and useful basis for the allocation of effort levels. However, other factors, such as recent increases in effort, coastal state interests, developing fisheries, immobile vessels, and recent entrants, must be considered. Under the present circumstances of fully utilized fisheries, new entrants would not be given significant consideration.

Coastal fishing interests should be given high priority. Many coastal fisheries are relatively immobile and cannot be shifted to other areas. Similarly, coastal states are often concerned with developing new potentials; effort control must recognize this need and must be flexibly applied to permit such expansion.

Even a quick look at the data shows clearly that the coastal states have not increased their catch and effort since 1961. In fact, they have decreased it, and thus have already made a contribution to effort control. They should not be expected to make a further contribution now, since they have not created the problem.

Moreover, it must be recognized that the relatively immobile fleets of small coastal vessels are unique in contrast with the remaining vessels in the area, that is, the distant-water vessels. These coastal vessels have been designed almost exclusively to supply specialized markets with a continuous year-round supply of fresh fish. This they cannot do if they are shifted to other areas. Nor can they make longer trips to other fishing grounds: even when they are physically capable of venturing further offshore, they cannot operate effectively amidst the fleets of large vessels found there.

As in catch quota allocation, it appears appropriate to divide part of the effort quota among participating countries in proportion to their average level of participation over an agreed period of time. However, it seems only equitable to relate the amount of effort an individual participating country is asked to reduce, in part, to the extent by which that country has increased its level of effort over the years when the total effort was excessive. On the other hand, the allocation scheme must recognize that countries, which have not increased their fishing effort or which may have reduced their effort in response to changes in fish stocks or biomass, have already made a contribution toward effort control and should not be expected to accept further reductions.

Certain other special factors need consideration similar to that given to the allocation of catch quotas. USA recognizes that these might include provision for the special needs of recent entrants with relatively small fleets to the fishery.

Basing such an allocation on historical fishing, as was done with the catch quotas, is, as the Assessments Subcommittee has stated, difficult because of changes in relative catch rates within time periods. This was tried in several different ways and although the trends remain the same, the actual country values fluctuated depending on the time periods for which relative catchabilities were calculated. Nevertheless, in all trials, Japan, Poland, USSR, Bulgaria and the German Democratic Republic showed increases since 1968 when effort was at about the right level. Because Canada and USA are coastal fishing nations, their effort was not reduced.

In order to avoid very small reductions, and the impairment of very small fisheries, countries with less than 2,500 days, or about 1% of the total, were not given reductions in effort. This rule applied to Romania and Spain.

Because of these difficulties, the procedure recommended by the Assessments Subcommittee to use 1971 relative catchabilities as determined from statistics reported to ICNAF to determine 1971 standard effort, was adopted. The number of standard days to be reduced was 25% of this total. This reduction was apportioned to those countries not exempted by the criteria given above on the basis of the standardized effort applied by each country in 1971. This resulted in a 30.7% reduction for each of the countries in the allocation to achieve the overall 25% reduction (Table 1).

A procedure for each country to use in allocating its total allowable effort among various vessel categories was presented by the Assessments Subcommittee. Tables have been prepared for each country. The conversion coefficients for "days on ground" to "days fished" are also listed.

Standardized "days fished" were computed using the relative catchabilities given in Table 7 of the Assessments Subcommittee Report. These were obtained by making monthly comparisons of catch rates of all vessel types with the US OTSI 0-50-ton class. These relative catch rates were then averaged over months to obtain an annual average.

The raw annual "days fished" for each gear type for each country were then multiplied by the annual average coefficients and added to obtain the total annual standardized "days fished" (Table 2). Serious problems arise in using the country-vessel type conversions for "days fished" to "days on ground". The first is that the last year for which such ratios were submitted to ICNAF was 1969 and changes may have occurred since then for some countries. The second is that such data are only available for Romania, Spain, Poland and USSR. The third is that there are differences among vessel classes in the "days fished" "days on ground" conversion coefficients for Poland. The latter fact leaves unresolved the precise determination of allowable "days on ground" to achieve the desired reduction in "days fished".

The Commission is faced with three possible solutions to this problem:

- (1) The Commission can decide at this meeting the best single coefficient for each country for conversion of "days fished" to "days on ground". It is assumed that further studies will be undertaken to improve the accuracy of this coefficient.
- (2) The Commission can set up a Working Party to study the matter further and to derive new country coefficients and to report to the 1973 Annual Meeting of the Commission. These new coefficients could then be applied to the regulations effective 1 September 1973.
- (3) The Commission can derive a scheme which would allow each country to utilize different "days on ground" to "days fished" conversion coefficients. This would require that the actual "days on ground" in column 15 of Table 13 of the Assessments Subcommittee Report would be reconverted to standard "days fished". The total of these reconverted "days fished" must not exceed the total given at the bottom of columns 6 or 7. If they do, a reapportionment of days among different vessel categories must be done such that the reconverted "days fished" are less than, or equal to, the original allocated "days fished".

VI. Present regulatory measures (Comm.Doc. 73/3, Section 1, Paragraph VI)

(See Paragraph 5 of the Summary)

VII. That the reduced level of fishing effort is to be implemented on an urgent basis (Comm.Doc. 73/3, Section 1, Paragraph VII)

The Assessments Subcommittee Report estimated that the level of fishing intensity associated with the MSY of finfish in Subarea 5 and Statistical Area 6 is 70-80% of the 1971 level. The Subcommittee also concluded that, on the basis of US overflight data, the increase in fishing effort from 1971 to 1972 was considerably in excess of 10%. The compositions of distant-water fleets have changed in recent years, with the ratio of large stern trawlers to medium side trawlers increasing from 0.7 in 1971 to 1.02 in 1972 (the former estimated to be 3.5 times as effective as the latter). Improved technology in addition to larger boats also tends to multiply the fishing intensity. This indicates that more fishing effort existed in 1972 than was necessary to harvest the available surplus resource.

In view of the existence of one major unregulated species (mackerel) and of other less substantial, unregulated stocks (including squid), one can only assume that all available effort will be directed by the distant-water fleets towards these resources. The by-catch of regulated species taken by effort specifically directed towards mackerel has been shown by the Assessments Subcommittee to be substantial.

Therefore, any delay in administering a reduction in fishing intensity will only serve to reduce stock levels further, and to increase the period of recovery of stocks to levels supporting the maximum sustainable yields. While the proposal sets out the annual allowable standard effort beginning 1 January 1974, the urgency of the current situation requires that effort reductions begin as soon as possible.

USA proposes that the standard "days fished" (expressed in terms of "days on ground") expended by each country from 1 September 1973 to 31 December 1973 not exceed one-third of the annual allowable effort as given in Table 2.

VIII. Annual review (Comm.Doc. 73/3, Section 1, Paragraph VIII)

The initial effort regulation should not only provide for the level at which effort should be set, but also for review and adjustments as necessary at each Annual Meeting.

As experience with the effort control system is gained, there will be a need to have the Assessments Subcommittee and STACRES review and adjust such critical factors in the equation as fishing power coefficients for various classes of vessels and for the different countries, as well as the relationship between "days on ground" and "days fished". In short, the effort regulation system must be considered to be a dynamic one over the years and adapt to changes in circumstances and experience.

IX. Administration of effort regulations (Comm.Doc. 73/3, Section 1, Paragraph IX)

Administration of effort regulations will be relatively simple. If a vessel is observed in Subarea 5 and Statistical Area 6, and if it is not listed as one to which vessel days which were allotted by its government from its allocation remain to be utilized, it is in violation. If it is listed, it is O.K. No boardings. No questions. No worrying about what it is doing.

Under an optimum system of enforcement of effort regulations, each country will plan well ahead of time for the optimum utilization of the "days on ground" allocated to it. It will determine how many such days will be apportioned to each vessel class and, to ensure utilization of its full share, it will allocate these shares to individual vessels. Allocating lists can then be provided to the ICNAF Secretariat, which in turn can provide collected lists to enforcement officers. A listed vessel would

then report by radio when it enters and leaves Subarea 5 and Statistical Area 6, and utilization of the days allocated to that vessel can be quickly verified. An enforcement officer can quickly check on the status of a vessel. If it is observed in the area, and it has not checked in, or is not listed, or has already checked out, it is in violation. If it is listed, and has checked in, everything is fine. However, it is envisaged that a simplified method of enforcement can be utilized under which a vessel will simply report its entry into and exit from the area. Of course, plans will change during the course of the year, and countries will have the possibility of modifying their list, as situations change.

It has been stated that vessels will use up some of their allocated time in non-productive activities, such as not being able to fish because of weather, of breakdown, or of the need to transit from one ground to another, and so on. This is true, but these non-fishing periods have been taken into account, on the average, in formulating X "days on ground" = Y "days fished". Thus, what the vessel is doing is immaterial in terms of enforcement. The only question is whether it should be in the area when observed there. The inspector would only have to record the names of the vessels he sees in the area. Later, in his office, he can check his observations against the listing, or whether the vessel had reported itself in the area.

Such a system, it has been said, would not improve the acceptance by fishermen that other nations were actually enforcing the rules. Credibility is a problem, because there is virtually no fisherman anywhere in the world who does not believe that he is subject to more rigorous enforcement than the other fishermen who are fishing alongside him. Fishermen of country A assume this to be true of countries B and C, while fishermen of country C assume this of countries A and B. It is universal. The system USA has proposed overcomes this through the ease with which checks can be made. True, an individual fisherman sees only a small part of what is going on, but fishermen have a very good communications system amongst themselves. More importantly, however, the fishermen will know how easy it will be for their own officials to verify compliance by others.

Moreover, fishermen can get the picture from what they observe even if they do not have all the details. Fishermen first saw in 1972 the increase in effort which was discussed in the two US memoranda. And fishermen will certainly be able to observe a decrease in effort of the order STACRES is referring to, and when they do, maybe they will say that ICNAF is useful instead of a failure.

Table 1. Calculation for reduction in fishing effort in US OTSI 2 standardized days fished.

	Column 1	Column 2	Column 3 <sup>1</sup>
Country	Days fished 1971	Percent distribution of effort based on total (Can, USA, Rom, Sp)	1973 decrease
Canada	7,414	-	-
Germany, Fed.Rep.	11,285	6.09	3,470
Japan	8,567	4.62	2,632
Poland	45,974	24.81	14,135
Romania	1,980	-	-
Spain	2,375	-	-
USSR	89,003	48.04	27,370
USA	30,860	-	-
Bulgaria	9,684	5.23	2,980
Germany, Dem.Rep.	20,754	11.20	6,381
Total	227,896	99.99	56,968
	x 0.25		
Reduction	56,974		
Total (less Can, Rom, Sp, and USA)	185,267		

<sup>1</sup> Reduction x Column 2



Table 2. Calculations for 1973 allowable effort by country.

Column numbers	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Vessel category	Relative performance ratio		Actual 1971 days fished	Standardized days fished		Ratio: days on ground to days fished	Raw days on ground	Standardized days on ground		Reduction in standardized days fished		1973 Standardized days fished		1973 Standardized days on ground	
	to US OTSI 2	to USSR OTSI 4		to US OTSI 2	to USSR OTSI 4			to US OTSI 2	to USSR OTSI 4	to US OTSI 2	to USSR OTSI 4	to US OTSI 2	to USSR OTSI 4	to US OTSI 2	to USSR OTSI 4
USSR															
OTSI 4	1.32	1.00	11489	15165	11489	1.3	14936	19714	14936						
OTSI 5	1.91	1.45	6590	12587	9556	1.3	8567	16363	12423						
OTST 5	1.91 <sup>2</sup>	1.45	360	688	522	1.3 <sup>1</sup>	468	894	679						
OTST 7	7.26	5.50	7767	56388	42718	1.3	10097	73304	55533						
PS 4	3.93	2.98	197	744	587	1.7	335	1316	998						
PS 5	6.63	5.02	513	3401	2575	1.5	770	5102	3862						
Total			26916	89003	67447		35173	116693	88431	27370	20706	61633	46741		
POLAND															
		to POL OTSI 5			to POL OTSI 5			to POL OTSI 5		to POL OTSI 5		to POL OTSI 5		to POL OTSI 5	
OTSI 5	1.57	1.00	5852	9188	5852	1.6	9363	14700	9363						
OTST 6	6.92	4.41	1873	12961	8260	1.4 <sup>3</sup>	2622	18144	11563						
OTST 7	8.29	5.28	2874	23825	15175	1.4	4024	33359	21247						
Total			10599	45974	29287		16009	66203	42173	14135	8991	31839	20296		
GERMANY (DR)															
		to GDR OTSI 5			to GDR OTSI 5			to GDR OTSI 5		to GDR OTSI 5		to GDR OTSI 5		to GDR OTSI 5	
OTSI 5	1.72 <sup>4</sup>	1.00	Not known	Not known	Not known	1.4 <sup>4</sup>	Not known	Not known	Not known						
OTST 6	7.82 <sup>4</sup>	4.55 <sup>4</sup>				1.3 <sup>4</sup>									
OTST 7	7.31 <sup>4</sup>	4.25 <sup>4</sup>				1.4 <sup>4</sup>									
Total				20754 <sup>5</sup>	12066					6381	3704	14373	8362		
BULGARIA															
		to BUL OTST 7			to BUL OTST 7			to BUL OTST 7		to BUL OTST 7		to BUL OTST 7		to BUL OTST 7	
OTST 7	7.68	1.00	1261	9684	1261	1.4	1765	13555	1765	2980	387	6704	874		
GERMANY (FR)															
		to FRG OTST 6			to FRG OTST 6			to FRG OTST 6		to FRG OTST 6		to FRG OTST 6		to FRG OTST 6	
OTST 6	8.72	1.00	490	4273	490	1.3 <sup>6</sup>	637	5555	637						
OTST 7	8.82	1.01	795	7012	803	1.3 <sup>6</sup>	1034	9116	1044						
Total			1285	11285	1293		1671	14671	1681	3470	397	7815	896		
JAPAN (Cols 3, 5, 7, 11, 13 expressed in hours fished)															
		to JAP OTST 6			to JAP OTST 6			to JAP OTST 6		to JAP OTST 6		to JAP OTST 6		to JAP OTST 6	
OTST 6	0.13	0.50	2520	328	1260	1.3 <sup>6</sup>	3276	426	1638						
OTST 7	0.42	1.00	19617	8239	19617	1.3 <sup>6</sup>	25502	10711	25502						
Total			22137	8567	20877		28778	11137	27140	2632	6409	5935	14468		

<sup>1</sup> Used average of all USSR values

<sup>2</sup> Used USSR OTSI 5 value

<sup>3</sup> Used Poland OTST 7 value

<sup>4</sup> Used average over all countries in distant-water fleets for gear class

<sup>5</sup> Obtained by dividing catch by 1971 USA OTSI 2 total catch/day (5.15 MT)

<sup>6</sup> Average for vessel class over all countries ..33

Table 2. (continued)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Vessel category	Relative performance ratio		Actual 1971 days fished	Standardized days fished		Ratio: days on ground		Raw days on ground	Standardized days on ground		Reduction in standardized days fished		1973 Standardized days fished		1973 Standardized days on ground	
	to US OTSI 2	to SPA PT 4		to US OTSI 2	to SPA PT 4	to US fished	to SPA fished		to US OTSI 2	to SPA PT 4	to US OTSI 2	to US OTSI 2	to US OTSI 2	to US OTSI 2	to US OTSI 2	
SPAIN																
PT 4	3.16	1.00	499	1577	499	1.3	649	2050	649			No reduction below minimum number of days fished				
OT 6	1.68	0.49	475	798	233	1.3 <sup>7</sup>	618	1037	303							
Total			974	2375	732		1267	3087	952							
ROMANIA																
		to ROM OTST 7			to ROM OTST 7				to ROM OTST 7							
OTST 7	4.52	1.00	438	1980	438	1.1	482	2178	482			No reduction below minimum number of days fished				
USA																
OTSI 2	1.0		6439	6439								No reduction coastal state				
OTSI 3	1.12		12827	14366												
OTSI 4	1.44		2777	3999												
Other gear	-		-	6056 <sup>8</sup>												
Total			-	30860												
CANADA																
OTSI 4	1.09		353	390								No reduction coastal state				
OTST 5	1.83		454	952												
Other gear	-		-	6072 <sup>8</sup>												
Total			-	7414												

<sup>7</sup> Used Spain PT 4 value

<sup>8</sup> Estimated by dividing catch by total US OTSI Class 2 catch/day (5.15 MT)

Explanation of data in Table 2

The standardized "days fished" (hours fished in the case of Japan) in Table 2 were compiled from the raw days in Table 5 of the 1971 Statistical Bulletin for all countries (otter trawl catches only for USA and Canada), except the German Democratic Republic, and were standardized by using the average monthly relative catchabilities to US 0-50-ton otter trawlers as given in Table 7 in the Assessments Subcommittee Report (1973 Sp. Comm. Mtg. Proc. 1, App. I). Average monthly catchabilities for Japan (all vessels) and Spain (otter trawlers Class 6) which do not appear in Table 7 have now been calculated. The standardized "days fished" for the German Democratic Republic were estimated by dividing the total catch by the total catch per day of US small otter trawlers which was 5.15 tons. The remainder of the Canadian catch (except by scallop dredges and from the large pelagic fisheries) for which, in general, no effort was reported, was treated similarly as was the remainder of the US catch in Table 5 of the Statistical Bulletin, minus that by the fixed gear and from the large pelagics, menhaden, and invertebrate fisheries (including the not-known mixed species category which is primarily invertebrates but includes such miscellaneous inshore fisheries as striped bass, etc.)

Catches which were eliminated for the USA were the same ones omitted from analysis of effort reported in the Assessments Subcommittee Report.

Ratios of "days on ground" to "days fished" were taken from the 1969 (the last year for which they were reported) column in Table 11 of the Assessments Subcommittee Report. Such values were not available for all countries and gears. Where estimates were used, their bases are given in the footnotes to Table 2.

Calculations involved in Table 2

Col 4 = Col 1 x Col 3  
5 = Col 2 x Col 3  
7 = Col 3 x Col 6  
8 = Col 4 x Col 6  
9 = Col 5 x Col 6  
10 = Total Col 4 x 0.307  
11 = Total Col 5 x 0.307  
12 = Total Col 4 - Col 10  
13 = Total Col 5 - Col 11

2 - vessel tonnage category	0- 50 tons
3 - " " "	51- 150 tons
4 - " " "	151- 500 tons
5 - " " "	501- 900 tons
6 - " " "	901-1800 tons
7 - " " "	over 1800 tons

OTSI = side otter trawler  
OTST = stern otter trawler  
OT = otter trawler  
PT = pair trawler  
PS = purse seine

SPECIAL COMMISSION MEETING - JANUARY 1973

Statement by the Portuguese Delegate, Captain Cardoso,  
Relating to a Scheme of Effort Regulation as Proposed by  
the USA (Comm.Doc. 73/3) and Analyzed by the Assessments Subcommittee  
of STACRES (1973 Special Commission Meeting Proc. I, Appendix I)

My delegation must confess, in the first place, that, in all the available literature, we cannot find one conclusion that fishing effort regulation is more viable or preferable to catch limitation and catch quota allocation. Indeed, on page 1 of the Report of the Assessments Subcommittee (hereafter referred to as RAS) (see 1973 Sp. Comm. Mtg. Proc. 1, App. I), it is stated:

"These interactions must be taken into account in making assessments and in setting annual catch quotas. Provided this is done, the best way, from the biological point of view, to manage a multi-species fishery would be to set individual quotas for each stock."

Following that, it is said, however, that the current regime, in which only some catch quotas have been adopted, has several disadvantages. Three of these are mentioned:

- (1) By-catch of regulated species taken in other regulated and unregulated fisheries has not been controlled.
- (2) The danger, especially with highly mobile fleets, that particular stocks can be depleted before appropriate regulations are introduced.
- (3) Difficulties of enforcement, particularly of ensuring not only that the regulations are obeyed, but that they are clearly seen to be obeyed.

Again, we fail to see how effort regulation answers these objections better than catch regulations.

Let us take objection No. 1, the by-catch problem: that effort regulation does not solve the problem is clearly stated on page 18 of RAS: "Since overall effort regulation does not in itself solve the by-catch problem".

In fact, we would say that the only way of solving this problem is to take into account, while determining the MSY's and the consequent allowable catches, all by-catch of regulated and unregulated species, including catches and by-catches of non-member countries.

We cannot agree that it is correct to classify a fishing effort as too intense before one has knowledge of the allowable catches and the trends of their evolution. In fact, it is theoretically possible to have a case in which an abundance of stock "Y" exists which would justify a total allowable effort (TAE) "T". It would be catastrophic if not applied on "Y" but on unregulated species "Z" or else harmful to regulated species "R" due to the by-catches of "R" in a fishery on "Y" alone.

It appears to us, therefore, that one can only solve resources conservation problems if one has knowledge about those resources. If we know the resources it might be good economics to translate stocks into effort and then regulate effort. If not, it is impossible to regulate the effort properly since the effort has to be allocated rationally among the stocks.

Moving on to objection No. 2, we feel sure that any appropriate regulation, even an effort regulation, if applied too late, will allow stocks to be depleted. We also feel that a highly technical controversial effort regulation will have a very high probability of being accepted too late!

As to objection No. 3, we agree with a previous statement that effort regulation does not appear more seeable or credible than a catch limitation. For example, according to the factors presented, 10 gill-netters of the biggest size possible fishing side by side with one US 50-ton side trawler will put in fishing time equal to the one American vessel. I wonder how many US fishermen will see this as credible! Neither would they ever see all the foreign vessels fishing during the whole year.

Besides, we stand by the statement that, in our opinion, all a regulation needs to be is reasonable and enforceable; if it is enforceable, it does not need to be credible, since it can and should be enforced, with obvious results to all involved.

Having shown, we hope, that the three main disadvantages of the current catch limitation regime either do not exist or, if they do, they affect equally if not more strongly, the effort regulation system, we

pass on to page 2 of the RAS. The very last paragraph of that page tells us that "It was pointed out that the standardized effort derived from this study is really an index of fishing intensity appropriate for the period concerned and not necessarily a measure of fishing power". We agree with a small correction: we would say "certainly not" instead of "not necessarily".

It happens that we disagree completely with the method of allocating days of fishing based on a one-point relationship between the characteristics of the vessels and the resulting intensity of fishing.

If a certain large class of ships has just been generally unlucky, for many unspecified reasons, during 1971 and, for that reason, it is allocated a relatively large number of fishing days, it just may happen that instead of reducing fishing effort, we will be expanding it in 1973.

Another disadvantage of fishing power or capacity to be ascertained in this manner and fishing effort to be allocated on this basis, that is to say, from a direct relationship to fishing mortality, is that, if it results in a decrease of mortality, automatically will bring back mortality to the rate that existed at the point that was used for the calculation. Indeed, if the reduction of effort brings about a better abundance of stock, this same effort applied on the more abundant stock will tend to reduce it.

Another fault of the system is that the introduction of such regulation to be effective will definitely change the pattern of fishing of any one country. This will have as a consequence, a change in the fishing mortality generated by the action of that country's fleet and consequently, its position relative to other countries. But since this initial fishing mortality generated by that country determined its relative position, this means that in order to be effective the calculated factors are automatically unfair or incorrect during the year in which they are applied. The RAS refers to the same problem at the bottom of page 14.

Another point is that the fishing power coefficients should be taken off a continuous curve and not from block values. Otherwise, you might increase considerably the fishing power of a fleet by moving the average tonnage from near the lower limit to near the upper limit (which in the 900+ does not even exist) without reducing your allowed fishing time.

On the other hand, and for the same reason, with the present block values, a 499-ton stern trawler will have a coefficient of 1.3, whereas a 501 would probably have 2.0, which does not make sense.

Also, of course, it is well known that tonnage is only one of the determinant factors of fishing power. Horsepower, winch power, fishing equipment and aids may be even more important.

Finally, we would inquire: Are there no trawler-seiners in the area and its fisheries? If one appears, what is its fishing power? Do all the vessels inside a block tonnage group take only fresh fish? Or only frozen fish? Do all stern trawlers in any one group use pelagic trawls? What happens to the fishing power of those that initiate their use in the near future?

One may reply to most of our doubts and questions that, of course, we will revise annually the whole schedule. It is hard to see, however, how one could justify starting from such an obviously erroneous basis by the fact that it would be corrected soon enough.

We are told at the bottom of page 8 of the RAS that the principle of standardization of fishing effort is crucial, but that the choice of a particular national unit is not. We could not agree more that within the calculations made and for the year 1971 the choice of standard vessel is absolutely immaterial.

We would not, however, like this truth to be taken to imply a certain correctness of the method as a basis for extrapolation. For this purpose, it is essential to study the footnote on page 27 of the RAS, which is self-explanatory.

Not only the vessels were compared without making all the different factors, like time and area, constant, but also very significantly it is stated that "They (the vessels performance factors)..... provide a basis for computing total standardized fishing effort.....provided their distributions and pattern of fishing remains the same as in 1971".

How can it remain the same if our purpose is exactly to change it? And even without our joint action are there two adjacent years in which the distributions and pattern of fishing remain equal or very similar?

A further point: How can this calculation be right when we are told that the two main components of the fishery - herring and mackerel - are not really known? In 1971 these two fisheries accounted for about 66% of the total catch in the area (RAS Table 9).

This is confirmed on page 10 of the RAS: ".....the appropriate level of overall fishing effort is critically determined by the state of the herring and particularly because it is presently unregulated,

the mackerel fishery". The Subcommittee has been able to carry out only a very preliminary assessment of the mackerel stock, and estimates of MSY, the associated fishing effort and current status for this stock are tentative (I underline tentative). Can the whole system be based on this attempt?

It is not possible for me from the data given to deduce how the learning factor has been calculated. We are told on page 3 of RAS that there is no change of direction, but rather of degree by about 50%. Overall the possible inaccuracy appears (I underline appears) less if the learning factor is used. Obviously, a change of degree of 50% is rather formidable and cannot be justified only because it leads to fairer curves. We would, therefore, ask further elucidation on the development of the calculation of this factor.

Another calculation I am unable to follow is that of the increase in total effort by about 25% from 1971 to 1972 in this area. For that purpose, it would be necessary to know how many of the total number of days fished and of vessels counted were Canadian or US vessels, how many side trawlers, stern trawlers, other fishing vessels, and how many vessels of non-member countries.

We also point out that the RAS at the bottom of page 11 states that it is still impossible to determine the effective fishing effort in 1972. So probably, the 25% increase will not be substantiated in the end.

On page 7 of the RAS we are told that an overall limit in terms of catch would be a partial solution. Why partial? Is it because questions of enforcement would still remain? Which questions?

We would tend to disagree with the impossibility, stated on page 9 of the RAS, of studying the historic performance of a particular vessel or country category in precise terms. We believe this could and should be done if we are to develop a regulation of fishing effort. It would be necessary for each country to choose typical classes of their vessels and study their results, say, in the last five years.

We do not agree, as it is written on page 15 of the RAS, that every vessel of a distant-water fleet would have to fish 365 days and we cannot see that days on ground is easily observed by the fishermen, as we have already mentioned.

We cannot possibly agree with a constant factor of days fished to days on ground for every type of vessel considered in the calculations. If we look at Tables 11 and 12 of the RAS, we observe that there are many classes of vessels that do not appear in the Tables.

If we would accept an average figure for large vessels, it would seem obvious without any calculations that the figure for small vessels would have to be considerably different and smaller.

As to the calculations for the national allocation of the national total allowable fishing effort, mentioned at the top of page 16 and presented in Table 13 of the RAS, I am afraid that they are not of much use for a distant-water fleet.

It is obvious that a percentage allocation by class of vessels will not do. It is enough to see in Table 13 that it would result in the sacrifice of two classes of vessels in favour of a middle one, without any reason for it. The problem is further complicated by the fact that if we take two ships of the same class, for instance the 900+ stern trawlers, which are, therefore, estimated to have the same fishing power and consequently, the same right to fishing time, we come up against the problem that in order to fill up, say, 70% of her holds, or otherwise it is uneconomical to send her away to fish, the 901-ton vessel will need less time than the 1800-ton vessel.

The whole puzzle for a large fleet of highly diversified vessels would necessitate the use of computers. This is, of course, assuming that we had already solved the problem of vessels which may fish by trawl, by drift net or longline according to what species they may find.

The whole question of an allocation of vessel days on the grounds has, however, far graver implications.

We must in the first place ask ourselves what are these grounds to which entrance would be forbidden unless a national allocation has been granted. These grounds are those where fishing effort on any of the species existent in Subarea 5 and Statistical Area 6 may be exerted. In other words, they are the total of Subarea 5 and Statistical Area 6: an extension of high seas of some 400,000 square miles! A vast body of water which any fishing vessel should have at least the right to navigate, a vast expanse of sea where any new entrant or non-member would indeed fish. Would it not be absolutely illogical that a fishing vessel of any nation with her fishing gear properly stowed would be allowed to pass across the territorial waters of the coastal state, but a fishing vessel of a non-allocated member nation with the same stowed gear would not be able to pass across that expanse of high seas? Would it not be absurd that a fishing vessel for any reason would wish to interrupt her fishing and come back to

Subarea 4, in order not to penalize her own country's rights of fishing, would have to either navigate close to the shores of the USA or else go out past the meridian of 42°W to come back again at the right latitude to Subarea 4?

What would happen to a non-allocated fishing vessel that wished to load bait or be repaired at a coastal harbour in these areas? Through which seas would she be allowed to navigate? What would be the consequences of crossing them going to or returning from the South Atlantic?

And what of a new entrant? How does one qualify as a new entrant? Has a new entrant more or less rights than a non-member? And how do the rights of members and non-members compare?

I fear that the concept of days on the ground cannot reasonably be used to close to fishing vessels vast expanses of high seas, turning these areas into waters, in some ways more exclusive to the coastal state than its own territorial waters.

The political implications of such a move could indeed be prejudicial to the interests of the USA and, therefore, I am confident that they will study this question carefully.

We will, therefore, proceed to other questions which have raised doubts.

We find that in Section 7 on page 17 of the RAS, the problem of reflex actions of a regulation of effort in Subarea 5 and Statistical Area 6 is raised. This was touched upon in the US memorandum (Comm. Doc. 73/3). I am afraid, however, that both solutions suggested there are unworkable, at least, for the moment. To forbid employment of that effort on non-regulated species in the whole of ICNAF Area seems inappropriate and illogical to the rational exploitation of stocks. Not to forbid it, it would raise the problem of by-catches, maybe on a bigger scale than previously to the introduction of the effort regulation.

To regulate the whole effort in all the areas seems an impossible task at least for the time being. We have been pointing out some of our doubts in relation to Subarea 5 and Statistical Area 6: they would be multiplied many times over for the whole area.

There are many stocks for which statistical data are incomplete and allow errors of ±50%. In other words, one cannot even be sure if it is 50% in excess or 50% by default. Check please what is said at the top of page 17 of the RAS on the fishing mortality and potential of the mackerel stock in Subarea 5 and Statistical Area 6.

Another problem that has not been clarified is, what is the state of stocks, fishing mortality and effort, in each of the following: territorial waters, outside the Convention Area, and within this Area? We feel these bring in other unknown quantities.

Having stated all my doubts relating to the general principles of the US memorandum, I must now affirm that we in the Portuguese delegation, find ourselves in agreement with much that is written there and share their alarm.

As to the solution urgently proposed, although we feel it may be impracticable for the moment, we consider that it shows the way into useful refinements which should have paramount importance in the future: How to maximize yield at the maximum output of economical effort - should be the true aim of every conservation system.

We sincerely commend the important work already done and recommend that it be continued and that all possible measures be taken to ensure obtaining the necessary statistical background.

But, given the existing problem, what should be done immediately? That is the question. We believe that the USA is right in asking the Commission to start taking measures before they are so obviously necessary that they may not be needed because they are already obsolete.

We are very pleased to note that the USA supports the maintenance of all conservation measures so far adopted. We do feel that they are essential to the welfare of the stocks involved and it is wise to have time to study their effect. Furthermore, as we said previously, without them the limitation of total effort alone would be useless in guaranteeing that welfare. We fear, however, that as elaborated, they would result in different member countries being unable to catch their allocated quotas and encourage, in fact, the activities of new entrants and non-members.

We had great satisfaction in hearing the Polish Delegate state that Poland is willing to study immediately a catch quota system for the mackerel fishery in the area and we hope that the Commission will finally agree on measures to limit the catch of herring. We believe that this new idea of taking conservation measures before all the data is in but the trends are menacing is a novel and important step that the Commission should take immediately and be proud of. This alone should allay most of the fears voiced in the US memorandum.

In spite of the fact that it is stated, on page 11 of the RAS in reply to Question 3, "It is impossible to estimate the effect of maintaining the fishing intensity at the 1972 level in 1973 to 1975 in terms of the potential catches in these years, because data are not yet available to determine the effective fishing effort in 1972 or the recruitment to the stocks in the immediate future.", the Subcommittee explains on page 13 that "So the implication of maintaining the catches of particular species at the 1971 catch level could lead to an undesirable increase in fishing directed toward mackerel (or one or two other minor species) or diversion to other areas. Thus, if an increase in fishing on mackerel is to be avoided, it would be preferable to regulate the amount of fishing in Subarea 5 and Statistical Area 6 or to introduce a catch quota regulation on mackerel." This is even more clearly stated in the summary on page 18 of the RAS "Bearing in mind the history of exploitation of some of the other regulated resources, there is justification for a pre-emptive catch quota regulation of mackerel, pending a better assessment of its potential."

As to the problem of by-catches, we feel that it could be ameliorated by a more exact determination of MSY's taking into account by-catches in other fisheries. Tables 6A and 6B of the RAS already appear to provide good guide lines for that assessment.

Thank you.



SPECIAL COMMISSION MEETING - JANUARY 1973

Questions Posed by STACREM Regarding Details of Effort Regulation

1. What are the conversion factors needed to obtain days on ground from days fished for the various Member Countries? Do countries collect the necessary information to answer this question and, if not, how long will it take to collect the necessary data?
2. Please define exactly the following terms:
  - a) fishing mortality
  - b) fishing intensity
  - c) fishing power
  - d) fishing effortand specify what are the variables that should be discussed for effort control.
3. The Commission is attempting to control the fishing mortality on the resources and fishing mortality is an abstract quantity which cannot be regulated directly. The Commission may be able to control fishing mortality by regulation of fishing intensity or fishing effort. What is the accuracy with which these quantities can be measured and what is the error involved in using them as a predictor of future fishing mortality?
4. If catch quotas are set for several species which imply different percentage reductions in fishing mortality, what problems does this raise in connection with a fixed reduction in fishing effort, especially for countries only interested in some species?
5. What is the probable increase of fishing mortality in other subareas, if a regulation of fishing effort is introduced in Subarea 5 and Statistical Area 6?
6. If you are controlling your vessels at a level of fishing intensity lower than the one you are allowed, how can that be judged by the criterion of days on ground?
7. If both catch and effort quotas are applied to a given stock, what problems are raised in allocating between countries and within a country to ensure that the two quotas are simultaneously met?
8. What are the opportunities for countries to increase in response to effort control the fishing mortality caused by one unit of fishing effort?
9. Given the present status of stocks and fishing effort in Subarea 5 and Statistical Area 6, assuming that non-member activity does not change, that no new entrants and that the coastal state stabilizes the catches in the territorial waters outside the Convention Area at the 1972 level, what will be the situation of the stocks in those areas in the years 1974 and 1975 if appropriate catch quotas for those years for mackerel and flounders (other than yellowtail) are added to the quotas already established and the by-catch problem is taken care of by revising MSY's of the regulated species in the area at June 1972 and 1973?
10. Could STACRES look into the question of further regulating mesh size and minimum size of fish in Subarea 5?

## SPECIAL COMMISSION MEETING - JANUARY 1973

Estimates of Total Allowable Catch (TAC) of Finfish in Subarea 5 and  
Statistical Area 6 Prepared by the Assessments Subcommittee  
at the Request of STACREM, 24 January 1973

1. The Assessments Subcommittee of STACRES met at the request of STACREM, on 24 January 1973, to estimate the total allowable catches of finfish species in Subarea 5 and Statistical Area 6 in 1973. These are summarized in Table 1.

Table 1. Nominal catches in 1971 and TAC's for 1973 for Subarea 5 and Statistical Area 6 combined.

Species	1971 Catch (000 t)	1973 <sup>1</sup> (000 t)
Cod	35	45
Haddock	12	6
Silver hake	108	170
Red hake	40	40
Yellowtail flounder	38	31
Herring	326	-
Redfish	20	30
Pollock	25 <sup>2</sup>	50 <sup>3</sup>
Dogfish	1	50
Other flounders	27	25
Mackerel	349	-
Other finfish	97	-

<sup>1</sup> Total allowable catch to meet Commission objectives for regulated species. The catch given for presently unregulated species is the potential catch in 1973 which would not result in reduction of the stocks named.

<sup>2</sup> Includes 15,000 tons from Subarea 5 and Statistical Area 6 and 10,000 tons from Div. 4X of Subarea 4.

<sup>3</sup> TAC for Subarea 5, Statistical Area 6 and Div. 4X of Subarea 4.

2. Comment

Mackerel. The level of fishing effort that would achieve the MSY of mackerel, and the present state of the resource is not known. The Subcommittee was, therefore, unable to agree on a level of catch of mackerel in 1973 that could be related to a level of exploitation that might form the objective of the Commission. Further information will become available at the 1973 Annual Meeting.

The seasonal distribution of mackerel catches in 1971 is given in Table 2. It shows that 60% of the annual catch was taken by June during that year. The proportion may have increased slightly in 1972 owing to changes in the pattern of fishing in that year.

Pollock. This resource migrates into Div. 4X. Ideally, regulation should cover the whole stock.

Other flounders. Detailed information on individual species in this group is not available. However, they are judged to be subject to the same level of exploitation as yellowtail flounder and the TAC for 1973 is at a level slightly below the catch in 1971 to accord with the regulation agreed for yellowtail flounder.

Other fish. This category includes demersal species and pelagic species (e.g. butterfish, round herring, saury). The present state and potential catches of these resources, particularly pelagic, is not known.

Table 2. Nominal catches<sup>1</sup> of mackerel and accumulated percentages by month in Subarea 5 and Statistical Area 6 in 1971.

Month	Nominal catches (000 tons)			Accumulated percentages		
	SA 5	SA 6	Total	SA 5	SA 6	Total
Jan	0.5	29.9	30.4	+	18	11
Feb	0.3	14.6	14.9	1	27	16
Mar	0.3	36.2	36.5	1	48	29
Apr	13.1	33.8	46.9	13	68	46
May	19.7	12.7	32.4	32	75	58
Jun	9.9	2.1	12.0	41	76	62
Jul	7.1	-	7.1	48	76	65
Aug	7.0	-	7.0	55	76	68
Sep	6.9	-	6.9	61	76	70
Oct	3.7	0.8	4.5	64	77	72
Nov	16.0	3.8	19.8	79	79	79
Dec	23.2	35.5	58.7	100	100	100
Total	107.7	169.4	277.1			
GDR <sup>2</sup>	7.1	63.1	69.2			
Others	1.6	0.8	2.4			
Total (Stat. Bull.)	116.4	232.3	348.7			

<sup>1</sup> For Poland, USSR, Romania, Bulgaria, Japan and Federal Republic of Germany.

<sup>2</sup> German Democratic Republic.

### 3. Catches of finfish resources in the squid fishery

The fishery directed at squid alone cannot be separated in the international statistics. Squid are recorded in a mixed fishery, a part of which is directed toward other finfish, e.g. butterfish. The catch of finfish associated with squid may, therefore, have been taken in a fishery for another finfish, or as by-catch in the squid fishery.

Accumulation of monthly catches in 1971 (ICNAF Statistical Bulletin, Vol. 21, Table 4) for which 50% or more of the total catch was given as shellfish (assumed to be squid).

Subarea or Statistical Area	Cod	Silver hake	Flounders	Other Groundfish	Herring	Other Pelagics	Other Fish	Shellfish	Total
5	12	82	6	183	12	1,130	571	4,766	6,762
6	-	32	33	317	25	2,270	33	8,800	11,510
Total	12	114	39	500	37	3,400	604	13,566	18,272
%	0.1	0.6	0.2	2.7	0.2	18.7	3.3	74.2	100

A summary of the catch of finfish associated with the squid in this mixed group in 1971 is given above. The Japanese fishery taking squid also catches butterfish as the opportunity arises. The by-catch of finfish in the squid fishery alone cannot be separated but in 1971 the combined fishery caught 11,400 tons of squid, 5,800 tons of butterfish and 4,600 tons of other finfish, mainly hakes, mackerel, skates, redfish and other unregulated species. In 1972 a catch of 17,800 tons of squid was associated with 3,900 tons of butterfish and 3,800 tons of other finfish.

### 4. The sustainable yield of the total resource

In its Report (1973 Sp. Comm. Mtg. Proc. 1), STACRES concluded that the by-catch problem would tend to generate over-exploitation if the TAC is set as the sum of MSY's of individual resources. The Subcommittee cannot at present advise on a reduction in catch below the summed MSY's of the individual resources that would alleviate this problem in a predictable way. It will vary from year to year with the relative abundance of the resources and the way in which the pattern of fishing responds to that abundance. A considerable amount of further research is necessary to make progress in this aspect of the problem and should include study of alternative ways of reducing the by-catch problem, e.g. by adjustment of the method of fishing for particular species.





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SPECIAL COMMISSION MEETING - JANUARY 1973

Report of Meetings of the *ad hoc* Committee on Herring Quotas and their Allocation

Thursday, 18 January, 1520 hrs  
Friday, 18 January, 0930 and 1500 hrs  
Saturday, 20 January, 1025 hrs  
Tuesday, 23 January, 0900 and 1445 hrs  
Wednesday, 24 January, 1500 hrs  
Thursday, 25 January, 1430 and 2115 hrs  
Friday, 26 January, 0930 hrs

1. The Executive Secretary opened the first meeting of the *ad hoc* Committee which had been set up by the Joint Meetings of Panels 4 and 5 (1973 Sp. Comm. Mtg. Proc. 3) to give detailed consideration to establishing for 1973 the TAC's and their national allocation for the herring stocks in the Georges Bank, Gulf of Maine and Nova Scotia Banks areas. Dr A.W.H. Needler (Canada) was elected Chairman. Representatives from Canada, Fed. Rep. Germany, Japan, Poland, USSR and USA were present.
2. The Chairman pointed out that the Joint Meetings of Panels 4 and 5 (1973 Sp. Comm. Mtg. Proc. 3) had tentatively agreed to TAC's of 90,000 tons for the Nova Scotia Bank stock and 20,000 tons for the Gulf of Maine stock, subject to looking at the TAC's and their national allocation for all three stocks. The Joint Panels could not reach agreement on a TAC for the Georges Bank stock. One group of Member Countries supported a TAC of 150,000 tons while the other group supported a lower TAC of 135,000 tons.
3. TAC's and their National Allocation. Canada reviewed a Canadian proposal regarding quota allocation for the three herring stocks (Comm.Doc. 73/1). The proposal required establishing the TAC, then deducting the estimated catch from inside the 3-mile limit, and allocating the remainder of the TAC nationally, using the 40-40-10-10 formula of the STACREM guidelines. However, USSR, Fed. Rep. Germany, Poland and Japan all favoured a prorating scheme. Canada presented three tables showing the national allocations when the 40-40-10-10 formula and the 1972 unadjusted prorating procedure were used on TAC's of 20,000 tons for the Gulf of Maine stock, 90,000 tons for the Nova Scotia Bank stock and 150,000 tons and 135,000 tons for the Georges Bank stock. Both proposals were unacceptable. A Canadian proposal for the Nova Scotia Bank allocation which subtracted the estimated catch made inside territorial waters from the TAC and allocated the remainder by prorating against the 1971 catch, was dropped when it was pointed out by USSR that, on this basis, Statistical Area 6 catches should be excluded from the TAC. A US proposal for national allocation had minor adjusted allocations in prorating a TAC of 135,000 against 1971 catches for the Georges Bank stock. It also increased the TAC for the Gulf of Maine stock to 25,000 tons from 20,000 tons and gave Canada and USSR allocations from the Nova Scotia Bank stock which were halfway between that given by the 40-40-10-10 formulation and the 1972 prorating procedure, using a TAC of 90,000 tons.

A USSR proposal used the unadjusted 1972 prorating procedure with a TAC of 150,000 tons for the Georges Bank stock, adopted the US proposed allocation for the Gulf of Maine stock, and adjusted Canadian and USSR allocations to meet USSR needs from the Nova Scotia Bank stock. However, still no agreement could be reached on a TAC for 1973 for the Georges Bank stock. The Chairman noted that, according to STACRES, if the 1970 year-class was as large as or 75% of the successful 1966 year-class, using a TAC of 150,000 tons for 1973 could mean that more drastic conservation measures might have to be taken for 1974. The USA presented analyses of data, based on the assumption that the 1970 year-class was equal to or 75% of the 1966 year-class at TAC's for 1973 of 155,000, 149,000 and 132,000 tons. These analyses showed the Georges Bank stock size which could be expected at the beginning of 1975 (end of 1974) and that there was a risk in agreeing to a TAC of even 115,000 tons. Further discussion resulted in the *ad hoc* Committee agreeing that the Herring Working Group should be asked to discuss analysis of existing data and assumptions which would provide stock size estimates for the Georges Bank and Gulf of Maine stocks at the end of 1974, under various assumptions as to the strength of the 1970 and 1971 year-classes. Accordingly, the following terms of reference were drawn up and presented to the Herring Working Group for consideration and report back to the *ad hoc* Committee:

- 1) Calculate the stock size at 1 January 1975 for the various catches in 1974 for the following options:
  - a) Catch in 1973 in range of 100,000-150,000 tons
  - b) Recruitment level in 1973 figured on
    - 1) 1970 year-class = 1.25 of 1966 year-class

- ii) 1970 year-class = 1.00 of 1966 year-class
- iii) 1970 year-class = 0.75 of 1966 year-class
- c) Recruitment level in 1974 figured on
  - i) 1971 year-class = 1.25 of 1966 year-class
  - ii) 1971 year-class = 1.00 of 1966 year-class
  - iii) 1971 year-class = 0.50 of 1966 year-class
- 2) Make calculations for both the Georges Bank and Gulf of Maine stocks.
- 3) What is the stock size which in the long run will provide adequate recruitment for obtaining maximum productivity? What is the yield related thereto?

All countries agreed that TAC's proposed by USA for 1973 for the Georges Bank and Gulf of Maine stocks would be withdrawn pending a report from the Herring Working Group.

4. Herring Size Limit Tolerance. Canada introduced discussion on the implementation of the herring size limit adopted in 1972 and in effect from 1 January 1973 in Subarea 5 and parts of Div. 4X and 4W of Subarea 4 (1972 Sp. Mtg. on Herring, Proc. 4, Appendix IV), particularly the provision regarding size limit tolerances (Comm.Doc. 73/1). Canada explained that, because of the many small Canadian fishing vessels landing at many small ports, it was difficult to implement the requirement that not more than 10% by weight of herring less than 9 inches could be taken by each vessel during a year. Instead, Canada proposed a count of not more than 25% per trip per vessel. Following discussion, Canada agreed to postpone the proposal and to provide comparative data on the size frequency in catches using the two methods for the 1973 Annual Meeting for examination by the Herring Working Group, prior to consideration by the Commission.

5. The *ad hoc* Committee recessed at 1730 hrs, Saturday, 20 January, to await the report of the *ad hoc* Meeting of the Herring Working Group.

6. The *ad hoc* Committee reconvened at 0900 hrs, Tuesday, 23 January, under the chairmanship of Dr A.W.H. Needler (Canada). Representatives were present from Canada, Fed. Rep. Germany, Japan, Poland, Romania, USSR and USA.

7. In continuation of the consideration of possible TAC's and their national allocation (see Section 3 above), the Report of the *ad hoc* Meeting of the Herring Working Group (1973 Sp. Comm. Mtg. Proc. 1, App. II, Suppl. 2) was presented by the Chairman, Mr T.D. Iles (Canada). For the Georges Bank stock, optimum stock size was estimated to be 500,000 tons and MSY 250,000 tons; for the Gulf of Maine stock, 100,000-120,000 tons and 50,000-60,000 tons. Catch and recruitment and their effect on the stock size at the beginning of 1975 were presented in a series of Tables. Canada pointed out that the 1972 Report of the Herring Working Group recommended quotas for 1973 which would not further reduce spawning stocks and would maintain the MSY. To get to the MSY of 250,000 tons for the Georges Bank stock and 50,000-60,000 tons for the Gulf of Maine stock, the catches should be reduced in 1973 to at or below 100,000 tons and below 20,000 tons respectively. This view was endorsed by USA. After considerable discussion and further reference to previous allocation proposals, the Chairman pointed out that the hindrance to establishing TAC's for 1973 for the Georges Bank and Gulf of Maine stocks was the uncertainty about the size of the 1970 year-class, which would be recruiting in 1973, and the resulting wide range of allowable catches. He suggested that, regardless of the quotas agreed to, a commitment should be included in the proposals for 1973 TAC's, as was done for the 1972 proposals, to the effect that, in setting the 1974 TAC's, the Commission would take action to produce substantial restoration of the stocks and that the commitment be honoured. Most Member Countries agreed in principle to the commitment proposal but wanted to have "substantial restoration" quantified. USA suggested that the commitment in the 1973 proposals be stock-size objectives of 300,000 tons in the Georges Bank stock and 62,000 tons in the Gulf of Maine stock at the end of 1974. These were about 3/5 of the optimum size for each stock as reported by the Herring Working Group. After considerable discussion, the *ad hoc* Committee agreed to recommend to the Joint Panels 4 and 5 the setting of objectives which would require rebuilding of the Georges Bank and Gulf of Maine stocks by the end of 1974 (beginning of 1975) to at least 225,000 tons and 60,000 tons, respectively. The *ad hoc* Committee further agreed to recommend the setting of allowable catches in 1973 at 150,000 tons (150,000 tons in 1972) and 25,000 tons (30,000 tons in 1972) respectively, which would be reduced in 1974 if scientific assessments indicated the objectives could not be reached, and, in any event, would not be increased unless the stocks reached a level which would provide their MSY's of 250,000 tons and 110,000 tons respectively by the end of 1974. The *ad hoc* Committee agreed that the TAC for the Nova Scotia Bank stock in 1973 should be 90,000 tons (65,000 tons in 1972) as the stock was in good condition in 1972 with good recruitment expected in 1973 and that no commitment for 1974 was necessary.

8. National Allocation. After considerable discussion and negotiation, a proposal presented by the Chairman for national allocation of the TAC for Georges Bank, Gulf of Maine and Nova Scotia Bank stocks which took into account the special needs presented in previous proposals was presented as follows:

Country	Georges Bank stock	Gulf of Maine stock	Nova Scotia Bank stock	Total
Total TAC's	150,000 tons	25,000 tons	90,000 tons	265,000 tons
Canada	5,050	4,000	57,000	66,050
Germany, Fed. Rep.	31,600	1,000	-	32,600
Japan	1,200	-	1,350	2,550
Poland	49,400	-	-	49,400
Romania	1,300	-	-	1,300
USSR	48,200	-	31,050	79,250
USA	5,250	19,750	-	25,000
Others	8,000	250	600	8,850

By a vote of 5 Yes and 2 No (Fed. Rep. Germany and Romania), the *ad hoc* Committee agreed to recommend the above national allocations for the TAC's for the Georges Bank, Gulf of Maine and Nova Scotia stocks and the commitment proposal for the Georges Bank and Gulf of Maine stocks to the Joint Meeting of Panels 4 and 5 for consideration and approval.

9. The *ad hoc* Committee on Herring Quotas and their Allocation, having completed its work, adjourned at 1105 hrs, Friday, 26 January. The best thanks of the Committee was extended to its Chairman, Dr Needler, for his patience and skill.







Serial No. 2938  
(B.v.)

Proceedings No. 6

SPECIAL COMMISSION MEETING - JANUARY 1973

Report of Final Plenary Sessions

Friday, 26 January, 1125 hrs and 1430 hrs

1. The Chairman of the Commission convened a meeting of the Plenary at 1125 hrs, Friday, 26 January. Representatives of all Member Countries, except Bulgaria and Italy, were present.
  2. The Report of STACREM (1973 Sp. Comm. Mtg. Proc. 4) was presented by the Chairman of STACREM, Mr J. Graham (UK), for acceptance by the Plenary. Following a short discussion, the Report, with minor editorial changes, was adopted by the Plenary.
  3. The Plenary recessed at 1150 hrs.
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4. The Chairman of the Commission reconvened the Plenary at 1430 hrs. Representatives of all Member Countries, except Bulgaria and Italy, were present.
  5. The Report of Joint Panels 4 and 5 (1973 Sp. Comm. Mtg. Proc. 3) was presented by the Chairman, Dr A.W.H. Needler (Canada), for consideration of seven proposals for international catch quota regulation of herring, flounders, mackerel, pollock and redfish in the southern part of the Convention Area and a resolution relating to these proposals (1973 Sp. Comm. Mtg. Proc. 3, App. I-VIII).

In the discussion of the catch quota proposals and the resolution which followed, the delegate of Iceland reiterated his Government's view that the coastal state had the prime responsibility for the conservation and management of the marine resources and, therefore, he must abstain from voting on the proposals and the resolution.

The delegate of Denmark, supported by a number of other delegates, objected, in principle, to a single allocation for both non-members and other Contracting Governments which might become new entrants under a catch quota scheme. It was pointed out that separate allocations could become a problem if a non-member country should become a member of the Commission in the near future. The Plenary finally agreed

- 1) that a single allocation called "Others" would be acceptable, with the understanding that, in making provision for countries not individually specified, it was not the intention of the Commission that fishing by non-member countries should have the effect of limiting the catches which Member Countries, not individually specified, were permitted to take.
- 2) that the Commission would give further consideration to resolving quota allocation problems at its 1973 Annual Meeting.

The Chairman of the Commission then called for a vote on each of the seven proposals and the resolution. The Plenary agreed that the French and Spanish delegates should be able to vote by proxy. By a vote of 12 yes, 1 no (Romania), 1 abstention (Iceland) and 2 absent (Bulgaria and Italy), the Plenary adopted the proposal (1) for herring quota on the Georges Bank stock (1973 Sp. Comm. Mtg. Proc. 3, App. I). By votes of 13 yes, 1 abstention (Iceland) and 2 absent (Bulgaria and Italy), the Plenary adopted proposal (2) for herring quota in Division 5Y of Subarea 5 (1973 Sp. Comm. Mtg. Proc. 3, App. II), proposal (3) for herring quota in Division 4X and part of Division 4W of Subarea 4 (1973 Sp. Comm. Mtg. Proc. 3, App. III), proposal (4) for flounder (except yellowtail) quota on the Southern New England stock (1973 Sp. Comm. Mtg. Proc. 3, App. IV), proposal (5) for mackerel quota on the Southern New England stock (1973 Sp. Comm. Mtg. Proc. 3, App. V), proposal (6) for pollock quota in Subarea 5 and Division 4X of Subarea 4 (1973 Sp. Comm. Mtg. Proc. 3, App. VI), proposal (7) for redfish quota in Subarea 5 (1973 Sp. Comm. Mtg. Proc. 3, App. VII) and the Resolution relating to the seven 1973 proposals (1973 Sp. Comm. Mtg. Proc. 3, App. VIII).

6. The Chairman of the Commission recognized the Observer from the European Economic Community (EEC) who spoke as follows:

"Mr Chairman,

"Thank you very much for giving me the floor in my capacity as a representative of the European Community.

"You and your Commission know how much EEC is interested in the work of international organizations for fisheries and how much it is aware of the necessity to try to find the most efficient measures for conservation at the international level. In this respect, having looked very broadly at the measures concerning the limitation of fishing effort, we also think like many of the representatives who are present and as has been decided here, that such an important question requires a very careful examination, particularly in the light of the implementation of national quota allocations.

"In view of the introduction of national catch quotas for some species for the year 1973, I would like to refer to the statement made on behalf of the Community in Halifax on 4 June at the 1971 ICNAF Meeting - which I shall not repeat now - but to which I should like to add - the implementation of the common policy on fisheries may lead the Community to work out arrangements for Community management of its member-states quotas.

"Thank you."

The Observer from ICES thanked the Commission on behalf of the Council for the invitation to attend the meeting and drew attention to the active and useful cooperation and collaboration between the ICES and ICNAF scientists. He felt assured that such close working arrangements prove of mutual benefit in the wise use of the North Atlantic fishery resources.

The Observer from FAO said that FAO and its Department of Fisheries in particular were pleased to have the Commission meet again at FAO in Rome. It provided an excellent opportunity to meet old friends and discuss mutual problems in fisheries. FAO was greatly interested in the good work and rapid progress now being made by ICNAF and hoped that others would take note.

7. The Chairman of the Commission announced the conclusion of the business before the Commission's Special Meeting. On his own behalf and that of the Commission, he expressed his sincere thanks to all for their efforts in providing solutions to difficult and delicate tasks. A special thank you was extended to Dr A.W.H. Needler (Canada) as Chairman of Joint Panels 4 and 5 and of the *ad hoc* Committee on Herring Quotas and their Allocation, to Mr J. Graham (UK) as Chairman of STACREM, to Dr A.S. Bogdanov (USSR) and Messrs D.J. Garrod (UK) and T.D. Iles (Canada) for their excellent work in STACRES and its Assessments Subcommittee and Herring Working Group. He expressed the Commission's gratitude to the US delegation for the considerable thought and effort it had put into introducing effort limitation as a possible additional measure to ensure wise use of the stocks of fish in the Northwest Atlantic. He thanked the staff of the Secretariat for its work and FAO for its cooperation, accommodation and hospitality.

8. There being no other business, the Chairman declared the Special Commission Meeting - January 1973 adjourned at 1800 hrs. A press notice covering the proceedings of the Special Commission Meeting is at Appendix I.

SPECIAL COMMISSION MEETING - JANUARY 1973

Press Notice

1. A second extraordinary meeting of the International Commission for the Northwest Atlantic Fisheries (ICNAF) considered the current status of the herring stocks on the Nova Scotia Bank, in the Gulf of Maine, and on Georges Bank and areas to the west and south following the application of national catch quotas on these stocks as conservation measures for the year 1972. The meeting also considered the possibility for limitation of the increasing amount of fishing effort being applied on the commercial fish stocks in the southern part of the Northwest Atlantic area.
  2. The Special Meeting was held by courtesy of the Department of Fisheries of the Food and Agriculture Organization of the United Nations in Rome, Italy, from 16 to 26 January 1973, under the chairmanship of Mr K. Løkkegaard (Denmark). Delegates from all Member Countries, except Bulgaria and Italy, were present. The sixteen Member Countries are Bulgaria, Canada, Denmark, France, Federal Republic of Germany, Iceland, Italy, Japan, Norway, Poland, Portugal, Romania, Spain, USSR, UK, and USA. Observers represented the Food and Agriculture Organization, the Commission of the European Economic Community and the International Council for the Exploration of the Sea.
  3. The Special Meeting was preceded by meetings of the Commission's Standing Committee on Research and Statistics from 8 to 15 January 1973.
  4. After considering the reports of the scientific meetings and other relevant economic and technical information, the Commission agreed to recommend to the Member Countries measures to conserve the herring stocks by limiting the total catch of herring during 1973 from the Georges Bank stock to 150,000 tons (the same amount allowed in 1972), from the Gulf of Maine stock to 25,000 tons (5,000 tons less than for 1972), and from the Nova Scotia Banks stock to 90,000 tons (25,000 tons more than for 1972). The Commission also agreed to recommend to Member Countries catch quota allocations of the 1973 total catch quotas for each Member Country fishing on each of the three stocks of herring.
  5. The Commission's Standing Committee on Research and Statistics under the chairmanship of Dr A.S. Bogdanov (USSR) and the Standing Committee on Regulatory Measures under the chairmanship of Mr J. Graham (UK) conducted thorough studies of a US proposal to limit the amount of fishing effort as a further conservation measure for the commercial fish stocks in the southern part of the Northwest Atlantic. Following considerable discussion, the Commission agreed to refer the many scientific, economic and technical problems involved in effort regulation for future detailed study to a meeting of scientific and technical experts to be convened at the National Marine Fisheries Centre, Woods Hole, Massachusetts or at the Commission offices, Dartmouth, Nova Scotia in late March or early April 1973.
  6. Further and pending further consideration of effort limitation at its Annual Meeting in June 1973, the Commission agreed, as an interim measure, to recommend for 1973 measures to conserve the currently unregulated fish species by limiting their total catches as follows:  
  
Mackerel from the Gulf of Maine, Georges Bank and to the west and south to 450,000 tons  
Pollock from the Gulf of Maine, Georges Bank, and off southwestern Nova Scotia to 50,000 tons  
Redfish from the Gulf of Maine and Georges Bank to 30,000 tons  
Flounders (except yellowtail) from the Gulf of Maine, Georges Bank and to the west and south to 25,000 tons.
- The Commission also agreed to recommend catch quota allocations of these 1973 total catch quotas for each Member Country fishing on the stocks making up these commercial species.
7. The Commission adopted a resolution urging Member Countries whose fleets fish the stocks of species which migrate between Georges Bank and the area to the west and south outside the Commission's jurisdiction (ICNAF Statistical Area 6) and for which catch quotas were recommended for 1973 to institute appropriate measures to regulate their fisheries in Statistical Area 6 to ensure the effectiveness of the Commission's proposals for these stocks either by further international agreements or on a national basis.
  8. The Commission urged Member Countries to accept or ratify the Commission's seven conservation proposals for herring, mackerel, pollock, redfish and flounders other than yellowtail as soon as possible

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in order to shorten the six-month period normally required for the proposals to come into force for 1973.

9. The 1973 Annual Meeting of the Commission will be held at the World Health Organization Building in Copenhagen, Denmark from 5 to 15 June 1973 under the chairmanship of Mr K. Løkkegaard (Denmark). Meetings of the Commission's Standing Committee on Research and Statistics will meet for a preceding period of a week or more.

27 January 1973

Office of the Secretariat of the Commission  
Dartmouth, Nova Scotia

PART II  
 PROCEEDINGS OF THE 23RD ANNUAL MEETING  
 COPENHAGEN, DENMARK, 5-16 JUNE 1973

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INTERNATIONAL COMMISSION FOR



THE NORTHWEST ATLANTIC FISHERIES

Serial No. 3102  
(B.a.73)

Proceedings No. 2

ANNUAL MEETING - JUNE 1973

Ceremonial Opening

Tuesday, 5 June, 1000 hrs

The Opening Session of the Twenty-Third Annual Meeting of the Commission was convened in the Main Conference Hall of the World Health Organization, Scherfigsvej, Copenhagen, Denmark at 1000 hrs on 5 June 1973.

The Chairman of the Commission, Mr K. Løkkegaard, Head of Department, Ministry of Fisheries for Denmark, opened the Twenty-Third Meeting of the Commission. He welcomed the Commissioners, Advisers, Observers and Guests, and on behalf of the Commission, thanked the Government of Denmark for the invitation to the Commission to hold its meeting in Denmark and for the excellent meeting facilities and hospitality. He expressed his pleasure to introduce Mr Chv. Thomsen, Minister of Fisheries for Denmark, who addressed the Meeting on behalf of the Government of Denmark, as follows:

"Mr Chairman, Ladies and Gentlemen.

"It is a great pleasure for me that it has been possible for us to arrange for the Commission's Annual Meeting here in Copenhagen and I bid you all a hearty welcome.

"As you will probably know, Denmark has been a Member of the Commission from its very beginning and has during its existence taken great interest in its work to which we have tried to contribute to the best of our ability. The waters of ICNAF are far away from Copenhagen, but the conditions of the fisheries in the Convention Area are of the utmost importance to both Greenland, Faroese and Danish fishing industries.

"I shall try to avoid - what can perhaps sometimes be difficult in a situation like this - to succumb to the temptation of underlining our own problems and our specific need for action by ICNAF.

"Seen from an international viewpoint, however, action is needed in organizations like yours in a spirit of cooperation and almost always of compromise - to find ways and means for the management of fisheries under the threat of overfishing - sometimes also under an influence of problems in other fields of activity than fisheries.

"It is correct - when stated - that the Commission has not so far been able to solve all the problems facing international fisheries in the ICNAF Area but it is not fair to blame ICNAF for this fact. Compared with other fields of international cooperation, ICNAF has achieved much in my opinion.

"It has been encouraging to see the resoluteness with which, during the last two years, the Commission has used its powers to institute new and more effective measures. The development within fisheries has created a difficult job for ICNAF in the latest years, but I feel convinced that ICNAF will be equal to the task and I sincerely hope that exaggerated expectations to its possibilities will not destroy the good results it can achieve.

"Thank you, Mr Chairman."

The Chairman thanked the Minister for his words of confidence in the ability of ICNAF to deal with fisheries within the Convention Area. He continued

"We meet from outside and within the Commission, heavy and impatient criticism as to the results or rather the lack of results achieved.

"In my opening speech last year in Washington, I tried to outbalance to a certain extent such a criticism by referring to the great number of regulatory measures introduced by the Commission since December 1971 when sufficient powers were given to the Commission. I did so, feeling that in that

short period ICNAF had overcome more than anybody could or should expect it possible for an international organization. I meant so not only relatively - but also absolutely.

"I did not mean, however, that anything ideal was achieved - I think we all realize that an overwhelming burden of unsolved problems is still on our shoulders.

"Almost day by day this burden is increasing due to technical, political and economic factors in the individual countries and in the relationship between the countries. We are, in fact, facing not only - what would be more than sufficient - problems of overfishing in international waters - but we have to cope with pronounced or unpronounced principles of Member Countries and even countries outside the "family" regarding not only fisheries but other activities in the sea(s).

"For more than a year the United Nations have been preparing the Conference of the Law of the Sea. It has now been scheduled to start in November this year. Nobody knows what will be the result of the Conference though some countries seem to have anticipated it. It has, however, already been lying over this organization and others like a cloud of uncertainty and doubt. The fear of prejudicing a standpoint in that Conference or the wish to justify a standpoint there has heavily influenced the discussions in our Commission.

"I have a strong belief in the necessity of international cooperation in general and international cooperation in fisheries in particular. Whatever the result of the Law of the Sea Conference, ICNAF, and other organizations like it, will have a role to play if the world does not want to return to conditions which history should prevent it from returning to.

"The set up - the competence or the powers given to the Commission might be altered and to my mind, there is no doubt that they must be altered in order to act in a satisfactory way - but ICNAF must continue.

"I should be the last to recommend ICNAF to close their eyes and ears to the world and to evade the obstacles - but, I appeal to all Member Countries of this Commission to do the work we have before us without undue influence from factors like fear of prejudice - feeling of defeat.

"We have an important job to do - it should be done in the spirit which has up to now been characteristic of this Commission: the spirit of compromise. It might be only a step towards the goal - but anyway better than defeat."

The Chairman then declared the Twenty-Third Annual Meeting of the Commission recessed to 1100 hrs when it would begin its work in the first Plenary Session.



INTERNATIONAL COMMISSION FOR



THE NORTHWEST ATLANTIC FISHERIES

Serial No. 3103  
(B.b.23)

Proceedings No. 3

ANNUAL MEETING - JUNE 1973

Report of the First Plenary Session

Tuesday, 5 June, 1100 hrs

- Item 1. Opening. The First Plenary Session of the Twenty-Third Annual Meeting of the Commission was called to order by the Chairman, Mr K. Løkkegaard (Denmark), after the Ceremonial Opening which was addressed by the Minister of Fisheries for Denmark, Mr Chv. Thomsen (Proc. 2). The Chairman welcomed Delegates from 15 of the 16 Member Countries and the Commission's Observers and Guests.

The Chairman asked the Plenary to stand for a moment in silence in memory of Mr Wm.M. Terry, former head of the US delegation to ICNAF.

The Chairman welcomed the delegation of Bulgaria which was representing its country for the first time since joining the Commission on 21 August 1972. The head of the Bulgarian delegation, Mr D. Nedev, responded as follows:

"Mr Chairman, Ladies and Gentlemen.

"Allow me, on behalf of the Government of the People's Republic of Bulgaria and on my behalf, as General Manager of Bulgarian State Fisheries, to express our gratitude for the words of welcome extended to my country on the occasion of the acceptance of Bulgaria as a Member of the International Commission for the Northwest Atlantic Fisheries.

"We regard with deep esteem fishery traditions, which have been formed in the course of centuries in this important fishing region of the World Ocean. We know at the same time that many countries have made brave efforts to clarify the possibilities for fishing in the tremendous area of the Convention. Their experience and knowledge are highly regarded in our country.

"The Bulgarian ocean fishery has been developed in the last ten years. For its successful development the example of a number of other countries, which had for many years before us gathered experience on the difficult way towards utilization of biological resources in the World Ocean was very important.

"With the rapid technical progress of world fisheries the question of careful and rational exploitation of fishery stock has become especially important. In this connection, the cooperation between fishing states plays an important part.

"Therefore, having become a Member of the International Commission for the Northwest Atlantic Fisheries, I wish to declare that my country will observe the principles and abide by the spirit of the Convention, corresponding to the objective necessity of international cooperation in the sphere of fisheries.

"I would like to add, that within our possibilities we shall make efforts to contribute to the investigation of the complicated biological problems in the Convention Area.

"These studies will be submitted to the requirements for ensuring reasonable use of the resources in the waters of the Northwest Atlantic.

"Thank you for your attention."

- Item 2. Agenda. The Agenda was approved.

- Item 3. Publicity. The Plenary agreed that a Committee on Publicity should be set up, composed of the Chairman and Vice-Chairman of the Commission with the Chairman of STACFAD and the Executive Secretary.

Items 4, 12, 35, 37-41, 43-45 4. Approval of draft report of Proceedings of Special Commission Meeting, Rome, January 1973. 12. Status of proposals adopted by Commission (a) for changes in Convention, (b) for regulation of fisheries. 35. Reports of meetings of NEAFC, ICES, FAO, IOC, SCOR, and OECD. 37. Report of Standing Committee on Finance and Administration (STACFAD). 38. Report of Standing Committee on Regulatory Measures (STACREM). 39. Report of Standing Committee on International Control (STACTIC). 40. Reports of Panels 1-5 and Panel A (Seals). 41. Election of Chairman and Vice-Chairman for 1973/74 and 1974/75. 43. Press statement. 44. Other business. 45. Adjournment. These items were set aside for later consideration by the Plenary.

Items 5-11 5. Panel memberships. 6. Administrative Report. 7. Auditor's Report. 8. Financial statement, 1972/73 (preliminary). 9. Budget estimate, 1973/74. 10. Budget forecast, 1974/75. 11. Consideration of amendment to Convention Article XI(3). These items were referred to STACFAD.

Items 13-15 13. Annual Returns of Infringements. 14. Scheme of Joint Enforcement. 15. Standard logbook. These items were referred to STACTIC.

Item 16. Principles and problems of limiting fishing as a conservation measure. This item was referred to STACREM.

The Plenary noted that the report of the Second Meeting of Experts on Effort Limitation (Summ. Doc. 73/37) would not be ready for presentation to STACREM at its first meeting scheduled for 1430 hrs. Accordingly, it was agreed that the reports of both the First Meeting (Summ.Doc. 73/5) and the Second Meeting (Summ.Doc. 73/37) of Experts on Effort Limitation would be presented to STACREM beginning 0915 hrs, Wednesday, 6 June, and form the basis for deliberations, if necessary, throughout the day.

The Plenary agreed that the first meeting of STACTIC would be held from 1430-1600 hrs.

Items 17, 26, 30 and 34 17. Conservation of Atlantic salmon in the Convention Area. 26. Conservation of cod in the Convention Area. 30. Conservation of developing fisheries in the Convention Area (capelin in Subareas 1-4). 34. Measures to ensure maximum utilization of catches of regulated species in the Convention Area. These items were referred to a Joint Meeting of Panels 1-5.

Items 18, 19, 22, 23 and 25 18. Conservation of haddock stocks in Subareas 4 and 5. 19. Conservation of silver and red hakes in Subareas 4 and 5 and Statistical Area 6. 22. Conservation of pollock in Subareas 4 and 5. 23. Conservation of redfish in Subareas 3, 4 and 5. 25. Conservation of herring stocks in Subareas 4 and 5 and Statistical Area 6. These items were referred to a Joint Meeting of Panels 4 and 5.

Items 20, 23, 27 and 28 20. Conservation of yellowtail flounder in Subareas 3 and 5 and Statistical Area 6. 23. Conservation of redfish in Subareas 3, 4 and 5. 27. Conservation of American plaice in Subarea 3. 28. Conservation of witch flounder in Subarea 3. These items were referred to Panel 3.

Items 20, 21, 24 and 31 20. Conservation of yellowtail flounder in Subareas 3 and 5 and Statistical Area 6. 21. Conservation of mackerel in Subarea 5 and Statistical Area 6. 24. Conservation of flounders, except yellowtail, in Subarea 5 and Statistical Area 6. 31. Conservation of scallops in Subarea 5. These items were referred to Panel 5.

Items 29 and 33 29. Conservation of yellowtail, witch and American plaice combined in Subarea 4. 33. Measures to ensure uniform mesh size for regulated species in all Subareas. These items were referred to Panel 4.

Item 32 Conservation of seals in the Convention Area. This item was referred to Panel A (Seals).

Item 36 Report of Standing Committee on Research and Statistics (STACRES). The Chairman of STACRES, Dr A.S. Bogdanov (USSR), was invited to present a summary of the Provisional Report of STACRES. Dr Bogdanov reviewed briefly the work of the Assessments, Statistics and Sampling, and Environmental Subcommittees and the Report of the ICES/ICNAF Joint Working Party on North Atlantic Salmon. The Chairman of the Commission expressed appreciation, on behalf of the Plenary, to the scientists for their tireless and highly productive efforts. The US Delegate expressed his concern at some of the conclusions in the Report and drew attention particularly to the inadequacy and lateness of statistical and sampling data required by the STACRES scientists in order to prepare sound advice to the Commission. The Plenary tabled the Provisional Report until the Final Plenary Session when the work of STACRES would be completed and fully reported.

The Plenary adjourned at 1230 hrs.



Serial No. 3104  
(B.u.73)

Proceedings No. 4

ANNUAL MEETING - JUNE 1973

Report of Meetings of STACTIC

Tuesday, 5 June, 1430-1600 hrs  
Wednesday, 13 June, 1130-1730 hrs  
Friday, 15 June, 2230-2400 hrs

1. Opening. The meeting of the Standing Committee on International Control (STACTIC) was convened by the Chairman, Captain J.C.E. Cardoso (Portugal). Representatives from all Member Countries and Observers were present.
2. Rapporteur. The Assistant Executive Secretary (Mr V.M. Hodder) was appointed Rapporteur.
3. Adoption of Agenda. The provisional agenda, as outlined in Circular Letter 73/28 (6 April 1973), was adopted.
4. Scheme of Joint Enforcement. The Scheme for Joint International Enforcement of the Fishery Regulations in the Convention Area, which was proposed on 5 June 1970 (Ann.Proc.Vol.20, p.20-22), entered into force on 7 January 1971. The Scheme became operative on 1 July 1971 with reservations by USSR, Poland and Romania in relation to inspection of gear below deck and of catch.

(a) Review of operation of Scheme, 1 July 1972-30 June 1973. The Executive Secretary reviewed the status of implementation of the Scheme as on 9 May 1973 (Circular Letter 73/34). It was noted that no information had been received from Bulgaria, Denmark, Iceland, Italy and Romania; that Norway, Poland, Spain and UK were not fully participating and had not provided the Secretariat with the required information on inspecting officers and vessels; and that Canada will be fully participating as of 1 July 1973, the information on its inspecting officers and vessels having already been reported.

(b) Member Countries' plans for participation. The Chairman invited Member Countries to report on their participation in the International Inspection Scheme. Summaries of statements follow:

- (i) Bulgaria. Accepts the Scheme in principle and is preparing to participate; will notify the Secretariat when ready.
- (ii) Denmark. Will be ready to be inspected in a month or two, but unable to state now when will be ready to inspect.
- (iii) Iceland. Not yet ready to participate.
- (iv) Poland. Committee was informed of Poland's intention to withdraw all reservations and to accept all provisions of the Scheme, provided that Member Countries with no diplomatic relations with Poland will do the same and permit Polish inspectors to inspect on board their vessels. No specified inspection vessels are yet available, but inspectors are on board of specified fishing vessels in 1973 as follows:

Vessels: *Dalmor*  
*Korwin*  
*Luzytanka*

Inspectors: Jerzy Rynkiewicz  
Bohdan Mrugalski  
Jozef Sobczyk  
Boleslaw Zemla  
Marian Bakota  
Roman Czubyryj

- (v) Portugal. Fully participating; reported a change in inspecting officers (Comm. J.P. de Figueiredo) and provided information on inspection vessel (*Gil Eanes*, identification number LX42N, radio call letters CSAU).
- (vi) Romania. Plans to participate fully on 1 October 1973; announced intention to withdraw all reservations and will notify Secretariat officially on names of inspection officers and vessels.
- (vii) Spain. Continues ready to be inspected at any time, but not yet ready to inspect due to lack of a suitable vessel.

(c) Review of "Questionnaire" and "Report of Inspection", including reprinting of Questionnaire and Translations. It was noted that the revised Questionnaire and Report of Inspection was adopted by the Commission at its 1972 Annual Meeting. STACTIC agreed that the Secretariat proceed with the reprinting of the booklet containing the translations of the Questionnaire after incorporating any revisions since the last printing.

(d) Disposition of nets with seals applied. The Chairman drew STACTIC's attention to the US statement respecting withdrawal of improper nets from use by the application of a seal by inspectors (1972 Mtg.Proc. 15, App.II). The US delegate indicated that the question posed is whether it was the intent of the Commission to authorize the inspector to apply the seal in such a manner to prevent the use of the net until it was made available to the Flag State authorities for examination. Delegates of two countries indicated that illegal nets found on their national fishing vessels would be impounded.

The Canadian delegate proposed that, to be effective, the Scheme of Joint Enforcement should provide for the seizure of an illegal net as evidence of the infraction and its return only to the appropriate authorities of the Flag State. He requested that the proposal be taken as notice at this Meeting for consideration at the next Annual Meeting of the Commission.

(e) Reports of disposition of infringements. The Chairman drew STACTIC's attention to the US proposed recommendation on Annual Return of Infringements (1972 Mtg.Proc.15,App.III). The US delegate moved that the proposal be adopted. After some discussion, STACTIC agreed that the proposal in a slightly amended form be incorporated into the present ICNAF Scheme of Joint Enforcement and accordingly

recommends

that the present ICNAF Scheme of Joint Enforcement (Ann.Proc.Vol.20,p.20-22) be amended by the insertion of a new paragraph after paragraph 13 as follows:

"14. Each Contracting Government, to which an infringement report is sent originating from an Inspector of another Contracting Government, shall transmit to the Commission Secretariat and to the reporting Inspector's Government a report of the specific judicial or administrative disposition of each infringement, insofar as possible, 30 days prior to the commencement of the first Annual Meeting following the calendar year in which the infringement occurred."

(f) Extension of the Scheme to cover closed areas, seasons and fish size. The Chairman indicated that the present ICNAF Scheme of Joint Enforcement does indeed cover these matters but that it may be necessary to make the appropriate provisions in the Questionnaire and Reporting Form. STACTIC agreed that the Secretariat make the necessary amendments to the Questionnaire and Reporting Form to cover closed areas, seasons and fish size, following the NEAFC Questionnaire as closely as possible.

(g) Consideration of enforcement of fisheries regulation.

- (i) The USSR delegate introduced a draft resolution which, if adopted, would extend the coverage of the present ICNAF Scheme of Joint Enforcement to Statistical Area 6. There was general agreement on the need to extend the coverage of the Scheme to Statistical Area 6, and the suggestion was made that the Commission should perhaps initiate procedures to have Statistical Area 6 included in the Convention.

STACTIC agreed that a Working Group composed of delegates from Canada, Japan, USSR, UK and USA, and the Committee Chairman (Captain J.C.E. Cardoso, Portugal) consider the appropriate wording for the proposed resolution and also the question of initiating procedures to include Statistical Area 6 in the Convention (see Section 8 of this Report).

- (ii) The US delegate introduced a document entitled "Revised Proposal for a Scheme of Joint International Enforcement of the Fishery Regulations in Effect Under the Convention" (Appendix I), and in so doing, he elaborated on the ineffectiveness of the present Scheme by pointing out two significant defects: the inability of the inspecting officer to preserve the evidence of an apparent infringement, and the inequality of enforcement on the fishermen

of different nations because of reservations by some countries. It was noted that the most substantial proposed changes would be in paragraph 5, which would include a provision for detention of the vessel, in the case of a significant violation of Commission regulations, until an inspector or authorized representative of the Flag State could assume responsibility for the vessel and the evidence of the infringement, and in paragraph 9, which would eliminate all reference to reservations.

After considerable discussion there was general agreement on the need for substantial improvement in the Scheme and also in the manner in which Contracting Governments enforce the fisheries regulations of the Commission. However, some countries expressed some doubt on the proposed approach to the problem and felt that the matter needed further study.

STACTIC agreed (1) that a Working Group be appointed immediately to consider the various alternatives for some immediate improvement in the present Scheme and report its conclusions before the end of this Annual Meeting; (2) that the Working Group, using the document "Revised Proposal . . . ." (Appendix I) as the base for the study, also consider all possible alternatives for substantial improvement in the Scheme; and (3) that the Working Group be expected to conclude its deliberations and present its conclusions to the Secretariat on or before 1 October 1973, so that action may be taken on further improving the Enforcement Scheme at the next Mid-Term Meeting of the Commission.

The US delegate indicated that the USA would be willing to participate in the Working Group on the condition that some immediate improvements in the Scheme are agreed to at this Meeting and that others would be forthcoming at the Mid-Term Meeting.

For immediate consideration of the problem, the Working Group will consist of representatives from Canada, Poland, Portugal, Spain, USSR and USA. For further consideration of the problem after this Annual Meeting, the Working Group will be augmented by representatives from Fed. Rep. Germany, Norway, Romania, and UK (see Section 7 of this Report).

(h) Consideration of withdrawal of reservations to the Scheme of Joint Enforcement. The US delegate drew STACTIC's attention to the reservations to the Joint Enforcement Scheme (see above) and noted that the delegates from Poland and Romania had announced their countries' intention to withdraw all reservations to the Scheme of Joint Enforcement. The USSR delegate reported the removal of reservation to inspection of fish on deck and indicated that the withdrawal of the remaining reservation was at present under consideration.

5. Standard Logbook: Review of Use of Logbook by Member Countries (1972 Mtg. Proc. 15, Section 10). The Chairman drew attention to Comm.Doc. 73/21 and Addendum, which summarized the comments on the proposed standard logbook format by Canada, Norway, USSR, UK, USA and Denmark (Faroes). Although some delegates indicated that their logbooks provided haul-by-haul information, STACTIC agreed generally (1) that day-by-day logbook records were adequate, and (2) that the Secretariat inform all Member Countries of the information required, so that they can incorporate the required items in their own logbook system.

6. Review of Annual Return of Infringements (Comm.Doc. 73/8). The Chairman reviewed the information contained in Comm.Doc. 73/8, indicating that only six countries complied with the requirement to report annually on infringements, and requested comments from the others. The Norwegian delegate reported no apparent infringements for mesh size, mesh obstruction and excess landings regulations, and no fishing in Subareas where closed areas exist. The UK delegate indicated that a "nil" return had been submitted. The French and Fed. Rep. Germany delegates regretted the delay in reporting in time for inclusion in the above report. In response to a question from USA regarding twice as many prosecutions as infringements in the USSR report, the USSR delegate informed STACTIC that it is usual for both the Captain and Trawling Master to be prosecuted for the same infringement. The Fed. Rep. Germany delegate indicated that it would be useful to have national and international inspections and infringements reported separately. STACTIC agreed that the Secretariat request the reporting of national and international inspections and infringements separately in future submissions from Member Countries.

#### 7. Reports of the Working Groups.

(a) The Report of the Working Group on Improving the International Joint Enforcement Scheme (Appendix II), involving changes in the Scheme, was adopted with minor amendments by STACTIC with the recommendation that the measures proposed (Appendix II) be adopted by the Commission.

(b) The Report of the Working Group on Extending the Scheme of Joint Enforcement of Fishery Regulations in Effect under the Convention (Appendix III) was discussed at some length. Both the resolution (Appendix III, Annex 1) and the proposal (Appendix III, Annex 2) including several amendments were approved by STACTIC for recommendation to the Commission for adoption.

(c) The UK delegate raised doubts as to the advisability of recommending to the Plenary, at this time, hastily conceived proposals. He felt that the present Scheme was the result of much deliberation with the

help of competent legal advice, and he reserved his position since he did not feel competent to pass an immediate opinion.

(d) Following further discussion, STACTIC

agreed to recommend

that the Commission transmit to the Depositary Government for joint action by the Contracting Governments, proposal (31) for amendment of the Scheme of Joint Enforcement of the Fisheries Regulations in the Convention Area, adopted in 1970, for international control outside national fishing limits for the purpose of ensuring the application of the Convention and the measures in force thereunder (Appendix IV).

8. Election of Chairman for 1973/74. Captain J.C.E. Cardoso (Portugal) was unanimously re-elected as Chairman of STACTIC.

9. There being no further business at this time, STACTIC agreed to meet in regular session during the Mid-Term Meeting of the Commission in early 1974.

ANNUAL MEETING - JUNE 1973

US Proposal for a Revised Scheme of Joint International Enforcement of the  
Fishery Regulations in Effect under the Convention

That pursuant to paragraph 5 of Article VIII of the Convention, the following arrangements be established for international control outside national fishery limits for the purpose of ensuring the application of the Convention and the measures in force thereunder:

- "1. Control shall be carried out by inspectors of the fishery control services of Contracting Governments. The names of the inspectors appointed for that purpose by their respective governments shall be notified to the Commission.
- "2. Ships carrying inspectors shall fly a special flag or pennant approved by the Commission to indicate that the inspector is carrying out international inspection duties. The names of the ships so used for the time being, which may be either special inspection vessels or fishing vessels, shall be notified to the Commission.
- "3. Each inspector shall carry a document of identity supplied by the authorities of the flag state in a form approved by the Commission and given him on appointment stating that he has authority to act under the arrangements approved by the Commission.
- "4. A vessel employed for the time being in fishing for sea fish or in the treatment of sea fish in the Convention Area shall stop when given the appropriate signal in the International Code of Signals by a ship carrying an inspector unless fishing, shooting or hauling, in which case it shall stop immediately it has finished hauling. The master of the vessel shall permit the inspector, who may be accompanied by a witness, to board it. The master shall enable the inspector to make such examination of catch, nets or other gear and any relevant documents as the inspector deems necessary to verify the observance of the Commission's regulations in force in relation to the flag state of the vessel concerned and the inspector may ask for any explanations that he deems necessary.
- "5. (i) On boarding the vessel an inspector shall produce the document described in paragraph 3 above. Inspections shall be made so that the vessel suffers the minimum interference and inconvenience. An inspector shall limit his inquiries to the ascertainment of the facts in relation to the observance of the Commission's regulations in force in relation to the flag state of the vessel concerned. In making his examination an inspector may ask the master for any assistance he may require. He shall draw up a report of his inspection in a form approved by the Commission. He shall sign the report in the presence of the master of the vessel who shall be entitled to add or have added to the report any observations which he may think suitable and must sign such observations. Copies of the report shall be given to the master of the vessel and to the Inspector's Government who shall transmit copies to the appropriate authorities of the flag state of the vessel and to the Commission.
  - (ii) Where a significant infringement of the regulations is discovered, in the judgment of the inspector, the inspector shall, with a view to facilitating flag state action on the infringement, detain the vessel and give immediate notice of the infringement and detention to authorities of the vessel's flag state and to any inspection ship of the flag state in the vicinity. The flag state shall take immediate action through one of its inspectors or another representative to accept responsibility for the vessel and the evidence of the infringement. The detention shall commence at the point of boarding. If it is found desirable to move a detained vessel to within the national fishery limits of a Contracting Government or to some other location inside or outside the Convention Area, the moving of the vessel shall be with the agreement of the master of the vessel or the competent authorities of the flag state. Any entry into national fishery limits shall be subject to all applicable rules, regulations and special requirements or prohibitions of the coastal state. Detention responsibility may be transferred from one inspector to another of a Contracting Government or to an inspector of another Contracting Government. All inspectors and Contracting Governments shall act to facilitate prompt release of detained vessels to the flag state. The inspector responsible for detention may release the detained vessel at any time.
  - (iii) Where an infringement of the regulations is discovered that is not, in the judgment of the inspector, significant, he shall report his findings as soon as possible to the competent authorities of the flag state of the inspected vessel, and to any inspection ship of the flag state in the vicinity, but shall not detain the vessel.

"6. Resistance to an inspector or failure to comply with his directions shall be treated by the flag state of the vessel as if the inspector were an inspector of that state.

"7. Inspectors shall carry out their duties under these arrangements in accordance with the rules set out in this regulation but they shall remain under the operational control of their national authorities and shall be responsible to them.

"8. Contracting Governments shall consider and act on reports of foreign inspectors under these arrangements on the same basis as reports of national inspectors. The provisions of this paragraph shall not impose any obligation on a Contracting Government to give the report of a foreign inspector a higher evidential value than it would possess in the inspector's own country. Contracting Governments shall collaborate in order to facilitate judicial or other proceedings arising from a report of an inspector under these arrangements.

"9. (i) Contracting Governments shall inform the Commission by 1 March each year of their provisional plans for participation in these arrangements in the following year and the Commission may make suggestions to Contracting Governments for the coordination of national operations in this field including the number of inspectors and ships carrying inspectors.

(ii) The arrangements set out in this Scheme and the plans for participation shall apply amongst all Contracting Governments.

"10. (i) Nets shall be inspected in accordance with the regulations in force for the subarea in which the inspection takes place. The number of undersized meshes and the width of each mesh examined shall be entered in the inspector's report, together with the average width of the meshes examined.

(ii) Inspectors shall have authority to inspect all nets.

"11. Whether an inspector detains or does not detain a vessel pursuant to paragraph 5 above, he shall affix an identification mark approved by the Commission, to any net which appears to have been used in contravention of the Commission's regulations in force in relation to the flag state of the vessel concerned and shall record this fact in his report.

"12. The inspector may photograph the net in such a way that the identification mark and the measurement of the net is visible, in which case the subjects photographed should be listed in the report and copies of the photographs should be attached to the copy of the report to the flag state.

"13. The inspector shall have authority, subject to any limitations imposed by the Commission, to carry out such examination and measurement of the catch as he deems necessary to establish whether the Commission's regulations are being complied with. He shall report his findings to the authorities of the flag state of the inspected vessel as soon as possible, whether or not the vessel is detained in accordance with the provisions of paragraph 5 above.

"14. Each Contracting Government shall prohibit any fishing vessel under its flag which is not prepared to fully comply with the provisions of paragraph 4 of this Scheme from operating in any waters for which conservation regulations are in effect for that Contracting Government pursuant to the terms of the Convention."



ANNUAL MEETING - JUNE 1973

Report of Working Group on Improving the  
International Joint Enforcement Scheme

Friday, 15 June, 0830 hrs

1. The Working Group convened under the Chairmanship of Captain J.C.E. Cardoso (Portugal). Representatives from Canada, Japan, Poland, Spain, USSR and USA were present.
2. The Working Group reviewed the present ICNAF Scheme (Ann.Proc.Vol.20,p.20-22) and the US proposal for a Scheme of Joint International Enforcement of the Fishery Regulations in effect under the Convention (Proc. 4, Appendix I). As an interim measure, until such time as the Mid-Term Meeting may revise the entire Scheme, the Working Group

recommends

(a) that the present ICNAF Scheme of Joint Enforcement be amended as follows:

(i) last sentence of paragraph 5 to become paragraph 5 (ii) and to read as follows:

"5. (ii) Where an infringement of a regulation is discovered, the inspector may look at the pages of a bridge log, fishing log or other pertinent documents which contain information relevant to the infringement. The inspector shall enter a notation in the fishing logbook or other relevant document stating the date, location and type of infringement observed. The inspector may make a true copy of any relevant entry in such a document, and shall require the master of the vessel to certify in writing on each page of the copy that it is a true copy of such entry. The inspector shall have full opportunity to document evidence of the infringement with photographs of the relevant fishing vessel, gear, catch, and logs or other documents. The inspector shall give notice of the infringement to authorities of the vessel's flag state, as notified to the Commission, and to any inspection ship of the flag state known to be in the vicinity. The flag state shall take prompt action through its authorized representatives to receive and consider the evidence of the infringement. The flag state shall cooperate fully with the inspector's state to ensure that the evidence of the infringement is prepared and preserved in a form which will facilitate judicial action on the infringement."

(ii) paragraph 10, sections (i) and (ii), and paragraphs 11, 12 and 13 to read as follows:

"10. (i) Fishing gear shall be inspected in accordance with the regulations in force for the subarea in which the inspection takes place. The number of undersized meshes and the width of each mesh in the nets examined shall be entered in the inspector's report, together with the average width of the meshes examined.

(ii) Inspectors shall have authority to inspect all fishing gear.

"11. The inspector shall affix an identification mark approved by the Commission, to any part of the fishing gear which appears to have been used in contravention of the Commission's regulations in force in relation to the flag state of the vessel concerned and shall record this fact in his report.

"12. The inspector may photograph the fishing gear in such a way that the identification mark and measurements of the fishing gear are visible, in which case the subjects photographed should be listed in the report and copies of the photographs should be attached to the copy of the report to the flag state.

"13. The inspector shall have authority, subject to any limitations imposed by the Commission, to carry out such examination and measurement of the catch as he deems necessary to establish whether the Commission's regulations are being complied with. He may photograph the catch to document evidence of infringements, in which case copies of the photographs shall be attached to the copy of the report to the flag state. He shall report his findings to the authorities of the flag state of the inspected vessel as soon as possible."

- (b) that the following inspection and reporting procedures be adopted:
- (i) That the Commission require the Secretariat of the Commission to circulate to all Contracting Governments 60 days prior to each Annual Meeting a document describing the results of each inspection carried out under the ICNAF Scheme of Joint Enforcement during the preceding year.
  - (ii) That the Commission ask every Contracting Government to appoint, before the end of 1973, one or more competent officials who may be contacted through an appropriate radio channel, both from the inspecting vessel and the inspected vessel, by an inspecting officer at such time that a significant infringement of the Convention regulation is noted. Such official so named shall be advised of the date, location and nature of the infringement for transmittal to the flag state.
- (c) that the views of all Contracting Governments on the following questions be solicited by the Executive Secretary:
- (i) What is the legal value of the statement by an international inspecting officer that a certain vessel at a certain time in a certain location did not allow boarding to take place? Does it have to be corroborated by one witness? By two?
  - (ii) What is the legal value of the report of inspection properly witnessed and related documents properly certified? How should it be witnessed? How should they be certified?
- (d) that the Working Group continue to study all possible alternatives for substantial improvement in the present Scheme, using as the basis for the study the US proposal given in Proceedings No. 4, Appendix I, and to submit initial views on this document to the Executive Secretary who will circulate copies to all members of the Working Group which will include the following representatives of the indicated Member Countries:

<u>Country</u>	<u>Name and address of participant</u>
Canada	Dr M.P. Shepard, Resource Management Branch, Fisheries and Marine Service, Environment Canada, Ottawa, Ont. K1A 0H3
Fed.Rep. Germany	Dr D. Booss, Federal Ministry of Food, Agriculture and Forestry, 53 Bonn
Japan	Mr T. Yamaguchi, Ministry of Foreign Affairs, 2-2-1 Kasumigaseki, Chiyoda-ku, Tokyo
Norway	Mr O. Lund, Directorate of Fisheries, Bergen <u>Alternate:</u> Mr K. Raasok, Ministry of Fisheries, Oslo
Poland	Mr K. Talarczak, Fisheries Central Board, 1 Odrowaza Street, Szczecin
Portugal	Captain J.C.E. Cardoso, Rua 9 de Abril 40, S. Pedro do Estoril
Romania	Mr L. Popescu, Ministry of Transportation and Telecommunication, Civil Marine Directorate, Bd. Dinicu Golescu 28, Bucharest
USSR	Mr A.A. Volkov, Ministry of Fisheries, 12 Rozhdestvensky Blvd., Moscow K-45
UK	Mr J. Graham, Ministry of Agriculture, Fisheries and Food, Great Westminster House, Horseferry Road, London SW1P 2AE, England
USA	Mr H.R. Beasley, Marine Resources Division, Office of International Affairs (NOAA), Dept. of Commerce, Washington, D.C. 20235

4. In discussion leading to the above areas of agreement, the USA noted the great concern they felt regarding the provision for reservations under paragraph 9 of the present Scheme. These should be eliminated as soon as it would be constitutionally possible.

ANNUAL MEETING - JUNE 1973

Report of Working Group on Extending the Scheme of Joint Enforcement  
of Fishery Regulations in Effect under the Convention

Friday, 15 June, 1130 hrs

1. The Working Group convened under the Chairmanship of Captain J.C.E. Cardoso (Portugal). Representatives from Canada, Japan, USSR, UK and USA were present.
2. The Working Group reviewed a draft resolution to extend the Scheme of Joint Enforcement to regulatory measures on stocks beyond the Convention Area and a proposal to ensure application of the Scheme of Joint Enforcement to regulation of stocks ranging outside the Convention Area in Statistical Area 6. After considerable discussion, resulting in amendments to the draft proposal and resolution, the Working Group agreed that the STACTIC recommend for adoption by the Commission at this meeting the resolution (Annex 1) and the proposal (Annex 2).

ANNUAL MEETING - JUNE 1973

Resolution Relating to a Proposal for Application of the Scheme of Joint Enforcement  
Outside the Convention Area in Statistical Area 6

The Commission

Taking into Account the fact that measures for conservation of some stocks enacted pursuant to Article VIII of the Convention are applicable both within the Convention Area and in Statistical Area 6.

Having Considered the importance of ensuring that the Scheme of Joint Enforcement may be applied to enforce these regulations in waters outside national fishery limits, in Statistical Area 6 as well as inside the Convention Area, and having adopted a proposal to this effect,

Being Aware of the time period before the proposal referred to above may enter into effect under the provisions of Article VIII of the Convention as amended, and the desirability, in the interest of conservation, of taking appropriate steps to enforce these regulatory measures in Statistical Area 6 as soon as possible prior to the effective date of the proposal referred to above,

1. Invites the attention of all Contracting Governments to the above matters,
2. Requests all Contracting Governments fishing those stocks which are regulated in waters both inside the Convention Area and in Statistical Area 6 to take appropriate action as soon as possible to ensure the timely acceptance and effective implementation of the above-mentioned proposal,
3. Further Requests all Contracting Governments fishing those stocks which are regulated in waters both inside the Convention Area and in Statistical Area 6 to notify the Depositary Government promptly, if possible before 30 July 1973, of their acceptance of the above-mentioned proposal and their willingness to inspect and be inspected under it from 15 August 1973 or from a date earlier than provided under the normal procedure, if possible.

ANNUAL MEETING - JUNE 1973

Proposal to Ensure Application of the Scheme of Joint Enforcement to Regulation  
of Stocks Ranging Outside the Convention Area in Statistical Area 6

1. That the Scheme of Joint Enforcement be amended to ensure its application on the high seas outside national fisheries limits to measures in force under Article VIII of the Convention, regulating stocks of fish found outside the Convention Area in Statistical Area 6.
2. That the title of the Joint Enforcement Scheme be amended to read as follows:  

"Scheme of Joint International Enforcement of the Fishery Regulations in Effect under the Convention, adopted by the International Commission for the Northwest Atlantic Fisheries in Plenary Session on June 1973."
3. That the introductory paragraph be amended to read as follows:  

"That pursuant to paragraph 5 of Article VIII of the Convention, the following arrangements be established for international control in any waters outside national fishery limits in which regulatory measures under the Convention are applicable for the purpose of ensuring the application of the Convention and the measures in force thereunder."
4. That paragraph 4 of the Joint Enforcement Scheme be modified to read:  

"A vessel employed for the time being in fishing for sea fish or in the treatment of sea fish in waters outside national fishery limits in which regulatory measures under the Convention are applicable shall....."

ANNUAL MEETING - JUNE 1973

(31) Proposal for a Scheme of Joint Enforcement of the Fishery Regulations in the Convention Area and in Statistical Area 6

STACTIC recommends that the Commission transmit to the Depository Government the following proposal for joint action by the Contracting Governments:

That pursuant to paragraph 5 of Article VIII of the Convention, the following arrangements be established to replace the Scheme of Joint International Enforcement of the Fishery Regulations in the Convention Area adopted at the Twentieth Annual Meeting (Ann.Proc.Vol.20,1969-70,p.21-22), for international control outside national fishing limits for the purpose of ensuring the application of the Convention and the measures in force thereunder:

"1. Control shall be carried out by inspectors of the fishery control services of Contracting Governments. The names of the inspectors appointed for that purpose by their respective governments shall be notified to the Commission.

"2. Ships carrying inspectors shall fly a special flag or pennant approved by the Commission to indicate that the inspector is carrying out international inspection duties. The names of the ships so used for the time being, which may be either special inspection vessels or fishing vessels, shall be notified to the Commission.

"3. Each inspector shall carry a document of identity supplied by the authorities of the flag state in a form approved by the Commission and given him on appointment stating that he has authority to act under the arrangements approved by the Commission.

"4. A vessel employed for the time being in fishing for sea fish or in the treatment of sea fish in the Convention Area or in Statistical Area 6 shall stop when given the appropriate signal in the International Code of Signals by a ship carrying an inspector unless fishing, shooting or hauling, in which case it shall stop immediately it has finished hauling. The master of the vessel shall permit the inspector, who may be accompanied by a witness, to board it. The master shall enable the inspector to make such examination of catch, nets or other gear and any relevant documents as the inspector deems necessary to verify the observance of the Commission's regulations in force in relation to the flag state of the vessel concerned and the inspector may ask for any explanations that he deems necessary.

"5. (i) On boarding the vessel an inspector shall produce the document described in paragraph 3 above. Inspections shall be made so that the vessel suffers the minimum interference and inconvenience. An inspector shall limit his inquiries to the ascertainment of the facts in relation to the observance of the Commission's regulations in force in relation to the flag state of the vessel concerned. In making his examination an inspector may ask the master for any assistance he may require. He shall draw up a report of his inspection in a form approved by the Commission. He shall sign the report in the presence of the master of the vessel who shall be entitled to add or have added to the report any observations which he may think suitable and must sign such observations. Copies of the report shall be given to the master of the vessel and to the inspector's Government who shall transmit copies to the appropriate authorities of the flag state of the vessel and to the Commission.

(ii) Where an infringement of a regulation is discovered, the inspector may look at the pages of a bridge log, fishing log or other pertinent documents which contain information relevant to the infringement. The inspector shall enter a notation in the fishing logbook or other relevant document stating the date, location and type of infringement observed. The inspector may make a true copy of any relevant entry in such a document, and shall require the master of the vessel to certify in writing on each page of the copy that it is a true copy of such entry. The inspector shall have full opportunity to document evidence of the infringement with photographs of the relevant fishing vessel, gear, catch, and logs or other documents. The inspector shall give notice of the infringement to authorities of the vessel's flag state, as notified to the Commission, and to any inspection ship of the flag state known to be in the vicinity. The flag state shall take prompt action through its authorized representatives to receive and consider the evidence of the infringement. The flag state shall cooperate fully with the inspector's state to ensure that the evidence of the infringement is prepared and preserved in a form which will facilitate judicial action on the infringement.

"6. Resistance to an inspector or failure to comply with his directions shall be treated by the flag state of the vessel as if the inspector were an inspector of that state.

"7. Inspectors shall carry out their duties under these arrangements in accordance with the rules set out in this regulation but they shall remain under the operational control of their national authorities and shall be responsible to them.

"8. Contracting Governments shall consider and act on reports of foreign inspectors under these arrangements on the same basis as reports of national inspectors. The provisions of this paragraph shall not impose any obligation on a Contracting Government to give the report of a foreign inspector a higher evidential value than it would possess in the inspector's own country. Contracting Governments shall collaborate in order to facilitate judicial or other proceedings arising from a report of an inspector under these arrangements.

"9. (i) Contracting Governments shall inform the Commission by 1 March each year of their provisional plans for participation in these arrangements in the following year and the Commission may make suggestions to Contracting Governments for the coordination of national operations in this field including the number of inspectors and ships carrying inspectors.

(ii) The arrangements set out in this recommendation and the plans for participation shall apply between Contracting Governments unless otherwise agreed between them; and such agreement shall be notified to the Commission:

Provided, however, that implementation of the Scheme shall be suspended between any two Contracting Governments if either of them has notified the Commission to that effect, pending completion of an agreement.

"10. (i) Fishing gear shall be inspected in accordance with the regulations in force for the subarea in which the inspection takes place. The number of undersized meshes and the width of each mesh in the nets examined shall be entered in the inspector's report, together with the average width of the meshes examined.

(ii) Inspectors shall have authority to inspect all fishing gear.

"11. The inspector shall affix an identification mark approved by the Commission, to any part of the fishing gear which appears to have been used in contravention of the Commission's regulations in force in relation to the flag state of the vessel concerned and shall record this fact in his report.

"12. The inspector may photograph the fishing gear in such a way that the identification mark and measurements of the fishing gear are visible, in which case the subjects photographed should be listed in the report and copies of the photographs should be attached to the copy of the report to the flag state.

"13. The inspector shall have authority, subject to any limitations imposed by the Commission, to carry out such examination and measurement of the catch as he deems necessary to establish whether the Commission's regulations are being complied with. He may photograph the catch to document evidence of infringements, in which case copies of the photographs shall be attached to the copy of the report to the flag state. He shall report his findings to the authorities of the flag state of the inspected vessel as soon as possible.

"14. Each Contracting Government, to which an infringement report is sent originating from an inspector of another Contracting Government, shall transmit to the Commission Secretariat and to the reporting inspector's Government a report of the specific judicial or administrative disposition of each infringement, insofar as possible, 30 days prior to the commencement of the first Annual Meeting following the calendar year in which the infringement occurred."







Serial No. 3105  
(B.p.)

Proceedings No. 5

ANNUAL MEETING - JUNE 1973

Report of Meeting of STACREM

Wednesday, 6 June, 0915 hrs

1. The Standing Committee on Regulatory Measures (STACREM) met under the Chairmanship of Mr J. Graham (UK). The Executive Secretary acted as Rapporteur. Representatives from all Member Countries and Observers were present.
2. Under Plenary Agenda Item 16, Principles and problems of limiting fishing as a conservation measure, the Chairman drew attention to the Report of a Special Meeting of Experts on Effort Limitation, Woods Hole, Massachusetts, 26-30 March 1973 (Appendix I; also Summ.Doc. 73/5). The Report was requested by STACREM at the January 1973 Special Meeting of the Commission (1973 Spec.Comm.Mtg.Proc.No. 4 and 6; also Summ.Doc. 73/1). It contained further and detailed studies on the establishment of effort limitation schemes and provided advice on ten questions (this Proc. 5, Appendix I, Annex 2) posed by STACREM to the Experts regarding details of effort regulation. The Chairman noted that the March 1973 report of the Group of Experts contained nine recommendations, one of which was to convene a Second Meeting of the Experts on Effort Limitation in Copenhagen through 30-31 May and 5 June 1973 (Appendix II; also Summ.Doc. 73/37).
3. The Chairman of the Group of Experts, Dr R.L. Edwards (USA), reviewed the work of its first meeting held in March 1973 which, in order to respond to the ten STACREM questions and an additional four questions posed by Captain J.C.E. Cardoso (Portugal), included critical examination of the problems related to by-catch, to fishing effort and to methods of control of catch and effort. The Group of Experts had looked at two major options for management - continuing the existing regulatory regime of catch quotas on major species or introducing regulations to control the total fishing mortality as proposed in a memorandum by the US Commissioners (Comm.Doc. 73/3) to the Commission's Special January 1973 Meeting. Advantages and disadvantages related to three proposed management schemes, i.e., single or group species catch quotas, total catch quotas with some or all species quotas or total effort limitation with some species quotas, were reviewed.
4. The Chairman of the Group of Experts, in reviewing the work of its second meeting held at Copenhagen (Appendix II), drew attention to the additional studies, relevant to the problems, which had been submitted as documentation to the Commission's 1973 Annual Meeting and the conclusion derived from them that there is not as yet adequate information to permit full evaluation of the proposed effort limitation scheme. He also noted that the studies do indicate for Subarea 5 and Statistical Area 6 that the setting of individual species catch quotas based on independent species assessments is not satisfactory in terms of the current ICNAF management regime in achieving the objectives of maximum sustained yield in this mixed species fishery. The Group of Experts had agreed that a major problem was the solution of the by-catch problem and had recommended that a Working Group be set up to study all aspects of this problem.
5. Discussion of the two Reports from the Group of Experts opened with the US delegate drawing attention to the management option of a total quota for all species as an interesting concept. The existence of a by-catch of one regulated species in a directed fishery for a second regulated species raises difficulties in achieving simultaneously the allowable catch of both. These difficulties cannot be overcome by employing individual species quotas alone in a way which will ensure that the quota for each species is achieved, but it may be alleviated by a total quota which may be less than the sum of individual quotas depending on how many species are under quota. The Canadian delegate pointed to the conclusion in the Reports that individual species quotas were not in themselves adequate because of the by-catch problem and that some other action was absolutely necessary. The Portuguese delegate drew attention to two major problems (1) the by-catch problem, and (2) the level of total fishing (biomass). There was a great need to understand the by-catch problem; also that it was not just the problem of eliminating it but of eliminating the errors in the estimation of by-catch. This had resulted in the recommendation to set up a Working Group.
6. A number of delegates felt that a total catch quota superimposed on species catch quotas was a useful concept for interim solution of the Subarea 5 and Statistical Area 6 management problem pending detailed study and reporting on the by-catch problem.

7. The US delegate reiterated that a permanent solution must include effort limitation, but expressed a willingness to explore other possible interim measures such as those presented in Comm.Doc. 73/18, "Note by US Commissioners on ICNAF conservation actions", in an effort to stop the depletion of the stocks. He pointed out that the current catch quota system had failed. Many catch quotas have been exceeded because of inherent and practical deficiencies of the system. Needed were (1) improvement in Member Countries' commitments to collect adequate statistics in mixed fisheries, (2) control of the excessive rate of exploitation by more effective selective fishing techniques and, (3) improved enforcement procedures. The UK delegate pointed out that the US proposal was a package of inter-related proposals, and suggested discussing it as such.

8. The Canadian delegate expressed support for the US proposal for effort limitation as set out in Comm. Doc. 73/3, "Memorandum by the US Commissioners on the regulation of fishing effort", but suggested it might require some modification. However, it was generally felt that the real question to be answered was whether STACREM could recommend effort limitation now, or whether some other method or combination of methods should be employed pending further study of the problems relating to effort limitation. A large majority felt that effort limitation was not feasible and that the problem of mixed fisheries must be dealt with in other ways. The Canadian delegate felt that STACREM should consider and support an interim proper alternative measure and should express positive views regarding a total catch quota along the lines discussed in the Report of the Second Meeting of Experts on Effort Limitation (Appendix II).

9. Following further discussion, there was general consensus that STACREM should invite the Panels to study carefully the management concept of a total catch quota superimposed on individual species quotas.

10. At the Chairman's suggestion, the delegates considered the ten US proposals regarding more effective management, as summarized in Addendum I (Appendix III) to Comm.Doc. 73/18. It was noted that paragraph 1 was a general declaration of what the Commission's attitude should be; paragraph 2 referred to the general problem of improving statistics and is included in a recommendation by STACRES regarding the establishment of an adequate ICNAF data base; paragraph 3 was discussed above; paragraphs 4 and 5 have been embodied in a recommendation from the Group of Experts for a Working Group (Appendix II). Paragraph 5 is for Panel 5 consideration (Proc.11); paragraph 6 like paragraph 2 has to do with the need for a good data base, and also should be considered under the logbook item in STACTIC (Proc.4); paragraphs 7-10 should be referred to STACTIC (Proc.4).

11. The feeling of the large majority was that the stage had not yet been reached where the Commission could be recommended to employ effort limitation as a regulatory measure, but that the problem should be further examined. On the other hand, two delegations believed that effort limits should be initiated immediately. STACREM

recommended

that the Commission accept the Reports of the Group of Experts on Effort Limitation, and

that the Group continue its study of effort limitation.

Delegates agreed, however, that, in the meantime, some answer must be found to the problems described by the US Commissioners, and STACREM

recommended

that the Panels concerned should consider possible solutions, including a total catch quota superimposed on individual species quotas, and the ten US proposals for more effective management (Appendix III).

12. The meeting of STACREM adjourned at 1720 hrs.

Serial No. 2954  
(B.w.)

Proceedings No. 5  
Appendix I  
(also ICNAF Summ.Doc. 73/5)

ANNUAL MEETING - JUNE 1973

Report of Special ICNAF Meeting of Experts on Effort Limitation  
Woods Hole, Massachusetts, 26-30 March 1973

1. The Special Meeting of Experts on Effort Limitation was established by the Commission on recommendation of STACREM to consider, specifically, ten questions posed by STACREM regarding details of effort limitation and, generally, matters related to the establishment of effort limitation schemes (1973 Spec. Comm.Mtg.Proc.4, App.III and Proc.6).
2. The Special Meeting was held at the Marine Biological Laboratory, Woods Hole, Massachusetts by invitation of the United States Government from 26 to 30 March 1973.
3. The Executive Secretary opened the meeting and, on behalf of the Commission, welcomed the fishery administrators, economists, scientists and technologists from 12 of the 16 Member Countries of the Commission and observers from the German Democratic Republic and FAO (Annex 1).

PROGRAM OF WORK

4. Dr R.L. Edwards (USA) was elected Chairman. The Executive Secretary was appointed Rapporteur. The Chairman welcomed the participants on behalf of the National Marine Fisheries Service and introduced a provisional agenda which included a program of work designed to provide information on which to base answers to the ten questions posed by STACREM (Annex 2). It was further proposed that working groups might be set up to investigate the two major problems: by-catch and control of effort regulation.

Following considerable discussion, the Group agreed to relate the ten STACREM questions to the agenda items, to define the terms contained in STACREM Question 2 as the first item under the program of work and to start through the modified agenda (Annex 3) until it was felt necessary to set up working groups.

DEFINITION OF TERMS

5. STACREM Question 2 reads:

*Please define exactly the following terms:*

- (a) *fishing mortality*
- (b) *fishing intensity*
- (c) *fishing power*
- (d) *fishing effort*

*and specify what are the variables that should be discussed for effort control.*

In addition to the four terms listed in STACREM Question 2 for definitions, the Working Group considered it necessary to clarify the term "by-catch" and indicate its meaning in the context of the data available. Somewhat more detailed notes on terms used in fishery assessments are given in Annexes 4 and 5.

- (a) Fishing effort. For practical purposes, fishing effort refers to the amount of fishing by some standardized fishing unit, e.g. days fished, number of hauls, volume of water filtered, etc.
- (b) Fishing intensity, as strictly understood, is proportional to the fishing mortality it generates. It is measured by the fishing effort per unit area in a unit of time.
- (c) Fishing mortality is a function of fishing effort. The function is generally linear such that the two are related by a constant, the catchability coefficient (q). In a particular fishery, where the unit of effort may vary, the total fishing mortality (F) will be composed of the effect

of the sum of the effort of each vessel (f) multiplied by its catchability characteristic (q),

$$F = q_1 f_1 + q_2 f_2 + q_3 f_3 + \dots$$

The catchability coefficient of each vessel is the proportion of the stock removed per unit fishing time of that vessel,

$$q = (\text{catch/stock}) \times \text{time}$$

Where the fishing activity (effort) of different vessels is referred to a common unit of time, e.g. hours fishing, fishing power is indicated by the quantity of a standard stock removed per unit fishing time.

- (d) Fishing power. For biological and technical reasons, fishing power varies as a function of the vessel characteristics, its gear, its crew, as well as the stock being fished.

In order to approach an estimate of fishing mortality in terms of a single unit of fishing effort, variations of fishing power between vessels/fleets must be taken into account. If one unit of effort and fishing power is selected as the standard, then

$$\text{Fishing Mortality} = q_1 \times (\text{Fishing Effort})_1 +$$

$$q_2 \left[ \frac{(\text{Fishing Power})_2}{(\text{Fishing Power})_1} \right] \times (\text{Fishing Effort})_2 + \text{etc.}$$

The fishing power of each vessel will be specific to each species stock but the relative fishing power of particular vessels remain stable over broad categories of resources, e.g. pelagic/demersal or roundfish/flatfish.

Where the fishing power is measured on the same stock size (albeit averaged over a year) and effort is measured in the same unit, then

$$\frac{q_2}{q_1} \times \frac{(\text{Fishing Power})_2}{(\text{Fishing Power})_1} = \frac{(\text{Catch per Unit Effort})_2}{(\text{Catch per Unit Effort})_1}$$

and the summation becomes

$$F = q_1 f_1 + q_1 f_2 \left( \frac{C_{pue2}}{C_{pue1}} \right) + q_1 f_3 \left( \frac{C_{pue3}}{C_{pue1}} \right) + \dots$$

Since the catch per unit effort of each fleet is by definition c/f of that fleet, the above expression simplifies to

$$F = q_1 f_1 \left( 1 + \frac{C_2}{C_1} + \frac{C_3}{C_1} + \dots + \frac{C_n}{C_1} \right)$$

- (e) By-catch may be defined as the quantity of one or more species caught at the time when fishing is directed primarily toward other specific species. Technically, the by-catch includes not only the quantities of these minor species reported as nominal catches in the statistics but also discards of all species.

Because such data were not available in the statistics, the term "by-catch" as used by the Assessments Subcommittee at the January 1973 Meeting in Rome is not the same as that defined above; rather, the term "subsidiary catch" might be more appropriate. In this context, the Subcommittee examined the monthly catch and effort statistics as reported in Table 4 of the Statistical Bulletin. In cases where no "main species" was indicated or it was shown as "mixed", the effort was allocated to species according to catch on a monthly basis. In nearly all cases, the quantity of the main species designated in this manner was considerably greater than 50% of the total nominal catch of all species. Thus, the monthly "subsidiary" catches in most cases totalled considerably less than 50% of the total for all species.

#### MANAGEMENT OPTIONS

6. The Group discussed the problem of defining the management options and the associated advantages and disadvantages. Two major options are apparent - continuing with the existing regulatory regime of quotas on major species or introducing regulation to control the total fishing mortality. The latter option arises from the US proposal in January 1973 (Comm.Doc. 73/3). The Assessments Subcommittee Report to the

Special Commission Meeting, January 1973 (Summ.Doc. 73/1) indicated that in 1971 the total catch was probably beyond the maximum sustainable level, and the fishing mortality (as measured by an effort index) probably greater than that corresponding to the MSY. Thus, in order to achieve the objective of maximizing yields from the total biomass, it appears necessary to control fishing mortality at a level lower than that obtained in 1971.

Under the second of the major options - control of total mortality - there are two further options: catch or effort. Discussion by the Group centered mainly on aspects of the direct control of effort because the US proposal generated a STACREM list of ten questions for the Group to answer. However, it was felt that an evaluation of the total effort regulation must be addressed by a relative comparison of catch versus effort control. For example, a reduction in catch must, except under certain circumstances, result in a reduction in fishing effort, so that the two options would have immediate common effects. In the long run, adjustment and monitoring must be considered, and might be somewhat different than in the initial stage. Within either option, the benefits of the regulation of total fishing mortality can be maximized by control of fishing mortality on individual species. This, of course, implies a further set of options that require evaluation.

The Group attempted a first approach to the problem by discussing some of the advantages and disadvantages of management schemes (Table 1). The table does not purport to represent a complete listing, nor, perhaps, is it the best format. However, the Group felt that its inclusion in the report, even though it does not represent an agreed tabulation, would stimulate further comments which would be beneficial to further development of the evaluation of management options.

Table 1. Advantages and disadvantages related to proposed management schemes.

Option I Species (single or group) Catch Quotas + All		Option II Total Catch Quota (a) with some species quotas (b) with all species quotas		Option III Total Effort Limitation with some species quotas	
<u>Advantages</u>	<u>Disadvantages</u>	<u>Advantages</u>	<u>Disadvantages</u>	<u>Advantages</u>	<u>Disadvantages</u>
1. Most precise estimate of MSY in theory	1. Difficult to do (a) Do not know the theory (b) Cannot get data	1. Alleviates by-catch problem	1. Estimating recruitment (stock changes)	1. Alleviates by-catch problem	1. Intercalibration of fishing units
2. Readily understood, hence more acceptable	2. Failure + leads to over-fishing	2. Less precision in assessment required	2. Discard - either tend to increase or require reporting (difficult)	2. Less precision in assessment required	2. Variability in catchability in time (species)
3. Flexibility to adjust quotas	3. Necessity to predict recruitment and rate of by-catch	3. Minimizes probability of over-fishing		3. Minimizes probability of over-fishing	3. New concept (no precedents)
4. National allocation - more readily acceptable	4. Does not prevent excess capitalization per se + difficulty in regulating catch at proper level	4. National allocation easier (historic catch base)		4. Need not be adjusted for variability in stock density and recruitment	4. Difficult in establishing historical basis for national allocation (lack of data)
5. More options for fleet deployment	5. Difficult to set and control appropriate quotas because of by-catch				

The following comments are intended only to clarify the points listed in Table 1.

Option I refers to the case where individual species or species-group assessments are made and catch quotas set. As the number of species covered increases, this scheme approaches Option II(b). However, it is assumed under Option I that the sum of the species quotas will equal the total quota. The advantages listed are (1) that MSY estimates are theoretically more precise because of a knowledge of the individual components, (2) that estimates of yield on a species basis are easiest to grasp conceptually, and thus may be more acceptable, (3) that maximization of yield of a given species is enhanced by the flexibility to adjust quotas based on current conditions, (4) that national allocation may be more acceptable as it could be based on historic species catches, (5) that fleet operators are free to deploy their fleets in any manner in order to catch species quotas, without concern for other regulations. The disadvantages listed are (1) that some assessments are difficult because of the lack of a theoretical basis to adjust for ecological relationships in rapidly changing conditions and because of the lack of available data for many species, (2) that inadequate assessments due to the problems in (1) may lead to overfishing, (3) that the estimation of recruitment and by-catch that is necessary in order to set quotas is difficult because of a lack of developed methods for mixed fisheries and, even when methods are available because of logistics, and (4) that excess effort is not necessarily diverted out of the area, and is difficult to control or monitor.

Option II is the case of a total catch quota with either some or all species under catch quotas. However, since by-catch would not be adjusted for in a species quota, the total quota may be less than the sum of individual quotas depending, of course, on how many species were under quota. The first three advantages of this option are the same as those of the total effort limitation scheme (Option III). They are (1) that the by-catch problem may be attenuated by reducing the overall removals; this would allow the catch of a species to be made in any component of the fishery, provided the sum of the catches does not exceed the quota for that species. Thus, the reduction in species quotas to adjust for by-catch as in Option I would not be necessary and the reduction could be allowed to float to whatever component a country desired, (2) that, with an overall upper limit and no direct adjustment for by-catch, the assessments would require less precision than under Option I, (3) that the probability of overfishing would be minimized by preventing large increases in fishing mortality, particularly on species not under quota or accurately assessed, (4) that overall catch quotas are easier to allocate nationally because there is historical data base of catches upon which to base the allocation. Disadvantages of total quota are (1) that the estimation of recruitment is difficult (see (3) of Option I) and, (2) that precise information on discards is essential to regulating the desired fishing mortality.

Option III refers to the establishment of a level of fishing effort corresponding to the MSY. This Option has the same advantages (1)-(3) of Option II. A further advantage is (4) that yearly adjustments of catch for variability in stock density and recruitment are not required, because, with effort constant, catch should fluctuate with abundance of the stock in the correct proportions. The disadvantages of total effort limitation listed are (1) that the correct intercalibration of fishing units and adjustments for changes are difficult, (2) that variance in catchability with time and shifts between species from year to year may mitigate the effects of effort control because vessels could concentrate on a different mix of species in a different time period, resulting in increased fishing mortality for the same amount of regulated effort, (3) that total effort control, as a new concept, may be difficult to fully understand or accept, (4) that national allocation may be difficult because of the lack of national historical data.

The Group urges countries to investigate the relative importance of these and any other factors that further thought elucidates (Recommendation 1).

#### STACREM QUESTIONS

##### 7. STACREM Question 1 reads

*What are the conversion factors needed to obtain "days on ground" from "days fished" for the various Member Countries? Do countries collect the necessary information to answer this question and, if not, how long will it take to collect the necessary data?*

Prior to 1970 some Member Countries submitted "days on ground" as a regular part of their statistical submissions to ICNAF. These data together with "days fished" were published in Tables 4 and 5 of the Statistical Bulletin. The collection and publication of "days on ground" data were discontinued on the recommendation of the Sampling and Statistics Subcommittee at the 1971 Annual Meeting, mainly because nearly all countries provided more refined effort measures, e.g. days fished and hours fished. While the "days on ground" data for 1970 were actually collected, they were not published in Statistical Bulletin Vol. 20 for the year 1970. These data were not a requirement for 1971 and 1972 data submissions from Member Countries and consequently, are not available at the ICNAF Secretariat. Therefore, the conversion factors based on the ratio of "days on ground" to "days fished" for the years 1970 and 1971 cannot be readily calculated at this time.

Information obtained from representatives of countries present at this meeting indicated that most of

the Member Countries could provide data on "days on ground" as well as "days fished" from 1973 onwards and some countries could supply the data to fill the gap mentioned above. The following is the result of the survey when representatives were asked if they collected the necessary information (i.e., "days on ground" and "days fished") and when the information would be available:

<u>Member Countries</u>	<u>Remarks</u>
Canada	Data not now available but could be in about one year
Denmark (G)	For OT, data can be supplied for 1972 and onwards; but data for the small-boat fisheries are difficult to obtain and unlikely in the near future
Denmark (F)	It is possible that some data might be available
France (M)	Data are available for 1972 and can be provided for future years
Germany (FR)	Data can be supplied for all years since 1969 if requested
Japan	Such data are collected by the fishing companies but its preparation would require much time
Norway	Data are available for OT, and will be available for LL from 1973
Poland	Data are available from 1971
Portugal	Data will be available from 1973
Spain	Data are available and can be supplied for all years from 1966
USSR	Submitted such data in previous years and can do so again if requested
UK	From 1973 onwards
USA	Basic data are collected and could be supplied if requested
Bulgaria ) Iceland ) Italy ) Romania )	No representative at the meeting
German Democratic Republic	Data are available for 1969 and 1970 and can be provided from 1971 onwards

During the course of the discussion the representatives of some Member Countries indicated that the nature of their fisheries were such that conversion factors obtained from the ratio of "days on ground" to "days fished" would be highly variable with time, area and tonnage class, etc. In this connection, the Group urged Member Countries to analyze their data on "days on ground" and "days fished" and provide estimates of the variance associated with conversion factors obtained from these two effort measures (Recommendation 2).

8. STACREM Question 2 (for answer, see Section 5)

9. STACREM Question 3 reads

*The Commission is attempting to control the fishing mortality on the resources and fishing mortality is an abstract quantity which cannot be regulated directly. The Commission may be able to control fishing mortality by regulation of fishing intensity or fishing effort. What is the accuracy with which these quantities can be measured and what is the error involved in using them as a predictor of future fishing mortality?*

The statistical errors involved in monitoring a regulatory scheme can only be outlined in general terms at present. The main advantage of catch quotas is that accuracy is independent of variations in the catchability coefficient. But the setting of catch quotas is sensitive to fluctuations in recruitment. Fishing effort quotas are not sensitive to fluctuations in recruitment, but they are sensitive to variations in catchability.

A) Errors involved in setting a catch quota regulation

As currently envisaged catch quotas will be revised annually. Then it is necessary to estimate

the stock at the beginning of the year and the amount of catch related to a specified level of mortality. The sources of error are

- i) in the size of the exploited stock (errors in data and technique)
- ii) in the size of recruitment to the exploited stock (errors in data and technique)
- iii) in the fishing mortality achieved when the catch defined with respect to (i) and (ii) is expressed as a proportion of the new stock.

B) Errors involved in setting a fishing effort regulation

If the regulation were set up for an indefinite period, the error would reside in the catchability coefficient caused by

- i) the intercalibration of these units between countries
- ii) the scope for changes in the pattern of fishing (seasons, species) between countries and change in vessel efficiency, etc.

These two components are described further below.

- iii) The choice of effort unit may have a further effect if the choice of unit in a multi-species fishery differs from the unit which would be chosen for each species in a single species fisheries. Also, at the beginning of regulation and if the effort regulation needed to be adjusted, i.e., with reference to the existing state of the fisheries, the A(i) errors will occur.

Very few data are available to quantify all of these errors for single or multiple species fisheries (because of inadequate time series) but some progress has been made with respect to the errors involved in the intercalibration of effort units and the scope for changes in the catchability coefficient with time (B(i) and B(ii)).

For purposes of answering the question, fishing intensity and fishing effort are assumed to be related by a constant area factor and the term "accuracy" was considered to imply two different concepts: variance and bias. The former expresses the uncertainty in a given estimate of the fishing effort, using a specific estimator. For example, if

$$F = q_i \left[ \sum_{i=1}^n \frac{cpue_i}{cpue_1} \cdot f_i \right]$$

where i indicates a fishing unit, then

$$\text{Var}(F) = q_i^2 \sum_{i=1}^n \left[ f_i^2 \text{Var} \left( \frac{cpue_i}{cpue_1} \right) + \left( \frac{cpue_i}{cpue_1} \right)^2 (\text{Var}(f_i)) + 2 \frac{cpue_i}{cpue_1} f_i \text{Cov} \left( \frac{cpue_i}{cpue_1}, f_i \right) \right]$$

Thus, leaving aside the accuracy with which a particular reduction in fishing mortality can be specified, one part of the question dealing with determining the probability of achieving the desired reduction, at least initially, may be answered by evaluating the overall variance. It is suggested that the variance of the catchability coefficients for 1971 be estimated to provide some information on this aspect.

The bias term becomes important when considering the control of F in some future year, using the catchability coefficients as estimated, say, in 1971. In general, when Bias > 1.25 √Var(f), its effect on errors of estimate becomes important.

Many factors may cause bias, or changes in q over time. These include

- vessel (type, age, equipment, crew, captain)
- density of fish (saturation)
- species of fish (demersal, pelagic, bathypelagic)
- area (geographic)
- time (season, between different gear)
- temperature
- learning (introduction of new gear, echo sounders, etc.)

Some of these may be asymptotic in effect, and thus, after a period of adjustment may not be a significant factor. Improvement in learning how to cope with variability in catch caused by variations in season, area and other factors would tend to be asymptotic. The change with time in percent of total catch of the principal species sought may provide a measure of the ability to reduce by-catch and may also illustrate



the asymptotic nature of learning. Certainly, some factors are more significant than others, and some may produce negative, as well as positive, bias.

The Group suggested that the relative Cpue be examined for 1970 and 1971 to determine, if possible, the effects of vessel class within and between gear and between years, and relate this to pelagic and demersal fish. The seasonal and area components of variation may also be examined by (1) plots of catch against effort by gear-tonnage class, month, species and country to illustrate the internal consistency (see Figs. 1 and 2 for examples), (2) the technique of mean ratio versus ratio of means to examine the degree to which fishing effort can be directed to maximize catch rate (see Fig. 3 for example) and seasonal variations in catch per unit effort (Figs. 4 and 5). Figure 4 includes all finfish, but Fig. 5 excludes the catches of herring, haddock, and flounders which would be under quotas which restrict the opportunities to shift effort. The Group suggested that each country analyze its data with regard to the problem of variance and bias in order to provide some inference on the question of changes in fishing performance (Recommendation 3).

10. STACREM Question 4 reads

*If catch quotas are set for several species which imply different percentage reductions in fishing mortality, what problems does this raise in connection with a fixed reduction in fishing effort, especially for countries only interested in some species?*

Summaries of catch by fishery (main species sought) and species for each country for 1971 are given in Table 2. It may be observed that most countries harvest a mix of different species, although preferences are evident. Unless the finfish biomass increases, an overall reduction in effort implies a reduction in catch. The problem becomes troublesome when a change in fishing pattern is desired. The table indicates where the problems may be most significant. A problem may arise for countries with a strong species preference which has led to a concentration of effort in certain areas and seasons. An overall reduction in fishing effort could result in the inability to achieve a species quota. Thus, fishing mortality could be reduced unevenly for different species.

Notes on the regulation of total fishing effort and the problem of by-catches (prepared by Captain J.C.E. Cardoso, Portugal) are found at Annex 6. These were given preliminary consideration by the Group.

Table 2. Nominal catches ('000 tons) in Subareas 5 and 6 by fishery (species sought or main species) and species caught for each country in 1971.

Country	Species sought	Species caught										Total
		Cod	Had	Red	Hal	S H	Flo	O G	Her	O P	O F	
Canada	Cod	2.0	0.7	*	*	0.0	0.1	0.4	0.0	0.0	0.0	3.2
	Had	0.4	0.7	0.1	*	0.0	*	0.1	0.0	0.0	0.0	1.4
	Red	*	*	0.1	*	0.0	*	*	0.0	0.0	0.0	0.2
	O G	0.7	0.3	*	*	0.0	*	2.4	0.0	0.0	0.0	3.5
	Her	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28.4	0.0	0.0	28.4
	O F	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	1.1
	Total	3.1	1.7	0.3	*	0.0	0.2	2.9	28.4	1.1	0.0	37.7
Ger(FR)	Her	*	*	0.0	0.0	0.0	0.0	0.6	56.5	1.2	*	58.3
	O P	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0	1.6
	Total	*	*	0.0	0.0	0.0	0.0	0.6	56.5	2.8	*	59.9
Japan	Her	*	*	*	0.0	*	*	*	2.4	*	*	2.5
	O P	0.0	0.0	0.0	0.0	*	*	0.3	*	3.6	*	4.0
	O F	*	0.0	*	0.0	*	0.0	1.2	*	0.1	4.9	6.2
	Total	*	*	*	0.0	*	*	1.5	2.4	3.7	4.9	12.7
Poland	Her	0.1	*	*	0.0	*	0.0	0.1	75.4	16.8	8.1	100.5
	O P	0.1	0.0	0.1	0.0	0.1	*	0.2	12.6	95.4	9.9	118.4
	O F	0.0	0.0	0.0	0.0	0.0	0.0	*	0.3	0.2	0.4	0.9
	Total	0.3	*	0.1	0.0	0.1	*	0.3	88.3	112.3	18.4	219.9
Romania	S H	0.0	0.0	0.0	0.0	*	*	0.0	0.0	0.0	0.0	*
	Her	0.0	0.2	0.0	0.0	0.0	0.2	*	0.5	0.3	0.5	1.7
	O P	*	0.1	0.0	0.0	0.4	0.3	*	0.4	4.2	1.5	7.0
	Total	*	0.2	0.0	0.0	0.4	0.5	*	0.9	4.5	2.1	8.7

Table 2. Continued

Country	Species sought	Species caught										Total
		Cod	Had	Red	Hal	S H	Flo	O G	Her	O P	O F	
Spain	Cod	7.6	1.3	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	9.1
	Total	7.6	1.3	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	9.1
USSR	S H	0.7	0.3	0.2	0.0	59.7	2.3	12.5	10.6	13.0	10.3	109.6
	O G	*	*	0.0	0.0	5.0	0.8	14.2	0.7	2.0	2.5	25.4
	Her	0.3	*	0.6	0.0	6.3	0.3	1.9	52.7	8.0	3.0	73.2
	O P	0.1	*	2.6	0.0	9.3	3.2	6.9	15.3	104.4	12.2	154.0
	O F	*	*	0.0	0.0	8.2	1.2	9.7	2.0	3.0	13.4	37.6
	Total	1.3	0.4	3.4	0.0	88.6	7.9	45.1	81.3	130.5	41.4	399.8
USA	Cod	5.4	0.7	0.2	0.1	0.3	0.8	1.4	*	*	0.1	9.0
	Had	5.4	3.6	0.5	*	*	1.8	2.7	0.0	*	0.0	14.1
	Red	0.9	0.3	11.7	*	0.2	0.4	1.0	0.1	*	*	14.5
	S H	1.1	0.5	0.6	*	7.6	2.3	1.7	2.4	*	0.1	16.2
	Flo	7.7	2.9	2.0	*	1.7	32.8	5.8	0.3	0.5	0.4	54.0
	O G	1.0	0.2	0.1	0.0	0.9	2.3	6.1	0.3	0.1	0.5	11.5
	Her	0.4	0.1	0.5	0.0	2.1	0.6	0.8	27.2	0.2	*	31.9
	O P	*	0.0	0.0	0.0	*	*	*	0.1	2.1	*	2.2
	O F	0.1	*	*	0.0	*	0.1	*	0.0	0.1	3.5	3.7
	Total	21.9	8.3	15.7	0.1	12.9	41.0	19.4	30.3	3.1	4.5	157.2
GDR	O G	0.0	0.0	*	0.0	0.0	0.0	4.8	2.3	0.1	*	7.1
	Her	0.0	0.0	0.0	0.0	0.0	0.0	1.3	15.0	2.1	1.0	19.4
	O P	0.0	0.0	0.0	0.0	0.0	0.0	1.0	3.3	66.9	7.3	78.5
	O F	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	1.6	1.8
Total	0.0	0.0	*	0.0	0.0	0.0	7.1	20.7	69.2	9.9	106.9	
Bulgaria	S H	*	*	0.0	0.0	0.3	*	*	0.2	0.2	0.1	0.8
	O G	0.0	0.0	0.0	0.0	0.6	*	1.0	0.1	0.8	0.8	3.3
	Her	*	0.0	*	0.0	0.2	*	0.2	3.5	0.2	0.6	4.7
	O P	*	0.0	*	0.0	0.7	0.1	1.4	0.7	27.3	4.7	35.0
	O F	0.0	0.0	0.0	0.0	0.2	0.1	0.1	*	0.1	0.4	1.0
Total	*	*	*	0.0	2.0	0.3	2.7	4.6	28.5	6.7	44.8	
Cuba	O F	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.1	0.7	1.1
	Total	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.1	0.7	1.1
All Countries	Cod	15.0	2.7	0.3	0.1	0.3	0.9	2.0	*	*	*	21.4
	Had	5.8	4.3	0.6	*	*	1.8	2.8	0.0	*	0.0	15.5
	Red	0.9	0.3	11.8	*	0.2	0.4	1.0	0.1	*	*	14.7
	S H	1.8	0.8	0.8	*	67.6	4.6	14.1	13.2	13.2	10.5	126.6
	Flo	7.7	2.9	2.0	*	1.7	32.8	5.8	0.3	0.5	0.4	54.0
	O G	1.7	0.5	0.2	*	6.6	3.2	28.5	3.3	3.0	3.8	50.7
	Her	0.9	0.2	1.2	0.0	8.6	1.1	5.0	261.6	28.9	13.3	320.7
	O P	0.3	0.1	2.7	0.0	10.6	3.7	9.8	32.4	305.6	35.7	400.8
	O F	0.1	*	*	0.0	8.8	1.4	11.0	2.5	4.9	25.0	53.5
	Total	34.1	12.0	19.5	0.1	104.4	49.9	79.9	313.3	355.9	88.7	1057.9

\* Less than 0.1

11. STACREM Question 5 reads

*What is the probable increase of fishing mortality in other Subareas, if a regulation of fishing effort is introduced in Subarea 5 and Statistical Area 6?*

Assuming that fishing mortality is proportional to fishing effort, an indication of the magnitude of the surplus effort available for diversion to other areas is shown in Table 3 based on 1971 statistics of nominal catch and days fished for trawlers by ICNAF Subarea and tonnage class (lines 1-7). Line 8 gives the total nominal catches of finfish (all species less shellfish) in Subareas 1 to 4; the total

Table 3. Effort, catch and catch-per-unit-effort by subareas and tonnage classes for trawlers, standardized effort relative to OT 7 vessels, and surplus effort assuming a 25% decrease in effort in Subareas 5 and 6.

Line No.	Gear and tonnage class	Subarea 1			Subarea 2			Subarea 3			Subarea 4			Subareas 5 + 6		
		Days fished	Catch (tons)	C/f (tons)	Days fished	Catch (tons)	C/f (tons)	Days fished	Catch (tons)	C/f (tons)	Days fished	Catch (tons)	C/f (tons)	Days fished	Catch (tons)	C/f (tons)
1	OT 7	818	24,878	28.2	6816	184,262	27.0	8351	211,738	25.4	6963	253,317	36.4	13135	472,845	36.0
2	OT 6	1369	28,489	20.8	2128	43,887	20.6	6945	98,794	14.2	1966	50,862	25.9	2838	87,787	30.9
3	OT 5	262	3,557	13.6	67	1,447	21.6	8005	87,613	10.9	3838	44,159	11.5	12735	104,786	8.2
4	OT 4	193	1,664	8.6	-	-	-	10411	65,469	6.3	13685	118,586	8.7	14837	97,352	6.6
5	OT 3	-	-	-	-	-	-	282	566	2.0	11050	43,376	3.9	13056	71,697	5.5
6	OT 2	-	-	-	-	-	-	21	30	-	8812	20,825	2.4	6572	35,384	5.4
7	PT 4	1345	22,737	16.9	20	477	23.9	9689	155,507	16.0	2668	40,114	15.0	499	9,139	18.3
8	Total Catch <sup>1</sup> (all gears)	140,909			246,184			950,475			1,016,059			1,110,573		
9	Std. effort (days fished)	5000			9120			37420			27915			30850		
10	Surplus effort relative to SA 1-4 (9.7%)	+485			+885			+3635			+2711			+7715		

<sup>1</sup> Excludes shellfish in all subareas and an allowance of 250,000 tons for menhaden and large pelagics in SA 5 and 6.

catch given for Subarea 5 and Statistical Area 6 is the total catch of finfish less an allowance of 250,000 tons for menhaden and large pelagics which are taken in specialized fisheries. The values of standardized fishing effort in days fished (line 9) were obtained by taking OT 7 as the standard fleet and dividing the catches (line 8) by the C/f (catch per day fished) values for OT 7 vessels (line 1). Assuming that the fishing activity in Subarea 5 and Statistical Area 6 is reduced by 25%, a value of 7,715 days fished (standard) represents the surplus effort available for diversion elsewhere. Many options for the diversion of this amount of effort are available: it might be diverted from the ICNAF Area completely, or all or part of it might be diverted in varying proportions to ICNAF Subareas 1-4. If all of the excess effort were diverted to Subareas 1-4, the total effort there would increase by approximately 10%. The values (line 9) for Subareas 1-4 (just one of an infinite number of options) are the amounts by which the standardized effort in these Subareas would increase, if the excess effort were distributed among the Subareas in the same proportions as the values given in line 9.

Calculations, taking (i) OT 6 as the standard, (ii) OT 6 + 7 as the standard, and (iii) OT 5 + 6 + 7 as the standard, gave percentage values ranging from 8.5% to 11.0%, compared with 9.7% for OT 7 as the standard.

12. STACREM Question 6 reads

*If you are controlling your vessels at a level of fishing intensity lower than the one you are allowed, how can that be judged by the criterion of days on ground?*

The term "fishing intensity", as used in this question, implies a somewhat different sense than that which the Group defined in its reply to STACREM Question 2. It is thought that the STACREM Question 6 raises the problem of the option which should be left to the national authorities of regulating the way in which the fishing effort allocated to them should be applied or distributed as to time and place. Consequently, it involves the definition of days on ground and it is, therefore, to be studied when considering STACREM Question 1.

In order to regulate fishing effort the following difficulty will then have to be faced: when using fishing effort quotas, considerable difficulty may be found in determining the actual days on ground because control might be based on the number of days the vessel stays in the fishing area, when, in some cases, the number of days at the fishing grounds in relation to fishing mortality may be highly variable. Furthermore, directed changes in the relation between days on ground and amount of fishing could mitigate the ability to effect desired changes in fishing mortality through regulation of days on grounds.

The Group suggested that the Coordinating Working Party on Atlantic Fishery Statistics be requested to provide a more precise definition of days on ground than that currently in use (Recommendation 4).

13. STACREM Question 8 reads

*What are the opportunities for countries to increase, in response to effort control, the fishing mortality caused by one unit of fishing effort?*

- a) By changing the time distribution of its effort on a given species (and this may mean greater effort on the spawning stock).
- b) By changing the distribution of its effort between species within a given period.
- c) Employing only the best skippers and crews and the most efficient vessels within each class.
- d) Using most productive techniques and technology that is permitted without, in the short term at least, incurring a change of class.
- e) Changing working conditions and increasing spares and, perhaps, crew carried in order to increase hours per day spent fishing.
- f) Providing improved knowledge to vessels by better communications between them and more extensive search methods which do not involve the use of fishing vessels themselves so as both to reduce searching time and to concentrate efforts on best fishing areas.
- g) Using more extensively support vessels for repairs, refuelling, re-crewing, etc., thereby increasing the proportion of the days spent on the grounds actually fishing.
- h) Fishing in weather conditions which, in the absence of effort control, would be considered unsafe.
- i) Staying on the fish available instead of searching for more suitable (usually larger) sizes, giving rise to what might be a concealed rise in the mortality rate through a rise in unreported discards as well as to a lowering of the average age of the fish caught (with the detrimental effects in the stock that this implies).

14. STACREM Question 7 reads

*If both catch and effort quotas are applied to a given stock, what problems are raised in allocating between countries and within a country to ensure that the two quotas are simultaneously met?*

In the view of the Group, both catch and effort quotas need not be applied where the regulatory scheme is concerned with one species only. Moreover, an effort quota need not be applied to any country which fishes for only one of the species in a multi-species scheme provided the by-catch can be limited to small proportions. It would be enough to allocate a catch quota for that species to the country concerned and to give it "nil" catch quotas for all other species.

The species catch quotas would likely be allocated to the participating countries based upon some agreed-upon historical basis. The total effort quota might be allocated in several ways, but would likely be based, in some measure, upon country catch-effort relationships which existed in the most recent time period and, of course, calibrated with the catch quotas. Because of (a) the inaccuracies and variations in the effort measurement, the distribution of effort and the mortality rates generated, (b) the opportunities for increasing fishing mortality caused by one unit of fishing effort, and (c) the fact that the effort limitation is designed to be more restrictive than the sum of the catch quotas, there would be no reason to expect that the species quotas and the effort limitation would be met simultaneously by any country or by all countries taken together. Indeed, it is the expressed intention of the proposal that effort quotas should be exhausted before all catch quotas have been fulfilled. Moreover, because of the uncertainties involved, the realization of the desired fishing mortality would be somewhat difficult.

In the opinion of the Group under this plan, those countries which fish for several species would enjoy a greater advantage, by reason of having greater flexibility in achieving their species quotas within the constraint of their effort limitation, than would those countries with fisheries directed to fewer species.

There is a variety of ways in which catch and effort quotas can be allocated within a country and each has its own problems. These are, however, matters for each country to determine for itself. Consequently, the Group feels that it should not comment on this aspect of the matter.

15. STACREM Question 9 reads

*Given the present status of stocks and fishing effort in Subarea 5 and Statistical Area 6, assuming that non-member activity does not change, no new entrants arrive and the coastal state stabilizes the catches in the territorial waters outside the Convention Area at the 1972 level, what will be the situation of the stocks in those areas in the years 1974 and 1975 if appropriate catch quotas for those years for mackerel and flounders (other than yellowtail) are added to the quotas already established and the by-catch problem is taken care of by revising MSY's of the regulated species in the area at June 1972 and 1973?*

The feasibility of extending catch quotas to the important species depends on both the ability to determine the biological basis for quotas on additional species and the problem of by-catch. The former can be dealt with satisfactorily only when adequate data and theory become available. The latter requires analysis of the amount and distribution of by-catch in the directed fisheries.

The 1971 ICNAF statistics were first examined to determine the feasibility of treating the pelagic and groundfish fisheries separately (Table 4), but no clear-cut distinction was found. To determine the areas where incompatibility might occur between quotas, the pattern of fishing, as shown by the 1971 fishery statistics, was projected to the 1973 quota allocations for each country (Table 5). The conclusions are summarized in Table 6. The method of calculation is outlined in Annex 7. It should be pointed out that within the definition of by-catch used, individual fleets in their day-to-day operations have more flexibility in directing their efforts towards particular species than it appears in the monthly total catches. If this flexibility is used, it would result in overestimating the 1973 interactions.

National quotas on named species may create subsidiary catch of regulated species by countries which have no allocation. However, these subsidiary catches are allowed for in allocating the "Others" portion of the TAC and the same consideration applies to non-member countries. "Other Groundfish" and "Other Fish" categories were not considered in the summary because of lack of information for 1973. There are some fisheries under national quota allocation which do not have a by-catch problem but for other fisheries, national quota allocation would require close management of the national fishery to control subsidiary catch in order to stay within the quota. Tables 5 and 6 clearly indicate problems for some countries in the flounder and herring allocations. Examination of the total fishing pattern over all countries indicates that it would be difficult as well not to exceed the haddock quota even though it is not allocated nationally. Therefore, adjustments will have to be made in 1973 to avoid exceeding these quotas by:

- 1) changing fishing practices to avoid exceeding quotas on these species,
- 2) reducing directed fisheries for these species within national allocations,
- 3) not achieving the quotas on some species because of the necessity of avoiding catches of species for which quotas have been achieved.

The magnitude of the total by-catch problem over all countries can be illustrated by the simulations of 1973 catches given in Tables 7 and 8. First (Table 7), the individual species quotas were assumed to be taken in the directed fisheries for those species and the incidental catches calculated based on the 1971 overall ratios of by-catch to main species sought catch. It is obvious that significant overharvesting would occur under this regime. Second (Table 8), it was assumed that the total directed and individual catches of 1973 would be the sum of the country values as given in Table 5. The overall total exceeds the sum of the assigned quotas (or 1971 catch of 1973 unregulated fisheries) for flounder, haddock, herring, other fish and other groundfish. It takes less in the cod, redfish, silver hake, and other pelagic fisheries. This is because of the reduced by-catch due to restrictive quotas on some species. If this "underfishing" is compensated for by increased directed fisheries, then the total catch of the flounder, haddock, herring and other fish and other groundfish categories would increase, and exceed the quotas even more. (Recommendations 5 and 6)

Table 4. Distribution of catches of main species sought in 1971 in Subarea 5 and Statistical Area 6.

Species sought	Species caught								
	Cod	Had	Flo	Red	S H	O G	Her	O P	O F
Cod									
Haddock	+	+	+			+			
Flounder									
Silver hake	+	+	+		+	+	+	+	+
Herring						+	+	+	+
Redfish		+		+		+			
Other pelagic					+	+	+	+	+
Other groundfish					+	+	+	+	+
Other fish			+		+	+		+	+

Table 5. Simulation of 1973 catches ('000 tons) by main species sought categories for Subarea 5 and Statistical Area 6 by country.

Country	Species sought	Catch	Species caught										Total
			Cod	Had	Red	Hal	S H	Flo	O G	Her	O P	O F	
Bulgaria	S H	Alloc.	*	*	-	-	0.3	*	*	0.2	0.2	0.1	0.8
		Est.	*	*	-	-	0.3	*	*	0.2	0.2	0.1	0.8
	O G	Alloc.	-	-	-	-	0.6	*	1.0	0.1	0.9	0.8	3.4
		Est.	-	-	-	-	0.6	*	1.0	0.1	0.8	0.8	3.3
	Her	Alloc.	*	-	*	-	0.2	*	0.2	3.5	0.2	0.6	4.7
		Est.	*	-	*	-	0.2	*	0.2	3.5	0.2	0.6	4.7
	O P	Alloc.	*	-	*	-	0.7	0.1	1.4	0.7	31.6	4.8	39.3
		Est.	*	-	*	-	0.8	0.2	1.6	0.8	31.6	5.5	40.5
	O F	Alloc.	-	-	-	-	0.2	0.1	0.1	0.1	0.1	0.4	1.0
		Est.	-	-	-	-	0.2	0.1	0.1	0.1	0.1	0.4	1.0
Total		Alloc.	*	-	*	-	2.0	0.2	2.7	4.6	33.0	6.7	49.2
		Est.	*	-	*	-	2.1	0.3	2.9	4.7	32.9	7.4	50.3

Table 5. Continued

Country	Species sought	Catch	Species caught										Total
			Cod	Had	Red	Hal	S H	Flo	O G	Her	O P	O F	
Canada	Cod	Alloc.	2.7	0.4	*	*	-	0.1	0.4	-	-	-	3.6
		Est.	2.7	1.0	0.1	*	-	0.2	0.5	-	-	-	4.4
	Had	Alloc.	0.5	0.3	0.1	*	-	0.1	0.2	-	-	-	1.2
		Est.	0.2	0.3	*	*	-	*	0.1	-	-	-	0.6
	Red	Alloc.	*	*	0.2	*	-	*	*	-	-	-	0.2
		Est.	0.1	*	0.2	*	-	*	0.1	-	-	-	0.4
	O G	Alloc.	0.9	0.2	0.1	*	-	*	2.3	-	-	-	3.5
		Est.	0.6	0.3	*	*	-	*	2.3	-	-	-	3.3
	Her	Alloc.	-	-	-	-	-	-	-	9.1	-	-	9.1
		Est.	-	-	-	-	-	-	-	9.1	-	-	9.1
O P	Alloc.	-	-	-	-	-	-	-	-	22.5	-	22.5	
	Est.	-	-	-	-	-	-	-	-	22.5	-	22.5	
Total	Alloc.	4.1	0.9	0.4	0.1	-	0.2	2.9	9.1	22.5	-	40.1	
	Est.	3.6	1.6	0.3	*	-	0.2	3.0	9.1	22.5	-	40.3	
Cuba	O F	Alloc.	-	-	-	-	0.3	-	-	-	0.1	0.7	1.1
		Est.	-	-	-	-	0.3	-	-	-	0.1	0.7	1.1
	Total	Alloc.	-	-	-	-	0.3	-	-	-	0.1	0.7	1.1
		Est.	-	-	-	-	0.3	-	-	-	0.1	0.7	1.1
Ger(FR)	Her	Alloc.	*	*	-	-	-	0.6	32.6	1.5	*	34.7	
		Est.	*	*	-	-	-	0.4	32.6	0.7	-	33.7	
	O P	Alloc.	-	-	-	-	-	-	-	-	2.0	-	2.0
		Est.	-	-	-	-	-	-	-	-	2.0	-	2.0
	Total	Alloc.	*	*	-	-	-	0.6	32.6	3.5	*	36.7	
		Est.	*	*	-	-	-	0.4	32.6	2.7	*	35.7	
GDR	O G	Alloc.	-	-	*	-	-	4.8	2.3	0.1	*	7.1	
		Est.	-	-	*	-	-	4.8	2.3	0.1	*	7.1	
	Her	Alloc.	-	-	-	-	-	1.3	15.0	2.1	1.0	19.4	
		Est.	-	-	-	-	-	1.3	15.0	2.1	1.0	19.4	
	O P	Alloc.	-	-	-	-	-	1.0	3.3	66.9	7.3	78.5	
		Est.	-	-	-	-	-	1.0	3.3	66.9	7.3	78.5	
	O F	Alloc.	-	-	-	-	-	-	0.1	0.1	1.6	1.8	
		Est.	-	-	-	-	-	-	0.1	0.1	1.6	1.8	
	Total	Alloc.	-	-	*	-	-	7.1	20.7	69.2	9.9	106.9	
		Est.	-	-	*	-	-	7.1	20.7	69.2	9.9	106.9	
Japan	Her	Alloc.	*	*	*	-	*	*	*	1.2	*	*	1.2
		Est.	*	*	*	-	*	*	*	1.2	-	*	1.2
	O P	Alloc.	-	-	-	-	*	*	0.3	*	3.6	*	3.9
		Est.	-	-	-	-	*	*	0.3	*	3.6	*	3.9
	O F	Alloc.	*	-	*	-	*	-	1.2	*	0.1	4.9	6.2
		Est.	*	-	*	-	*	-	1.2	-	0.1	4.9	6.2
	Total	Alloc.	-	-	-	-	-	-	1.5	1.2	3.7	4.9	11.3
		Est.	-	-	-	-	-	-	1.5	1.2	3.7	4.9	11.2
Poland	Her	Alloc.	0.2	-	-	-	-	0.1	42.2	19.4	8.1	70.0	
		Est.	0.1	-	-	-	-	0.1	42.2	9.4	4.5	56.3	
	O P	Alloc.	0.2	-	0.1	-	0.1	-	0.2	7.1	110.4	9.9	128.0
		Est.	0.1	-	0.1	-	0.1	-	0.2	14.6	110.4	11.5	137.0
	O F	Alloc.	-	-	-	-	-	-	*	*	*	0.4	0.4
		Est.	-	-	-	-	-	-	*	0.3	0.1	0.4	0.8
	Total	Alloc.	0.4	-	0.1	-	0.1	-	0.3	49.3	129.8	18.4	198.4
		Est.	0.2	-	0.1	-	0.1	-	0.3	57.1	119.9	16.4	194.1

Table 5. Continued

Country	Species sought	Catch	Species caught										Total
			Cod	Had	Red	Hal	S H	Flo	O G	Her	O P	O F	
Romania	S H	Alloc.	-	-	-	-	*	*	-	-	-	-	*
		Est.	-	-	-	-	*	*	-	-	-	-	*
	Her	Alloc.	-	0.1	-	-	-	0.2	*	0.7	1.2	0.5	2.7
		Est.	-	0.2	-	-	-	0.3	*	0.7	0.4	0.8	2.4
	O P	Alloc.	*	*	-	-	0.4	0.3	*	0.6	18.8	1.6	21.7
Est.		*	0.3	-	-	1.8	1.3	0.1	1.8	18.8	6.8	30.9	
Total	Alloc.	*	0.1	-	-	0.4	0.5	*	1.3	20.0	2.1	24.4	
	Est.	*	0.5	-	-	1.8	1.6	0.1	2.5	19.2	7.6	33.3	
Spain	Cod	Alloc.	5.8	0.7	-	-	-	-	0.2	-	-	-	6.7
		Est.	5.8	1.0	-	-	-	-	0.2	-	-	-	7.0
	Total	Alloc.	5.8	0.7	-	-	-	-	0.2	-	-	-	6.7
		Est.	5.8	1.0	-	-	-	0.2	-	-	-	7.0	
USA	Cod	Alloc.	7.2	0.4	0.4	0.1	1.3	0.9	1.4	*	0.1	0.1	11.9
		Est.	7.2	1.0	0.3	0.1	0.4	1.1	1.9	*	*	0.1	12.0
	Had	Alloc.	7.2	1.8	0.8	*	0.1	2.0	2.7	-	*	-	14.6
		Est.	2.7	1.8	0.3	*	*	0.9	1.3	-	*	-	7.0
	Red	Alloc.	1.1	0.1	18.3	*	0.9	0.5	1.0	*	*	*	21.9
		Est.	1.3	0.5	18.3	*	0.3	0.7	1.5	0.1	*	*	22.7
	S H	Alloc.	1.4	0.2	1.0	*	30.3	2.5	1.7	2.0	0.4	0.1	39.6
		Est.	4.2	1.9	2.5	*	30.3	8.9	6.6	9.5	0.2	0.3	64.4
	Flo	Alloc.	10.2	1.4	3.1	*	6.6	36.5	5.8	0.3	4.0	0.4	68.3
		Est.	8.6	3.2	2.2	*	1.9	36.5	6.4	0.4	0.5	0.4	60.2
	O G	Alloc.	1.3	0.1	0.2	-	3.6	2.6	6.1	0.2	0.9	0.5	15.5
		Est.	0.9	0.2	0.1	-	0.9	2.3	6.1	0.3	0.1	0.5	11.4
	Her	Alloc.	0.5	0.1	0.8	-	8.5	0.7	0.8	22.5	2.0	*	35.9
		Est.	0.3	*	0.4	-	1.8	0.5	0.6	22.5	0.2	*	26.3
	O P	Alloc.	*	-	-	-	0.2	*	*	0.1	17.8	*	18.1
Est.		*	-	-	-	0.4	0.2	0.1	0.5	17.8	*	18.9	
O F	Alloc.	0.1	*	*	-	*	0.1	*	-	0.9	3.5	4.6	
	Est.	0.1	*	*	-	*	0.1	*	-	0.1	3.5	3.7	
Total	Alloc.	29.0	4.1	24.6	0.1	51.5	45.7	19.4	25.1	26.2	4.5	230.4	
	Est.	28.1	10.5	24.3	0.1	36.0	52.1	25.9	33.3	18.9	4.8	233.9	
USSR	S H	Alloc.	1.7	0.2	0.2	0.0	68.7	0.9	12.5	6.3	14.8	10.3	115.6
		Est.	0.9	0.0	0.2	0.0	68.7	2.7	14.3	12.2	15.0	11.9	126.2
	O G	Alloc.	0.1	*	0.0	0.0	5.8	0.3	14.2	0.4	2.3	2.5	25.6
		Est.	0.1	0.0	0.0	0.0	5.1	0.8	14.2	0.7	2.0	2.5	25.4
	Her	Alloc.	0.7	*	0.8	0.0	7.3	0.1	1.9	31.2	9.1	3.0	54.1
		Est.	0.2	0.0	0.4	0.0	3.7	0.2	1.2	31.2	4.8	1.7	43.4
	O P	Alloc.	0.3	*	3.4	0.0	10.7	1.2	6.9	9.1	118.4	12.2	162.2
		Est.	0.1	0.0	3.0	0.0	10.5	3.7	7.8	17.4	118.4	13.9	174.8
	O F	Alloc.	0.1	*	0.0	0.0	9.5	0.5	9.7	1.2	3.4	13.4	37.8
		Est.	0.0	0.1	0.0	0.0	8.3	1.2	9.7	2.0	3.0	13.4	37.7
	Total	Alloc.	2.9	0.2	4.5	0.0	102.0	3.0	45.1	48.2	148.0	41.4	395.3
		Est.	1.2	0.4	3.6	0.0	96.3	8.6	47.2	63.5	143.2	43.4	407.5

\* Less than 0.1



Table 6. Quota allocations for 1973 (+) and species for which the quota in Subarea 5 and Statistical Area 6 is exceeded when the national fleet is managed to obtain the quota of the named species according to the 1971 pattern of fishing (e.g. under cod, both Canada and USA would exceed their flounder allowances).

Country	Cod	Had	Flo	Red	S H	O G	Her	O P	O F
Bulgaria								+	
Canada	+ Flo		+	+		+	+	+	
Denmark									
France									
FRG						+	+	+	
Ice									
Italy									
Japan							+		
Norway									
Poland	+			+			+	+	Her
Portugal									
Romania			+				+	+	Her
Spain	+					+			
USSR	+		+	+	+ Her Flo	+ Her	+ Flo	+ Her Flo	
UK									
USA	+ Flo		+ Her	+ Her Flo	+	+	+	+	

Table 7. 1973 quotas<sup>1</sup> ('000 tons) for Subarea 5 and Statistical Area 6 with associated by-catch if "quotas" are all caught in the directed fisheries.

Species sought		Species caught (finfish only)										Total
		Cod	Had	Red	Hal	S H	Flo	O G	Her	O P	O F	
Cod	Catch	45.0	8.2	0.8	0.2	0.1	2.7	5.9	<.1	<.1	0.2	63.3
Had	Catch	8.1	6.0	0.8	<.1	<.1	2.5	3.9	0.0	<.1	0.0	21.5
Red	Catch	2.2	0.8	30.0	<.1	0.5	1.1	2.6	0.1	0.0	<.1	37.4
S H	Catch	4.6	2.0	2.0	0.0	170.0	11.6	35.5	33.2	33.2	26.4	318.4
Flo	Catch	12.0	4.5	3.1	0.0	2.6	51.0	9.0	0.5	0.7	0.6	84.0
O G	Catch	4.6	1.4	0.4	0.1	18.4	9.0	80.0	9.4	8.3	10.7	142.5
Her	Catch	0.5	0.2	0.7	0.0	5.8	0.7	3.3	175.0	19.2	8.9	214.4
O P	Catch	0.5	0.0	4.2	0.0	16.4	5.6	15.0	49.8	470.0 <sup>2</sup>	55.0	616.6
O F	Catch	0.3	0.2	0.0	0.0	31.7	5.0	39.7	8.8	17.5	90.0	193.0
Total	Catch	77.8	23.3	42.0	0.3	245.5	89.2	194.9	276.8	548.9	191.8	1691.1
	%	100	100	100	100	100	100	100	100	100	100	
Catch/Quota		1.73	3.88	1.40	3.00	1.44	1.75	2.44	1.58	1.17	2.13	
Quota (1973)		45.0	6.0	30.0	0.1	170.0	51.0	80.0	175.0	470.0	90.0	1117.0
Catch minus Quota		-32.8	-17.3	-12.0	-0.2	-75.5	-38.2	-114.9	-101.8	-78.9	-101.8	-574.0

<sup>1</sup> 1971 catches used where no quotas exist.

<sup>2</sup> Mackerel quota of 450,000 tons increased to 470,000 to account for total other pelagic.

Table 8. Simulated 1973 catches based on 1971 catches and 1973 quotas summed over (A) all Member Countries and (B) all Member and Non-member Countries.

Species sought	Catch	Species caught										Total
		Cod	Had	Red	Hal	S H	Flo	O G	Her	O P	O F	
A. Cod	Alloc.	15.7	1.5	0.4	0.1	1.3	1.0	2.0	*	0.1	0.1	22.2
	Est.	15.7	1.5	0.4	0.1	0.4	1.3	2.6	*	*	0.1	22.1
Had	Alloc.	7.7	2.1	0.9	*	0.1	2.1	2.9	-	*	-	15.8
	Est.	2.9	2.1	0.3	*	*	0.9	1.4	-	*	-	7.6
Red	Alloc.	1.7	0.1	18.4	*	0.9	0.5	1.0	*	*	*	22.6
	Est.	1.3	0.5	18.4	*	0.3	0.7	1.5	0.1	*	*	22.8
S H	Alloc.	3.1	0.4	1.2	*	99.3	3.4	14.2	8.5	15.4	10.5	156.0
	Est.	5.1	2.2	2.7	*	99.3	11.6	20.9	21.9	15.4	12.3	191.4
Flo	Alloc.	10.2	1.4	3.1	*	6.6	36.5	5.8	0.3	4.0	0.4	68.3
	Est.	8.6	3.2	2.2	*	1.9	36.5	6.4	0.4	0.5	0.4	60.1
O G	Alloc.	2.3	0.3	0.3	*	10.0	2.9	23.6	0.7	4.1	3.8	48.0
	Est.	1.5	0.5	0.1	*	6.6	3.1	23.6	1.1	2.9	3.8	43.2
Her	Alloc.	1.4	0.2	1.6	-	16.0	1.0	3.6	143.0	33.4	12.2	212.4
	Est.	0.6	0.2	0.8	-	5.7	1.0	2.5	143.0	15.7	7.6	177.1
O P	Alloc.	0.2	*	3.5	-	12.1	1.6	8.8	17.6	325.1	28.5	397.4
	Est.	0.2	0.3	0.4	-	13.6	5.4	10.1	35.1	325.1	37.7	427.9
O F	Alloc.	0.1	*	*	-	9.7	0.7	11.0	1.3	4.5	22.6	49.9
	Est.	0.1	*	*	-	8.5	1.4	9.9	2.4	3.4	22.6	48.3
Total	Alloc.	42.4	6.0	29.4	0.1	156.0	49.7	72.9	171.4	386.6	78.1	992.6
	Est.	36.0	10.5	25.3	0.1	136.3	61.9	78.9	204.0	363.0	84.5	1000.5
Quota (1973)		42.7	6.0	29.5	0.1	153.5	49.3	72.9	166.7	383.2	78.1	
Quota minus Est.		+6.7	-4.5	+4.2	0.0	+17.2	-12.6	-6.0	-37.3	+20.2	-6.4	
B. Cod	Alloc.	15.7	1.5	0.4	0.1	1.3	1.0	2.0	*	0.1	0.1	22.2
	Est.	15.7	3.0	0.4	0.1	0.4	1.3	2.6	*	*	0.1	23.6
Had	Alloc.	7.7	2.1	0.9	*	0.1	2.1	2.9	-	*	-	15.8
	Est.	2.9	2.1	0.3	*	*	0.9	1.4	-	*	-	7.6
Red	Alloc.	1.7	0.1	18.4	*	0.9	0.5	1.0	*	*	*	22.6
	Est.	1.3	0.5	18.4	*	0.3	0.7	1.5	0.1	*	*	22.8
S H	Alloc.	3.1	0.4	1.2	*	99.3	3.4	14.2	8.5	15.4	10.5	156.0
	Est.	5.1	2.2	2.7	*	99.3	11.6	20.9	21.9	15.4	12.3	191.4
Flo	Alloc.	10.2	1.4	3.1	*	6.6	36.5	5.8	0.3	4.0	0.4	68.3
	Est.	8.6	3.2	2.2	*	1.9	36.5	6.4	0.4	0.5	0.4	60.1
O G	Alloc.	2.3	0.3	0.3	*	10.0	2.9	28.4	3.0	4.2	3.8	55.2
	Est.	1.5	0.5	0.1	*	6.6	3.1	28.4	3.4	3.0	3.8	50.4
Her	Alloc.	1.4	0.2	1.6	-	16.0	1.0	4.9	158.0	33.6	12.8	229.5
	Est.	0.6	0.2	0.8	-	5.7	1.0	3.8	158.0	17.8	8.6	196.5
O P	Alloc.	0.5	*	3.5	-	12.1	1.6	9.8	20.9	392.0	35.8	476.2
	Est.	0.2	0.3	0.4	-	13.6	5.4	11.1	38.4	392.0	45.0	506.4
O F	Alloc.	0.1	*	*	-	10.0	0.7	11.0	1.4	4.7	24.9	52.8
	Est.	0.1	*	*	-	8.8	1.4	9.9	2.5	3.6	24.9	51.2
Total	Alloc.	42.7	6.0	29.4	0.1	156.3	49.7	80.0	192.1	454.0	88.3	1098.6
	Est.	36.0	12.0	25.3	0.1	136.6	61.9	80.0	224.7	432.3	95.1	1110.0
Quota (1973)		45.5	6.0	30.0	0.1	170.0	51.0	80.0	175.0	450.0	88.3	
Quota minus Est.		+9.5	0.0	+4.7	0.0	+33.4	-10.9	-6.0	-49.7	+17.7	-6.8	

\* Less than 0.1

16. STACREM Question 10 reads

*Could STACRES look into the question of further regulating mesh size and minimum size of fish in Subarea 5?*

Much of the data required to determine the effects of further mesh size regulation may not be readily available. However, certain generalized effects could be determined from data at hand, and advice from STACRES on this question would be useful. It is understood that this advice should be related to the problem of by-catch - both as to the effect on yields of the small fish in the by-catch and the possible alleviation of such effects by mesh regulation.

CARDOSO QUESTIONS

17. CARDOSO Question 1

*Could the fishing power coefficients be taken off continuous curves of tonnage which would take into account horsepower, winch power, fishing aids and type of fishing (fresh or frozen)?*

For most countries, the information currently available to estimate fishing power coefficients is based on monthly catch and effort data reported by ICNAF tonnage class and ICNAF statistical divisions (or subdivisions where applicable). These data enable the computation of catch-per-unit-effort values by month for each tonnage and gear class of vessel and for each ICNAF division. In cases where "Main Species" is reported, the Cpue's can be calculated for each "Main Species" separately. These Cpue values represent the average performance of the group of vessels within the particular tonnage classes. However, their use for estimation of fishing power would involve inaccuracy owing to the need to assume the vessels fished on the same stock/area within the division.

For most, if not all, countries similar data should be available in logbooks of individual vessels, and Cpue values could be computed for individual vessels of varying tonnages with each ICNAF tonnage class. If this were done, curves could be drawn showing the relationship between Cpue and tonnage and the variance in Cpue could be estimated for any point on the curve. The Group felt that this could best be achieved by national research studies based on detailed knowledge of the activities of the national fleet (Recommendation 7).

18. CARDOSO Question 2

*How was the learning factor calculated?*

Recorded days fished of the first two years in a fishery by a gear/tonnage class/country were adjusted by a learning function in order to make one day of fishing in the early years in a fishery equivalent to one day of fishing in the third and later years. This was done by estimating what the catch per effort of a gear/tonnage class/country should be had the catch per effort followed the abundance indices recorded by *Albatross IV* for the species concerned, and then adjusting the recorded catch per effort of a fleet to follow the trend of the abundance index. The first year in a fishery was taken to be the first year a fleet recorded twenty percent of its total catch in a particular fishery. Learning was found to be completed by the third year in the fishery. In determining the rate of learning, learning was assumed to increase exponentially with time.

The data used in estimating the rate of learning were as follows:

<u>Species</u>	<u>Subarea</u>	<u>Country</u>	<u>Gear/Tonnage Class</u>	<u>Years</u>
Herring	5Z	Poland	OtSt, 1800+ MT	1966, 1967
Herring	5Z	Romania	OtSt, 1800+ MT	1967, 1968
Cod	5Z	Spain	OtSi, 501-900 MT	1964, 1965
Silver hake	5Z	USSR	OtSi, 501-900 MT	1964, 1965
Silver hake	5Z	USSR	OtSi, 151-500 MT	1963, 1965

These cases (Fig. 6) were used since only they provided sound basis for analysis. Following estimation of the rate of learning, data for other fleets (Table 9) were adjusted using the procedure and rate of learning developed from the above data base. The actual model used is given below. In using this model, learning was considered completed when changes in commercial catch per unit effort paralleled the survey index.

Table 9. Country/gear/tonnage class categories where effort was adjusted for learning.

Species	5Y			5Z			6					
	Country	Gear	Tonnage Class	Years Adjusted	Country	Gear	Tonnage Class	Years Adjusted	Country	Gear	Tonnage Class	Years Adjusted
Herring	Germany (FR)	OtSt	901-1800	1969, 70	Germany (FR)	OtSt	901-1800	1967, 68	Poland	OtSt	501-900	1968, 69
		OtSt	1801+	1969, 70		OtSt	1801+	1967, 68		OtSt	1800+	1968, 69
	United States	Purse			Non-Mbr							
		Seine	51+	1965,66	Poland	OtSt	1801+	1965, 66	USSR	OtSi	151-500	1967, 68
						OtSi	501-900	1967, 68		OtSi	501-900	1969, 70
						OtSt	1801+	1966, 67				
					Romania	OtSt	1801+	1967, 68				
					USSR	OtSi	151-500	1963				
						OtSi	501-900	1962, 64				
						OtSt	1800+	1961, 62				
Cod					Purse							
					Seine	50+		1968, 69				
					D. Gill							
					Nets All			1961, 62				
	Spain	Pair										
		Trawl	151-500	1969, 70	Spain	Trawl	151-500	1964, 65				
					USSR	OtSi	501-900	1965, 66				
					USSR	OtSi	151-500	1963, 65				
						OtSi	501-900	1964, 65				
						OtSt	1800+	1962, 63				
Haddock Silver Hake					Poland	OtSi	501-900	1969, 70	Poland	OtSi	501-900	1969, 70
						OtSt	1800+	1968, 69		OtSt	1800+	1970, 71
					Romania	OtSt	1800+	1969, 70	USSR	OtSi	151-500	1968, 70
					USSR	OtSi	151-500	1969, 70		OtSi	501-900	1969, 70
						OtSi	501-900	1969, 70		OtSt	1800+	1970, 71

An exponential learning model was assumed thus:

$$\frac{X_i}{Z_i} = [\exp (a \cdot i)] * e_i$$

where

$$Z_i = X_0 \left( \frac{Y_i}{Y_0} \right),$$

$X_i$  = the observed commercial catch per unit effort in the  $i^{\text{th}}$  year in the fishery after entrance,

$Y_i$  = the stock abundance in the same year, and

$e_i$  = residual error, where  $\ln(e_i)$  has a  $N(0, \sigma^2)$  distribution.

Where the catch of a given species was between 20% and 80%, effort was prorated on the basis of the catch and when the catch exceeded 80%, the entire effort was considered to be directed towards that species. The curve was fitted to the logged data by least squares (Fig. 6). It is apparent that learning has been completed by the third year in the fishery (year two after entrance). The parameter  $a$  was estimated from all data combined to be 0.70 with an index of determination of 0.82 (proportion of the variation due to regression). (Recommendation 8)

19. CARDOSO Question 3

*How was the increase of total effort from 1971 to 1972 calculated?*

The United States conducts airplane overflights of the fishing grounds on, generally, a bi-weekly basis. Fishing vessels are identified as to type and also, as far as possible, to individual vessels. These data were summed to estimate vessel days using the assumption that if a vessel was observed during a week, it was present on the grounds for the entire seven days. These data were expanded to a 1972 total using a relationship between days observed and days reported to ICNAF in 1971.

20. CARDOSO Question 4

*Could we have data separation on state of stocks, fishing mortality and fishing effort in waters within and outside the Convention Area, as was done for other Subareas?*

The Group noted that the USA agreed to make the necessary data available prior to the June 1973 meeting.

RECOMMENDATIONS

21. The Group agreed that the following recommendations be presented to STACREM:

Rec. 1 That Member Countries consider the relative importance of the factors listed in Table 1 and any other factors which would be relevant, and provide comments and revisions for consideration at the June 1973 Annual Meeting (Ref. MANAGEMENT OPTIONS Section 6).

Rec. 2 That Member Countries analyze their data on "days on ground" and "days fished" and provide estimates of the variance associated with conversion factors obtained from the ratio of days on ground to days fished (Ref. STACREM Question 1).

Rec. 3 That Member Countries consider the magnitude of the errors associated with factors involved in setting a fishing effort regulation by

- a) estimating variance of the conversion coefficients for 1971,
- b) examining the relative  $C_{pue}$  for 1970 and 1971 with a view to determining the possible effects of vessel class within and between gear, years and species,
- c) examining the seasonal and area components of variation by the technique of mean ratio versus ratio of the means,
- d) estimating the variance of the catchability coefficient  $q$ .

(Ref. STACREM Question 3).

Rec. 4 That the CWP (Coordinating Working Party on Atlantic Fishery Statistics) be requested to provide a more precise definition of days on ground than that currently in use (Ref. STACREM Question 6).

- Rec. 5 *That Member Countries in their statistical submissions to ICNAF provide*
- a) *more refined data on the species composition of catches, thus reducing significantly the quantities reported as "species not specified", and*
  - b) *more detailed catch and effort data on "main species", thus reducing significantly or eliminating the records for which the "main species" is currently reported as "mixed", and enabling more refined estimates of "by-catch" to be obtained.*
- (Ref. STACREM Question 9).*
- Rec. 6 *That Member Countries analyze the more detailed data in national archives (logbook records) to estimate more precisely the by-catch and species interaction for 1971 and subsequent years (Ref. STACREM Question 9).*
- Rec. 7 *That Member Countries undertake studies, using detailed information contained in the logbooks of individual vessels, of the fishing power coefficients of national fleets (Ref. CARDOSO Question 1).*
- Rec. 8 *That Member Countries undertake analyses of historical data on the fishing activity of their fleets in relation to the determination of learning factors associated with the development of fisheries in the various Subareas or on the various stocks (Ref. CARDOSO Question 2).*
- Rec. 9 *That, since considerable analyses remain to be done, necessary steps be taken to convene another session of the Group just prior to the June 1973 Annual Meeting of the Commission (Ref. Section 22).*

#### ADJOURNMENT

22. The Group agreed that, while substantial progress was made during the period allotted for the meeting, considerable analyses remained to be completed and studied. The Group agreed that steps should be taken to convene another session just prior to the June 1973 Annual Meeting of the Commission (Recommendation 9).
23. The Chairman thanked the participants for their interest and contributions. The excellent facilities and hospitality provided by the National Marine Fisheries Service Laboratory and personnel and the Marine Biological Laboratory were recognized by the Executive Secretary on behalf of the participants and the Commission.
24. The meeting adjourned at 1800 hours, 30 March 1973.

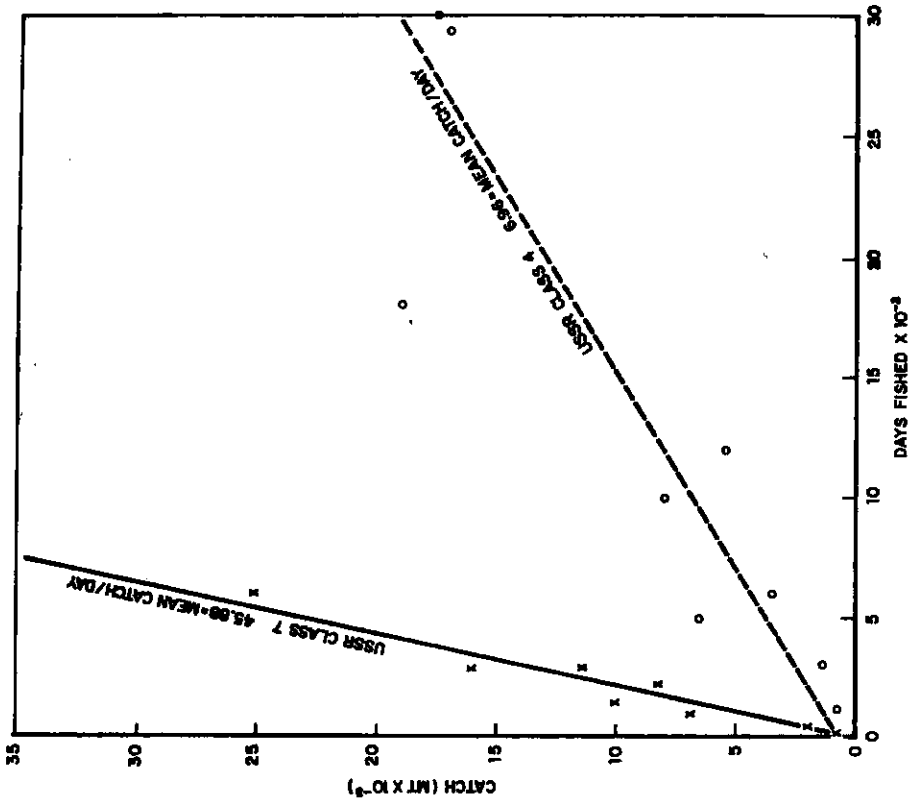


Fig. 2. Plot of total monthly catch against effort for Div. 5Z, 1958 (data from Table 4, ICNAF Statistical Bulletin).

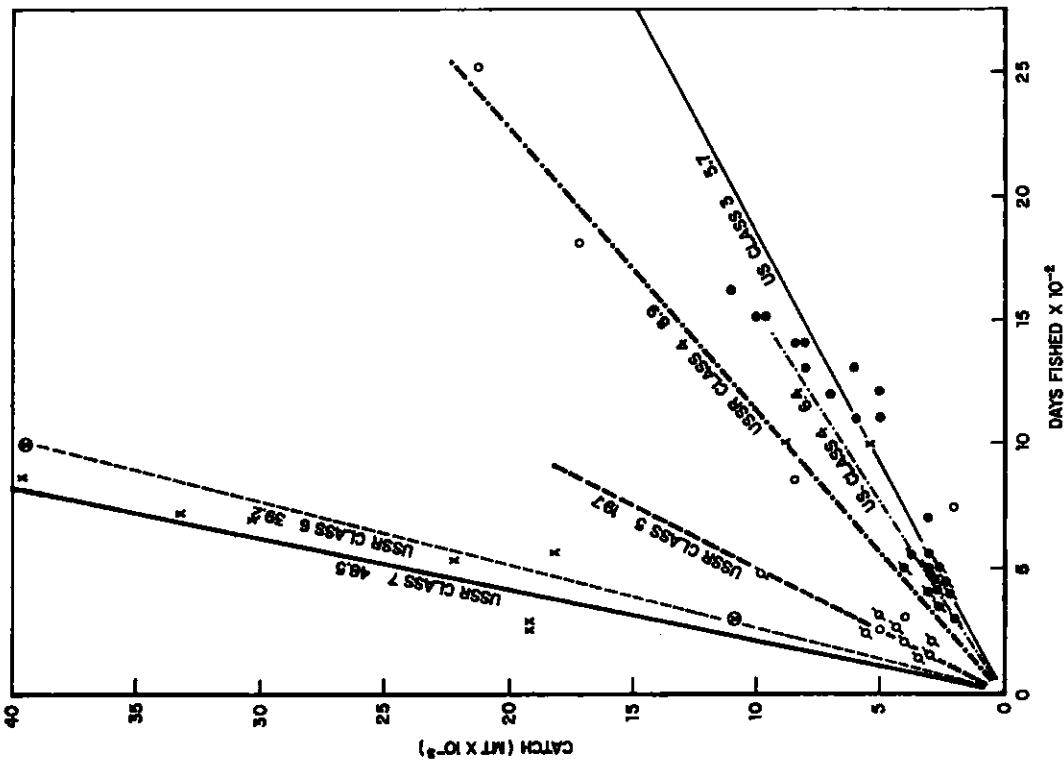


Fig. 1. Plot of total monthly catch against effort for Div. 5Z, 1957 (data from Table 4, ICNAF Statistical Bulletin).

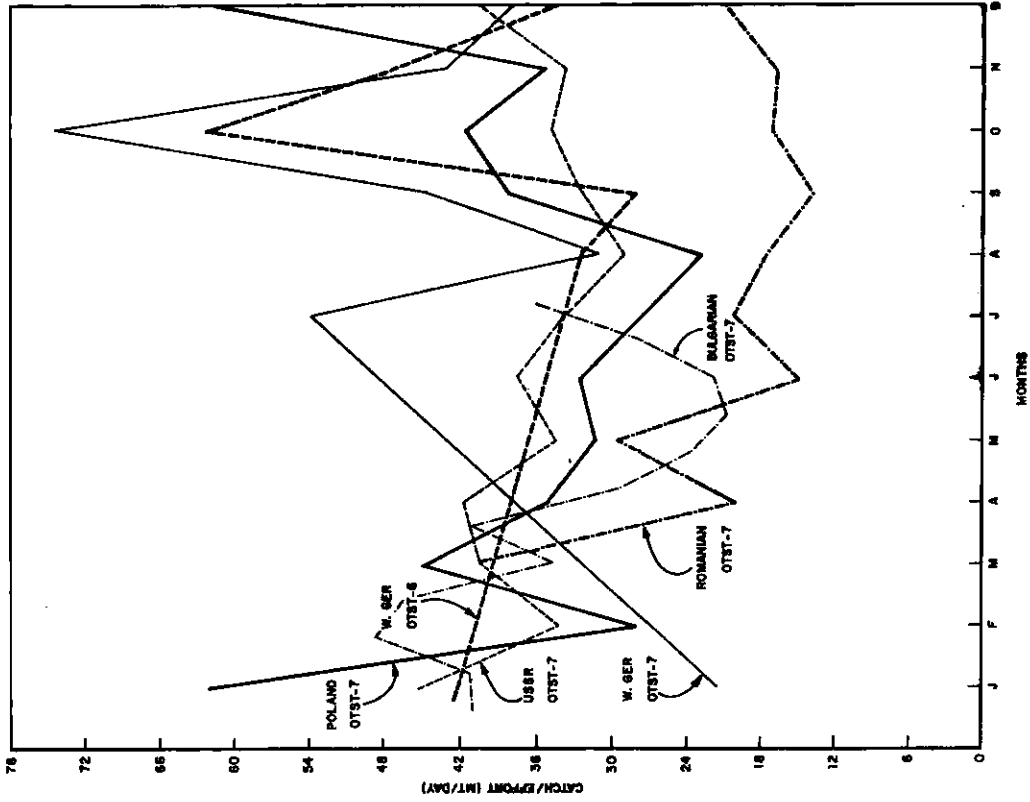


Fig. 4A(1). Monthly catch per unit effort for 1971 by country and vessel class for ICNAF Subarea 5 and Statistical Area 6.

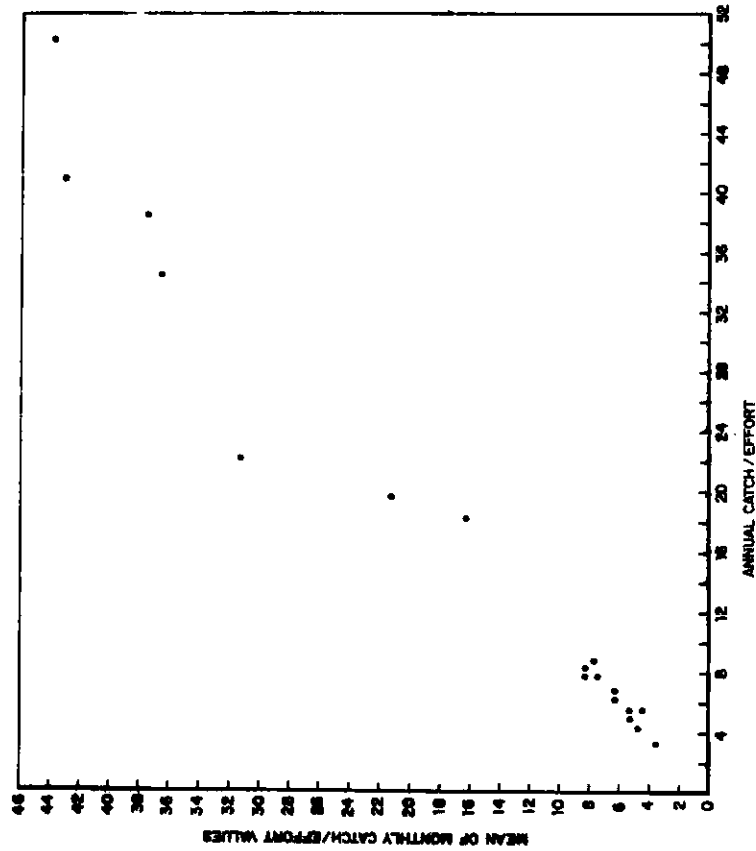


Fig. 3. Annual catch per effort vs mean monthly catch per effort for various tonnage classes, types, nationalities of otter trawlers fishing in ICNAF Subarea 5 and Statistical Area 6 in 1971.



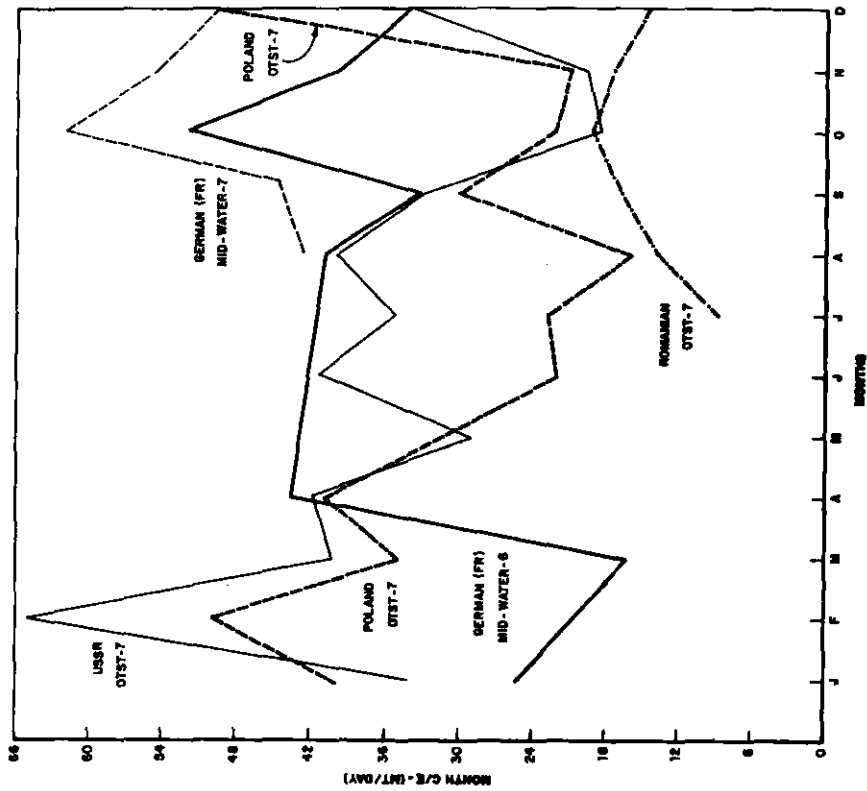


Fig. 4B(1). Monthly catch per unit effort for 1970 by country and vessel class for ICNAF Subarea 5 and Statistical Area 6.

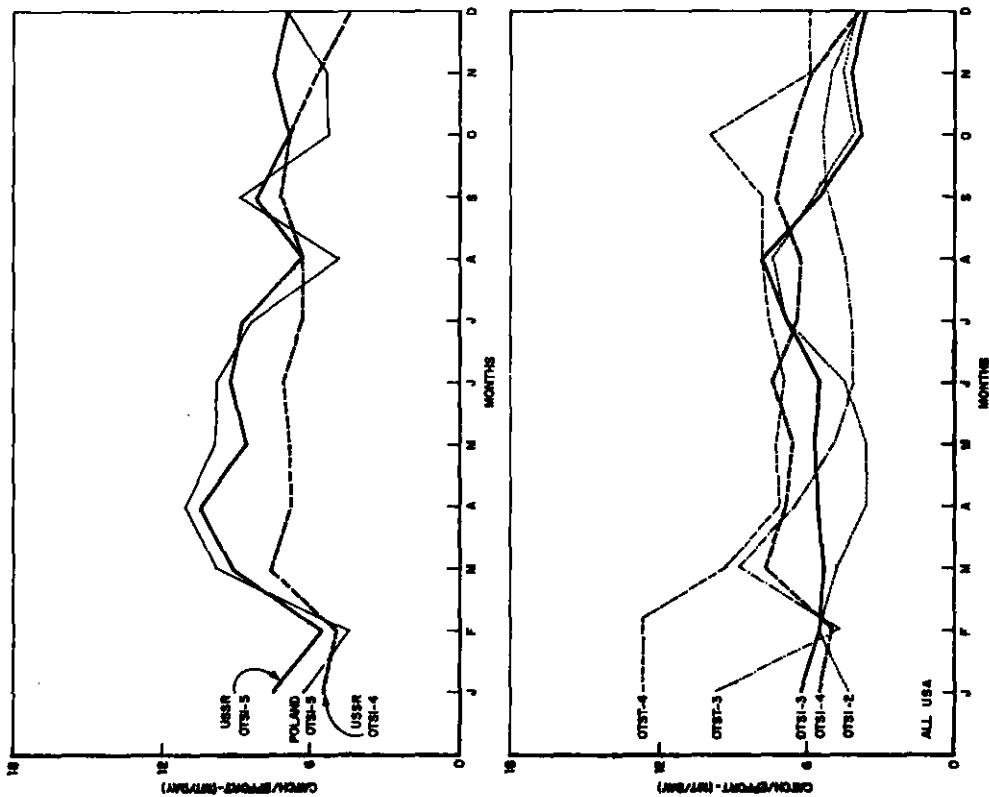


Fig. 4A(2). Monthly catch per unit effort for 1971 by country and vessel class for ICNAF Subarea 5 and Statistical Area 6.

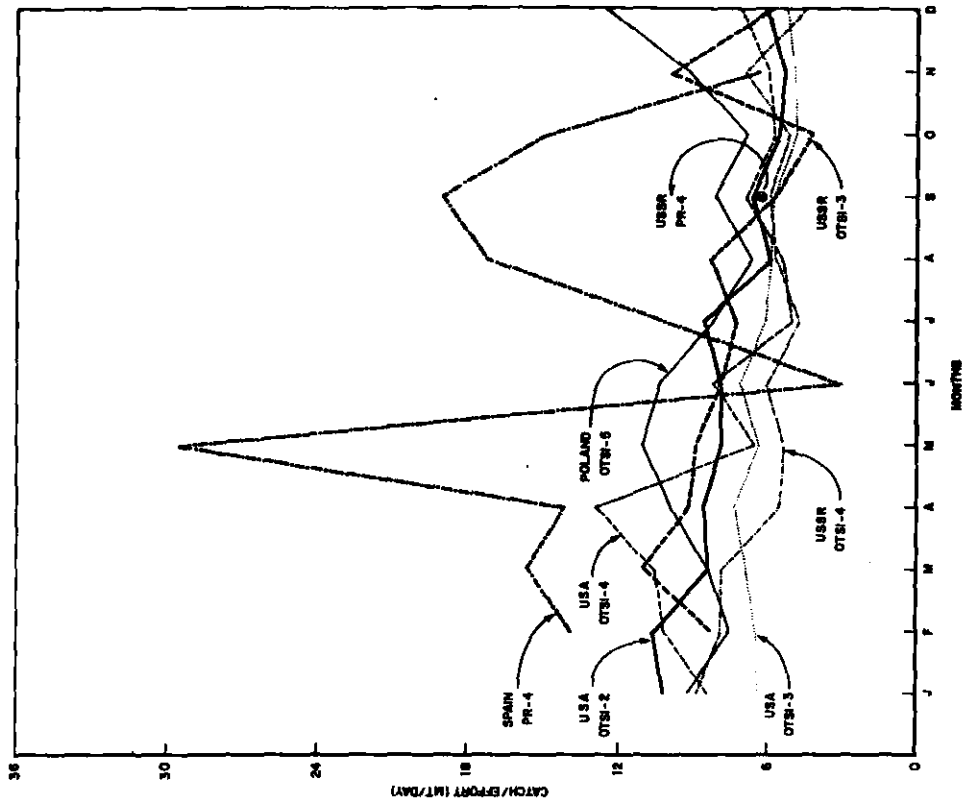


Fig. 4C(1). Monthly catch per unit effort for 1969 by country and vessel class for ICNAF Subarea 5 and Statistical Area 6.

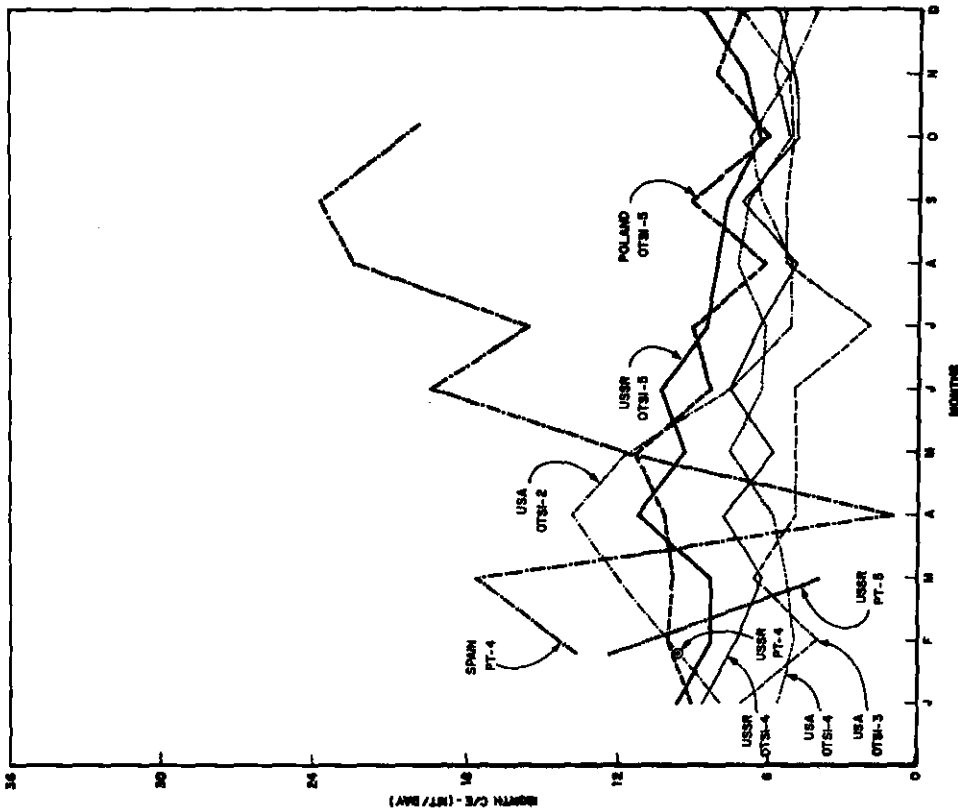


Fig. 4B(2). Monthly catch per unit effort for 1970 by country and vessel class for ICNAF Subarea 5 and Statistical Area 6.

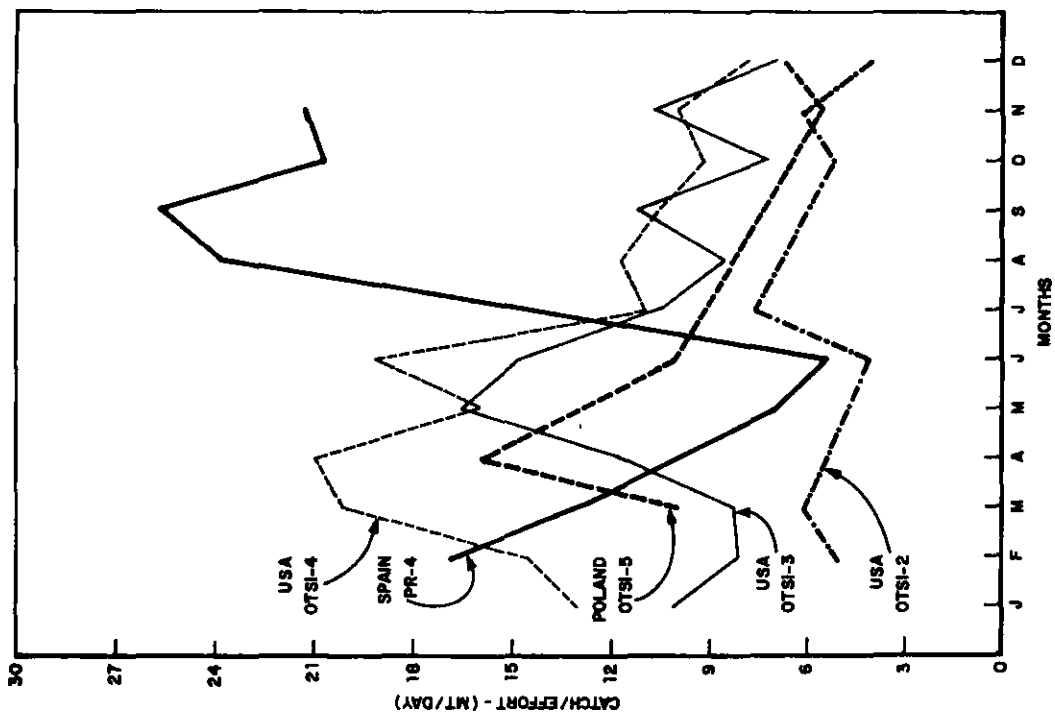


Fig. 5A(1). Monthly catch per unit effort for 1971 by country and vessel class for ICNAF Subarea 5 and Statistical Area 6 with directed catches for flounders, haddock and herring removed.

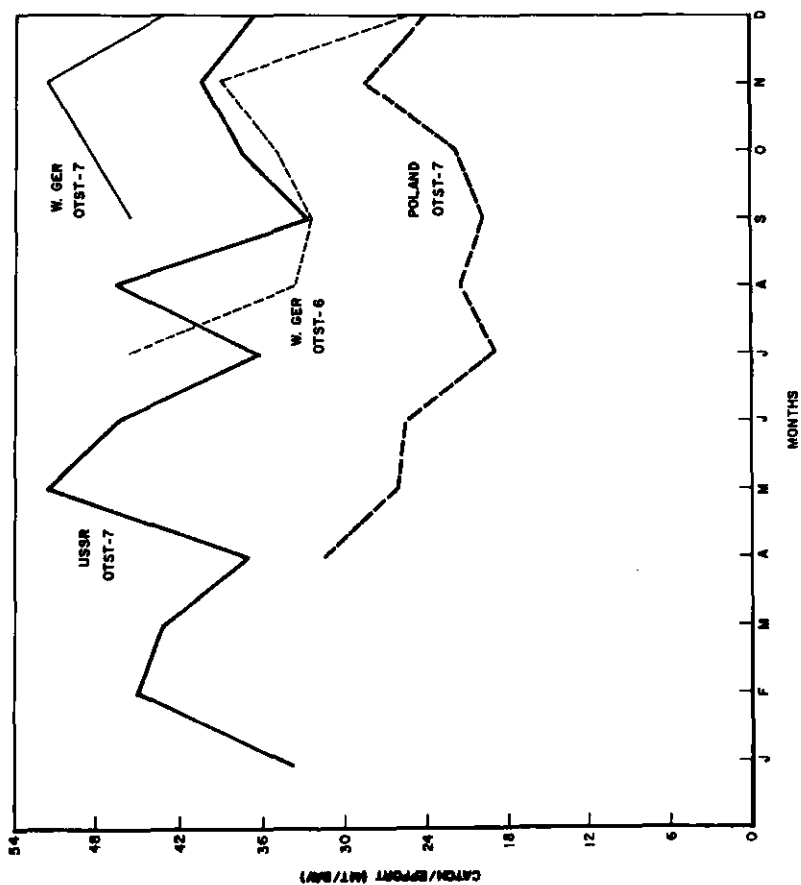


Fig. 4C(2). Monthly catch per unit effort for 1969 by country and vessel class for ICNAF Subarea 5 and Statistical Area 6.

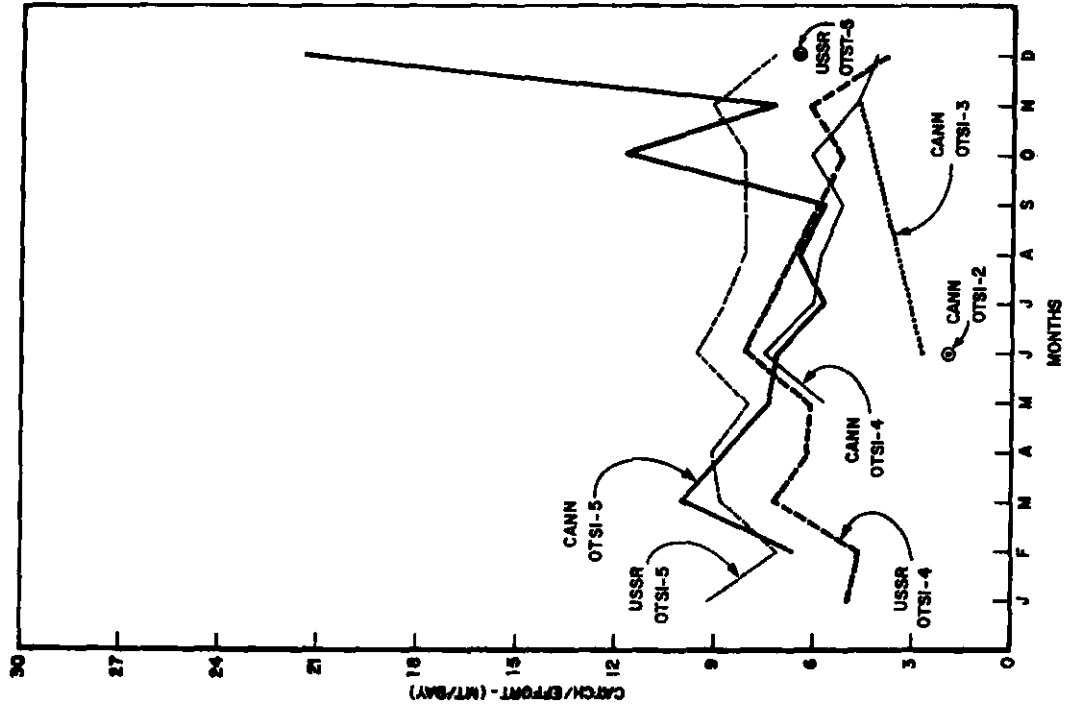


Fig. 5A(3). Monthly catch per unit effort for 1971 by country and vessel class for ICNAF Subarea 5 and Statistical Area 6 with directed catches for flounders, haddock and herring removed.

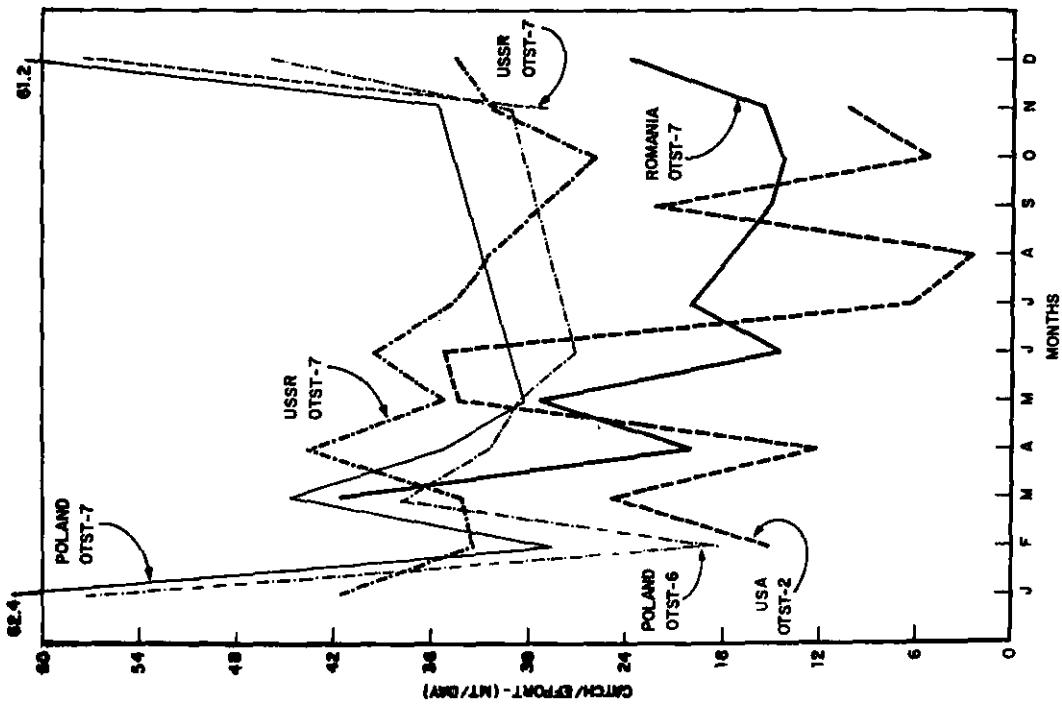


Fig. 5A(2). Monthly catch per unit effort for 1971 by country and vessel class for ICNAF Subarea 5 and Statistical Area 6 with directed catches for flounders, haddock and herring removed.

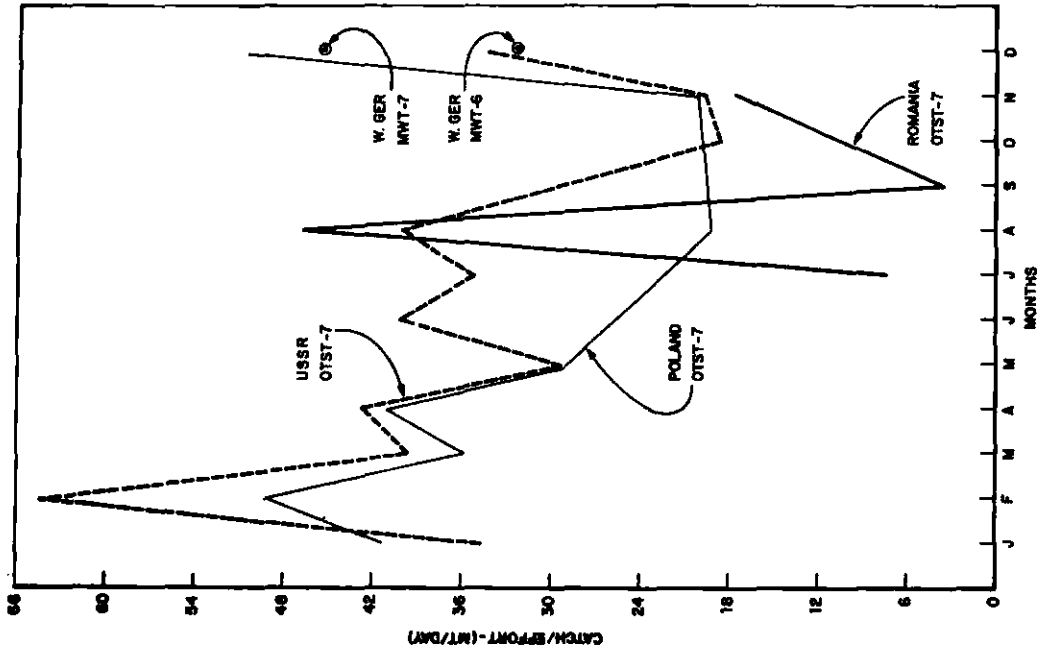


Fig. 5B(2). Monthly catch per unit effort for 1970 by country and vessel class for ICNAF Subarea 5 and Statistical Area 6 with directed catches for flounders, haddock and herring removed.

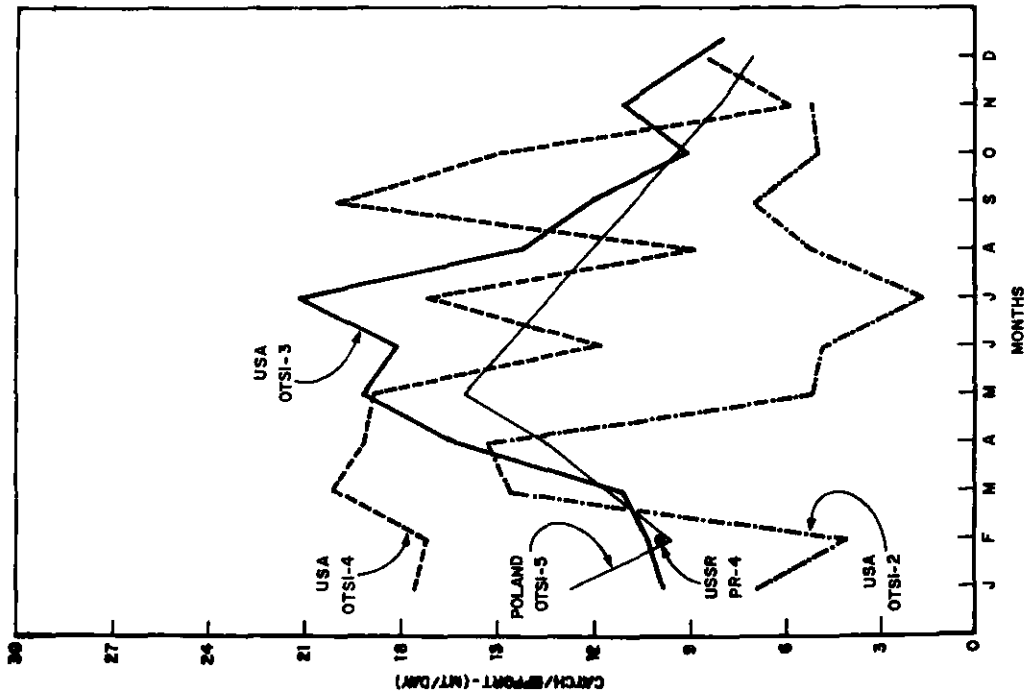


Fig. 5B(1). Monthly catch per unit effort for 1970 by country and vessel class for ICNAF Subarea 5 and Statistical Area 6 with directed catches for flounders, haddock and herring removed.

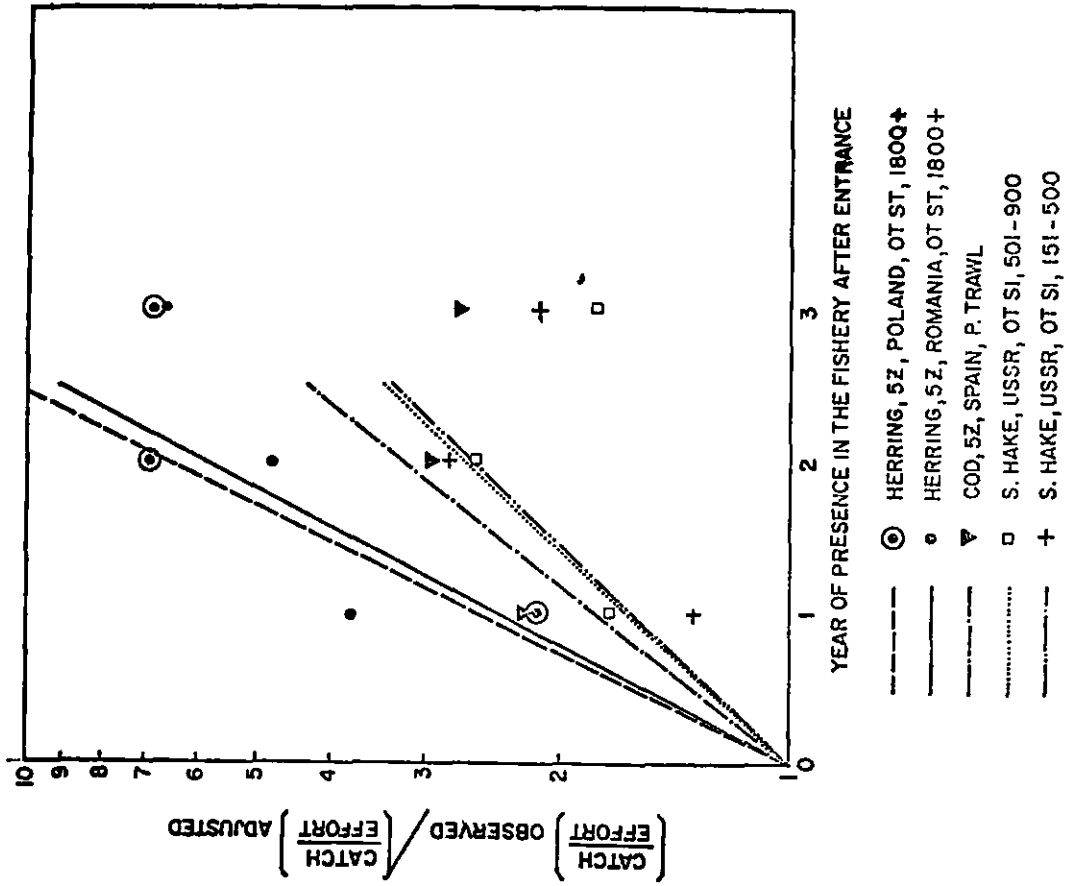


Fig. 6. Relationship of commercial catch per effort to Albatross IV survey cruise abundance indices.

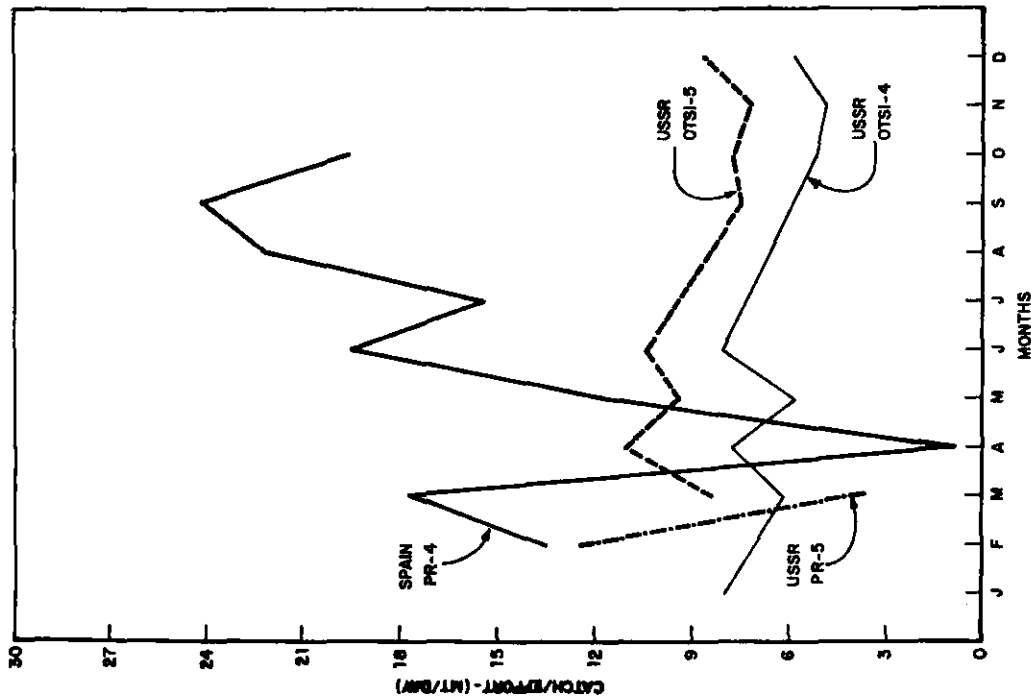


Fig. 5B(3). Monthly catch per unit effort for 1970 by country and vessel class for ICNAP Subarea 5 and Statistical Area 6 with directed catches for flounders, haddock and herring removed.

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(B.w.)

ANNUAL MEETING - JUNE 1973

Proceedings No. 5  
Appendix I  
Annex 1  
(also ICNAF Summ.Doc. 73/5  
- Appendix I)

Special Meeting of Experts on Effort Limitation  
Woods Hole, Massachusetts, 26-30 March 1973

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Mrs V.C. Kerr, Secretary, P.O. Box 638, Dartmouth, N.S.



Serial No. 2954  
(A. a. 4)

ANNUAL MEETING - JUNE 1973

Proceedings No. 5  
Appendix I  
Annex 2  
(also ICNAF Summ.Doc. 73/5  
- Appendix II)

Questions posed by STACREM regarding details of effort regulation  
FAO, Rome, Italy, 24 January 1973

1. What are the conversion factors needed to obtain "days on ground" from "days fished" for the various Member Countries? Do countries collect the necessary information to answer this question and, if not, how long will it take to collect the necessary data?
2. Please define exactly the following terms:
  - (a) fishing mortality
  - (b) fishing intensity
  - (c) fishing power
  - (d) fishing effortand specify what are the variables that should be discussed for effort control.
3. The Commission is attempting to control the fishing mortality on the resources and fishing mortality is an abstract quantity which cannot be regulated directly. The Commission may be able to control fishing mortality by regulation of fishing intensity or fishing effort. What is the accuracy with which these quantities can be measured and what is the error involved in using them as a predictor of future fishing mortality?
4. If catch quotas are set for several species which imply different percentage reductions in fishing mortality, what problems does this raise in connection with a fixed reduction in fishing effort, especially for countries only interested in some species?
5. What is the probable increase of fishing mortality in other Subareas, if a regulation of fishing effort is introduced in Subarea 5 and Statistical Area 6?
6. If you are controlling your vessels at a level of fishing intensity lower than the one you are allowed, how can that be judged by the criterion of days on ground?
7. If both catch and effort quotas are applied to a given stock, what problems are raised in allocating between countries and within a country to ensure that the two quotas are simultaneously met?
8. What are the opportunities for countries to increase in response to effort control the fishing mortality caused by one unit of fishing effort?
9. Given the present status of stocks and fishing effort in Subarea 5 and Statistical Area 6, assuming that non-member activity does not change, no new entrants arrive and the coastal state stabilizes the catches in the territorial waters outside the Convention Area at the 1972 level, what will be the situation of the stocks in those areas in the years 1974 and 1975 if appropriate catch quotas for those years for mackerel and flounders (other than yellowtail) are added to the quotas already established and the by-catch problem is taken care of by revising MSY's of the regulated species in the area at June 1972 and 1973?
10. Could STACRES look into the question of further regulating mesh size and minimum size of fish in Subarea 5?

RESTRICTED

Serial No. 2954  
(B.w.)

ANNUAL MEETING - JUNE 1973

Proceedings No. 5  
Appendix I  
Annex 3  
(also ICNAF Summ.Doc. 73/5  
- Appendix III)

Special Meeting of Experts on Effort Limitation  
Woods Hole, Massachusetts, 26-30 March 1973

Agenda

- I. Opening
- II. Election of Chairperson
- III. Approval of Agenda
- IV. Program of Work (Report of STACREM, Circular Letters 73/17, 73/23)
  - A. Definition of terms (STACREM Q. 2)
  - B. Problems related to by-catch
    1. Measurement
    2. Relation to directed fishery (STACREM Q. 9)
    3. Assessment of effects of fishing (STACREM Q. 9, 10)
  - C. Fishing effort
    1. Factor involved in
      - i) Changes in performance with time (STACREM Q. 3, 8)
      - ii) Inter-calibration of gear (STACREM Q. 1, 3, 6)
    2. Methods of measurement and data requirements (STACREM Q. 1, 3, 6)
  - D. Methods of control of catch and effort
    1. Practical and economic problems in application (STACREM Q. 4, 5, 6, 7)
    2. Minimization of by-catch (STACREM Q. 10)
    3. Reporting requirements
    4. Enforcement
- V. Other Matters (Cardoso Questions 1-4)
- VI. Report

Serial No. 2954  
(H) & (B.w.)

ANNUAL MEETING - JUNE 1973

Proceedings No. 5  
Appendix I  
Annex 4  
(also ICNAF Summ.Doc. 73/5  
- Appendix IV)

Note on definition of fishing mortality and exploitation rate

Fishing mortality is the mortality generated by fishing, inside a certain group of fish. That group of fish will usually be a stock (of one single species) but can also be a different group, as for example, a single year-class within that stock, age group, sex group, etc.

Natural mortality is the mortality generated by causes other than fishing inside a certain group of fish.

Mortality is the proportion or percentage (in terms of numbers of the fish or members of the group in question) that would be killed by the corresponding cause within the unit of time chosen. This unit of time might be instantaneous or finite. If finite, it may be one hour, one month or, as generally used, one year. Although easily understood when one chooses a finite interval of time, the notion will, for other reasons, be difficult to grasp, as we will see further on.

The instantaneous fishing mortality is the proportion of a stock removed by fishing at that instant during the infinitesimal interval of time  $dt$ . During that infinitesimal period of time the stock size or abundance  $N$  (number of fish in the stock) may be considered to remain at  $N$  and suffer then an infinitesimal change  $dN$ . The proportion of stock removed is then  $dN/N$ . Consequently, instantaneous fishing mortality,  $F$ , is

$$F = \frac{-dN}{N} \cdot \frac{1}{dt} \quad (1)$$

The negative sign only denotes that  $dN$  is a quantity removed, not added, during the instantaneous interval  $dt$ .

Expression (1) can easily be integrated, assuming no other cause of mortality, if we consider that instantaneous mortality does not vary with time:

$$F = \frac{-dN}{N} \cdot \frac{1}{dt} \quad -Fdt = \frac{dN}{N} \quad -Ft = \log N + \text{Constant}$$

When  $t = 0$ , Constant =  $-\log N_0$

Thence,  $-Ft = \log N - \log N_0$

and

$$e^{-Ft} = \frac{N}{N_0} \quad (2)$$

which shows that, if  $F$  is a constant, the abundance of the stock (i.e., the number of fish in the stock) decreases as a result of fishing with time and mortality in an exponential manner.

If we apply the definition already given, to a finite interval of time, if  $C$  is the catch during that interval of time  $\Delta t$ ,

$$F_{\Delta} = \frac{C}{N} \cdot \frac{1}{\Delta t} \quad (3)$$

where  $\bar{N}$  is the mean value of the number of fish  $N$  in the stock during the period  $\Delta t$ , taking into account all the gains or losses occurred due to any motive during that period.

Because of all variation causes,  $N$  varies with  $t$ , so that  $N = f(t)$ . Then, if  $\Delta t = t_1 - t_0$ ,

$$\bar{N} = \frac{\int_{t_0}^{t_1} f(t)dt}{t_1 - t_0} \quad (4)$$

This expression shows that it is impossible to determine  $F_{\Delta}$  due to fishing if you do not know the variation of  $N$  due to all other causes of mortality during the interval of time considered. It also shows that if a fleet takes 20% of the fish that exists on the grounds fished at the time of fishing, two equal fleets will not take double the amount of fish of one fleet but something less. This is due to the so-called competition between the sources of mortality.

With one fleet operating with a mortality of 20%, we will have approximately

$$F_{\Delta} = \frac{1/2 \cdot 20\%(N_0 + 80\% N_0)}{1/2 (N_0 + 80\% N_0)} = 20\%$$

which in relation to  $N_0$  means that the fleet caught approximately

$$1/2 \cdot 20\%(N_0 + 80\% N_0) = 18\% N_0$$

With two fleets, we will have approximately:

$$F_{\Delta} = \frac{1/2 \cdot 20\%(N_0 + 60\% N_0) + 1/2 \cdot 20\%(N_0 + 60\% N_0)}{1/2 (N_0 + 60\% N_0)} = 40\%$$

which in relation to  $N_0$  means the fleets caught approximately:

$$10\% N_0(1 + 60\%) + 10\% N_0(1 + 60\%) = 20\% N_0(1 + 60\%) = 32\% N_0.$$

Because of the difficulties pointed out, it is far more practical to work with instantaneous fishing mortality and use expression (2). It is customary to designate the fishing mortality coefficient as  $F$ . If the time interval is of one unit:

$$N_{t+1} = N_t \cdot e^{-F} \quad (5)$$

It is obvious that mortality coefficients can be added together and simply multiplied by time units. The most common time unit, as we already said, is one year.

Under identical assumptions, but taking into consideration the natural mortality, defining instantaneous natural mortality in an identical manner, one obtains:

$$N_{t+1} = N_t e^{-(F+M)} \quad (6)$$

$$N_t = N_0 e^{-(F+M)t} \quad (7)$$

where  $M$  is the natural mortality coefficient. The sum  $(F+M)$  which corresponds to the mortality generated both by fishing and all other causes is designated by:

$$Z = F + M \quad (8)$$

where  $Z$  is the total mortality coefficient. From expression (7), it follows that

$$\frac{N_t}{N_0} = e^{-(F+M)t} \quad \text{and} \quad N_0 - N_t = N_0 - N_0 e^{-(F+M)t}$$

Hence,

$$\frac{N_0 - N_t}{N_0} = [1 - e^{-(F+M)t}] \quad (9)$$

which allows an easy calculation of the percentage of fish naturally dying, or fished, or naturally dying and fished, if certain values of mortality coefficients apply.

The following table is an example of the results of that calculation:

Line No.	Total mortality coefficient	Number of time units	Percentage of fish dying
1	0.10	1	10
2	0.10	2	18
3	0.20	1	18
4	0.20	2	33
5	0.40	1	33
6	0.70	1	50
7	1.00	1	63
8	1.50	1	78

It follows from the above table (line 5) that if  $F = 0.20$  and  $M = 0.20$ , then, within one year, 33% of the fish will die. In this example, half the total mortality is due to fishing, the other half to other causes. If there had been no fishing mortality, 18% would have died of other sources inside the period regarded (line 3) and not 16-1/2%.

The ratio between numbers of fish removed due to fishing and total numbers of fish dying is referred to as the exploitation rate, denoted by  $E$ ,

$$E = \frac{F}{F+M} = \frac{F}{Z} \quad (10)$$

If  $F = 0.20$  and  $M = 0.20$ , then  $E = 0.5$ .

Notes on terminology used in fishery assessment

by

Captain J.C.E. Cardoso  
Portugal

1. Fishing power of a vessel with a certain equipment, master and crew, working on a certain density of fish of a certain stock, in a certain area of the grounds, at a certain moment, is defined as the amount (weight or number) of fish caught by the vessel per unit fishing time at that moment.

$$FP = \frac{C}{T} \quad (1)$$

where C is the catch, i.e., the number of fish caught by the vessel in the area, divided by fishing time T. The term C/T is therefore a function of (vessel, equipment, master and crew, density of fish, location of area, season, weather and stock).

Density of fish is defined as the amount (weight or number) of fish of that stock existing in the area per unit volume of water V.

$$\delta = \frac{N}{V} \quad (2)$$

where N is the number of fish in the volume V.

It is obvious that fishing power of a vessel can only be constant when equipment, master and crew, density of fish, location, occasion, stock are all constant and well determined.

Fishing power may also be defined for a fishing gear. In such a case, if the gear sweeps or encircles a certain volume of water, as the density of fish N/V is a constant, to that volume corresponds the number of fish N which will be caught. That is, in such a case, there is a simple relation of scale between the volume swept  $V_g$  and C. Fishing power of the gear may then be defined as

$$FP = \frac{V_g}{T} \quad (3)$$

where  $V_g$  is the volume of water swept by the gear per unit fishing time T, assuming all the parameters mentioned to be constant.

2. Relative fishing power of one vessel (or gear) with a certain equipment (accessories), master and crew, on a certain density of fish, of a certain stock, in a certain area of the grounds, at a certain moment, is the ratio of its corresponding fishing power and the fishing power of a reference or standard vessel (gear) with a certain equipment (accessories), master and crew, operating in the same density of fish of the same stock, in the same area, at the same moment.

$$RFP_1 = \rho_1 = \frac{C_1/T_1}{C_0/T_0} \quad (4)$$

where  $C_1$  is the catch taken by vessel 1 in fishing time  $T_1$ , and  $C_0$  is the catch taken by the reference vessel 0 in fishing time  $T_0$ .

It is generally assumed that RFP, once properly determined, i.e., with all fixed necessary parameters, will remain constant even when some or many of these parameters differ.

3. Fishing effort exerted by a fishing vessel or gear is the product of its relative fishing power and its fishing time.

$$X_1 = \rho_1 T_1 \quad (5)$$

This expression enables the fishing effort of different vessels to be measured in the same unit of effort. It is obvious that the measure of fishing effort is really relative to the reference vessel used to deter-

mine  $\rho_1$  and, strictly speaking, is only valid for the parameters fixed to determine  $\rho$ .

It is often necessary to determine the total fishing effort exerted by  $n$  vessels over an area  $A$ . This will be:

$$X_i = \sum_{i=1}^{i=n} \rho_i T_i \quad (6)$$

where the total sum of the efforts exerted by vessels 1 to  $n$  in the area is calculated. This concept may still be applied to a larger area, where it is known that different densities of fish in the stock apply. This will be considered next when we deal with fishing intensity.

4. Fishing intensity, applied on a stock in a certain area  $A$  during the interval of time  $\Delta t$ , is the total fishing effort applied in the area per unit of area and unit of time.

$$\bar{f} = \frac{\sum_{i=1}^{i=n} X_i}{A \cdot \Delta t} = \frac{\sum_{i=1}^{i=n} \rho_i T_i}{A \cdot \Delta t} \quad (7)$$

When one is dealing with large areas, it is important to define effective overall fishing intensity:

$$f = \frac{\sum \delta \bar{f}}{\sum \delta} \quad (8)$$

which is a weighted average of the values of fishing intensities applied in different part-areas of the total area considered,  $\delta$  being the densities of fish occurring in the different part-areas.

Some confusion occurs sometimes between the concept of fishing intensity and fishing effort. This arises because it is many times practical, and usually done, to work with annual values and take the year as the unit of time. In the same manner, if you take the area under study as the unit of area, then fishing intensity is equivalent to fishing effort.

5. Basic relationship between fishing mortality and fishing effort. It is assumed in fisheries that

$$F = qf \quad (9)$$

The instantaneous fishing mortality in an area on a stock is directly proportional to the effective overall fishing intensity in the area on the stock. If it is assumed that the density of fish and intensity of fishing do not vary significantly within the area, the effective overall fishing intensity will be approximately equal to  $\bar{f}$  or the average of  $\bar{f}$ , the fishing intensity. However, as previously explained, in practical population dynamics work,  $F \equiv X$ . Consequently,

$$F = q\bar{f} = qX \quad (10)$$

6. Catchability coefficient. From expression (10) it is easily seen that

$$q = \frac{F}{X} \quad (11)$$

Consequently,  $q$  is the instantaneous fishing mortality induced in the area per unit of fishing effort.

If we introduce the notion that  $\frac{dN}{dt} = -FN$ , and set  $X = 1$  and  $dt = 1$ , we can then write

$$q = -\frac{dN}{N} \quad (12)$$

The catchability coefficient in the area is the proportion of stock removed per unit of fishing effort. Applying the notion of a standard vessel,  $\rho = 1$ , we can state that the catchability coefficient in the area is the proportion of stock removed per unit fishing time of the standard vessel.

7. Catchability coefficient of a ship. In the case of  $n$  vessels fishing the same stock in the reference unit area, we can write, from expression (7):

$$F = qX = q \left( \sum_{i=1}^{i=n} X_i \right) \quad (13)$$

Since fishing mortality coefficients  $F$  are additive, we can write:

$$F = \sum_{i=1}^{i=n} F_i = q \sum_{i=1}^{i=n} X_i = q \sum_{i=1}^{i=n} \rho_i T_i = \sum_{i=1}^{i=n} q \rho_i T_i \quad (14)$$

If we call  $q \rho_i = q_i$  (15)

we have  $F = \sum_{i=1}^{i=n} F_i = \sum_{i=1}^{i=n} q_i T_i$  (16)

and consequently  $F_i = q_i T_i$  (17)

Hence,  $q_i$ , the catchability coefficient of a ship fishing in the reference unit area, is the proportion of the stock removed per unit fishing time of that vessel.

**8. Relation between fishing power, catchability coefficient and catch per unit fishing time of a vessel.**

When we have several vessels during the unit year fishing the same stock in the reference unit area, we can average the stock size over the unit year and take it as the unit of stock, which means  $\bar{N} = 1$ . In such a case, it is evident that the catchability coefficient of a ship is equal to its fishing power and the fishing mortality induced by it.

$$F_i = \frac{dN_i}{1} \times 1 = \frac{C_i}{1} = FP_i = q_i \times 1 \quad (18)$$

And as we consider that the stock is constant, we have from expression (18):

$$\frac{FP_2}{FP_1} = \frac{C_2/\bar{N}}{C_1/\bar{N}} = \frac{C_2}{C_1} = \frac{F_2}{F_1} = \frac{q_2}{q_1} \quad (19)$$

which means that the ratio of the fishing power of two vessels is equal to the ratio of the catch per unit fishing time of these vessels.

One should mention that it is common to call the catch per unit fishing time of a vessel *cpue* (catch per unit effort). This is a slight inexactitude of language resulting from the fact that in absolute for that vessel, a unit time of fishing is a unit of effort, although this vessel may be efficient enough so that one unit of its fishing time may correspond to more than one unit of fishing effort measured in standard units of fishing effort.

**9. Mortality of a stock in terms of catch per year of the vessels fishing the stock.** From expression

(16) we have seen that  $F = F_1 + F_2 + \dots + F_n$

which can be written  $F = F_1 + F_1 \frac{F_2}{F_1} + \dots + F_1 \frac{F_n}{F_1}$  (20)

From (19) we conclude that  $F = F_1 + F_1 \frac{C_2}{C_1} + \dots + F_1 \frac{C_n}{C_1}$

or  $F = F_1 \left( 1 + \frac{C_2}{C_1} + \dots + \frac{C_n}{C_1} \right)$

or  $F = q_1 T_1 \left( 1 + \frac{C_2}{C_1} + \dots + \frac{C_n}{C_1} \right)$  (21)

where  $F$  is the instantaneous fishing mortality of a stock of average size  $\bar{N}$ , during the year, as a result of fishing by a fleet of vessels when the mortality induced by the standard vessel is  $q_1 T_1$  and this vessel in that year caught  $C_1$  tons of fish and the other vessels  $C_2, C_3 \dots C_n$  tons.



Notes on regulation of total fishing effort and the problem of by-catches

by

Captain J.C.E. Cardoso

Let  $n_i$  be the quantity of species  $n$  caught as a by-catch of the fishery on species  $i$  and  $n_n$  the amount of species  $n$  caught in the direct fishery of  $n$ .

The total quantity of species  $n$  fished is 
$$\sum_{i=1}^{i=n} n_i$$

The total quantity of all species of fish caught is 
$$\sum_{n=1}^{n=n} \sum_{i=1}^{i=n} n_i$$

Two points must be stressed:

- a) The concepts of fishing effort and fishing intensity only have scientific value when applied to one definite area and one definite stock and the more restricted the stock (e.g. age group of a definite population) and the area, the greater the possible accuracy.
- b) The simple relationship,  $F = qf$ , will, in many cases, not hold for several stocks in a large area. For example, it could actually be possible to increase  $f$  in an area while reducing  $F$ . If increased,  $f$  were applied to predator stocks only, thus reducing their numbers, the total number of all fishes in the area might be increased.

It would not be scientifically correct to translate  $\sum_{n=1}^{n=n} \sum_{i=1}^{i=n}$  into fishing effort from one year to another. Also in the relationship of one variable to another, many assumptions have to be made which are, in turn, affected by the variability of the parameters.

Let us assume that it is possible with sufficient accuracy to estimate the conversion of  $\sum_{n=1}^{n=n} \sum_{i=1}^{i=n} n_i$  into total fishing effort  $X$ , based on historical data. To show that maintaining fishing effort at  $X$  has a very low probability of maximizing the sustained catch from the fisheries while allowing proper conservation of the stocks. Let us consider, for simplicity, a binary biomass consisting only of two stocks, stock 1 and stock 2. Using the notation previously suggested, we would consider the following yearly catches:

Catch of direct fishery on 1 is $l_1$		2 <sub>1</sub> is by-catch of 2 in fishery 1
By-catch of 1 in fishery 2 is $l_2$		2 <sub>2</sub> is catch of direct fishery on 2
Totals	$l_1 + l_2$	$2_1 + 2_2$
Overall total	$l_1 + l_2 + 2_1 + 2_2$	

Assuming that there is a limitation on maximum catch of stock 1 and that catches on stock 2 are not limited, that  $I$  is the maximum sustainable yield for stock 1 and that the maximum catch allowed is  $I$ , then for maximization and conservation,  $l_1 + l_2 = I$ . But, if there is no limit on 2 and the by-catches of 1 in fishery 2 are important, increasing the catch of 2 will increase  $l_2$  rapidly. In other words, it is impossible to regulate fishery 1 with a limitation on 1 only. In fact, by increasing 2 without limit, stopping the direct fishery for 1 may not be enough to conserve 1 since  $l_2$  may become larger than  $I$ . If the problem of the by-catch is severe, without fishing for 1,  $l_2$  may exceed  $I$  even before  $2_2$  reaches its maximum sustainable yield. This is really the argument put forward to justify the necessity of imposing a total fishery effort regulation. However, the argument only proves that in order to regulate  $I$  you will have to regulate 2 also. In fact, a total fishery effort regulation may be inadequate to solve the problem.

Another point is that fisheries with large by-catches are not desirable from a conservation point of view, and that the by-catches  $l_2$  and  $2_1$  may be quite large with no allocation of fishing effort. In other words, by-catches are catches in which the main assumption,  $F = qf$ , which allows mortality to be controlled

by control of fishing effort, breaks down. It may immediately be concluded that the problem of by-catches can be solved by a careful consideration of maximum allowable catches and an intelligent regulation of indiscriminate fishing, but cannot, in principle, be solved by regulation of fishing effort while respecting the tenets of conservation of stocks at maximum possible yields.

To limit total effort at some arbitrary low level may or may not solve the problem of by-catches, but cannot certainly either lead to maximization of catches or guarantee the conservation of stocks. Assuming that it is possible to convert correctly  $l_1$  to effort  $X_1$  and  $2_2$  to effort  $X_2$ , then  $l_2$  and  $2_1$  in practice correspond to zero fishing effort.

If now an arbitrary limit  $L$  is set on total effort, this limit, if "correctly" set, should correspond to the catch,  $l_1 + l_2 + 2_1 + 2_2$ .

It is immediately obvious that, when converting  $l_1 + l_2 + 2_1 + 2_2$  into effort as a "lump" stock, the resulting effort could never equal  $X_1 + X_2$  since the relationship  $F$  to  $f$  in stock 1 is different from that applying in stock 2 and either of those two relationships different from that applying in the hypothetical "lump" stock  $l + 2$ . Thus, arbitrarily or "correctly" calculated, we may always write

$$L = X_1 + X_2 \pm \epsilon$$

where  $\epsilon$  is a positive quantity equal to the absolute value of the difference or error in  $L$  relative to  $X_1 + X_2$ . Since there is a limitation of catch in stock 1, it is now obvious that the termination of fishing on that stock will not coincide with the  $X_1$  effort. This is because  $X_1$  corresponds correctly only to the component  $l_1$  of the catch in stock 1 while, all the time, another component  $l_2$  is being added as a result of fishing stock 2 at a rate that has nothing to do with the relation between  $l_1$  and  $X_1$ . If  $l_2$  is accumulated at a faster rate than  $l_1$ ,  $X_1$  will not be fully spent by the time  $I = l_1 + l_2$  is caught, and vice-versa.

Assuming that  $I$  has been caught at the end of application of effort  $X_1^1 = X_1 \pm \epsilon_1$ , then the effort available to catch stock 2 will be  $L - X_1^1 = X_1 + X_2 \pm \epsilon - X_1 \pm \epsilon_1 = X_2 \pm \epsilon \pm \epsilon_1$ . The effort necessary to catch  $II = 2_1 + 2_2$  will similarly be  $X_2^1 = X_2 \pm \epsilon_2$ , so that, if stock 2 is to be properly regulated,  $X_2 \pm \epsilon \pm \epsilon_1 = X_2 \pm \epsilon_2$  or  $\pm \epsilon \pm \epsilon_1 \pm \epsilon_2 = 0$ .

If this condition is not fulfilled, stock 2 will not be properly regulated and unless the regulation curtails drastically the fishing time available to fish stock 1 and especially stock 2, as 2 is not regulated, stock 1 will not be regulated either, because as we have seen, with important by-catches, one stock cannot be properly regulated if the other is not.

It is our contention that the condition  $\Sigma \epsilon = 0$ , in which the errors  $\epsilon$  are so difficult to estimate and control, proves that, especially in a multi-species fishery, total effort regulation will either prohibit maximization of yield or else will not secure proper conservation of stock of species threatened by the existence of large by-catches of those species as a result of fisheries for other species.

It is, therefore, maintained that in a multi-species fishery, total effort regulation may, because of the abundance of one large stock  $Y$ , allow a large total effort. This large effort will have a catastrophic result if diverted to an unregulated species  $Z$  or be harmful to regulated species  $R$  due to by-catches in the fishery on  $Y$  alone or on  $R$ .

Calculation of projected 1973 catches in Tables 5 and 6

The projected 1973 catches were calculated as follows:

- (1) For each country the 1971 catch statistics in Table 5 of the ICNAF Statistical Bulletin were categorized by main species sought by the Assessments Subcommittee (see Table 2). The annual percentage catch distribution of each species caught over the main species sought fisheries was calculated.
- (2) The percentage of the species in by-catch to the main species sought within each fishery was calculated for 1971.
- (3) The 1973 species quotas or 1971 catches for species or groups of species where no quotas are assigned were partitioned over fisheries on the basis of the percentages as calculated in (1) above and called the allocated catch<sup>1</sup>.
- (4) The estimated by-catch for 1973 was calculated by applying the percentages in (2) above to the "allocated" directed catch to give a 1973 "estimated" catch (Table 5). The main conclusions are summarized in Table 6.
- (5) Where the "estimated" catch exceeded the "allocated", the consequence is overharvest unless there is a change in fishing patterns. Where it is lower than the allocated catch, the result would be an underharvest unless there is an increase in directed effort (with accompanying increased by-catch).
- (6) The country values were then summed both for Member Countries only and for Member and Non-Member Countries to illustrate the overall situation (Table 8).

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<sup>1</sup> Haddock was adjusted for the reduced quota. The mackerel quota was used for the other pelagics.

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ANNUAL MEETING - JUNE 1973

Report of the Second Meeting of Experts on Effort Limitation  
Copenhagen, Denmark, 30-31 May, 5 June 1973

1. The Report of the First Meeting of Experts on Effort Limitation in Woods Hole, Massachusetts in March (this Proc. 5, Appendix I) was reviewed briefly. That meeting considered primarily the ten questions posed by STACREM during the January 1973 Commission Meeting and also dealt with four questions posed by Captain Cardoso. The March meeting in Woods Hole resulted in the formulation of nine recommendations including one that recommended the convening of another meeting at the Annual Meeting of the Commission.
2. The Group next considered the additional studies relevant to the problems which had been submitted as documentation to this Annual Meeting. In considering these contributions, it was felt that they could be related primarily to Recommendations 1, 3, 7 and 8 in Appendix I of this Proceedings No. 5.
3. Recommendation 1 dealt with three possible options for fisheries management. These were related to their advantages and disadvantages in managing a mixed fishery. These three options were:
  - (a) the current ICNAF regime of individual species quotas,
  - (b) total quota for all species,
  - (c) limitation of total effort,
 the latter two including optimization by setting individual species quotas within them. Documents pertinent to this recommendation were January 1973 Proc. 1, Appendix I, and Res.Docs. 73/1, 6, 8, 9, 10, 15, and a contribution from NEAFC *ad hoc* Study Group on Celtic Sea Herring Stocks. January 1973 Proc. 1, Appendix I, and Res.Docs. 73/6, 8, 9, and 10 dealt primarily with aspects of assessments of the productivity of the total finfish biomass. These had been reviewed in detail by the Commission and were briefly referred to during the current meeting.
4. The general conclusions derived from these contributions were that
  - (a) the finfish biomass in the Subarea 5 and Statistical Area 6 was being fished in 1971 at a point beyond the fishing mortality corresponding to its maximum sustained yield;
  - (b) the difficulties of management in fisheries in this area were related to the mixture of species and the consequent by-catch problem;
  - (c) the Assessments Subcommittee concluded that this problem could be alleviated by controlling the fishing mortality either by means of total catch quota or a total effort limitation and that the relative merits of the two approaches to regulation were difficult to decide on scientific grounds;
  - (d) the total finfish catch quota must be less than the sum of the individual species quotas.
5. The choice between options 3(b) and 3(c) depended upon the resolution of a number of problems which had been referred to the present meeting. Information related to this aspect is contained in Res.Docs. 73/10 and 15, and in the contribution from the NEAFC *ad hoc* Study Group.
6. Res.Doc. 73/15 was reviewed. This document illustrates the possible general effects of removal of only the most inefficient vessels of a given category. It reviews the rate of technological change during the period of development of ICNAF and the consequence of using an effort quota as opposed to a catch quota in terms of the probable reactions of the fleet manager. It also presents an evaluation of the practicability of control as related to the choice of units of fishing activity, i.e., days on ground, days fished.
7. Subsequent discussions dealt with the reactions to an international effort control which may result in an increase of fishing efficiency with or without technological improvements. Some of these reactions may be of a psychological nature and difficult to predict. Discussions provided further examples of how the relation between fishing mortality and fishing effort might change in response to an effort control regulation. It was not possible to evaluate the rate of change and the time involved but it was felt that once these changes in efficiency had been made, the system would stabilize again, presenting then an opportunity to re-evaluate and adjust for them.

If, on the other hand, it will be accepted that an improvement in fishing efficiency is inevitable as an immediate reaction to the introduction of fishing effort regulation, it would be desirable to set the effort quota at a lower level than apparently required.

8. The choice of units of effort for management, i.e., choice of days fished opposed to days absence or days on grounds, could allow for minimization of changes in fishing patterns but the choice must also be

related to maximizing the efficiency of administration and management. Some felt, however, that effort limitation of this type would impose inequalities on some participants in the fishery (this Proc. 5, Appendix I, paragraph 3 of Item 14).

An effort limitation would fix the upper level to which the effort would tend as opposed to a catch quota which in face of a possible decrease in catch per unit effort might, if not promptly and adequately adjusted, generate more and more effort in an attempt to reach the quota.

9. With regard to Recommendation 3 (this Proc. 5, Appendix I, Item 21), Member Countries should consider the magnitude of the errors associated with factors involved in setting fishing effort regulations. Res. Docs. 73/18, 110, 114 and 118 were considered.

10. Res.Doc. 73/18 contained an analysis of various factors involving year, species, area, country, vessel, gear-tonnage classes and months. It showed that the vessel gear-tonnage class factor was the most critical accounting for the major portion of variability. The next most important factor was country, and the others were of lesser importance. The 1970-71 year-gear interaction was not significant suggesting no change in gear during this period. The ensuing discussion brought out the fact that this analysis may not be applicable to future changes and that the factors incorporated in the model failed to account for a substantial part of the variation.

11. Res.Doc. 73/110 considered relative error in fishing mortality by catch or effort quotas. The model employed was similar to that used in the March meeting. Data from several North Atlantic cod and Georges Bank herring fisheries were considered. Catchability coefficients were noted as changing with biomass although these tended to be asymptotic, and some time trends were observed but over long periods of time. The general conclusions from the analysis were that catch quotas are by their nature theoretically more subject to error than effort quotas, based on the best measures of effort available, e.g. days fished, especially if recruitment is highly variable. It was suggested that catch quotas may give, in some cases, more accurate results than effort regulation using an easily observable but less precise unit of effort, e.g. days on grounds, especially in multi-species fisheries with a large variety of fishing methods.

12. Res.Doc. 73/118 dealt with the development of fishing effort measures based on the concept of the volume of water fished per unit time. The document defined the basic derivation of the method and illustrated its application to fisheries of the USSR of the Northwest Atlantic. The accuracy of the method was evaluated on the basis of a correlation between catch per hour fished and gross tonnage, vessel length, engine capacity, and fishing capacity (volume of water swept). These correlations ranged from 0.80-0.97. Discussion of the paper indicated that the definitions of certain terms differ from those commonly adopted in the consideration of fishing effort. This approach was considered of value if, in fact, the factors involved in the evaluation of what is now usually designated as "fishing power" of vessels and their gear will be part of what is in this method defined as "fishing efficiency". This would take care of catchability of the gear as well as behavioural and distributional characteristics of fish.

It was noted that ICES Working Group on Research and Engineering Aspects of Fishing Gear, Vessels and Equipment, IJmuiden, 3-5 May 1973, recognized this method as a fundamental approach to the solution of the problem of fishing effort evaluation and recommended to ICES member countries a study of the feasibility of its application to their fisheries.

13. Res.Doc. 73/99 outlined the magnitude of the by-catch problem in Subarea 5 and Statistical Area 6 and its effects on regulation by individual species catch quotas. The analysis indicated that, even when the catch of a species from different fisheries was accounted for, the fishing pattern of directed fisheries would have to be significantly altered but even then, some species quotas would be exceeded and some not achieved. If the coastal directed fisheries were to be maintained, some other directed fisheries would have to be substantially limited and the total catch would be considerably reduced.

14. General conclusions. The report of the March meeting and the contributions discussed at this meeting provide some measure of the probable effects of changes in the fishing pattern on the regulation of fishing mortality by direct effort limitation. It is obvious, however, from the research documents, the report of the March meeting, and discussions that there is not as yet adequate information to permit full evaluation of the proposed effort limitation scheme. The studies do indicate, however, that in Subarea 5 and Statistical Area 6, the setting of individual species catch quotas based on independent species assessments is not satisfactory in terms of the current ICNAF management regime in achieving the objectives of maximum sustainable yield in this mixed species fishery.

The Group was of the opinion that a major problem is the solution of the by-catch problem but that, unfortunately, not enough work has yet been applied to its solution. It recognized that the definition of by-catch and the deficiencies in the collection of statistics in mixed fisheries are components of this problem.

It was agreed that, firstly, it should be determined in which fisheries and for which countries this problem is important and that then an evaluation should be made of its true magnitude in Subarea 5 and

Statistical Area 6, utilizing all sources of information available from the Member Countries concerned, including season and area distribution of species and catches, and the type, mode, operation and selectivity of the fishing gears used. The Group noted that, on the basis of the statistical data currently published by ICNAF, the herring and mackerel fisheries do not seem to contribute significantly to the by-catch problem, whereas this problem appears to be of major significance in the silver hake fishery as shown in the attached table prepared from Table 4 of the 1971 ICNAF *Statistical Bulletin*.

The Group

recommends

that a Working Group be established to undertake a detailed study of all available data on the by-catch problem in Subarea 5 and Statistical Area 6, and to prepare plans which might form the basis of an international experiment to study mesh selectivity and the use of specialized fishing gear in relation to the by-catch problem.

It was also suggested that all exemption rules in force should be reviewed so that their contribution to the by-catch problem can be evaluated.

Breakdown of catches by species and types of fishery in Subarea 5 and Statistical Area 6 in 1971 (ICNAF Statistical Bulletin Vol. 21 for 1971, Table 4) for the purpose of studying the problem of by-catch associated with the silver hake fishery.

Div.	Fishery	Days fished	Cod	Had	Red	S.H.	Flo	OG	Her	OP	OF	SF	Total
5Y	Groundfish	3,470	3,020	332	3,673	3,257	1,964	3,073	270	18	31	3,313	18,964
	Silver hake	13				82	1	12				9	104
	Pelagic (USA)	1,749	604	118	610	4,969	626	1,194	12,497	93	20	377	21,109
	NK (USA)		22	3	5	7	55	1			3,130	711	3,934
5Ze	Groundfish	3,220	2,070	1,230	1,900	3,017	5,457	1,811	1,334	12	11	556	17,398
	All species	2,274	657	283	65	42,771	1,810	5,617	5,276	12,226	9,562	2,966	81,266
	Pelagic	9,122	442	12	3,105	11,202	859	3,585	50,908	29,892	8,510	1,262	109,777
5Zw	Groundfish	2,476	577	4		1,909	5,026	6,538	767	516	686	441	16,464
	All species	2,173	25	53	10,681	1,834	14,112	2,930	2,930	5,068	14,189	483	49,375
	Pelagic	899	2		566	89	667	313	1,163	8,605	1,756	9	13,072
		284	1		6		34	248	1,987	3,009	659	9	6,042
5NK	All species	1,572	152	29	180	18,126	4,432	11,089	4,823	11,277	3,691	1,781	55,580
6A	Groundfish	733	102	1		542	2,990	1,915	61	133	122	67	5,933
	All species	916				2,379	312	7,875	17	90	1,021	191	11,885
	Pelagic	4,551	8		3	2,924	873	2,376	10,078	46,199	4,635	114	67,120
6BC	Groundfish	-	-	-	-	-	-	-	-	-	-	-	-
	All species	-	-	-	-	-	-	-	-	-	-	-	-
	Pelagic	1,407	-	-	-	2,445	33	958	3,594	22,892	3,312	116	33,350
6NK			258	7	-	2,447	7,964	3,524	1,160	233,552	26,386	429,345	704,643
ALL	Groundfish	5,769	5,769	1,567	5,573	8,725	15,437	13,337	2,432	679	850	4,377	58,759
	All species	834	834	365	245	74,039	8,389	38,705	13,046	28,661	28,463	5,430	198,210
	Pelagic	1,057	1,057	130	3,724	22,195	3,092	8,674	80,227	110,690	18,892	1,878	250,470
	NK	280	280	10	5	2,453	8,019	3,525	1,160	233,552	29,516	430,056	708,577
	Total												

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(A.a.4)

Proceedings No. 5  
Appendix III  
(also ICNAF Comm.Doc. 83/18  
- Addendum I)

ANNUAL MEETING - JUNE 1973

Summary of US Proposals in "Note by US Commissioners on ICNAF Conservation Actions" (Comm.Doc. 73/18)

1. That the Commission implement a more comprehensive and robust regulatory program tailored to fit the characteristics of the stock structure and fishing patterns of the area and fisheries concerned, taking into full account the research, monitoring, and enforcement capabilities of the Commission (paragraph 5 of Comm.Doc. 73/18).
2. That all Contracting Governments be required to measure a sample of at least 200 fish for each 1,000 tons caught (paragraph 7).
3. That the US proposal on the limitation of effort be adopted (paragraph 11).
4. That either the use of far more selective fishing techniques in mixed fisheries be required or that a very drastic reduction of fishing effort in such areas be required (paragraphs 21 and 30).
5. That the following supplemental mesh regulations be adopted:
  - (a) All trawl fisheries using gear capable of catching demersal species conducted by vessels over 110 feet inside 40 fathoms in Subdivision 5Zw of Subarea 5 and that portion of Subdivision 5Ze of Subarea 5 west of 69°W longitude be conducted only with trawls having a minimum mesh size in the codend of the net of not less than 130 mm (manila).
  - (b) All trawl fisheries capable of catching demersal species outside of 40 fathoms in Subdivision 5Zw of Subarea 5 and that portion of Subdivision 5Ze of Subarea 5 west of 69°W longitude be carried out with trawls having the minimum mesh size required by ICNAF when fishing for regulated species, but not less than 62 mm when fishing for any species (paragraph 31).
6. That the catch reports of vessels be required to adequately reflect the catches in the area, including all by-catches and discards (paragraphs 37 and 38).
7. That the existing reservations to the ICNAF Joint International Enforcement Scheme which limit opportunities for inspections of catch and gear be removed at this Annual Meeting (paragraph 41).
8. That international inspectors make a required inspection of catches and gear when observing apparently inadequate logbooks (paragraph 41).
9. That the ICNAF Joint International Enforcement Scheme be modified to authorize the inspectors to detain any vessel found to be in clear violation of the ICNAF fishery regulations (paragraph 45).
10. That the Commission be required to give careful weight to enforcement aspects at the inception of regulatory programs (paragraph 49).





Serial No. 3106  
(B.c.23)

Proceedings No. 6

ANNUAL MEETING - JUNE 1973

Report of Meeting of STACFAD

Thursday, 14 June, 1630 hrs

1. The meeting of the Standing Committee on Finance and Administration (STACFAD) was opened by the Chairman, Mr Wm.L. Sullivan, Jr (USA).
2. Membership of STACFAD consisted of the Executive Secretary (Mr L.R. Day) and nominees from Canada (Mr E.B. Young), Denmark (Mr K. Løkkegaard), USSR (Mr A.A. Volkov), and USA (Mrs M.B. West).
3. The Executive Secretary was appointed Rapporteur.
4. The Agenda was approved with some minor amendments.
5. Panel Membership. Panel memberships were reviewed. STACFAD

recommends

that the application of Bulgaria for membership in Panel 5 be accepted effective 1 July 1973.

6. Auditor's Report. The Executive Secretary reported that the Auditor's Report covering the Commission's accounts to 30 June 1972 had been distributed to each Contracting Government in September 1972, and noted that no comments had been received. STACFAD

recommends

that the Auditor's Report for 1971/72 be adopted.

7. Administrative Report and Financial Statement (Comm.Doc. 73/10). The Executive Secretary reviewed the Administrative Report for the year ending 30 June 1973 (estimated from 1 May 1973). He indicated that the new position of Statistical Clerk was filled on 1 July 1972, and commented on the high morale of the Secretariat staff despite difficulties associated with inadequate space, particularly for printing and collating equipment and materials. He also indicated that the Commission's lease arrangement with the Canadian Government expires on 1 August 1973. The Canadian representative informed STACFAD that action on extending the arrangement was being taken and that the Commission would be informed shortly.

STACFAD examined in detail Financial Statements 1, 2 and 3, as well as Appendix I, of Comm.Doc. 73/10. The Executive Secretary pointed out that the appropriation for Annual and Mid-Term Meetings in 1972/73 was exceeded by \$4,495, due largely to additional expenses incurred for additional help and the extended duration of both the Mid-Term and Annual Meetings in 1972/73. STACFAD noted that total obligations for the year 1972/73 were estimated at \$147,131, which would be \$3,294 less than the amount appropriated by the Commission at the 1972 Annual Meeting. The Working Capital Fund is estimated at \$30,515 and the Miscellaneous Fund at \$21,383 as of 30 June 1973. STACFAD

recommends

that the Administrative Report with the financial statements for 1972/73 be adopted.

8. Working Capital Fund (WCF). STACFAD, noting that the WCF was estimated at \$30,515 and, considering ICNAF's proposed participation in the Joint ICES/FAO/ICNAF Symposium on Acoustic Methods in Fisheries Research at Bergen, Norway, in June 1973,

recommends

- (1) that \$5,000 be appropriated from the WCF to support the publication of papers of the 1973 Acoustic Symposium,

- (ii) that \$5,000 be appropriated from the WCF and transferred immediately to the Miscellaneous Fund to reduce the amount to be appropriated from Member Countries in 1973/74.

9. Budget 1973/74. STACFAD examined in detail the preliminary budget estimate for 1973/74 (Appendix I to STACFAD Agenda). STACFAD noted a significant increase of \$5,000 proposed for Other Contractual Services which was due largely to the acquisition of machinery to facilitate the more efficient production of the Commission's publications, including the rapidly increasing number of Meeting Documents. It was also noted that the proposed estimate for Equipment is \$1,000 compared with \$5,500 in the Advance estimates for 1973/74. This decrease is due to a decision not to purchase outright a Hewlett-Packard Electronic Calculator (cost \$4,500) but rather to lease the machine, the annual cost of which is \$993 under Other Contractual Services. In view of the greatly increased expenditures incurred at recent Mid-Term and Annual Meetings, STACFAD agreed that the appropriation for Annual and Mid-Term Meetings be set at \$12,500. STACFAD accordingly

recommends

- (i) that the ordinary expenditures of the Commission for the fiscal year 1972/73 be \$171,000,  
(ii) that, after \$5,000 from the WCF and an estimated \$21,383 from the Miscellaneous Fund is applied against that amount, approximately \$144,617 be appropriated from Member Countries in 1973/74.

In recommending adoption of the 1973/74 Budget (Appendix I), STACFAD

recommends

that the Commission approve proposals of the International Fisheries Commissions Pension Society (IFCPS) that

- (a) the Commission upgrade pension credits for service from 1 October 1966 to 1 October 1969 with automatic upgrading on an annual basis in future years,  
(b) the pension of former employees be upgraded by 2% each year (as for Canadian Government Civil Servants),  
(c) the Commission provide for surviving spouse pension benefit equal to one-half of the former employee's monthly retirement pension upon the death of the former employee.

10. Budget Forecast 1974/75. STACFAD considered the Budget Forecast for 1974/75 as presented in Appendix II to the STACFAD Agenda and noted that \$183,000 would be required to cover the ordinary expenditures (Appendix II).

STACFAD reiterated a decision taken at the Commission's 1972 Annual Meeting not to support financially the Symposium on the Early Life History Stages of Fish. STACFAD discussed the proposal of STACRES that the Commission support the preparation and publication of a paper or papers on the history of fisheries science and management in the Northwest Atlantic. It was agreed that an amount of \$5,000 might be considered for this special project, pending further investigation by the Secretariat on the organization and presentation of the subject matter, possible authors and costs, and the results of investigation to be reported to STACFAD at the Mid-Term Meeting in January 1974. STACFAD accordingly

recommends

that the Commission give consideration at the 1974 Annual Meeting to authorize

- (a) an appropriation of \$183,000 for the ordinary expenditures of the Commission,  
(b) an appropriation of \$5,000 from the WCF for preparation of a history of fisheries science and management in the Northwest Atlantic, subject to a further recommendation of STACFAD on this matter at the next Mid-Term Meeting of the Commission.

11. Commission's Annual Membership Fee (Comm.Doc. 73/16). Following discussion of whether the basic membership fee of \$500 US should be increased, a matter raised by the Commission at its 1972 Annual Meeting for investigation and reporting, and consideration of the report on possible formulae for calculating annual payments to the Commission (Comm.Doc. 73/16) as prepared by the Executive Secretary and the Chairman of STACFAD, STACFAD

recommends

- (i) that the basic portion of the annual payment be 15% of the ordinary annual budget of the Commission,

- (ii) that the Depositary Government be requested to prepare an appropriate amendment to Article XI of the Convention for subsequent approval by Contracting Governments, noting that the form of the amendment would be different depending on whether it is formulated before or after the 1970 Protocol on Amendments enters into force following ratification by one more Contracting Government.

12. Date of Billing for 1973/74. STACFAD

recommends

that the Contracting Governments be billed by the Commission for payments due, under the 1973/74 administrative budget, in accordance with Article XI of the Convention, on 15 August 1973.

13. Time and Place of 1974, 1975 and 1976 Annual Meetings. STACFAD, taking note of a previous recommendation of STACRES that a weekend intervene between the end of the scientific meetings and the beginning of the Plenary, and of the increasingly heavy agenda of the Annual Meeting,

recommends

- (i) that the 1974 Annual Meeting of the Commission be held at Halifax, Canada, 4-15 June 1974,
- (ii) that the 1975 and 1976 Annual Meetings be held at the Commission Headquarters at a date to be agreed later, if no other invitation is extended.

STACFAD also took note of a suggestion from NEAFC that the Commission might adjust the time of its Annual Meeting in order to facilitate the desire of NEAFC to adjust the time of its annual meeting. STACFAD concluded that no great adjustment would be possible, considering the timetable of work of the Commission, and

recommended

that the Commission consider setting the second week of June as the normal time for commencing Annual Meetings as from 1975.

14. Other Business.

- (a) The Executive Secretary reviewed information received from the ICES General Secretary on the administrative and financial aspects of the International Salmon Tagging Experiment 1972, indicating that sufficient funds were remaining to permit the publication of the papers which will present the analyses of the data.
- (b) In order to avoid confusion that often arises when reference is made to "Proceedings", STACFAD agreed to recommend to the Commission

that the title of the publication "Annual Proceedings" be changed to "Annual Report".

15. Mr E.B. Young (Canada) was unanimously elected Chairman of STACFAD for 1973/74.

16. The meeting adjourned at 2200 hrs.

ANNUAL MEETING - JUNE 1973

1973/74 Expenditures to be Covered by Appropriations  
from Contracting Governments and from Other Sources

	<u>Proposed</u> <u>estimates</u> <u>1973/74</u>
1. Personal Services	
(a) Salaries	\$ 92,500
(b) Superannuation	2,200
(c) Additional help	1,300
(d) Group medical and insurance plans	1,000
(e) Contingencies	4,500
(f) Forecast increase	2,500
2. Travel	7,000
3. Transportation	1,000
4. Communications	7,500
5. Publications	13,000
6. Other Contractual Services	15,000
7. Materials and Supplies	6,000
8. Equipment	1,000
9. Annual and Mid-Year Meetings	12,500
10. Contingencies	<u>4,000</u>
Total Ordinary Expenditures	\$171,000
<hr/>	
Special appropriation WCF	
(i) Transfer to Miscellaneous Fund	5,000
(ii) Acoustic Symposium, June 1973	5,000

ANNUAL MEETING - JUNE 1973  
Preliminary Budget Forecast 1974/75

	<u>Forecast estimate 1974/75</u>
1. Personal Services	
(a) Salaries	\$ 95,000
(b) Superannuation	2,500
(c) Additional help	1,300
(d) Group medical and insurance plans	1,200
(e) Contingencies	5,000
(f) Forecast increases	-
2. Travel	7,000
3. Transportation	1,000
4. Communications	8,000
5. Publications	14,000
6. Other Contractual Services	15,000
7. Materials and Supplies	6,000
8. Equipment	2,000
9. Annual and Mid-Year Meetings	15,000
10. Contingencies	<u>10,000</u>
Total Ordinary Expenditures	\$183,000
<hr/>	
Special appropriation WCF	
(i) Special Publication Project	5,000 <sup>1</sup>

<sup>1</sup> Subject to a further recommendation of STACFAD at the next Mid-Term Meeting





Serial No. 3107  
(B.e.73)

Proceedings No. 7

ANNUAL MEETING - JUNE 1973

Report of Meeting of Panel 1

Thursday, 7 June, 0915 hrs  
Friday, 8 June, 1430 hrs  
Saturday, 9 June, 0915 hrs  
Wednesday, 13 June, 0915 hrs

1. In the absence of the Panel's Chairman, Mr G. Mücklinghoff (Fed.Rep. Germany), Dr D. Booss (Fed.Rep. Germany), with the approval of the Panel, took the chair. He welcomed members of the Panel and Observers. All Member Countries were represented.
2. Rapporteur. Mr B.B. Parrish (UK) was appointed Rapporteur.
3. Agenda. The draft Agenda was adopted.
4. Panel Membership. No changes in Panel membership were proposed.
5. Report of Scientific Advisers. The Chairman of the Scientific Advisers to the Panel, Mr Sv.Aa. Horsted (Denmark), presented the Report of the Meeting of Scientific Advisers (Appendix I) and his Summary of the Status of the Fisheries and Research Carried Out in Subarea 1 and off East Greenland in 1972 (Summ.Doc. 73/33 Revised). These reports were approved by the Panel.
6. Adequacy of Biostatistical Data. The Panel noted that, in accordance with its recommendation at last year's Annual Meeting, information on the status of reporting statistical and sampling data for the fisheries in Subarea 1 had been compiled by the Secretariat (Summ.Doc. 73/2). This indicated the statistics and catch sampling data reported by some countries are subject to major deficiencies and fall short of the requirements for scientific assessment work. The Panel recognized the great importance of all countries providing these data, and strongly endorsed the recommendation by STACRES relating to their collection and sampling.
7. Conservation Requirements.

(a) Catch quota regulation for cod. The Chairman drew the Panel's attention to the Danish proposal in Comm.Doc. 73/11, Addendum Annex 1, concerning a catch quota regulation for cod in Subarea 1, and to the reports of the Scientific Advisers and the Assessments Subcommittee of STACRES (this Proc. 1, Appendix I) which recommended a total allowable catch (TAC) in 1974 of 80,000 metric tons for the cod stock in the Subarea as a whole.

In speaking on the proposal, the Danish delegate pointed out that it was based on a TAC of 90,000 metric tons, 10,000 metric tons of which represented the estimated catch outside the Convention Area, and 80,000 metric tons within it, to be allocated between countries. He considered this a justifiable increase in TAC in view of the conservative nature of the quantity recommended by the scientists. Although in the ensuing discussion the Portuguese delegate suggested a higher TAC of 150,000 metric tons, the Panel agreed that in view of the low state of the cod stock in the Subarea, regulation by catch quota was necessary and that the proposed TAC of 90,000 metric tons in 1974 was appropriate. The Icelandic delegate, however, declared its opposition to the principle underlying the proposal.

In discussion a number of delegates objected to the allocation of national quotas embodied in the proposal. The UK and Portuguese delegates indicated their opposition to the overlapping 10- and 3-year periods as a basis for allocation, because it gave too great a weight to the most recent performance. They also questioned the justification for so large a coastal state preference. The Norwegian delegate proposed that, as a compromise pending the outcome of the Law of the Sea Conference, the overlapping STACREM guideline formula should be adopted but that in addition, special preferences should be given to fisheries using highly selective gears. This suggestion was not accepted by the Panel.

After further discussion of the basis for allocating national quotas, it was agreed that in view of the

currently provisional nature of the catch statistics for 1972, the most recent year to be used in considering the historical performance component of the quotas for 1974 should be 1971 as was agreed in the other Panels. It was also agreed that the special needs of non-coastal states should be taken into account in arriving at the national quotas. Following further detailed consideration of the Danish proposal in the light of these and the coastal states' needs, an amended TAC of 107,000 metric tons, including an estimated 12,000 metric tons to be taken outside the Convention Area, 800 metric tons for other Member Countries and 200 metric tons for non-members was agreed. Panel 1

agreed by a majority of two-thirds to recommend

that the Commission transmit to the Depositary Government for joint action by the Contracting Governments proposal (1) for international quota regulation of the fishery for cod in Subarea 1 (Appendix II).

(b) Maximum utilization of regulated species. The Panel noted that this item had been considered in the Joint Meeting of Panels 1-5 (this Proc. 13) and endorsed its recommendation requesting Member Governments to discourage and, if possible, eliminate the wasteful practice of discarding edible fish. Although, as indicated in the Report of the Scientific Advisers, in the fisheries in Subarea 1, the discarding of regulated species over one-half kilogram is small, the Panel endorsed their request that countries fishing in the Subarea report to the Commission full information on discards.

8. Future Research. The Chairman drew the Panel's attention to this item in the Report of the Scientific Advisers. The Panel noted with approval the attention currently being given to ice conditions in Subarea 1 and endorsed the STACRES recommendation regarding the collection and reporting of its occurrence and movements. It also again noted the great importance of all countries collecting and reporting statistical and catch sampling data for their fisheries in the Subarea.

9. Date and Place of Next Meeting. It was agreed that the next meeting of Panel 1 and its Scientific Advisers would be held at the time of the 1974 Meeting of the Commission.

10. Approval of Panel Report. It was agreed that a draft of the Panel Report would be circulated for approval among the Panel members.

11. Election of Chairman. Mr K. Raasok (Norway) was unanimously elected Chairman of the Panel for 1973/74 and 1974/75.

12. Other Business. The Panel agreed unanimously that there was no need for additional measures such as establishing a total catch quota for the biomass in the Subarea, as was discussed in the other Panels, because the fishery was mainly directed to a single species.

There being no other business, the Panel adjourned at 1100 hrs.



ANNUAL MEETING - JUNE 1973Report of Scientific Advisers to Panel 1

Saturday, 2 June, 1625 hrs

1. The Chairman, Mr Sv.Aa. Horsted (Denmark), opened the meeting.
2. Mr B.B. Parrish (UK) was appointed Rapporteur.
3. Scientific Advisers from all Member Countries of Panel 1, except Iceland and Poland, were present. An Observer from Canada also attended.
4. The Agenda, as circulated, was adopted.
5. Report of Chairman of Scientific Advisers. The Chairman presented his Report on the Status of Fisheries and Research Carried Out in Subarea 1 and at East Greenland in 1972 (Summ.Doc. 73/33 Revised). As in previous years, this excluded detailed reference to the salmon and seal fisheries in the Subarea. The meeting noted a further decrease in nominal catches of cod from the Subarea to reach in 1972 the lowest level since ICNAF commenced the publication of statistics. This was due to a continuation of the recent decline in the trawl fisheries for cod in the Subarea, especially by Fed.Rep. Germany, in which the catch-per-unit of effort decreased further in 1972. In contrast, however, high catches of cod were reported for Norwegian trawlers fishing in the Subarea. The Portuguese fishery has taken place by gill nets exclusively, and catches by gill nets consist of cod older and larger than cod in trawl catches.

The Chairman's report was adopted subject to minor amendments.

6. Information on Fisheries in 1973. Mr Horsted reported that catches by Greenland trawlers up to May 1973 were approaching the level for the corresponding period in 1972. Fishing in inshore grounds had been generally poor but there had been a short period of relatively good fishing on offshore grounds.

Dr A. Meyer (Fed.Rep. Germany) reported relatively good fishing in the Subarea by German trawlers up to mid-May, when most of the fleet moved from the Subarea. He also reported less fishing by Fed.Rep. Germany's trawlers in East Greenland waters in 1973 than in 1972.

7. Review of Proposals for Regulatory Measures in Subarea 1

(a) Quota regulation for cod (Comm.Doc. 73/11). The Scientific Advisers reviewed the report of the Assessments Subcommittee on this item (this Proc. 1, Appendix I). They endorsed the Subcommittee's assessments of the state of the cod stock in the Subarea and, in view of the current low stock abundance and poor recruitment prospects, its recommended total allowable catch of 80,000 metric tons in 1974 for the Subarea as a whole. They accordingly recommend to the Panel a total allowable catch of 80,000 metric tons in its consideration of a catch quota regulation for cod in 1974.

(b) Regulation of developing fisheries (Comm.Doc. 73/12). The meeting noted the results of the Assessments Subcommittee's consideration of this item (this Proc. 1, Appendix I). The attention of the Panel was drawn to the fact that although capelin and other unexploited species occur in the Subarea, they are not currently subject to exploitation in developing fisheries as in other parts of the Convention Area. The Scientific Advisers wish to stress the importance of countries implementing from the outset the necessary statistical collection, sampling and research on the species concerned should such fishery developments take place in Subarea 1 in the future.

(c) Maximum utilization of catches of regulated species (1972 Mtg.Proc.13). The Scientific Advisers wish to draw the Panel's attention to its statement in last year's report (1972 Mtg.Proc.3, App.I) that in the fisheries in Subarea 1 the discarding of regulated species over one-half kilogram is small. They stress the importance, however, of all countries fishing in the Subarea reporting full information to the Commission on discards in accordance with its statistics and sampling reporting procedures.

8. Adequacy of Statistics and Sampling (Summ.Doc. 73/2 and 73/8). The Scientific Advisers reviewed the information in Summ.Doc. 73/2 on the statistical reporting and catch sampling coverage by countries fishing in the Convention Area, and the present deficiencies in some countries in meeting the minimal requirements for scientific assessment purposes. This reveals major deficiencies in the present coverage, especially of catch sampling data for some countries' fisheries in Subarea 1. The Scientific Advisers wish to stress to the Panel the great importance of complete statistics collection and its timely reporting in accordance with

the Commission's reporting procedures, and the introduction and maintenance of adequate catch sampling. In this regard attention is drawn to STACRES recommendations (this Proc. 1), relating to this subject.

9. Future Research. It was noted that most Member Countries of Panel 1 had circulated research programs for 1973, which indicated, in addition to fishery monitoring studies, the continuation of environmental and biological research of direct relevance to stock assessment problems. The Panel's attention is drawn to the Environmental Subcommittee's consideration of ice problems in the ICNAF Area, with special reference to the fishery requirement for information on its occurrence and movements, and the STACRES recommendation (this Proc. 1, Appendix III) concerning the reporting of ice conditions in Greenland and Canadian waters.

10. Election of Chairman. Mr Sv.Aa. Horsted (Denmark) was re-elected Chairman of the Scientific Advisers to the Panel for the ensuing year.

11. The meeting adjourned at 1815 hrs.

ANNUAL MEETING - JUNE 1973(1) Proposal for International Quota Regulation of the Fishery for Cod in Subarea 1 of the Convention Area

Panel 1 recommends that the Commission transmit to the Depositary Government the following proposal for joint action by the Contracting Governments:

"1. That the Contracting Governments take appropriate action to regulate the catch of cod, *Gadus morhua* L., by persons under their jurisdiction fishing in Subarea 1 so that the aggregate catch of cod by vessels taking such cod shall not exceed 95,000 metric tons in 1974.

"2. That Competent Authorities from each Contracting Government listed below shall limit in 1974 the catch of cod taken by persons under their jurisdiction to the amount listed from the above-mentioned Subarea:

Denmark	30,000	metric tons
France	6,300	" tons
Fed. Rep. Germany	27,800	" tons
Norway	8,000	" tons
Portugal	10,000	" tons
Spain	7,400	" tons
USSR	1,000	" tons
UK	3,500	" tons
Others	1,000	" tons

"3. That each Contracting Government mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of the date on which its vessels have ceased a specialized fishery for cod. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary if its vessels engage in a specialized fishery for cod, together if possible with an estimate of the projected catch. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of specialized or incidental catches of cod in increments of 100 tons. The Executive Secretary shall promptly inform all other Contracting Governments of such notifications. The Executive Secretary shall notify each Contracting Government of the date on which accumulated catch and estimated catch of cod, the quantity estimated to be taken before closure could be introduced, and the likely incidental catch for the remainder of the year equal 100 percent of the allowable catch designated as for "Others" in paragraph 2 above. Within 10 days of receipt of such notification from the Executive Secretary, each Contracting Government not mentioned by name in paragraph 2 above shall prohibit the catching of cod in Subarea 1 by persons under its jurisdiction, except for small incidental catches.

"4. That the Contracting Governments take appropriate action to ensure that all vessels under their jurisdiction which take cod, record their catches on a daily basis according to position, amount, date, type of gear, amount of effort, i.e., number of sets (or hooks) x time gear on the bottom (otter trawl) or fishing (midwater trawl, lines, other gear), discards and disposition of catch.

"5. That the allocations in paragraph 2 above are without prejudice to future allocations of catches for this or other stocks."





Serial No. 3108  
(B.e.73)

Proceedings No. 8

ANNUAL MEETING - JUNE 1973

Report of Meetings of Panel 2

Thursday, 7 June, 1130 hrs

Saturday, 9 June, 1200 hrs

1. The meeting was called to order by the Chairman, Mr R.H. Letaconoux (France).
2. Rapporteur. Dr A.W. May (Canada) was appointed Rapporteur.
3. Agenda. The Agenda was adopted, with the addition of items on conservation of cod in Div. 2GH and witch in Div. 2J.
4. Panel Memberships. The following members of the Panel were present: Canada, France, Fed.Rep. Germany, Norway, Poland, Portugal, Romania, Spain, USSR and UK.
5. Reports by Chairman of Scientific Advisers. Dr A.W. May (Canada) presented his report on the Status of the Fisheries and Research Carried Out in 1972 (Summ.Doc. 73/32 Revised), and the Report of the Meeting of Scientific Advisers to Panel 2 (Appendix I).
6. Adequacy of Biostatistical Data. The Panel agreed to bring to the attention of the Commission, as a matter of some urgency, the serious inadequacies in biostatistical data and the need to improve the quality of statistics and sampling in the Subarea. The Panel welcomed the information that some increase in research vessel surveys was planned.
7. Conservation Requirements for Cod, Witch and Capelin. The Panel agreed that any consensus reached on total allowable catches would be subject to later review depending on the outcome of negotiations on national allocation of catches. With this understanding, the following agreement was reached:
  - (a) the TAC for cod in Div. 2GH would be 20,000 metric tons in 1974;
  - (b) the TAC for cod in Div. 2J-3KL would be 650,000 metric tons in 1974, though this subject was referred to a Joint Meeting of Panels 2 and 3 (Proc. 14) for confirmation of the TAC and allocation among countries;
  - (c) the subject of catch quota control for witch in Div. 2J was referred to a Joint Meeting of Panels 2 and 3 (Proc. 14), with the suggestion that a single TAC for witch in Div. 2J-3KL combined be considered; it was noted that this could be 17,000 metric tons, if based on the average catches in 1970 to 1972;
  - (d) the subject of catch quota control for capelin fisheries was referred to a Joint Meeting of Panels 2 and 3 (Proc. 14);
  - (e) it was understood that the above amounts had reference to the stocks as a whole in each case, including that part of the stock outside the Convention Area.
8. Allocation of TAC for Cod in Div. 2GH. Canada explained that the Canadian Government did not wish to apply the allocation formula used last year to determine the coastal state's preferential share and the share based on historical performance. Instead, Canada estimated that it would catch 1,000 metric tons of cod in Div. 2GH in 1974, and that most of this catch would be taken outside the Convention Area. This would leave 19,000 metric tons to be allocated and Canada proposed that allocations be made on the basis of catches taken in the past three years, and the past ten years, giving equal weight to both periods, and allowing 10% of the amount to be allocated, i.e., 1,900 metric tons, for non-members and special needs. Allocations were initially made on this basis and, following adjustments for special needs, were agreed as below. It was estimated that non-members and other Member Governments of the Commission would catch 1,000 metric tons and 600 metric tons, respectively, of cod in the Subarea in 1974. Panel 2 accordingly

recommends

that the Commission transmit to the Depositary Government for joint action by the Contracting Governments proposal (2) for international quota regulation of the fishery for cod in Divisions 2G and 2H of Subarea 2 (Appendix II).

9. Future Research Required. It was pointed out that the amount of research undertaken in the Subarea was less than that needed, and that this was true for all Member Countries.
10. It was agreed that the Chairman and Rapporteur should draft the report and circulate copies for approval.
11. Mr K. Henriksen (Canada) was elected Chairman of Panel 2 for 1973/74 and 1974/75.

ANNUAL MEETING - JUNE 1973

Report of Meeting of Scientific Advisers to Panel 2

Sunday, 3 June, 0900 hrs

1. The Chairman, Dr A.W. May (Canada) opened the meeting at 0900 hrs.
2. Rapporteur. Mr A.T. Pinhorn (Canada) was appointed Rapporteur.
3. Agenda. The Agenda for Panel 2, with addition of items covering Div. 2GH cod and Div. 2J witch and some change in the order of items considered, was adopted for the meeting.
4. Scientific Advisers were present from the following Member Countries of the Panel: Canada, France, Fed. Rep. Germany, Norway, Poland, Portugal, Romania, Spain, USSR and UK. Observers from Denmark, German Democratic Republic and Bulgaria were also present.
5. Report of Chairman of Scientific Advisers. The Chairman's Report on Status of Fisheries and Research Carried Out in Subarea 2 in 1972 (Summ.Doc. 73/32 Revised) was, with minor revisions and additions, adopted.
6. Adequacy of biostatistical data (Summ.Doc. 73/2). The amount of biological sampling in Subarea 2 was reviewed in relation to the ICNAF suggested minimum sampling requirement. Of the ten countries fishing cod in 1971, only one met the minimum for age and length data, two reported adequate length samples but no ages, one reported sampling data less than the minimum and six reported no sampling.

For redfish, the two major fishing countries reported adequate length sampling, but one had no age samples.

No sampling was reported for the various flatfish species.

It was noted that research vessel survey activity in Subarea 2 increased in 1972 and the Panel Advisers stressed the importance of such surveys.

The Scientific Advisers draw to the attention of the Panel the fact that the quality of scientific advice is dependent on the quantity and quality of data which are used to determine that advice, and that the need for more and better data is imperative.

7. (a) Div. 2GH cod. It was pointed out by the Chairman that although there was no conservation proposal for cod in Div. 2GH, the Assessments Subcommittee had considered the assessment of the cod in these Divisions. Mr A.T. Pinhorn (Canada) summarized the results of the new assessment for Div. 2GH cod as reported in the Assessments Subcommittee Report. Catches were at a low level during 1955-64 but increased sharply to 100,000 metric tons in 1966 and subsequently declined to about 13,000 metric tons in 1971 and 1972. The Assessments Subcommittee indicated that the catch in 1974 should not exceed 20,000 metric tons.

It was noted that, although the stock relationships in the Div. 2G and Div. 3L cod stock complex are at present not well understood, the difference in growth rate between the cod in Div. 2GH and Div. 2J indicates that there is not complete mixing of the cod in these Divisions. In view of the prospects for poorer recruitment, the decreased abundance of older fish and the smaller stock size in Div. 2GH (about 10% of the stock size in Div. 2J and Div. 3KL), it was recommended that if a TAC for Div. 2GH for 1974 is accepted, it be allocated separately from that for Div. 2J-3KL to prevent the possibility of the catch from Div. 2GH exceeding the recommended TAC by a considerable amount.

(b) Div. 2J and Div. 3KL cod (1972 Mtg.Proc.No.11,App.V). Mr A.T. Pinhorn (Canada) summarized the recent assessment of the Div. 2J and Div. 3KL cod stock. The decline from 784,000 metric tons in 1968 to 421,000 metric tons in 1971 was not continued in 1972. There was a slight increase to 453,000 metric tons in 1972. This was due to considerably higher catch in Div. 3K. It was also noted that the German (FRG) fleet experienced a considerable increase in catch per day fished and this may be an indication of higher abundance of cod in Div. 3K. The Assessments Subcommittee recommended that the total allowable catch in 1974 should not exceed 650,000 metric tons, the same as recommended for 1973.

(c) Div. 2J witch. The Chairman summarized the Assessments Subcommittee's conclusions that, although no detailed assessment was available for witch in Div. 2J, the stock in this area is probably small and the catches in recent years were composed mainly of fairly old fish. The Assessments Subcommittee concluded that, with the possibility of diversion of effort to presently unregulated species and since research vessel

data do not indicate a large witch resource, it would be prudent to limit removals to a level not substantially above recent landings.

(d) Species with developing fisheries (Comm.Doc. 73/12). The Chairman of the Assessments Subcommittee reviewed the assessment for capelin, one of the species which is the object of a developing fishery in Subarea 2. There was lengthy discussion on the capelin-predator relationship and the importance of this in arriving at sustainable yields for capelin. The developing fishery took 70,000 metric tons in 1972, the bulk of the catch being taken in Div. 2J and Div. 3K in a fishery on maturing capelin. Surveys indicate that stock size could be large enough to permit considerably increased catches, perhaps to 750,000 metric tons, from the stocks in Subareas 2 and 3, but since capelin is a short-lived species, both stock and potential catch are likely to fluctuate sharply. In order to control the development of the fishery to a rate consistent with assessment of its potential, the Assessments Subcommittee considered catches in 1974 should not exceed 250,000 metric tons.

Other species which are or may be subject to developing fisheries in Subarea 2 include sand lance, Greenland halibut, roundnose grenadier and oceanic redfish. The Advisers wish to emphasize that developing fisheries should be accompanied by adequate research and sampling to provide a sound basis for management of these fisheries.

(e) Full use of regulated species (1972 Mtg.Proc.No.13). The Scientific Advisers agreed to reiterate the conclusion of the 1972 Meeting of Scientific Advisers to Panel 2 that the proposal is considered to have greater practical than scientific implications.

8. Future Research Required. The Chairman drew attention to the significant increase in surveys planned for 1973 as indicated in the Report of the Working Group on Coordinated Surveys. Surveys are planned by Canada, Fed.Rep. Germany, USSR and UK. The Chairman also indicated the desirability of coordinating surveys in Subarea 2 where possible.

Dr J. Messtorff (Fed.Rep. Germany) indicated that the stratification scheme for Subarea 2 presented to the 1972 Annual Meeting was used in the surveys by the Fed.Rep. Germany and will be used in the 1973 surveys. Charts indicating the design used will be forwarded to the Secretariat for distribution.

9. It was agreed that the time and place of the next meeting of Advisers should be prior to the next Annual Meeting of the Panel, at the same location.

10. It was agreed that the Report be prepared and circulated to a representative of each country for approval before final reproduction.

11. Dr A.W. May was re-elected Chairman.



ANNUAL MEETING - JUNE 1973

(2) Proposal for International Quota Regulation of the Fishery for Cod in Divisions 2G and 2H of Subarea 2 of the Convention Area.

Panel 2 recommends that the Commission transmit to the Depository Government the following proposal for joint action by the Contracting Governments:

"1. That the Contracting Governments take appropriate action to regulate the catch of cod, *Gadus morhua* L., by persons under their jurisdiction fishing in Divisions 2G and 2H of Subarea 2 so that the aggregate catch of cod by vessels taking such cod shall not exceed 19,000 metric tons in 1974.

"2. That Competent Authorities from each Contracting Government listed below shall limit in 1974 the catch of cod taken by persons under their jurisdiction to the amount listed from the above-mentioned Divisions:

France	500	metric tons
Fed.Rep. Germany	4,000	" tons
Norway	900	" tons
Poland	4,500	" tons
Portugal	3,200	" tons
Romania	400	" tons
Spain	500	" tons
USSR	2,600	" tons
UK	800	" tons
Others	1,600	" tons

"3. That each Contracting Government mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of the date on which its vessels have ceased a specialized fishery for cod. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary if its vessels engage in a specialized fishery for cod, together if possible with an estimate of the projected catch. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of specialized or incidental catches of cod in increments of 100 tons. The Executive Secretary shall promptly inform all other Contracting Governments of such notifications. The Executive Secretary shall notify each Contracting Government of the date on which accumulated catch and estimated catch of cod, the quantity estimated to be taken before closure could be introduced, and the likely incidental catch for the remainder of the year equal 100 percent of the allowable catch designated as for "Others" in paragraph 2 above. Within 10 days of receipt of such notification from the Executive Secretary, each Contracting Government not mentioned by name in paragraph 2 above shall prohibit the catching of cod in Divisions 2G and 2H of Subarea 2 by persons under its jurisdiction, except for small incidental catches.

"4. That the Contracting Governments take appropriate action to ensure that all vessels under their jurisdiction which take cod, record their catches on a daily basis according to position, amount, date, type of gear, amount of effort, i.e., number of sets (or hooks) x time gear on the bottom (otter trawl) or fishing (midwater trawl, lines, other gear), discards and disposition of catch.

"5. That the allocations in paragraph 2 above are without prejudice to future allocations of catches for this or other stocks."





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ANNUAL MEETING - JUNE 1973

Report of Meetings of Panel 3

Thursday, 7 June, 1430 hrs  
Wednesday, 13 June, 1700 hrs  
Thursday, 14 June, 1430 hrs

1. The Chairman was unable to be present and the meeting was opened by the Executive Secretary, Mr E. Gillett (UK) was elected Chairman for the current meetings.
2. Rapporteur. Mr T.D. Iles (Canada) was appointed Rapporteur.
3. Agenda. The provisional Agenda, as circulated, was adopted.
4. Panel Membership. All Panel Members were present. No changes in Panel membership were made.
5. Report by Chairman of Scientific Advisers. Dr H.A. Cole (UK) presented his Report on the Status of the Fisheries and Research Carried Out in 1972 (Summ.Doc. 73/30 Revised) and also presented the Report of the Scientific Advisers to Panel 3 (Appendix I). The Reports were adopted.
6. Adequacy of Biostatistical Data (Summ.Doc. 73/2). Dr Cole emphasized that the quality and reliability of advice depended on the quality of the statistics provided for the scientists. He invited members to study Summ.Doc. 73/2 so as to identify their own deficiencies and make plans to fill in any gaps. Denmark said that a new system of statistics for Faroese fisheries had been reported on (Res.Doc. 73/112), that for technical reasons biological sampling was not at recommended levels and agreed, in principle, that sampling levels should be related to catch.
7. Conservation Requirements. It was agreed that principles of allocation of national shares of TAC's be discussed at a joint meeting of Panels 1-5 and that the meeting would first consider levels for TAC's only.
  - (a) The setting of TAC's (Table 1)
    - (i) Div. 2J, 3KL cod stock (1972 Mtg.Proc.No.11 and App.V). It was agreed unanimously that the TAC for 1974 be set at 650,000 metric tons, the level recommended by the Scientific Advisers.
    - (ii) Div. 3M cod stock (Comm.Doc. 73/13). It was agreed unanimously that the TAC for 1974 be set at 40,000 metric tons, 5,000 metric tons higher than the level recommended by the Scientific Advisers.
    - (iii) Div. 3NO cod stock (1972 Mtg.Proc.No.5,11 and App.VII). UK pointed out a division of opinion in the Report of the Scientific Advisers. Sampling of the commercial catch was inadequate so that assessments could not be soundly based. The 12-year average yield has been about 100,000 metric tons which suggests that the recommended 85,000 metric tons is too low. A TAC for 1974 of 100,000 metric tons was proposed by UK. This proposal was supported by Poland, Portugal, Romania, Spain and USSR. USA said that the TAC set for 1973 (103,500 metric tons) was much higher than the 70,000 metric tons recommended by the scientists; a catch of 100,000 metric tons in 1974 would reduce the recruitment of the 1968 year-class which would make up some 65% of the catch in 1974. Canada said that the recommended 85,000 metric tons was itself a compromise between separate survey estimates of 70,000 and 100,000 metric tons from two countries. If a figure of 100,000 metric tons was agreed to, it would be necessary to recommend that appropriate sampling and research be initiated for this stock immediately, so as to correct the woeful inadequacies of the information available for assessment. Portugal agreed that sampling must be improved immediately and indicated that she would make every effort to do what was necessary.

It was agreed unanimously that the TAC for 1974 be set at 100,000 metric tons.

- (iv) Subdiv. 3Ps cod stock (1972 Mtg.Proc.No.5,11 and App.VI). It was agreed unanimously that the TAC for 1974 be set at the level recommended by the Scientific Advisers of 70,000 metric tons.
- (v) Div. 3LNO American plaice stock (1972 Mtg.Proc.No.5,11 and App.VIII). The recommendation of the Scientific Advisers for this stock of 60,000 metric tons (allowing for a catch of 8,000 metric tons in Div. 30) as a TAC for 1974 was agreed to unanimously by the Panel.
- (vi) Div. 3LNO yellowtail stock (1972 Mtg.Proc.No.5,11 and App.IX). A TAC for 1974 was unanimously agreed at a level of 40,000 metric tons, the level recommended by the Scientific Advisers.
- (vii) Div. 3LN redfish stock (Comm.Doc. 73/13).
- (viii) Div. 30 redfish stock (Comm.Doc. 73/13).
- (ix) Div. 3P redfish stock (Comm.Doc. 73/13). The Chairman of Assessments Subcommittee (Mr D.J. Garrod, UK) commented on the recent increase in catches of redfish stocks in Subarea 3. Past history of fisheries on these stocks and available assessment indicate that recent catch levels would not be sustained and that stock size would fall; stock recovery would be slow. USSR said that the Scientific Advisers could not relate any recommended level of TAC to a specific level of fishing mortality and proposed that the 1974 TAC's for these stocks be set at 1972 catch levels.

A USSR proposal to set TAC's for 1974 for Div. 3LN at 28,000 metric tons, for Div. 3P at 25,000 metric tons and for Div. 30 at 16,000 metric tons was agreed to unanimously.
- (x) Div. 3M redfish stock. Canada suggested that despite lack of knowledge of the Div. 3M redfish stock, a TAC for 1974 should be proposed to avoid diversion of effort to that stock. It was agreed unanimously to set a TAC in 1974 for the Div. 3M stock at 40,000 metric tons.
- (xi) Div. 3K witch (Comm.Doc. 73/13). It was agreed to include the Div. 2J witch stock in the discussions. Poland proposed that a setting of a TAC be postponed until the next Annual Meeting. Canada pointed out that Panel 2 had provisionally agreed to set a TAC at this meeting, that this was needed to protect the stock, and that TAC's should not be substantially in excess of recent landings. It was agreed unanimously that the 1974 TAC be set at 21,000 metric tons, it being recognized that this was subject to approval by a Joint Meeting of Panels 2 and 3 (Proc. 14).
- (xii) Div. 3NO witch stock (Comm.Doc. 73/13). The Chairman pointed out that the Scientific Advisers had considered also the neighbouring Div. 3P witch stock. Canada said that the two stocks were biologically distinct and separate TAC's should be set. It was agreed unanimously that the 1974 TAC for Div. 3NO witch be set at 10,000 metric tons; for Subdiv. 3Ps at 3,000 metric tons.
- (xiii) Species with developing fisheries/capelin (Comm.Doc. 73/12).
- (xiv) Full use of regulated species (1972 Mtg.Proc.No.13; Comm.Doc.72/20). These last two items were referred to the Joint Meeting of Panels 2 and 3 (Proc. 14).

(b) National allocation of TAC's (Table 1). It was agreed that the national allocation of quotas be made within the limits of the TAC's already agreed to, unless there were compelling reasons to exceed them.

USSR reaffirmed the view she had expressed in Joint Panels 1-5, namely, that the 40:40:10:10 principle, although not necessarily favourable to her, should be followed. In response to a request for clarification by Canada, USSR said that she would maintain a flexible attitude on individual stocks, as had already been done in Subareas 1 and 2.

France drew attention to her coastal state status in Subarea 3 (and also in Subarea 4) and to the special situation of the Islands of St. Pierre and Miquelon. Recent trends of catch decreases will be reversed as modernization and development take effect and increases in allocations will be required for certain stocks in those parts of the Subarea where her interests are greatest. France demonstrated that, through the St. Pierre and Miquelon laboratory and by the efforts of her oceanographic vessel, she played her full part in the ICNAF research program.

Canada said that increases in her allocations for certain stocks in the Subarea were essential to ensure the future of large fishing communities on her east coast and to redress damage to Canadian fisheries. Her extra needs in the Subarea totalled 35,000 metric tons and for Subareas 2, 3 and 4 was about 7% which she considered moderate. To have to curtail the activities of fishermen in the area prematurely, because Canada's allocations were reached early in the quota year, might, through public opinion and internal political action, create more difficulties in the use of local ports by other ICNAF Member Countries than already exist. Canada wished to cooperate in this area in spite of possible changes in international law, but her attitude could change if her reasonable proposals were not considered sympathetically.

The special needs of coastal states in the Subarea received general recognition by other Panel Members.

Canada presented documents in respect of each stock showing the proposed allocation of national shares of TAC's on the basis of the 40:40:10:10 principle, and on the Canadian principle (Comm.Doc. 73/13) of coastal state catch: 45:45:10. It was agreed to use these as working documents.

USA maintained that it was essential to reserve an unallocated portion of the TAC in each stock. This would allow Member Countries with relatively minor fisheries or with future expectations to maintain or establish their interest; it would also help ensure that total catches did not exceed TAC's. It might even be advantageous to countries with small allocations to return these to the unallocated portion; catches from the unallocated portion would have full status as historical performance.

The agreed national allocations for each stock are shown in Table 1. Formal proposals for international quota regulation of each of these stocks are as follows (in each case, the allocation to the coastal state includes the estimated catch outside the Convention Area):

- (i) Div. 2J-3KL cod stock. See Report of the Joint Meeting of Panels 2 and 3 (Proc. 14) for proposal (3).
- (ii) Div. 2J-3KL witch stock. See Report of the Joint Meeting of Panels 2 and 3 (Proc. 14) for proposal (4).
- (iii) Div. 3M cod stock. Panel 3, unanimously,  
agreed to recommend  
that the Commission transmit to the Depositary Government for joint action by the Contracting Governments proposal (5) for international quota regulation of the fishery for cod in Division 3M of Subarea 3 (Appendix II).
- (iv) Div. 3NO cod stock. Panel 3, with UK dissenting,  
agreed to recommend  
that the Commission transmit to the Depositary Government for joint action by the Contracting Governments proposal (6) for amendment of the international quota regulation, adopted in 1972, of the fishery for cod in Divisions 3N and 3O of Subarea 3 (Appendix III).
- (v) Subdiv. 3Ps cod stock. Panel 3, unanimously,  
agreed to recommend  
that the Commission transmit to the Depositary Government for joint action by the Contracting Governments proposal (7) for amendment of the international quota regulation, adopted in 1972, of the fishery for cod in Subdivision 3Ps of Subarea 3 (Appendix IV).
- (vi) Div. 3LNO American plaice stock. Panel 3, unanimously,  
agreed to recommend  
that the Commission transmit to the Depositary Government for joint action by the Contracting Governments proposal (8) for amendment of the international quota regulation, adopted in 1972, of the fishery for American plaice in Divisions 3L, 3N and 3O of Subarea 3 (Appendix V).
- (vii) Div. 3LNO yellowtail flounder stock. Panel 3, unanimously,  
agreed to recommend  
that the Commission transmit to the Depositary Government for joint action by the Contracting Governments proposal (9) for amendment of the international quota regulation, adopted in 1972, of the fishery for yellowtail flounder in Divisions 3L, 3N and 3O of Subarea 3 (Appendix VI).
- (viii) Div. 3M redfish stock. Panel 3, unanimously,  
agreed to recommend

that the Commission transmit to the Depositary Government for joint action by the Contracting Governments proposal (10) for international quota regulation of the fishery for redfish in Division 3M of Subarea 3 (Appendix VII).

- (ix) Div. 3LN redfish stock. Panel 3, unanimously,  
agreed to recommend

that the Commission transmit to the Depositary Government for joint action by the Contracting Governments proposal (11) for international quota regulation of the fishery for redfish in Divisions 3L and 3N of Subarea 3 (Appendix VIII).

- (x) Div. 3O redfish stock. Panel 3, unanimously,  
agreed to recommend

that the Commission transmit to the Depositary Government for joint action by the Contracting Governments proposal (12) for international quota regulation of the fishery for redfish in Division 3O of Subarea 3 (Appendix IX).

- (xi) Div. 3P redfish stock. Panel 3, unanimously,  
agreed to recommend

that the Commission transmit to the Depositary Government for joint action by the Contracting Governments proposal (13) for international quota regulation of the fishery for redfish in Division 3P of Subarea 3 (Appendix X).

- (xii) Div. 3NO witch stock. Panel 3, unanimously,  
agreed to recommend

that the Commission transmit to the Depositary Government for joint action by the Contracting Governments proposal (14) for international quota regulation of the fishery for witch in Divisions 3N and 3O of Subarea 3 (Appendix XI).

- (xiii) Subdiv. 3Ps witch stock. Panel 3, unanimously,  
agreed to recommend

that the Commission transmit to the Depositary Government for joint action by the Contracting Governments proposal (15) for international quota regulation of the fishery for witch in Subdivision 3Ps of Subarea 3 (Appendix XII).

8. Future Research Required. Dr H.A. Cole (UK) said that nothing need be added to what was discussed on this item in the Report of the Scientific Advisers.

9. Date and Place of Next Meeting. It was agreed that the next meeting of Panel 3 and its Scientific Advisers would coincide with the next Annual Meeting of the Commission.

10. Other Business. None.

11. Approval of Panel Report. It was agreed that the Panel Report would be approved by circulation of a draft to Member Countries.

12. Election of Chairman for 1973/74 and 1974/75. It was agreed unanimously to appoint Mr V. Bermejo (Spain) as Chairman of Panel 3 for 1973/74 and 1974/75. Mr Bermejo agreed.

Mr V.M. Kamentsev (USSR) expressed his appreciation of the work of Mr E. Gillett (UK) in dealing so competently with complex matters of great difficulty and at such short notice. He felt sure that a very good precedent for other Panels had been set. The other delegates associated themselves with these views. Mr Gillett said that nothing could have been accomplished without the willingness of delegations to understand others' points of view and to modify their stand in order to reach agreement.

Table 1. Summary of TAC's and allocations for Subarea 3 for 1974.

	Cod		Amer. plaice 3LNO	Yellow-tail 3LNO	Witch		Redfish				Cod	Witch
	3M	3NO			3Ps	3NO	3Ps	3M	3LN	3O		
TAC recommended by Scientific Advisers	35,000	85,000	70,000	40,000	10,000	2,600	-	20,000	15,000	23,000	650,000	17,000
Agreed TAC	40,000	100,000	70,000	40,000	10,000	3,000	40,000	28,000	16,000	25,000	650,000	22,000
Canada	3,000	15,000	40,000	32,400	4,500	2,500	1,000	3,000	3,000	9,500	60,000	6,000
Denmark	6,700	1,500	-	-	-	-	-	-	-	-	13,800	-
France	8,000	1,000	5,300	900	-	400	-	-	-	2,500	51,100	-
Fed. Rep. Germany	500	-	-	-	-	-	-	-	-	-	43,000	-
Iceland	-	-	-	-	-	-	-	-	-	-	-	-
Italy	-	-	-	-	-	-	-	-	-	-	4,000	-
Japan	-	-	-	-	-	-	-	800	-	-	6,000	-
Norway	1,400	2,500	1,700	-	-	-	-	-	-	-	18,100	-
Poland	800	-	-	-	-	-	-	1,000	-	-	43,400	6,000
Portugal	8,700	6,500	-	900	-	-	-	-	-	-	133,600	-
Romania	500	-	-	-	-	-	-	-	-	-	7,000	-
Spain	2,200	45,500	19,000	-	-	-	-	-	-	-	94,800	-
USSR	5,700	25,100	2,000	7,000	4,900	-	30,000	20,500	11,800	11,300	94,700	6,400
UK	2,300	1,500	-	-	-	-	-	-	-	-	20,200	-
USA	-	-	-	-	-	-	-	-	-	-	-	-
Unallocated Members	200	1,500	2,000	600	600	100	9,000	1,700	1,200	1,700	2,000	600
Unallocated Non-Members	-	-	-	-	-	-	-	1,000	-	-	15,000	500
Total allocated catches	40,000	100,100	70,000	40,000	10,000	3,000	40,000	28,000	16,000	25,000	606,700 <sup>a</sup>	19,500 <sup>b</sup>

<sup>a</sup> Does not include 50,000 metric tons for Canada outside Convention Area

<sup>b</sup> Does not include 2,500 metric tons for Canada outside Convention Area

ANNUAL MEETING - JUNE 1973

Report of Scientific Advisers to Panel 3

Sunday, 3 June, 1115 hrs

1. The meeting was called to order by the Chairman, Dr H.A. Cole (UK). Advisers were present from Canada, Denmark, France, Japan, Norway, Poland, Portugal, Romania, Spain, USSR, UK and USA. Observers were present from Bulgaria, Fed. Rep. Germany and German Democratic Republic.
2. Rapporteur. Dr A.W. May (Canada) was appointed Rapporteur.
3. Agenda. The Agenda as distributed by the Chairman was adopted.
4. Report of Chairman of Scientific Advisers. The Chairman reviewed his Report on the Status of the Fisheries and Research Carried Out in 1972 (Summ.Doc. 73/30). Some amendments were incorporated and a revised report prepared for presentation to the Panel.

5. Conservation Requirements

(a) Cod. The Advisers agreed that the TAC of 650,000 metric tons recommended by the Assessments Subcommittee for Div. 2J-3KL cod stocks in 1974 was appropriate. It was noted that this was the same amount as recommended for 1973. In Div. 3M no quotas are in effect in 1973, but if a TAC is established for this stock in 1974, it should not exceed 35,000 metric tons. With reference to the TAC in 1974 for Div. 3NO cod of 85,000 metric tons as recommended by the Assessments Subcommittee, some Advisers were of the opinion that this was too low, mainly on the basis of past cod catches in this area. Others, however, felt that the estimate was not conservative, and, depending on the strength of the 1968 year-class, might even be optimistic. The recommended TAC of Subdiv. 3Ps cod for 1974 is 70,000 metric tons as in 1973.

(b) American plaice. The TAC for Div. 3LNO recommended by the Assessments Subcommittee for 1974 is 60,000 metric tons (allowing for a catch of 8,000 metric tons in Div. 3O). This is identical to the TAC for 1973.

(c) Yellowtail. The recommended TAC for 1974 in Div. 3LNO is 40,000 metric tons (allowing for a catch of 5,000 metric tons in Div. 3O) compared with 50,000 metric tons allocated in 1973.

(d) Redfish. Total allowable catches recommended for redfish are at MSY levels as indicated by present analyses, and are 20,000 metric tons for Div. 3LN, 15,000 metric tons for Div. 3O, and 23,000 metric tons for Div. 3P.

(e) Witch. No stock assessments were available, but the Advisers endorsed the Assessments Subcommittee's advice to the effect that future removals of witch should not be substantially in excess of recent landings, and that for management purposes the witch of Div. 3KL, Div. 3NO and Subdiv. 3Ps should be treated separately. In the 1970-72 period catches were relatively stable at average levels of about 14,000 metric tons in Div. 3KL, 10,000 metric tons in Div. 3NO, and 2,600 metric tons in Subdiv. 3Ps.

(f) Developing fisheries. The Advisers wish to emphasize the importance of developing the information on which to base fishery assessments and fishery management in parallel with the development of the fisheries themselves. The quality of the Commission's conservation and management measures will be only as good as the quality of the advice on which these measures are based. Information collected during the early stages of developing fisheries is particularly valuable in later assessments.

Attention is drawn to the Assessments Subcommittee's recommendation that the TAC of capelin in Subareas 2-4 (mainly Subareas 2 and 3) should not exceed 250,000 metric tons in 1973, although a catch as high as 750,000 metric tons might perhaps be attainable. However, it is considered prudent to control the rate of development of this fishery while its potential is being assessed. In this context it was noted that research on the interaction of capelin with other species, e.g. cod, was important.

With reference to other species which are or may be subject to developing fisheries, it was noted that the fishery for roundnose grenadiers had declined in 1972, and that no assessments were available for this species or for Greenland halibut, sand lance and oceanic redfish.

(g) Full use of regulated species. The Advisers regard this as a subject which raises important practical issues, but did not feel able to offer any further scientific advice.



6. Adequacy of Biostatistical Data. The detailed analysis of the reporting of statistical and sampling data, undertaken by the Secretariat for submissions in 1971, shows the continued general inadequacy of this material for all species in the area. It is worth noting in this context that no commercial length and age data were reported from 1971 fisheries for Div. 3NO cod. The Advisers note that the existing requirements, which are not being met, are in themselves minimal and barely adequate, and that more detailed and frequent reporting of statistics and more detailed reporting of length and age data will be necessary in future. A Working Group to review the kind of detail necessary has been recommended by STACRES. This could involve in parts of the Subarea a statistical reporting system based on unit areas as small as 30-minute rectangles.

7. Future Research. Some increase in survey activity is indicated, with groundfish surveys in various parts of the area planned by Canada, Fed. Rep. Germany, France and USSR. The Advisers consider it important that closer coordination of these surveys be attempted, and particularly that a single survey design be adopted based on recommendations of the Working Group on Groundfish Surveys.

It was noted that special presentations of 1973 plankton data, and Subarea 3 hydrography in relation to fisheries, would be made to STACRES next year.

8. It was agreed that the next meeting of Panel Advisers should take place before the meeting of Panel 3, at the time and place of the next Annual Meeting.

9. It was agreed that the draft report would be circulated to Advisers for approval.

10. Dr H.A. Cole (UK) was re-elected Chairman of Scientific Advisers to Panel 3.

## ANNUAL MEETING - JUNE 1973

(5) Proposal for International Quota Regulation of the Fishery for Cod in Division 3M of Subarea 3 of the Convention Area.

Panel 3 recommends that the Commission transmit to the Depository Government the following proposal for joint action by the Contracting Governments:

"1. That the Contracting Governments take appropriate action to regulate the catch of cod, *Gadus morhua* L., by persons under their jurisdiction fishing in Division 3M of Subarea 3 so that the aggregate catch of cod by vessels taking such cod shall not exceed 40,000 metric tons in 1974.

"2. That Competent Authorities from each Contracting Government listed below shall limit in 1974 the catch of cod taken by persons under their jurisdiction to the amount listed from the above-mentioned Division:

Canada	3,000	metric tons
Denmark	6,700	" tons
France	8,000	" tons
Fed. Rep. Germany	500	" tons
Norway	1,400	" tons
Poland	800	" tons
Portugal	8,700	" tons
Romania	500	" tons
Spain	2,200	" tons
USSR	5,700	" tons
UK	2,300	" tons
Others	200	" tons

"3. That each Contracting Government mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of the date on which its vessels have ceased a specialized fishery for cod. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary if its vessels engage in a specialized fishery for cod, together if possible with an estimate of the projected catch. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of specialized or incidental catches of cod in increments of 100 tons. The Executive Secretary shall promptly inform all other Contracting Governments of such notifications. The Executive Secretary shall notify each Contracting Government of the date on which accumulated catch and estimated catch of cod, the quantity estimated to be taken before closure could be introduced, and the likely incidental catch for the remainder of the year equal 100 percent of the allowable catch designated as for "Others" in paragraph 2 above. Within 10 days of receipt of such notification from the Executive Secretary, each Contracting Government not mentioned by name in paragraph 2 above shall prohibit the catch of cod in Division 3M of Subarea 3 by persons under its jurisdiction, except for small incidental catches.

"4. That the Contracting Governments take appropriate action to ensure that all vessels under their jurisdiction which take cod, record their catches on a daily basis according to position, amount, date, type of gear, amount of effort, i.e., number of sets (or hooks) x time gear on the bottom (otter trawl) or fishing (midwater trawl, lines, other gear), discards and disposition of catch.

"5. That the allocations in paragraph 2 above are without prejudice to future allocations of catches for this or other stocks."

## ANNUAL MEETING - JUNE 1973

(6) Proposal for International Quota Regulation of the Fishery for Cod in Divisions 3N and 3O of Subarea 3 of the Convention Area.

Panel 3 recommends that the Commission transmit to the Depositary Government the following proposal for joint action by the Contracting Governments:

That the Cod Quota Regulation for Divisions 3N and 3O of Subarea 3 adopted at the Twenty-Second Annual Meeting (Annual Proceedings, Vol. 22, 1971-72, page 47) and entered into force on 1 January 1973 for the year 1973, be replaced by the following:

"1. That the Contracting Governments take appropriate action to regulate the catch of cod, *Gadus morhua* L., by persons under their jurisdiction fishing in Divisions 3N and 3O of Subarea 3 so that the aggregate catch of cod by vessels taking such cod shall not exceed 100,100 metric tons in 1974.

"2. That Competent Authorities from each Contracting Government listed below shall limit in 1974 the catch of cod taken by persons under their jurisdiction to the amount listed from the above-mentioned Divisions:

Canada	15,000	metric tons
Denmark	1,500	" tons
France	1,000	" tons
Norway	2,500	" tons
Portugal	6,500	" tons
Spain	45,500	" tons
USSR	25,100	" tons
UK	1,500	" tons
Others	1,500	" tons

"3. That each Contracting Government mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of the date on which its vessels have ceased a specialized fishery for cod. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary if its vessels engage in a specialized fishery for cod, together if possible with an estimate of the projected catch. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of specialized or incidental catches of cod in increments of 100 tons. The Executive Secretary shall promptly inform all other Contracting Governments of such notifications. The Executive Secretary shall notify each Contracting Government of the date on which accumulated catch and estimated catch of cod, the quantity estimated to be taken before closure could be introduced, and the likely incidental catch for the remainder of the year equal 100 percent of the allowable catch designated as for "Others" in paragraph 2 above. Within 10 days of receipt of such notification from the Executive Secretary, each Contracting Government not mentioned by name in paragraph 2 above shall prohibit the catching of cod in Divisions 3N and 3O of Subarea 3 by persons under its jurisdiction, except for small incidental catches.

"4. That the Contracting Governments take appropriate action to ensure that all vessels under their jurisdiction which take cod, record their catches on a daily basis according to position, amount, date, type of gear, amount of effort, i.e., number of sets (or hooks) x time gear on the bottom (otter trawl) or fishing (midwater trawl, lines, other gear), discards and disposition of catch.

"5. That the allocations in paragraph 2 above are without prejudice to future allocations of catches for this or other stocks."

ANNUAL MEETING - JUNE 1973(7) Proposal for International Quota Regulation of the Fishery for Cod in Subdivision 3Ps of Subarea 3 of the Convention Area

Panel 3 recommends that the Commission transmit to the Depository Government the following proposal for joint action by the Contracting Governments:

That the Cod quota Regulation for Subdivision 3Ps of Subarea 3 adopted at the Twenty-Second Annual Meeting (Annual Proceedings, Vol. 22, 1971-72, page 46) and entered into force on 1 January 1973 for the year 1973 be replaced by the following:

"1. That the Contracting Governments take appropriate action to regulate the catch of cod, *Gadus morhua* L., by persons under their jurisdiction fishing in Subdivision 3Ps of Subarea 3 so that the aggregate catch of cod by vessels taking such cod shall not exceed 70,000 metric tons in 1974.

"2. That Competent Authorities from each Contracting Government listed below shall limit in 1974 the catch of cod taken by persons under their jurisdiction to the amount listed from the above-mentioned Subdivision:

Canada	40,000 metric tons
France	5,300 " tons
Norway	1,700 " tons
Spain	19,000 " tons
USSR	2,000 " tons
Others	2,000 " tons

"3. That each Contracting Government mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of the date on which its vessels have ceased a specialized fishery for cod. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary if its vessels engage in a specialized fishery for cod, together if possible with an estimate of the projected catch. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of specialized or incidental catches of cod in increments of 100 tons. The Executive Secretary shall promptly inform all other Contracting Governments of such notifications. The Executive Secretary shall notify each Contracting Government of the date on which accumulated catch and estimated catch of cod, the quantity estimated to be taken before closure could be introduced, and the likely incidental catch for the remainder of the year equal 100 percent of the allowable catch designated as for "Others" in paragraph 2 above. Within 10 days of receipt of such notification from the Executive Secretary, each Contracting Government not mentioned by name in paragraph 2 above shall prohibit the catching of cod in Subdivision 3Ps of Subarea 3 by persons under its jurisdiction, except for small incidental catches.

"4. That the Contracting Governments take appropriate action to ensure that all vessels under their jurisdiction which take cod, record their catches on a daily basis according to position, amount, date, type of gear, amount of effort, i.e., number of sets (or hooks) x time gear on the bottom (otter trawl) or fishing (midwater trawl, lines, other gear), discards and disposition of catch.

"5. That the allocations in paragraph 2 above are without prejudice to future allocations of catches for this or other stocks."

ANNUAL MEETING - JUNE 1973(8) Proposal for International Quota Regulation of the Fishery for American Plaice in Divisions 3L, 3N and 3O of Subarea 3 of the Convention Area

Panel 3 recommends that the Commission transmit to the Depository Government the following proposal for joint action by the Contracting Governments:

That the American Plaice Quota Regulation for Divisions 3L, 3N and 3O of Subarea 3 adopted at the Twenty-Second Annual Meeting (Annual Proceedings, Vol. 22, 1971-72, page 51) and entered into force on 1 January 1973 for the year 1973 be replaced by the following:

"1. That the Contracting Governments take appropriate action to regulate the catch of American plaice, *Hippoglossoides platessoides* (Fab.), by persons under their jurisdiction fishing in Divisions 3L, 3N and 3O of Subarea 3 so that the aggregate catch of American plaice by vessels taking such American plaice shall not exceed 60,000 metric tons in 1974.

"2. That Competent Authorities from each Contracting Government listed below shall limit in 1974 the catch of American plaice taken by persons under their jurisdiction to the amount listed from the above-mentioned Divisions:

Canada	48,000 metric tons
France	900 " tons
Poland	900 " tons
USSR	9,000 " tons
Others	1,200 " tons

"3. That each Contracting Government mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of the date on which its vessels have ceased a specialized fishery for American plaice. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary if its vessels engage in a specialized fishery for American plaice, together if possible with an estimate of the projected catch. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of specialized or incidental catches of American plaice in increments of 100 tons. The Executive Secretary shall promptly inform all other Contracting Governments of such notifications. The Executive Secretary shall notify each Contracting Government of the date on which accumulated catch and estimated catch of American plaice, the quantity estimated to be taken before closure could be introduced, and the likely incidental catch for the remainder of the year equal 100 percent of the allowable catch designated as for "Others" in paragraph 2 above. Within 10 days of receipt of such notification from the Executive Secretary, each Contracting Government not mentioned by name in paragraph 2 above shall prohibit the catching of American plaice in Divisions 3L, 3N and 3O of Subarea 3 by persons under its jurisdiction, except for small incidental catches.

"4. That the Contracting Governments take appropriate action to ensure that all vessels under their jurisdiction which take American plaice, record their catches on a daily basis according to position, amount, date, type of gear, amount of effort, i.e., number of sets (or hooks) x time gear on the bottom (otter trawl) or fishing (midwater trawl, lines, other gear), discards and disposition of catch.

"5. That the allocations in paragraph 2 above are without prejudice to future allocations of catches for this or other stocks."

## ANNUAL MEETING - JUNE 1973

(9) Proposal for International Quota Regulation of the Fishery for Yellowtail Flounder in Divisions 3L, 3N and 30 of Subarea 3 of the Convention Area

Panel 3 recommends that the Commission transmit to the Depositary Government the following proposal for joint action by the Contracting Governments:

That the Yellowtail Flounder Quota Regulation for Divisions 3L, 3N and 30 of Subarea 3 adopted at the Twenty-Second Annual Meeting (Annual Proceedings, Vol. 22, 1971-72, page 52) and entered into force on 1 January 1973 for the year 1973; be replaced by the following:

"1. That the Contracting Governments take appropriate action to regulate the catch of yellowtail flounder, *Limanda ferruginea* (Storer), by persons under their jurisdiction fishing in Divisions 3L, 3N and 30 of Subarea 3 so that the aggregate catch of yellowtail flounder by vessels taking such yellowtail flounder shall not exceed 40,000 metric tons in 1974.

"2. That Competent Authorities from each Contracting Government listed below shall limit in 1974 the catch of yellowtail flounder taken by persons under their jurisdiction to the amount listed from the above-mentioned Divisions:

Canada	32,400 metric tons
USSR	7,000 " tons
Others	600 " tons

"3. That each Contracting Government mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of the date on which its vessels have ceased a specialized fishery for yellowtail flounder. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary if its vessels engage in a specialized fishery for yellowtail flounder, together if possible with an estimate of the projected catch. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of specialized or incidental catches of yellowtail flounder in increments of 100 tons. The Executive Secretary shall promptly inform all other Contracting Governments of such notifications. The Executive Secretary shall notify each Contracting Government of the date on which accumulated catch and estimated catch of yellowtail flounder, the quantity estimated to be taken before closure could be introduced, and the likely incidental catch for the remainder of the year equal 100 percent of the allowable catch designated as for "Others" in paragraph 2 above. Within 10 days of receipt of such notification from the Executive Secretary, each Contracting Government not mentioned by name in paragraph 2 above shall prohibit the catching of yellowtail flounder in Divisions 3L, 3N and 30 of Subarea 3 by persons under its jurisdiction, except for small incidental catches.

"4. That the Contracting Governments take appropriate action to ensure that all vessels under their jurisdiction which take yellowtail flounder, record their catches on a daily basis according to position, amount, date, type of gear, amount of effort, i.e., number of sets (or hooks) x time gear on the bottom (otter trawl) or fishing (midwater trawl, lines, other gear), discards and disposition of catch.

"5. That the allocations in paragraph 2 above are without prejudice to future allocations of catches for this or other stocks."

Serial No. 3109  
(A.a.4)

Proceedings No. 9  
Appendix VII

ANNUAL MEETING - JUNE 1973

(10) Proposal for International Quota Regulation of the Fishery for Redfish in Division 3M of Subarea 3 of the Convention Area

Panel 3 recommends that the Commission transmit to the Depositary Government the following proposal for joint action by the Contracting Governments:

"1. That the Contracting Governments take appropriate action to regulate the catch of redfish, *Sebastes maximus* (L.), by persons under their jurisdiction fishing in Division 3M of Subarea 3 so that the aggregate catch of redfish by vessels taking such redfish shall not exceed 40,000 metric tons in 1974.

"2. That Competent Authorities from each Contracting Government listed below shall limit in 1974 the catch of redfish taken by persons under their jurisdiction to the amount listed from the above-mentioned Division:

Canada	1,000 metric tons
USSR	30,000 " tons
Others	9,000 " tons

"3. That each Contracting Government mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of the date on which its vessels have ceased a specialized fishery for redfish. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary if its vessels engage in a specialized fishery for redfish, together if possible with an estimate of the projected catch. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of specialized or incidental catches of redfish in increments of 100 tons. The Executive Secretary shall promptly inform all other Contracting Governments of such notifications. The Executive Secretary shall notify each Contracting Government of the date on which accumulated catch and estimated catch of redfish, the quantity estimated to be taken before closure could be introduced, and the likely incidental catch for the remainder of the year equal 100 percent of the allowable catch designated as for "Others" in paragraph 2 above. Within 10 days of receipt of such notification from the Executive Secretary, each Contracting Government not mentioned by name in paragraph 2 above shall prohibit the catching of redfish in Division 3M of Subarea 3 by persons under its jurisdiction, except for small incidental catches.

"4. That the Contracting Governments take appropriate action to ensure that all vessels under their jurisdiction which take redfish, record their catches on a daily basis according to position, amount, date, type of gear, amount of effort, i.e., number of sets (or hooks) x time gear on the bottom (otter trawl) or fishing (midwater trawl, lines, other gear), discards and disposition of catch.

"5. That the allocations in paragraph 2 above are without prejudice to future allocations of catches for this or other stocks."

Serial No. 3109  
(A.a.4)

Proceedings No. 9  
Appendix VIII

ANNUAL MEETING - JUNE 1973

(11) Proposal for International Quota Regulation of the Fishery for Redfish in Divisions 3L and 3N of Subarea 3 of the Convention Area

Panel 3 recommends that the Commission transmit to the Depository Government the following proposal for joint action by the Contracting Governments:

"1. That the Contracting Governments take appropriate action to regulate the catch of redfish, *Sebastes marinus* (L.), by persons under their jurisdiction fishing in Divisions 3L and 3N of Subarea 3 so that the aggregate catch of redfish by vessels taking such redfish shall not exceed 28,000 metric tons in 1974.

"2. That Competent Authorities from each Contracting Government listed below shall limit in 1974 the catch of redfish taken by persons under their jurisdiction to the amount listed from the above-mentioned Divisions:

Canada	3,000	metric tons
Japan	800	" tons
Poland	1,000	" tons
USSR	20,500	" tons
Others	2,700	" tons

"3. That each Contracting Government mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of the date on which its vessels have ceased a specialized fishery for redfish. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary if its vessels engage in a specialized fishery for redfish, together if possible with an estimate of the projected catch. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of specialized or incidental catches of redfish in increments of 100 tons. The Executive Secretary shall promptly inform all other Contracting Governments of such notifications. The Executive Secretary shall notify each Contracting Government of the date on which accumulated catch and estimated catch of redfish, the quantity estimated to be taken before closure could be introduced, and the likely incidental catch for the remainder of the year equal 100 percent of the allowable catch designated as for "Others" in paragraph 2 above. Within 10 days of receipt of such notification from the Executive Secretary, each Contracting Government not mentioned by name in paragraph 2 above shall prohibit the catching of redfish in Divisions 3L and 3N of Subarea 3 by persons under its jurisdiction, except for small incidental catches.

"4. That the Contracting Governments take appropriate action to ensure that all vessels under their jurisdiction which take redfish, record their catches on a daily basis according to position, amount, date, type of gear, amount of effort, i.e., number of sets (or hooks) x time gear on the bottom (otter trawl) or fishing (midwater trawl, lines, other gear), discards and disposition of catch.

"5. That the allocations in paragraph 2 above are without prejudice to future allocations of catches for this or other stocks."



ANNUAL MEETING - JUNE 1973(12) Proposal for International Quota Regulation of the Fishery for Redfish in Division 30 of Subarea 3 of the Convention Area

Panel 3 recommends that the Commission transmit to the Depositary Government the following proposal for joint action by the Contracting Governments:

"1. That the Contracting Governments take appropriate action to regulate the catch of redfish, *Sebastes marinus* (L.), by persons under their jurisdiction fishing in Division 30 of Subarea 3 so that the aggregate catch of redfish by vessels taking such redfish shall not exceed 16,000 metric tons in 1974.

"2. That Competent Authorities from each Contracting Government listed below shall limit in 1974 the catch of redfish taken by persons under their jurisdiction to the amount listed from the above-mentioned Division:

Canada	3,000 metric tons
USSR	11,800 " tons
Others	1,200 " tons

"3. That each Contracting Government mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of the date on which its vessels have ceased a specialized fishery for redfish. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary if its vessels engage in a specialized fishery for redfish, together if possible with an estimate of the projected catch. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of specialized or incidental catches of redfish in increments of 100 tons. The Executive Secretary shall promptly inform all other Contracting Governments of such notifications. The Executive Secretary shall notify each Contracting Government of the date on which accumulated catch and estimated catch of redfish, the quantity estimated to be taken before closure could be introduced, and the likely incidental catch for the remainder of the year equal 100 percent of the allowable catch designated as for "Others" in paragraph 2 above. Within 10 days of receipt of such notification from the Executive Secretary, each Contracting Government not mentioned by name in paragraph 2 above shall prohibit the catching of redfish in Division 30 of Subarea 3 by persons under its jurisdiction, except for small incidental catches.

"4. That the Contracting Governments take appropriate action to ensure that all vessels under their jurisdiction which take redfish, record their catches on a daily basis according to position, amount, date, type of gear, amount of effort, i.e., number of sets (or hooks) x time gear on the bottom (otter trawl) or fishing (midwater trawl, lines, other gear), discards and disposition of catch.

"5. That the allocations in paragraph 2 above are without prejudice to future allocations of catches for this or other stocks."

ANNUAL MEETING - JUNE 1973(13) Proposal for International Quota Regulation of the Fishery for Redfish in Division 3P of Subarea 3 of the Convention Area

Panel 3 recommends that the Commission transmit to the Depository Government the following proposal for joint action by the Contracting Governments:

"1. That the Contracting Governments take appropriate action to regulate the catch of redfish, *Sebastes marinus* (L.), by persons under their jurisdiction fishing in Division 3P of Subarea 3 so that the aggregate catch of redfish by vessels taking such redfish shall not exceed 25,000 metric tons in 1974.

"2. That Competent Authorities from each Contracting Government listed below shall limit in 1974 the catch of redfish taken by persons under their jurisdiction to the amount listed from the above-mentioned Division:

Canada	9,500 metric tons
France	2,500 " tons
USSR	11,300 " tons
Others	1,700 " tons

"3. That each Contracting Government mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of the date on which its vessels have ceased a specialized fishery for redfish. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary if its vessels engage in a specialized fishery for redfish, together if possible with an estimate of the projected catch. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of specialized or incidental catches of redfish in increments of 100 tons. The Executive Secretary shall promptly inform all other Contracting Governments of such notifications. The Executive Secretary shall notify each Contracting Government of the date on which accumulated catch and estimated catch of redfish, the quantity estimated to be taken before closure could be introduced, and the likely incidental catch for the remainder of the year equal 100 percent of the allowable catch designated as for "Others" in paragraph 2 above. Within 10 days of receipt of such notification from the Executive Secretary, each Contracting Government not mentioned by name in paragraph 2 above shall prohibit the catching of redfish in Division 3P of Subarea 3 by persons under its jurisdiction, except for small incidental catches.

"4. That the Contracting Governments take appropriate action to ensure that all vessels under their jurisdiction which take redfish, record their catches on a daily basis according to position, amount, date, type of gear, amount of effort, i.e., number of sets (or hooks) x time gear on the bottom (otter trawl) or fishing (midwater trawl, lines, other gear), discards and disposition of catch.

"5. That the allocations in paragraph 2 above are without prejudice to future allocations of catches for this or other stocks."

ANNUAL MEETING - JUNE 1973

(14) Proposal for International Quota Regulation of the Fishery for Witch in Divisions 3N and 3O of Subarea 3 of the Convention Area

Panel 3 recommends that the Commission transmit to the Depositary Government the following proposal for joint action by the Contracting Governments:

"1. That the Contracting Governments take appropriate action to regulate the catch of witch, *Glyptocephalus cynoglossus* (L.), by persons under their jurisdiction fishing in Divisions 3N and 3O of Subarea 3 so that the aggregate catch of witch by vessels taking such witch shall not exceed 10,000 metric tons in 1974.

"2. That Competent Authorities from each Contracting Government listed below shall limit in 1974 the catch of witch taken by persons under their jurisdiction to the amount listed from the above-mentioned Divisions:

Canada	4,500 metric tons
USSR	4,900 " tons
Others	600 " tons

"3. That each Contracting Government mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of the date on which its vessels have ceased a specialized fishery for witch. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary if its vessels engage in a specialized fishery for witch, together if possible with an estimate of the projected catch. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of specialized or incidental catches of witch in increments of 100 tons. The Executive Secretary shall promptly inform all other Contracting Governments of such notifications. The Executive Secretary shall notify each Contracting Government of the date on which accumulated catch and estimated catch of witch, the quantity estimated to be taken before closure could be introduced, and the likely incidental catch for the remainder of the year equal 100 percent of the allowable catch designated as for "Others" in paragraph 2 above. Within 10 days of receipt of such notification from the Executive Secretary, each Contracting Government not mentioned by name in paragraph 2 above shall prohibit the catching of witch in Divisions 3N and 3O of Subarea 3 by persons under its jurisdiction, except for small incidental catches.

"4. That the Contracting Governments take appropriate action to ensure that all vessels under their jurisdiction which take witch, record their catches on a daily basis according to position, amount, date, type of gear, amount of effort, i.e., number of sets (or hooks) x time gear on the bottom (otter trawl) or fishing (midwater trawl, lines, other gear), discards and disposition of catch.

"5. That the allocations in paragraph 2 above are without prejudice to future allocations of catches for this or other stocks."

ANNUAL MEETING - JUNE 1973(15) Proposal for International Quota Regulation of the Fishery for Witch in Subdivision 3Ps of Subarea 3 of the Convention Area

Panel 3 recommends that the Commission transmit to the Depositary Government the following proposal for joint action by the Contracting Governments:

"1. That the Contracting Governments take appropriate action to regulate the catch of witch, *Glyptocephalus cynoglossus* (L.), by persons under their jurisdiction fishing in Subdivision 3Ps of Subarea 3 so that the aggregate catch of witch by vessels taking such witch shall not exceed 3,000 metric tons in 1974.

"2. That Competent Authorities from each Contracting Government listed below shall limit in 1974 the catch of witch taken by persons under their jurisdiction to the amount listed from the above-mentioned Subdivision:

Canada	2,500 metric tons
France	400 " tons
Others	100 " tons

"3. That each Contracting Government mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of the date on which its vessels have ceased a specialized fishery for witch. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary if its vessels engage in a specialized fishery for witch, together if possible with an estimate of the projected catch. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of specialized or incidental catches of witch in increments of 100 tons. The Executive Secretary shall promptly inform all other Contracting Governments of such notifications. The Executive Secretary shall notify each Contracting Government of the date on which accumulated catch and estimated catch of witch, the quantity estimated to be taken before closure could be introduced, and the likely incidental catch for the remainder of the year equal 100 percent of the allowable catch designated as for "Others" in paragraph 2 above. Within 10 days of receipt of such notification from the Executive Secretary, each Contracting Government not mentioned by name in paragraph 2 above shall prohibit the catching of witch in Subdivision 3Ps of Subarea 3 by persons under its jurisdiction, except for small incidental catches.

"4. That the Contracting Governments take appropriate action to ensure that all vessels under their jurisdiction which take witch, record their catches on a daily basis according to position, amount, date, type of gear, amount of effort, i.e., number of sets (or hooks) x time gear on the bottom (otter trawl) or fishing (midwater trawl, lines, other gear), discards and disposition of catch.

"5. That the allocations in paragraph 2 above are without prejudice to future allocations of catches for this or other stocks."



Serial No. 3110  
(B.e.73)

Proceedings No. 10

ANNUAL MEETING - JUNE 1973

Report of the Meetings of Panel 4

Tuesday, 12 June, 1630 hrs  
Friday, 15 June, 1130 hrs

1. The meeting was opened by the Chairman, Captain J.C.E. Cardoso (Portugal). Representatives of all Member Countries of the Panel were present.
2. Rapporteur. Mr H.R. Beasley (USA) was appointed Rapporteur.
3. Agenda. The agenda for the meeting, as circulated, was adopted with the addition of a new Item 8(1). Further measures of conservation.
4. Panel Membership. No change in the membership of Panel 4 was proposed.
5. Report of Scientific Advisers. The Chairman of the Scientific Advisers to Panel 4, Dr F.D. McCracken (Canada), presented his summary report on the Status of the Fisheries and Research Carried Out in Subarea 4 in 1972 (Summ.Doc. 73/35 Revised) and the Report of Scientific Advisers to Panel 4 (Appendix I). These were adopted by the Panel.
6. Adequacy of Biostatistical Data. No comments were offered regarding this matter in the Panel.
7. Consideration of Increase to 130-mm Mesh Size for Cod, Haddock and Flounders in Div. 4X. Noting the responsibility of the Commission at its Twenty-Third Annual Meeting to determine the effective date in Div. 4X of Subarea 4 for the 130-mm mesh size regulation adopted by the Commission at the Twenty-Second Annual Meeting, the Panel

agreed to recommend to the Commission

that the Trawl Regulations for Subarea 4 adopted at the Twenty-Second Annual Meeting (Ann.Proc.Vol.22, p.61) become effective for Division 4X of Subarea 4 as of 1 January 1974.

8. (a) Conservation measures: Subdiv. 4Vs and Div. 4W cod stock. Panel 4, agreeing that the total allowable catch (TAC) in 1974 for this stock should be 60,000 metric tons,

agreed to recommend

that the Commission transmit to the Depository Government for joint action by the Contracting Governments, proposal (16) for amendment of the international quota regulation, adopted in 1972, of the fishery for cod in Subdivision 4Vs and Division 4W of Subarea 4 (Appendix II).

- (b) and (c). Conservation measures for Div. 4X and Div. 4VW haddock stocks. The Panel agreed that the TAC in 1974 for these stocks should be zero, and that the same incidental catch allowances in fisheries conducted primarily for other species, and the same area and seasonal closure provided in the existing haddock quota regulations for Subarea 4 be applied in 1974. Therefore, Panel 4

agreed to recommend

that the Commission transmit to the Depository Government for joint action by the Contracting Governments, proposal (17) for amendment of the international quota regulation, adopted in 1971 and 1972, of the fishery for haddock in Division 4X of Subarea 4 (Appendix III), and proposal (18) for amendment of the international quota regulation, adopted in 1971 and 1972, of the fishery for haddock in Divisions 4V and 4W of Subarea 4 (Appendix IV).

Canada asked that consideration be given to adjusting the seasonal closure that has been in effect in part of Div. 4X to fishing with gear in a manner capable of catching demersal species so that it would apply

during March, April and May in 1974, to the same waters as when the haddock quota was first implemented in 1970. (This would apply the closure to that part of Div. 4X that lies between 42°N and 43°N latitude and between 67°W and 64°30'W longitude.) It was agreed that this proposal to adjust the closed area should be considered further at the next Mid-Term Meeting of the Commission, and note was taken of Canada's interest in arranging for such an adjustment to be implemented prior to March 1974.

(d) Conservation measures for Div. 4V and 4Wa herring stock. Panel 4, in agreeing that the TAC in 1974 for this stock be 45,000 metric tons,

agreed to recommend

that the Commission transmit to the Depositary Government for joint action by the Contracting Governments, proposal (19) for international quota regulation of the fishery for herring in Division 4V and the northern part of Division 4W of Subarea 4 (Appendix V).

The Panel noted that a significant part of the TAC for this herring stock would be taken outside the Convention Area.

(e) and (f) Conservation measures for Div. 4X and the southern part of Div. 4W herring stock. The Panel noted plans to set the TAC in 1974 for this stock at a Mid-Term Meeting of the Commission. The Panel agreed to refer to a Joint Meeting of Panels 4 and 5 the question of herring size limit exemptions and the question of bringing into effect without delay the quota for this stock agreed upon at the Mid-Term Meeting (Proc. 16, Appendix II).

(g) Conservation measures for Div. 4V, 4W and 4X of Subarea 4 and Subarea 5 pollock stock. Canada proposed that the TAC for 1974 for this stock should cover pollock catches in Div. 4V and 4W as well as in Div. 4X and Subarea 5, and that because of this expansion of the area affected, the TAC in 1974 for this stock should be increased to 55,000 metric tons. In view of the location of this stock, the Panel agreed that national allocation decisions regarding it should be taken in a Joint Meeting of Panels 4 and 5 (Proc. 16, Appendix I).

(h) Conservation measures for Div. 4V, 4W and 4X redfish stock. Panel 4, in agreeing that the TAC in 1974 for this stock should be 40,000 metric tons,

agreed to recommend

that the Commission transmit to the Depositary Government for joint action by the Contracting Governments, proposal (21) for international quota regulation of the fishery for redfish in Divisions 4V, 4W and 4X of Subarea 4 (Appendix VI).

(i) Conservation measures for Div. 4V, 4W and 4X silver hake stock. The Panel agreed that the TAC in 1974 for this stock should be 100,000 metric tons, with the understanding that complete research survey vessel data concerning the stock would be made available to the Commission at its 1974 Annual Meeting. Panel 4

agreed to recommend

that the Commission transmit to the Depositary Government for joint action by the Contracting Governments, proposal (22) for international quota regulation of the fishery for silver hake in Divisions 4V, 4W and 4X of Subarea 4 (Appendix VII).

(j) Conservation measures for Div. 4V, 4W and 4X yellowtail, witch and American plaice combined stocks. Panel 4, agreeing that the TAC in 1974 for this stock should be 32,000 metric tons,

agreed to recommend

that the Commission transmit to the Depositary Government for joint action by the Contracting Governments, proposal (23) for international quota regulation of the fishery for yellowtail flounder, witch, and American plaice combined in Divisions 4V, 4W and 4X of Subarea 4 (Appendix VIII).

(k) Full use of regulated species. Consideration of this item was referred to the Joint Meeting of Panels 1-5 (Proc. 13). Table 1 gives a summary of all the TAC's and their allocations.

(l) Further measures for conservation. Consideration of this item was referred to the Joint Meeting of Panels 4 and 5 (Proc. 16).

9. Future Research Required. The Panel noted these requirements were discussed in the Report of the Research and Statistics Committee.

10. Date and Place of Next Meeting. It was agreed that the next Panel Meeting should take place at the time and place of the next meeting of the Commission, unless circumstances require otherwise.

11. Approval of Panel Report. It was agreed that the Panel Report would be approved in the usual manner.
12. Election of Chairman. The Panel unanimously elected Dr D. Booss (Fed.Rep. Germany) as Chairman of the Panel for 1973/74 and 1974/75.
13. Adjournment. The meeting of Panel 4 adjourned at 1735 hrs, 15 June.

## ANNUAL MEETING - JUNE 1973

Report of Scientific Advisers to Panel 4

Sunday, 3 June, 1430 hrs

1. As a Chairman had not been elected in 1972, the meeting was called to order by Dr F.D. McCracken (Canada), who agreed to act as Chairman. Representatives of Canada, France, Fed.Rep. Germany, Japan, Poland, Portugal, Spain, USSR and USA and Observers from Bulgaria, Denmark, Norway and UK attended.
2. Rapporteur. Mr L.S. Parsons (Canada) was appointed Rapporteur.
3. Agenda. The Agenda for Panel 4 was adopted, after the deletion of Item 8(e) relating to conservation measures for Div. 4WX herring stock.
4. Report of Chairman of Scientific Advisers. The Chairman's Report on the Status of the Fisheries and Research Carried Out in Subarea 4 in 1972 was read and approved with minor amendments (Summ.Doc. 73/35 Revised).
5. Adequacy of Biostatistical Data. The Advisers considered the detailed analyses of the reporting of statistical and sampling data for 1971, carried out by the Secretariat, and noted that serious deficiencies exist for most species. Existing requirements, which are not being met, are minimal and more detailed and frequent reporting of statistics and more extensive collections of length and age data of commercial catches are vitally needed to provide a basis for accurate stock assessments. A Working Group to review the kind of detail necessary has been recommended by STACRES.
6. Consideration of Increase to 130-mm Mesh Size for Cod, Haddock and Flounders in Div. 4X. Attention is drawn to the Assessments Subcommittee's conclusion that the proposed increase in trawl mesh size to 130 mm should result in increased yield from cod, haddock and flounders in Div. 4X as well as in other Divisions of Subarea 4.
7. Conservation Measures
  - (a) Subdiv. 4Vs and Div. 4W cod. The recommended total allowable catch for 1974 is 60,000 metric tons, the same level as recommended for 1973. The Advisers noted that this level (60,000 metric tons) may be somewhat high but that the sampling data available does not allow adequate assessment of the situation.
  - (b) Div. 4X haddock. Current levels of fishing mortality are probably close to that giving maximum yield per recruit. However, stock abundance is considerably below that giving maximum sustainable yield and current management objectives should be to rebuild the stock. The Advisers agreed that removals from this stock should be minimized to maximize the chances of stock recovery.
  - (c) Div. 4VW haddock. This stock, which has been capable of sustaining catches of 25,000 metric tons in the past under conditions of normal recruitment, is severely depleted and the exploitation rate continues high. It was agreed that there should be no directed fishery for haddock in Div. 4VW in 1974. Div. 4V should be included under such restriction to obtain full management control of this stock throughout its range.
  - (d) Div. 4VWa herring. No satisfactory biological basis for the recommendation of a TAC for the presently defined Banquereau stock was available. The Advisers agreed with the Assessments Subcommittee that a pre-emptive TAC of 45,000 metric tons should be set for 1974 to prevent a diversion of fishing effort to this stock.
  - (e) Div. 4WX herring size limit exemption. The Canadian proposal (Comm.Doc. 73/1) for alternative tolerance criteria for herring size limits was discussed. In the light of information presented to the Assessments Subcommittee and to the Panel Advisers, it was agreed that the Canadian proposal would probably lead to a lower exploitation of undersized fish than under the criteria at present being used.
  - (f) Div. 4X and Subarea 5 pollock. No detailed assessment is available for pollock and it is unlikely that an accurate estimate of maximum sustainable yield will be possible unless biological sampling of the catches improves. The Advisers agreed with the Assessments Subcommittee that there is no reason at this time to suggest an adjustment to the 50,000 metric ton TAC recommended for 1973. However, this regulation should be extended to include Div. 4W and Div. 4V. The Advisers noted the regulatory problem involved for this stock, since it is also fished in Statistical Area 6. To ensure that the stock in its entire distribution range is under control, this problem needs consideration by the Commission.



(g) Div. 4VWX redbfish. A detailed assessment of these stocks is not possible at this time. It was agreed that, despite large variations in year-class strength, the slow growth and low mortality of redbfish imply that little loss in yield will result from fishing consistently at a level corresponding to the long-term MSY. The MSY estimate based on sustained catches in the last decade is considered to be about 30,000 metric tons. A total allowable catch of 30,000 metric tons is, therefore, recommended for 1974.

(h) Div. 4VWX silver hake. Estimates of the yield per recruit ( $M = 0.5$ ) for this stock indicate that the level of fishing mortality  $F_{0.1} = 0.6$  would give approximately 90% of the maximum yield per recruit. However, because of rapid development of the fishery and insufficient data, the current levels of fishing mortality, natural mortality, recruitment and the age at recruitment are not known accurately. The most reliable estimate indicates  $F = 1.1$  in 1970/71. This, in conjunction with an assumed high average recruitment suggests a value of  $F = 1.4$  would be required to account for catches in 1972/73. The projected catches for 1974 are  $F = 0.6$ , 50,000 metric tons and  $F = 1.4$ , 100,000 metric tons. No specific total allowable catch for 1974 could be agreed upon. Some Advisers were of the opinion that the lower figure was more appropriate since most of the catch could then be taken at times when the silver hake are concentrated and hence, the by-catch of other species would be greatly reduced. Other Advisers felt that signs of general improvement in the strength of recent year-classes up to and including 1971 warranted setting a TAC at the upper level of this range.

(i) Div. 4VWX yellowtail, witch and American plaice. A total allowable catch of 32,000 metric tons for Div. 4VWX yellowtail, witch and American plaice is recommended for 1974.

(j) Full use of regulated species. The Advisers regard this as an important problem but feel that achievement of the goal of full utilization of regulated species is more dependent on practical considerations than scientific advice.

8. Future Research Required. The Advisers noted that many current total allowable catch recommendations are of a pre-emptive nature due to the lack of adequate data on which to base accurate stock assessments, e.g. redbfish in Div. 4VWX, pollock in Div. 4VWX and Subarea 5, herring in Div. 4VWa. If the Commission intends to regulate stocks on a scientific basis, the necessary information must be provided to allow detailed scientific assessments. Considerable improvement in the degree of sampling of commercial catches is required.

Improvement in the extent of juvenile surveys for pelagic species is required since annual adjustments in allowable catches for herring and mackerel are heavily dependent upon indices of pre-recruit abundance. Subarea 4 was inadequately covered by preliminary juvenile herring surveys in early 1973. It is important that this area be adequately covered by the surveys for juveniles of pelagic species planned for early 1974. Full coordination of these surveys is deemed essential; calibration of acoustic and trawl surveys requires particular emphasis.

In view of the possible interaction between mackerel fisheries in Subarea 4 and in Subarea 5 and Statistical Area 6, more information relating to stock identity is urgently needed. Adequate stock sampling in Subarea 4 should be initiated in 1973.

9. Date and Place of Next Meeting. It was agreed that the next meeting of Panel Advisers should take place immediately before the next meeting of the Panel in 1974.

10. Election of Chairman. Dr F.D. McCracken (Canada) was unanimously elected Chairman of the Scientific Advisers to Panel 4 for the ensuing year.

ANNUAL MEETING - JUNE 1973

(16) Proposal for International Quota Regulation of the Fishery for Cod in Subdivision 4Vs and Division 4W of Subarea 4 of the Convention Area

Panel 4 recommends that the Commission transmit to the Depositary Government the following proposal for joint action by the Contracting Governments:

That the Cod Quota Regulation for Subdivision 4Vs and Division 4W of Subarea 4 adopted at the Twenty-Second Annual Meeting (Annual Proceedings, Vol. 22, 1971-72, page 48) and entered into force on 1 January 1973 for the year 1973, be replaced by the following:

"1. That the Contracting Governments take appropriate action to regulate the catch of cod, *Gadus morhua* L., by persons under their jurisdiction fishing in Subdivision 4Vs and Division 4W of Subarea 4 so that the aggregate catch of cod by vessels taking such cod shall not exceed 60,000 metric tons in 1974.

"2. That Competent Authorities from each Contracting Government listed below shall limit in 1974 the catch of cod taken by persons under their jurisdiction to the amount listed from the above-mentioned Subdivision and Division:

Canada	24,250 metric tons
Denmark	1,150 " tons
France	1,500 " tons
Spain	28,500 " tons
USSR	2,900 " tons
Others	1,700 " tons

"3. That each Contracting Government mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of the date on which its vessels have ceased a specialized fishery for cod. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary if its vessels engage in a specialized fishery for cod, together if possible with an estimate of the projected catch. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of specialized or incidental catches of cod in increments of 100 tons. The Executive Secretary shall promptly inform all other Contracting Governments of such notifications. The Executive Secretary shall notify each Contracting Government of the date on which accumulated catch and estimated catch of cod, the quantity estimated to be taken before closure could be introduced, and the likely incidental catch for the remainder of the year equal 100 percent of the allowable catch designated as for "Others" in paragraph 2 above. Within 10 days of receipt of such notification from the Executive Secretary, each Contracting Government not mentioned by name in paragraph 2 above shall prohibit the catching of cod in Subdivision 4Vs and Division 4W of Subarea 4 by persons under its jurisdiction, except for small incidental catches.

"4. That the Contracting Governments take appropriate action to ensure that all vessels under their jurisdiction which take cod, record their catches on a daily basis according to position, amount, date, type of gear, amount of effort, i.e., number of sets (or hooks) x time gear on the bottom (otter trawl) or fishing (midwater trawl, lines, other gear), discards and disposition of catch.

"5. That the allocations in paragraph 2 above are without prejudice to future allocations of catches for this or other stocks."

Serial No. 3110  
(A.a.4)

Proceedings No. 10  
Appendix III

ANNUAL MEETING - JUNE 1973

(17) Proposal for International Quota Regulation of the Fishery for Haddock in Division 4X of Subarea 4 of the Convention Area

Panel 4 recommends that the Commission transmit to the Depository Government the following proposal for joint action by the Contracting Governments:

That the Haddock Quota Regulation for Division 4X of Subarea 4, adopted at the Twenty-First Annual Meeting (Annual Proceedings, Vol. 21, 1970-71, pages 33-34) and amended at the Twenty-Second Annual Meeting (Annual Proceedings, Vol. 22, 1971-72, page 61) be replaced by the following:

"1. That the Contracting Governments take appropriate action to prohibit the catch of haddock, *Melanogrammus aeglefinus* (L.), by persons under their jurisdiction fishing in Division 4X of Subarea 4, except as provided in paragraph 2.

"2. That in order to avoid impairment of fisheries conducted for other species and which take small quantities of haddock incidentally, the Contracting Governments may permit persons under their jurisdiction to have in possession on board a vessel fishing for other species, haddock caught in Division 4X of Subarea 4 in amounts not exceeding 5,000 lb or 2,268 kg, or 10% by weight, of all other fish on board caught in Division 4X of Subarea 4, whichever is greater.

"3. That the Contracting Governments take appropriate action to prohibit persons under their jurisdiction from using fishing gear in a manner capable of catching demersal species during March, April and May of 1974 in that part of Division 4X of Subarea 4 bounded by straight lines connecting the following coordinates in the order listed:

65°44'W, 42°04'N  
64°30'W, 42°40'N  
64°30'W, 43°00'N  
66°32'W, 43°00'N  
66°32'W, 42°20'N  
66°00'W, 42°20'N

"4. That the application to haddock of the trawl regulations effective in Division 4X of Subarea 4 be suspended during the period that prohibitions on the catching of haddock are in effect."

ANNUAL MEETING - JUNE 1973

(18) Proposal for International Quota Regulation of the Fishery for Haddock in Divisions 4V and 4W of Subarea 4 of the Convention Area

Panel 4 recommends that the Commission transmit to the Depositary Government the following proposal for joint action by the Contracting Governments:

That the Haddock Quota Regulation for Division 4W of Subarea 4, adopted at the Twenty-First Annual Meeting (Annual Proceedings, Vol. 21, 1970-71, pages 34-35) and amended at the Twenty-Second Annual Meeting (Annual Proceedings, Vol. 22, 1971-72, page 62) be replaced by the following:

"1. That the Contracting Governments take appropriate action to prohibit the catching of haddock, *Melanogrammus aeglefinus* (L.), by persons under their jurisdiction fishing in Divisions 4V and 4W of Subarea 4, except as provided in paragraph 2.

"2. That in order to avoid impairment of fisheries conducted for other species and which take small quantities of haddock incidentally, the Contracting Governments may permit persons under their jurisdiction to have in possession on board a vessel fishing for other species, haddock caught in Divisions 4V and 4W of Subarea 4 in amounts not exceeding 5,000 lb or 2,268 kg, or 10% by weight, of all other fish on board caught in Divisions 4V and 4W of Subarea 4, whichever is greater.

"3. That the application to haddock of the trawl regulations effective in Divisions 4V and 4W of Subarea 4 be suspended during the period these prohibitions on the catching of haddock are in effect."

Serial No. 3110  
(A.a.4)

Proceedings No. 10  
Appendix V

ANNUAL MEETING - JUNE 1973

(19) Proposal for International Quota Regulation of the Fishery for Herring in Division 4V and the northern part of Division 4W of Subarea 4 of the Convention Area

Panel 4 recommends that the Commission transmit to the Depository Government the following proposal for joint action by the Contracting Governments:

"1. That the Contracting Governments take appropriate action to regulate the catch of herring, *Clupea harengus* L., by persons under their jurisdiction fishing in that portion of Division 4W north of 44°52'N latitude and in Division 4V of Subarea 4 so that the aggregate catch of herring by vessels taking such herring shall not exceed 45,000 metric tons in 1974.

"2. That Competent Authorities from each Contracting Government listed below shall limit in 1974 the catch of herring taken by persons under their jurisdiction to the amount listed from the above-mentioned area:

Canada	39,800 metric tons
Fed. Rep. Germany	1,500 " tons
USSR	3,000 " tons
Others	700 " tons

"3. That each Contracting Government mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of the date on which its vessels have ceased a specialized fishery for herring. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary if its vessels engage in a specialized fishery for herring, together if possible with an estimate of the projected catch. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of specialized or incidental catches of herring in increments of 100 tons. The Executive Secretary shall promptly inform all other Contracting Governments of such notifications. The Executive Secretary shall notify each Contracting Government of the date on which accumulated catch and estimated catch of herring, the quantity estimated to be taken before closure could be introduced, and the likely incidental catch for the remainder of the year equal 100 percent of the allowable catch designated as for "Others" in paragraph 2 above. Within 10 days of receipt of such notification from the Executive Secretary, each Contracting Government not mentioned by name in paragraph 2 above shall prohibit the catching of herring in Division 4V and the northern part of Division 4W of Subarea 4 by persons under its jurisdiction, except for small incidental catches.

"4. That the Contracting Governments take appropriate action to ensure that all vessels under their jurisdiction which take herring, record their catches on a daily basis according to position, amount, date, type of gear, amount of effort, i.e., number of sets (or hooks) x time gear on the bottom (otter trawl) or fishing (midwater trawl, lines, other gear), discards and disposition of catch.

"5. That the allocations in paragraph 2 above are without prejudice to future allocations of catches for this or other stocks."

ANNUAL MEETING - JUNE 1973(21) Proposal for International Quota Regulation of the Fishery for Redfish in Divisions 4V, 4W and 4X of Subarea 4 of the Convention Area

Panel 4 recommends that the Commission transmit to the Depositary Government the following proposal for joint action by the Contracting Governments:

"1. That the Contracting Governments take appropriate action to regulate the catch of redfish, *Sebastes marinus* (L.), by persons under their jurisdiction fishing in Divisions 4V, 4W and 4X of Subarea 4 so that the aggregate catch of redfish by vessels taking such redfish shall not exceed 40,000 metric tons in 1974.

"2. That Competent Authorities from each Contracting Government listed below shall limit in 1974 the catch of redfish taken by persons under their jurisdiction to the amount listed from the above-mentioned Divisions:

Canada	20,000	metric tons
France	1,000	" tons
Poland	1,300	" tons
USSR	6,600	" tons
USA	10,000	" tons
Others	1,100	" tons

"3. That each Contracting Government mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of the date on which its vessels have ceased a specialized fishery for redfish. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary if its vessels engage in a specialized fishery for redfish, together if possible with an estimate of the projected catch. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of specialized or incidental catches of redfish in increments of 100 tons. The Executive Secretary shall promptly inform all other Contracting Governments of such notifications. The Executive Secretary shall notify each Contracting Government of the date on which accumulated catch and estimated catch of redfish, the quantity estimated to be taken before closure could be introduced, and the likely incidental catch for the remainder of the year equal 100 percent of the allowable catch designated as for "Others" in paragraph 2 above. Within 10 days of receipt of such notification from the Executive Secretary, each Contracting Government not mentioned by name in paragraph 2 above shall prohibit the catching of redfish in Divisions 4V, 4W and 4X of Subarea 4 by persons under its jurisdiction, except for small incidental catches.

"4. That the Contracting Governments take appropriate action to ensure that all vessels under their jurisdiction which take redfish, record their catches on a daily basis according to position, amount, date, type of gear, amount of effort, i.e., number of sets (or hooks) x time gear on the bottom (otter trawl) or fishing (midwater trawl, lines, other gear), discards and disposition of catch.

"5. That the allocations in paragraph 2 above are without prejudice to future allocations of catches for this or other stocks."

Serial No. 3110  
(A.a.4)

Proceedings No. 10  
Appendix VII

ANNUAL MEETING - JUNE 1973

(22) Proposal for International Quota Regulation of the Fishery for Silver Hake in Divisions 4V, 4W and 4X of Subarea 4 of the Convention Area

Panel 4 recommends that the Commission transmit to the Depositary Government the following proposal for joint action by the Contracting Governments:

"1. That the Contracting Governments take appropriate action to regulate the catch of silver hake, *Merluccius bilinearis* (Mitch.), by persons under their jurisdiction fishing in Divisions 4V, 4W and 4X of Subarea 4 so that the aggregate catch of silver hake by vessels taking such silver hake shall not exceed 100,000 metric tons in 1974.

"2. That Competent Authorities from each Contracting Government listed below shall limit in 1974 the catch of silver hake taken by persons under their jurisdiction to the amount listed from the above-mentioned Divisions:

Canada	2,000 metric tons
USSR	90,000 " tons
Others	8,000 " tons

"3. That each Contracting Government mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of the date on which its vessels have ceased a specialized fishery for silver hake. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary if its vessels engage in a specialized fishery for silver hake, together if possible with an estimate of the projected catch. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of specialized or incidental catches of silver hake in increments of 100 tons. The Executive Secretary shall promptly inform all other Contracting Governments of such notifications. The Executive Secretary shall notify each Contracting Government of the date on which accumulated catch and estimated catch of silver hake, the quantity estimated to be taken before closure could be introduced, and the likely incidental catch for the remainder of the year equal 100 percent of the allowable catch designated as for "Others" in paragraph 2 above. Within 10 days of receipt of such notification from the Executive Secretary, each Contracting Government not mentioned by name in paragraph 2 above shall prohibit the catching of silver hake in Divisions 4V, 4W and 4X of Subarea 4 by persons under its jurisdiction, except for small incidental catches.

"4. That the Contracting Governments take appropriate action to ensure that all vessels under their jurisdiction which take silver hake, record their catches on a daily basis according to position, amount, date, type of gear, amount of effort, i.e., number of sets (or hooks) x time gear on the bottom (otter trawl) or fishing (midwater trawl, lines, other gear), discards and disposition of catch.

"5. That the allocations in paragraph 2 above are without prejudice to future allocations of catches for this or other stocks."

## ANNUAL MEETING - JUNE 1973

(23) Proposal for International Quota Regulation of the Fishery for Yellowtail Flounder, Witch and American Plaice Combined in Divisions 4V, 4W and 4X of Subarea 4 of the Convention Area

Panel 4 recommends that the Commission transmit to the Depository Government the following proposal for joint action by the Contracting Governments:

"1. That the Contracting Governments take appropriate action to regulate the catch of yellowtail flounder, *Limanda ferruginea* (Storer), witch, *Glyptocephalus cynoglossus* (L.), and American plaice, *Hippoglossoides platessoides* (Fab.), by persons under their jurisdiction fishing in Divisions 4V, 4W and 4X of Subarea 4 so that the aggregate catch of yellowtail flounder, witch and American plaice shall not exceed 32,000 metric tons in 1974.

"2. That Competent Authorities from each Contracting Government listed below shall limit in 1974 the catch of yellowtail flounder, witch and American plaice taken by persons under their jurisdiction to the amount listed from the above-mentioned Divisions:

Canada	20,000 metric tons
France	300 " tons
USSR	10,500 " tons
USA	500 " tons
Others	700 " tons

"3. That each Contracting Government mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of the date on which its vessels have ceased a specialized fishery for yellowtail flounder, witch and American plaice. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary if its vessels engage in a specialized fishery for yellowtail flounder, witch and American plaice, together if possible with an estimate of the projected catch. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of specialized or incidental catches of yellowtail flounder, witch and American plaice in increments of 100 tons. The Executive Secretary shall promptly inform all other Contracting Governments of such notifications. The Executive Secretary shall notify each Contracting Government of the date on which accumulated catch and estimated catch of yellowtail flounder, witch and American plaice, the quantity estimated to be taken before closure could be introduced, and the likely incidental catch for the remainder of the year equal 100 percent of the allowable catch designated as for "Others" in paragraph 2 above. Within 10 days of receipt of such notification from the Executive Secretary, each Contracting Government not mentioned by name in paragraph 2 above shall prohibit the catching of yellowtail flounder, witch and American plaice in Divisions 4V, 4W and 4X of Subarea 4 by persons under its jurisdiction, except for small incidental catches.

"4. That the Contracting Governments take appropriate action to ensure that all vessels under their jurisdiction which take yellowtail flounder, witch and American plaice, record their catches on a daily basis according to position, amount, date, type of gear, amount of effort, i.e., number of sets (or hooks) x time gear on the bottom (otter trawl) or fishing (midwater trawl, lines, other gear), discards and disposition of catch.

"5. That the allocations in paragraph 2 above are without prejudice to future allocations of catches for this or other stocks."





Serial No. 3111  
(B.e.73)

Proceedings No. 11

ANNUAL MEETING - JUNE 1973

Report of Meetings of Panel 5

Monday, 11 June, 0930 hrs  
Tuesday, 12 June, 0930 hrs  
Wednesday, 13 June, 2000 hrs  
Friday, 15 June, 0930 hrs  
Saturday, 16 June, 0005 hrs

1. As the Chairmanship was open, the meeting was convened by the Executive Secretary. Dr A.W.H. Needler (Canada) was elected Chairman for the current meeting. Representatives of all Member Countries of the Panel were present.
2. Rapporteur. Mr W.G. Gordon (USA) was appointed Rapporteur.
3. Agenda. The Agenda, as circulated, was amended to include a general discussion of conservation measures under Agenda Item 7, prior to discussions of more specific measures.
4. Panel Membership. The application of Bulgaria for membership in Panel 5, at a date to be decided by the representative of Bulgaria, was approved by the Panel and referred to STACFAD.
5. Report by the Chairman of Scientific Advisers. Dr M.D. Grosslein (USA) presented the summary of the Status of Fisheries and Research Carried Out in 1972 (Summ.Doc. 73/34 Revised), and also presented the Report of the Scientific Advisers to Panel 5 (Appendix I). As regards the latter report, the USA stated its support for the work of the Scientific Advisers and requested clarification of the disagreement noted in the report regarding interpretation of data used for assessment of the mackerel total allowable catch of 245,000 metric tons. The Polish delegate expressed his opinion that this assessment was incorrect and cited recent data from commercial catches in 1973 and research surveys as the basis for his disagreement. The USSR also voiced their opinion that the mackerel TAC was incorrect and should be at the 450,000 metric ton level. Poland informed the Panel that analysis of their additional mackerel data would be available for a mid-year meeting and proposed delaying establishment of a TAC until such time. This view was endorsed by Romania and USSR. USA expressed the view that the Report of the Scientific Advisers adequately reflected scientific opinion. Additional discussion on mackerel was deferred to a later agenda item.
6. Adequacy of Biostatistical Data. USA, commenting upon Summ.Doc. 73/2, noted the inadequacies of the present statistics scheme, reviewed Comm.Doc. 73/19 (Appendix II) regarding the views of USA for establishing an adequate data base for resource assessment, and suggested that Panel 5 advise the Commission to adopt the proposed resolution of the USA concerning the STACRES recommendations on statistical information. USSR expressed support for improvement in the biostatistical data collection and that USSR would take the necessary steps to overcome any shortcomings. USSR suggested that it would be useful for the Secretariat to provide such a review (Summ.Doc. 73/2) each year. USSR also stated that logbooks should be the mandatory basis for statistical data for research and management needs and that this should apply to all vessels fishing within the Convention Area. Further discussion of the US resolution was deferred to STACREM.
7. Conservation Needs. USA called the Panel's attention to the deteriorating condition of the fish stock throughout Subarea 5 and Statistical Area 6 and that as a result, US coastal fishermen were suffering extreme economic losses. USA indicated that this could not continue and steps must be taken to restore the stocks to the level which would provide maximum yield. It was pointed out that the current individual stock quotas had failed as many quotas had been exceeded because of the inherent and practical deficiencies in the present system. USA strongly voiced their opinion that ICNAF needed improvements in Member Countries' commitments to obtain statistics particularly in the mixed fisheries, effective enforcement of their fishermen, and control of excessive exploitation by more selective fishing. USA repeated its proposal for total effort limitation but voiced willingness to explore other possible measures to stop depletion of these stocks (Comm. Doc. 73/18). USA drew attention to the management option of an overall quota for the total biomass as an alternate interim measure. The alternate US proposal includes (1) an overall quota, (2) continuing individual species quotas for the major stocks, (3) use of selective gear for certain areas, and (4) an improvement and strengthening of international control. Specific proposals for each component were discussed

in detail by USA and it was pointed out that these proposals were interrelated and should be discussed as such. USA considered that a 40% reduction in the total catch (from the average of the last three years) is justifiable to provide for recovery of the stocks within 3-5 years. Canada voiced general support for those proposals and concluded that drastic measures were needed to reverse the downward trend. In discussion a number of delegations proposed to continue with the agenda and deferred discussion to a later item on the agenda.

7. The Total Allowable Catches (TAC's) for Individual Stocks. After further discussion, Members of the Panel agreed to continue with agenda items and to establish the necessary total allowable catches for 1974 for individual species within Subarea 5. The following agreement was reached:

- (a) Cod stock in Div. 5Y. 10,000 metric tons.
- (b) Cod stock in Div. 5Z. 35,000 metric tons.
- (c) Haddock stock (quota and closed area). Zero (0) quota and continue closed areas A and B (see Section 13 of this Report).
- (d) Herring stock in Div. 5Y. To be established at Mid-Term Meeting (see also Proc. 16).
- (e) Herring stocks in Div. 5Z and Statistical Area 6. To be established at Mid-Term Meeting (see also Proc. 16).
- (f) Herring size limit exemption (1973 Spec.Mtg.Proc.No.5; Summ.Doc. 73/1). Canada introduced their proposal to use an alternate scheme based on a 25% by count or 10% by weight exemption by trip for enforcement purposes. The subject was referred to a Joint Meeting of Panels 4 and 5 (Proc. 16) with the suggestion that a single scheme for Subareas 4 and 5 be recommended.
- (g) Flounders (except yellowtail) in Subarea 5 and Statistical Area 6. 25,000 metric tons.
- (h) Mackerel in Subarea 5 and Statistical Area 6. USA recommended a TAC of 245,000 metric tons based on the expert advice of the Scientific Advisers and the Assessments Subcommittee Report (Proc. 1). The delegates from Poland, Bulgaria and USSR expressed their opinions that this TAC was incorrect and cited recent data as basis for their views that the TAC should be at the 450,000 metric ton level. USA requested that Mr D.J. Garrod (UK) and Dr A. Schumacher (Fed.Rep. Germany) review the work of the Assessments Subcommittee. Mr Garrod pointed out that this was the best assessment available for mackerel and that there was broad agreement on the parameters used in assessments. He pointed out that there was the possibility for better assessment at the Mid-Term Meeting, particularly, since better data on the 1971 year-class would be available but that uncertainties would exist regarding the 1972 year-class. Following further discussion it was decided not to establish a TAC for mackerel and its allocations at the present Meeting, referring consideration of that issue to the Special Meeting in January 1974 (see also Report of the Joint Meetings of Panels 4 and 5; Proc. 16, proposal (28)). At the same time an agreement was reached that in order to determine an overall quota, some unspecified number and its allocation would be adopted and that neither case creates precedents or prejudice to the future.
- (i) Pollock in Subareas 4 and 5. Referred to a Joint Meeting of Panels 4 and 5 (Proc. 16, proposal (24)).
- (j) Redfish in Subarea 5. 30,000 metric tons.
- (k) Red hake in Subdiv. 5Zw and Statistical Area 6. USA recommended 50,000 metric tons west of 69°W, and a TAC for stock east of 69°W to be decided at Mid-Term Meeting. Delegates agreed.
- (l) Red and silver hake in closed area. Panel 5, agreeing to continuation of the closure, agreed to recommend  
  
that the Commission transmit to the Depositary Government for joint action by the Contracting Governments, proposal (29) for amendment of the international regulation, adopted in 1972, of the fishery for silver and red hake (closed area and season) in Subarea 5 (Appendix III).
- (m) Scallops in Div. 5Z. Although no action was required, USA noted the problem and expressed a desire to work with Canada for its resolution.
- (n) Silver hake in Div. 5Y. 10,000 metric tons.
- (o) Silver hake in Subdiv. 5Ze. 80,000 metric tons.
- (p) Silver hake in Subdiv. 5Zw and Statistical Area 6. 80,000 metric tons.

- (q) Yellowtail flounder in Subarea 5 east of 69°W. 16,000 metric tons.
- (r) Yellowtail flounder in Subarea 5 west of 69°W. 10,000 metric tons.
- (s) Full use of regulated species. General agreement to avoid waste of protected species was noted.
- (t) Squid (*Loligo*) in Subarea 5 and Statistical Area 6. 65,000 metric tons.

8. US Total Effort Limitation Proposal. Discussion turned to the proposal of the USA for total effort limitation. USA repeated its proposal of the Mid-Term Meeting on total effort limitation (Summ.Doc. 73/1) and voiced its present belief that the proposal for total effort represented the best scheme to solve the management problem in Subarea 5 and Statistical Area 6. USA reminded the Panel that the efforts of the Working Group on Effort Limitation resulted in agreement that the present system was not meeting the objectives of conservation. A vote was held on the feasibility of instituting effort limitation at this time. The majority of the Panel voted against application of total effort limitation at this Meeting. Panel Members, however, agreed that studies of effort limitation should go forward and indicated strong support.

9. Panel 5 recessed at 1300 hrs, Monday, 11 June.

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10. Panel 5 reconvened in second session at 0930 hrs, Tuesday, 12 June.

11. US Overall Catch Quota Scheme. Discussion of the US proposal for a total quota scheme was resumed. Various delegations expressed their views concerning the proposal. Canada proposed setting an overall quota for pelagic species and an additional overall quota for groundfish species. USA noted that such a proposal had merit but the scheme would pose difficulties for certain species and types of gear. It was pointed out that the overall quota scheme would force more specific fishery toward target species and reduce the by-catch problem significantly.

USSR expressed the view that the quota system is the best regulatory system. It was pointed out that individual quotas by Subareas had provided protection to those stocks covered by such a scheme and that pre-emptive quotas should be established for species not endangered. The USSR delegate again pointed out that logbooks should be mandatory on all vessels in order to account for all species taken in the mixed fisheries. USSR favoured establishing an overall quota by summing the individual quotas and then applying a suggested reduction of 10%. Taking these factors into account, the USSR would be prepared to participate in the development of an overall quota scheme. USSR also favoured applying the total quota to all Subareas. Spain expressed the view that a reduction in catches of 20% seemed reasonable. Fed.Rep. Germany stated that they would not accept a reduction on the fixed quota on pelagic fisheries as they operated a clean fishery. Canada related the problems that would be encountered in applying the total quota scheme to all Subareas in that data on the biomass was lacking. Poland suggested moving ahead with allocation of TAC's as the US proposal was received after the deadline of the Commission. After continued debate, the Chairman suggested moving ahead with other conservation proposals.

12. Proposed Regulation of Trawl Gear. USA introduced their proposal for international regulation of fishing gear employed in the trawl fisheries in Subarea 5 (Appendix IV). USSR responded to this proposal by stating that it should apply to all vessels. Various delegations responded favourably to this proposal but suggested a transitional period and review at the end of one year. Other delegations voiced objection to the scheme as it would hamper their fisheries for certain species. In declining the proposal the delegations noted that they would be prepared to discuss the proposal at the Mid-Term Meeting.

13. Proposed Haddock Regulation. The proposal by USA for the regulation of haddock in Subarea 5 was introduced. Although Panel Members favoured the proposal, it was referred to a Joint Meeting of Panels 4 and 5 (Proc. 16, proposal (25)).

14. Proposed Deletion of Annual Exemption Regulation. USA introduced their proposal (Appendix V) to amend the trawl regulations to delete the 10% annual exemption in Subarea 5. During debate it was pointed out that the annual exemption was also present in trawl regulations for Subareas 3 and 4. The proposal was subsequently referred to a Joint Meeting of Panels 4 and 5 (Proc. 16) for further consideration.

15. The second session of Panel 5 recessed at 1320 hrs.

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16. Panel 5 reconvened, in third session, at 2000 hrs, Wednesday, 13 June.

17. Allocation of TAC's. USA introduced its proposal for allocation of TAC's. Considerable debate followed regarding the allocation of various stocks and agreement was reached for some stocks, subject to later change when all allocations were completed.

18. The third session of Panel 5 recessed at 2345 hrs.

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19. Panel 5 reconvened, in fourth session, at 0930 hrs, Friday, 15 June.

20. Further Allocation of TAC's. The Chairman continued the work of allocating the TAC's for the various stocks. USSR (and Romania) noted that the TAC's listed for herring and mackerel were only provisional, pending action at the Mid-Term Meeting in January and requested that allocation tables indicate this with an appropriate footnote. Canada provided a proposal for the allocation of mackerel, and explained its basis. USSR stated that it accepted the allocation proposed but objected to change in allocation principles and asked that their position be indicated in a footnote. USA proposed national allocations for "other flounders". After a brief discussion and some changes, the allocations were agreed to (with some reservations). The proposed squid allocations were introduced by USA. In response to a request from USSR, USA explained that the proposal was based on recent landings. Until recent years the harvest has been minimal. After considerable discussion a tentative allocation was agreed to, including an allocation to Italy. USA explained the rationale for the "other fish" category proposed to complete the allocation of all finfish resources in Subarea 5 and Statistical Area 6 except for high seas pelagics and anadromous species. The total sum, 200,000 metric tons, was based on landings records and scientific studies of the fish biomass.

21. Proposed Reductions under the Overall Catch Quota Concept. A brief discussion of the reasons for so allocating the remainder of finfish resources followed, including further discussion of the overall or total catch quota concept. USSR and some other countries expressed the opinion that it was also necessary to discuss this matter in a joint Panel meeting. The opinion was expressed that all Panels but Panel 1 should consider, and possibly implement a total catch quota.

The subject of the required reduction in Subarea 5 and Statistical Area 6 was addressed by USA. It was suggested that an appropriate reduction, based on research and recent landings, was 25% below the average catch of the last three years. The recommended total catch quota was 825,000 metric tons of finfish and squid, but not including high seas pelagics and anadromous species.

USSR noted that it had early indicated an understanding and appreciation of the problem and had suggested a 10% overall reduction. USSR submitted the following statement on this matter:

"The Soviet Delegation stated that it also considers it necessary to adopt further additional conservation measures. In accordance with the STACREM recommendation, based on the findings of the Commission experts on effort regulation, at the present time the best method to achieve that objective is to establish overall catch quotas. The Soviet Delegation is prepared to set such an overall catch quota in Subarea 5 together with such quotas in the other Subareas. The Soviet Delegation proposed to reduce by 10% the 1972 total catch of Member Countries (or the sum of quotas for individual regulated species and species groups), since that was the allowed limit of by-catch under the Commission regulations, and the USA recognized the by-catch problem to be (together with the decrease in the abundance of some fish stocks) a major reason for raising the issue. The Soviet Delegation is prepared to discuss proposals both on the principles to be applied and on concrete (specific) figures (numbers)."

Fed.Rep. Germany and Poland indicated that their countries had reduced effort in recent years and that their fisheries were very selective.

22. The fourth session of Panel 5 recessed at 1130 hrs, 15 June, with USA requested to provide a completed table of allocations, including those already discussed, as well as the additional information on the total catch quota and its allocation among countries.

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23. Panel 5 reconvened, in fifth session, at 0005 hrs, 16 June.

24. Further Consideration of Overall Catch Reduction. The US delegate introduced a table prepared by the US delegation which presented proposed species TAC's for Subarea 5 with species allocations and 1974 overall allocations of a TAC of 825,000 metric tons (Appendix VI), and another table showing the same data with 20,000 metric tons for "Other Members" pro-rated over the listed countries (Appendix VII). These tables illustrated the effect on each Member Country of proposed US overall reduction of about 25% in catch from the average for the past three years in Subarea 5 and Statistical Area 6.

Following lengthy and detailed discussion, no decision could be reached on the proposal. The Panel agreed to recommend to the Commission

that a Special Meeting of the Commission be held in September or October of 1973 at a location to be decided as soon as possible to give further consideration to excess fishing activity in Subarea 5 and Statistical Area 6 and possible solutions to the problem.

25. Panel 5 adjourned at 0300 hrs, 16 June.

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(B.f.3)

Proceedings No. 11  
Appendix I

ANNUAL MEETING - JUNE 1973

Report of the Meeting of Scientific Advisers to Panel 5

Sunday, 3 June, 1630 hrs

1. The meeting was opened by the new Chairman, Dr M.D. Grosslein (USA) who replaced Dr F.D. McCracken (Canada). Representatives from Member Countries - Canada, Fed.Rep. Germany, Japan, Poland, Romania, Spain, USSR and USA - were present. Observers from Bulgaria, German Democratic Republic and FAO were also present.
2. Rapporteur. Dr W.T. Stobo (Canada) was appointed Rapporteur.
3. Agenda. The provisional agenda for Panel 5 was adopted with some revisions. The item pertaining to the full use of regulated species was deleted and was replaced with an item on the development of the squid fishery. The item on cod and haddock exemptions and species regulation was expanded as a review of the adequacy of conservation measures in relation to mixed fisheries, changes in finfish biomass, developing fisheries, total effort limitation, as well as review of the 10% annual exemption.
4. Report of the Chairman of Scientific Advisers. The Chairman's report on the Status of the Fisheries and Research Carried Out in Subarea 5 and Statistical Area 6 in 1972 was presented and approved with minor modifications (Summ.Doc. 73/34 Revised).
5. Conservation Measures for Cod in Div. 5Y-Z. In the absence of additional assessments, no change in the 1973 TAC is advised, either in Div. 5Y (10,000 metric tons) or Div. 5Z (35,000 metric tons).
6. Quota and Closed Areas for Subarea 5 Haddock. The incidental or by-catches of haddock are more than enough to exceed any annual surplus yield at the present time. The Assessments Subcommittee recommended that the haddock quota for Subarea 5 for 1974 be set at zero. The Scientific Advisers unanimously agreed to recommend the same closures of areas and seasons for haddock as were established for 1973. It was also agreed that other measures may be necessary to ensure any recovery of the stock and the Scientific Advisers recommended that other possible measures (e.g. changes in the exemption rules for haddock) to reduce the by-catch should be considered.
7. Herring Quotas and Size Limit Exemption. Herring quotas for 150,000 metric tons and 25,000 metric tons for Div. 5Z and 5Y, respectively, were established at the Mid-Term Meeting and no modifications are recommended. The Canadian size exemption proposal of 10% by weight seasonally or 25% by number on a per trip basis was originally suggested for the Canadian Div. 4X herring fishery though it may be applicable elsewhere. The Advisers recommended adoption of this proposal also for Subarea 5 since the 25% by number tolerance is nearly equivalent to a 10% by weight tolerance and application on a per trip basis would result in a decrease in the amount of undersized fish being landed.
8. Flounders (Other than Yellowtail). No assessments were available for these stocks and no change is recommended in the TAC level of 25,000 metric tons in 1974 for flounders other than yellowtail in Subarea 5 and Statistical Area 6.
9. Mackerel. The Assessments Subcommittee recommended a TAC of 245,000 metric tons in 1974. Due to differences in the interpretation of the data presented, a range of probable values for the vital statistics and recruitment was used in the calculations. Some Advisers considered the recommended TAC to be optimistic, others thought it to be conservative, and Dr J. Popiel (Poland) expressed the opinion that the assessment was incorrect. All Advisers agreed, however, that juvenile fish were being exploited and could have serious implications to the future of the fishery.
10. Pollock. No detailed assessment was available and no change in the 1973 pre-emptive quota of 50,000 metric tons, for Div. 4X and Subarea 5 combined, is recommended for 1974.
11. Redfish. No new assessment was available. US groundfish survey abundance indices have shown no clear trends and thus, no change in the 1973 TAC of 30,000 metric tons is recommended.
12. Red Hake. The Assessments Subcommittee agreed to recommend an overall TAC for 1974 of between 50,000 metric tons and 70,000 metric tons for Subdiv. 5Ze + Subdiv. 5Zw + Statistical Area 6. However, it was noted that there was disagreement between some of the Advisers regarding the current level of abundance in Subdiv. 5Ze (specifically that portion of Subdiv. 5Ze which lies east of 69°W long).

Some Advisers noted that groundfish surveys on Georges Bank (east of 69°W) in the fall of 1972 indicate decreased abundance of the stock, and that the 1972 year-class is about one-third the size of the 1971 year-class. In addition, it was noted that in the previous year the Assessments Subcommittee concluded that the

Georges Bank stock was small and that only incidental catches should be taken during 1973. Based on this evidence, it was recommended that only a small incidental catch, say 2,000-4,000 metric tons, be allowed in the area east of 69°W, and that the catch west of 69°W should be limited to 50,000 metric tons.

Other Advisers agreed with the quota of 50,000 metric tons for the area west of 69°W but considered that the Georges Bank stock (east of 69°W) could support more than an incidental fishery because it is expected that a good 1971 year-class will recruit to the fishery in 1974; therefore, these Advisers recommended that either

- (1) consideration of the quota east of 69°W be postponed until the Mid-Term Meeting, or
- (2) the TAC of 50,000-70,000 metric tons be applied to the whole of Div. 5Z and Statistical Area 6.

13. Silver Hake. An updated assessment was not available but indices of abundance in Div. 5Z and Statistical Area 6 suggested no significant change in stock size in 1972. The Advisers recommend the 1974 TAC remain the same as in 1973, i.e., 10,000 metric tons for Div. 5Y, 80,000 metric tons for Subdiv. 5Ze, and 80,000 metric tons for Subdiv. 5Zw and Statistical Area 6.

14. Closed Areas for Red and Silver Hake. It was agreed that given an appropriate quota closed areas are not necessary for maintaining a proper level of F, but that other benefits may be realized. It was noted that closed areas in spring would enhance the subsequent availability of hake to the inshore fishery following their shoreward migration, and also possibly improve spawning success.

But it was also indicated that fishing the concentrations of hake at this time would reduce the by-catch problem prevalent later in the season.

15. Scallop Stock. No new information was available and the Scientific Advisers agreed to recommend that the 1973 Canadian size-limit proposal of 40 meats per pound be again adopted.

16. Yellowtail. The Southern New England stock (west of 69°W) apparently declined in 1972, and the Georges Bank stock (east of 69°W) remained about the same as in 1971. The 1973 TAC of 16,000 metric tons for the Georges Bank stock and 10,000 metric tons for the New England stock (8,000 for Southern New England and 2,000 for Cape Cod) is again recommended for 1974.

It was noted that landings from Statistical Area 6 increased again in 1972, and because of a possible relation to the Subdiv. 5Zw stock, this stock should be assessed.

17. Squid (*Loligo pealei*) Fishery. A potential catch of 50,000-80,000 metric tons was indicated by the first assessment. It was agreed that the catches (41,000 metric tons in 1972) are rapidly approaching the estimated sustainable yield and it may be reasonable to expect a continued expansion. Thus, to control development of the fishery a pre-emptive quota should be considered in the near future.

18. Adequacy of Conservation Measures. The adequacy of conservation measures in Subarea 5 and Statistical Area 6 were briefly reviewed. It was generally agreed that there was evidence that the total finfish biomass was being overexploited and the current management regime of individual species quotas would not meet the conservation objectives of the Commission. Because of the mixed fishery problem, it was agreed that other methods should be considered to achieve this end.

It was noted that other possible management options included total catch limitation, effort limitation, gear and mesh regulations to alleviate the by-catch problem, and adjustments in the exemption rules. However, the Advisers recognized that these alternatives pose a number of practicable problems and the Scientific Advisers were not prepared to provide specific advice to the Panel at this time.

19. Adequacy of Biostatistical Data. Both the Assessments and Statistics and Sampling Subcommittees noted the inadequacy of the data upon which TAC estimates are dependent which can only be rectified by considerable increase in national sampling efforts. An improvement in sampling was noted but emphasis was placed on the need for additional information.

The current controversy regarding mackerel assessment indicated a need for additional biological data, specifically on recruitment (age and size at maturity) and weight at age.

The value of reporting catch data on the basis of smaller statistical squares was aptly illustrated in the squid assessment. In this case, a minimal population estimate was derived by extrapolating abundance over large areas of concentration from catch figures obtained from small unit areas.

It was also noted that the greatest problem in agreeing on a 1974 TAC for red hake was the fact that no data from the commercial fisheries were presented to indicate what proportion of the catch came from east of 69°W in Subdiv. 5Ze.

The Advisers considered it also desirable for countries to report statistics to the Assessments Subcommittee in a form which can be easily utilized and suggested that data on groundfish surveys and age and length

samples should be submitted early enough to permit evaluation by other scientists.

20. Future Research. The Advisers concurred with the recommendations for an expanded and improved data base as outlined in the Reports of the Assessments and Statistics and Sampling Subcommittees. In addition, it was agreed that the presentation and analysis of data in standard form would provide a more refined analysis of the existing data base, and hence more reliable assessments. Further, the Advisers indicated a need for more coordinated research vessel activity as well as the acquisition of data on presently unassessed stocks. Since the interpretation of much of the assessment relies on basic biological data, it was also agreed that biological and ecological investigations should be given greater emphasis than at present. It was noted that assessment of the long-term productivity of the total fish biomass will require a much better understanding of the processes controlling productivity, including species interactions. For example, the need for more biological information in the following areas was stressed: stock identity, biology of squid, survival during the early life history and the food composition of commercially important fishes.

21. It was agreed that the next meeting of Scientific Advisers should take place before the Panel 5 meeting, at the time and place of the next Annual Meeting.

22. It was agreed that the Chairman and Rapporteur would draft the Report and circulate copies for approval.

23. New Chairman - Dr R.L. Edwards (USA) was nominated *in absentia* as Chairman of the Scientific Advisers to Panel 5 for 1973/74.

ANNUAL MEETING - JUNE 1973

US comments and recommendations for establishing an adequate ICNAF data base

I. INTRODUCTION

The current high level of fishing intensity which includes virtually all species in the ICNAF Area has generated an urgent need for more and better information on the status of stocks. The importance of comprehensive biostatistical data was once again emphasized at the 22nd Annual Meeting, but a memorandum by the Secretariat in February 1973 (Summ.Doc. 73/2) indicated that Members have a long way to go just to meet the current minimum sampling standards even for the major species.

The need for more data on abundance and age-length structure of stocks is fairly obvious and the major deficiencies in relation to the minimum requirements for statistics and sampling are documented in ICNAF Summ.Doc. 73/2. There is also a need for better data in the form of better documentation of sampling and analytical methods, including evaluation of the sources and magnitude of sampling errors, to provide statistical measures of accuracy and precision which can then be used by scientists and Commissioners for more objective appraisal of the margins of error associated with estimates.

Uncertainty about the validity of estimates of stock size and recruitment, which led to extended debate on quota levels during the 1973 Mid-Term Meeting, only serves to prevent effective action by ICNAF, and this uncertainty can be circumvented only by complete documentation of the data base and the nature of the estimates in written form suitable for critical evaluation by scientists of the Assessments Subcommittee.

The purpose of this document is to focus attention on critical areas where the data base needs strengthening most, and to suggest ways in which improvements can be made.

II. CATCH AND EFFORT STATISTICS

There is need for a finer breakdown of catches by species and by area (e.g. 10' squares have been suggested by the Herring Working Group) in order to deal more effectively with the general problem of mixed species fisheries, and to permit more accurate assessments of abundance and stock structure of major species as well as total productive capacity of the fish resource as a whole.

Several examples will illustrate the problem. The Assessments Subcommittee at the January 1973 Meeting and the Meeting of Experts on Effort Limitation in March 1973 had difficulty in estimating what part of the catches reported in Table 4 of the Statistical Bulletin was a by-catch of directed fisheries because catches were not broken down into sufficiently small units of area and not identified by fisheries. This is particularly important in those Subareas which have a highly mixed fish population. Finer breakdown of catches is also necessary for assigning catches to particular stocks of given species; this is critical, for example, in assessing the red and silver hake stocks. Finally, a finer breakdown is necessary to sort out the mixed groundfish category which is larger than some allocated quotas and may, in fact, prevent useful assessments on some species.

The degree of detail required in reporting catch statistics for each species should ideally be tailored to the unique characteristics of the stocks and areas involved. The present requirements can be considered adequate only for very large, homogeneous stocks and will not provide the necessary precision for the smaller stocks more restricted in area with which the Commission must also be concerned.

Along with a finer breakdown in catch records, there is a need for more precise concomitant data on fishing effort for assigning effort to a given species for use in estimating stock abundance. Effort should be reported in the same standard unit areas as the catches referred to above and it should also be precisely identified as to species sought and gear and fishing techniques used. If the fishing in an area is directed toward more than one species, this too should be clearly recorded in the statistics. Depth at which effort is expended should be reported also so that this can be utilized in deriving abundance indices. The present categories of vessel tonnage, class, and gear are too broad for the required precision in adjusting for relative catchabilities. In addition, within country standardizations for even finer factors, e.g. day-night differences, are required in some areas for catch-effort analyses to provide well defined units of effort.

Next, it is essential that we employ well defined statistical sampling designed for unbiased estimation of the age-length structure and abundance of stocks. There is potential for serious bias in these estimates unless considerable care is taken to insure that appropriate randomization is used in selecting vessels and catches to be sampled, and then to appropriately weight these samples in a pooled estimate. The importance of this problem and the theoretical framework and practical methods for developing appropriate sampling



designed, have been described in considerable detail in an FAO manual on sampling (Gulland, 1966).

So far, however, there have been few attempts to document existing sampling schemes in sufficient detail to permit even approximate evaluation of the sources and magnitude of sampling errors, and thus ICNAF does not yet have a measure of the importance of these errors in the overall reliability of assessments. A sampling design based on probability sampling is required not only to insure lack of bias but also to provide a statistically valid basis for measuring random sampling errors. Such an analysis presents a formidable computing task because data must be treated on an individual sample basis, and therefore, modern data processing techniques are a necessity.

In order to produce the desired estimates in an efficient way the collection processing and analysis of fishery statistics must be organized into a well integrated, computerized plan utilizing a standardized coding scheme for data on catch, effort, and age-length samples. It has become quite clear that the only way to implement such a plan is to establish a much larger central data processing unit at ICNAF Headquarters. This unit must be capable of efficiently handling a greatly increased volume of fishery data in the form of individual sample records from all countries, and then providing up-to-date standard summaries and analyses of the catch-effort and age-length data base.

### III. RESEARCH VESSEL DATA

The need for appropriate sampling designs and full documentation of sampling methods to allow critical evaluation and admissibility of results is as important for research vessel data as for commercial fishery data. A major advantage of research vessel surveys is that they can avoid some of the principal sources of bias in commercial data, but this advantage can only be achieved if proper sampling designs are scrupulously followed. Thus, admissibility of research vessel results must also be based on certain standards of documentation of sampling techniques including exact methods of selecting stations, sampling catches, and gear and fishing parameters used.

Analysis of sampling variability using well established statistical methods and including estimates of confidence limits are equally important.

In addition to the unique value of using research vessel surveys to provide measures of status of the total fish biomass (all species combined), the research data are especially important for recruitment predictions. In view of the importance of recruitment indices in predicting future abundance, it is essential that these indices be developed very carefully with full regard for the nature and magnitude of errors affecting research surveys. There is considerable room for improvement here, especially with respect to species such as sea herring and mackerel.

The United States, therefore, feels that the Commission must broaden the ICNAF Groundfish Survey Program into a more generalized research vessel program which would include surveys for pelagic as well as groundfish species, juveniles as well as adults, and which would promote still more effective pooling of research vessel resources. To accomplish this task, a permanent working group should be established within the Assessments Subcommittee to promote analysis, documentation and utilization of research vessel results for assessment of major stocks, and to formulate proposals for coordinated surveys. Integration of results from commercial and research vessel sampling in a properly coordinated study should provide more accurate assessments at less cost.

### IV. IMPLEMENTATION

The United States is concerned that unless proper emphasis is provided by the Commission, the solution to the data base problem will be delayed. It, therefore, recommends that action proceed on the items listed below to fully implement new procedures by 1975.

1. Establish the necessary data processing capability and the appropriate staff within the ICNAF Secretariat to handle a greatly increased volume of catch, effort and sample data, and to provide up-to-date standard summaries and preliminary analyses of the data.
2. Change the statistical reporting requirements to more nearly provide the data required for adequate assessments by:
  - (a) reporting catch and effort by species and species directed fisheries for 10-minute divisions of latitude and longitude and bi-weekly periods,
  - (b) reporting individual length frequency and age-length samples with appropriate identification of vessel, amount of catch and effort, etc., and information on adopting a standard method of sampling catch (e.g. length frequency and age samples).
3. Establish a special working group within the Statistics and Sampling Subcommittee, with considerable expertise in statistical methods and good representation from the Assessments Subcommittee with the objectives of:

- (a) formulating a basic statistical sampling design for the collection, processing and preliminary analysis of ICNAF statistics, which will meet the more rigorous assessment needs outlined above, and which will serve as the framework for developing the ICNAF central data processing system,
  - (b) reviewing the current and proposed new minimum requirements for catch/effort statistics and age/length sampling in relation to the accuracy required and feasibility of handling the workload within the central ADP unit,
  - (c) documenting the sources and magnitude of sampling variation in the major fisheries, and evaluating the significance of sampling errors in terms of potential losses in yield as a result of errors in management decisions (e.g. quota estimates),
  - (d) formulating minimum standards for documentation of sampling methods, the data base and its analysis, including well defined (statistical) measures of sampling variation - to be used as a basis for judging admissibility of information (research vessel as well as commercial fishery data) in the Assessments Subcommittee.
4. Establish a more comprehensive, standardized research vessel survey program including commitments of all countries to participate.
  5. Establish a permanent working group within ICNAF to promote greater analysis, documentation, and utilization of research vessel data.
  6. Establish a basis for assessing penalties on countries which do not comply with the expanded data collecting program as proposed by ICNAF.

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Appendix III

ANNUAL MEETING - JUNE 1973

(29) Proposal for International Regulation of the Fishery for Red Hake and Silver Hake in Subarea 5 of the Convention Area

Panel 5 recommends that the Commission transmit to the Depository Government the following proposal for joint action by the Contracting Governments:

That the Red Hake and Silver Hake Trawl Regulations for Subarea 5, adopted at the Twenty-Second Annual Meeting (Annual Proceedings, Vol. 22, 1971-72, page 63) and entered into force on 1 January 1973, be replaced by the following:

"That the Contracting Governments take appropriate action to prohibit the taking of red hake, *Urophycis chuss* (Walb.) and silver hake, *Merluccius bilinearis* (Mitch.), during the month of April of 1974 in the area bounded by 69°00'W, 39°50'N; 71°40'W and 40°20'N, however, provided that during this period, groundfish vessels may be permitted to take on each trip during which they fish in the said area, red and silver hake in amounts not to exceed 10 percent each of the total catch taken in the said area on that trip."

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Appendix IV

ANNUAL MEETING - JUNE 1973

US Proposal for International Regulation of Fishing Gear Employed  
in the Trawl Fisheries in Subarea 5

"1. That each Contracting Government take appropriate action to prohibit the taking of fish, other than crustacea and molluscs, from vessels over 200 Gross Registered Tons (GRT) by persons under their jurisdiction with fishing gear other than pelagic fishing gear (purse seines or true midwater trawls, including trawl doors incapable of being fished on the bottom) within that part of Subarea 5 (Southern New England and Gulf of Maine) north of 40°20'N, south of 43°17'N, and west of a straight line connecting the following coordinates:

68°51'W, 40°20'N                      and                      70°00'W, 43°17'N

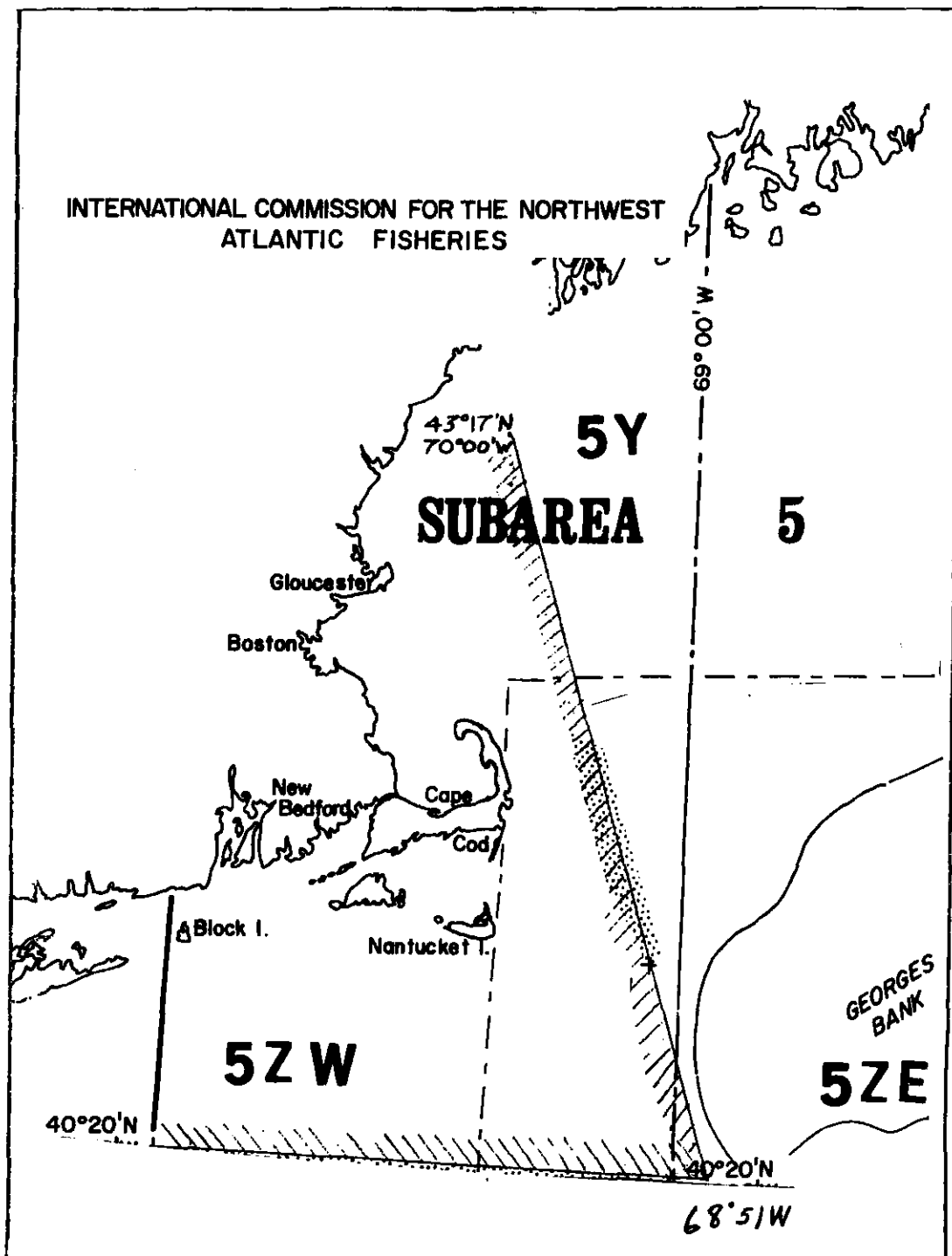
"2. That Contracting Governments prohibit any person to whom paragraph 1 would apply from attaching any protective device to pelagic fishing gear or employing any means which would, in effect, make it possible to fish for demersal species in the area described in paragraph 1.

"3. That nothing in this proposal shall affect the trawl mesh-size requirements in force in Subarea 5."

NOTE: Attached as Annex 1 is a chart illustrating the area affected by this proposal.

ANNUAL MEETING - JUNE 1973

Chart illustrating the area affected by US proposal for International Regulation  
of Fishing Gear Employed in the Trawl Fisheries in Subarea 5



Serial No. 3111  
(A.a.4)

Proceedings No. 11  
Appendix V

ANNUAL MEETING - JUNE 1973

US Proposed Amendment to Eliminate the 10% Annual Exemption from the International Regulation of the Trawl Fishery for Cod, Haddock and Yellowtail Flounder in Subarea 5

That paragraph 2 of the International Trawl Regulations for Subarea 5 be amended to read as follows:

"That in order to avoid impairment of fisheries conducted primarily for other species and which take small quantities of cod, haddock and yellowtail flounder incidentally, the Contracting Governments permit persons under their jurisdiction to take cod, haddock and yellowtail flounder with trawl nets having a mesh size less than that proposed in the preceding paragraph, so long as such persons do not have in possession on board a vessel fishing primarily for other species, cod, haddock or yellowtail flounder in amounts in excess of 5,000 lb or 2,268 kg for each, or 10% by weight for each, of all fish on board such vessel, whichever is greater."

ANNUAL MEETING - JUNE 1973

Proposed species TAC, species allocations and 1974 overall allocations with TAC of 825,000 metric tons for Subarea 5 and Statistical Area 6.

Species & area	Bul	Can	FRG	Italy	Japan	Pol	Rom	Spain	USSR	USA	Other Members	GDR	Non-Members	Total
COD <sup>1</sup>														
5Y	-	122	27	-	-	-	-	164	10	8,677	900	100	-	10,000
5Z	-	4,820	-	-	7	487	28	7,088	2,468	16,590	3,414	100	-	35,000
YELLOWTAIL <sup>4</sup>														
5 (E of 69°W)	-	-	-	-	-	-	-	-	-	15,000	1,000	-	-	16,000
5 (W of 69°W)	-	-	-	-	-	-	-	-	400	9,000	600	-	-	10,000
SILVER HAKE <sup>4</sup>														
5Y	10	-	-	-	-	10	-	-	600	8,380	900	50	50	10,000
5Z	1,496	-	-	-	48	128	324	-	60,248	11,056	6,200	400	100	80,000
5Z <sup>5</sup> +6	1,552	-	-	-	176	56	444	-	52,208	18,864	6,200	400	100	80,000
RED HAKE <sup>4</sup>														
5Z (W of 69°W)+6	1,500	-	-	-	-	-	-	-	32,000	15,000	1,400	100	-	50,000
HERRING <sup>1</sup>														
5Y														25,000
5Z+6														150,000
Total	-	9,050	32,600	-	1,200	49,400	1,300	-	48,200	25,000	8,250	46,729	-	175,000
POLLOCK <sup>2</sup>														
4														
5														
Total	-	34,000	1,600	-	-	-	-	1,200	2,100	12,000	100	4,000	-	55,000
REDFISH <sup>4</sup>														
5	6	414	3	-	9	84	412	-	1,725	24,747	2,400	200	-	30,000
OTHER FLOUNDER <sup>4</sup>														
(exc. Yellowtail)														
5+6	-	-	-	-	-	-	-	-	2,600	21,700	500	100	100	25,000
MACKEREL <sup>3</sup>														
5+6	25,667	17,500	2,722	-	101,110	15,556	-	115,111	20,378	51,956	(79,941) <sup>7</sup>	-	-	350,000
SQUID <sup>4</sup>	-	-	1,000	2,000	24,000	6,800	-	10,000	8,500	5,600	7,000	100	-	65,000
OTHER FISH <sup>4</sup>	5,320	5,000	380	1,000	4,940	6,555	-	-	73,815	100,000	2,490	(4,504) <sup>7</sup>	500	200,000
TOTAL	35,551	70,906	38,332	3,000	30,380	164,630	18,064	18,452	399,985	311,990	93,310	5,550	850	1,191,000
Proposed														
1974 Catch <sup>5</sup>	24,750	48,675	26,400	2,062	21,450	113,850	12,375	12,375	277,200	216,150	64,571	3,841	588	824,587 <sup>6,8</sup>

1 1973 TAC and allocations for herring used is tentative measure. 1974 amounts to be set at Mid-Term Meeting 1974 (Proc. 16, Appendices III and IV).

2 TAC and allocations for pollock agreed in Joint Meeting of Panels 4 and 5 (Proc. 16, Appendix I).

3 TAC and allocations for mackerel tentative. 1974 amounts to be set at Mid-Term Meeting 1974 (Proc. 16, Appendix V).

4 TAC's and allocations for these species and species groups agreed to tentatively, but were not formally approved by Panel 5 because a number of delegates regarded them as being conditional on the solution of the major problem.

5 Based on proportional total applied to 825,000 overall total allowable catch.

6 75% of 1,100,000 metric tons.

7 Reported 1972 landings (not adjusted from "Other") not included in any totals.

8 300-ton rounding error in horizontal total.

Serial No. 3111  
(B.e.73)

RESTRICTED  
Proceedings No. 11  
Appendix VII

ANNUAL MEETING - JUNE 1973

Proposed species TAC, species allocations and 1974 overall allocations with TAC of 825,000 metric tons, 20,000 of "Other Members" pro-rated over listed countries for Subarea 5 and Statistical Area 6.

Species & area	Bul	Can	FRG	Italy	Japan	Pol	Rom	Spain	USSR	Other		Non-Members	Total
										USA	Members		
COD <sup>1</sup>													
5Y	-	122	27	-	-	-	-	164	10	8,677	900	100	10,000
5Z	-	4,820	-	7	487	28	7,088	2,468	2,468	16,590	3,414	100	35,000
YELLOWTAIL <sup>4</sup>													
5 (E of 69°W)	-	-	-	-	-	-	-	-	-	15,000	1,000	-	16,000
5 (W of 69°W)	-	-	-	-	-	-	-	-	400	9,000	600	-	10,000
SILVER HAKE <sup>4</sup>													
5Y	10	-	-	-	-	10	-	-	600	8,380	900	50	10,000
5Ze	1,496	-	-	-	48	128	324	-	60,248	11,056	6,200	100	80,000
5Zw+6	1,552	-	-	-	176	56	444	-	52,208	18,864	6,200	100	80,000
RED HAKE <sup>4</sup>													
5Z (W of 69°W)+6	1,500	-	-	-	-	-	-	-	32,000	15,000	1,400	100	50,000
HERRING <sup>1</sup>													
5Y													25,000
5Z+6													150,000
Total	-	9,050	32,600	-	1,200	49,400	1,300	-	48,200	25,000	250	8,000	175,000
POLLOCK <sup>2</sup>													
4													35,000
5													20,000
Total	-	34,000	1,600	-	-	-	-	1,200	2,100	12,000	100	4,000	55,000
REDFISH <sup>4</sup>													
5	6	414	3	-	9	84	412	-	1,725	24,747	2,400	200	30,000
OTHER FLOUNDER <sup>4</sup>													
(exc. Yellowtail)													
5+6	-	-	-	-	-	-	-	-	2,600	21,700	500	100	25,000
MACKEREL <sup>3</sup>													
5+6	25,667	17,500	2,722	-	-	101,110	15,556	-	115,111	20,378	1,956	50,000	350,000
SQUID <sup>4</sup>													
5+6	-	-	1,000	2,000	24,000	6,800	-	10,000	8,500	5,600	7,000	100	65,000
OTHER FISH <sup>4</sup>													
5+6	5,320	5,000	380	1,000	4,940	6,555	-	-	73,815	100,000	990	1,500	200,000
TOTAL	35,551	70,906	38,332	3,000	30,380	164,630	18,064	18,452	399,985	311,990	33,810	65,050	1,191,000
Proposed													
1974 catch <sup>5</sup>	25,850	55,075	28,200	3,062	23,300	115,450	13,875	14,625	277,700	218,150	3,100	45,375	824,587 <sup>6</sup>

<sup>1</sup> 1973 TAC and allocations for herring used is tentative measure. 1974 amounts to be set at Mid-Term Meeting 1974 (Proc. 16, Appendices III and IV).

<sup>2</sup> TAC and allocations for pollock agreed in Joint Meeting of Panels 4 and 5 (Proc. 16, Appendix I).

<sup>3</sup> TAC and allocations for mackerel tentative. 1974 amounts to be set at Mid-Term Meeting 1974 (Proc. 16, Appendix V).

<sup>4</sup> TAC's and allocations for these species and species groups agreed to tentatively, but were not formally approved by Panel 5 because a number of delegates regarded them as being conditional on the solution of the major problem.

<sup>5</sup> Based on proportional total applied to 825,000 overall total allowable catch.

<sup>6</sup> 75% of 1,100,000 metric tons, less than 825,000, due to rounding errors.



INTERNATIONAL COMMISSION FOR



THE NORTHWEST ATLANTIC FISHERIES

Serial No. 3112  
(B.e.73)

Proceedings No. 12

ANNUAL MEETING - JUNE 1973

Report of Meeting of Panel A

Tuesday, 5 June, 1615 hrs

1. The Chairman, Dr A.W.H. Needler (Canada), opened the meeting with the following representatives of the three Panel Member Countries in attendance:

- Canada - Dr A.W.H. Needler (Chairman), Mr J.W. Carroll, Mr R.S. Collie, Mr J.E. Creeper, Dr H.D. Fisher, Mr K. Henriksen, Dr A.W. Mansfield, Mr B. Meagher, Mr M.B. Phillips, Dr M.P. Shepard, Mr E.B. Young
- Denmark - Mr Sv.Aa. Horsted, Mr P. Kannevorff, Mr J. Kronborg, Mr E. Lemche, Mr K.B. Lund, Mr J.K. Pedersen, Dr E. Smidt, Mr L. Vesterbirk
- Norway - Mr Aa. Aarseth, Mr E. Aas, Mr G. Jakobsen, Dr Aa. Jonsgaard, Mr K. Kristoffersen, Mr O. Lund, Mr T. Øritsland.

At the Chairman's invitation, Mr D.H. Wallace, US Department of Commerce, NOAA, Washington, D.C., attended the meeting as an Observer.

2. Rapporteur. Dr A.W. Mansfield (Canada) was appointed Rapporteur.
3. Agenda. The provisional Agenda was adopted.
4. Reception of Briefs. At the Chairman's invitation, Mr D.H. Wallace (USA), presented a note from the US Commissioners (Comm.Doc. 73/20) on the conservation of harp and hood seals. He expressed the US Commissioners' hope that the countries engaged in sealing would carefully review their management programs to take into account the broader criteria for management contained in the note, i.e., the achievement of optimum sustainable yield on the basis of the seals relative to a balanced ecosystem, rather than on the basis of their economic utility.
5. Panel membership was reviewed and no changes were noted.
6. The Report of the Mid-Term Meeting of Panel A, Charlottenlund, Denmark, 9 November 1972 (Appendix II) and that of the Meeting of the Scientific Advisers, Charlottenlund, Denmark, 6-7 November 1972 (Annex I to Appendix II) were accepted without comment.
7. The Report of the Meeting of Scientific Advisers to Panel A, 2 June 1973 (Appendix I) was read by the Chairman, Dr A.W. Mansfield (Canada) and accepted without comment.
8. Review of the Status of Harp and Hood Seal Populations and Conservation Measures for 1974. The Panel agreed that the agenda item regarding disposal of unused catch quotas was confusing and should be left out. In the past, catch quotas for harp seals had been set on a yearly basis with no thought that an automatic carry-over would apply.

It was pointed out that the Scientific Advisers had been unable to make any substantial new proposals on the basis of the latest scientific evidence available.

Panel Members agreed that quotas for harp seals should remain unchanged for 1974, i.e., 120,000 seals, mostly pups, to be shared equally between Canadian and Norwegian ships on the 'Front', and an allowance of 30,000 for the estimated take of seals in the 'Gulf' and on the 'Front' by small vessels and landsmen.

Panel Members also agreed that there should be a quota of 15,000 hood seals for 1974 with no shares apportioned at this time (the quota would not apply to West Greenland). In order to be able to prevent a catch in excess of this quota, it was agreed that a daily reporting system of ships' catches should be established by both countries.

It was further agreed that Panel Members should propose to their Governments the following regulations for the 1974 sealing season on the 'Front' area:

- (i) that the harp seal fishery should commence not earlier than 0900 GMT on 12 March 1974 and terminate not later than 24 April 1974;
- (ii) that the hood seal fishery should commence not earlier than 0900 GMT on 20 March 1974 and terminate not later than 24 April 1974.

Panel A, therefore,

agreed to recommend

that the Commission transmit to the Depositary Government for joint action by the Contracting Governments, proposal (30) for international regulation of the fishery for harp and hood seals, by catch quota and season, in the Front and Gulf areas of the Convention Area (Appendix III).

9. Future Research Required. The lack of information on hood seal stocks was recognized and it was agreed that more attention should be given to determining their status.

10. Bibliography of Seals. It was pointed out by the Scientific Advisers that this work prepared by the University of Guelph, which contained about 9,000 citations on seals in computer printout form, would be a most useful reference when adequately edited and printed.

The probable cost to ICNAF to print a work of this size, and the fact that budget forecasts for 1974/75 had already been tabled, presented obvious difficulties. It was agreed that Panel A should bring the matter to the attention of the Executive Secretary and STACFAD.

- 11. It was agreed that the next meeting of Panel A should take place at the Annual Meeting of ICNAF in 1974.
- 12. It was further agreed that the draft report of the present meeting should be referred to the heads of the Canadian, Danish and Norwegian delegations for approval before being issued in final form by ICNAF.
- 13. The meeting adjourned at 1830 hrs.

ANNUAL MEETING - JUNE 1973

Report of Meeting of Scientific Advisers to Panel A

Saturday, 2 June, 1430 hrs

1. The meeting was called to order by the Chairman, Dr A.W. Mansfield (Canada).
2. Participants. Canada - Dr A.W. Mansfield, Dr H.D. Fisher, Dr M.P. Shepard, Mr A.A. Haller (Observer);  
Denmark - Dr E. Smidt, Mr Sv.Aa. Horsted, Mr J.M. Jensen, Mr P. Kannevorff;  
Norway - Mr T. Øritsland, Mr Ø. Ulltang, Dr A. Hylen;  
USA - Mr W.G. Gordon.
3. Agenda. The Agenda, as proposed by the Chairman, was adopted.
4. Rapporteur. Dr M.P. Shepard was appointed Rapporteur.
5. Report of Chairman of Scientific Advisers. The Chairman, Dr A.W. Mansfield (Canada), presented his summary of the Status of the Fisheries and Research Carried Out in 1972 (Summ.Doc. 73/36 Revised).

The recent research on harp seals was reviewed. No new data were presented by Norway other than catch statistics for 1973 (Res.Doc. 73/122). Two good age samples of moulted immatures and adults had been obtained on the 'Front' by Norwegian vessels, but neither sample had yet been processed.

A useful summary of catch statistics of harp seals at West Greenland from 1953-72 and analyses of age samples were presented (Res.Doc. 73/54). Comparison of the 1953 and 1972 samples indicate that an increase in mortality rates of immature and young adult seals has occurred during this period. The samples also show a good inverse correlation between the catch of pups at the 'Front' and the representation of the same year-class in later years. The Scientific Advisers stressed the importance of the Greenland samples in helping to verify conclusions resulting from research carried out by Canada and Norway.

A preliminary report was presented on Canadian research (Res.Doc. 73/123). An estimate of the 'Gulf' population of breeding females was obtained by aerial photography and simultaneous observations on behaviour. No estimate of females was obtained for the 'Front', but a capture-recapture tagging experiment on pups is expected to give some idea of production in one patch when all collected tags have been returned.

An age sample was obtained from St. Anthony, Newfoundland, which, when analyzed, will allow an estimate of the survival of the 1972 year-class following the comparatively low catch of 117,000 young harp seals.

6. The results of recent research on hood seals were reviewed. Age analyses of over 2,000 hood seals taken by Norway on the 'Front' during the period 1964 to 1972 (Res.Doc. 73/120) give good estimates of adult mortality rates; 23% for males over 10 years, and 16% for females 6 years and older. There appears to have been no significant change in mortality rates during these years.

Catch statistics since the early 1960's show an increase in catch per ship even when allowance is made for their increased efficiency. This suggests that the 'Front' population is not suffering any reduction, or even that it may be increasing by migrants from the moulting herds in Denmark Strait where sealing has been under nearly complete protection since 1960. The recent recovery from Angmagassalik of a hood seal marked on the 'Front' lends some support to this suggestion.

New data on sexual maturity and reproductive performance of hood seals taken on the 'Front' (Res.Doc. 73/121) suggest that females mature early and maintain pregnancy rates that are extraordinarily high for phocids.

7. Conservation measures were considered for the 1974 season. In the case of harp seals, evidence obtained in the last year does not change the conclusion made at the Special Meeting of Panel A experts held in 1971 that the sustainable yield from the present stock is approximately 150,000 pups.

Although the 1973 catch was below the sustainable yield level, the Scientific Advisers recommend that the unused portion of the 1973 catch not be added to the 1974 catch quota in order to allow the stocks an opportunity to increase.

In the case of hood seals, evidence is still not firm enough to calculate a sustainable yield, but it is possible that the 1966 catch of 16,000 pups was too high. In this respect, if catches rise greatly over present average levels, serious consideration should be given to establishing maximum catch levels. As an

interim measure to prevent large increases in catches and to effect further protection of breeding females, it is recommended that the opening date for taking hood seals be further delayed by a period of up to one week.

8. Future research on harp seals will continue to include branding of pups and adults on the 'Front' in an attempt to obtain direct evidence of movements of seals to the 'Gulf'. Collection of samples of adult and immature seals from the 'Front' and West Greenland will provide further information on survival of specific age groups and reproductive success of adult females.

Aerial surveys in the 'Gulf' and on the 'Front' will be carried out together with studies on the parturient females in an endeavour to define more accurately the annual production of pups.

Studies on the anatomy and serology of Canadian and West Ice hood seals have shown no evidence that the stocks are discrete.

Future research on hood seals should, therefore, include marking both in Canadian waters and in Denmark Strait to provide more direct information on the relation of the two groups. More age samples will be necessary to provide checks on mortality rates and reproductive success.

9. The Chairman reported briefly on the ICES/ICNAF/IBP Symposium on Seals, held at the University of Guelph, Ontario, 14-17 August 1972.

Final editing of the symposium volume would probably not be finished until August mainly owing to the unsatisfactory preparation of some manuscripts.

The World Bibliography of Seals prepared by the University of Guelph was discussed and it was agreed that this document was most useful, though it would need much editing before being considered ready for publication. The Scientific Advisers recommend that ICNAF consider publication of the bibliography in the near future.

10. In discussing the date of the next meeting, the Scientific Advisers noted the preliminary nature of the Canadian analysis of the current season's harp seal data which could not be completed until all tag returns had been received. Though this might be completed later in the year, it was doubtful whether the Norwegian analysis of 1973 harp seal data would be available until 1974. The Scientific Advisers could only suggest that the next scientific meeting be held an appropriate number of days in advance of the next Panel A meeting.

11. The Chairman, Dr A.W. Mansfield (Canada), was re-elected for another year's term of office.

ANNUAL MEETING - JUNE 1973Report of a Mid-Term Meeting of Panel A  
Charlottenlund, Denmark, 9 November 1972

1. Welcome. The Chairman, Dr A.W.H. Needler (Canada) introduced Mr H. Lassen (Denmark) who welcomed the Panel participants on behalf of the Greenland Ministry. Mr H. Tambs-Lyche, Secretary General of ICES, expressed pleasure to accommodate the meeting at ICES Headquarters.
2. Attendance. The following were participants:
 

<u>Canada</u>	- Dr A.W.H. Needler (Chairman); Mr J.W. Carroll; Mr K. Karlsen; Dr A.W. Mansfield
<u>Denmark</u>	- Mr H.J. Lassen; Mr L. Vesterbirk; Mr E. Lemche; Mr Sv.Aa. Horsted; Mr F. Kapel
<u>Norway</u>	- Mr O. Lund; Mr A. Aasbø; Mr E. Aas; Mr Aa. Aarseth; Mr P. Kibsgaard-Petersen; Mr G. Jakobsen; Mr T. Øritsland
<u>ICNAF</u>	- Mr L.R. Day
3. Rapporteur. Mr L.R. Day (ICNAF) was appointed Rapporteur.
4. Agenda. The following agenda was agreed:
  - 1) Opening by the Chairman, Dr A.W.H. Needler
  - 2) Selection of Rapporteur
  - 3) Adoption of Agenda
  - 4) Report of mid-term meeting of Scientific Advisers to Panel A, Charlottenlund, 6-7 November 1972 (Dr A.W. Mansfield, Chairman)
  - 5) Conservation measures for harp seals
  - 6) Conservation measures for hooded seals
  - 7) Other business
5. Report of Scientific Advisers. Dr A.W. Mansfield, Chairman of the Scientific Advisers to Panel A, presented the Report (Appendix I).
6. Conservation Measures for Harp Seals. The Panel members, having noted that there was no scientific evidence to support a change in the estimate of 150,000 as the maximum sustainable yield of harp seal pups, agreed that the catch quota recommended for the 1972 sealing season be applied in the 1973 sealing season, provided the Canadian Landsmen portion, whose amount cannot be controlled, be recorded as an estimated or average catch. It was, therefore, agreed that Panel members would submit to their Governments the following recommendations for regulation of the 1973 harp sealing fishery:
  - 1) that a catch quota of 120,000 harp seals be allocated to sealing vessels as follows:
 

Canadian	60,000
Norwegian	60,000

allowing for an estimated catch of 30,000 harp seals by Canadian landsmen.
  - 2) that the dates agreed to for the opening and closing of the 1972 harp sealing season be retained for the 1973 season in the "Gulf" and "Front" areas with the further provision that the season commence not earlier than 0900 hrs GMT on 12 March 1973, and close not later than 24 April 1973.
  - 3) that the 1972 regulation prohibiting the killing of adult harp seals in whelping patches in the "Gulf" and "Front" areas be retained.

The Panel members noted that there was a large escapement of pups from the 'Gulf' stock in 1972 and emphasized the need for further research to establish the relationship between the 'Gulf' and 'Front' stocks.

The Panel members discussed the need for improving enforcement of the sealing activities and agreed that the reports on sealing activities by the national sealing inspectors should be exchanged as provided for under the ICNAF schemes of joint enforcement.

7. Conservation Measures for Hood Seals. The Panel members took note of the 1972 hood seal regulation which required that the fishery commence not earlier than 12 March and close not later than 24 April and discussed the recommendation of the Scientific Advisers to delay commencement of the hood seal fishery for about a week. It was finally agreed that Panel members should submit to their Governments the following recommendations for regulation of the 1973 hood seal fishery in the "Gulf" and "Front" areas:

that the 1973 hood seal fishery should commence not earlier than 0900 hrs GMT on 20 March 1973 and close not later than 24 April 1973.

The Panel members discussed the need for a catch quota for hood seals. The Canadian delegate proposed a quota of 15,000 hood seals to be shared equally between Canada and Norway on the 'Front'. However, the Norwegian delegate felt that there was insufficient scientific evidence to set a catch quota at this time. Following discussion, it was agreed that the matter of a catch quota for hood seals should receive further attention at the time of the 1973 Annual Meeting.

8. Other Business. Panel members discussed the timing of future meetings of the Scientific Advisers and the Panel. It was agreed that it was important to have a meeting of the Scientific Advisers previous to the Panel meeting at the time of the Annual Meeting. It was also agreed that Panel A should consider recommendations for regulation of the harp and hood seal fisheries in 1974 at the 1973 Annual Meeting of the Commission.
9. Adjournment. The Chairman thanked the Scientific Advisers for their report and the meeting participants for their contributions to the discussions. He extended the best thanks of the meeting participants to ICES for the meeting facilities and to the Ministry of Greenland for its hospitality.

The meeting adjourned at 1530 hrs.

Serial No. 2906  
(B.f.6)

Proceedings No. 12  
Appendix II  
Annex I  
(also ICNAF Summ.Doc. 73/4  
- Appendix I)

ANNUAL MEETING - JUNE 1973

Report of Mid-Term Meeting of Scientific Advisers to Panel A  
Charlottenlund, Denmark, 6-7 November 1972

1. The Chairman, Dr A.W. Mansfield (Canada), met with the following participants:

Denmark - Mr Sv.Aa. Horsted; Mr F.O. Kapel  
Norway - Mr T. Øritsland  
ICNAF - Mr L.R. Day

The meeting was convened at this time to give full consideration to all scientific data from the 1972 sealing season in order to provide the best advice to Panel A on conservation measures for the 1973 season.

2. The Agenda, as proposed by the Chairman, was adopted. Mr L.R. Day was appointed Rapporteur.
3. The results of recent research on harp seals (Sergeant, Seal Doc. 72/1) were reviewed. In examining the catch statistics for Norwegian ships, it was noted that the figures in Doc. 72/1 were incorrect. The revised statistics are as follows:

	<u>Young harps</u>	<u>Immature and adult harps</u>	<u>Total</u>
Canadian ships	52,195	260	
Canadian landmen	10,389	9,757	
Norwegian ships	51,914	1,386	
	114,498	11,403	125,901

Catches for the Quebec North Shore have still not been received.

Aerial photographic survey gave estimates of 100,000 young produced on the Front and 125,000 in the Gulf. However, the Front production was an underestimate since about 112,000 pups were taken by all agencies, including landmen. If the Gulf population was underestimated by the same percentage, total production must have been at least 252,000. This figure for production in 1972 suggests that the figure of 300,000, estimated as the production of pups in 1970, was realistic.

Since only about 2,500 pups were taken in the Gulf out of an estimated production of at least 125,000, survival should be unusually high. The 1972 year-class, therefore, should be strongly represented in age samples collected in 1972 in West Greenland and in 1973 in Eastern Canada.

The Scientific Advisers noted the different estimates of sustainable yield given by Sergeant (Seal Doc. 72/1) and the Panel of Experts (1972 Meeting Proc. 8, App. I, Annex I, Attach. II) which result from the sensitivity of population models to small changes in adult mortality rates. It will be important in future research to obtain samples large enough to establish accurate mortality rates.

At this time, there appears to be no need to change the estimate of sustainable yield of 150,000 pups as determined by the Panel of Experts in September 1971 and confirmed by the Scientific Advisers in May 1972.

Future research on harp seals will include large-scale branding of pups and adults on the Front in an attempt to obtain direct evidence of movements of seals to the Gulf population. Collection of large samples of adults from ships at the Front is desirable but is precluded by selective hunting for pups and immature seals. The Scientific Advisers wish to point out that in order to obtain adequate samples of adults (ca. 1,000), special permission will have to be given for such catches when required.

The importance of age samples from the West Greenland coast was recognized and plans have been made to continue yearly collections and analyses of data from this area.

4. The results of recent research on hood seals were discussed. It was noted that in the catch statistics for 1972 (Doc. 72/1) there were some inaccuracies. Revised statistics are as follows:

	<u>Young hoods</u>	<u>Immature and adult hoods</u>	<u>Total</u>
Canadian ships	159	119	
Canadian landsmen	108	36	
Norwegian ships	<u>6,661</u>	<u>5,517</u>	
	6,928	5,672	12,600

Catches of hood seals (Table 2, Seal Doc. 72/1) have increased since 1965 to a yearly average of about 15,000, and mortality rates of adult females at Newfoundland (Table 1, Seal Doc. 72/1) have reached a level similar to that of adult females in the heavily exploited West Ice (Jan Mayen) stock. Until further information can be obtained on the level of sustainable yield of the Newfoundland stock, the Scientific Advisers recommend that, as an interim measure, future annual catches should not exceed the 1966-71 average.

A relation between the moulting seals in Denmark Strait and the Newfoundland breeding stock has not been established, but it may be significant that a two-year-old hood seal, tagged on the Front in 1970, was recaptured in Angmagssalik, just south of the moulting area, in 1972. It is hoped that marking of seals in future years will provide further information on the connection between the two stocks.

The Scientific Advisers noted that the proportion of males taken in the catches of adult hood seals tends to increase as the season progresses. It is, therefore, recommended that the season be delayed by one week in order to reduce the proportion of adult females in the catch.

5. After discussion of future research, it was agreed that information on marking programmes should be circulated among the Panel countries well in advance of each sealing season. Similarly, detailed information on the time and place of marking and the number of seals marked should be circulated as soon as possible after the sealing season.

The Scientific Advisers re-affirmed the importance of meeting not earlier than late October so that adequate analyses of data resulting from the current sealing season could be carried out. If future meetings take place at this time of the year, there would seem to be little need for a further meeting in June.



ANNUAL MEETING - JUNE 1973

(30) Proposal for International Regulation Respecting the Protection of Seals in the "Gulf" and "Front" Areas of the Convention Area.

Panel A recommends that the Commission transmit to the Depositary Government the following proposal for joint action by the Contracting Governments:

"1. That the Contracting Governments take appropriate action to ensure that, for the year 1974 only, the total allowable catch in the "Front"<sup>1</sup> area be 120,000 harp seals, *Pagophilus groenlandica*, to be shared equally between Canada and Norway, and additional allowances of 100 harp seals for possible other participants in the seal fishery, and, of 30,000 harp seals for the indigenous non-mobile fisheries of the "Front" and "Gulf"<sup>2</sup> areas.

"2. That the Contracting Governments take appropriate action to ensure that, for the year 1974 only, the total allowable catch in the "Front" area, be 15,000 hood seals, *Cystophora cristata*. (The quota does not apply to West Greenland.)

"3. That the Contracting Governments take appropriate action to ensure that the open season in the "Front" area for the taking of harp seals shall commence not earlier than 0900 hours GMT on 12 March 1974 and terminate not later than 24 April 1974, and for the taking of hood seals shall commence not earlier than 0900 hours GMT on 20 March 1974 and terminate not later than 24 April 1974.

"4. That Contracting Governments take appropriate action to prohibit the killing of adult (harp) seals in whelping patches in the "Gulf" and "Front" areas."

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<sup>1</sup> All the waters of the Strait of Belle Isle and the Atlantic Ocean east of a straight line between the lighthouse at Amour Point on the east coast of Labrador and the lighthouse on Flowers Island in Flowers Cove, Newfoundland.

<sup>2</sup> All the waters and territories west of a straight line between the lighthouse at Amour Point on the coast of Labrador and the lighthouse on Flowers Island in Flowers Cove, Newfoundland.



INTERNATIONAL COMMISSION FOR



THE NORTHWEST ATLANTIC FISHERIES

Serial No. 3115  
(B.e.73)

Proceedings No. 13

ANNUAL MEETING - JUNE 1973

Report of Joint Meeting of Panels 1-5

Friday, 8 June, 0915 hrs

1. Opening. The Chairman of the Commission, Mr K. Løkkegaard (Denmark), opened the meeting. Participants were advised of the sudden death of a highly respected member of the Canadian delegation, Mr Brian Meagher, Deputy Minister of Fisheries for the Province of Nova Scotia. Participants stood for a moment in silent remembrance.
2. Election of Chairman. The Chairman of the Commission, Mr Løkkegaard, was elected unanimously. The Executive Secretary was appointed Rapporteur.
3. Under Plenary Agenda Item 17, Conservation of Atlantic Salmon, the Chairman drew attention to the Report of the ICES/ICNAF Joint Working Party on North Atlantic Salmon, Copenhagen, 19-23 March 1973 (Summ.Doc. 73/7) which had been given detailed consideration in STACRES (Proc. 1). The Report was received.
4. Under Plenary Agenda Item 30, Conservation of Developing Fisheries, the Joint Panels agreed that a Canadian proposal (Comm.Doc. 73/12) calling for conservation measures in the developing fishery for capelin should be considered in a Joint Meeting of Panels 2 and 3 (Proc. 14).
5. Under Plenary Agenda Item 34, Maximum Utilization of Catches of Regulated Species, the Chairman drew attention to the Canadian proposal to the 1972 Meeting prohibiting the discard of any fish of a regulated species weighing over one-half kilogram (Comm.Doc. 72/20). This matter was referred to STACRES for study (1972 Mtg.Proc.No.13, paragraph 4). He pointed out that the scientific advice to the Panels was that the matter was more a practical than a scientific problem. The Canadian delegate, supported by the Norwegian and US delegates, considered it illogical and wrong to discard edible fish of a regulated species and that the practice should be discouraged. However, it would be difficult to enforce any regulation. Consequently, the Joint Panels

agreed to recommend

that the Commission request Member Governments to discourage and to eliminate, if possible, the wasteful practice of discarding at sea edible fish caught by fishing vessels and to improve the statistics and the sampling of catches including any discards as recommended by STACRES.

6. Guidelines for Allocation of Total Allowable Catches (TAC's). The Chairman reviewed the discussions in Panel 1 regarding the allocation of the TAC for the Subarea 1 cod stocks. Some delegations disagreed with the use of the 40:40:10:10 allocation formula which gave equal weighting to the last 3 years and the last 10 years. He pointed out that it was desirable to discuss the matter in a Joint Panels meeting to avoid repetition of the discussion in each Panel. It was agreed that there should be no recommendations, only suggested guidelines.

The UK delegate pointed out that the STACREM formulae were only suggestions and illustrative of ways of assessing historical performance in a fishery. Previous allocations departed considerably from the formula suggested by STACREM, and the recommendations eventually included a provision that they were without prejudice to future allocations. The UK delegate thought the 10-year, 3-year formula inequitable and unsuitable because it gave four times as much weight to performance during any of the last three years, as was given to performance during any of the previous seven. He pointed out that with the need to reduce fishing mortality in the Convention Area, the formula rewarded the countries who had contributed to the pressure on stocks, while those which were not responsible for the increasing fishing pressure were being penalized. Now there should be reconsideration to give less weight to historical performance in recent years. The 10-3 year formula had produced very inequitable allocations to the UK and Portugal in 1972. The Commission had recognized this by agreeing to some compensatory adjustments of the quotas. A more equitable approach would be to use the last 10 years only but this or any other should not be applied automatically in all cases.

The Portuguese delegate supported the UK, while the Norwegian delegate could see no reason to amend the

the guidelines agreed by the majority last year, that the 10-3 year formula should be used as the basis for allocation of quotas.

The Icelandic delegate stated that in the past his country had abstained from voting on quotas. The allocation of TAC's touches on the utilization problem. His country as a coastal state reserves the right to determine the use of the fish stocks within her declared fishing limits. He could, therefore, not accept anything called historical rights.

The Canadian delegate, in presenting the background of the Canadian position, pointed out that there were thousands of Canadian east coast fishermen who want to remain fishermen but who are suffering economically, in spite of Government subsidies, because of their catches having decreased to one-half that taken before World War II. He said it was very difficult and indeed impossible to tell inshore communities which depend solely on fishing for their livelihood that they must stop fishing to allow other countries, who in their minds are right but who have caused the decline, to come fish in an area where there is such great dependency on fisheries. He said the Canadian proposal was not to catch more than the stocks could stand but that Canada as a coastal state should take its needs from the TAC and the remainder be shared by countries on the basis of some formula which could be historical performance. He pointed out the difficulty of collecting reliable statistics on catches made by thousands of small inshore boats inside and outside the Convention Area. He said that the present quota regulations as shown by the US data are not being effective. They may only be slowing down the decline in the stocks but they have not prevented serious overfishing in Subareas 5, 4 and 3 due to by-catch. Measures to prevent further decline and hopefully rebuild the stocks must be taken now. He concluded saying Canadians are not greedy but are being rational. A Canadian paper (Comm.Doc. 73/16) shows a Canadian allocation formula which would give more fish to other nations than the 40:40:10:10 formula.

The Japanese delegate declared for practical negotiations of each allocation, rather than past principles, in the Panels. Japan has a short fishing history in the Northwest Atlantic and, therefore, cannot agree with UK and Portugal who give less weight to recent years. Japan would treat the coastal state as a "Special Need" and not as a coastal state preference.

The Canadian delegate, in reply to a question from the Norwegian delegate, said that it was difficult to find an applicable valid formula for all situations. There must be flexibility and allocations must be finalized in Panels. He said the criteria for establishing the Canadian formula were experience largely. In some cases, catches had to be improved. In other cases, continuance of existing effort and extrapolation of trends were the criteria.

The French delegate found the 10-3 year formula difficult for France because there had been only a moderate fishery in the late years of her 300-year-old traditional fishery. France was openminded regarding the proposals and needs of others and would treat each problem as it arose.

The USSR delegate pointed out that the STACREM principles were used last year as a basis for allocation. He said that it was impossible to allocate without a principle. Principles adopted last year resulted in successful allocations not believed possible two years ago. He said USSR was not quite happy with the 40:40:10:10 formula using 10-3 year performance figures for separate areas, but it adopted that principle in order to get a solution to the allocation problem. He indicated that it was impossible to find a principle convenient to all the countries in all cases, and in connection with that proposed the use of last year's formula.

Following expression by the Portuguese and French delegates, in support of the UK delegate's view that the present formula does put excessive weight on the last three years, the UK delegate pointed out that UK concern was to make it clear that the 1972 allocation formula was adopted in order to make progress in 1972 and was without prejudice to future allocations. He was glad that there had been considerable support for his delegation's view that the formula was inequitable. As long as it was clearly understood that the 10-3 year formula was only a basis for starting discussion of the allocation of TAC's, he was satisfied that modifications could be made to deal with any injustices that might become apparent.

Other delegates also expressed some dissatisfaction with the application of a rigid formula but there was agreement that the 10-3 year formula could be used as a starting point in negotiating allocation of the TAC's with consideration and modifications where there was special need.

7. The Joint Panels adjourned at 1215 hrs.

INTERNATIONAL COMMISSION FOR



THE NORTHWEST ATLANTIC FISHERIES

Serial No. 3116  
(B.e.73)

Proceedings No. 14

ANNUAL MEETING - JUNE 1973

Report of Joint Meeting of Panels 2 and 3

Saturday, 9 June, 1430 hrs

1. Opening. The Panels agreed unanimously that Mr E. Gillett (UK) be Chairman for the Joint Meeting.
2. Rapporteur. Mr T.D. Iles (Canada) was appointed Rapporteur.
3. Agenda. The Agenda proposed by the Chairman was adopted without change.
4. Conservation Requirements

(a) Div. 2J and 3KL cod stock (1972 Mtg.Proc.No.11 and Appendix V). The Joint Panels agreed unanimously that the TAC for 1974 be set at 650,000 metric tons, this to include catches made outside the Convention Area and by Non-Member Countries. It was noted that, in Proceedings No. 11, Appendix V of the 1972 Meeting Proceedings, the aggregate catch set for 1972 at 575,500 metric tons did not specifically include estimates either of non-member catches or catches outside the Convention Area, although these were taken into account in setting a figure of 575,500 metric tons.

Canada introduced data on the historical performance by individual countries for the period 1962-71 inclusive. She proposed that, from the TAC of 650,000 metric tons, 110,000 metric tons be deducted to take into account her estimated catch both inside and outside the Convention Area. Her estimated catch inside the Convention Area was less than she would receive under the 40:40:10:10 formula. A further amount would be deducted to take into account non-member catches and special needs, and the remainder would be allocated on the basis of historical performance.

Several countries indicated that because of special needs, they would wish to have their allocation increased relative to the figures introduced by Canada as their allocation. USA indicated that they would like also to see a certain amount unallocated to allow other Member Countries, including perhaps USA, to take part in this fishery in 1974 should they wish to.

After considerable discussion of alternative methods of allocation, the principle of basing allocation by historical performance over the period 1962-71 and then taking special needs into account was re-established.

Claims for special needs for 1974 for Denmark, France, Italy, Japan, Norway, Poland, Romania and UK, together with an estimate of an amount to be unallocated to take into account the point made by USA, totalled more than the 39,100 metric tons reserved for special needs in the Canadian document.

The Chairman suggested that a downward revision of these estimates would enable the TAC of 650,000 metric tons to be retained. Italy revised her special needs from 6,000 metric tons to 4,000 metric tons conditional on the results of her allocation of other stocks in the Convention Area and pointed out that an upward revision of the TAC by 1% or so was within limits of precision with which the TAC was established. Canada said that it was unlikely that the TAC set for 1973 would be reached because of bad fishing conditions, that conditions are likely to be bad in 1974 and the TAC, therefore, not reached again, so that provided Contracting Governments were not allowed to enter into mutual agreement for re-allocation, a slight increase in the TAC allocated at this meeting would likely still result in a catch that fulfilled the scientific advice offered to the Commission. The TAC was revised upward to 656,700 metric tons including an estimated catch of 50,000 metric tons by Canada outside the Convention Area, 2,000 metric tons unallocated, and 15,000 metric tons for non-members.

Panels 2 and 3, in joint session,

agreed to recommend

that the Commission transmit to the Depositary Government for joint action by the Contracting Governments proposal (3) for amendment of the international quota regulation, adopted in 1972, of the fishery for cod in Divisions 2J of Subarea 2 and Divisions 3K and 3L of Subarea 3 (Appendix I).

(b) Div. 2J-3KL witch stock. Canada introduced data on historical performance for the period 1962-71 for this stock, and pointed out that, although a small stock, it was of great importance to her small boat fishermen. Canada expected that 2,500 metric tons would be caught by her outside the Convention Area and 6,000 metric tons inside, and proposed that 8,500 metric tons be deducted from the TAC before allocation to other countries. There was general agreement as to the size of Canada's total take from this stock but several countries pointed out that this in no way implied that they accepted the principle that the estimated catch of the coastal state be deducted from TAC's before allocation. Poland indicated that an increased Polish catch in 1974 would not threaten the stock and suggested that the TAC could be revised upwards from the 21,000 metric tons provisionally agreed to in Panel 3 (Proc. 9). USSR pointed out that Canada's proposal implied a lower catch for her in 1974 than in 1972 but attached importance to making allocations according to agreed principles. It was agreed that the TAC be set at 22,000 metric tons, including an estimated catch of 2,500 metric tons by Canada outside the Convention Area, 600 metric tons for new entrants and by-catch, and 500 metric tons for non-members. Panels 2 and 3, in joint session,

agreed to recommend

that the Commission transmit to the Depository Government for joint action by the Contracting Governments proposal (4) for international quota regulation of the fishery for witch in Division 2J of Subarea 2 and Divisions 3K and 3L of Subarea 3 (Appendix II).

(c) Subareas 2 and 3 capelin. It was agreed unanimously that the TAC recommended for 1974 by the Assessments Subcommittee of 250,000 metric tons be accepted, and that allocation of this TAC be considered at the next meeting of the Commission, if adequate data were available.

5. The meeting of Joint Panels adjourned at 1800 hrs.

ANNUAL MEETING - JUNE 1973(3) Proposal for International Quota Regulation of the Fishery for Cod in Division 2J of Subarea 2 and Divisions 3K and 3L of Subarea 3 of the Convention Area

Panels 2 and 3, in joint session, recommend that the Commission transmit to the Depository Government the following proposal for joint action by the Contracting Governments:

That the Cod Quota Regulation for Division 2J of Subarea 2 and Divisions 3K and 3L of Subarea 3, adopted at the Twenty-Second Annual Meeting (Annual Proceedings, Vol. 22, 1971-72, page 45) and entered into force on 1 January 1973 for the year 1973, be replaced by the following:

"1. That the Contracting Governments take appropriate action to regulate the catch of cod, *Gadus morhua* L., by persons under their jurisdiction fishing in Division 2J of Subarea 2 and Divisions 3K and 3L of Subarea 3 so that the aggregate catch of cod by vessels taking such cod shall not exceed 606,700 metric tons in 1974.

"2. That Competent Authorities from each Contracting Government listed below shall limit in 1974 the catch of cod taken by persons under their jurisdiction to the amount listed from the above-mentioned Divisions:

Canada	60,000	metric tons
Denmark	13,800	" tons
France	51,100	" tons
Fed. Rep. Germany	43,000	" tons
Italy	4,000	" tons
Japan	6,000	" tons
Norway	18,100	" tons
Poland	43,400	" tons
Portugal	133,600	" tons
Romania	7,000	" tons
Spain	94,800	" tons
USSR	94,700	" tons
UK	20,200	" tons
Others	17,000	" tons

"3. That each Contracting Government mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of the date on which its vessels have ceased a specialized fishery for cod. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary if its vessels engage in a specialized fishery for cod, together if possible with an estimate of the projected catch. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of specialized or incidental catches of cod in increments of 100 tons. The Executive Secretary shall promptly inform all other Contracting Governments of such notifications. The Executive Secretary shall notify each Contracting Government of the date on which accumulated catch and estimated catch of cod, the quantity estimated to be taken before closure could be introduced, and the likely incidental catch for the remainder of the year equal 100 percent of the allowable catch designated as for "Others" in paragraph 2 above. Within 10 days of receipt of such notification from the Executive Secretary, each Contracting Government not mentioned by name in paragraph 2 above shall prohibit the catching of cod in Division 2J of Subarea 2 and Divisions 3K and 3L of Subarea 3 by persons under its jurisdiction, except for small incidental catches.

"4. That the Contracting Governments take appropriate action to ensure that all vessels under their jurisdiction which take cod, record their catches on a daily basis according to position, amount, date, type of gear, amount of effort, i.e., number of sets (or hooks) x time gear on the bottom (otter trawl) or fishing (midwater trawl, lines, other gear), discards and disposition of catch.

"5. That the allocations in paragraph 2 above are without prejudice to future allocations of catches for this or other stocks."

ANNUAL MEETING - JUNE 1973(4) Proposal for International Quota Regulation of the Fishery for Witch in Division 2J of Subarea 2 and Divisions 3K and 3L of Subarea 3 of the Convention Area

Panels 2 and 3, in joint session, recommend that the Commission transmit to the Depositary Government the following proposal for joint action by the Contracting Governments:

"1. That the Contracting Governments take appropriate action to regulate the catch of witch, *Glyptocephalus cynoglossus* (L.), by persons under their jurisdiction fishing in Division 2J of Subarea 2 and Divisions 3K and 3L of Subarea 3 so that the aggregate catch of witch by vessels taking such witch shall not exceed 19,500 metric tons in 1974.

"2. That Competent Authorities from each Contracting Government listed below shall limit in 1974 the catch of witch taken by persons under their jurisdiction to the amount listed from the above-mentioned Divisions:

Canada	6,000 metric tons
Poland	6,000 " tons
USSR	6,400 " tons
Others	1,100 " tons

"3. That each Contracting Government mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of the date on which its vessels have ceased a specialized fishery for witch. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary if its vessels engage in a specialized fishery for witch, together if possible with an estimate of the projected catch. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of specialized or incidental catches of witch in increments of 100 tons. The Executive Secretary shall promptly inform all other Contracting Governments of such notifications. The Executive Secretary shall notify each Contracting Government of the date on which accumulated catch and estimated catch of witch, the quantity estimated to be taken before closure could be introduced, and the likely incidental catch for the remainder of the year equal 100 percent of the allowable catch designated as for "Others" in paragraph 2 above. Within 10 days of receipt of such notification from the Executive Secretary, each Contracting Government not mentioned by name in paragraph 2 above shall prohibit the catching of witch in Division 2J of Subarea 2 and Divisions 3K and 3L of Subarea 3 by persons under its jurisdiction, except for small incidental catches.

"4. That the Contracting Governments take appropriate action to ensure that all vessels under their jurisdiction which take witch, record their catches on a daily basis according to position, amount, date, type of gear, amount of effort, i.e., number of sets (or hooks) x time gear on the bottom (otter trawl) or fishing (midwater trawl, lines, other gear), discards and disposition of catch.

"5. That the allocations in paragraph 2 above are without prejudice to future allocations of catches for this or other stocks."



INTERNATIONAL COMMISSION FOR



THE NORTHWEST ATLANTIC FISHERIES

Serial No. 3117  
(B.d.73)

Proceedings No. 15

ANNUAL MEETING - JUNE 1973

Report of the Second Plenary Session

Thursday, 14 June, 0915 hrs

1. The Chairman, Mr K. Løkkegaard (Denmark), opened the meeting. Representatives of all Member Countries with Observers were present.
2. Under Plenary Agenda Item 4, Draft Report of the Proceedings of a Special Commission Meeting, Rome, January 1973 (Summ.Doc. 73/1) was approved.
3. Under Plenary Agenda Item 12, Status of Commission Proposals, the Chairman drew attention to Comm.Doc. 73/9. The Romanian delegate reported that acceptance of the 1970 Protocol relating to Amendments to the Convention was in the process. It was noted that this action would bring the Protocol into force.
4. Under Plenary Agenda Item 35, Reports of Meetings, the Chairman pointed out that reports were available from NEAFC (Summ.Doc. 73/18), from ICES (Summ.Doc. 73/16), from OECD (Appendix I), and from FAO (Appendix II).
5. The Report of the First Plenary Session (Proc. 3) was adopted without change.
6. The Report of Joint Meeting of Panels 1-5 (Proc. 13) was adopted.
7. The Report of Panel 1 (Proc. 7) was adopted including the proposal (1) for total allowable catch (TAC) and its allocation for cod in Subarea 1 (Proc. 7, Appendix II). The Icelandic delegate approved the report but could not accept the TAC and its allocation.
8. The Report of Panel 2 (Proc. 8) was adopted including the proposal (2) for the TAC and its allocation for cod in Div. 2GH (Proc. 8, Appendix II) by all Member Countries except Iceland which abstained from the vote on the TAC and its allocation.
9. The Report of Joint Meeting of Panels 2 and 3 (Proc. 14) was adopted. It was agreed, however, that approval of the TAC's and their allocation for cod (proposal (3)) and witch (proposal (4)) in Div. 2J-3KL should be considered for approval separately at a late meeting of the Plenary (Proc. 17).
10. The Report of Panel A (Seals) (Proc. 12) was presented for adoption. The USSR delegate, while giving assurance that USSR was not going to enter the seal fishery, drew attention to the need for an unallocated portion of the total allowable catch of harp seals for other possible participants in the seal fishery as has been done for all other TAC allocations. With the agreement of the Panel A Members present, the Plenary approved the addition of 100 harp seals to the total allowable catch on the "Front", the amount to be an unallocated portion of the TAC. The delegate from Denmark pointed out that the regulation regarding the sealing season should apply in the "Front" area only and not to West Greenland, and the Report was amended to take into account this matter. The Report with its amended proposal (30) for harp and hood seals (Proc. 12, Appendix III) was adopted.
11. The Report of STACREM (Proc. 5), including redrafting and editorial changes, was adopted.
12. The Plenary Session adjourned at 1100 hrs.

ANNUAL MEETING - JUNE 1973

Summary Report on the Work of the Committee for Fisheries of the  
Organization for Economic Co-operation and Development

Gratitude must be expressed for the honour of being allowed to attend ICNAF's Annual Meetings in the capacity of Observer which is valuable for keeping abreast with recent and current developments in the management of fisheries in the Northwest Atlantic. The Secretariat of the Committee for Fisheries of OECD welcomes this opportunity to present to the Commissioners a résumé of work completed, in progress and envisaged.

In 1972, a study of international developments in fish production was completed, the results being published earlier this year. Some copies are available for participants and readers will see that the authors have drawn heavily on the data on fishing stocks, fleets and effort produced by North Atlantic Commissions and their advisers. Also published in 1972 were a review of fisheries in Member Countries in 1971 and a selection of papers presented at a symposium held at the end of that year on the theme Economic Aspects of Fish Production. No copies of the book on the Symposium are shown here as the print is practically sold out.

By the time this report is presented, the Council of OECD should have approved the 1972 Review of Fisheries which is scheduled for publication at the end of June. In the preparation of these Reviews, the Secretariat, like that of the Commission, relies on the cooperation of national fisheries administrators who, in turn, are dependent on the statistics and other information supplied from the coast. The OECD Fisheries Secretariat is, therefore, in full sympathy with those whose work is either slowed down or comes to a halt through lack of data. Any steps taken to improve matters will be well worthwhile.

Part of the current OECD work is directed to that end in that investigations have been proceeding, in conjunction with other international and national administrations, towards the establishment of a Fishing Vessel Register and Statistics at the international level. In recent months encouraging progress has been made of which a short account is given in relevant documents [FI/131 and Annexes] which can be seen by anyone with a particular interest in the subject. These papers outline proposals for the next stages of the exercises.

For the remainder of 1973 and part of 1974, work will continue on a major study of the demand for fish, taking into account the many important recent developments in the markets for industrial as well as food fish products.

Last to be selected for special mention is the second symposium to be organized by the Fisheries Committee which has been scheduled, although not yet finally approved, for the end of 1974. The theme will concentrate attention on small-scale coastal fisheries and the socio-economic problems facing them. The Fisheries Committee will again be depending on the cooperation of eminent specialists to make this symposium as successful as the first.

In addition to the foregoing, the Committee maintains its normal periodic examination of such economic influences on fisheries as the structures, means and extent of financial aid and matters relating to international trade in fishery produce which currently absorbs about two-fifths of the annual global catch.

ANNUAL MEETING - JUNE 1973

Statement of the FAO Observer

Mr Chairman,

I would like to thank the Commission, on behalf of FAO, for the opportunity to take part again in the activities of your meeting. The close connections which exist between FAO and your Commission have again been demonstrated by the fact that some recent meetings of your Commission, including the Special Commission Meeting and the Mid-Term Meetings of the Standing Committee on Research and Statistics in January of this year have been held in FAO Headquarters in Rome, and also by the active participation of various FAO staff members in meetings of your working groups. Your Commission will, of course, be welcome whenever it appears that another meeting in Rome is desirable.

It has already been mentioned on several occasions that the experience of ICNAF in the field of fish stock assessment and of fisheries management is most valuable for all bodies concerned with these problems in other parts of the world. ICNAF has made important steps in the application of catch quotas. An important decision of principle was taken when it was decided at the last meeting to introduce a catch quota on mackerel even before the scientists could give a clear answer to the question of the level of the sustainable yield, but based upon the view that fishing was already heavy and that regulation should be introduced in order to prevent serious damage to the stocks before scientific advice would become available. Most of the studies on the effects of regulations have been carried out on individual species or populations and quotas have usually been set by species. The increasing flexibility of part of the fleets, which enables more and more vessels to move either from fishing one stock to another stock of the same species, or from one species to another, or from one area to another, and to take advantage of favourable fluctuations in one or other stock or species, requires a broader approach. It becomes increasingly important to study how limitations on fishing for one species affects the amount of fishing on other groups and their yields, and thus the fishery as a whole. ICNAF is making most valuable progress in this field also, by its studies together with ICES on the multiple stock cod fisheries in the North Atlantic, and by its recent studies and discussions on the possible effect of direct effort regulations.

Rapid progress in these various fields is becoming more and more important, as fishing pressure is rising in several parts of the world. Notwithstanding this rise, a provisional estimate of the world fish catch in 1972 was down to 65 million tons, compared to 69.4 million tons in 1971. This was due to a large fall in the catches of anchoveta off Peru, and the remainder still shows an increase, but the decline in the Peruvian catch puts extra heavy pressure on other resources for fishmeal production. More and more countries become increasingly concerned about the resources along their coasts. The Vancouver Conference on Fishery Management and Development highlighted several aspects of the problems of stock evaluation, management and development in various parts of the world. The successes and failures of the existing fisheries bodies are playing an important role in these countries' attitude in the preparations for the forthcoming Law of the Sea Conference.

Meanwhile, both FAO and ICNAF will continue to have important responsibilities to promote the optimum use of the available fishery resources, and the cooperation between our bodies in fields such as statistics and studies of stock assessment, effects of fishing and effects of regulations, will continue to be of mutual benefit. I hope, therefore, that this cooperation will not only last but, if possible, expand.

Thank you.





Serial No. 3118  
(B.e.73)

Proceedings No. 16

ANNUAL MEETING - JUNE 1973

Report of Joint Meeting of Panels 4 and 5

Friday, 15 June, 1735 hrs

1. Captain J.C.E. Cardoso (Portugal) was in the Chair.
2. Mr C.J. Dandy (UK) was appointed Rapporteur.
3. All Panel Members, except Italy, were present.
4. In the absence of an agenda, the Chairman proposed seven items for discussion. These are reported upon under paragraphs 5-11 below.
5. Herring Size Limit. The Canadian delegate proposed that this item be referred to the Mid-Term Meeting, and agreed to circulate a draft proposal to Commissioners 60 days before that Meeting.
6. Div. 4VWX and Subarea 5 Pollock Stocks. The Joint Panels agreed to a TAC of 55,000 metric tons for the pollock stock in Div. 4VWX and Subarea 5 for 1974 to replace the catch quota for pollock in Div. 4X and Subarea 5, adopted in January 1973, for 1973.

Panels 4 and 5, in joint session,

agreed to recommend

that the Commission transmit to the Depositary Government for joint action by the Contracting Governments proposal (24) for amendment of the international quota regulation, adopted in January 1973, of the fishery for pollock in Divisions 4V, 4W and 4X of Subarea 4 and Subarea 5 (Appendix I).

7. US Proposal for Eliminating the 10% Annual Exemption from the Trawl Fishery. Delegations were generally in agreement that the 12-month exemption clause should be removed from the trawl regulations in both Subareas 4 and 5. There was, however, a need for further consideration of the wording of the amendment. The US delegate undertook to provide a draft proposal for the Mid-Term Meeting.
8. Proposed Regulatory Measures for Herring

(a) Div. 4X and part of Div. 4W herring stock. The Canadian delegate introduced a proposal for international quota regulation of the fishery for herring in Div. 4X and part of Div. 4W of Subarea 4, stressing that, in principle, the proposal delegated responsibility from the Commission to its Mid-Term Meeting in January 1974 for setting herring quotas for 1974, and, in effect, waived the six-month objection period subsequent to that Meeting. He suggested that this proposal be taken together, with similar proposals for herring in the Georges Bank stock, and in Div. 5Y, and for mackerel in the Southern New England stock.

The US delegate pointed out that under US law it was not possible to enforce quota regulations until they had been agreed by all Contracting Governments to the Convention, which meant that the 1973 quotas set in January 1973 were not yet in force in USA. He emphasized that Governments would be protected by the provisions for a unanimous vote.

Several delegations expressed support for the proposal, in principle, while emphasizing that there might be some difficulties in its application in national law, and that there was an essential difference between Governments and the Commissioners who acted for them. In particular, the delegate of the Fed. Rep. Germany called on those nations which had not yet accepted the quota regulations set in January 1973 to do so in order to allow USA to enforce them. He also expressed some doubt as to whether all herring stocks should be tied together in the proposal, since failure to agree on one might prejudice regulation of the others. In answer to questions, the US delegate emphasized that, if the unanimous vote should fail, the normal Convention procedure would come into operation. The Romanian delegate expressed some doubt as to whether such measures were necessary for herring, which he maintained was fished late in the year.

Finally, Panel 4, in joint session with Panel 5,

agreed to recommend

that the Commission transmit to the Depositary Government for joint action by the Contracting Governments proposal (20) for amendment of the international quota regulation, adopted in January 1973, of the fishery for herring in Division 4X and the southern part of Division 4W of Subarea 4 (Appendix II).

(b) Georges Bank herring stock. Panel 5, in joint session with Panel 4,

agreed to recommend

that the Commission transmit to the Depositary Government for joint action by the Contracting Governments proposal (26) for amendment of the international quota regulation, adopted in January 1973, of the fishery for herring in the Georges Bank stock (Appendix III).

(c) Div. 5Y herring stock. Panel 5, in joint session with Panel 4,

agreed to recommend

that the Commission transmit to the Depositary Government for joint action by the Contracting Governments proposal (27) for amendment of the international quota regulation, adopted in January 1973, of the fishery for herring in Division 5Y of Subarea 5 (Appendix IV).

(d) Southern New England mackerel stock. In respect of the mackerel proposal, the USSR and Polish delegates objected to a clause providing that the quota should "not result in a rate of fishing mortality greater than that in 1971". It was agreed that the clause be deleted.

Panel 5, in joint session with Panel 4,

agreed to recommend

that the Commission transmit to the Depositary Government for joint action by the Contracting Governments proposal (28) for amendment of the international quota regulation, adopted in January 1973, of the fishery for mackerel in the Southern New England stock (Appendix V).

9. Further Conservation Measures. The US delegate introduced the question of application of an overall catch quota in Subareas 4 and 5.

The Canadian delegate referred to his proposal for extending any effort limitation in Subarea 5 to other Subareas (Comm.Doc. 73/15). He now felt that, since the problems in the other Subareas were different from those in Subarea 5, and since there was not sufficient information available at present, the same measures should not be taken in Subareas 2, 3 and 4, as in Subarea 5. However, the situation should be kept under review.

The USSR delegate emphasized his support for the original Canadian proposal but felt that, although the matter of extension of conservation measures to all areas of the Convention should be reviewed at the Mid-Term Meeting, for the moment, the question of an overall catch quota could be discussed in Panel 5.

10. Subarea 5 Haddock Stock. The US delegate presented a proposal for haddock in Subarea 5 which contained a zero catch quota, closed areas, and provision for by-catch. This proposal with suitable editing and deleting of the special provision for hooks having a gape of less than 3 cm had already been applied to the Div. 4X and Div. 4W haddock stocks in Subarea 4 (proposals (17) and (18) in Proc. 10). Panel 5, in joint session with Panel 4,

agreed to recommend

that the Commission transmit to the Depositary Government for joint action by the Contracting Governments proposal (25) for amendment of the international fishery regulations, adopted in 1971 and amended in 1972, for the fishery for haddock in Subarea 5 (Appendix VI).

11. The Joint Meeting of Panels 4 and 5 was adjourned at 2240 hrs.

## ANNUAL MEETING - JUNE 1973

(24) Proposal for International Quota Regulation of the Fishery for Pollock in Divisions 4V, 4W and 4X of Subarea 4 and in Subarea 5 of the Convention Area

Panels 4 and 5, in joint session, recommend that the Commission transmit to the Depository Government the following proposal for joint action by the Contracting Governments:

That the Pollock Quota Regulation for Division 4X of Subarea 4 and Subarea 5 adopted at the Special Commission Meeting, 26 January 1973 (Special Commission Meeting Proceedings No. 3, Appendix VI) and pending entry into force for the year 1973 be replaced by the following:

"1. That the Contracting Governments take appropriate action to regulate the catch of pollock, *Pollachius virens* (L.), by persons under their jurisdiction fishing in Divisions 4V, 4W and 4X of Subarea 4 and in Subarea 5 so that the aggregate catch of pollock by vessels taking such pollock shall not exceed 55,000 metric tons in 1974.

"2. That Competent Authorities from each Contracting Government listed below shall limit in 1974 the catch of pollock taken by persons under their jurisdiction to the amount listed from the above-mentioned Divisions and Subarea:

Canada	34,000 metric tons
Fed. Rep. Germany	1,600 " tons
Spain	1,200 " tons
USSR	2,100 " tons
USA	12,000 " tons
Others	4,100 " tons

"3. That each Contracting Government mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of the date on which its vessels have ceased a specialized fishery for pollock. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary if its vessels engage in a specialized fishery for pollock, together if possible with an estimate of the projected catch. Each Contracting Government not mentioned by name in paragraph 2 above shall promptly notify the Executive Secretary of specialized or incidental catches of pollock in increments of 100 tons. The Executive Secretary shall promptly inform all other Contracting Governments of such notifications. The Executive Secretary shall notify each Contracting Government of the date on which accumulated catch and estimated catch of pollock, the quantity estimated to be taken before closure could be introduced, and the likely incidental catch for the remainder of the year equal 100 percent of the allowable catch designated as for "Others" in paragraph 2 above. Within 10 days of receipt of such notification from the Executive Secretary, each Contracting Government not mentioned by name in paragraph 2 above shall prohibit the catching of pollock in Divisions 4V, 4W and 4X of Subarea 4 and in Subarea 5 by persons under its jurisdiction, except for small incidental catches.

"4. That the Contracting Governments take appropriate action to ensure that all vessels under their jurisdiction which take pollock, record their catches on a daily basis according to position, amount, date, type of gear, amount of effort, i.e., number of sets (or hooks) x time gear on the bottom (otter trawl) or fishing (midwater trawl, lines, other gear), discards and disposition of catch.

"5. That the allocations in paragraph 2 above are without prejudice to future allocations of catches for this or other stocks."

ANNUAL MEETING - JUNE 1973

(20) Proposal for International Quota Regulation of the Fishery for Herring in Division 4X and the southern part of Division 4W of Subarea 4 of the Convention Area

Panel 4, in joint session with Panel 5, recommends that the Commission transmit to the Depository Government the following proposal for joint action by the Contracting Governments:

That the Herring Quota Regulation for Division 4X and the southern part of Division 4W of Subarea 4, adopted at the Special Commission Meeting, 26 January 1973 (Special Commission Meeting Proceedings No. 3, Appendix III) and pending entry into force for the year 1973, be replaced by the following:

"1. That the Contracting Governments take appropriate action to regulate the catch of herring, *Clupea harengus* L., by persons under their jurisdiction fishing in that portion of Division 4W south of 44°52'N latitude and in Division 4X of Subarea 4 so that the aggregate catch of herring by vessels from this stock shall not exceed in 1974 an amount which is decided at a Special Meeting in January 1974 by unanimous vote of the Contracting Governments present and voting, which amount shall become effective for all Contracting Governments upon receipt of notification from the Depository Government of the amount decided by the Commission.

"2. That Competent Authorities from each Contracting Government shall limit in 1974 the catch of herring taken by persons under their jurisdiction from the above-mentioned stock to the amount which is decided for each Contracting Government at the above-mentioned Special Meeting by unanimous vote of the Contracting Governments present and voting, which amounts shall become effective for all Contracting Governments upon receipt of notification from the Depository Government of the amounts decided by the Commission.

"3. That each Contracting Government for which a catch is allocated by the Commission pursuant to paragraph 2 above shall promptly notify the Executive Secretary of the date on which its vessels have ceased a specialized fishery for herring. Each Contracting Government for which a catch is not allocated by the Commission pursuant to paragraph 2 above shall promptly notify the Executive Secretary if its vessels engage in a specialized fishery for herring, together if possible with an estimate of the projected catch. Each Contracting Government for which a catch is not allocated by the Commission pursuant to paragraph 2 above shall promptly notify the Executive Secretary of specialized or incidental catches of herring in increments of 100 tons. The Executive Secretary shall promptly inform all other Contracting Governments of such notifications. The Executive Secretary shall notify each Contracting Government of the date on which accumulated catch and estimated catch of herring, the quantity estimated to be taken before closure could be introduced, and the likely incidental catch for the remainder of the year equal 100 percent of the allowable catch which may be designated for "Others" by the Commission pursuant to paragraph 2 above. Within 10 days of receipt of such notification from the Executive Secretary, each Contracting Government for which a catch is not allocated by the Commission pursuant to paragraph 2 above shall prohibit the catching of herring from that portion of Division 4W south of 44°52'N latitude and in Division 4X of Subarea 4 by persons under its jurisdiction, except for small incidental catches.

"4. That the Contracting Governments take appropriate action to ensure that all vessels under their jurisdiction which take herring, record their catches on a daily basis according to position, amount, date, type of gear, amount of effort, i.e., number of sets (or hooks) x time gear on the bottom (otter trawl) or fishing (midwater trawl, lines, other gear), discards and disposition of catch.

"5. That the allocations decided by the Commission pursuant to paragraph 2 above are without prejudice to future allocations of catches for this or other stocks. Nothing in this proposal shall prejudice the future possibility of the Contracting Governments entering into mutual arrangements for the management of the allocations of herring catches or re-allocating the allocations of herring catches decided by the Commission pursuant to paragraph 2 above by such agreements as they may enter into, all such arrangements and re-allocations to be reported to all other Contracting Governments through the Executive Secretary.

"6. This proposal shall become effective only at such times as the herring quota proposals adopted 16 June 1973 by Panel 5 for the Georges Bank stock and for herring in Division 5Y of Subarea 5 become effective."



ANNUAL MEETING - JUNE 1973

(26) Proposal for International Quota Regulation of the Fishery for Herring from the Georges Bank Stock

Panel 5, in joint session with Panel 4, recommends that the Commission transmit to the Depository Government the following proposal for joint action by the Contracting Governments:

That the Herring Quota Regulation for the Georges Bank Stock, adopted at the Special Commission Meeting, 26 January 1973 (Special Commission Meeting Proceedings No. 3, Appendix I) and pending entry into force for the year 1973, be replaced by the following:

"1. That the Contracting Governments take appropriate action to regulate the catch of herring, *Clupea harengus* L., by persons under their jurisdiction fishing in Division 5Z of Subarea 5 and in the adjacent waters to the west and south so that the aggregate catch of herring by vessels from this stock shall not exceed in 1974 an amount which is decided at a Special Meeting in January 1974 by unanimous vote of the Contracting Governments present and voting, which amount shall become effective for all Contracting Governments upon receipt of notification from the Depository Government of the amount decided by the Commission; provided, that the amount to be decided may not exceed the level of catch which will result in the restoration of the adult stock to at least 225,000 metric tons by the end of 1974, and that the Commission may not decide on an amount larger than the 1973 quota for the above-mentioned stock unless the adult stock size at the end of 1973 has reached a level which will provide the maximum sustainable yield by the end of 1974.

"2. That Competent Authorities from each Contracting Government shall limit in 1974 the catch of herring taken by persons under their jurisdiction from the above-mentioned stock to the amount which is decided for each Contracting Government at the above-mentioned Special Meeting by unanimous vote of the Contracting Governments present and voting, which amounts shall become effective for all Contracting Governments upon receipt of notification from the Depository Government of the amounts decided by the Commission.

"3. That each Contracting Government for which a catch is allocated by the Commission pursuant to paragraph 2 above shall promptly notify the Executive Secretary of the date on which its vessels have ceased a specialized fishery for herring. Each Contracting Government for which a catch is not allocated by the Commission pursuant to paragraph 2 above shall promptly notify the Executive Secretary if its vessels engage in a specialized fishery for herring, together if possible with an estimate of the projected catch. Each Contracting Government for which a catch is not allocated by the Commission pursuant to paragraph 2 above shall promptly notify the Executive Secretary of specialized or incidental catches of herring in increments of 100 tons. The Executive Secretary shall promptly inform all other Contracting Governments of such notifications. The Executive Secretary shall notify each Contracting Government of the date on which accumulated catch and estimated catch of herring, the quantity estimated to be taken before closure could be introduced, and the likely incidental catch for the remainder of the year equal 100 percent of the allowable catch which may be designated for "Others" by the Commission pursuant to paragraph 2 above. Within 10 days of receipt of such notification from the Executive Secretary, each Contracting Government for which a catch is not allocated by the Commission pursuant to paragraph 2 above shall prohibit the catching of herring from Division 5Z of Subarea 5 and in the adjacent waters to the west and south by persons under its jurisdiction, except for small incidental catches.

"4. That the Contracting Governments take appropriate action to ensure that all vessels under their jurisdiction which take herring, record their catches on a daily basis according to position, amount, date, type of gear, amount of effort, i.e., number of sets (or hooks) x time gear on the bottom (otter trawl) or fishing (midwater trawl, lines, other gear), discards and disposition of catch.

"5. That the allocations decided by the Commission pursuant to paragraph 2 above are without prejudice to future allocations of catches for this or other stocks. Nothing in this proposal shall prejudice the future possibility of the Contracting Governments entering into mutual arrangements for the management of the allocations of herring catches or re-allocating the allocations of herring catches decided by the Commission pursuant to paragraph 2 above by such agreements as they may enter into, all such arrangements and re-allocations to be reported to all other Contracting Governments through the Executive Secretary.

"6. This proposal shall become effective only at such times as the herring quota proposals adopted 16 June 1973 by Panel 4 for herring in Division 4X and the southern part of Division 4W of Subarea 4 and for herring in Division 5Y of Subarea 5 become effective."

ANNUAL MEETING - JUNE 1973

(27) Proposal for International Quota Regulation of the Fishery for Herring in Division 5Y of Subarea 5 of the Convention Area

Panel 5, in joint session with Panel 4, recommends that the Commission transmit to the Depositary Government the following proposal for joint action by the Contracting Governments:

That the Herring Quota Regulation for Division 5Y of Subarea 5, adopted at the Special Commission Meeting, 26 January 1973 (Special Commission Meeting Proceedings No. 3, Appendix II) and pending entry into force for the year 1973, be replaced by the following:

"1. That the Contracting Governments take appropriate action to regulate the catch of herring, *Clupea harengus* L., by persons under their jurisdiction fishing in Division 5Y of Subarea 5 so that the aggregate catch of herring by vessels from this stock shall not exceed in 1974 an amount which is decided at a Special Meeting in January 1974 by unanimous vote of the Contracting Governments present and voting, which amount shall become effective for all Contracting Governments upon receipt of notification from the Depositary Government of the amount decided by the Commission; provided, that the amount to be decided may not exceed the level of catch which will result in the restoration of the adult stock to at least 60,000 metric tons by the end of 1974, and that the Commission may not decide on an amount larger than the 1973 quota for the above-mentioned stock unless the adult stock size at the end of 1973 has reached a level which will provide the maximum sustainable yield by the end of 1974.

"2. That Competent Authorities from each Contracting Government shall limit in 1974 the catch of herring taken by persons under their jurisdiction from the above-mentioned stock to the amount which is decided for each Contracting Government at the above-mentioned Special Meeting by unanimous vote of the Contracting Governments present and voting, which amounts shall become effective for all Contracting Governments upon receipt of notification from the Depositary Government of the amounts decided by the Commission.

"3. That each Contracting Government for which a catch is allocated by the Commission pursuant to paragraph 2 above shall promptly notify the Executive Secretary of the date on which its vessels have ceased a specialized fishery for herring. Each Contracting Government for which a catch is not allocated by the Commission pursuant to paragraph 2 above shall promptly notify the Executive Secretary if its vessels engage in a specialized fishery for herring, together if possible with an estimate of the projected catch. Each Contracting Government for which a catch is not allocated by the Commission pursuant to paragraph 2 above shall promptly notify the Executive Secretary of specialized or incidental catches of herring in increments of 100 tons. The Executive Secretary shall promptly inform all other Contracting Governments of such notifications. The Executive Secretary shall notify each Contracting Government of the date on which accumulated catch and estimated catch of herring, the quantity estimated to be taken before closure could be introduced, and the likely incidental catch for the remainder of the year equal 100 percent of the allowable catch which may be designated for "Others" by the Commission pursuant to paragraph 2 above. Within 10 days of receipt of such notification from the Executive Secretary, each Contracting Government for which a catch is not allocated by the Commission pursuant to paragraph 2 above shall prohibit the catching of herring in Division 5Y of Subarea 5 by persons under its jurisdiction, except for small incidental catches.

"4. That the Contracting Governments take appropriate action to ensure that all vessels under their jurisdiction which take herring, record their catches on a daily basis according to position, amount, date, type of gear, amount of effort, i.e., number of sets (or hooks) x time gear on the bottom (otter trawl) or fishing (midwater trawl, lines, other gear), discards and disposition of catch.

"5. That the allocations decided by the Commission pursuant to paragraph 2 above are without prejudice to future allocations of catches for this or other stocks. Nothing in this proposal shall prejudice the future possibility of the Contracting Governments entering into mutual arrangements for the management of the allocations of herring catches or re-allocating the allocations of herring catches decided by the Commission pursuant to paragraph 2 above by such agreements as they may enter into, all such arrangements and re-allocations to be reported to all other Contracting Governments through the Executive Secretary.

"6. This proposal shall become effective only at such times as the herring quota proposals adopted 16 June 1973 by Panel 5 for the Georges Bank stock and by Panel 4 for herring in Division 4X and the southern part of Division 4W of Subarea 4 become effective."

ANNUAL MEETING - JUNE 1973

(28) Proposal for International Quota Regulation of the Fishery for Mackerel from the Southern New England Stock

Panel 5, in joint session with Panel 4, recommends that the Commission transmit to the Depository Government the following proposal for joint action by the Contracting Governments:

That the Mackerel Quota Regulation for the Southern New England Stock, adopted at the Special Commission Meeting, 26 January 1973 (Special Commission Meeting Proceedings No. 3, Appendix V) and pending entry into force for the year 1973, be replaced by the following:

"1. That the Contracting Governments take appropriate action to regulate the catch of mackerel, *Scomber scombrus* L., by persons under their jurisdiction fishing on the Southern New England stock found in Subarea 5 and in the adjacent waters to the west and south so that the aggregate catch of mackerel by vessels from this stock shall not exceed in 1974 an amount which is decided at a Special Meeting in January 1974 by unanimous vote of the Contracting Governments present and voting, which amount shall become effective for all Contracting Governments upon receipt of notification from the Depository Government of the amount decided by the Commission.

"2. That Competent Authorities from each Contracting Government shall limit in 1974 the catch of mackerel taken by persons under their jurisdiction from the above-mentioned stock to the amount which is decided for each Contracting Government at the above-mentioned Special Meeting by unanimous vote of the Contracting Governments present and voting, which amounts shall become effective for all Contracting Governments upon receipt of notification from the Depository Government of the amounts decided by the Commission.

"3. That each Contracting Government for which a catch is allocated by the Commission pursuant to paragraph 2 above shall promptly notify the Executive Secretary of the date on which its vessels have ceased a specialized fishery for mackerel. Each Contracting Government for which a catch is not allocated by the Commission pursuant to paragraph 2 above shall promptly notify the Executive Secretary if its vessels engage in a specialized fishery for mackerel, together if possible with an estimate of the projected catch. Each Contracting Government for which a catch is not allocated by the Commission pursuant to paragraph 2 above shall promptly notify the Executive Secretary of specialized or incidental catches of mackerel in increments of 100 tons. The Executive Secretary shall promptly inform all other Contracting Governments of such notifications. The Executive Secretary shall notify each Contracting Government of the date on which accumulated catch and estimated catch of mackerel, the quantity estimated to be taken before closure could be introduced, and the likely incidental catch for the remainder of the year equal 100 percent of the allowable catch which may be designated for "Others" by the Commission pursuant to paragraph 2 above. Within 10 days of receipt of such notification from the Executive Secretary, each Contracting Government for which a catch is not allocated by the Commission pursuant to paragraph 2 above shall prohibit the catching of mackerel from the Southern New England stock by persons under its jurisdiction, except for small incidental catches.

"4. That the Contracting Governments take appropriate action to ensure that all vessels under their jurisdiction which take mackerel, record their catches on a daily basis according to position, amount, date, type of gear, amount of effort, i.e., number of sets (or hooks) x time gear on the bottom (otter trawl) or fishing (midwater trawl, lines, other gear), discards and disposition of catch.

"5. That the allocations decided by the Commission pursuant to paragraph 2 above are without prejudice to future allocations of catches for this or other stocks."

ANNUAL MEETING - JUNE 1973

(25) Proposal for International Quota Regulation of the Fishery for Haddock in Subarea 5 of the Convention Area

Panel 5, in joint session with Panel 4, recommends that the Commission transmit to the Depository Government the following proposal for joint action by the Contracting Governments:

That the Haddock Quota Regulation for Subarea 5, adopted at the Twenty-First Annual Meeting of the Commission (Annual Proceedings, Vol. 21, pages 32-33) and amended at the Twenty-Second Annual Meeting of the Commission (Annual Proceedings, Vol. 22, page 60), be replaced by the following:

"1. That the Contracting Governments take appropriate action to prohibit the catch of haddock in Subarea 5, except as provided in paragraph 2.

"2. That in order to avoid impairment of fisheries conducted for other species and which take small quantities of haddock incidentally, the Contracting Governments may permit persons under their jurisdiction to have on board a vessel fishing for other species, haddock caught in Subarea 5 in amounts not exceeding 5,000 lb or 2,268 kg, or 10% by weight, of all other fish on board caught in Subarea 5, whichever is greater.

"3. That the Contracting Governments take appropriate action to prohibit persons under their jurisdiction from using fishing gear in a manner capable of catching demersal species during March, April and May 1974 in areas of Subarea 5 bounded by straight lines connecting the following coordinates in the order listed:

(a) 69°55'W, 42°10'N	(b) 67°00'W, 42°20'N
69°10'W, 41°10'N	67°00'W, 41°15'N
68°30'W, 41°35'N	65°40'W, 41°15'N
68°45'W, 41°50'N	65°40'W, 42°00'N
69°00'W, 41°50'N	66°00'W, 42°20'N

The provisions of this paragraph shall not apply to vessels that fish in area (a) with hooks having a gape of not less than 3 cm.

"4. That the application to haddock of the trawl regulations effective in Subarea 5 be suspended during the period these prohibitions on the catching of haddock are in effect."



Serial No. 3119  
(B.b.23)

Proceedings No. 17

ANNUAL MEETING - JUNE 1973

Report of the Final Plenary Session

Saturday, 16 June, 0930 hrs

1. The Chairman, Mr K. Løkkegaard (Denmark), opened the meeting. Representatives of all Member Countries were present, except Bulgaria which left a proxy vote with the Chairman of the Commission.
2. The Report of the Ceremonial Opening (Proc. 2) was accepted.
3. The Report of the Second Plenary Session (Proc. 15) was adopted.
4. The Report of STACFAD (Proc. 6) was presented by the outgoing Chairman, Mr Wm.L. Sullivan Jr (USA). Delegates noted that the proposal to establish the basic portion of the annual payment at 15% of the ordinary budget of the Commission would require an amendment to Convention Article XI to be distributed to Contracting Governments for subsequent approval. Membership of STACFAD was reviewed. It was agreed that the Fed.Rep. Germany should replace Denmark on the STACFAD. The Plenary took note that the delegate of Canada would look into the possibility of the proposed September 1973 meeting of the Commission being held at a location in Canada.

The Plenary adopted the STACFAD Report.

5. The Report of STACRES (Proc. 1 with Addendum) was presented by the Chairman, Dr A.S. Bogdanov (USSR), and accepted.
6. The Report of STACTIC (Proc. 4) was presented by the Chairman, Captain J.C.E. Cardoso (Portugal). The UK delegate declared his support for the need for improvement of the Commission's International Joint Enforcement Scheme, but raised doubts as to the advisability of recommending hastily conceived proposals which, because of legal problems, may make them impossible to effect.

The Report with proposal (31) for amendments to the Scheme of Joint Enforcement (Proc. 4, Appendix IV) and the Resolution pertaining to it (Proc. 4, Appendix III, Annex 1) were adopted.

7. The Report of Joint Panels 2 and 3 (Proc. 14) was introduced by the Chairman, Mr E. Gillett (UK). The delegate of Iceland informed the Plenary that Iceland would abstain from voting on all quota allocations. The delegate of Spain said that he had abstained from asking for any amount of the unallocated 10% of cod in the Div. 2J-3KL stock because he expected that Spain would get the quantity it desired when the 40:40:10:10 formula was used. Because this was not done, he requested, if possible, an additional amount of 5,000 metric tons. Spain had no preference for any particular formula to be used in allocation but would like one as a reference point from which to start and would want it to apply to all Subareas in the same way. He said he would like to know in advance the amount that would be allocated to Spain under any proposed formula and that the allocations would be made in an unbiased manner. The UK delegate found the allocations acceptable though disappointing.

The Report with proposals (3) and (4) for catch quota regulation of cod and witch, respectively, in Div. 2J-3KL (Proc. 14, Appendices I and II) were adopted.

8. The Report of Panel 3 (Proc. 9) was introduced by the Chairman, Mr E. Gillett (UK). The US delegate voted no to the TAC and allocation for the cod stock in Div. 3NO because it was 15,000 metric tons beyond the TAC recommended by the scientists. Iceland abstained from voting on all TAC's and their allocations.

The Report with proposal (5) for cod quota regulation in Div. 3M (Proc. 9, Appendix II); proposal (6) for cod quota regulation in Div. 3NO (Proc. 9, Appendix III); proposal (7) for cod quota regulation in Subdiv. 3Ps (Proc. 9, Appendix IV); proposal (8) for American plaice quota regulation in Div. 3LNO (Proc. 9, Appendix V); proposal (9) for yellowtail quota regulation in Div. 3LNO (Proc. 9, Appendix VI); proposal (10) for redfish quota regulation in Div. 3M (Proc. 9, Appendix VII); proposal (11) for redfish quota regulation

in Div. 3LN (Proc. 9, Appendix VIII); proposal (12) for redfish quota regulation in Div. 3O (Proc. 9, Appendix IX); proposal (13) for redfish quota regulation in Div. 3P (Proc. 9, Appendix X); proposal (14) for witch quota regulation in Div. 3NO (Proc. 9, Appendix XI); and proposal (15) for witch quota regulation in Subdiv. 3Ps (Proc. 9, Appendix XII) were adopted.

9. The Report of Panel 4 (Proc. 10) was introduced by the Chairman, Captain J.C.E. Cardoso (Portugal).

The Report including proposal (16) for cod quota regulation in Subdiv. 4Vs and Div. 4W (Proc. 10, Appendix II); proposal (17) for haddock quota and closed areas regulation in Div. 4X (Proc. 10, Appendix III); proposal (18) for haddock quota regulation in Div. 4VW (Proc. 10, Appendix IV); proposal (19) for herring quota regulation in Div. 4V and the northern part of Div. 4W (Proc. 10, Appendix V); proposal (21) for redfish quota regulation in Div. 4VWX (Proc. 10, Appendix VI); proposal (22) for silver hake quota regulation in Div. 4VWX (Proc. 10, Appendix VII); and proposal (23) for yellowtail, witch and American plaice quota regulation in Div. 4VWX (Proc. 10, Appendix VIII) were adopted with Iceland abstaining from voting on the proposals.

10. The Report of Joint Panels 4 and 5 (Proc. 16) was introduced by the Chairman, Captain J.C.E. Cardoso (Portugal).

The Report including proposal (24) for pollock quota regulation in Div. 4VWX (Proc. 16, Appendix I); proposal (20) for herring quota regulation in Div. 4X and the southern part of Div. 4W and Subarea 5 (Proc. 16, Appendix II); proposal (26) for herring quota regulation in the Georges Bank stock (Proc. 16, Appendix III); proposal (27) for herring quota regulation in Div. 5Y (Proc. 16, Appendix IV); proposal (28) for mackerel quota regulation in the Southern New England stock (Proc. 16, Appendix V); and proposal (25) for haddock quota and closed area regulation in Subarea 5 (Proc. 16, Appendix VI) were adopted, with Iceland abstaining.

11. The Report of Panel 5 (Proc. 11) was introduced by the Chairman, Dr A.W.H. Needler (Canada). Following a proposal that the individual TAC's and allocations be accepted, the US delegate said that these were considered only as one part of the "package" which required that the overall total allowable catch reduction also be accepted. A Canadian proposal to add a footnote to the tables of proposed individual TAC's and their allocation, as follows: "Allocations agreed to tentatively, but were not formally accepted by the Panel Members because a number of delegations regarded them as being conditional on the solution of the major problem" was accepted. Regarding the proposal for a special meeting in September 1973, the US delegate said he could not agree to such a meeting unless there was an understanding that significant changes would be made in the regulatory regime in Subarea 5 and Statistical Area 6. Other alternative courses of action for the USA were possible re-writing of the terms of the Convention, or withdrawal from the Commission. The US delegate also pointed out that on 13 June 1973 a bill had been introduced in the US Congress which, if passed, would set 200-mile fishing limits off US coast. In further discussion the appendix Tables in the Panel Report were considered to represent the stage reached in the Panel and Plenary discussions, and to be the condition for selection of the overall total allowable catch proposal. A Canadian proposal that the Commission should recommend to Member Countries that they approve the Panel recommendation to hold a special meeting in September 1973, subject to the US agreement to participate, was accepted by a large majority of the delegates. The Canadian delegate volunteered to inquire about the possibility of holding such a meeting during the latter half of September in Canada.

The Plenary then approved the Report including proposal (29) for red and silver hake closed area regulation in Subarea 5 (Proc. 11, Appendix III).

12. Under Plenary Agenda Item 41, Election of Chairman and Vice-Chairman, Mr M. Fila (Poland) was unanimously elected Chairman of the Commission for the period 1973/74 and 1974/75 to replace Mr K. Løkkegaard (Denmark). Mr E. Gillett (UK) was unanimously elected Vice-Chairman for the same period.

13. Under Plenary Agenda Item 44, Other Business, the Chairman thanked all meeting participants for their contributions to the meeting's discussions and decisions. The Danish Government was thanked for playing host to the meetings and for the excellent meeting facilities at the World Health Organization's European Regional Office. He acknowledged the kind hospitality of the Danish Ministry of Fisheries, the Faroese Ministry of Fisheries and the Greenland Administration. Lastly, he welcomed the newly-elected Chairman and wished him every success while thanking the delegates and their advisers for their support during his two sessions in office. Mr V. Kamentsev (USSR) thanked the Chairman, on behalf of the delegates, for his efforts on behalf of the Commission.

14. There being no other business, the Chairman declared the Twenty-Third Annual Meeting adjourned at 1210 hrs.