

International Commission for



the Northwest Atlantic Fisheries

Serial No. 5329

ICNAF Sum. Doc. 79/VI/3

ANNUAL MEETING - JUNE 1979

Provisional Index and List of Titles for ICNAF Publications
and Meeting Documents, 1977

by

V. M. Hodder
Assistant Executive Secretary

Introduction

Special Publication No. 11, issued in June 1975, contained an index and list of titles for ICNAF publications (*Annual Proceedings*, *Research Bulletin*, *Redbook* and *Special Publications* series) for the period 1950-74. A corresponding index and list of titles of meeting documents issued during 1950-74 has been compiled in two parts: No. 2 for the years 1965-74 was distributed in October 1978, and No. 1 for the years 1950-64 should be ready for printing early in 1979.

After completing the indexing of publications and documents for the period 1950-74, work was commenced on the compilation of an index to be issued annually in the *Summary Document* series. Such indexes for the years 1975 and 1976 were issued in 1978 as *Sum. Doc. 78/VI/33* and *78/VI/18* respectively.

ICNAF Publications in 1977

The following is a list of publications in 1977. The abbreviation preceding the name of each publication represents the code used in indexing:

AR *Annual Report* Vol. 26 for 1975/76 (Issued August 1977)
AR *Annual Report* Vol. 27 for 1976/77 (Issued December 1977)
MP *Meeting Proceeding* for 1976/77 (Issued September 1977)
R *Redbook* 1977 (Issued August 1977)
SE *Selected Papers* No. 2 (Issued February 1977)
SB *Statistical Bulletin* Vol. 25 for 1975 (Issued January 1977)
SB *Statistical Bulletin* Vol. 26 for 1976 (Issued December 1977)
SY *Sampling Yearbook* Vol. 20 for 1975 (Issued December 1977)
CD *Commissioners' Documents* (77/VI/1 to 77/VI/14)
RD *Research Documents* (77/VI/1 to 77/XI/70)
SD *Summary Documents* (77/VI/1 to 77/XI/37)

In the preparation of the material for this index, emphasis was placed on the indexing of scientific papers, particularly those published in the *Research Bulletin*, *Selected Papers* and *Special Publications* series, and those issued as *Research Documents* and *Summary Documents*, where appropriate. In the case of *Commissioners' Documents*, except for those originating from the ICNAF Secretariat, most lack specific authorship in that they were presented by delegates of the various countries. Such documents are referenced only in the "Author Index" under the heading "ANON." followed by the name of the country whose delegation was responsible for presenting the document. The remaining publications are indexed by subject under one or two appropriate headings only, as a detailed indexing by subject (e.g. names of species, areas, etc.) would have involved a great deal of repetition.

In the case of meeting documents listed by author and title in the "List of Titles" section, those indicated by asterisks (*) preceding the authorship are indexed by subject and author with reference to the actual publication noted in parentheses and not as meeting documents.

Format Used in Subject and Author Index

The compilation of this index of 1977 publications generally follows the procedure used in compiling the indexes for 1975 and 1976 (*Sum. Doc. 78/VI/33*, *78/VI/15*). Each publication is identified by a 2-letter code followed by arabic numerals to designate the actual volume, issue number or year of issue.

* Executive Secretary, ICNAF, P. O. Box 638, Dartmouth, Nova Scotia, Canada B2Y 3Y9

The numerals following a colon (:) represent the first page number for the referenced paper, whereas the numerals following an oblique (/) for all meeting documents represent the designated document number. This is then followed in parentheses by a shortened version of the title or an expression which indicates to the reader the object of the paper. For brevity, many ungrammatical expressions are used, some of which require subject headings to be read into them in order for the expression to make sense. Examples of references with their descriptive expressions are as follows:

AR 26 : 7 (administrative report for 1975/76)
 MP(77): 5 (9th special meeting, Dec 1976)
 R (77): 5 (report of STACRES meeting, Dec 1976)
 SE 2 : 15 (assessment of pollock in Div. 4VWX)
 SY 20 : 1 (list of sampling data for 1975)
 SB 26 : 1 (fishery statistics for 1976)
 RD 77 / 8 (assessment of cod in SA 1)

Abbreviations Used in Indexing

The abbreviations commonly used for some countries (and provinces), international agencies, and standing committees are as follows:

CWP - Coordinating Working Party on Atlantic Fishery Statistics
 FAO - Food and Agriculture Organization of the United Nations
 FRG - Federal Republic of Germany
 GDR - German Democratic Republic
 ICCAT - International Commission for the Conservation of Atlantic Tunas
 ICES - International Council for the Exploration of the Sea
 ICNAF - International Commission for the Northwest Atlantic Fisheries
 ICSEAF - International Commission for the Southeast Atlantic Fisheries
 NB - New Brunswick (a province of Canada)
 NEAFC - Northeast Atlantic Fisheries Commission
 Nfld - Newfoundland (a province of Canada)
 NS - Nova Scotia (a province of Canada)
 OECD - Organization for Economic Cooperation and Development
 STACRES - Standing Committee on Research and Statistics (ICNAF)
 STACTIC - Standing Committee on International Control
 STACFAD - Standing Committee on Finance and Administration
 STACREM - Standing Committee on Regulatory Measures
 UK - United Kingdom
 USA - United States of America
 USSR - Union of Soviet Socialist Republics

Indexes Issued Previously

- a) Index and List of Titles, ICNAF Publications, 1950-1974. *ICNAF Spec. Publ. No. 11*, 125 p. (Issued June 1975.)
- b) Index and List of Titles, Meeting Documents, No. 2 for the years 1965-1974. (Issued October 1978.)
- c) Provisional Index and List of Titles for ICNAF Publications and Meeting Documents, 1975. *ICNAF Sum. Doc. 78/VI/33*.
- d) Provisional Index and List of Titles for ICNAF Publications and Meeting Documents, 1976. *ICNAF Sum. Doc. 78/VI/18*.

CONTENTS

	<u>Page</u>
Subject Index	3
Author Index	15
List of Titles	21

SUBJECT INDEX

3

A

Abundance; Abundance index

- SE 2 : 15 (pollock in Div. 4VWX and SA 5)
 33 (mackerel in SA 5 and 6)
 85 (*Illex* and *Loligo* in SA 5 and 6, 1963-74)
 RD 77 / 4 (squid from surveys in SA 5 and 6, 1976)
 5 (capelin on Grand Bank, 1976)
 16 (larval capelin in Div. 3L)
 17 (evaluation of cod stock in Div. 3NO)
 21 (herring in Div. 4V from surveys)
 32 (capelin spawning in Div. 3N, 1976)
 33 (capelin in SA 2 and Div. 3K, 1976)
 34 (silver hake in Div. 4VWX)
 39 (zooplankton off Nova Scotia, 1974)
 40 (assessment of red hake in Div. 5Z)
 43 (larval herring in USSR survey, 1975)
 53 (groundfish species in Div. 3M)
 61 (shrimp stock off W Greenland, 1977)
 69 (shrimp off W Greenland, 1975-77)

Administrative reports

- AR 26 : 7 (report for the fiscal year 1975/76)
 27 : 7 (report for the fiscal year 1976/77)

Age; Age composition; Age groups

- SE 2 : 11 (witch flounder fishery in Subdiv. 3Ps)
 15 (pollock in Div. 4VWX and SA 5 fishery)
 45 (roundnose grenadier in SA 0 to 3)
 55 (growth and life cycle of *Illex* and *Loligo*)
 85 (*Illex* and *Loligo* in SA 5 and 6, 1963-74)
 RD 77 / 5 (capelin in Grand Bank fishery, 1976)
 8 (assessment of cod in SA 1)
 9 (assessment of A. plaice in SA 2 and Div. 3K)
 11 (G. halibut fishery in SA 2 and Div. 3KL)
 12 (assessment of witch in Div. 3NO)
 15 (re growth of cod in Div. 3M)
 18 (redfish stocks in SA 2 and 3)
 19 (yellowtail stock in Div. 3LNO)
 20 (A. plaice stock in Div. 3LNO)
 23 (salmon caught in Div. 3P, 1976)
 26 (cod stock in Div. 2J, 3K and 3L)
 30 (roundnose grenadier in SA 0 to 2)
 31 (cod catches off W Greenland)
 32 (capelin stock in Div. 3N, 1976)
 33 (capelin stock in SA 2 and Div. 3K, 1976)
 40 (red hake stock in Div. 5Z)
 41 (mackerel fishery in SA 5 and 6)
 44 (silver hake stock in Div. 4VWX)
 57 (hooded seals in NW Atlantic, 1977)
 58 (harp seals in NW Atlantic, 1977)
 66 (harp seals in SA 1, 1972-75)
 68 (re assessment of the harp seal stocks)

Age determination; Age validation

- SE 2 : 154 (cod ageing workshop, Oct 1975)
 RD 77 / 13 (analysis of cod ages from Oct 1975 workshop)
 SD 77 / 12 (cod ageing workshop, Feb 1977)
 13 (silver hake ageing workshop, Mar 1977)

American plaice (see Plaice, American)

Anmodytes spp. (see Sand lance)

Annual reports

- AR 26 : 1 (ICNAF annual report for the year 1975/76)
 27 : 1 (ICNAF annual report for the year 1976/77)

Anomalies (hydrographic)

- RD 77 / 35 (temperature conditions in SA 1 to 3, 1976)
 36 (circulation and salinity in SA 2 and 3, 1976)
 54 (oceanography re cod recruitment in Div. 3M)
 55 (hydrographic conditions in Div. 2J, 1976)

Assessments

- SE 2 : 11 (witch flounder fishery in Subdiv. 3Ps)
 15 (pollock fishery in Div. 4VWX and SA 5)
 45 (roundnose grenadier stocks in SA 0 to 3)
 71 (*Illex* and *Loligo* fishery in SA 5 and 6)
 RD 77 / 4 (squid stocks in SA 5 and 6)
 7 (redfish stock on Flemish Cap)
 8 (cod stocks off W Greenland)
 9 (A. plaice stock in SA 2 and Div. 3K)
 11 (G. halibut stock in SA 2 and Div. 3KL)
 12 (witch flounder stock in Div. 3NO)
 17 (cod stock in Div. 3NO)
 18 (redfish stocks in SA 2 and 3)
 19 (yellowtail stock in Div. 3LNO)
 20 (A. plaice stock in Div. 3LNO)
 26 (cod stock in Div. 2J+3KL)
 28 (cod fishery on Flemish Cap)
 34 (silver hake stock in Div. 4VWX)
 40 (red hake stock on Georges Bank)
 41 (mackerel stock in SA 5 and 6)
 44 (silver hake fishery in Div. 4VWX)
 47 (two programs for pocket calculators)
 64 (critique of two harp seal population models)
 68 (harp seal populations in NW Atlantic)

Assessments Subcommittee

- R (77): 49 (report to STACRES, Jun 1977)

Atlantic, North

- SD 77 / 21 (ICES/ICNAF/IOC coordinating group on oceanographic research)
 36 (three-alpha codes for fishing logbooks)
 37 (standard elements for fishing logbooks)

Atlantic, Northeast

- SD 77 / 7 (press notice, NEAFC meeting, Apr 1977)
 20 (1976 ICES resolutions relevant to ICNAF)
 22 (report of ICES statistical committee, Oct 1966)
 34 (press notice, NEAFC meeting, Jul 1977)
 35 (press notice, NEAFC meeting, Nov 1976)

Atlantic, Northwest

- SE 2 : 154 (report of cod ageing workshop, Oct 1975)
 RD 77 / 13 (analysis of cod ageing workshop data)
 48 (time series of bottle stations)
 52 (MEDS progress report for 1976/77)
 64 (critical analysis of 2 harp seal models)
 SD 77 / 4 (list of fishing vessels for 1975)
 6 (Norwegian research report, 1976)
 8 (historical catches for TAC species, 1966-75)
 9 (Cuban research report, 1976)
 10 (French research report, 1976)

- 11 (Polish research report, 1976)
- 12 (report of cod ageing workshop, Feb 1977)
- 13 (report of silver hake ageing workshop, Mar 1977)
- 14 (GDR research report, 1976)
- 15 (USSR research report, 1976)
- 18 (statistics on discards, 1975)
- 19 (tagging activities reported for 1976)
- 23 (catches and TACs for regulated stocks, 1973-78)
- 24 (United Kingdom research report, 1976)
- 25 (Canadian research report, 1976)
- 26 (FRG research report, 1976)
- 27 (Danish research report, 1976)
- 28 (trawl materials and mesh size sampling, 1975)
- 30 (Portuguese research report, 1976)
- 31 (efficiency of sampling major stocks in 1975)
- 32 (Japanese research report, 1976)
- 33 (USA research report, 1976)

Atlantic salmon (see Salmon, Atlantic)

Availability (see Abundance; Catches)

B

Baffin Island (Statistical Area 0)

- SE 2 : 45 (assessment of roundnose grenadier in SA 0 to 3)
- RD 77 / 30 (roundnose grenadier fishery in SA 0 to 2)

Biological Surveys Subcommittee

R (77): 71 (report to STACRES, Jun 1977)

Biomass (see Stock size and also Abundance)

By-catch

RD 77 / 61 (in shrimp fishery in SA 1)

C

Calanus spp. (copepod)

- RD 77 / 37 (distribution in Div. 3M, spring 1976)
- 39 (distribution off Nova Scotia, 1974)
- 43 (distribution in SA 5, 1975)

Canada

SD 77 / 25 (research report for 1976)

Capelin (*Mallotus villosus*)

- RD 77 / 5 (studies on the Grand Bank stock, 1976)
- 16 (larval distribution in Div. 3L)
- 23 (food of salmon in Div. 3P)
- 32 (biomass estimate for Div. 3N, 1976)
- 33 (biomass in SA 2 and Div. 3K, 1976)

Catches; Catch/effort

- SE 2 : 11 (assessment of witch in Subdiv. 3Ps)
- 15 (assessment of mackerel in Div. 4VWX and SA 5)
- 45 (assessment of grenadier in SA 0 to 3)
- 71 (assessment of *Illex* and *Loligo* in SA 5 and 6)
- 85 (*Illex* and *Loligo* fishery in SA 5 and 6)

- 111 (variation in catchability coefficients)
- 137 (effect of random fluctuations on fisheries)
- SB 25 : 1 (1975 statistics of NW Atlantic fisheries)
- 26 : 1 (1976 statistics of NW Atlantic fisheries)
- RD 77 / 5 (Norwegian capelin fishery in Div. 3N)
- 7 (redfish fishery in Div. 3M)
- 8 (cod fishery off W Greenland)
- 9 (A. plaice fishery in SA 2 and Div. 3K)
- 11 (G. halibut fishery in SA 2 and Div. 3KL)
- 12 (witch fishery in Div. 3NO)
- 17 (cod fishery in Div. 3NO)
- 18 (redfish fishery on stocks in SA 2 and 3)
- 19 (yellowtail fishery in Div. 3LNO)
- 20 (A. plaice fishery in Div. 3LNO)
- 26 (cod fishery in Div. 2J and 3KL)
- 28 (status of cod stock in Div. 3M)
- 30 (roundnose grenadier fishery in SA 0 to 3)
- 40 (red hake fishery on Georges Bank)
- 41 (assessment of mackerel fishery in NW Atlantic)
- 44 (silver hake fishery in Div. 4VWX)
- 53 (fluctuations in groundfish in Div. 3M)
- 56 (estimating the harp seal populations)
- 58 (studies on NW Atlantic harp seal stocks)
- 59 (harp seals at the Front, 1977)
- 61 (shrimp fishery in SA 1, 1977)
- 66 (composition of harp seals in SA 1, 1972-75)
- 68 (assessment of harp seal stocks)
- 69 (re effort for shrimp in SA 1, 1975-77)
- SD 77 / 8 (historical catches for major stocks, 1966-75)
- 23 (catches and TACs for regulated stocks, 1973-78)
- 31 (re efficiency of sampling in 1975)

Centropages spp. (copepod)

RD 77 / 43 (distribution in SA 5, 1975)

Cephalopods (see Squids)

Chaetognaths (arrow worms)

RD 77 / 39 (in zooplankton survey off Nova Scotia, 1974)

Circulation, water (see Currents)

Cladocerans

RD 77 / 39 (in zooplankton survey off Nova Scotia, 1974)

Clausocalanus spp. (copepod)

RD 77 / 39 (in zooplankton survey off Nova Scotia, 1974)

Clupea harengus (see Herring, Atlantic)

Cod, Atlantic (*Gadus morhua*)

- SE 2 : 154 (results of cod ageing workshop, Oct 1975)
- RD 77 / 8 (assessment of stock in SA 1)
- 13 (analysis of data from Oct 1975 workshop)
- 15 (changes in growth of cod in Div. 3M)
- 17 (evaluation of stock in Div. 3NO)
- 26 (status of stock in Div. 2J, 3K and 3L)
- 28 (status of fishery in Div. 3M)
- 31 (research on SA 1 stocks)
- 45 (tagging results for Div. 2J+3KL stock, 1962-66)
- 49 (migrations of stock in Div. 3P and 4RS)
- 53 (fluctuations in abundance in Div. 3M)
- 54 (recruitment re hydrography in Div. 3M)
- 61 (by-catch in SA 1 shrimp fishery, 1977)
- SD 77 / 12 (report of ageing workshop, Feb 1977)

Cod, Greenland (*Gadus ogac*)

RD 77 / 61 (by-catch in SA 1 shrimp fishery, 1977)

Cohort analysis (see Virtual population analysis)Commission Meetings (reports)

AR 26 : 19 (report of 7th Special Meeting, Sep 1975)
 49 (report of 8th Special Meeting, Jan 1976)
 77 (report of 26th Annual Meeting, Jun 1976)
 27 : 17 (report of 9th Special Meeting, Dec 1976)
 51 (report of 27th Annual Meeting, Jun 1977)

Computer programs

RD 77 / 47 (stock assessment programs for pocket calculators)
 64 (critical analysis of 2 harp seal models)

Conservation (see Management)Conservation proposals

AR 26 : 34 (7 proposals of 7th Special Meeting, Sep 1975)
 61 (9 proposals of 8th Special Meeting, Jan 1976)
 105 (8 proposals of 26th Annual Meeting, Jun 1976)
 27 : 33 (10 proposals of 9th Special Meeting, Dec 1976)
 67 (1 proposal of 27th Annual Meeting, Jun 1977)

Conversion factors

RD 77 / 1 (measurements of haddock in various conditions)
 46 (anal to total length for A. plaice in SA 3)

Coordinated surveys (see Biological Surveys)Copepods (see also under individual genus names)

RD 77 / 39 (distribution off Nova Scotia, 1974)
 43 (distribution in SA 5, 1975)

Crustaceans (see under specific names)Cuba

SD 75 / 9 (research report for 1976)

Currents

SE 2 : 145 (Gulf Stream eddies in SA 5 and 6)
 RD 77 / 36 (circulation in SA 2 and 3, 1975-76)
 54 (re cod recruitment in Div. 3M)

DDavis Strait

RD 77 / 30 (assessment of roundnose grenadier fishery)
 57 (studies on hooded seals, 1977)

Decapods

RD 77 / 39 (in zooplankton survey off Nova Scotia, 1974)

Denmark

SD 77 / 27 (research report for 1976)

Discards (discarding of fish at sea)

SD 77 / 18 (statistics on discards, 1974)

Distribution (see also Abundance; Catches)

SE 2 : 15 (pollock in Div. 4VWX and SA 5)
 33 (mackerel in SA 5 and 6 surveys)
 85 (squids in SA 5 and 6 surveys)
 RD 77 / 16 (larval capelin in Div. 3L)
 37 (plankton in Div. 3M, spring 1976)
 39 (zooplankton off Nova Scotia, 1974)
 43 (larval herring in USSR survey, 1975)
 59 (seals at the Front, spring 1977)

Dynamic topography

RD 77 / 39 (re zooplankton distribution off Nova Scotia, 1974)
 54 (re recruitment of cod in Div. 3M)

EEast Greenland (see Greenland area)Echo-sounding (see Hydroacoustics)Effort (see Fishing effort)

Environment (because of the general nature of this heading, references to many papers that could be listed here are indexed under more specific headings: Hydrography; Salinity; Temperature; Plankton; etc.)

R (77): 83 (working group report on Flemish Cap project)
 RD 77 / 52 (MEDS progress report for 1976/77)

Environmental Subcommittee

R (77): 77 (report to STACRES, Jun 1977)

Euphausiids

RD 77 / 39 (in zooplankton off Nova Scotia, 1974)

Exploitation rate (see also Mortality)

SE 2 : 71 (squid fishery in SA 5 and 6)
 RD 77 / 68 (harp seal stocks in ICNAF area)

FFederal Republic of Germany

SD 77 / 26 (research report for 1976)

Feeding; Food

RD 77 / 23 (studies on salmon taken in Div. 3P, 1976)

Finfish

SB 25 : 23 (nominal catch and effort statistics, 1975)
 26 : 23 (nominal catch and effort statistics, 1976)

Finrays

RD 77 / 21 (meristics of herring in Div. 4V)

Fisheries (see Catches)Fishery regulations

CD 77 / 1 (1977 ICNAF fishery regulations, to Feb. 1977)

Fishing effort; Fishing intensity

- SE 2 : 85 (squid fishery in SA 5 and 6, 1963-74)
 111 (variation in catchability coefficients)
 SB 25 : 23 (nominal catch and effort statistics, 1975)
 26 : 23 (nominal catch and effort statistics, 1976)
 RD 77 / 7 (assessment of redfish in Div. 3M)
 8 (assessment of cod in SA 1)
 17 (evaluation of cod in Div. 3NO)
 18 (status of redfish stocks in SA 2 and 3)
 20 (assessment of A. plaice in Div. 3LNO)
 26 (status of cod in Div. 2J, 3K and 3L)
 28 (status of cod stock in Div. 3M)
 61 (shrimp fishery in SA 1, 1977)
 69 (shrimp fishery in SA 1, 1975-77)

Fishing power

SE 2 : 111 (re variation in catchability coefficient)

Fishing vessels

SD 77 / 4 (ICNAF list of fishing vessels, 1975)

Flatfishes (see names of the various species)Flemish Cap (Subarea 3)

- R (77): 83 (working group report on environmental project)
 RD 77 / 7 (assessment of redfish fishery)
 15 (changes in growth of cod)
 18 (updated assessment of redfish stock)
 28 (status of the cod fishery)
 29 (stratified-random scheme for trawl surveys)
 35 (temperature conditions, 1976)
 36 (circulation and salinity, 1975-76)
 37 (plankton distribution, spring 1976)
 51 (temperatures from satellite imagery)
 53 (fluctuations in groundfish stocks)
 54 (oceanography and cod recruitment)

Flounder, witch (*Glyptocephalus cynoglossus*)

- SE 2 : 11 (status of stock in Subdiv. 3Ps)
 RD 77 / 12 (updated assessment for stock in Div. 3NO)
 46 (anal to total length conversions for flatfish)

Flounder, yellowtail (*Limanda ferruginea*)

- RD 77 / 19 (assessment of fishery in Div. 3LNO)
 46 (anal to total length conversions for flatfish)

Flounders (see under names of species)Fluctuations

- SE 2 : 111 (variation in catchability coefficients)
 137 (hypothetical fishery re random fluctuations)
 RD 77 / 15 (changes in growth of cod in Div. 3M)
 53 (groundfish abundance in Div. 3M)
 54 (cod recruitment re oceanography in Div. 3M)

Food (see Feeding)France

SD 77 / 10 (research report for 1976)

Front area (pertains to seal hunting off Labrador and Northeast Newfoundland)

- RD 77 / 56 (estimating the harp seal populations)
 57 (Canadian studies on hooded seals, 1977)
 58 (Canadian studies on harp seals, 1977)
 59 (Norwegian studies on seals, 1977)
 62 (1977 census of harp seals by aerial photography)
 63 (seal counting by aerial photography)
 68 (assessment of harp seal stocks)

GGadus morhua (see Cod, Atlantic)Gadus ogac (see Cod, Greenland)Georges Bank (Subarea 5)

- SE 2 : 15 (assessment of pollock fishery)
 33 (distribution of mackerel from surveys)
 55 (growth and life cycle of *Illex* and *Loligo*)
 71 (assessment of squid stocks)
 85 (squid fishery in SA 5 and 6, 1963-74)
 111 (variation in catchability coefficients)
 145 (Gulf Stream eddies on continental shelf)
 RD 77 / 4 (biology of squids in SA 5 and 6)
 40 (assessment of red hake stocks)
 41 (assessment of mackerel stock)
 43 (USSR larval herring survey, 1975)

German Democratic Republic (GDR)

SD 77 / 14 (research report for 1976)

Gillrakers

RD 77 / 21 (meristic studies on herring in Div. 4V)

Glyptocephalus cynoglossus (see Flounder, witch)Grand Bank (Subarea 3)

- RD 77 / 1 (variation in haddock length measurements)
 5 (Norwegian studies on capelin, 1976)
 11 (status of G. halibut stock in Div. 2J+3KL)
 12 (assessment of witch in Div. 3NO)
 16 (larval capelin distribution in Div. 3L)
 17 (evaluation of cod stock in Div. 3NO)
 18 (assessment of redfish stocks in SA 2 and 3)
 19 (assessment of yellowtail in Div. 3LNO)
 20 (assessment of A. plaice in Div. 3LNO)
 26 (status of cod stock in Div. 2J+3KL)
 32 (biomass estimate for capelin in Div. 3N, 1976)
 35 (temperature conditions, 1976)
 36 (circulation and salinity, 1975-76)
 45 (results of cod tagging in Div. 2J+3KL, 1962-66)
 46 (anal to total length conversions for flatfish)
 54 (oceanography and cod recruitment)

Greenland area (Subarea 1 and East Greenland)

SE 2 : 45 (assessment of grenadier stock in SA 0 to 3)

- RD 77 / 3 (yield per recruit of beaked redfish)
- 8 (assessment of cod stock in SA 1)
- 30 (roundnose grenadier fishery in SA 0 to 2)
- 31 (USSR cod investigations in SA 1)
- 35 (temperature conditions, 1976)
- 57 (studies on hooded seals in Davis Strait)
- 61 (Norwegian studies on shrimp)
- 66 (catch composition of harp seals, 1972-75)
- 69 (catch/effort in Faroes shrimp fishery)

Greenland cod (see Cod, Greenland)

Greenland halibut (see Halibut, Greenland)

Grenadier, roundnose (*Macrourus rupestris*)

- SE 2 : 45 (assessment of stocks in SA 0 to 3)
- RD 77 / 30 (status of fishery in SA 0 to 2)

Greysole (see Flounder, witch)

Groundfish (see also under names of species)

- RD 77 / 55 (fluctuations in stocks on Flemish Cap)

Growth

- SE 2 : 11 (witch flounder in Subdiv. 3Ps)
- 15 (pollock in Div. 4VWX and SA 5)
- 45 (roundnose grenadier in NW Atlantic)
- 55 (life cycle of *Illex* and *Loligo* in NW Atlantic)
- RD 77 / 8 (cod in W Greenland area)
- 11 (G. halibut in SA 2 and Div. 3KL)
- 12 (witch flounder in Div. 3NO)
- 15 (changes for cod in Div. 3M)

Gulf of Maine (Subarea 5)

- SE 2 : 15 (assessment of pollock in Div. 4VWX and SA 5)
- 33 (distribution of mackerel from surveys)
- 71 (assessment of squid stocks in SA 5 and 6)
- 85 (squid fisheries in SA 5 and 6, 1963-74)
- RD 77 / 50 (herring tagging along the Maine coast)

Gulf of St. Lawrence (Subarea 4)

- RD 77 / 49 (migrations of cod in Div. 3P and 4RS)
- 56 (estimating the harp seal population)
- 58 (Canadian studies on harp seals, 1977)
- 62 (1977 census of harp seals from aerial survey)
- 63 (seal counting by aerial photography)
- 68 (assessment of harp seal stocks)

Gulf Stream

- SE 2 : 145 (Gulf Stream eddies along continental shelf)

H

Haddock (*Melanogrammus aeglefinus*)

- RD 77 / 1 (variation in haddock length measurements)

Hake, red (*Urophycis chuss*)

- RD 77 / 40 (assessment of stock on Georges Bank)

Hake, silver (*Merluccius bilinearis*)

- R (77): 19 (working group report for Div. 4VWX stock, Dec 1976)
- RD 77 / 34 (assessment of stock in Div. 4VWX)
- 44 (status of stock on Scotian Shelf)
- SD 77 / 13 (report of ageing workshop, Mar 1977)

Halibut, Greenland (*Reinhardtius hippoglossoides*)

- RD 77 / 11 (status of stock in Div. 2J, 3K and 3L)
- 46 (anal to total length conversions for flatfish)
- 61 (by-catch in shrimp fishery in SA 1)

Harp seal (see Seal, harp)

Herring, Atlantic (*Clupea harengus*)

- RD 77 / 21 (biological studies in Div. 4V)
- 23 (food of salmon taken in Div. 3P)
- 43 (USSR larval survey in SA 5, 1976)
- 50 (tagging studies in Gulf of Maine)

Hippoglossoides platessoides (see Plaice, American)

Hydroacoustics

- RD 77 / 32 (survey of capelin stock in Div. 3N, 1976)
- 33 (survey of capelin stock in Div. 2J+3K, 1976)

Hydrography

- SE 2 : 145 (Gulf Stream eddies along continental shelf)
- RD 77 / 35 (temperature conditions in SA 1 to 3, 1976)
- 36 (circulation and salinity in SA 2 and 3, 1976)
- 48 (time series of stations in ICNAF area)
- 51 (temperature by remote sensing in Div. 3M)
- 52 (MEDS progress report for 1976/77)
- 54 (effect on cod recruitment in Div. 3M)
- 55 (observations in Div. 2J, Nov 1976)

I

ICES (International Council for the Exploration of the Sea)

- SD 77 / 20 (1976 ICES resolutions relevant to ICNAF)
- 21 (ICES/ICNAF/IOC meeting on oceanography)
- 22 (report of statistical committee, Oct 1976)

Invertebrates (see under names of individual species)

- SB 25 : 23 (nominal catches in NW Atlantic, 1975)
- 26 : 23 (nominal catches in NW Atlantic, 1976)

IOC (Intergovernmental Oceanographic Commission)

- SD 77 / 21 (ICES/ICNAF/IOC coordinating group on research in N Atlantic, Sep 1976)

J

Japan

- SD 77 / 32 (research report for 1976)

LLabrador area (Subarea 2) (see under Front for seal references)

- SE 2 : 45 (assessment of roundnose grenadier fishery)
 RD 77 / 9 (assessment of A. plaice in Div. 2+3K)
 11 (status of G. halibut fishery in Div. 2+3KL)
 18 (assessment of redfish in Div. 2+3K)
 26 (status of cod stock in Div. 2J+3KL)
 30 (status of roundnose grenadier fishery)
 33 (biomass estimate for capelin in Div. 2+3K)
 35 (temperature conditions in 1976)
 36 (circulation and salinity, 1975-76)
 45 (results of cod tagging in Div. 2J+3KL, 1962-66)
 55 (hydrographic observations, Nov 1976)

Lance (see Sand lance)Landings (see Catches)Larvae (fish)

- RD 77 / 16 (capelin distribution in Div. 3L)
 39 (larvae in plankton survey off Nova Scotia, 1974)
 43 (herring in USSR survey in SA 5, 1975)

Length; Length composition

- SE 2 : 11 (witch flounder fishery in Subdiv. 3Ps)
 15 (re weight for pollock in Div. 4VWX and SA 5)
 45 (roundnose grenadier fishery in SA 0 to 3)
 55 (growth of *Illex* and *Loligo* in ICNAF area)
 85 (re weight for *Illex* and *Loligo* in SA 5 and 6)
 RD 77 / 3 (redfish catches off E Greenland)
 4 (*Illex* and *Loligo* in SA 5 and 6)
 5 (capelin in Grand Bank fishery, 1976)
 9 (A. plaice catches in SA 2 and Div. 3K)
 11 (G. halibut catches in SA 2 and Div. 3KL)
 12 (witch flounder catches in Div. 3NO)
 15 (re growth changes of cod in Div. 3M)
 16 (larval capelin in Div. 3L)
 18 (redfish fisheries in SA 2 and 3)
 21 (re meristic studies on herring in Div. 4V)
 23 (salmon taken in Div. 3P, 1976)
 30 (roundnose grenadier in SA 0 to 3)
 41 (mackerel catches in SA 5 and 6)
 43 (larval herring in USSR survey, 1975)
 44 (selection curves for silver hake in Div. 4VWX)
 46 (anal to total length conversion for flatfishes)
 61 (shrimp catches in SA 1, 1977)

Limanda ferruginea (see Flounder, yellowtail)Logbooks

- SD 77 / 36 (3-alpha codes for species identification)
 37 (standard elements for fishing logbooks)

Loligo pealei (see Squid, short-finned)**M**Mackerel (*Scomber scombrus*)

- SE 2 : 33 (distribution in SA 5 and 6)
 R (77): 25 (report of working group, Dec 1976)
 RD 77 / 41 (assessment of mackerel in SA 5 and 6)

Macrourus rupestris (see Grenadier, roundnose)Maine (see Gulf of Maine)Mallothus villosus (see Capelin)Management (only the references to this item in scientific papers are listed below; the numerous resolutions and proposals relevant to the Commission's conservation program are given in Meeting Proceedings and Annual Reports)

- CD 77 / 1 (1977 ICNAF Fishery Regulations, as on 9 Feb 1977)
 SD 77 / 23 (catches and TACs for regulated stocks, 1973-78)

Mathematical analyses (see also Virtual population analyses and Production model analyses)

- SE 2 : 71 (simulation model of squid fishery in SA 5 and 6)
 111 (variation in catchability coefficients)
 137 (effect of random fluctuations on a fishery)
 RD 77 / 13 (analysis of data from cod ageing workshop)
 47 (two assessment programs for pocket calculators)
 64 (critical analysis of two seal population models)
 69 (catch/effort analysis of shrimp fishery in SA 1)

Maturation; Maturity (see also Reproduction; Spawning)

- SE 2 : 55 (*Illex* and *Loligo* in SA 5 and 6)
 RD 77 / 5 (studies on capelin in Div. 3LNO, 1976)
 21 (studies on herring in Div. 4V)
 32 (studies on capelin in Div. 3N, 1976)

Maximum sustainable yield (see Yield)MEDS (Marine Environmental Data Service)

- RD 77 / 48 (time series of hydrographic stations)
 52 (progress report to ICNAF for 1976/77)

Meeting Proceedings (see under STACRES for reports of Standing Committee on Research and Statistics)

- MP 77 : 5 (Ninth Special Meeting, Dec 1976)
 115 (27th Annual Meeting, Jun 1977)

Melanogrammus aeglefinus (see Haddock)Meristics

- RD 77 / 21 (studies on herring in Div. 4V)

Merluccius bilinearis (see Hake, silver)Mesh size sampling

- SD 77 / 28 (and trawl materials, 1976)

Methodology; Methods

- SE 2 : 7 (estimating fishing mortality at different catch levels)
 71 (simulation model of squid fishery)
 111 (variation in catchability coefficients)
 RD 77 / 62 (seal counting by aerial photography)
 63 (on-ice counting to verify aerial census)

Metridia spp. (copepod)

- RD 77 / 39 (in zooplankton survey off Nova Scotia, 1974)

Migration

- SE 2 : 15 (pollock from tagging in Div. 4VMX and SA 5)
 RD 77 / 45 (results of cod tagging in Div. 2J+3KL)
 49 (of cod from tagging in Div. 3P and 4RS)
 50 (herring tagging in Gulf of Maine)
 53 (USSR cod tagging in Div. 3M)
 57 (tagging of hooded seals by Canada, 1977)
 58 (tagging of harp seals by Canada, 1977)

Molluscs (see under specific names)

Mortality

- SE 2 : 7 (estimating fishing mortality at different catch levels)
 11 (witch flounder fishery in Subdiv. 3Ps)
 15 (pollock fishery in Div. 4VMX and SA 5)
 45 (roundnose grenadier fishery in SA 0 to 3)
 71 (squid fisheries in SA 5 and 6)
 RD 77 / 3 (re yield of redfish off E Greenland)
 8 (assessment of cod in SA 1)
 9 (assessment of A. plaice in Div. 2+3K)
 11 (status of G. halibut in Div. 2+3KL)
 12 (assessment of witch in Div. 3NO)
 17 (assessment of cod in Div. 3NO)
 19 (assessment of yellowtail in Div. 3LNO)
 20 (assessment of A. plaice in Div. 3LNO)
 26 (status of cod in Div. 2J+3KL)
 34 (assessment of silver hake in Div. 4VMX)
 40 (assessment of red hake on Georges Bank)
 41 (assessment of mackerel in SA 5 and 6)
 44 (assessment of silver hake in Div. 4VMX)
 50 (re herring tagging in Div. 5Y)
 68 (assessment of harp seals in NW Atlantic)

NNEAFC (Northeast Atlantic Fisheries Commission)

- SD 77 / 7 (press notice, Special Meeting, Mar-Apr 1977)
 34 (press notice, Annual Meeting, Jul 1977)
 35 (press notice, Special Meeting, Nov 1976)

New England area (Subarea 5 and Statistical Area 6) (see also Georges Bank and Gulf of Maine)

- SE 2 : 33 (distribution of mackerel in SA 5 and 6)
 55 (growth and life cycle of *Illex* and *Loligo*)
 71 (simulation of squid fishery in SA 5 and 6)
 85 (squid fishery in SA 5 and 6, 1963-74)
 111 (variation in catchability coefficients)
 145 (Gulf Stream eddies on continental shelf)
 RD 77 / 4 (biology of squids in SA 5 and 6)
 41 (assessment of mackerel in SA 5 and 6)
 43 (USSR larval herring survey, 1975)

Newfoundland area (subareas 3 and 4) (see also Flemish Cap, Grand Bank, Northeast Nfld Shelf, St. Pierre Bank, and Gulf of St. Lawrence)

- RD 77 / 46 (anal to total length conversions for flatfish)
 49 (migrations of cod in Div. 3P and 4RS)

Newfoundland Shelf (see Northeast Nfld Shelf)

North Atlantic (see Atlantic, North)

Northeast Atlantic (see Atlantic, Northeast)

Northeast Nfld Shelf (Subarea 3)

- SE 2 : 45 (assessment of roundnose grenadier fishery)
 RD 77 / 9 (assessment of A. plaice in Div. 2+3K)
 11 (status of G. halibut in Div. 2+3KL)
 18 (assessment of redfish in Div. 2+3K)
 26 (status of cod stock in Div. 2J+3KL)
 33 (size of capelin stock in Div. 2+3K)
 35 (temperature conditions, 1976)
 36 (circulation and salinity, 1975-76)
 45 (results of cod tagging in 1962-66)

Northwest Atlantic (see Atlantic, Northwest)

Norway

- SD 77 / 6 (research report for 1976)

Nova Scotia banks (see Scotian Shelf)

O

Oceanography (see also under such headings as Hydrography, Plankton, Oxygen, Salinity, Temperature, etc.)

- SE 2 : 145 (Gulf Stream eddies along continental shelf)
 RD 77 / 48 (time series of bottle stations in ICNAF area)
 52 (MEDS progress report for 1976/77)
 54 (oceanography and cod recruitment in Div. 3M)
 SD 77 / 21 (ICES/ICNAF/IOC coordinating group on research in North Atlantic)

Oithona spp.

- RD 77 / 39 (in zooplankton survey off Nova Scotia, 1974)
 43 (in USSR larval herring survey in SA 5, 1975)

Otoliths

- SE 2 : 154 (cod ageing workshop, Oct 1975)
 RD 77 / 13 (analysis of cod ages from Oct 1975 workshop)
 SD 77 / 12 (cod ageing workshop, Feb 1977)
 13 (silver hake ageing workshop, Mar 1977)

Oxygen

- RD 77 / 54 (oceanography and cod recruitment in Div. 3M)

P

Pagophilus groenlandicus (see Seal, harp)

Pandalus spp. (see Shrimp)

Panel meetings

- MP 77 : 35 (report of Panel A on seals, Dec 1976)
 40 (report of Panel A on seals, Oct 1976)
 47 (report of Panel 1, Dec 1976)
 53 (report of Panel 4, Dec 1976)
 59 (report of Joint Panels 3, 4 and 5, Dec 1976)
 63 (report of Panel 5, Dec 1976)
 95 (report of Joint Panels 1 to 5, Dec 1976)
 99 (report of Joint Panels 2 and 3, Dec 1976)
 137 (report of Joint Panels 2, 3 and 4, Jun 1977)
 143 (report of Panel 3, Jun 1977)

Paracalanus spp.

RD 77 / 43 (distribution in SA 5, 1975)

Photography

SE 2 : 154 (ageing cod otoliths from photographs)
 RD 77 / 62 (aerial census of harp seal stocks)
 63 (seal counting by aerial photography)
 SD 77 / 12 (cod otoliths for age determination)
 13 (silver hake otoliths for age determination)

Phytoplankton

RD 77 / 37 (distribution in Div. 3M, spring 1976)

Plaice, American (*Hippoglossoides platessoides*)

RD 77 / 9 (assessment of stock in SA 2 and Div. 3K)
 20 (assessment of stock in Div. 3LNO)
 46 (anal to total length conversion for flatfish)
 53 (fluctuations in abundance in Div. 3M)

Plankton (see under Phytoplankton and Zooplankton)

Plenary meetings

MP 77 : 9 (report of first plenary session, Dec 1976)
 101 (report of final plenary session, Dec 1976)
 119 (report of first plenary session, Jun 1977)
 159 (report of final plenary session, Jun 1977)

Pleuromamma spp.

RD 77 / 39 (in zooplankton off Nova Scotia, 1974)

Poland

SD 77 / 11 (research report for 1976)

Pollachius virens (see Pollock)Pollock (*Pollachius virens*)

SE 2 : 15 (assessment of stock in Div. 4VMX and SA 5)

Population (see Stock)Portugal

SD 77 / 30 (research report for 1976)

Prawns (see Shrimp)Predation; Predators

SE 2 : 85 (predators of squid in SA 5 and 6)

Proceedings (see Meeting proceedings)Production model analysis

SE 2 : 137 (effect of random fluctuations on a fishery)
 RD 77 / 7 (assessment of redfish in Div. 3M)
 18 (assessment of redfish in SA 2 and 3)
 28 (status of cod fishery in Div. 3M)

Pseudocalanus spp. (copepod)

RD 77 / 39 (in zooplankton off Nova Scotia, 1974)

RRecaptures (see Tagging)Recruitment

SE 2 : 15 (assessment of pollock in Div. 4VMX and SA 5)
 85 (*Illex* and *Loligo* in SA 5 and 6, 1963-74)
 RD 77 / 8 (assessment of cod in SA 1)
 19 (yellowtail flounder in Div. 3LNO)
 26 (cod stock in Div. 2J+3KL)
 53 (fluctuations for groundfish in Div. 3M)
 54 (cod re oceanography in Div. 3M)
 68 (assessment of harp seal stocks)

Red hake (see Hake, red)Redfish, Atlantic (*Sebastes marinus*; *S. mentella*)

RD 77 / 3 (USSR studies on stock at E Greenland)
 7 (assessment of stock in Div. 3M)
 18 (assessment of 4 stocks in SA 2 and 3)
 53 (fluctuations in abundance in Div. 3M)
 61 (by-catch in shrimp fishery in SA 1)

Regulation (see Management)Reinhardtius hippoglossoides (see Halibut, Greenland)Remote sensing

SE 2 : 145 (Gulf Stream eddies along continental shelf)
 RD 77 / 51 (use of satellite imagery for oceanographic studies on Flemish Cap)

Reports of Meetings (see Annual Report, Meeting Proceedings, and names of Committees and Subcommittees)Reproduction

SE 2 : 55 (*Illex* and *Loligo* in SA 4 to 6)

Research and Statistics (see STACRES for Meeting Reports)Research reports

SD 77 / 6 (Norwegian research report, 1976)
 9 (Cuban research report, 1976)
 10 (French research report, 1976)
 11 (Polish research report, 1976)
 14 (German Dem. Rep. research report, 1976)
 15 (USSR research report, 1976)
 24 (United Kingdom research report, 1976)
 25 (Canadian research report, 1976)
 26 (Fed. Rep. Germany research report, 1976)
 27 (Danish research report, 1976)
 30 (Portuguese research report, 1976)
 32 (Japanese research report, 1976)
 33 (United States research report, 1976)

Research Summaries

AR 26 : 127 (for SA 0 to 6 and for seals, 1975)
 73 (for SA 0 to 6 and for seals, 1976)

SSalinity

- RD 77 / 36 (observations in SA 2 and 3, 1975-76)
 54 (oceanography re cod recruitment in Div. 3M)
 55 (observations in Div. 2J, Nov 1976)

Salmon, Atlantic (*Salmo salar*)

- RD 77 / 23 (studies on specimens taken at St. Pierre, 1976)

Salpidae

- RD 77 / 39 (in zooplankton off Nova Scotia, 1974)

Sampling

- R (77): 65 (report of Subcommittee, Jun 1977)
 SY 20 : 1 (list of sampling data for 1975)
 SD 77 / 31 (efficiency of sampling in 1975)

Sand lance (*Ammodytes* spp.)

- RD 77 / 23 (food of salmon caught at St. Pierre, 1976)

Scales, keeled

- RD 77 / 21 (meristic studies on herring in Div. 4V)

Scomber scombrus (see Mackerel)Scientific Advisers

- R (77): 91 (report to Panel 1, Jun 1977)
 93 (report to Panels 2, 3 and 4, Jun 1977)
 95 (report to Panel A on seals, Oct 1976)

Scotian Shelf (Subarea 4)

- SE 2 : 15 (assessment of pollock in Div. 4VMX and SA 5)
 33 (distribution of mackerel from surveys)
 55 (growth and life cycle of *Illex*)
 RD 77 / 21 (biology of herring in Div. 4V)
 34 (assessment of silver hake stock)
 39 (distribution of zooplankton, 1974)
 44 (assessment of silver hake stock)

Seal, harp (*Pagophilus groenlandicus*)

- RD 77 / 56 (estimating the harp seal populations)
 58 (Canadian research at Gulf and Front, 1977)
 59 (Norwegian studies at Front, 1977)
 62 (1977 aerial census of Gulf and Front stocks)
 63 (seal counting by aerial photography)
 64 (critical analysis of two population models)
 66 (catch composition in SA 1, 1972-75)
 68 (assessment of NW Atlantic stocks)

Seal, hooded (*Cystophora cristata*)

- RD 77 / 57 (Canadian research at Front, 1977)
 59 (Norwegian research at Front, 1977)

Seals

- R (77): 95 (scientific advisers report, Oct 1976)
 SB 25 : 229 (catch and effort data for 1975)
 26 229 (catch and effort data for 1976)

Selection

- RD 77 / 44 (studies on silver hake in Div. 4VMX)

Sequential population analysis

- RD 77 / 68 (harp seal populations in NW Atlantic)

Shrimps (*Pandalus* spp.)

- R (77): 13 (working group report for SA 1, Dec 1976)
 RD 77 / 61 (Norwegian studies in SA 1, 1977)
 69 (catch/effort analysis for SA 1, 1975-77)

Silver hake (see Hake, silver)Southern New England (see New England area)Spawning (see also Maturation; Reproduction)

- RD 77 / 32 (capelin in Div. 3N, 1976)

Squid, long-finned (*Loligo pealei*)

- SE 2 : 55 (growth and life cycle in SA 4 to 6)
 71 (assessment of fishery in SA 5 and 6)
 85 (fishery in SA 5 and 6, 1963-74)
 RD 77 / 4 (biology and biomass in SA 5 and 6)

Squid, short-finned (*Illex illecebrosus*)

- SE 2 : 55 (growth and life cycle in SA 4 to 6)
 71 (assessment of fishery in SA 5 and 6)
 85 (fishery in SA 5 and 6, 1963-74)
 RD 77 / 4 (biology and biomass in SA 5 and 6)

St. Pierre and Miquelon (Subarea 3)

- RD 77 / 23 (biological studies on salmon, 1976)

St. Pierre Bank (Subarea 3)

- SE 2 : 11 (status of the witch flounder fishery)

STACFAD (Standing Committee on Finance and Administration)

- MP 77 : 153 (report to Plenary, Jun 1977)

STACRES (Standing Committee on Research and Statistics)

- R (77): 5 (report of Special Meeting, Dec 1976)
 33 (report of Annual Meeting, Jun 1977)

STACTIC (Standing Committee on International Control)

- MP 77 : 147 (report to Plenary, Jun 1977)

Standard stations

- RD 77 / 48 (time series of bottle stations in ICAF area)

Statistical Area 0 (see Baffin Island; Davis Strait)Statistical Area 6 (see New England area)Statistics

- SB 25 : 1 (fisheries statistics of NW Atlantic, 1975)
 26 : 1 (fisheries statistics of NW Atlantic, 1976)
 SD 77 / 4 (on fishing vessels in NW Atlantic, 1975)
 8 (historical catches for TAC stocks, 1966-75)

- 18 (statistics on discards, 1975)
- 23 (on catches and TACs, 1973-78)
- 36 (3-alpha codes at species identifiers)
- 37 (standard elements for fishing logbooks)

Statistics and Sampling Subcommittee

R (77): 65 (report to STACRES, Jun 1977)

Stock; Stock size; Stock differentiation

- SE 2 : 15 (assessment of pollock in Div. 4VWX and SA 5)
- 45 (assessment of roundnose grenadier stocks)
- 71 (assessment of squid stocks in SA 5 and 6)
- 85 (squid fishery in SA 5 and 6, 1963-74)
- RD 77 : 4 (*Illex* and *Loligo* stocks in SA 5 and 6)
- 7 (assessment of redfish in Div. 3M)
- 8 (assessment of cod in SA 1)
- 9 (assessment of A. plaice in Div. 2+3K)
- 11 (status of G. halibut in Div. 2+3KL)
- 12 (assessment of witch in Div. 3NO)
- 17 (evaluation of cod stock in Div. 3NO)
- 19 (assessment of yellowtail in Div. 3LNO)
- 20 (assessment of A. plaice in Div. 3LNO)
- 26 (assessment of cod in Div. 2J+3KL)
- 32 (spawning capelin in Div. 3N, 1976)
- 33 (capelin stock in Div. 2+3K)
- 34 (assessment of silver hake in Div. 4VWX)
- 40 (assessment of red hake in SA 5)
- 41 (assessment of mackerel in SA 5 and 6)
- 44 (assessment of silver hake in Div. 4VWX)
- 47 (assessment programs for pocket calculators)
- 56 (estimating the harp seal populations)
- 62 (1977 census of harp seal stocks)
- 68 (assessment of harp seal stocks)
- SD 77 / 23 (catches and TACs for regulated stocks, 1973-78)

Stratified trawling

- SE 2 : 15 (surveys for pollock in Div. 4VWX and SA 5)
- 33 (re distribution of mackerel in SA 4 to 6)
- 85 (survey abundance of squids in SA 5 and 6)
- RD 77 / 4 (survey for squids in SA 5 and 6)
- 17 (survey for cod in Div. 3M)
- 29 (stratification scheme for Div. 3M)

Subarea 1 (see Greenland area)

Subarea 2 (see Labrador area)

Subarea 3 (see Flemish Cap; Grand Bank; Newfoundland area, Northeast Nfld Shelf; St. Pierre Bank)

Subarea 4 (see Bay of Fundy; Gulf of St. Lawrence; Nova Scotia area; Scotian Shelf)

Subarea 5 (see Georges Bank; Gulf of Maine; New England)

Subcommittee reports

- R (77): 49 (Assessments Subcommittee, Jun 1977)
- 65 (Statistics and Sampling Subcommittee, Jun 1977)
- 71 (Biological Surveys Subcommittee, Jun 1977)
- 77 (Environmental Subcommittee, Jun 1977)

Surveys

- R (77): 71 (Biological Surveys Subc. report, Jun 1977)
- SE 2 : 15 (pollock abundance in Div. 4VWX and SA 5)
- 33 (mackerel distribution in SA 4 to 6)

- 55 (studies on squids in SA 4 to 6)
- 85 (squid abundance in SA 5 and 6, 1963-74)
- RD 77 / 4 (biomass estimates for squid in SA 5 and 6)
- 17 (evaluation of cod stock in Div. 3NO)
- 21 (herring abundance in Div. 4V)
- 29 (stratification scheme for Flemish Cap)
- 32 (biomass of capelin in Div. 3N, 1976)
- 33 (biomass of capelin in Div. 2+3K, 1976)
- 37 (plankton distribution in Div. 3M)
- 39 (zooplankton south of Nova Scotia, 1974)
- 43 (larval herring in SA 5, 1975)

Survival (see also Mortality)

RD 77 / 58 (studies on harp seals, 1977)

T

Tagging

- SE 2 : 15 (re migrations of pollock in SA 4 and 5)
- RD 77 / 5 (capelin on Grand Bank, 1976)
- 11 (studies on G. halibut in Div. 2+3KL)
- 45 (results for cod in Div. 2J+3KL, 1962-66)
- 49 (results for cod in Div. 3P and 4RS)
- 50 (studies on herring in Gulf of Maine)
- 53 (USSR cod tagging in Div. 3M)
- 56 (re estimating harp seal populations)
- 57 (studies on hooded seals, 1977)
- 58 (studies on harp seals, 1977)
- SD 77 / 19 (tagging activities reported for 1976)

Temperature

- SE 2 : 145 (Gulf Stream eddies along continental shelf)
- RD 77 / 5 (and capelin abundance in Div. 3NO)
- 16 (re larval capelin in Div. 3L)
- 35 (conditions in SA 1 to 3, 1976)
- 39 (and zooplankton off Nova Scotia, 1974)
- 51 (by remote sensing for Flemish Cap)
- 52 (MEDS progress report for 1976/77)
- 53 (re groundfish fluctuations in Div. 3M)
- 54 (and cod recruitment in Div. 3M)
- 55 (conditions in Div. 2J, Nov 1976)

Trawls; Trawl materials

SD 77 / 28 (materials and mesh size sampling, 1976)

Turbot (see Halibut, Greenland)

U

Union of Soviet Socialist Republics (USSR)

SD 77 / 15 (research report for 1976)

United Kingdom (UK)

SD 77 / 24 (research report for 1976)

United States of America (USA)

SD 77 / 33 (research report for 1976)

Urophycis chuss (see Hake, red)

VVertebrae

RD 77 / 21 (meristic studies on herring in Div. 4V)

Vessels, fishing (see Fishing vessels)Virtual population analysis (including Cohort analysis)

SE 2 : 15 (assessment of pollock in SA 4 and 5)
 45 (assessment of roundnose grenadier stocks)
 RD 77 / 8 (assessment of cod in SA 1)
 19 (assessment of yellowtail in Div. 3LNO)
 20 (assessment of A. plaice in Div. 3LNO)
 26 (assessment of cod in Div. 2J+3KL)
 44 (assessment of silver hake in Div. 4VWX)
 47 (assessment programs for pocket calculators)

WWeight

SE 2 : 45 (re length for roundnose grenadier)
 85 (re length for squids in SA 5 and 6)
 RD 77 / 8 (re age for cod in SA 1)
 23 (re age of salmon in Div. 3P)

West Greenland (see Greenland area)Witch flounder (see Flounder, witch)Working group reports

MP 77 : 26 (group of experts on future of ICNAF, Dec 1976)
 73 (on SA 5 regulatory regime, Dec 1976)
 132 (on transitional arrangements, Jun 1977)
 R (77): 13 (on shrimp in SA 1, Dec 1976)
 19 (on silver hake in Div. 4VWX, Dec 1976)
 25 (on mackerel assessment, Dec 1976)
 83 (on Flemish Cap project, Jun 1977)

Workshop

SE 2 : 154 (cod ageing workshop report, Oct 1975)
 RD 77 / 13 (analysis of cod ages from Oct 1975 workshop)
 SD 77 / 12 (cod ageing workshop report, Feb 1977)
 13 (silver hake ageing workshop report, Mar 1977)

YYellowtail flounder (see Flounder, yellowtail)Yield per recruit

SE 2 : 11 (witch flounder in Subdiv. 3Ps)
 15 (pollock in Div. 4VWX and SA 5)
 45 (roundnose grenadier in SA 0 to 3)
 71 (squids in SA 5 and 6)
 RD 77 / 3 (redfish stock off E Greenland)
 9 (A. plaice in SA 2 and Div. 3K)
 11 (G. halibut in SA 2 and Div. 3KL)
 12 (witch flounder in Div. 3NO)
 19 (yellowtail flounder in Div. 3LNO)
 20 (A. plaice in Div. 3LNO)

Yield (equilibrium, maximum, sustainable, etc.)

SE 2 : 45 (roundnose grenadier in NW Atlantic)
 71 (squid fisheries in SA 5 and 6)
 137 (re effect of random fluctuations)
 RD 77 / 7 (redfish stock in Div. 3M)
 18 (4 redfish stocks in SA 2 and 3)
 28 (cod stock in Div. 3M)
 68 (harp seal stocks in NW Atlantic)

ZZooplankton

RD 77 / 37 (distribution in Div. 3M, spring 1976)
 39 (distribution off Nova Scotia, 1974)
 43 (distribution in SA 5, fall 1975)

AUTHOR INDEX

15

A

- ALMEIDA, F. P. (USA)
SE 2 : 33 (mackerel distribution in SA 5 and 6)
- ANDERSON, E. D. (USA)
SE 2 : 33 (mackerel distribution in SA 5 and 6)
- ANON. (Canada)
CD 77 / 4 (request for advice on some stocks within
national fisheries limits)
12 (views on options in providing advice)
13 (request for advice on seals)
- ANON. (USA)
SD 77 / 33 (United States research report, 1976)

B

- BARCHARD, W. (Canada)
RD 77 / 62 (1977 census of harp seal stocks)
- BERGFLØDT, B. (Norway)
RD 77 / 59 (Norwegian research on seals, 1977)
- BERTH, U. (GDR)
SD 77 / 14 (GDR research report, 1976)
- BISHOP, C. A. (Canada)
RD 77 / 15 (changes in growth of cod in Div. 3M)
17 (evaluation of cod stock in Div. 3NO)
- BOITSOV, V. D. (USSR)
RD 77 / 36 (circulation and salinity in SA 2 and 3, 1975-76)
- BORRMANN, H. (GDR)
SE 2 : 45 (assessment of roundnose grenadier in SA 2 and 3)
- BOWERING, W. R. (Canada)
SE 2 : 11 (status of witch fishery in Subdiv. 3Ps)
RD 77 / 11 (status of G. halibut in Div. 2+3KL)
12 (assessment of witch in Div. 3NO)
46 (anal to total length conversions for flatfish)
- BRENNAN, J. A. (USA)
SE 2 : 111 (variation in catchability coefficients)
- BRIAND, D. (France)
RD 77 / 21 (studies on herring in Div. 4V)

- BURMAKIN, V. V. (USSR)
RD 77 / 35 (temperature conditions in SA 1 to 3, 1976)
- BURNS, T. S. (USA)
SE 2 : 15 (assessment of pollock in SA 4 and 5)

C

- CAPSTICK, C. K. (Canada)
RD 77 / 63 (seal counting by aerial photography)
- CARSCADDEN, J. E. (Canada)
RD 77 / 16 (distribution of larval capelin in Div. 3L)
- CHAMBERLIN, J. L. (USA)
SE 2 : 145 (Gulf Stream eddies along continental shelf)
- CHEKHOVA, V. A. (USSR)
RD 77 / 3 (studies on redfish off E Greenland)
- CHEVALIER, R. (France)
SD 77 / 10 (French research report, 1976)
- CLARK, S. H. (USA)
SE 2 : 15 (assessment of pollock in SA 4 and 5)

D

- DORNHEIM, H. (FRG)
SD 77 / 26 (Fed. Rep. Germany research report, 1976)
- DOUBLEDAY, W. G. (Canada)
RD 77 / 44 (assessment of silver hake in Div. 4VWX)
47 (stock assessment programs for calculators)
62 (1977 census of harp seal populations)

E

- ERNST, P. (GDR)
SD 77 / 14 (GDR research report, 1976)

F

- FLEMING, A. M. (Canada)
SD 77 / 25 (Canadian research report, 1976)

FOREST, A. (France)

RD 77 / 21 (studies on herring in Div. 4V)

G

GAGNON, J. (Canada)

RD 77 / 48 (time series of bottle stations in ICNAF area)
52 (MEDS progress report for 1976/77)

GRAY, D. F. (Canada)

RD 77 / 68 (assessment of harp seal stocks)

H

HALLIDAY, R. G. (Canada)

SE 2 : 15 (assessment of pollock in SA 4 and 5)

HAYES, R. M. (USA)

RD 77 / 54 (oceanography and cod recruitment in Div. 3M)

HODDER, V. M. (ICNAF)

SE 2 : 154 (editor: report of cod ageing workshop, 1975)
RD 77 / 1 (comparison of sea and shore measurements of haddock)

HORSTED, Sv. Aa. (Denmark)

RD 77 / 8 (assessment of cod stock in SA 1)
SD 77 / 27 (Danish research report, 1976)

HOYDAL, K. (Denmark-Faroes)

RD 77 / 69 (catch/effort analysis for shrimp in SA 1)

HUNT, J. J. (Canada)

RD 77 / 44 (assessment of silver hake in Div. 4VWX)

I

ICES (International Council for Exploration of the Sea)

SD 77 / 21 (ICES/ICNAF/IOC meeting on oceanography)
22 (report of statistical committee, Oct 1976)

ICNAF (Int. Commission for the Northwest Atlantic Fisheries)

AR 26 : 19 (report of 7th Special Meeting, Sep 1975)
49 (report of 8th Special Meeting, Jan 1976)
77 (report of 26th Annual Meeting, Jun 1976)
27 : 17 (report of 9th Special Meeting, Dec 1976)
51 (report of 27th Annual Meeting, Jun 1977)
MP(77): 5 (proceedings of 9th Special Meeting, Dec 1976)
117 (proceedings of 27th Annual Meeting, Jun 1977)
R (77): 5 (report of STACRES Special Meeting, Dec 1976)
33 (report of STACRES Annual Meeting, Jun 1976)
89 (reports of advisers to Panels, 1976/77)

CD 77 / 2 (report of Int. Fisheries Pension Society)
11 (report of Conference on Future Multilateral Cooperation in Northwest Atlantic)
14 (report of 2nd Meeting on Future Multilateral Cooperation in Northwest Atlantic)
SD 77 / 12 (report of ageing workshop on cod, Feb 1977)
13 (report of ageing workshop on silver hake, Mar 1977)
21 (ICES/ICNAF/IOC meeting on oceanography, 1976)

ICNAF Secretariat

AR 26 : 7 (administrative report for 1975/76)
127 (summaries of research and fisheries, 1975)
27 : 7 (administrative report for 1976/77)
73 (summaries of research and fisheries, 1976)
SB 25 : 1 (catch and effort statistics for 1975)
26 : 1 (catch and effort statistics for 1976)
SY 20 : 1 (lists of sampling data for 1975)
CD 77 / 1 (1977 fishery regulations, to Feb 1977)
3 (Commission's officers and meeting sites, 1951-77)
8 (present status of joint enforcement scheme)
9 (report on inspections and infringements, 1976)
10 (registration of fishery research vessels, 1976-77)

INNES, S. (Canada)

RD 77 / 62 (1977 census of harp seal populations)
63 (seal counting by aerial photography)

IOC (Intergovernmental Oceanographic Commission)

SD 77 / 21 (ICES/ICNAF/IOC coordinating group on oceanographic research in N Atlantic)

ISAKOV, V. I. (USSR)

RD 77 / 41 (assessment of mackerel for 1977-78)

J

JONES, B. W. (UK)

SD 77 / 24 (United Kingdom research report, 1976)

K

KANNEWORFF, P. (Denmark)

RD 77 / 8 (assessment of cod stock in SA 1)

KAPEL, F. (Denmark)

RD 77 / 66 (studies on harp seals in SA 1, 1972-75)

KLOCHKOV, D. N. (USSR)

RD 77 / 33 (biomass of capelin in SA 2 and Div. 3K, 1976)

KONSTANTINOV, K. G. (USSR)

RD 77 / 3 (studies on redfish off E Greenland)
53 (fluctuations in groundfish in Div. 3M)
SD 77 / 15 (USSR research report, 1976)

KOVALEV, S. M. (USSR)

RD 77 / 32 (biomass of capelin stock in Div. 3N, 1976)

KUDLO, B. P. (USSR)

RD 77 / 36 (circulation and salinity in SA 1 and 3, 1975-76)

L

LABORDE, J. L. (France)

RD 77 / 23 (studies on salmon taken at St. Pierre, 1976)

LAVIGNE, D. M. (Canada)

RD 77 / 62 (1977 census of harp seal populations)
63 (seal counting by aerial photography)

LETT, P. F. (Canada)

RD 77 / 68 (assessment of harp seal stocks)

LIMA-DIAS, M. (Portugal)

SD 77 / 30 (Portuguese research report, 1976)

LOPEZ-VEIGA, E. C. (Spain)

SE 2 :154 (editor: report of cod ageing workshop, 1975)

LOURDES-MARECOS, M. (Portugal)

SD 77 / 30 (Portuguese research report, 1976)

M

MAHNKE, W. (GDR)

SD 77 / 14 (GDR research report, 1976)

MARI, A. (Cuba)

RD 77 / 7 (assessment of redfish in Div. 3M)
28 (status of cod fishery in Div. 3M)

SD 77 / 9 (Cuban research report, 1976)

McKONE, W. D. (Canada)

RD 77 / 18 (assessment of redfish stocks in SA 2 and 3)

MESNIL, B. (France)

SE 2 : 55 (life cycle of *Illex* and *Loligo* in ICNAF area)
RD 77 / 4 (studies on squids in SA 4 to 6)

MESSTORFF, J. (FRG)

SD 77 / 26 (Fed. Rep. Germany research report, 1976)

MILLER, D. S. (Canada)

SE 2 : 7 (estimating fishing mortality at different
catch levels)

MINET, J. P. (France)

RD 77 / 49 (migrations of cod in Div. 3P, 4R and 4S)

MISRA, R. K. (Canada)

RD 77 / 13 (analysis of 1975 cod ageing workshop data)

MOHN, R. K. (Canada)

RD 77 / 64 (critical analysis of 2 harp seal models)
68 (assessment of harp seal stocks)

MOUNTAIN, D. G. (USA)

RD 77 / 54 (oceanography and cod recruitment in Div. 3M)

N

NAGASAKI, F. (Japan)

SD 77 / 32 (Japanese research report, 1976)

NEAFC (Northeast Atlantic Fisheries Commission)

SD 77 / 7 (press notice, Special meeting, Apr 1977)
34 (press notice, Annual meeting, Jul 1977)
35 (press notice, Special meeting, Nov 1976)

NOSKOV, A. S. (USSR)

RD 77 / 34 (assessment of silver hake in Div. 4VWX)
39 (zooplankton survey off Nova Scotia, 1974)
43 (USSR larval herring survey in SA 5, 1975)
SD 77 / 15 (USSR research report, 1976)

NOVIKOV, A. L. (USSR)

RD 77 / 43 (USSR larval herring survey in SA 5, 1975)

Ø

ØRITSLAND, T. (Norway)

SD 77 / 6 (Norwegian research report, 1976)

ØYNES, P. (Norway)

RD 77 / 61 (Norwegian studies on shrimp in SA 1, 1977)

P

PACIORKOWSKI, A. (Poland)

SD 77 / 11 (Polish research report, 1976)

PALMER, J. E. (USA)

SE 2 :111 (variability in catchability coefficients)

PANKRATOV, A. M. (USSR)

RD 77 / 39 (zooplankton survey off Nova Scotia, 1974)

PARSONS, D. G. (Canada)

RD 77 / 18 (assessment of redfish in SA 2 and 3)

PATUREL, B. (France)

RD 77 / 23 (studies on salmon taken at St. Pierre, 1976)

PITT, T. K. (Canada)

RD 77 / 9 (assessment of A. plaice in Div. 2+3K)
 19 (assessment of yellowtail in Div. 3LNO)
 20 (assessment of A. plaice in Div. 3LNO)
 46 (anal to total length conversions for flatfish)

PLEKHANOVA, N. V. (USSR)

RD 77 / 37 (plankton distribution in Div. 3M, spring 1976)

PORTUGAL, M. L. (Portugal)

SD 77 / 30 (Portuguese research report, 1976)

RRIKHTER, V. A. (USSR)

RD 77 / 40 (assessment of red hake on Georges Bank)

ROMANTCHENKO, A. N. (USSR)

RD 77 / 43 (USSR larval herring survey in SA 5, 1975)

RYZHOV, V. M. (USSR)

RD 77 / 37 (plankton distribution in Div. 3M, 1976)

SSANGØLT, G. (Norway)

RD 77 / 5 (studies on capelin in Div. 3N, 1976)

SAVVATIMSKY, P. I. (USSR)

RD 77 / 30 (studies on roundnose grenadier in SA 0 to 3)

SCOTT, J. S. (Canada)

SD 77 / 25 (Canadian research report, 1976)

SELIVERSTOV, A. S. (USSR)

RD 77 / 32 (biomass of capelin in Div. 3N, 1976)
 33 (biomass of capelin in Div. 2+3K, 1976)

SEREBROV, L. I. (USSR)

RD 77 / 33 (biomass of capelin in Div. 2+3K, 1976)

SERGEANT, D. E. (Canada)

RD 77 / 56 (estimating the harp seal populations)
 57 (Canadian research on hooded seals, 1977)
 58 (Canadian research on harp seals, 1977)

SHAFRAN, I. S. (USSR)

RD 77 / 3 (studies on redfish off E Greenland)

SHERSTYUKOV, A. I. (USSR)

RD 77 / 39 (zooplankton survey off Nova Scotia, 1974)

SIGAEV, I. K. (USSR)

RD 77 / 39 (zooplankton survey off Nova Scotia, 1974)

SIMACHYOVA, I. N. (USSR)

RD 77 / 31 (cod investigations in SA 1)

SISSENWINE, M. P. (USA)

SE 2 : 71 (assessment of squid in SA 5 and 6)
 137 (effect of random fluctuations on fisheries)

SPEIRS, G. D. (USA)

RD 77 / 50 (herring tagging in Gulf of Maine)

STANEK, E. (Poland)

SD 77 / 11 (Polish research report, 1976)

STEIN, M. (FRG)

RD 77 / 55 (hydrographic observations in Div. 2J, 1976)

STERKHOV, V. S. (USSR)

RD 77 / 35 (temperature conditions in SA 1 to 3, 1976)

SVETLOV, I. I. (USSR)

RD 77 / 35 (temperature conditions in SA 1 to 3, 1976)

TTAVARES, A. M. (Portugal)

SD 77 / 30 (Portuguese research report, 1976)

TEMPLEMAN, W. (Canada)

RD 77 / 1 (Comparison of sea and shore measurements of haddock)

TERRE, J. J. (Cuba)

RD 77 / 7 (assessment of redfish fishery in Div. 3M)
 28 (status of cod fishery in Div. 3M)

TIBBETTS, A. M. (USA)

SE 2 : 71 (assessment of squid in SA 5 and 6)
 85 (squid fishery in SA 5 and 6, 1963-74)

TRITES, R. W. (Canada)

RD 77 / 51 (satellite imagery for detecting temperatures)

U

ULLTANG, Ø. (Norway)

- RD 77 / 5 (studies on capelin in Div. 3N, 1976)
61 (studies on shrimp in SA 1, 1977)
SD 77 / 6 (Norwegian research report, 1976)

V

VAREA, J. A. (Cuba)

- SD 77 / 9 (Cuban research report, 1976)

W

WELLS, R. (Canada)

- SE 2 :154 (editor: report of 1975 cod ageing workshop)
RD 77 / 13 (analysis of data from cod ageing workshop)
26 (status of cod stock in Div. 2J+3KL)
29 (stratification scheme for Div. 3M)
45 (cod tagging results for Div. 2J+3KL, 1962-66)

WOLFORD, T. (USA)

- RD 77 / 54 (oceanography and cod recruitment in Div. 3M)

Z

ZAFERMAN, M. L. (USSR)

- RD 77 / 32 (biomass of capelin in Div. 3N, 1976)

LIST OF TITLES, 1977

21

ANNUAL REPORT, VOL. 26 (1975/76)

(Issued August 1977)

Abbreviation: AR

1. Administrative report for the year ending 30 June 1976	7
2. Report of the Seventh Special Commission Meeting, Montreal, Canada, 22-28 September 1975 (with 7 conservation proposals)	19
3. Report of the Eighth Special Commission Meeting, FAO, Rome, Italy, 21-26 January 1976 (with 9 conservation proposals)	49
4. Report of the 26th Annual Meeting, Montreal, Canada, 8-23 June 1976 (with 8 conservation proposals)	77
5. Summaries of research and status of fisheries by subareas and for seals, 1975	127

ANNUAL REPORT, VOL. 27 (1976/77)

(Issued December 1977)

Abbreviation: AR

1. Administrative report for the year ending 30 June 1977	7
2. Report of the Ninth Special Commission Meeting, Tenerife, Canary Islands, Spain, 1-9 December 1976 (with 10 conservation proposals)	17
3. Report of the 27th Annual Meeting, Ottawa, Canada, 31 May-10 June 1977 (with 1 conservation proposal)	51
4. Summaries of research and status of fisheries by subareas and for seals, 1976	73

MEETING PROCEEDINGS (1976/77)

(Issued September 1977)

Abbreviation: MP

<u>PART I</u>	Proceedings of the Ninth Special Commission Meeting, Puerto de la Cruz, Tenerife, Canary Islands, Spain, 1-9 December 1976	5
	1. Report of Meeting of STACRES (see <i>Redbook</i> 1977, Part A)	
	2. Ceremonial opening	7
	3. Report of the First Plenary Session	9
	4. Report of Special Meeting of Panel A (Seals)	35
	5. Report of Meetings of Panel 1	47
	6. Report of Meetings of Panel 4	53
	7. Report of Joint Meeting of Panels 3, 4 and 5	59

LIST OF TITLES

	8. Report of Meetings of Panel 5	63
	9. Report of Joint Meetings of Panels 1 to 5	95
	10. Report of Joint Meetings of Panels 2 and 3	99
	11. Report of the Final Plenary Session	101
<u>PART II</u>	Proceedings of the 27th Annual Meeting, Ottawa, Canada 31 May-10 June 1977 ...	115
	1. Report of Meeting of STACRES (see <i>Redbook</i> 1977, Part B)	
	2. Ceremonial opening	117
	3. Report of the First Plenary Session	119
	4. Note by Secretariat re Proceedings No. 4	135
	5. Report of Joint Meeting of Panels 2, 3 and 4	137
	6. Report of Meetings of Panel 3	143
	7. Report of Meeting of the Standing Committee on International Control (STACTIC)	147
	8. Report of Meeting of the Standing Committee on Finance and Administration (STACFAD)	153
	9. Report of the Final Plenary Sessions	159

REDBOOK 1977

(Issued August 1977)

Abbreviation: R

<u>PART A</u>	Report of Standing Committee on Research and Statistics, December 1976 (with 3 appendices)	5
	I. Report of Working Group on Shrimp in Subarea 1	13
	II. Report of Working Group on Silver Hake in Divisions 4VWX	19
	III. Report of Working Group on Mackerel	25
<u>PART B</u>	Report of Standing Committee on Research and Statistics, May-June 1977 (with 4 appendices)	33
	I. Report of Assessments Subcommittee	49
	II. Report of Statistics and Sampling Subcommittee	65
	III. Report of Biological Surveys Subcommittee	71
	IV. Report of Environmental Subcommittee	77
<u>PART C</u>	Reports of Scientific Advisers	89
	I. Report of Scientific Advisers to Panel 1	91
	II. Report of Scientific Advisers to Panels 2, 3 and 4	93
	III. Report of Scientific Advisers to Panel A (Seals)	95

LIST OF TITLES

23

<u>PART C</u>	Miscellaneous	101
	I. Agenda for Meetings of STACRES	103
	II. Agenda for Meetings of Scientific Advisers	106
	III. List of STACRES Recommendations	107
	IV. Lists of Summary and Research Documents, 1976 (continued)	108
	V. Lists of Summary and Research Documents, 1977	111
	VI. Participants in Scientific Meetings, 1976/77	115

SELECTED PAPERS NO. 2

(Issued February 1977)

Abbreviation: SE

<u>MILLER, D. S.</u>	A simple iterative method to determine fishing mortality rates associated with varying catch levels	7
<u>BOWERING, W. R.</u>	The status of the witch flounder fishery in ICNAF Subdivision 3Ps	11
<u>CLARK, S. H., T. S. BURNS, and R. G. HALLIDAY.</u>	Assessment of the pollock fishery in ICNAF Divisions 4VWX and Subarea 5	15
<u>ANDERSON, E. D., and F. P. ALMEIDA.</u>	Distribution of Atlantic mackerel in ICNAF Subarea 5 and Statistical Area 6, based on research vessel spring bottom trawl surveys, 1968-76	33
<u>BORRMANN, H.</u>	Stock assessment of roundnose grenadier in the Northwest Atlantic	45
<u>MESNIL, B.</u>	Growth and life cycle of squid, <i>Loligo pealei</i> and <i>Illex illecebrosus</i> , from the Northwest Atlantic	55
<u>SISSENWINE, M. P., and A. M. TIBBETTS.</u>	Simulating the effect of fishing on squid (<i>Loligo</i> and <i>Illex</i>) populations off the northeastern United States	71
<u>TIBBETTS, A. M.</u>	Squid fisheries (<i>Loligo pealei</i> and <i>Illex illecebrosus</i>) off the northeastern coast of the United States, 1963-74	85
<u>BRENNAN, J. A., and J. E. PALMER.</u>	Variability in "q" as measured by variation in daily catch per effort	111
<u>SISSENWINE, M. P.</u>	The effect of random fluctuations on a hypothetical fishery	137
<u>CHAMBERLIN, J. L.</u>	Monitoring effects of Gulf Stream meanders and warm core eddies on the continental shelf and slope	145
<u>LOPEZ-VEIGA, E. C., R. WELLS, and V. M. HODDER (Editors).</u>	Report of Ageing Workshop on cod held at Vigo, Spain, October 1975	155

STATISTICAL BULLETIN, VOL. 25 (1975)

(Issued January 1977)

Abbreviation: SB

<u>PART I</u>	Tabular summaries of fish, invertebrate and seal catches, 1961-75 (Tables A to S)	13
---------------	---	----

<u>PART II</u>	Nominal catch and fishing effort statistics for 1975 (6 tables of data compiled by species, ICNAF division, country, gear, tonnage class of vessel, and month)	23
<u>PART III</u>	Sealing catch and effort statistics for 1975	229
<u>PART IV</u>	Corrections and additions for previous issues of Statistical Bulletin	231

STATISTICAL BULLETIN, VOL. 26 (1976)

(Issued December 1977)

Abbreviation: SB

<u>PART I</u>	Tabular summaries of fish, invertebrate and seal catches, 1962-76 (Tables A to S)	13
<u>PART II</u>	Nominal catch and fishing effort statistics for 1976 (6 tables of data compiled by species, ICNAF division, country, gear, tonnage class of vessel, and month)	23
<u>PART III</u>	Sealing catch and effort statistics for 1976	229
<u>PART IV</u>	Corrections and additions to previous issues of Statistical Bulletin	231

SAMPLING YEARBOOK, VOL. 20 (1975)

(Issued December 1977)

Abbreviation: SY

<u>PART 1.</u>	ICNAF sampling program	7
<u>PART 2.</u>	Notes on sampling data	15
<u>PART 3.</u>	List of sampling data for Commercial Fisheries, 1975 (24 tables listing data for cod, haddock, redfish, silver hake, red hake, pollock, American plaice, witch flounder, yellowtail flounder, Greenland halibut, winter flounder, summer flounder, windowpane flounder, roundnose grenadier, white hake, herring, mackerel, alewife, argentine, butterfish, capelin, squids (<i>Illex</i> and <i>Loligo</i>), and sea scallops)	21
<u>PART 4.</u>	Sampling data from research vessel surveys by Canada, Denmark, France and Federal Republic of Germany	43

COMMISSIONERS' DOCUMENTS 1977

Abbreviation: CD

<u>Doc.</u>	<u>Serial</u>	
77/1	5005	<u>ICNAF Secretariat.</u> 1977 ICNAF Fishery Regulations (as on 9 February 1977).
77/2	5113	<u>ICNAF.</u> Annual Meeting of the International Fisheries Commissions Pension Society, Halifax, Canada, 12-13 May 1977.
77/3	5010	<u>ICNAF Secretariat.</u> Commission's officers and meeting sites, 1951-1977.
77/4	5011	<u>CANADA.</u> Canadian request for advice on the scientific basis for management of certain fisheries within national fisheries limits.
77/5	5077	* <u>ICNAF.</u> Panel memberships as on 1 May 1977 (see <i>ICNAF Annu. Rept.</i> Vol. 27 for 1976/77: 8).
77/6	5085	* <u>ICNAF Secretariat.</u> Administrative Report for the year ending 30 June 1977 (as on 1 May 1977) (Publ. in <i>ICNAF Annu. Rept.</i> Vol. 27 for 1976/77: 7-16).
77/7	5008	* <u>ICNAF Secretariat.</u> Status of Commission proposals for changes in the Convention and for international regulation of the fisheries under the Convention (as on 9 May 1977) (see <i>ICNAF Annu. Rept.</i> Vol. 27 for 1976/77: 12-13).
77/8	5114	<u>ICNAF Secretariat.</u> Present status of implementation - Scheme of Joint International Enforcement (as on 10 June 1977).
77/9	5115	<u>ICNAF Secretariat.</u> Summary of information on inspections, infringements and disposition on infringements for 1976.
77/10	5090	<u>ICNAF Secretariat.</u> Notification of fisheries research vessels and registration of fishing vessels, 1976 and 1977 (as on 21 June 1977). + Addendum.
77/11	5017	<u>ICNAF.</u> Report of the International Preparatory Conference on Future Multilateral Cooperation in the Northwest Atlantic Fisheries, Ottawa, Canada, 14-25 March 1977.
77/12	5023	<u>CANADA.</u> Canadian views on options to be considered by STACRES in providing advice on the scientific basis for management of certain fisheries in 1978.
77/13	5119	<u>CANADA.</u> Canadian request for advice on the scientific basis for management of seal fisheries within national fisheries limits.
77/14	5123	<u>ICNAF.</u> Second Preparatory Meeting on Future Multilateral Cooperation in the Northwest Atlantic Fisheries, Ottawa, Canada, 6, 7, and 10 June 1977.

RESEARCH DOCUMENTS 1977

Abbreviation: RD

<u>Doc.</u>	<u>Serial</u>	
77/1	5001	<u>TEMPLEMAN, W., and V. M. HODDER.</u> Comparisons of lengths of the same haddock measured at sea and on shore, and round and gutted.
77/2	5002	* <u>CHEKHOVA, V. A., and K. G. KONSTANTINOV.</u> The catches of the beaked redfish (<i>Sebastes mentella</i> Travin) with bottom and midwater trawls on the Flemish Cap Bank (Publ. in <i>ICNAF Sel. Papers</i> No. 3: 17-21).

* Indexing refers to the publication indicated in parentheses.

Research Documents (continued)

- 77/3 5003 CHEKHOVA, V. A., K. G. KONSTANTINOV, and I. S. SHAFRAN. On the age contingent of catches of beaked redfish (*Sebastes mentella* Travin).
- 77/4 5012 MESNIL, B. Biological characteristics and biomass estimates of squid, *Loligo pealei* and *Illex illecebrosus*, on the mid-Atlantic and southern New England shelves.
- 77/5 5018 SANGOLT, G., and Ø. ULLTANG. Norwegian capelin fishery and capelin investigations in Newfoundland waters in 1976.
- 77/6 5024 * TERRE, J. J., and A. MARÍ. Preliminary estimates of natural mortality for the silver hake stock in ICNAF Divisions 4VWX (Publ. in *ICNAF Sel. Papers* No. 3: 29-31).
- 77/7 5026 MARÍ, A., and J. J. TERRE. Assessment of the Flemish Cap redfish fishery.
- 77/8 5028 HORSTED, Sv. Aa., and P. KANNEWORFF. Subarea 1 cod: data for 1975-76 and estimates of yield for 1977-79. + Addendum.
- 77/9 5029 PITT, T. K. An update of the assessment of American plaice from ICNAF Subarea 2 and Division 3K.
- 77/10 5030 * BOWERING, W. R., and T. K. PITT. An evaluation of the status of witch flounder (*Glyptocephalus cynoglossus*) from ICNAF Divisions 2J, 3K and 3L (Publ. in *ICNAF Sel. Papers* No. 3: 23-28).
- 77/11 5031 BOWERING, W. R. Trends in the Greenland halibut fishery in Subarea 2 and Divisions 3K and 3L.
- 77/12 5032 BOWERING, W. R. An updated witch assessment for ICNAF Divisions 3N and 3O.
- 77/13 5033 MISRA, R. K., and R. WELLS. Analysis of anomalies between readers and regressions of average length on age from the Ageing Workshop on Cod held at Vigo, Spain in October 1975.
- 77/14 5034 * CARSCADDEN, J. E. The capelin (*Mallotus villosus*) population spawning on the Southeast Shoal, 1976 (Publ. in *ICNAF Sel. Papers* No. 3: 61-71).
- 77/15 5035 BISHOP, C. A. Changes in the growth rate of Flemish Cap cod in Div. 3M.
- 77/16 5036 CARSCADDEN, J. E. Observations on larval capelin (*Mallotus villosus*) in ICNAF Division 3L.
- 77/17 5037 BISHOP, C. A. Cod stock evaluation for Div. 3NO. + Addendum.
- 77/18 5038 McKONE, W. D., and D. G. PARSONS. An update of the assessment of redfish from Subarea 2 + Div. 3K, Div. 3M, Div. 3LN, and Div. 3O.
- 77/19 5039 PITT, T. K. Assessment of yellowtail from ICNAF Divisions 3LNO.
- 77/20 5040 PITT, T. K. Assessment of American plaice in ICNAF Divisions 3LNO.
- 77/21 5041 FOREST, A., and D. BRIAND. Atlantic herring on the Scotian Shelf: results of population studies from ICNAF Subdiv. 4Vn and 4Vs.
- 77/22 5042 * MINET, J. P., and J. B. PERODOU. Predation of cod (*Gadus morhua*) on capelin (*Mallotus villosus*) in northern Gulf of St. Lawrence (ICNAF Div. 4R, 4S, 3P) and off Labrador and east Newfoundland (ICNAF Div. 2J, 3K, 3L) (Publ. in *ICNAF Res. Bull.* No. 13: 11-20).
- 77/23 5043 PATUREL, B., and J. L. LABORDE. Characteristics of Atlantic salmon taken at St. Pierre and Miquelon in 1976.
- 77/24 5044 * MINET, J. P. Dynamics and yield assessment of the northern Gulf of St. Lawrence cod stock (ICNAF Div. 4R, 4S and 3Pn) (Publ. in *ICNAF Sel. Papers* No. 3: 7-16).

Research Documents (continued)

- 77/25 5049 * HUNT, J. J. An age-length key for silver hake in Divisions 4WX and comparison with length frequency modal analysis (Publ. in *ICNAF Sel. Papers* No. 3: 33-44).
- 77/26 5051 WELLS, R. Status of the cod stock in Div. 2J+3KL. + Addendum.
- 77/27 5052 * KAWAHARA, S. Age and growth of butterfish, *Poronotus triacanthus* (Peck), in ICNAF Subarea 5 and Statistical Area 6 (Publ. in *ICNAF Sel. Papers* No. 3: 73-78).
- 77/28 5053 MARI, A., and J. J. TERRE. An evaluation of the status of the Flemish Cap cod fishery.
- 77/29 5054 WELLS, R. Stratification scheme used and age composition of cod catches taken on Flemish Cap, 2-15 February 1977 by R/V *Cameron*.
- 77/30 5055 SAVVATIMSKI, P. I. Prospects of roundnose grenadier fishery in the Northwest Atlantic.
- 77/31 5056 SIMACHYOVA, I. N. The Soviet cod investigations in the West Greenland area.
- 77/32 5057 KOVALEV, S. M., A. S. SELIVERSTOV, and M. L. ZAFERMAN. Size of a spawning capelin stock on the Grand Newfoundland Bank (Div. 3N) in 1976.
- 77/33 5058 KLOCHKOV, D. N., A. S. SELIVERSTOV, and L. I. SEREBROV. Estimate of capelin stocks in the southern Labrador and northern Newfoundland Bank areas in the autumn of 1976 (Div. 2J and 3K).
- 77/34 5059 NOSKOV, A. S. Estimation of stock size and allowable catch of silver hake at Nova Scotia in Div. 4VWX for 1978.
- 77/35 5060 BURMAKIN, V. V., I. I. SVETLOV, and V. S. STERKHOV. Water temperature in the Labrador, Newfoundland and West Greenland areas in 1976.
- 77/36 5061 KUDLO, B. P., and V. D. BOITSOV. Circulation and salinity of waters in the south Labrador and Newfoundland areas in 1975-76.
- 77/37 5062 PLEKHANOVA, N. V., and V. M. RYZHOV. Plankton distribution in the Flemish Cap area in the spring of 1976.
- 77/38 5063 * SIGAEV, I. K. Intra-year variability of geostrophic circulation of the New England and Nova Scotia shelves (Publ. in *ICNAF Sel. Papers* No. 3: 97-107).
- 77/39 5064 NOSKOV, A. S., A. M. PANKRATOV, I. K. SIGAEV, and A. I. SHERSTYUKOV. Ecological survey in the Gulf Stream zone southward of Nova Scotia, 1974.
- 77/40 5065 RIKHTER, V. A. The assessment of total allowable catch of the Georges Bank red hake for 1978.
- 77/41 5066 ISAKOV, V. I. Estimation of stock and total allowable catch of mackerel in the Northwest Atlantic for 1977-78.
- 77/42 5067 * BERENBEIM, D. Y., and I. K. SIGAEV. On correlation between the water temperature and the spawning times for Georges Bank herring (Publ. in *ICNAF Sel. Papers* No. 3: 57-59).
- 77/43 5068 NOSKOV, A. S., A. L. NOVIKOV, and A. N. ROMANTCHENKO. Results of distribution and abundance survey of herring larvae in the Georges Bank area in September-October 1975.
- 77/44 5072 DOUBLEDAY, W. G., and J. J. HUNT. An assessment of the Div. 4VWX silver hake fishery incorporating 1976 provisional nominal catch statistics reported to 18 April 1977. + Corrigendum.
- 77/45 5050 WELLS, R. Recaptures of cod tagged in Div. 2J, 3K and 3L in 1962-66.

Research Documents (continued)

- 77/46 5098 BOWERING, W. R., and T. K. PITT. Length conversion factors for four species of commercial flatfish.
- 77/47 5099 DOUBLEDAY, W. G. Two stock-assessment programs for a programmable pocket calculator.
- 77/48 5101 CAGNON, J. Time series of oceanographic bottle stations along ICNAF standard sections.
- 77/49 5102 MINET, J. P. Updated results on migrations of the northern Gulf of St. Lawrence cod stock (ICNAF Div. 4R, 4S and 3Pn).
- 77/50 5103 SPEERS, G. A. Herring tagging in western Gulf of Maine.
- 77/51 5104 TRITES, R. W. Some preliminary comments on the usefulness of satellite imagery for the Flemish Cap area.
- 77/52 5105 CAGNON, J. Marine Environmental Data Service: progress report for 1976-77.
- 77/53 5106 KONSTANTINOV, K. G. Fluctuations in the abundance of cod and some other commercial fishes on the Flemish Cap Bank.
- 77/54 5107 HAYES, R. M., D. G. MOUNTAIN, and T. C. WOLFORD. Physical oceanography and oceanographic data available for the Flemish Cap region.
- 77/55 5122 STEIN, M. Hydrographic conditions on Hamilton Inlet Bank (Div. 2J) in early November 1976.
- 77/56 5131 SERGEANT, D. E. A new approach to estimating harp seal production.
- 77/57 5132 SERGEANT, D. E. Research on hooded seals in the western North Atlantic in 1977.
- 77/58 5133 SERGEANT, D. E. Studies on harp seals of the western North Atlantic population in 1977.
- 77/59 5135 BERGFLØDT, B. The sealing season and Norwegian seal investigations off Newfoundland-Labrador in 1977.
- 77/60 5136 Document withdrawn.
- 77/61 5138 ULLTANG, Ø., AND P. ØYNES. Norwegian investigations on the deep sea shrimp (*Pandalus borealis*) in West Greenland waters, 1977.
- 77/62 5139 LAVIGNE, D. M., S. INNES, and W. BARCHARD. The 1977 census of western Atlantic harp seal, *Pagophilus groenlandicus*.
- 77/63 5140 CAPSTICK, C. K., D. M. LAVIGNE, and S. INNES. Comparison of on-ice counts of harp seal pups with counts from 35-mm ultraviolet aerial photography.
- 77/64 5141 MOHN, R. K. Critical analysis of two harp seal population models.
- 77/65 5142 * KANNEWORFF, P. Estimated density of shrimp (*Pandalus borealis*) in Greenland waters, 1975-77, and calculation of biomass on the offshore fishing grounds, Div. 1A-1B, based on bottom photography (Publ. in *ICNAF Sel. Papers* No. 4: 61-65).
- 77/66 5143 KAPEL, F. O. An estimate of the composition of the catch of harp seal in West Greenland, 1972-1975.
- 77/67 5144 * CARLSSON, D. M., Sv. Aa. HORSTED, and P. KANNEWORFF. Review of Danish trawl surveys on the offshore West Greenland shrimp grounds in 1977, and a comparison with material from previous years (Publ. in *ICNAF Sel. Papers* No. 4: 67-74).

Research Documents (continued)

- 77/68 5145 LETT, P. F., D. F. GRAY, and R. MOHN. New estimates of harp seal production on the Front and in the Gulf of St. Lawrence and their impact on herd management.
- 77/69 5146 HOYDAL, K., and H. LASSEN. Catch per unit effort in the Faroese prawn (*Pandalus borealis*) fishery in ICNAF Subarea 1, 1975-77.
- 77/70 5147 * MINET, J. P., A. FOREST, and J. B. PERODOU. New biological data on the shrimp, *Pandalus borealis*, in the Baffin Island waters (ICNAF Statistical Area 0) (Publ. in *ICNAF Sel. Papers* No. 4: 15-21).

SUMMARY DOCUMENTS 1977

Abbreviation: SD

- | <u>Doc.</u> | <u>Serial</u> | |
|-------------|---------------|--|
| 77/1 | 4099 | * <u>ICNAF.</u> Report of Standing Committee on Research and Statistics (STACRES), Ninth Special Commission Meeting, December 1976 (Publ. in <i>ICNAF Redbook</i> 1977: 5-32). |
| 77/2 | 5016 | * <u>ICNAF.</u> Proceedings of Ninth Special Commission Meeting, Tenerife, Canary Islands, Spain, 1-9 December 1976 (Publ. in <i>ICNAF Meet Proc.</i> 1976/77: 5-114). |
| 77/3 | 5006 | * <u>ICNAF Secretariat.</u> Supplement to Statistical Bulletin, Vol. 25: Detailed catch and effort statistics for Ireland (see <i>ICNAF Stat. Bull.</i> Vol. 26: 234-235). |
| 77/4 | 5007 | <u>ICNAF Secretariat.</u> List of fishing vessels, 50 GRT and over, 1975. |
| 77/5 | 5013 | * <u>ICNAF Secretariat.</u> Lists of sampling data for 1975 (Publ. in <i>ICNAF Sampl. Yearb.</i> Vol. 20: 21-46). |
| 77/6 | 5019 | <u>ULLTANG, Ø, and T. ØRITSLAND.</u> Norwegian research report, 1976. |
| 77/7 | 5020 | <u>NEAFC.</u> Northeast Atlantic Fisheries Commission, special conference on the future of the Commission, 29 March-2 April 1977: press notice. |
| 77/8 | 5022 | <u>ICNAF Secretariat.</u> Historical catches of regulated species by stock area and country for the period 1966-75. |
| 77/9 | 5025 | <u>VAREA, J. A., and A. MARI.</u> Cuban research report, 1976. |
| 77/10 | 5045 | <u>CHEVALIER, R.</u> French (St. Pierre and Miquelon) research report, 1976. |
| 77/11 | 5046 | <u>PACIORKOWSKI, A., and E. STANEK.</u> Polish research report, 1976. |
| 77/12 | 5048 | <u>ICNAF.</u> Preliminary report of ageing workshop on cod held at St. John's, Canada, 31 January-5 February 1977. |
| 77/13 | 5073 | <u>ICNAF.</u> Report of the silver hake ageing workshop, St. Andrews, Canada, 14-18 March 1977. |
| 77/14 | 5070 | <u>MAHNKE, W., U. BERTH, and P. ERNST.</u> GDR research report, 1976. |
| 77/15 | 5071 | <u>KONSTANTINOV, K. G., and A. S. NOSKOV.</u> USSR research report, 1976. |
| 77/16 | 5074 | * <u>ICNAF.</u> Report of Assessments Subcommittee, 19-27 April 1977. + Corrigendum (Publ. in <i>ICNAF Redbook</i> 1977: 49-64). |

* Indexing refers to the publication indicated in parenthesis.

Summary Documents (continued)

- 77/17 5078 * ICNAF Secretariat. Sealing statistics for the Northwest Atlantic, 1976 (Publ. in ICNAF Stat. Bull. Vol. 26: 229-230).
- 77/18 5079 ICNAF Secretariat. Statistics on discards, 1975.
- 77/19 5080 ICNAF Secretariat. Tagging activities reported by Member Countries for 1976.
- 77/20 5081 ICNAF Secretariat. Extracts from resolutions passed at the 1976 ICES Meeting relevant to the research and statistical activities of ICNAF.
- 77/21 5082 ICNAF. Report on the Third Meeting of the ICES/ICNAF/IOC Coordinating Group for the North Atlantic with representatives of international marine research projects in the North Atlantic.
- 77/22 5083 ICES. Report of ICES Statistical Committee, October 1976 (Extract from Procès-Verbal de la Réunion 1976).
- 77/23 5084 ICNAF Secretariat. Nominal catches (1966-75) by country and stock area, with TACs and allocations (1973-77) for species and stocks proposed for regulation in 1978.
- 77/24 5086 JONES, B. W. UK research report, 1976.
- 77/25 5091 FLEMING, A. M., and J. S. SCOTT. Canadian research report, 1976.
- 77/26 5092 MESSTORFF, J., and H. DORNHEIM. Federal Republic of Germany research report, 1976.
- 77/27 5093 HORSTED, Sv. Aa. Denmark (Greenland) research report, 1976.
- 77/28 5094 ICNAF Secretariat. Summary of trawl materials and mesh size sampling, 1976.
- 77/29 5095 * ICNAF Secretariat. Provisional nominal catches in the Northwest Atlantic, 1976 (Publ. in ICNAF Stat. Bull. Vol. 26: 28-69).
- 77/30 5096 PORTUGAL, M. L., A. M. TAVARES, M. LIMA DIAS, and M. de LOURDES MARECOS. Portuguese research report, 1976.
- 77/31 5097 ICNAF Secretariat. Efficiency of sampling the major fisheries of the Northwest Atlantic in 1975.
- 77/32 5100 NAGASAKI, F. Japanese research report, 1976.
- 77/33 5117 ANON. United States research report, 1976.
- 77/34 5125 NEAFC. Northeast Atlantic Fisheries Commission, Fifteenth Annual Meeting, 6-11 July 1977: press notice.
- 77/35 5126 NEAFC. Northeast Atlantic Fisheries Commission, Mid-term Meeting, 22-25 November 1976: press notice.
- 77/36 5130 ICNAF Secretariat. Three-alpha code for use in logbooks to identify North Atlantic species names.
- 77/37 5134 ICNAF Secretariat. Standard elements for fishing sheets and logbooks.