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Provisional Index and List of Titles for ICNAF Publications  
and Meeting Documents, 1978

by

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Introduction

*Special Publication* No. 11, issued in June 1975, contained an index and list of titles of ICNAF publications (Annual Proceedings, Redbook, Research Bulletin and Special Publications) for the period 1950-74. A corresponding *Index and List of Titles of Meeting Documents* for 1950-74 has been compiled in two parts: No. 2 for the years 1965-74 was issued in October 1978, and No. 1 for the years 1950-64 will be published in the latter part of 1979.

Annual indexes of ICNAF publications and meeting documents for the years 1975 and 1976 were issued in 1978 as *Sum. Doc. 78/VI/33* and *78/VI/18* respectively, and the index for 1977 was issued in early 1979 as *Sum. Doc. 79/VI/3*.

ICNAF Publications in 1978

The following is a list of publications and meeting documents issued in 1978. The abbreviations preceding the name of each publication represents the code used for indexing:

- IN *Index and List of Titles, Meeting Documents, No. 2 for 1965-1974* (Issued in October 1978)
- MP *Meeting Proceedings for 1977/78* (Issued in August 1978)
- R *Redbook 1978* (Issued in August 1978)
- RB *Research Bulletin No. 13* (Issued in June 1978)
- SE *Selected Papers No. 3* (Issued in January 1978)
- SE *Selected Papers No. 4* (Issued in August 1978)
- SY *Sampling Yearbook Vol. 19 for 1974* (Revised) (Issued in October 1978)
- SY *Sampling Yearbook Vol. 21 for 1976* (Issued in December 1978)
- CD *Commissioners' Documents (78/VI/1 to 78/VI/20)*
- RD *Research Documents (78/II/1 to 78/XI/98)*
- SD *Summary Documents (78/VI/1 to 78/VI/33)*

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 for 1978 publications generally follows the procedure used in compiling

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the indexes for 1975, 1976 and 1977 (Sum. Doc. 78/VI/33, 78/VI/18, 79/VI/3). Each publication is identified by a 2-letter code followed by arabic numerals to designate the actual volume, issue number or year of issue. 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*.
- e) Provisional Index and List of Titles for ICNAF Publications and Meeting Documents, 1977. *ICNAF Sum. Doc. 79/VI/3*.

#### CONTENTS

	<u>Page</u>
Subject Index .....	3
Author Index .....	19
List of Titles .....	25

# SUBJECT INDEX

3

## A

### Abundance; Abundance index

- RB 13 : 31 (year-class success of haddock on Grand Bank)
- 81 (factors affecting catchability of trawls)
- SE 3 : 33 (silver hake stock in Div. 4VWX)
- 45 (indices for mackerel in SA 5 and 6)
- 49 (indices for mackerel from survey data)
- 57 (herring re temperature in Div. 5Z)
- 61 (capelin spawning on SE Shoal, 1976)
- 93 (*Illex* on Scotian Shelf, 1970-76)
- 4 : 7 (exploitation of shrimp in SA 1)
- 16 (data for shrimp from survey in SA 0)
- 23 (biomass estimate for shrimp in SA 1)
- 31 (assessment of shrimp in SA 1)
- 35 (status of shrimp stocks in SA 1)
- 47 (USSR studies on shrimp in SA 1, 1976)
- 61 (shrimp density by photography in SA 1)
- 68 (trawl survey for shrimp in SA 1)
- RD 78 / 8 (study on squid fishery in SA 5 and 6)
- 9 (squid and silver hake in Div. 4VWX, 1977)
- 10 (assessment of *Illex* in Div. 4W)
- 11 (state of *Illex* stocks in SA 4 and 5)
- 12 (biomass of *Illex* in Subdiv. 3Ps)
- 17 (status of *Illex* stocks in SA 3 and 4)
- 18 (ichthyoplankton on Flemish Cap)
- 24 (cod and G. halibut in SA 1 and 2)
- 25 (reliability of trawl survey data)
- 27 (assessment of cod in Div. 3M, 1972-77)
- 28 (shrimp concentrations in SA 2)
- 29 (assessment of capelin in Div. 3N, 1977)
- 30 (status of capelin in Div. 2J+3K, 1977)
- 32 (silver hake eggs and larvae in Div. 4VWX)
- 33 (red hake stock on Georges Bank)
- 36 (A. plaice and yellowtail in Div. 3LNO)
- 43 (biomass estimate of capelin in Div. 2J+3K, 1977)
- 44 (assessment of cod stock in SA 1)
- 45 (groundfish in survey in SA 0, 1977)
- 59 (status of cod stock in Div. 3NO)
- 66 (status of cod stock in Div. 2J+3KL)
- 69 (USA-FRG trawl survey in SA 4 and 5, 1977)
- 72 (plankton on Flemish Cap, 1970-77)
- 77 (accuracy of abundance indices from surveys)
- 78 (young herring in SA 5 and 6 surveys, 1975-77)
- 87 (assessment of shrimp potential in SA 0)
- 88 (exploratory survey for shrimp in SA 0, 1978)
- 89 (shrimp density by photography in SA 1)
- 91 (productivity of hooded seals)
- 93 (drift of shrimp larvae in Davis Strait)
- 94 (Norwegian studies on shrimp in SA 1)
- 95 (data on French shrimp fishery in SA 1, 1977)
- 96 (distribution of shrimp grounds in SA 1)

### Acoustics (see Hydroacoustics)

### Age; Age composition; Age groups

- RB 13 : 5 (G. halibut in SA 2 to 4)
- 21 (capelin ecology in SA 2 and 3)
- 31 (age and growth of Grand Bank haddock)
- 53 (re maturity of haddock on Grand Bank)
- SE 3 : 7 (dynamics of cod in Div. 4RS)
- 23 (witch flounder in Div. 2J+3KL)
- 33 (and growth of silver hake in Div. 4VWX)
- 61 (capelin spawning on SE Shoal, 1976)
- 73 (butterfish in SA 5 and 6)
- 79 (variance in age of mackerel in SA 5 and 6)

- RD 78 / 22 (capelin catches in Div. 3N, 1977)
- 26 (forecasting state of cod stock in SA 2)
- 27 (assessment of cod in Div. 3M, 1972-77)
- 29 (status of capelin in Div. 3N, 1977)
- 30 (studies on capelin in Div. 2J+3K, 1977)
- 37 (status of witch stock in Div. 2J+3KL)
- 38 (G. halibut distribution in SA 0)
- 39 (G. halibut fishery in Div. 2J+3KL)
- 44 (assessment of cod in SA 1)
- 52 (composition of capelin in Div. 3NO)
- 53 (status of G. halibut in SA 0 and 1)
- 54 (assessment of grenadier stocks in SA 0 to 3)
- 62 (assessment of silver hake in Div. 4VWX)
- 66 (status of cod stock in Div. 2J+3KL)
- 78 (young herring in GDR surveys in SA 5 and 6)
- 85 (Canadian research on harp seals)
- 91 (productivity of hooded seals in ICNAF area)

### Age determination; Age validation

- SE 3 : 73 (of butterfish in SA 5 and 6)
- RD 78 / 15 (ageing of *Illex* by statoliths)
- SD 78 / 10 (silver hake ageing workshop, Mar 1978)

### Ageing techniques (meeting reports)

- SD 78 / 10 (silver hake ageing workshop, Mar 1978)

### American plaice (see Plaice, American)

### Ammodytes spp. (see Sand lance)

### Amphipods

- RB 13 : 11 (food of cod in SA 2 to 4)

### Analyses (see Biochemical, Mathematical, Production model Virtual population, etc.)

### Anarhichus spp. (see Wolffishes)

### Anglemouth (*Cyclothone signata*)

- RD 78 / 18 (ichthyoplankton in Flemish Cap area)

### Annelids

- RB 13 : 11 (food of cod in SA 2 to 4)

### Anomalies (hydrographic)

- SE 3 : 57 (temperature re herring spawning in Div. 5Z)
- RD 78 / 65 (hydrographic conditions in SA 1, Nov 1976)
- 70 (temperature conditions in SA 0 to 3, 1977)

### Anonyx spp. (gammarid)

- RB 13 : 11 (food of cod in SA 2 to 4)

### Argentina silus (see Argentine, Atlantic)

### Argentine, Atlantic (*Argentina silus*)

- RD 78 / 9 (by-catch in squid fishery in SA 4)
- 16 (by-catch in Japanese squid fishery)

### Assessments

- RB 13 : 21 (capelin ecology and surplus yield)
- SE 3 : 7 (dynamics of cod stock in Div. 4RS)
- 23 (status of witch stock in Div. 2J+3KL)

- 4 : 23 (biomass estimate for shrimp in SA 1)  
 31 (assessment of shrimp in SA 1)  
 35 (status of shrimp stock in SA 1)  
 43 (method of estimating TAC for shrimp)  
 68 (shrimp biomass from surveys in SA 1)  
 RD 78 / 10 (status of *Illex* fishery in SA 4)  
 11 (status of *Illex* stocks in SA 4 and 5)  
 12 (biomass of *Illex* in Subdiv. 3Ps, 1977)  
 17 (status of *Illex* fishery in SA 3 and 4)  
 27 (cod stock in Div. 3M, 1972-77)  
 29 (capelin stock in Div. 3N, 1977)  
 30 (capelin stock in Div. 2J+3K, 1977)  
 31 (silver hake stock in Div. 4VMX)  
 33 (TAC estimate for red hake in Div. 5Z)  
 35 (A. plaice stock in Div. 3LNO)  
 37 (witch flounder stock in Div. 2J+3KL)  
 39 (G. halibut stock in SA 2 and 3)  
 40 (analysis of witch stock in Div. 3NO)  
 41 (yellowtail stock in Div. 3LNO)  
 44 (status of cod stock in SA 1)  
 46 (status of redfish in Div. 3LN)  
 47 (roundnose grenadier in SA 0 to 3)  
 48 (redfish stock in Div. 3M)  
 51 (update of Div. 3M cod assessment)  
 52 (sequential analysis of capelin in Div. 3NO)  
 53 (G. halibut stock in SA 0 and 1)  
 54 (status of grenadier stocks in SA 0 to 3)  
 56 (status of redfish in Div. 3M)  
 57 (status of cod in Div. 3M)  
 58 (assessment of Div. 3M cod)  
 59 (status of cod in Div. 3NO)  
 61 (stock estimate for *Illex* in SA 4, 1977)  
 62 (silver hake stock in Div. 4VMX)  
 66 (cod stock in Div. 2J+3KL)  
 82 (cod stock in Div. 3Pn+4RS)  
 87 (shrimp fishery potential in SA 0)  
 91 (productivity of hooded seals in ICNAF area)  
 95 (data on French shrimp fishery in SA 1)  
 96 (shrimp distribution and biomass in SA 1)

#### Assessments Subcommittee

R (78): 51 (report to STACRES, Jun 1978)

Atlantic, North (references general to the North Atlantic as a whole) (see also Atlantic, Northeast and Atlantic, Northwest)

SD 78 / 2 (report of 9th session of CWP, Aug 1977)

#### Atlantic, Northeast

SD 78 / 7 (extracts from 1977 ICES meeting)  
 8 (press notice, NEAFC meeting, Nov 1977)

#### Atlantic, Northwest (see also names of specific areas)

- MP(78): 1 (proceedings of 28th Annual Meeting, Jun 1978)  
 R (78): 5 (report of Nov 1977 Special Meeting of STACRES)  
 21 (report of Feb 1978 Special Meeting of STACRES)  
 35 (report of Jun 1978 Annual Meeting of STACRES)  
 SE 3 : 109 (ICNAF standard oceanographic stations)  
 SY 19 : 1 (revised list of sampling data for 1974)  
 SY 21 : 1 (list of sampling data for 1976)  
 IN 2 : 1 (index of ICNAF meeting documents, 1965-74)  
 CD 78 / 1 (1977/78 fishery regulations, to Nov 1977)  
 RD 78 / 15 (ageing of squid from statoliths)  
 68 (plankton recorder surveys, 1976)  
 75 (plankton recorder surveys, 1977)  
 SD 78 / 5 (list of fishing vessels for 1976)  
 6 (historical catches for selected species)

- 9 (USSR research report for 1977)  
 10 (silver hake ageing workshop, Mar 1978)  
 11 (efficiency of sampling in 1976)  
 12 (Danish research report for 1977)  
 13 (Portuguese research report for 1977)  
 14 (GDR research report for 1977)  
 15 (Polish research report for 1977)  
 18 (index and list of titles for 1976)  
 19 (tagging activities in ICNAF area, 1977)  
 20 (Canadian research report for 1977)  
 21 (statistics on discards, 1976)  
 22 (CWP recommendations relevant to ICNAF)  
 23 (information on discards, 1977)  
 24 (ICNAF statistical activities, 1977/78)  
 25 (notes on statistical matters)  
 26 (nominal catches and TACs, 1974-78)  
 27 (French research report for 1977)  
 29 (Cuban research report for 1977)  
 30 (Japanese research report for 1977)  
 31 (FRG research report for 1977)  
 32 (USA research report for 1977)  
 33 (index and list of titles, 1975)

Atlantic argentine (see Argentine, Atlantic)

Atlantic butterfish (see Butterfish, Atlantic)

Atlantic cod (see Cod, Atlantic)

Atlantic halibut (see Halibut, Atlantic)

Atlantic herring (see Herring, Atlantic)

Atlantic mackerel (see Mackerel, Atlantic)

Atlantic redfish (see Redfish, Atlantic)

Availability (see Abundance; Catches)

## B

#### Baffin Island area (Statistical Area 0)

- SE 4 : 16 (data for shrimp from trawl survey)  
 RD 78 / 38 (distribution of G. halibut in SA 0)  
 45 (groundfish survey in 1977)  
 47 (assessment of grenadier stock)  
 53 (assessment of G. halibut stock)  
 54 (assessment of grenadier stock)  
 64 (stratification scheme for SA 0)  
 70 (temperature conditions in SA 0 to 3, 1977)  
 87 (assessment of shrimp fishery potential)  
 88 (exploratory survey for shrimp)

Balaenoptera physalus (see Whale, fin)

Bathypolypus spp. (cephalopod)

RB 13 : 11 (food of cod in SA 2 to 4)

#### Bibliography

SD 78 / 18 (index and titles of ICNAF publications, 1976)  
 32 (index and titles of ICNAF publications, 1975)

#### Biochemical analyses

RD 78 / 90 (genetic variability in harp seals)

Biological Surveys Subcommittee

R (78): 75 (report to STACRES, Jun 1978)

Biomass (see Abundance; Stock size)

Boreogadus saida (see Cod, polar)

Brosme brosme (see Cusk)

Buccinum spp. (mollusc)

RB 13 : 11 (food of cod in SA 2 to 4)

Butterfish, Atlantic (*Peprilus triacanthus*)

SE 3 : 73 (study of age and growth in SA 5 and 6)

RD 78 / 8 (by-catch in squid fishery of SA 5 and 6)

By-catch

SE 4 : 16 (with shrimp in survey off Baffin Island)

35 (with shrimp in fishery of SA 1)

RD 78 / 8 (study of squid fishery in SA 5 and 6)

9 (in squid and silver hake fishery in Div. 4VWX)

13 (in Spanish squid fishery in SA 4, 1977)

16 (in Japanese squid fishery in SA 4, 1977)

34 (groundfish in small-mesh trawls in SA 4)

88 (exploratory survey for shrimp in SA 0, 1978)

94 (in Norwegian shrimp fishery in SA 1, 1977-78)

## C

Calanus spp. (copepod)

RD 78 / 32 (distribution in Div. 4VWX, 1977)

68 (in plankton recorder surveys, 1976)

72 (distribution on Flemish Cap, 1970-77)

75 (in plankton recorder surveys, 1977)

Canada

RD 78 / 67 (report on discards in SA 2 and 3)

83 (report on discards in SA 4 and 5)

SD 78 / 20 (research report for 1977)

Capelin (*Mallotus villosus*)

RB 13 : 11 (predation of cod on capelin in SA 2 to 4)

21 (ecology and surplus yield in SA 2 and 3)

SE 3 : 61 (spawning on SE Shoal of Grand Bank)

RD 78 / 18 (ichthyoplankton in Flemish Cap area)

22 (Norwegian fishery off Nfld, 1977)

29 (assessment of stock in Div. 3N, 1977)

30 (studies on stock in Div. 2J+3K, 1977)

43 (acoustic estimate of stock in Div. 2J+3K)

52 (sequential abundance estimate for Div. 3NO)

Catchability

RB 13 : 81 (factors affecting catchability of trawls)

Catches; Catch/effort

RB 13 : 21 (surplus yield estimates for SA 2 and 3)

31 (fluctuations in Grand Bank haddock)

81 (factors affecting trawl catchability)

SE 3 : 7 (dynamics of cod stock in Div. 4RS)

17 (redfish in bottom and pelagic trawls in Div. 3M)

- 23 (witch flounder in Div. 2J+3KL)
- 61 (spawning capelin on SE Shoal, 1976)
- 79 (age composition of mackerel in SA 5 and 6)
- 4 : 7 (exploitation of shrimp in SA 1)
- 16 (shrimp in survey off Baffin Island)
- 23 (biomass estimate for shrimp in SA 1)
- 31 (assessment of shrimp in SA 1)
- 35 (re effort for shrimp in SA 1)
- 43 (estimating TAC for shrimp in SA 1)
- 45 (diurnal variation in shrimp catches)
- 68 (re effort for shrimp in SA 1)
- RD 78 / 3 (international squid fishery in SA 3 and 4)
- 4 (Canadian offshore squid fishery, 1977)
- 6 (squid catches in Nfld area, 1975-77)
- 8 (squid fishery in SA 5 and 6)
- 9 (squid and silver hake in Div. 4VWX, 1977)
- 10 (assessment of *Illex* in Div. 4W)
- 13 (Spanish squid fishery in SA 4, 1977)
- 14 (effect of gear type on Japanese squid fishery)
- 16 (by-catch in Japanese squid fishery)
- 17 (assessment of *Illex* in SA 3 and 4)
- 19 (resolution of the catch equation)
- 22 (Norwegian capelin fishery in 1977)
- 26 (forecasting state of cod fishery in SA 2)
- 31 (assessment of silver hake in Div. 4VWX)
- 33 (TAC estimate for red hake in Div. 5Z)
- 35 (status of A. plaice in Div. 3LNO)
- 37 (status of witch stock in Div. 2J+3KL)
- 38 (distribution of G. halibut in SA 0)
- 39 (fishery for G. halibut in Div. 2J+3KL)
- 40 (analysis of witch stock in Div. 3NO)
- 41 (status of yellowtail in Div. 3LNO)
- 44 (assessment of cod stock in SA 1)
- 46 (assessment of redfish stock in Div. 3LN)
- 47 (status of grenadier stocks in SA 0 to 3)
- 48 (assessment of redfish stock in Div. 3M)
- 49 (Canadian squid fishery in SA 4)
- 50 (mackerel on Scotian Shelf in winter)
- 51 (update of cod assessment for Div. 3M)
- 52 (sequential analysis of capelin in Div. 3NO)
- 53 (assessment of G. halibut in SA 0 and 1)
- 56 (status of redfish stock in Div. 3M)
- 57 (status of cod stock in Div. 3M)
- 58 (assessment of cod stock in Div. 3M)
- 59 (status of cod stock in Div. 3NO)
- 61 (stock estimate for *Illex* in SA 4, 1977)
- 62 (status of silver hake stock in Div. 4VWX)
- 66 (status of cod stock in Div. 2J+3KL)
- 67 (Canadian discards in SA 2 and 3)
- 82 (assessment of cod in Div. 3Pn+4RS)
- 83 (Canadian discards in SA 4 and 5)
- 91 (assessment of hooded seals in ICNAF area)
- 92 (Norwegian studies on seals, 1977-78)
- 94 (Norwegian studies on shrimp in SA 1, 1977-78)
- 95 (French shrimp fishery in SA 1, 1978)
- 97 (Faroes shrimp fishery in SA 1, 1974-78)
- 98 (harp and hooded seal catches in SA 1)
- SD 78 / 6 (historical catches of selected species, 1967-71)
- 11 (efficiency of sampling in 1976)
- 26 (nominal catches and TACs, 1974-78)

Centropages spp. (copepod)

RD 78 / 32 (zooplankton in Div. 4VWX, 1977)

Cephalopods (see also Squids)

RB 13 : 11 (food of cod in SA 2 to 4)

Cetaceans (see Whale)

Chaetognaths (arrow worms)

RD 78 / 32 (zooplankton in Div. 4VWX, 1977)

Chionocetes spp. (decapod)

RB 13 : 11 (food of cod in SA 2 to 4)

Chlamys spp. (pelecypod)

RB 13 : 11 (food of cod in SA 2 to 4)

Circulation, water (see Currents)Clupea harengus (see Herring, Atlantic)Cod, Atlantic (*Gadus morhua*)

- RB 13 : 11 (predation on capelin in SA 2 to 4)
- 21 (capelin ecology and cod predation)
- SE 3 : 7 (dynamics of stock in Div. 3Pn+4RS)
- 4 : 35 (by-catch in shrimp fishery in SA 1)
- RD 78 / 9 (by-catch in silver hake fishery in SA 4)
- 13 (by-catch in Spanish squid fishery)
- 16 (by-catch in Japanese squid fishery)
- 18 (ichthyoplankton of Flemish Cap area)
- 34 (catchability in bottom trawls)
- 25 (reliability of total trawl survey data)
- 26 (forecasting state of stock in SA 2)
- 27 (assessment of stock in Div. 3M, 1972-77)
- 44 (assessment of stock at W Greenland)
- 45 (groundfish survey in SA 0, 1977)
- 51 (update of Div. 3M assessment)
- 57 (status of stock in Div. 3M)
- 58 (assessment of Div. 3M stock)
- 59 (status of stock in Div. 3NO)
- 66 (status of stock in Div. 2J+3KL)
- 69 (FRG-USA survey in SA 4 and 5, 1977)
- 80 (planning group re Flemish Cap project)
- 82 (assessment of stock in Div. 3Pn+4RS)
- 94 (by-catch in Norwegian shrimp fishery)

Cod, polar (*Boreogadus saida*)

- RD 78 / 45 (groundfish survey in SA 0, 1977)
- 88 (by-catch with shrimp in SA 0, 1978)

Cohort analysis (see Virtual population analysis)Colus spp. (gastropod)

RB 13 : 11 (food of cod in SA 2 to 4)

Comparative fishing

RB 13 : 81 (factors affecting catchability of trawls)

Conservation (see Management)Continuous plankton records

- RD 78 / 68 (surveys in ICNAF area, 1976)
- 75 (surveys in ICNAF area, 1977)

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

- RD 78 / 32 (distribution in Div. 4VWX, 1977)
- 68 (in plankton recorder surveys, 1976)
- 72 (distribution on Flemish Cap, 1970-77)
- 75 (in plankton recorder surveys, 1977)

Crabs

RB 13 : 11 (food of cod in SA 2 to 4)

Crustaceans (see also under specific names)

RB 13 : 11 (food of cod in SA 2 to 4)

Cuba

SD 78 / 29 (research report for 1977)

Currents

- SE 3 : 97 (geostrophic circulation in SA 4 and 5)
- RD 78 / 21 (Scotian Shelf ichthyoplankton program)
- 70 (hydrographic conditions in SA 0 to 3, 1977)
- 71 (dynamics of water in SA 3, 1976-77)
- 79 (re herring larvae on Georges Bank)
- 80 (planning group re Flemish Cap project)
- 93 (drift of shrimp larvae in Davis Strait)

Cusk (*Brosme brosme*)

RD 78 / 18 (ichthyoplankton in Flemish Cap area)

CWP (Coordinating Working Party on Fishery Statistics)

- SD 78 / 2 (report of 9th session of CWP, May 1977)
- 22 (major recommendations relevant to ICNAF)

Cyclothone signata (see Anglemouth)Cyrtodaria spp. (pelecypod)

RB 13 : 11 (food of cod in SA 2 to 4)

Cystophora cristata (see Seal, hooded)

## D

Davis Strait (Statistical Area 0 and Subarea 1)

- SE 3 : 16 (survey from shrimp in SA 0, 1977)
- RD 78 / 87 (assessment of shrimp potential in SA 0, 1978)
- 88 (exploratory survey for shrimp in SA 0, 1978)
- 93 (possible drift of shrimp larvae)

Decapods (see also under specific names)

- RB 13 : 11 (food of cod in SA 2 to 4)
- RD 78 / 32 (zooplankton in Div. 4VWX, 1977)

Denmark

SD 78 / 12 (research report for 1977)

Diatoms (see also Phytoplankton)

RD 78 / 72 (distribution on Flemish Cap, 1970-77)

Discards (fish discarded at sea)

- RB 13 : 31 (in haddock fishery on Grand Bank)
- SE 4 : 35 (in shrimp fishery in SA 1)
- RD 78 / 67 (report by Canada for SA 2 and 3)
- 83 (report by Canada for SA 4 and 5)
- 94 (in shrimp fishery in SA 1)
- SD 78 / 21 (statistics on discards, 1976)
- 23 (information on discards, 1977)

Distribution (see also Abundance)

- SE 3 : 33 (silver hake in Div. 4VWX)  
 93 (*Illex* on Scotian Shelf, 1970-76)  
 4 : 7 (biology of shrimp in SA 1)  
 16 (shrimp in survey off Baffin Island)  
 23 (shrimp in survey off W Greenland)  
 47 (USSR studies on shrimp in SA 1)  
 68 (trawl survey for shrimp in SA 1)  
 RD 78 / 9 (squid and silver hake in SA 4, 1977)  
 18 (ichthyoplankton in Flemish Cap area)  
 25 (cod in surveys off Nfld)  
 27 (status of cod in Div. 3M, 1972-77)  
 30 (capelin in Div. 2J+3K, 1977)  
 32 (silver hake eggs and larvae in SA 4)  
 45 (groundfish in surveys in SA 0, 1977)  
 50 (mackerel on Scotian Shelf in winter)  
 69 (FRG-USA survey in SA 4 and 5, 1977)  
 72 (plankton on Flemish Cap, 1970-77)  
 78 (GDR herring surveys in SA 5 and 6, 1975-77)  
 79 (larvae herring re hydrography in Div. 5Z)  
 87 (assessment of shrimp potential in SA 0)  
 88 (exploratory survey for shrimp in SA 0, 1978)  
 93 (drift of shrimp larvae in Davis Strait)  
 94 (Norwegian studies on shrimp, 1977-78)  
 95 (French data on shrimp in SA 1, 1978)  
 96 (distribution of shrimp grounds in SA 1)

Diurnal effects

- RB 13 : 81 (factors effecting catchability of trawls)  
 SE 3 : 17 (variation in redfish catches in Div. 3M)  
 45 (variation in mackerel catches in SA 5 and 6)  
 4 : 23 (variation in shrimp catches in SA 1)  
 45 (variation in shrimp catches in SA 1)  
 68 (variation in survey catches of shrimp)  
 RD 78 / 87 (variation in shrimp catches in SA 0)  
 95 (variation in shrimp catches in SA 1)

Dynamic topography

- SE 3 : 97 (geostrophic circulation in SA 4 and 5)  
 RD 78 / 71 (circulation in SA 3, 1976-77)

**E**East Greenland (see Greenland area)Echinoderms

- RB 13 : 11 (food of cod in SA 2 to 4)

Echo-sounding (see Hydroacoustics)Ecology (see under specific behavioural and environmental aspects)Effort (see Fishing effort)Eggs; Ova

- RD 78 / 18 (ichthyoplankton in Flemish Cap area)  
 21 (Scotian Shelf ichthyoplankton program)  
 32 (silver hake on Scotian Shelf, 1977)  
 79 (distribution re hydrography in SA 5)  
 80 (planning group re Flemish Cap project)

Electrophoresis

- RD 78 / 90 (genetic variability in harp seals)

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, Oceanography, Salinity, Temperature, Plankton, etc.)

Environmental Subcommittee

- R (78): 93 (report to STACRES, Jun 1978)

Euchaeta spp. (copepod)

- RD 78 / 68 (in plankton recorder surveys, 1976)  
 75 (in plankton recorder surveys, 1977)

Euphausiids (see also under specific names)

- RB 13 : 11 (food of cod in SA 2 to 4)  
 RD 78 / 32 (distribution in Div. 4VWX, 1977)  
 68 (in plankton recorder surveys, 1976)  
 75 (in plankton recorder surveys, 1977)

Exploitation rate (see Mortality)Exploration (see Surveys)**F**Federal Republic of Germany

- SD 78 / 31 (research report for 1977)

Feeding; Food

- RB 13 : 11 (studies on cod in SA 2 to 4)  
 21 (capelin ecology and predation in SA 2 and 3)

Fin whale (see Whale, fin)Finfish (see also Groundfish, and names of individual species)

- RB 13 : 81 (factors affecting catchability in trawls)

Fisheries (see Catches)Fishery regulations

- CD 78 / 1 (1977/78 fishery regulations, to Nov 1977)

Fishing effort; Fishing intensity

- RB 13 : 81 (factors affecting catchability of trawls)  
 SE 3 : 17 (redfish in trawl catches in Div. 3M)  
 61 (capelin fishery on SE Shoal, 1976)  
 4 : 23 (re biomass estimate for shrimp in SA 1)  
 31 (assessment of shrimp in SA 1)  
 35 (Norwegian studies on shrimp in SA 1)  
 45 (diurnal variation in shrimp catches)  
 67 (re shrimp catches in SA 1)  
 RD 78 / 8 (study on squid fishery in SA 5 and 6)  
 9 (squid and silver hake fishery in Div. 4VWX)  
 10 (assessment of *Illex* in Div. 4W)  
 13 (Spanish *Illex* fishery in SA 4, 1977)  
 17 (assessment of *Illex* in SA 3 and 4)  
 26 (forecasting state of cod stock in SA 2)  
 44 (assessment of cod stock in SA 1)  
 46 (assessment of redfish in Div. 3LN)  
 47 (grenadier fishery in SA 0 to 3)  
 48 (assessment of redfish in Div. 3M)

- 49 (Canadian squid fishery in SA 4)
- 51 (update of Div. 3M cod assessment)
- 52 (analysis of capelin stock in Div. 3NO)
- 53 (assessment of G. halibut in SA 0 and 1)
- 56 (status of redfish stock in Div. 3M)
- 57 (status of cod stock in Div. 3MO)
- 58 (assessment of Div. 3M cod)
- 59 (status of cod stock in Div. 3NO)
- 66 (status of cod stock in Div. 2J+3KL)
- 82 (assessment of cod in Div. 3Pn+4RS)
- 94 (Norwegian shrimp fishery in SA 1, 1977-78)
- 95 (data on French shrimp fishery in SA 1, 1978)
- 97 (Faroes shrimp fishery in SA 1, 1974-78)

#### Fishing power

- RB 13 : 81 (factors affecting catchability of trawls)

#### Fishing vessels

- SD 78 / 5 (list of vessels for 1976)

#### Flatfishes (see under names of various species)

#### Flemish Cap

- R (78):101 (report of working group, Jun 1978)
- SE 3 : 17 (variation in trawl catches of redfish)
- RD 78 / 18 (distribution of ichthyoplankton)
- 27 (assessment of cod stock, 1972-77)
- 48 (assessment of redfish stock)
- 51 (update of cod stock assessment)
- 56 (status of redfish stock)
- 57 (status of cod stock)
- 58 (assessment of cod stock)
- 70 (temperature conditions, 1977)
- 71 (salinity conditions, 1976-77)
- 72 (plankton distribution, 1970-77)
- 80 (planning group re Flemish Cap project)

#### Flounder, witch (*Glyptocephalus cynoglossus*)

- SE 3 : 23 (status of fishery in Div. 2J+3KL)
- RD 78 / 9 (by-catch in squid fishery in SA 4, 1977)
- 18 (ichthyoplankton of Flemish Cap area)
- 37 (status of stock in Div. 2J+3KL)
- 40 (analysis of stock in Div. 3NO)

#### Flounder, yellowtail (*Limanda ferruginea*)

- RD 78 / 9 (by-catch in squid fishery in SA 4, 1977)
- 16 (by-catch in Japanese squid fishery)
- 18 (ichthyoplankton of Flemish Cap area)
- 36 (abundance from surveys in Div. 3LNO)
- 41 (assessment of stock in Div. 3LNO)

#### Flounders (see under names of various species)

#### Fluctuations (see also Diurnal effects)

- RB 13 : 31 (year-classes of haddock on Grand Bank)
- 53 (maturity and spawning of Grand Bank haddock)
- SE 3 : 57 (herring spawning on Georges Bank)
- 93 (*Illex* abundance on Scotian Shelf, 1970-76)
- RD 78 / 44 (cod abundance at W Greenland)
- 98 (harp and hooded seal catches in SA 1)

#### Food (see Feeding)

#### France

- SD 78 / 27 (research report for 1977)

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

- RD 78 / 85 (Canadian research on harp seals, 1978)
- 90 (genetic variability in harp seals)
- 91 (assessment of hooded seal stocks)
- 93 (Norwegian research on seals, 1977-78)

## G

#### Gadus morhua (see Cod, Atlantic)

#### Gammarids (amphipods)

- RB 13 : 11 (food of cod in SA 2 to 4)

#### Gastropods (molluscs)

- RB 13 : 11 (food of cod in SA 2 to 4)

#### Genetics

- RD 78 / 90 (variability in harp seal populations)

#### Georges Bank (Subarea 5)

- RB 13 : 81 (factors affecting catchability of trawls)
- SE 3 : 45 (abundance indices for mackerel)
- 49 (mackerel abundance from surveys)
- 57 (temperature re herring spawning)
- 73 (age and growth of butterfish)
- 79 (variance in mackerel age composition)
- 97 (geostrophic circulation in SA 4 and 5)
- RD 78 / 11 (state of *Illex* stock in SA 4 and 5)
- 20 (stages of maturity in herring)
- 33 (TAC estimate for red hake stock)
- 69 (FRG-USA trawl survey, 1977)
- 77 (abundance indices from trawl surveys)
- 78 (GDR young herring surveys, 1975-77)
- 79 (larval herring re hydrography)
- 83 (discards in Canadian fishery)

#### Geostrophic circulation

- SE 3 : 97 (monthly charts for SA 4 and 5)
- RD 78 / 71 (water dynamics in SA 3, 1976-77)

#### German Democratic Republic

- SD 78 / 14 (research report for 1977)

#### Germany, Federal Republic of (see Federal Republic of Germany)

#### Girth; Girth/length

- RD 78 / 34 (re length for silver hake in Div. 4W)

#### Glyptocephalus cynoglossus (see Flounder, witch)

#### Gonatus spp. (cephalopod)

- RB 13 : 11 (food of cod in SA 2 to 4)

#### Grand Bank (Subarea 3)

- RB 13 : 5 (age and growth of G. halibut)
- 11 (predation of cod on capelin)
- 21 (capelin ecology and surplus yield)



- 31 (age and growth of haddock)
- 53 (maturity and spawning of haddock)
- SE 3 : 23 (status of witch stock in Div. 2J+3KL)
- 61 (capelin spawning on SE Shoal, 1976)
- RD 78 / 3 (study of international squid catch, 1977)
- 4 (Canadian offshore squid fishery, 1977)
- 17 (assessment of *Illex* in SA 3 and 4)
- 22 (Norwegian capelin fishery in 1977)
- 25 (reliability of total trawl survey data)
- 29 (assessment of capelin in Div. 3N)
- 35 (status of A. plaice in Div. 3LNO)
- 36 (yellowtail and A. plaice abundance)
- 37 (status of witch stock in Div. 2J+3KL)
- 40 (analysis of witch stock in Div. 3NO)
- 41 (status of yellowtail stock in Div. 3LNO)
- 46 (assessment of redfish in Div. 3LN)
- 52 (sequential abundance model for capelin)
- 59 (status of cod stock in Div. 3NO)
- 66 (status of cod stock in Div. 2J+3KL)
- 67 (report on Canadian discards in SA 3)
- 70 (temperature conditions in SA 0 to 3, 1977)
- 71 (salinity conditions in SA 3, 1976-77)

#### Greenland area (Subarea 1 and East Greenland)

- SE 4 : 7 (biology and fishery for shrimp)
- 23 (biomass estimate for shrimp)
- 31 (assessment of shrimp stocks)
- 35 (Norwegian studies on shrimp)
- 43 (method of estimating TAC for shrimp)
- 45 (diurnal variation in shrimp catches)
- 47 (USSR studies on shrimp in SA 1)
- 51 (life cycle of shrimp in SA 1)
- 61 (density of shrimp by photography)
- 68 (trawl survey for shrimp in SA 1)
- RD 78 / 24 (catchability of cod and G. halibut)
- 44 (assessment of cod stock in SA 1)
- 47 (assessment of grenadier in SA 0 and 1)
- 53 (assessment of G. halibut in SA 0 and 1)
- 54 (status of grenadier stock in SA 0 and 1)
- 65 (hydrographic conditions, Nov 1976)
- 89 (shrimp density by photography, 1978)
- 93 (drift of shrimp larvae in Davis Strait)
- 94 (Norwegian studies on shrimp, 1977-78)
- 95 (data on French shrimp fishery, 1978)
- 96 (distribution of shrimp grounds)
- 97 (Faroes shrimp fishery, 1974-78)
- 98 (harp and hooded seal catches in SA 1)

#### Greenland halibut (see Halibut, Greenland)

#### Grenadier, roughhead (*Macrourus berglex*)

- RD 78 / 45 (groundfish survey in SA 0)

#### Grenadier, roundnose (*Macrourus rupestris*)

- RD 78 / 45 (groundfish survey in SA 0)
- 47 (assessment of stocks in SA 0 to 3)
- 54 (status of stocks in SA 0 to 3)

#### Greysole (see Flounder, witch)

#### Groundfish (see also under specific names)

- RD 78 / 45 (abundance in trawl survey in SA 0)
- 67 (discards by Canada in SA 2 and 3)
- 83 (discards by Canada in SA 4 and 5)

#### Growth; Growth rate

- RB 13 : 5 (studies on G. halibut in SA 2 to 4)
- 21 (ecology of capelin in SA 2 and 3)
- 31 (studies on Grand Bank haddock)
- 53 (re maturity of Grand Bank haddock)
- SE 3 : 7 (dynamics of cod stock in Div. 4RS)
- 23 (status of witch stock in Div. 2J+3KL)
- 33 (studies on silver hake in Div. 4VWX)
- 61 (capelin on SE Shoal of Grand Bank)
- 73 (studies on butterfish in SA 5 and 6)
- 4 : 51 (life cycle of shrimp in SA 1)
- RD 78 / 2 (*Illex* in Div. 4VWX in 1977)
- 53 (G. halibut stock in SA 0 and 1)
- 54 (roundnose grenadier in SA 0 to 3)

#### Gulf of Maine (Subarea 5)

- SE 3 : 45 (abundance indices for mackerel)
- 49 (mackerel abundance from surveys)
- 97 (geostrophic circulation in SA 4 and 5)
- RD 78 / 69 (FRG-USA trawl survey in SA 4 and 5, 1977)
- 77 (abundance indices from trawl surveys)
- 78 (GDR young herring surveys, 1975-77)
- 83 (Canadian discards in SA 4 and 5)

#### Gulf of St. Lawrence (Subarea 4)

- RB 13 : 5 (age and growth of G. halibut)
- 11 (feeding studies on cod)
- 67 (herring migration in Div. 3P and 4T)
- SE 3 : 7 (dynamics of Div. 4RS cod stock)
- RD 78 / 82 (assessment of cod in Div. 3Pn+4RS)
- 85 (Canadian research on harp seals)
- 86 (tagging and branding of hooded seals)
- 90 (genetic variation in harp seals)

## H

#### Haddock (*Melanogrammus aeglefinus*)

- RB 13 : 31 (age and growth studies for Grand Bank)
- 53 (maturity and spawning on Grand Bank)
- RD 78 / 9 (by-catch in squid fishery in SA 4, 1977)
- 16 (by-catch in Japanese squid fishery)
- 18 (ichthyoplankton of Flemish Cap area)
- 69 (FRG-USA trawl survey in SA 4 and 5, 1977)
- 83 (discards in Canadian fishery in SA 2 and 3)

#### Hake, red (*Urophycis chuss*)

- RD 78 / 8 (by-catch in squid fishery in SA 5 and 6)
- 33 (TAC estimate for Georges Bank stock)

#### Hake, silver (*Merluccius bilinearis*)

- SE 3 : 29 (natural mortality in Div. 4VWX)
- 33 (age and growth on Scotian Shelf)
- RD 78 / 8 (by-catch in squid fishery in SA 5 and 6)
- 9 (and squid fishery on Scotian Shelf, 1977)
- 13 (by-catch in Spanish squid fishery, 1977)
- 14 (by-catch with squid in Japanese fishery)
- 16 (by-catch in Japanese squid fishery)
- 31 (assessment of stock in Div. 4VWX)
- 32 (eggs and larvae in Div. 4VWX, 1977)
- 34 (trawl selection studies in Div. 4W)

- 55 (length-weight relation in Div. 4VWX)
- 62 (assessment of stock in Div. 4VWX)
- 63 (selection in kapron codends)
- SD 78 / 10 (report of ageing workshop, Mar 1978)

Halibut, Atlantic (*Hippoglossus hippoglossus*)

- RD 78 / 16 (by-catch in Japanese squid fishery)
- 45 (groundfish survey in SA 0, 1977)

Halibut, Greenland (*Reinhardtius hippoglossoides*)

- RB 13 : 5 (studies on age and growth in SA 2 to 4)
- 11 (food of cod in SA 2 to 4)
- SE 4 : 16 (by-catch in shrimp catches off Baffin Island)
- 35 (by-catch in shrimp fishery in SA 1)
- RD 78 / 24 (catchability in bottom trawls)
- 38 (distribution from surveys in SA 0)
- 39 (exploitation in SA 2 and 3)
- 45 (groundfish survey in SA 0, 1977)
- 53 (assessment of stock in SA 0 and 1)
- 88 (by-catch with shrimp in SA 0 survey, 1978)
- 94 (by-catch in shrimp fishery in SA 1)

Harp seal (see Seal, harp)

Hermaphroditism

- RB 13 : 53 (in haddock of the Grand Bank)

Herring, Atlantic (*Clupea harengus*)

- RB 13 : 11 (food of cod in SA 2 to 4)
- 67 (migrations from tagging in Div. 3P and 4T)
- SE 3 : 57 (temperature re spawning on Georges Bank)
- RD 78 / 8 (by-catch in squid fishery in SA 5 and 6)
- 20 (stages of maturity on Georges Bank)
- 69 (FRG-USA trawl survey in SA 4 and 5, 1977)
- 78 (GDR surveys in SA 5 and 6, 1975-77)
- 79 (larvae re hydrography in Div. 5Z)

Hippoglossoides platessoides (see Plaice, American)

Hippoglossus hippoglossus (see Halibut, Atlantic)

Hooded seal (see Seal, hooded)

Hyas spp. (decapod)

- RB 13 : 11 (food of cod in SA 2 to 4)

Hydroacoustics

- RD 78 / 29 (biomass estimate of capelin in Div. 3N)
- 30 (biomass estimate of capelin in Div. 2J+3K)
- 43 (biomass estimate of capelin in Div. 2J+3K)

Hydrography (see also under specific headings: eg. Temperature, Salinity, Currents, etc.)

- RB 13 : 13 (effect on haddock year-classes in SA 3)
- SE 3 : 57 (effect on herring spawning in Div. 5Z)
- 61 (effect on capelin spawning in Div. 3N)
- 97 (geostrophic circulation in SA 4 and 5)
- 109 (ICNAF standard oceanographic stations)
- 4 : 47 (effect on shrimp distribution in SA 1)
- RD 78 / 32 (silver hake eggs and larvae in Div. 4VWX)
- 50 (winter distribution of mackerel in Div. 4VWX)
- 65 (conditions off W Greenland, Nov 1977)
- 70 (conditions in SA 0 to 3, 1977)
- 71 (salinity conditions in SA 3, 1976-77)

- 78 (re young herring in SA 5 and 6, 1975-77)
- 79 (re larval herring on Georges Bank)
- 80 (planning group re Flemish Cap project)
- 81 (conditions in Div. 2J, Dec 1977)

Hyperids

- RB 13 : 11 (food of cod in SA 2 to 4)

I

Ice; Icebergs

- RB 13 : 31 (effect on year-class success of haddock)

ICES (International Council for the Exploration of the Sea)

- SD 78 / 7 (1977 resolutions relevant to ICNAF)

Ichthyoplankton

- RD 78 / 18 (distribution in the Flemish Cap area)
- 21 (report of program on the Scotian Shelf)
- 32 (eggs and larvae in Div. 4VWX, 1977)
- 80 (planning group re Flemish Cap project)

Illex illecebrosus (see Squid, short-finned)

Index of publications

- IN 2 : 1 (index of ICNAF meeting documents, 1965-74)
- SD 78 / 18 (index and list of titles for 1976)
- 33 (index and list of titles for 1975)

Invertebrates (see under specific names)

J

Japan

- SD 78 / 30 (research report for 1977)

L

Labrador area (Subarea 2)

- RB 13 : 5 (age and growth of G. halibut)
- 11 (predation of cod on capelin)
- 21 (capelin ecology and surplus yield)
- SE 3 : 23 (status of witch stock in Div. 2J+3KL)
- RD 78 / 24 (catchability of groundfish by trawls)
- 26 (forecasting the state of cod stock)
- 28 (shrimp concentrations in SA 2)
- 30 (studies on capelin in 2J+3K, 1977)
- 37 (status of witch stock in Div. 2J+3KL)
- 39 (exploitation of G. halibut in SA 2 and 3)
- 43 (acoustic estimate of capelin in Div. 2J+3K)
- 47 (assessment of grenadier in SA 0 to 3)
- 54 (status of roundnose grenadier stocks)
- 66 (status of cod stock in Div. 2J+3KL)
- 67 (report on Canadian discards in SA 2 and 3)
- 70 (temperature conditions in SA 0 to 3, 1977)
- 81 (hydrography in Div. 2J, Dec 1977)

Lance (see Sand lance)

Landings (see Catches)

Lanternfish (Myctophidae)

RB 13 : 11 (food of cod in SA 2 to 4)

Larvae

RD 78 / 18 (ichthyoplankton of Flemish Cap area)  
21 (ichthyoplankton program on Scotian Shelf)  
32 (silver hake on Scotian Shelf, 1977)  
68 (redfish in recorder surveys, 1976)  
75 (redfish in recorder surveys, 1977)  
79 (herring re hydrography in Div. 5Z)  
80 (planning group re Flemish Cap project)  
93 (drift of shrimp larvae in Davis Strait)

Length; Length composition

RB 13 : 5 (growth of G. halibut in SA 2 to 4)  
21 (re age of capelin in SA 2 and 3)  
31 (age and growth of haddock on Grand Bank)  
53 (spawning and maturity of Grand Bank haddock)  
67 (stock relation of herring in Div. 3P and 4T)  
SE 3 : 7 (dynamics of cod stock in Div. 4RS)  
17 (redfish in trawl catches in Div. 3M)  
23 (witch flounder in Div. 2J+3KL)  
33 (growth of silver hake in Div. 4VWX)  
73 (growth of butterfish in SA 5 and 6)  
4 : 16 (biological data for shrimp in SA 0)  
35 (Norwegian studies on shrimp in SA 1)  
47 (USSR studies on shrimp in SA 1)  
51 (life cycle of shrimp in SA 1)  
RD 78 / 2 (Illex population in Div. 4VWX, 1977)  
6 (Illex catches in Nfld area, 1975-77)  
8 (Illex and Loligo fishery in SA 5 and 6)  
13 (Spanish squid catches in SA 4, 1977)  
22 (Norwegian capelin fishery in SA 3, 1977)  
30 (USSR studies on capelin in Div. 2J+3K, 1977)  
32 (silver hake larvae in Div. 4VWX)  
34 (re girth relation for silver hake in SA 4)  
37 (witch flounder catches in Div. 2J+3KL)  
38 (G. halibut distribution in SA 0)  
39 (G. halibut catches in SA 2 and 3)  
46 (redfish catches in Div. 3LN)  
47 (roundnose grenadier in SA 0 to 3)  
48 (assessment of redfish in Div. 3M)  
53 (G. halibut fishery in SA 0 and 1)  
54 (assessment of grenadier in SA 0 to 3)  
55 (re weight relation for silver hake in SA 4)  
63 (re selection of silver hake in SA 4)  
78 (young herring in GDR surveys, 1975-77)  
83 (discards in Canadian fishery in SA 4 and 5)  
87 (shrimp in survey catches in SA 0, 1978)  
88 (exploratory survey for shrimp in SA 0, 1978)  
94 (shrimp in Norwegian fishery in SA 1, 1977-78)  
95 (data on French shrimp fishery in SA 1, 1978)

Light, reactions to (see Diurnal effects)

Limanda ferruginea (see Flounder, yellowtail)

Loligo pealei (see Squid, long-finned)

Long-finned squid (see Squid, long-finned)

## M

Mackerel, Atlantic (*Scomber scombrus*)

SE 3 : 45 (abundance indices for SA 5 and 6)  
49 (abundance in SA 5 and 6 from surveys)  
79 (variance in age composition of catches)  
RD 78 / 8 (by-catch in squid fishery in SA 5 and 6)  
9 (by-catch in squid fishery in SA 4, 1977)  
50 (winter distribution on Scotian Shelf)  
78 (GDR surveys in 5 and 6, 1975-77)

Macrouris berglex (see Grenadier, roughhead)

Macrourus rupestris (see Grenadier, roundnose)

Magdalen Islands (Gulf of St. Lawrence)

RB 13 : 81 (migration of herring in Div. 3P and 4T)

Maine (see Gulf of Maine)

Mallotus villosus (see Capelin)

Mammals (see under specific names)

Management (the numerous resolutions and proposals relevant to the Commission's conservation program are given in Meeting Proceedings and Annual Reports)

SE 4 : 7 (possible protective measures for shrimp in SA 43 (a method to determine TAC for shrimp in SA 1))  
CD 78 / 1 (1977/78 fishery regulations, to Nov 1977)  
SD 78 / 26 (nominal catches and TACs, 1974-78)

Marking (see Tagging)

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

RB 13 : 81 (factors affecting catchability of trawls)  
SE 3 : 49 (estimating mackerel abundance from survey data)  
79 (variance in age composition of mackerel)  
4 : 43 (estimating TAC for shrimp in SA 1)  
RD 78 / 19 (resolution of the catch equation by iteration)  
52 (sequential abundance model for capelin)  
77 (accuracy of abundance indices from surveys)

Maturation; Maturity (see also Spawning)

RB 13 : 53 (studies on haddock of the Grand Bank)  
SE 3 : 7 (dynamic of cod stock in Div. 4RS)  
17 (redfish in Flemish Cap area)  
61 (capelin spawning in Div. 3N, 1976)  
4 : 47 (USSR studies on shrimp in SA 1, 1976)  
51 (life cycle of shrimp in SA 1)  
RD 78 / 20 (stages for herring on Georges Bank)  
22 (capelin on Grand Bank, 1977)  
29 (capelin on Southeast Shoal, 1977)  
52 (studies on capelin in Div. 3NO)  
85 (Canadian research on harp seals, 1978)  
87 (assessment of shrimp potential in SA 0)  
88 (exploratory survey for shrimp in SA 0)  
95 (data from shrimp catches in SA 1, 1978)

Maximum sustainable yield (see Yield)

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

MP(78): 3 (28th Annual Meeting, June 1978)

Meganyctiphanes spp. (euphausiid)

RB 13 : 11 (food of cod in SA 2 to 4)

Melanogrammus aeglefinus (see Haddock)

Merluccius bilinearis (see Hake, silver)

Mesh regulation (see Management)

Mesh size (see under Selection for results of trawl selectivity studies)

Methodology; Methods

RB 13 : 67 (tagging of herring in SW Nfld area)  
SE 3 : 49 (estimating mackerel abundance from survey data)  
4 : 43 (estimating TAC for shrimp in SA 1)  
RD 78 / 9 (resolution of the catch equation)  
21 (Scotian Shelf ichthyoplankton program)  
26 (forecasting state of cod stock in SA 2)  
77 (abundance indices from trawl surveys)  
80 (planning group re Flemish Cap project)

Metridia spp. (copepod)

RD 78 / 32 (zooplankton in Div. 4VWX, 1977)

Migrations; Movements (see also Diurnal effects)

RB 13 : 67 (relations of herring in Div. 3P and 4T)  
81 (factors affecting catchability of trawls)  
SE 3 : 17 (diurnal migration of redfish in Div. 3M)  
45 (variation in mackerel catches in SA 5 and 6)  
61 (capelin spawning on SE Shoal, 1976)  
4 : 23 (diurnal variation in shrimp catches in SA 1)  
45 (diurnal variation in shrimp catches in SA 1)  
68 (variation in survey catches of shrimp)  
RD 78 / 85 (Canadian research on harp seals, 1978)  
86 (tagging and branding of hooded seals, 1972-78)  
87 (variation in survey catches of shrimp in SA 0)  
95 (variation in shrimp catches in SA 1)

Molluscs (see also under specific names)

RB 13 : 11 (food of cod in SA 2 to 4)

Mortality

RB 13 : 31 (haddock fishery on Grand Bank)  
67 (in tagging herring in Div. 3P and 4T)  
SE 3 : 7 (dynamics of cod stock in Div. 4RS)  
23 (witch flounder stock in Div. 2J+3KL)  
29 (estimates for silver hake in Div. 4VWX)  
4 : 43 (estimating TAC for shrimp in SA 1)  
RD 78 / 31 (assessment of silver hake in SA 4)  
35 (status of A. plaice in Div. 3NO)  
37 (status of witch stock in Div. 2J+3KL)  
39 (exploitation of G. halibut in SA 2 and 3)  
40 (analysis of witch stock in Div. 3NO)  
41 (status of yellowtail in Div. 3LNO)  
44 (assessment of cod in SA 1)  
52 (assessment of capelin in Div. 3NO)  
53 (assessment of G. halibut in SA 0 and 1)

54 (status of grenadier stocks in SA 0 to 3)  
59 (status of cod stock in Div. 3NO)  
61 (stock estimate for *Illex* in SA 4, 1977)  
62 (status of silver hake in Div. 4VWX)  
66 (status of cod stock in Div. 2J+3KL)  
91 (and productivity of hooded seals)

Myctophids (see Lanternfish)

## N

NEAFC (Northeast Atlantic Fisheries Commission)

SD 78 / 8 (press notice, special meeting, Nov 1977)

Neptuna spp. (gastropod)

RB 13 : 11 (food of cod in SA 2 to 4)

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

RB 13 : 81 (factors affecting catchability of trawl)  
SE 3 : 45 (abundance indices for mackerel)  
49 (mackerel abundance in trawl surveys)  
73 (age and growth of butterfish)  
79 (variance in age composition of mackerel)  
97 (geostrophic circulation in SA 5)  
RD 78 / 8 (study on squid fishery in SA 5 and 6)  
77 (accuracy of trawl survey abundance indices)  
78 (GDR herring surveys in SA 5 and 6, 1975-77)

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

RB 13 : 5 (age and growth studies on G. halibut)  
11 (feeding studies on cod in Div. 4RS)  
21 (capelin ecology and surplus yield)  
67 (herring migrations from SW Nfld to Div. 4T)  
SE 3 : 7 (dynamics of cod stock in Div. 3P+4RS)  
RD 78 / 6 (*Illex* catch composition, 1975-77)  
82 (assessment of W Nfld cod stock)

Newfoundland Shelf (see Northeast Nfld Shelf)

North Atlantic (see Atlantic, North)

Northeast Atlantic (see Atlantic, Northeast)

Northeast Nfld Shelf (Subarea 3)

RB 13 : 5 (age and growth of G. halibut)  
11 (feeding studies on cod)  
21 (capelin ecology and surplus yield)  
SE 3 : 23 (status of witch stock in Div. 2J+3KL)  
RD 78 / 25 (reliability of total trawl survey data)  
30 (studies on capelin in Div. 2J+3KL, 1977)  
37 (status of witch stock in Div. 2J+3KL)  
39 (exploitation of G. halibut in SA 2 and 3)  
43 (acoustic estimate for capelin in Div. 2J+3KL)  
47 (assessment of grenadier stocks in SA 0 to 3)  
54 (status of grenadier stock in SA 2 and 3)  
66 (status of cod stock in Div. 2J+3KL)  
67 (report on Canadian discards, 1977)  
70 (temperature conditions, 1977)  
71 (salinity and water dynamics, 1976-77)

Nova Scotia Banks (see Scotian Shelf)

## O

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

SE 3 : 109 (ICNAF standard oceanographic stations)  
RD 78 / 21 (Scotian Shelf ichthyoplankton program)  
80 (planning group re Flemish Cap project)

Oithona spp. (copepod)

RD 78 / 32 (zooplankton on Scotian Shelf, 1977)

Ophiopholis spp. (brittle star)

RB 13 : 11 (food of cod in SA 2 to 4)

Otoliths

SE 3 : 73 (ageing of butterfish in SA 5 and 6)  
SD 78 / 10 (ageing workshop for silver hake, Mar 1978)

Ova; Ovaries (see Eggs; Fecundity)

## P

Pagophilus groenlandicus (see Seal, harp)

Pandalus spp. (see Shrimp)

Panel meetings

MP(78): 23 (report of Panel 3 meeting, Jun 1978)

Parathemisto spp. (amphipod)

RB 13 : 11 (food of cod in SA 2 to 4)

Pelecypods

RB 13 : 11 (food of cod in SA 2 to 4)

Peprilus triacanthus (see Butterfish, Atlantic)

Photography

SE 4 : 61 (estimation of shrimp density in SA 1)  
RD 78 / 24 (re catchability of fish in trawls)  
29 (estimating capelin density in Div. 3N, 1977)  
30 (estimating capelin density in Div. 2J+3K, 1977)  
89 (estimating shrimp density in SA 1)

Phytoplankton

RD 78 / 68 (plankton recorder surveys, 1976)  
72 (distribution on Flemish Cap, 1970-77)  
75 (plankton recorder surveys, 1977)

Plaice, American (*Hippoglossoides platessoides*)

RB 13 : 11 (food of cod in SA 2 to 4)  
RD 78 / 9 (by-catch in squid fishery in SA 4)  
13 (by-catch in Spanish squid fishery, 1977)  
16 (by-catch in Japanese squid fishery)  
18 (ichthyoplankton in Flemish Cap area)

35 (status of plaice stock in Div. 3LNO)  
36 (abundance from surveys in Div. 3LNO)  
45 (groundfish survey in SA 0, 1977)  
80 (planning group re Flemish Cap project)

Plankton (see also Phytoplankton and Zooplankton)

RD 78 / 18 (ichthyoplankton in Flemish Cap area)  
21 (Scotian Shelf ichthyoplankton program)  
32 (food of silver hake larvae in SA 4)  
68 (recorder surveys in ICNAF area, 1976)  
72 (distribution on Flemish Cap, 1970-77)  
75 (recorder surveys in ICNAF area, 1977)  
80 (planning group re Flemish Cap project)

Plenary meetings

MP(78): 13 (report of first plenary, Jun 1978)  
37 (report of final plenary, Jun 1978)

Poland

SD 78 / 15 (research report for 1977)

Pollachius virens (see Pollock)

Pollock (*Pollachius virens*)

RD 78 / 9 (by-catch with squid and hake in SA 4)  
16 (by-catch in Japanese fishery in SA 4)

Polychaetes

RD 78 / 32 (zooplankton in Div. 4VWX, 1977)

Polymorphism

RD 78 / 90 (genetic variability in harp seals)

Population (see Stock)

Portugal

SD 78 / 13 (research report for 1977)

Prawn (see Shrimp)

Predation; Predators

RB 13 : 11 (capelin as prey for cod in SA 2 to 4)  
21 (capelin ecology and surplus yield)

Proceedings (see Meeting proceedings)

Production model analysis

RD 78 / 46 (assessment of redfish in Div. 3LN)  
47 (assessment of grenadier in SA 0 to 3)  
48 (assessment of redfish in Div. 3M)  
51 (update of Flemish Cap cod assessment)  
56 (assessment of redfish in Div. 3M)  
57 (assessment of cod in Div. 3M)  
58 (assessment of cod in Div. 3M)  
59 (assessment of cod in Div. 3NO)  
82 (status of cod stock in Div. 3Pn+4RS)

Pseudocalanus spp. (copepod)

RD 78 / 32 (zooplankton in Div. 4VWX, 1977)

## R

Raja spp. (see Skates)

Recaptures (see Tagging)

Recruitment

- RD 78 / 33 (red hake on Georges Bank)  
 44 (assessment of cod stock in SA 1)  
 62 (status of silver hake stock in SA 4)  
 66 (status of cod stock in Div. 2J+3KL)

Red hake (see Hake, red)

Redfish, Atlantic (*Sebastes marinus*, *S. mentella*)

- RB 13 : 11 (food of cod in SA 2 to 4)  
 SE 3 : 17 (in bottom and pelagic trawl catches in Div. 3M)  
 4 : 16 (by-catch with shrimp off Baffin Island)  
 35 (by-catch in shrimp fishery in SA 1)  
 RD 78 / 9 (by-catch in squid fishery in SA 4)  
 16 (by-catch in Japanese squid fishery)  
 18 (ichthyoplankton of Flemish Cap area)  
 45 (groundfish survey in SA 0, 1977)  
 46 (assessment of stock in Div. 3LN)  
 48 (assessment of stock in Div. 3M)  
 56 (status of stock on Flemish Cap)  
 68 (larvae in recorder surveys, 1976)  
 75 (larvae in recorder surveys, 1977)  
 80 (planning group re Flemish Cap project)  
 83 (discards in Canadian fishery in SA 4-5)  
 88 (by-catch with shrimp in SA 0, 1978)  
 94 (by-catch in shrimp fishery in SA 1, 1977-78)

Regulation (see Management)

Reinhardtius hippoglossoides (see Halibut, Greenland)

Reports of Meetings (see under Annual report, Meeting proceedings, STACRES, and also the names of subcommittees and working groups)

Reproduction (see Eggs; Maturation; Spawning)

Research and Statistics (see STACRES for meeting reports)

Research reports

- SD 78 / 9 (USSR report for 1977)  
 12 (Danish report for 1977)  
 13 (Portuguese report for 1977)  
 14 (German Dem. Rep. report for 1977)  
 15 (Polish report for 1977)  
 20 (Canadian report for 1977)  
 27 (French report for 1977)  
 29 (Cuban report for 1977)  
 30 (Japanese report for 1977)  
 31 (Fed. Rep. Germany report for 1977)  
 32 (USA report for 1977)

Rossia spp. (cephalopod)

- RB 13 : 11 (food of cod in SA 2 to 4)

Roughhead grenadier (see Grenadier, roughhead)

Roundnose grenadier (see Grenadier, roundnose)

## S

Sagitta spp. (arrow worms)

- RD 78 / 32 (zooplankton in Div. 4VWX, 1977)

Saithe (see Pollock)

Salinity

- RD 78 / 65 (conditions off W Greenland, Nov 1976)  
 71 (conditions in SA 3, 1976-77)  
 78 (GDR observations in SA 5 and 6, 1975-77)  
 79 (re larval herring in Div. 5Z)  
 80 (planning group re Flemish Cap project)  
 81 (conditions off Labrador, Dec 1977)

Sampling

- R (78): 85 (report of Stat. and Samp. Subcommittee, 1978)  
 SE 3 : 79 (variance in age composition of mackerel catches)  
 SY 19 : 1 (revised list of sampling data for 1974)  
 21 : 1 (list of sampling data for 1976)  
 SD 78 / 11 (efficiency of sampling in 1976)

Sand lance (*Ammodytes* spp.)

- RD 78 / 18 (ichthyoplankton in Flemish Cap area)

Sandeel (see Sand lance)

Scomber scombrus (see Mackerel, Atlantic)

Scotian Shelf (Subarea 4)

- RB 13 : 29 (natural mortality of silver hake)  
 33 (age and growth of silver hake)  
 SE 3 : 93 (distribution of *Illex*, 1970-76)  
 97 (geostrophic circulation in SA 4 and 5)  
 RD 78 / 2 (population structure of *Illex*, 1977)  
 3 (study of international squid fishery, 1977)  
 4 (Canadian offshore squid fishery, 1977)  
 9 (squid and silver hake fisheries, 1977)  
 10 (assessment of *Illex* in Div. 4W)  
 11 (state of *Illex* stocks in SA 4 and 5)  
 13 (Spanish *Illex* fishery in SA 4, 1977)  
 14 (effect of gear type on squid fishery)  
 16 (by-catch in Japanese squid fishery)  
 17 (assessment of *Illex* in SA 3 and 4)  
 21 (report on ichthyoplankton program)  
 31 (assessment of silver hake stock)  
 32 (silver hake eggs and larvae, 1977)  
 34 (silver hake selection in bottom trawls)  
 49 (Canadian squid fishery in SA 4)  
 50 (distribution of mackerel in winter)  
 55 (length-weight relation for silver hake)  
 61 (stock estimate for *Illex* in 1977)  
 62 (assessment of silver hake stock)  
 63 (selection of silver hake in kapron codends)  
 69 (FRG-USA trawl survey in SA 4 and 5, 1977)  
 83 (discards in Canadian fishery in SA 4 and 5)

Seal, harp (*Pagophilus groenlandicus*)

- RB 13 : 21 (predation on capelin in SA 2 and 3)  
 RD 78 / 85 (Canadian research in 1978)  
 90 (genetic variability in Gulf and Front stocks)  
 92 (Norwegian research in 1977-78)  
 98 (historical catches at Greenland)

Seal, hooded (*Cystophora cristata*)

- RD 78 / 86 (tagging and branding studies, 1972-78)  
 91 (mortality and productivity at Front)  
 92 (Norwegian research in 1977-78)  
 98 (historical catches at Greenland)

Seals

- R (78): 17 (working group report to STACRES, Nov 1977)

Sebastes spp. (see Redfish, Atlantic)Selection

- RD 78 / 34 (silver hake in bottom trawls in Div. 4W)  
 63 (silver hake in kapron codends)

Sequential population analysis

- RD 78 / 52 (model for capelin stock in Div. 3N0)  
 91 (analysis of hooded seals in ICNAF area)

Short-finned squid (see Squid, short-finned)Shrimps (*Pandalus* spp.)

- R (78): 11 (working group report to STACRES, Nov 1977)  
 RB 13 : 11 (food of cod in SA 2 to 4)  
 SE 4 : 7 (biology of shrimp in SA 1)  
 16 (biological data from survey in SA 0)  
 23 (biomass estimate from survey in SA 1)  
 31 (assessment of stocks in SA 1)  
 35 (Norwegian studies in SA 1)  
 43 (method of estimating TAC for SA 1)  
 45 (diurnal variation in SA 1 catches)  
 47 (USSR studies in SA 1, 1976)  
 51 (life cycle of shrimp in SA 1)  
 61 (density and biomass from photo survey)  
 68 (results of trawl survey in SA 1)  
 RD 78 / 28 (abundance in SA 2, 1977)  
 87 (assessment of potential in SA 0, 1978)  
 88 (exploratory survey in SA 0, 1978)  
 89 (density in SA 1 by photography, 1978)  
 93 (drift of larvae in Davis Strait)  
 94 (Norwegian studies in SA 1, 1977-78)  
 95 (data from French fishery in SA 1, 1978)  
 96 (distribution of fishing grounds in SA 1)  
 97 (Faroes fishery in SA 1, 1974-78)

Silver hake (see Hake, silver)Skates (*Raja* spp.)

- RD 78 / 45 (groundfish survey in SA 0, 1977)

Spawning (see also Maturation)

- RB 13 : 53 (and maturity of haddock in SA 3)  
 SE 3 : 57 (herring re temperature in Div. 5Z)  
 61 (capelin on Grand Bank, 1976)  
 4 : 51 (life cycle of shrimp in SA 1)  
 RD 78 / 20 (stages of maturity in herring of Div. 5Z)  
 52 (capelin abundance in Div. 3N0)

Squid, long-finned (*Loligo pealei*)

- RD 78 / 8 (study of squid fishery in SA 5 and 6)

Squid, short-finned (*Illex illecebrosus*)

- R (78): 21 (report of STACRES meeting, Feb 1978)  
 RB 13 : 11 (food of cod in SA 2 to 4)  
 SE 3 : 93 (distribution on Scotian Shelf, 1970-76)  
 RD 78 / 2 (population structure in SA 4, 1977)  
 3 (international fishery in SA 3 and 4, 1977)  
 4 (Canadian offshore fishery in SA 3 and 4)  
 6 (composition of catches in Nfld area, 1975-77)  
 8 (study of fishery in SA 5 and 6)  
 9 (re silver hake fishery in Div. 4VWX)  
 10 (assessment of stock in Div. 4W)  
 11 (state of stocks in SA 4 and 5)  
 12 (biomass of *Illex* in Subdiv. 3Ps)  
 13 (Spanish fishery in SA 4, 1977)  
 14 (effect of gear type on Japanese fishery)  
 15 (age determination from statoliths)  
 16 (by-catch in Japanese fishery)  
 17 (assessment of stocks in SA 3 and 4)  
 34 (by-catch in bottom trawls in Div. 4W)  
 49 (Canadian fishery in SA 4, 1977)  
 61 (stock estimate for SA 4 in 1977)  
 69 (FRG-USA survey in SA 4 and 5)

St. Pierre Bank (Subarea 3)

- RB 13 : 5 (age and growth of *G. halibut* in SA 2 to 4)  
 21 (capelin ecology and surplus yield)  
 RD 78 / 12 (biomass estimate of *Illex* in Subdiv. 3Ps)

STACFAD (Standing Committee on Finance and Administration)

- MP(78): 31 (report to Plenary, Jun 1978)

STACRES (Standing Committee on Research and Statistics)

- R (78): 5 (report of Special Meeting, Nov 1977)  
 21 (report of Special Meeting, Feb 1978)  
 35 (report of Annual Meeting, Jun 1978)

STACTIC (Standing Committee on International Control)

- MP(78): 5 (report to Plenary, Jun 1978)

Standard oceanographic stations

- SE 3 : 109 (ICNAF standard sections and stations)

Statistical Area 0 (see Baffin Island)Statistical Area 6 (see New England)Statistics (fishery statistics for Northwest Atlantic are given in ICNAF Statistical Bulletins, which have been issued annually since 1951)

- R (78): 85 (report of Stat. and Samp. Subcommittee, 1978)  
 SD 78 / 2 (report of 9th session of CWP, Aug 1977)  
 5 (list of fishing vessels for 1976)  
 6 (historical catches of selected species, 1967-76)  
 21 (statistics on discards, 1976)  
 22 (CWP recommendations relevant to ICNAF)  
 23 (information on discards, 1977)  
 24 (report on ICNAF statistical activities, 1977/78)  
 25 (notes on various statistical matters)

Statistics and Sampling Subcommittee

- R (78): 85 (report to STACRES, Jun 1978)

Statolith

RD 78 / 15 (possible use in ageing squid)

Stock; Stock size; Stock differentiation

- RB 13 : 21 (capelin ecology and surplus yield)  
 67 (relation of SW Nfld and Div. 4T herring)  
 SE 3 : 61 (capelin spawning on SE Shoal, 1976)  
 4 : 7 (exploitation of shrimp in SA 1)  
 16 (biomass estimate for shrimp in SA 0)  
 23 (biomass estimate for shrimp in SA 1)  
 31 (assessment of shrimp in SA 1)  
 35 (Norwegian studies on shrimp in SA 1)  
 43 (method of estimating TAC for shrimp)  
 47 (USSR studies on shrimp in SA 1)  
 61 (density of shrimp in SA 1 by photography)  
 68 (estimate for shrimp in SA 1, 1977)  
 RD 78 / 8 (estimate for squid in SA 5 and 6)  
 10 (assessment of *Illex* in Div. 4W)  
 11 (state of *Illex* stocks in SA 4 and 5)  
 12 (estimate for *Illex* in Subdiv. 3Ps)  
 17 (assessment of *Illex* in SA 3 and 4)  
 27 (assessment of cod in Div. 3M, 1972-77)  
 28 (shrimp concentrations in SA 2)  
 29 (assessment of capelin in Div. 3N, 1977)  
 30 (status of capelin in Div. 2J+3K, 1977)  
 31 (assessment of silver hake in SA 4)  
 33 (TAC estimate for red hake in Div. 5Z)  
 35 (status of A. plaice in Div. 3LNO)  
 40 (analysis of witch stock in Div. 3NO)  
 41 (status of yellowtail in Div. 3LNO)  
 43 (acoustic estimate for capelin in Div. 2J+3K)  
 44 (assessment of cod in SA 1)  
 52 (sequential analysis of capelin in Div. 3NO)  
 53 (assessment of G. halibut in SA 0 and 1)  
 54 (assessment of grenadiers in SA 0 to 3)  
 61 (stock estimate for *Illex* in SA 4, 1977)  
 62 (assessment of silver hake in SA 4)  
 66 (status of cod stock in Div. 2J+3KL)  
 87 (assessment of shrimp potential in SA 0)  
 88 (exploratory survey for shrimp in SA 0, 1978)  
 89 (estimate for shrimp by photography in SA 1)  
 91 (assessment of hooded seal stock)  
 95 (biomass estimate for shrimp in SA 1, 1978)  
 96 (estimates for shrimp grounds in SA 1)  
 SD 78 / 26 (nominal catches and TACs, 1974-78)

Stomach contents (see Feeding)Stratified trawling

- SE 3 : 45 (mackerel abundance indices for SA 5 and 6)  
 49 (abundance indices from survey data)  
 93 (abundance of *Illex* in SA 4, 197-76)  
 4 : 16 (survey for shrimp off Baffin Island)  
 23 (abundance from surveys in SA 1)  
 68 (survey for shrimp in SA 1)  
 RD 78 / 12 (survey for *Illex* in Subdiv. 3Ps)  
 36 (survey for plaice and yellowtail in SA 3)  
 38 (G. halibut distribution in SA 0)  
 45 (groundfish survey in SA 0, 1977)  
 59 (abundance of cod in Div. 3NO)  
 64 (stratification scheme for SA 0)  
 77 (abundance indices from trawl surveys)

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, Scotian Shelf)Subarea 5 (see Georges Bank, Gulf of Maine, New England)Subcommittee reports

- R (78): 51 (Assessments Subcommittee, Apr 1978)  
 75 (Biological Surveys Subcommittee, Jun 1978)  
 85 (Statistics and Sampling Subcommittee, Jun 1978)  
 93 (Environmental Subcommittee, Jun 1978)

Surveys

- R (78): 75 (report of Biol. Surveys Subcommittee, 1978)  
 RB 13 : 81 (factors affecting catchability of trawls)  
 SE 3 : 45 (abundance indices for mackerel in SA 5 and 6)  
 49 (mackerel abundance from trawl surveys)  
 57 (herring spawning re temperature in Div. 5Z)  
 93 (distribution of *Illex* in SA 4, 1970-76)  
 4 : 16 (data for shrimp in SA 0)  
 23 (biomass estimate for shrimp in SA 1)  
 61 (photographic estimate of shrimp density)  
 68 (trawl survey for shrimp in SA 1)  
 RD 78 / 12 (biomass estimate for *Illex* in Subdiv. 3Ps)  
 18 (ichthyoplankton on Flemish Cap)  
 21 (Scotian Shelf ichthyoplankton program)  
 25 (reliability of trawl survey data)  
 27 (abundance of redfish in Div. 3M, 1972-77)  
 28 (shrimp concentrations in SA 2)  
 29 (capelin abundance in Div. 3N, 1977)  
 30 (studies on capelin in Div. 2J+3K, 1977)  
 32 (silver hake eggs and larvae in SA 4, 1977)  
 36 (A. plaice and yellowtail in Div. 3LNO)  
 38 (distribution of G. halibut in SA 0)  
 43 (acoustic estimate of capelin in Div. 2J+3K)  
 45 (groundfish survey in SA 0, 1977)  
 59 (abundance of cod in Div. 3NO)  
 64 (stratification scheme for SA 0)  
 68 (plankton recorder surveys, 1976)  
 69 (FRG-USA trawl survey in SA 4 and 5, 1977)  
 72 (plankton on Flemish Cap, 1970-77)  
 75 (plankton recorder surveys, 1977)  
 77 (abundance indices from trawl surveys)  
 78 (GDR young herring surveys in SA 5 and 6)  
 79 (larval herring re hydrography in Div. 5Z)  
 80 (planning group re Flemish Cap project)  
 87 (assessing shrimp potential in SA 0, 1978)  
 88 (exploratory survey for shrimp in SA 0, 1978)  
 89 (photographic estimate of shrimp density in SA 1)

## T

Tagging

- RB 13 : 67 (stock relations of herring in Div. 3P and 4T)  
 RD 78 / 22 (studies on capelin in Div. 3N, 1977)  
 85 (Canadian research on harp seals, 1978)  
 86 (tagging and branding of hooded seals)  
 SD 78 / 19 (report on tagging in ICNAF area, 1977)

Temperature

- RB 13 : 31 (re growth of haddock on Grand Bank)  
 53 (re spawning of haddock on Grand Bank)



- SE 3 : 57 (effect on herring spawning in Div. 5Z)  
 61 (effect on capelin spawning in Div. 3N)  
 4 : 47 (effect on shrimp distribution in SA 1)  
 RD 78 / 32 (silver hake eggs and larvae in SA 4, 1977)  
 50 (winter distribution of mackerel in SA 4)  
 65 (conditions off W Greenland, Nov 1976)  
 70 (conditions in SA 0 to 3, 1977)  
 78 (effect on herring in SA 5 and 6, 1975-77)  
 79 (effect on larval herring in Div. 5Z)  
 80 (planning group re Flemish Cap project)  
 81 (conditions in Div. 2J, Dec 1977)

Thysanoessa spp. (euphausiid)

- RB 13 : 11 (food of cod in SA 2 to 4)  
 RD 78 / 68 (in plankton recorder surveys, 1976)  
 75 (in plankton recorder surveys, 1977)

Trawls; Trawl materials

- RB 13 : 81 (factors affecting catchability of trawls)  
 SE 3 : 17 (variation in redfish catches in Div. 3M)  
 49 (mackerel abundance from trawl surveys)  
 4 : 16 (stratified trawl survey off Baffin Island)  
 68 (trawl survey for shrimp in SA 1)  
 RD 78 / 13 (trawls used in Spanish squid fishery)  
 14 (effect of gear type on Japanese fishery)  
 16 (trawls used in Japanese squid fishery)  
 24 (catchability of groundfish by trawls)  
 25 (reliability of trawl survey data)  
 34 (silver hake selection in Div. 4W)  
 63 (silver hake selection in kapron codends)  
 77 (abundance indices from trawl surveys)

Turbot (see Halibut, Greenland)

Tusk (see Cusk)

## U

Union of Soviet Socialist Republics (USSR)

- SD 78 / 9 (research report for 1977)

United States of America (USA)

- SD 78 / 32 (research report for 1977)

Urophycis chuss (see Hake, red)

## V

Vessels, fishing (see Fishing vessels)

Virtual population analysis (including Cohort analysis)

- RD 78 / 35 (A. plaice stock in Div. 3LNO)  
 40 (witch flounder stock in Div. 3NO)  
 41 (yellowtail flounder stock in Div. 3LNO)  
 44 (status of cod stock in SA 1)  
 52 (capelin stock in Div. 3NO)  
 53 (G. halibut in SA 0 and 1)  
 62 (silver hake in Div. 4VWX)  
 66 (status of cod in Div. 2J+3KL)

## W

Water masses (see Currents)

Weight (see also Catches)

- RB 13 : 11 (food ingested by cod in SA 2 to 4)  
 53 (gonads re maturity in haddock)  
 SE 3 : 73 (length relation for butterfish in SA 5)  
 4 : 16 (length relation for shrimp in SA 0)  
 RD 78 / 2 (length relation for *Illex* in SA 4, 1977)  
 44 (weight-at-age for cod in SA 1)  
 55 (length relation for silver hake in SA 4)  
 66 (weight-at-age for cod in Div. 2J+3KL)  
 78 (length relation for herring in SA 5 and 6)

West Greenland (see Greenland area)

Whale, fin (*Balaenoptera physalus*)

- RB 13 : 21 (predator of capelin in SA 2 and 3)

Witch flounder (see Flounder, witch)

Wolffishes (*Anarhichus* spp.)

- RD 78 / 45 (groundfish survey in SA 0, 1977)

Working Group reports

- MP(78): 7 (report of STACTIC working group, Jun 1978)  
 R (78): 11 (report to STACRES on shrimp, Nov 1977)  
 17 (report to STACRES on seals, Nov 1977)  
 101 (report on Flemish Cap project, Jun 1978)  
 SD 78 / 2 (report of 9th session of CWP, Aug 1977)

Workshop

- SD 78 / 10 (silver hake ageing workshop, Mar 1978)

## Y

Year-class strength

- RB 13 : 31 (age and growth of Grand Bank haddock)

Yellowtail flounder (see Flounder, yellowtail)

Yield (equilibrium, maximum, sustainable, etc.)

- RB 13 : 21 (surplus yield for capelin in SA 2 and 3)  
 RD 78 / 54 (sustainable yield for grenadier stocks)  
 56 (sustainable yield for redfish in Div. 3M)  
 57 (sustainable yield for cod in Div. 3M)  
 82 (equilibrium yield for cod in Div. 3Pn+4RS)

Yield-per-recruit

- SE 3 : 7 (dynamics of cod stock in Div. 4RS)  
 23 (status of witch in Div. 2J+3KL)  
 RD 78 / 35 (A. plaice in Div. 3LNO)  
 37 (witch flounder in Div. 2J+3KL)  
 39 (G. halibut in SA 2 and 3)  
 40 (witch flounder in Div. 3NO)  
 41 (yellowtail flounder in Div. 3LNO)

- 53 (G. halibut in SA 0 and 1)
- 54 (roundnose grenadier in SA 0 to 3)
- 62 (silver hake on Scotian Shelf)

Voldia spp. (pelecypod)

RB 13 : 11 (food of cod in SA 2 to 4)

## Z

### Zooplankton

- RD 78 / 32 (distribution on Scotian Shelf, 1977)
- 68 (plankton recorder surveys, 1976)
- 72 (distribution on Flemish Cap, 1970-77)
- 75 (plankton recorder surveys, 1977)
- 80 (planning group re Flemish Cap project)

# AUTHOR INDEX

19

## A

ACKERMAN, B. B. (USA)

SE 3 : 45 (abundance indices for mackerel in SA 5 and 6)

AKENHEAD, S. A. (Canada)

RD 78 / 80 (planning group re Flemish Cap project)

AMARATUNGA, T. (Canada)

RD 78 / 2 (population structure of *Illex* in SA 4, 1977)  
3 (international squid fishery in SA 3 and 4)  
4 (Canadian offshore squid fishery, 1977)  
49 (Canadian squid fishery in SA 4)

ANDERSON, E. D. (USA)

SE 3 : 45 (abundance indices for mackerel in SA 5 and 6)

ANON. (Canada)

CD 78 / 2 (request for advice on management of *Illex*)  
3 (request for advice on management of groundfish stocks)  
12 (proposal to suspend mesh regulation for redfish in Div. 3M)  
13 (request for advice on management of seals)  
15 (request for action re non-members fishing outside 200-mile zone)  
RD 78 / 21 (Scotian Shelf ichthyoplankton program)

ANON. (EEC)

CD 78 / 5 (request for advice of management of stocks in SA 1)  
17 (statement for attachment to quota proposals)

ANON. (Poland)

CD 78 / 16 (proposal to amend enforcement scheme)

AZAROVITZ, T. R. (USA)

RD 78 / 69 (FRG-USA trawl survey in SA 4 and 5, 1977)

## B

BAKANEV, V. S. (USSR)

RD 78 / 30 (studies on capelin in Div. 2J+3K, 1977)

BARCHARD, W. W. (Canada)

RD 78 / 90 (genetic variability in harp seals)

BECKETT, J. S. (Canada)

RD 13 : 67 (migrations of herring in Div. 3P and 4T)

BELZILE, L. (Canada)

RD 78 / 83 (report on Canadian discards in SA 4 and 5)

BENNETT, B. (Canada)

RD 78 / 43 (acoustic estimate of capelin in Div. 2J+3K)

BERENBEIM, D. Y. (USST)

SE 3 : 57 (temperature re herring spawning in Div. 5Z)

BERENBOIM, B. I. (USSR)

SE 4 : 47 (USSR studies on shrimp in SA 1, 1976)

BERGFLØDT, B. (Norway)

RD 78 / 91 (mortality and productivity of hooded seals)

BISHOP, C. A. (Canada)

RD 78 / 59 (status of cod stock in Div. 3NO)

BOGART, J. P. (Canada)

RD 78 / 90 (genetic variability in harp seals)

BORRMANN, H. (GDR)

RD 78 / 54 (assessment of grenadier stocks in SA 0 to 3)

BOWERING, W. R. (Canada)

RB 13 : 5 (age and growth of *G. halibut* in SA 2 to 4)  
SE 3 : 23 (status of witch stock in Div. 2J+3KL)  
RD 78 / 37 (assessment of witch in Div. 2J+3KL)  
38 (distribution of *G. halibut* in SA 0)  
39 (exploitation of *G. halibut* in SA 2 and 3)  
40 (analysis of witch stock in Div. 3NO)

BOWMAN, E. W. (USA)

RB 13 : 81 (factors affecting catchability of trawls)

BOYTSOV, V. D. (USSR)

RD 78 / 71 (water dynamics in SA 3, 1976-77)

BRENNAN, J. A. (USA)

SE 3 : 79 (variance in age composition of mackerel)

BURMAKIN, V. V. (USSR)

RD 78 / 70 (temperature conditions in SA 0 to 3, 1977)

BURUKOVSKY, R. N. (USSR)

RD 78 / 11 (state of *Illex* stocks in SA 4 and 5)

## C

CARLSSON, D. M. (Denmark)

SE 4 : 7 (biology and exploitation of shrimp in SA 1)  
67 (trawl survey for shrimp in SA 1)

CARSCADDEN, J. E. (Canada)

RB 13 : 21 (capelin ecology and surplus yield)

SE 3 : 61 (capelin spawning on SE Shoal, 1977)  
 RD 78 / 43 (acoustic estimate of capelin in Div. 2J+3K)  
 52 (sequential abundance of capelin in Div. 3NO)

CHEKHOVA, V. A. (USSR)

SE 3 : 17 (variation in redfish catches in Div. 3M)  
 RD 78 / 25 (reliability of trawl survey data)  
 27 (assessment of cod in Div. 3M, 1972-77)

CHEVALIER, R. (France)

RD 78 / 12 (biomass of squid in Subdiv. 3Ps)  
 SD 78 / 27 (French research report for 1977)

CHUMAKOV, A. K. (USSR)

RD 78 / 24 (trawl catchability of cod and G. halibut)  
 27 (assessment of cod in Div. 3M, 1972-77)  
 53 (assessment of G. halibut in SA 0 and 1)

CLAY, D. (Canada)

RD 78 / 62 (assessment of silver hake in SA 4)

COLLINS, P. W. (Canada)

RD 78 / 6 (catch composition of *Illex* in Nfld area)

CWP Secretary

SD 78 / 2 (report of 9th session of CWP, Aug 1977)

## D

DANKE, L. (GDR)

SD 78 / 4 (GDR research report for 1977)

DANZMAN, R. (Canada)

RD 78 / 90 (genetic variability in harp seals)

DOMINGUEZ, R. (Cuba)

RD 78 / 17 (assessment of *Illex* in SA 3 and 4)  
 51 (update of Flemish Cap cod assessment)  
 56 (status of redfish stock in Div. 3M)

DOMMASNES, A. (Norway)

RD 78 / 22 (Norwegian capelin fishery off Nfld, 1977)

DORNHEIM, H. (FRG)

RD 78 / 69 (FRG-USA trawl survey in SA 5, 1977)  
 SD 78 / 31 (FRG research report for 1977)

DOWNER, R. G. H. (Canada)

RD 78 / 90 (genetic variability in harp seals)

DUBÉ, J. (Canada)

RD 78 / 82 (assessment of cod in Div. 3Pn+4RS)

DURWOOD, R. D. (Canada)

RD 78 / 2 (population structure of *Illex* in SA 4, 1977)

DUTHIE, A. (Canada)

RD 78 / 88 (exploratory survey for shrimp in SA 0, 1978)

## E

EARLE, M. (Canada)

RD 78 / 90 (genetic variability in harp seals)

EGGERS, R. (GDR)

SD 78 / 14 (GDR research report for 1977)

ENNIS, G. P. (Canada)

RD 78 / 6 (catch composition of *Illex* in Nfld area)

## F

FONTAINE, B. (France)

RD 78 / 95 (data on French shrimp fishery in SA 1, 1978)

FOREST, A. (France)

SE 4 : 15 (survey for shrimp off Baffin Island)  
 RD 78 / 45 (groundfish survey in SA 0, 1977)  
 64 (stratification scheme for SA 0)

FROERMANN, Y. M. (USSR)

RD 78 / 11 (state of *Illex* stocks in SA 4 and 5)

## G

GIBSON, J. (USA)

SD 78 / 32 (USA research report for 1977)

GIEDZ, M. (Poland)

RD 78 / 20 (stages of maturity for herring in Div. 5Z)

GRAY, D. F. (Canada)

RD 78 / 14 (gear type re Japanese squid fishery)

GROSSLEIN, M. D. (USA)

RD 78 / 77 (accuracy of survey abundance indices)

## H

HALLIDAY, R. G. (Canada)

RD 78 / 62 (assessment of silver hake in SA 4)

HODDER, V. M. (Canada)

RB 13 : 31 (age and growth of Grand Bank haddock)  
 53 (spawning and maturity of Grand Bank haddock)  
 IN 2 : 1 (index of ICNAF meeting documents, 1965-74)

HORSTED, Sv. Aa. (Denmark)

- SE 4 : 23 (biomass estimate for shrimp in SA 1)  
 51 (life cycle of shrimp in SA 1)  
 67 (trawl survey for shrimp in SA 1)  
 RD 78 / 44 (assessment of cod in SA 1)  
 93 (drift of shrimp larvae in Davis Strait)  
 96 (distribution of shrimp grounds in SA 1)  
 SD 78 / 12 (Danish research report for 1977)

HOYDAL, K. (Denmark (Faroes))

- SE 4 : 31 (assessment of shrimp in SA 1)  
 RD 78 / 97 (Faroes shrimp fishery in SA 1, 1974-78)  
 SD 78 / 12 (Danish research report for 1977)

HUNT, J. J. (Canada)

- SE 3 : 33 (age and growth of silver hake in SA 4)

HURLEY, G. V. (Canada)

- RD 78 / 61 (biomass estimate for *Illex* in SA 4, 1977)

## I

ICNAF (Int. Commission for the Northwest Atlantic Fisheries)

- MP(78): 3 (proceedings of 25th Annual Meeting, Jun 1978)  
 R (78): 5 (report of STACRES Special Meeting, Nov 1977)  
 21 (report of STACRES Special Meeting, Feb 1978)  
 35 (report of STACRES Annual Meeting, Jun 1978)  
 SE 3 : 109 (standard oceanographic sections and stations)  
 CD 78 / 18 (draft resolution to amend ICNAF Convention)  
 20 (Int. Fisheries Pension Society Meet., May 1978)  
 SD 78 / 20 (report of silver hake ageing workshop, Mar 1978)

ICNAF Secretariat

- SY 19 : 1 (revised list of sampling data for 1974)  
 21 : 1 (list of sampling data for 1976)  
 CD 78 / 1 (1977/78 fishery regulations to Nov 1977)  
 9 (inspections and infringements for 1977)  
 11 (status of Joint Enforcement Scheme, Jun 1978)  
 14 (Commission's officers and meetings, 1951-78)  
 19 (organization and staff of Secretariat, 1978/79)  
 SD 78 / 5 (list of fishing vessels for 1976)  
 6 (historical catches of selected species, 1967-76)  
 7 (1978 ICES resolutions relevant to ICNAF)  
 11 (efficiency of sampling in ICNAF area, 1976)  
 18 (index and list of ICNAF publications, 1976)  
 19 (tagging activities reported for 1977)  
 21 (statistics on discards, 1976)  
 22 (CWP recommendations relevant to ICNAF)  
 23 (information on discards for 1977)  
 24 (report on ICNAF statistical activities)  
 25 (notes on various statistical matters)  
 26 (catches and TACs for regulated stocks, 1974-78)  
 33 (index and list of ICNAF publications, 1975)

ISAKOV, V. I. (USSR)

- RD 78 / 50 (winter distribution of mackerel in SA 4)

## J

JOHANSEN, P. (Denmark)

- RD 78 / 93 (drift of shrimp larvae in Davis Strait)

JONES, B. C. (Canada)

- RD 78 / 87 (assessment of shrimp potential in SA 0)

## K

KANNEWORFF, P. (Denmark)

- SE 4 : 61 (shrimp density by photography in SA 1)  
 67 (trawl survey for shrimp in SA 1)  
 RD 78 / 89 (shrimp density by photography in SA 1, 1978)

KAPEL, F. O. (Denmark)

- RD 78 / 98 (harp and hooded seal catches in SA 1)

KARAULOVSKY, V. P. (USSR)

- RD 78 / 32 (silver hake eggs and larvae in SA 4, 1977)

KASHIN, S. F. (USSR)

- RD 78 / 34 (silver hake selection in Div. 4W)

KAWAHARA, S. (Japan)

- SE 3 : 73 (age and growth of butterfish in SA 5 and 6)

KLIMENKOV, A. I. (USSR)

- SE 4 : 47 (USSR studies on shrimp in SA 1, 1976)

KLOCHKOV, D. N. (USSR)

- RD 78 / 29 (assessment of capelin in Div. 3N, 1977)

KONO, H. (Japan)

- RD 78 / 16 (by-catch in Japanese squid fishery)

KONSTANTINOV, K. G. (USSR)

- SE 3 : 17 (variation in redfish catches in Div. 3M)  
 SD 78 / 9 (USSR research report for 1977)

KUDLO, B. P. (USSR)

- RD 78 / 71 (water dynamics in SA 3, 1976-77)

## L

LAVIGNE, D. M. (Canada)

- RD 78 / 90 (genetic variability in harp seals)

LEGGE, W. E. (Canada)

RD 78 / 47 (assessment of grenadiers in SA 0 to 3)

LETT, P. F. (Canada)

RD 78 / 62 (assessment of silver hake in SA 4)

LIPINSKI, M. (Poland)

RD 78 / 10 (assessment of *Illex* in Div. 4W)  
15 (ageing *Illex* by statoliths)

LLORIS, D. (Spain)

RD 78 / 13 (Spanish *Illex* fishery in SA 4, 1977)

LOURDES M. GODINHO, M. (Portugal)

SD 78 / 13 (Portuguese research report for 1977)

LUSSIAA-BERDOU, J. P. (Canada)

RD 78 / 82 (assessment of cod in Div. 3Pn+4RS)

LYSY, A. Y. (USSR)

SE 4 : 47 (USSR studies on shrimp in SA 1, 1976)

## M

MARI, A. (Cuba)

SE 3 : 29 (natural mortality of silver hake in SA 4)  
RD 78 / 17 (assessment of *Illex* in SA 3 and 4)  
51 (update of Flemish Cap cod assessment)  
55 (length-weight relation for silver hake)  
56 (status of redfish stock in Div. 3M)  
63 (selection of silver hake in kapron codends)  
SD 78 / 29 (Cuban research report for 1977)

McKONE, W. D. (Canada)

RD 78 / 46 (assessment of redfish in Div. 3LN)  
48 (assessment of redfish in Div. 3M)

MESNIL, B. (France)

RD 78 / 19 (resolution of the catch equation)

MESSTORFF, J. (FRG)

SD 78 / 31 (FRG research report for 1977)

MILLER, D. S. (Canada)

RD 78 / 43 (acoustic estimate of capelin in Div. 2J+3K)  
52 (sequential analysis of capelin in Div. 3NO)

MINET, J. P. (France)

RB 13 : 11 (predation of cod on capelin in SA 2 to 4)  
SE 3 : 7 (dynamics of cod stock in Div. 4RS)  
4 : 15 (survey for shrimp in SA 0, 1977)  
RD 78 / 45 (groundfish survey in SA 0, 1977)  
64 (stratification scheme for SA 0)

MOTUZENKO, B. K. (USSR)

RD 78 / 34 (silver hake selection in Div. 4W)

## N

NAGASAKI, F. (Japan)

SD 78 / 30 (Japanese research report for 1977)

NEAFC (Northeast Atlantic Fisheries Commission)

SD 78 / 8 (press notice, mid-term meeting, Nov 1977)

NOSKOV, A. S. (USSR)

RD 78 / 31 (assessment of silver hake in SA 4)  
32 (silver hake eggs and larvae in SA 4, 1977)  
SD 78 / 9 (USSR research report for 1977)

## O

ØRITSLAND, T. (Norway)

RD 78 / 92 (Norwegian seal research, 1977-78)

ØYNES, P. (Norway)

SE 4 : 36 (Norwegian studies on shrimp in SA 1)  
RD 78 / 94 (studies on shrimp in SA 1, 1977-78)

## P

PACIORKOWSKI, A. (Poland)

SD 78 / 15 (Polish research report for 1977)

PALMER, J. E. (USA)

SE 3 : 79 (variance in age composition of mackerel)

PANKRATOV, A. M. (USSR)

RD 78 / 33 (TAC estimate for red hake in Div. 5Z)

PARSONS, D. G. (Canada)

RD 78 / 47 (assessment of grenadier stocks in SA 0 to 3)  
87 (assessment of shrimp potential in SA 0)  
88 (exploratory survey for shrimp in SA 0)

PENNINGTON, M. R. (USA)

RD 78 / 77 (accuracy of abundance indices from surveys)

PERODOU, J. B. (France)

RB 13 : 11 (predation of cod on capelin in SA 2 to 4)  
SE 4 : 15 (survey for shrimp off Baffin Island)  
RD 78 / 45 (groundfish survey in SA 0, 1977)  
64 (stratification scheme for SA 0)

PITT, T. K. (Canada)

- SE 3 : 23 (status of witch flounder in Div. 2J+3KL)  
 RD 78 / 35 (status of A. plaice in Div. 3LNO)  
     36 (A. plaice and yellowtail abundance in Div. 3LNO)  
     41 (status of yellowtail stock in Div. 3LNO)

PLEKHANOVA, N. V. (USSR)

- RD 78 / 72 (plankton distribution in Div. 3M, 1970-77)

POSTOLAKY, A. I. (USSR)

- RD 78 / 26 (forecasting state of cod stock in SA 2)  
     27 (assessment of cod in Div. 3M, 1972-77)

## R

RIKHTER, V. A. (USSR)

- RD 78 / 33 (TAC estimate for red hake in Div. 5Z)

ROBERGE, M. (Canada)

- RD 78 / 2 (population structure of *Illex* in SA 4, 1977)  
     3 (international squid fishery in SA 4, 1977)  
     4 (Canadian *Illex* fishery in SA 3 and 4, 1977)  
     49 (Canadian squid fishery in SA 4)

ROBINSON, G. A. (UK)

- RD 78 / 68 (plankton recorder surveys, 1976)  
     75 (plankton recorder surveys, 1977)

ROMANCHENKO, A. N. (USSR)

- RD 78 / 32 (silver hake eggs and larvae in SA 4, 1977)

RYZHOV, V. M. (USSR)

- RD 78 / 72 (plankton distribution in Div. 3M, 1970-77)

## S

SABA, B. (Cuba)

- RD 78 / 55 (length-weight relation for silver hake)

SANDEMAN, E. J. (Canada)

- SD 78 / 20 (Canadian research report for 1977)

SANGØLT, G. (Norway)

- RD 78 / 22 (Norwegian capelin fishery off Nfld, 1977)

SCHULTZ, N. (GDR)

- RD 78 / 78 (GDR young herring survey in SA 5 and 6)  
 SD 78 / 14 (GDR research report for 1977)

SCOTT, J. S. (Canada)

- SE 3 : 93 (distribution of *Illex* in SA 4, 1970-76)  
 SD 78 / 20 (Canadian research report for 1977)

SELIVERSTOV, A. S. (USSR)

- RD 78 / 29 (assessment of capelin in Div. 3N, 1977)  
     30 (studies on capelin in Div. 2J+3K, 1977)

SEREBROV, L. I. (USSR)

- RD 78 / 24 (trawl catchability of cod and G. halibut)  
     28 (shrimp concentrations in SA 2)

SEREBRYAKOV, V. P. (USSR)

- RD 78 / 18 (ichthyoplankton in Flemish Cap area)

SERGEANT, D. E. (Canada)

- RD 78 / 85 (Canadian research on harp seals, 1978)  
     86 (tagging and branding of hooded seals, 1972-78)

SHAFFRAN, I. S. (USSR)

- RD 78 / 53 (assessment of G. halibut in SA 0 and 1)

SHERSTIUKOV, A. I. (USSR)

- RD 78 / 32 (silver hake eggs and larvae in SA 4, 1977)

SIGAEV, I. K. (USSR)

- SE 3 : 57 (temperature re herring spawning in Div. 5Z)  
     97 (geostrophic circulation in SA 4 and 5)

SISSEWINE, M. P. (USA)

- RB 13 : 81 (factors affecting catchability of trawls)  
 SE 3 : 49 (mackerel abundance from trawl surveys)

SMIDT, E. (Denmark)

- SE 4 : 7 (exploitation of shrimp in SA 1)  
     45 (diurnal variation in shrimp catches)  
 RD 78 / 93 (drift of shrimp larvae in Davis Strait)

STEIN, M. (FRG)

- RD 78 / 65 (hydrography off W Greenland, Nov 1976)  
     81 (hydrography in Div. 2J, Dec 1977)

STERHKOV, V. S. (USSR)

- RD 78 / 70 (temperature conditions in SA 0 to 3, 1977)

STEVENSON, S. C. (Canada)

- RD 78 / 67 (Canadian discards in SA 2 and 3)

## T

TAVARES, A. M. (Portugal)

- RD 78 / 58 (assessment of Div. 3M cod)

TEMPLEMAN, W. (Canada)

- RB 13 : 31 (age and growth of Grand Bank haddock)  
     53 (maturity and spawning of Grand Bank haddock)

TERRE, J. J. (Cuba)

SE 3 : 29 (natural mortality of silver hake in SA 4)  
RD 78 / 17 (assessment of *Illex* in SA 3 and 4)

TIBBETTS-LANGE, A. M. (USA)

RD 78 / 8 (squid fishery in SA 5 and 6)

TRETJAK, V. L. (USSR)

RD 78 / 53 (assessment of *G. halibut* in SA 0 and 1)

TRITES, R. W. (Canada)

RD 78 / 79 (larval herring re hydrography in SA 5)

## U

ULLTANG, Ø. (Norway)

SE 4 : 35 (Norwegian studies on shrimp in SA 1)  
43 (estimating TAC for shrimp in SA 1)  
RD 78 / 22 (capelin fishery off Nfld in 1977)  
94 (studies on shrimp in SA 1, 1977-78)

## V

VARIA, J. A. (Cuba)

SD 78 / 29 (Cuban research report in 1977)

VEITCH, P. J. (Canada)

RD 78 / 47 (assessment of grenadiers in SA 0 to 3)  
88 (exploratory survey for shrimp in SA 0, 1979)

## W

WALDRON, D. E. (Canada)

RD 78 / 9 (squid and silver hake fisheries in SA 4, 1977)  
14 (gear type re Japanese squid fishery)  
61 (stock estimate for *Illex* in SA 4 for 1977)

WELLS, R. (Canada)

RB 13 : 31 (age and growth of Grand Bank haddock)  
53 (maturity and spawning of Grand Bank haddock)  
RD 78 / 57 (status of cod stock in Div. 3M)  
59 (status of cod stock in Div. 3NO)  
66 (status of cod stock in Div. 2J+3KL)

WINTERS, G. H. (Canada)

RB 13 : 21 (capelin ecology and surplus yield)  
67 (migrations of herring in Div. 3P and 4T)  
RD 78 / 52 (sequential analysis of capelin in Div. 3NO)  
91 (mortality and productivity of hooded seals)

WOOD, L. (Canada)

RD 78 / 2 (population structure of *Illex* in SA 4, 1977)  
3 (international squid fishery in SA 3 and 4)  
4 (Canadian squid fishery in SA 3 and 4)  
49 (Canadian squid fishery in SA 4, 1977)



# LIST OF TITLES, 1978

25

## INDEX AND LIST OF TITLES, MEETING DOCUMENTS

NO. 2 FOR 1965-74

(Issued October 1978)

Abbreviation: IN

1. Meeting Documents Indexed and Listed .....	5
2. Compilation of Subject and Author Indexes .....	6
3. Subject Index .....	9
4. Author Index .....	51
5. List of Titles .....	67
Commissioners' documents .....	67
Research documents .....	82
Summary documents .....	136

## MEETING PROCEEDINGS (1977/78)

(Issued August 1978)

Abbreviation: MP

Proceedings of the 28th Annual Meeting, Bonn, Federal Republic of Germany, 30 May-6 June 1978 .....	1
1. Report of Meeting of STACRES (see <i>Redbook</i> 1978, Part C)	
2. Report of Meetings of the Standing Committee on International Control (STACTIC) ....	5
3. Ceremonial Opening .....	11
4. Report of the First Plenary Session .....	13
5. Report of Meetings of Panel 3 .....	23
6. Report of Meeting of the Standing Committee on Finance and Administration (STACFAD) .	31
7. Report of Final Plenary Session .....	37

## REDBOOK 1978

(Issued August 1978)

Abbreviation: R

<u>PART A</u>	Report of Standing Committee on Research and Statistics, Special Meeting on Shrimp and Seals, November 1977 .....	5
I.	Report of <i>ad hoc</i> Working Group on Shrimp .....	11
II.	Report of <i>ad hoc</i> Working Group on Seals .....	17

## LIST OF TITLES

<u>PART B</u>	Report of Standing Committee on Research and Statistics, Special Meeting on Squid, February 1978 .....	21
<u>PART C</u>	Report of Standing Committee on Research and Statistics, Annual Meeting, May-June 1978 .....	35
	I. Report of Assessments Subcommittee .....	51
	II. Report of Biological Surveys Subcommittee .....	75
	III. Report of Statistics and Sampling Subcommittee .....	85
	IV. Report of Environmental Subcommittee .....	93
<u>PART D</u>	Miscellaneous .....	105
	I. Agenda for STACRES Meetings, 1977/78 .....	107
	II. List of STACRES Recommendations, 1977/78 .....	110
	III. List of Summary and Research Documents, 1977 (continued) .....	112
	IV. List of Summary and Research Documents, 1978 .....	113
	V. Participants in Scientific Meetings of ICNAF, 1977/78 .....	118

## RESEARCH BULLETIN NO. 13

(Issued June 1978)

Abbreviation: RB

<u>BOWERING, W. R.</u>	Age and growth of the Greenland halibut, <i>Reinhardtius Hippoglossoides</i> (Walbaum), in ICNAF Subareas 2-4 .....	5
<u>MINET, J. P., and J. B. PERODOU.</u>	Predation of cod, <i>Gadus morhua</i> , on capelin, <i>Mallotus villosus</i> , off Eastern Newfoundland and in the Gulf of St. Lawrence .....	11
<u>WINTERS, G. H., and J. E. CARSCADDEN.</u>	Review of capelin ecology and estimation of surplus yield from predator dynamics .....	21
<u>TEMPLEMAN, Wilfred, V. M. HODDER, and R. WELLS.</u>	Age, growth, year-class strength, and mortality of the haddock, <i>Melanogrammus aeglefinus</i> , on the Southern Grand Bank and their relation to the haddock fishery of this area .....	31
<u>TEMPLEMAN, Wilfred, V. M. HODDER, and R. WELLS.</u>	Sexual maturity and spawning in haddock, <i>Melanogrammus aeglefinus</i> , of the Southern Grand Bank .....	53
<u>WINTERS, G. H., and J. S. BECKETT.</u>	Migrations, biomass and stock interrelationships of Southwest Newfoundland-Southern Gulf herring from mark-recapture experiments .....	67
<u>SISSENWINE, M. P., and E. W. BOWMAN.</u>	An analysis of some factors affecting the catch-ability of fish by bottom trawls .....	81

## SELECTED PAPERS NO. 3

(Issued January 1978)

Abbreviation: SE

<u>MINET, J. P.</u>	Dynamics and yield assessment of the Northeastern Gulf of St. Lawrence cod stock .....	7
---------------------	--	---

## LIST OF TITLES

27

<u>CHEKHOVA, V. A., and K. G. KONSTANTINOV.</u> Characteristics of the beaked redfish, <i>Sebastes mentella</i> Travin, in bottom and midwater trawl catches on Flemish Cap .....	17
<u>BOWERING, W. R., and T. K. PITT.</u> An evaluation of the status of witch flounder, <i>Glyptocephalus cynoglossus</i> , from ICNAF Divisions 2J, 3K and 3L .....	23
<u>TERRE, J. J., and A. MARI.</u> Estimates of natural mortality for the silver hake stock on the Scotian Shelf .....	29
<u>HUNT, J. J.</u> Age, growth and distribution of silver hake, <i>Merluccius bilinearis</i> , on the Scotian Shelf .....	33
<u>ANDERSON, E. D., and B. B. ACKERMAN.</u> Comparison of USA spring bottom trawl survey abundance indices for Atlantic mackerel, based on day, night and total catches .....	45
<u>SISSENWINE, M. P.</u> Using the USA research vessel spring bottom trawl survey as an index of Atlantic mackerel abundance .....	49
<u>BERENBEIM, D. Y., and I. K. SIGAEV.</u> On the correlation between water temperature and the spawning times for Georges Bank herring .....	57
<u>CARSCADDEN, J. E.</u> The capelin, <i>Mallotus villosus</i> , population spawning on the Southeast Shoal of the Grand Bank, 1976 .....	61
<u>KAWAHARA, S.</u> Age and growth of butterfish, <i>Peprilus triacanthus</i> (Peck), in ICNAF Subarea 5 and Statistical Area 6 .....	73
<u>BRENNAN, J. A., and J. E. PALMER.</u> Estimates of variance of age composition of mackerel catches in ICNAF Subarea 5 and Statistical Area 6 .....	79
<u>SCOTT, J. S.</u> Distribution of Squid, <i>Illex illecebrosus</i> , on the Scotian Shelf, 1970-76 ..	93
<u>SIGAEV, I. K.</u> Intra-year variability of geostrophic circulation on the continental shelf off New England and Nova Scotia .....	97
<u>ICNAF.</u> List of ICNAF standard oceanographic sections and stations .....	109

## SELECTED PAPERS NO. 4

(Issued August 1978)

Abbreviation: SE

<u>CARLSSON, D. M., and E. SMIDT.</u> Shrimp, <i>Pandalus borealis</i> Krøyer, stocks off Greenland: biology, exploitation and possible protective measures .....	7
<u>MINET, J. P., A. FOREST, and J. B. PERODOU.</u> Biological data on the northern deepwater prawn, <i>Pandalus borealis</i> , off Baffin Island .....	15
<u>HORSTED, Sv. Aa.</u> A trawl survey of the offshore shrimp grounds in ICNAF Division 1B and an estimate of the shrimp biomass .....	23
<u>HOYDAL, K.</u> An assessment of the deep sea shrimp, <i>Pandalus borealis</i> , stocks off West Greenland .....	31
<u>ULLTANG, Ø., and P. ØYNES.</u> Norwegian investigations on deep sea shrimp, <i>Pandalus borealis</i> , in West Greenland waters .....	35
<u>ULLTANG, Ø.</u> A method for determining the total allowable catch of deep sea shrimp, <i>Pandalus borealis</i> , off West Greenland .....	43
<u>SMIDT, E.</u> Diurnal variation in shrimp catches on the offshore grounds in ICNAF Divisions 1B and 1C .....	45
<u>KLIMENKOV, A. I., B. I. BERENBOIM, and A. Y. LYSY.</u> USSR investigations on shrimp in the West Greenland area, 1976 .....	47

<u>HORSTED, Sv. Aa.</u> The life cycle of shrimp, <i>Pandalus borealis</i> Kr., in Greenland waters in relation to the potential yield .....	51
<u>KANNEWORFF, Per.</u> Estimated density of shrimp, <i>Pandalus borealis</i> , in Greenland waters and calculation of biomass on the offshore grounds based on bottom photography .....	61
<u>CARLSSON, D. M., Sv. Aa. HORSTED, and P. KANNEWORFF.</u> Danish trawl surveys on the offshore West Greenland shrimp grounds in 1977 and previous years .....	67

## SAMPLING YEARBOOK VOL. 19 (1974 REVISED)

(Issued August 1978)

Abbreviation: SY

PART 1. ICNAF Sampling Program .....	7
PART 2. Notes on Sampling Data .....	15
PART 3. List of Sampling Data for Commercial Fisheries, 1974 .....	23
PART 4. Sampling Data from Research Vessel Surveys, 1974 .....	45

## SAMPLING YEARBOOK VO. 21 (1976)

(Issued December 1978)

Abbreviation: SY

PART 1. ICNAF Sampling Program .....	7
PART 2. Summary of Sampling Data .....	15
PART 3. List of Sampling Data for Commercial Fisheries, 1976 .....	19
PART 4. Sampling Data from Research Vessel Surveys, 1976 .....	43

## COMMISSIONERS' DOCUMENTS 1978

Abbreviation: CD

<u>Com. Doc.</u>	<u>Ser. No.</u>	
78/VI/1	5137	<u>ICNAF Secretariat</u> . 1977/78 fishery regulations (prepared 8 November 1977).
78/VI/2	5148	<u>CANADA</u> . Request for advice on the scientific basis for management of stocks of squid ( <i>Illex</i> ) within national fisheries limits.
78/VI/3	5170	<u>CANADA</u> . Request for advice on the scientific basis for management of certain fisheries within national fisheries limits.
78/VI/4	5181	<u>CANADA</u> . Report of the Diplomatic Conference on Future Multilateral Cooperation in the Northwest Atlantic Fisheries.
78/VI/5	5183	<u>EUROPEAN ECONOMIC COMMUNITY</u> . Requests and recommendations for management of fish stocks in ICNAF Subarea 1 and Statistical Area 0.
78/VI/6	5247	* <u>ICNAF Secretariat</u> . Panel memberships as of 1 May 1978 (see <i>ICNAF Annu. Rept.</i> Vol. 28 for 1977/78, p. 8).
78/VI/7	5257	* <u>ICNAF Secretariat</u> . Administrative report for the year ending 30 Jun 1978 (see <i>ICNAF Annu. Rept.</i> Vol. 28 for 1977/78, p. 7).
78/VI/8	5248	* <u>ICNAF Secretariat</u> . Status of Commission proposals for changes in the Convention and for international regulation of the fisheries under the Convention (see <i>ICNAF Annu. Rept.</i> Vol. 28 for 1977/78, p. 12).
78/VI/9 (Rev.)	5279	<u>ICNAF Secretariat</u> . Summary of information on inspections, infringements and disposition of infringements for 1977.
78/VI/10		(Not issued)
78/VI/11 (Rev.)	5273	<u>ICNAF Secretariat</u> . Present status of implementation of Scheme of Joint International Enforcement (as of 15 June 1978).
78/VI/12	5276	<u>CANADA</u> . Proposal to suspend mesh regulations for redfish ( <i>Sebastes</i> ) on Flemish Cap.
78/VI/13	5280	<u>CANADA</u> . Request for advice on the scientific basis for management of seal fisheries within national fisheries limits.
78/VI/14	5281	<u>ICNAF Secretariat</u> . Commission's officers and meeting sites, 1951-1978.
78/VI/15	5282	<u>CANADA</u> . Request for action by the Commission, pursuant to Article XIII of the Convention, with respect to the operations of non-member countries in the ICNAF Area beyond national fisheries jurisdiction.
78/VI/16	5283	<u>POLAND</u> . Proposal for an amendment to the ICNAF Scheme of Joint International Enforcement.
78/VI/17	5284	<u>EUROPEAN ECONOMIC COMMUNITY</u> . Statement by EEC for attachment to quota proposals.
78/VI/18 (Rev.)	5287	<u>ICNAF</u> . Draft resolution to amend the International Convention for the Northwest Atlantic Fisheries.
78/VI/19	5290	<u>ICNAF Secretariat</u> . Organization, staffing and duties, 1978/79.
78/VI/20	5296	<u>ICNAF</u> . Annual Meeting of the International Fisheries Commissions Pension Society La Jolla, USA, 15-16 May 1978.

## RESEARCH DOCUMENTS 1978

Abbreviation: RD

<u>Res. Doc.</u>	<u>Ser. No.</u>	
78/II/1 (Rev.)	5153	* <u>Durward, R. D., T. Amaratunga, and R. K. O'Dor.</u> Maturation index and fecundity for female <i>Illex illecebrosus</i> (LeSueur, 1821). (Publ. in <i>ICNAF Res. Bull.</i> No. 14: in press).
78/II/2	5154	<u>Amaratunga, R., R. D. Durward, M. Roberge, and L. Wood.</u> Population structure of <i>Illex illecebrosus</i> in the Scotian Shelf fishing areas in 1977.
78/II/3 (Rev.)	5155	<u>Amaratunga, T., M. Roberge, and L. Wood.</u> A study of the 1977 international catch statistics for the squid, <i>Illex illecebrosus</i> , fishery in ICNAF Subareas 3 and 4.
78/II/4 (Rev.)	5156	<u>Amaratunga, T., M. Roberge, and L. Wood.</u> The 1977 Canadian offshore catch statistics of the squid, <i>Illex illecebrosus</i> , fishery in ICNAF Subareas 3 and 4.
78/II/5 (Rev.)	5157	* <u>Amaratunga, T., and R. D. Durward.</u> Field guide for data collection for the squid <i>Illex illecebrosus</i> (Publ. in <i>ICNAF Sel. Papers</i> No. 5: 37-41).
78/II/6	5158	<u>Collins, P. W., and G. P. Ennis.</u> Breakdown of inshore Newfoundland squid catches, 1975-77 with length and sex composition from commercial samples.
78/II/7	5159	* <u>Ennis, G. P., and P. W. Collins.</u> Food and feeding of the short-finned squid ( <i>Illex illecebrosus</i> ) during its seasonal occurrence inshore at Newfoundland and a brief review of the trophic relationships of the species (Publ. in <i>ICNAF Sel. Papers</i> No. 5: 25-29).
78/II/8	5160	<u>Tibbetts-Lange, A. M.</u> Catch, effort and biological data from the 1977 directed squid fishery in the US Fishery Conservation zone.
78/II/9 (Rev.)	5161	<u>Waldron, D. E.</u> Catch compositions during the 1977 Scotian Shelf international fishery with emphasis on the silver hake and squid ( <i>Illex</i> ) fisheries
78/II/10	5162	<u>Lipinski, M.</u> Stock assessment of <i>Illex illecebrosus</i> (LeSueur, 1821) in ICNAF Div. 4W determined by area-density method.
78/II/11	5163	<u>Burukovsky, R. N., and Yu. M. Froerman.</u> On the state of short-finned squid ( <i>Illex illecebrosus</i> ) stocks in some areas of the Northwest Atlantic in 1977.
78/II/12	5164	<u>Chevalier, R.</u> Biomass estimates of squid, <i>Illex illecebrosus</i> , in Subdiv. 3Ps.
78/II/13	5165	<u>Lloris, D.</u> Observations on the Spanish <i>Illex</i> fishery in Subarea 4.
78/II/14	5166	<u>Waldron, D. E., and D. F. Gray.</u> The effects of gear type on the Japanese squid ( <i>Illex illecebrosus</i> ) fishery.
78/II/15	5167	<u>Lipinski, M.</u> The age of squids, <i>Illex illecebrosus</i> (LeSueur, 1821), from their statoliths.
78/II/16	5168	<u>Kono, H.</u> Report of the joint survey on by-catch in Japanese <i>Illex</i> trawl fishery, 1977.
78/II/17	5169	<u>Mari, A., J. J. Terre, and R. Dominguez.</u> Stock assessment of <i>Illex illecebrosus</i> in ICNAF Subareas 3 and 4.
78/VI/18	5172	<u>Serebryakov, V. P.</u> Ichthyoplankton from the Flemish Cap Bank.
78/VI/19	5173	<u>Mesnil, B.</u> Resolution of the catch equation by a simple iterative method.
78/VI/20	5174	<u>Giedz, M.</u> Stages of maturity of gonads in herring from Georges Bank.
78/VI/21	5179	<u>Department of Fisheries and Environment, Marine Fish Division, B. I. O.</u> Report on the First Scotian Shelf Ichthyoplankton Program (SSIP) Workshop, 29 August to 3 September 1977, St. Andrews, N. B.

<u>Res. Doc.</u>	<u>Ser. No.</u>	
78/VI/22	5182	<u>Dommasnes, A., Ø. Ulltang, and G. Sangolt.</u> Norwegian capelin fishery and capelin investigations in Newfoundland waters in 1977.
78/VI/23	5184	* <u>Kudlo, B. P., and V. D. Boytsov.</u> The effect of water dynamics on the size of the recruitment of the Flemish Cap Bank cod stock (Publ. in <i>ICNAF Sel. Papers</i> No. 5: 7-9).
78/VI/24	5185	<u>Chumakov, A. K., and L. I. Serebrov.</u> The determination of the catchability coefficient of bottom trawl for cod and Greenland halibut.
78/VI/25	5186	<u>Chekhova, V. A.</u> Reliability of total trawl survey data.
78/VI/26	5187	<u>Postolaky, A. I.</u> Method of forecasting the stock condition and catches of cod in the Labrador and Newfoundland Bank areas.
78/VI/27	5188	<u>Chekhova, V. A., A. K. Chumakov, and A. I. Postolaky.</u> Preliminary assessment of abundance and biomass of cod on Flemish Cap based on data from trawl surveys in 1972-1977.
78/VI/28	5189	<u>Serebrov, L. I.</u> On the shrimp concentrations to the south of the Harrison Bank in ICNAF Subarea 2.
78/VI/29	5190	<u>Klochkov, D. N., and A. S. Seliverstov.</u> Assessment of abundance and biomass of the spawning stock of capelin in ICNAF Division 3N in summer of 1977
78/VI/30	5191	<u>Bakanev, V. S., and A. S. Seliverstov.</u> Capelin investigations in the waters off southern Labrador (Division 2J) and on the north Newfoundland Bank (Division 3K) in the Autumn of 1977.
78/VI/31	5192	<u>Noskov, A. S.</u> Estimation of stock size and allowable catch of silver hake off Nova Scotia (Divisions 4VWX) for 1979.
78/VI/32	5193	<u>Noskov, A. S., V. P. Karaulovsky, A. N. Romanchenko, and A. I. Sherstiukov.</u> Distribution and abundance of silver hake eggs and larvae and environmental conditions off Nova Scotia in September-October 1977.
78/VI/33	5194	<u>Rikhter, V. A., and A. M. Pankratov.</u> An estimate of total allowable catch of red hake from Georges Bank (Subdiv. 5Ze) for 1979.
78/VI/34	5195	<u>Motuzenko, B. K., and S. F. Kashin.</u> On selectivity of bottom trawls in the North-west Atlantic (Division 4W).
78/VI/35	5197	<u>Pitt, T. K.</u> American plaice in ICNAF Divisions 3LNO, a stock assessment update.
78/VI/36	5198	<u>Pitt, T. K.</u> Abundance indices for American plaice and yellowtail from stratified random surveys on the Grand Bank.
78/VI/37	5199	<u>Bowering, W. R.</u> An analysis of the northern witch flounder stock, ICNAF Divisions 2J, 3K and 3L.
78/VI/38	5200	<u>Bowering, W. R.</u> The distribution of Greenland halibut in Statistical Area 0.
78/VI/39	5201	<u>Bowering, W. R.</u> The exploitation of the Greenland halibut stock complex of ICNAF Subarea 2 and Divisions 3KL.
78/VI/40	5202	<u>Bowering, W. R.</u> A cohort analysis of the ICNAF Divisions 3NO witch stock.
78/VI/41	5203	<u>Pitt, T. K.</u> An assessment update of yellowtail from ICNAF Divisions 3LNO.
78/VI/42	5204	<u>Hunt, J. J., and P. J. Stuart.</u> Back calculation of silver hake length at age from otoliths (Publ. in <i>ICNAF Sel. Papers</i> No. 5: 11-17).
78/VI/43 (Rev.)	5205	<u>Miller, D. S., J. E. Carscadden, and B. Bennett.</u> An acoustic estimate of Capelin ( <i>Mallotus villosus</i> ) biomass, ICNAF Divisions 2J and 3K, October and November 1977.
78/VI/44	5206	<u>Horsted, Sv. Aa.</u> Subarea 1 cod: data for 1976-77 and first months of 1978, and estimates of biomass and yield, 1978-80 + Corrigendum.

<u>Res. Doc.</u>	<u>Ser. No.</u>	
78/VI/45	5207	<u>Forest, A., J. P. Minet, and J. P. Perodou.</u> Results of groundfish survey on Baffin Island Shelf (ICNAF Statistical Division OB).
78/VI/46	5208	<u>McKone, W. D.</u> Assessment of Divisions 3LN redfish.
78/VI/47	5209	<u>Parsons, D. G., P. J. Veitch, and W. E. Legge.</u> Some characteristics of the roundnose grenadier fisheries in ICNAF Subareas 0 + 1 and 2 + 3.
78/VI/48	5210	<u>McKone, W. D.</u> An update of Flemish Cap redfish assessment.
78/VI/49 (Rev.)	5212	<u>Amaratunga, T., M. Roberge, and L. Wood.</u> Catch/effort statistics of the Canadian squid ( <i>Illex illecebrosus</i> ) fishery in Subarea 4 in 1977.
78/VI/50	5214	<u>Isakov, V. I.</u> On occurrence and distribution of mackerel in the Nova Scotian Shelf area in winter.
78/VI/51	5216	<u>Mari, A., and R. Dominguez.</u> An update of Flemish Cap cod assessment + Corrigendum.
78/VI/52	5217	<u>Carscadden, J. E., D. S. Miller, and G. H. Winters.</u> Biological aspects of the Div. 3NO capelin stock in 1977 and a capelin sequential abundance model.
78/VI/53	5219	<u>Chumakov, A. K., I. S. Shafram, and V. L. Tretjak.</u> Assessment of Greenland halibut abundance and biomass in Statistical Area 0 and Subarea 1 with application of the virtual population method.
78/VI/54	5220	<u>Borrmann, H.</u> Stock assessment of roundnose grenadier in the Northwest Atlantic.
78/VI/55	5221	<u>Mari, A., and B. Saba.</u> Length-weight relationship for silver hake on the Scotian Shelf.
78/VI/56	5224	<u>Mari, A., and R. Dominguez.</u> An evaluation of the status of ICNAF Div. 3M redfish.
78/VI/57	5225	<u>Wells, R.</u> Status of the cod stock on Flemish Cap.
78/VI/58	5226	<u>Tavares, A. M.</u> An assessment of the Div. 3M cod stock.
78/VI/59	5227	<u>Bishop, C. A., and R. Wells.</u> Status of the cod stock in Div. 3NO.
78/VI/60	5228	* <u>Clay, D.</u> The selection of silver hake ( <i>Merluccius bilinearis</i> ) on the Scotian Shelf (a final report on two joint cruises in 1977) (Publ. in ICNAF Res. Bull. No. 14: in press).
78/VI/61	5229	<u>Hurley, G. V., and D. E. Waldron.</u> 1977 population estimates for squid ( <i>Illex illecebrosus</i> ) in ICNAF Subarea 4.
78/VI/62	5230	<u>Halliday, R. G., P. F. Lett, and D. Clay.</u> Silver hake ( <i>Merluccius bilinearis</i> ) in ICNAF Div. 4VWX: a stock assessment and estimate of the total allowable catch (TAC) for 1979.
78/VI/63	5231	<u>Mari, A.</u> Selection of silver hake by kapron codends of trawl nets.
78/VI/64	5232	<u>Minet, J. P., A. Forest, and J. B. Perodou.</u> Stratification scheme for ICNAF Statistical Division OB.
78/VI/65	5233	<u>Stein, M.</u> Hydrographic conditions off West Greenland during November 1976.
78/VI/66	5236	<u>Wells, R.</u> Status of the cod stock in Divisions 2J, 3KL.
78/VI/67	5237	<u>Stevenson, S. C.</u> A descriptive report on the discarding of fish by the Canadian offshore fishery in ICNAF Subareas 2 and 3.
78/VI/68	5238	<u>Robinson, G. A.</u> The Continuous Plankton Recorder Survey: plankton in the ICNAF Area in 1976.
78/VI/69	5239	<u>Dornheim, H., and T. R. Azarovitz.</u> Results of the joint FRG-US bottom trawl survey, R/V Anton Dohrn, 11-28 October 1977 in ICNAF Subareas 4 and 5.



<u>Res. Doc.</u>	<u>Ser. No.</u>	
78/VI/70	5241	<u>Burmakin, V. V., and V. S. Sterhkov.</u> Water temperatures in Newfoundland, Labrador, and Baffin Island areas in 1977.
78/VI/71	5242	<u>Kudlo, B. P., and V. D. Boytsov.</u> Dynamics and salinity in waters in the Newfoundland area in 1976-77.
78/VI/72	5243	<u>Plekhanova, N. V., and V. M. Ryzhov.</u> Peculiarities of distribution of surface plankton in water masses of Flemish Cap Bank in the spring-summer period of 1970-1977.
78/VI/73	5244	* <u>Noskov, A. S., V. I. Vinogradov, and L. G. Ptitsina.</u> The studies of the feeding habits of larval herring ( <i>Clupea harengus</i> ) in the Georges Bank area, 1965-1975 (Publ. in <i>ICNAF Sel. Papers</i> No. 5: 43-48).
78/VI/74	5245	* <u>Vinogradov, V. I., and A. S. Noskov.</u> The study of feeding of short-finned, <i>Illex illecebrosus</i> , and long-finned, <i>Loligo pealei</i> , squids at Nova Scotia and New England in 1974 and 1975 (Publ. in <i>ICNAF Sel. Papers</i> No. 5: 31-36).
78/VI/75	5249	<u>Robinson, G. A.</u> The Continuous Plankton Recorder survey: plankton in the ICNAF Area in 1977.
78/VI/76	5262	* <u>Gasjukov, P. S., and R. S. Dorovskikh.</u> On estimating the accuracy of silver hake abundance indices derived from the Soviet research vessel trawling surveys of the Emerald Deep area in 1972-1976 (Publ. in <i>ICNAF Sel. Papers</i> No. 5: 19-24).
78/VI/77	5264	<u>Pennington, M. R., and M. D. Grosslein.</u> Accuracy of abundance indices based on stratified-random trawl surveys.
78/VI/78	5265	<u>Schultz, N.</u> GDR results of the juvenile herring surveys in ICNAF Div. 4X, 5Y, 5Z, and Statistical Area 6 in the spring of 1975, 1976, and 1977 (herring and mackerel).
78/VI/79	5266	<u>Trites, R. W.</u> Some physical oceanographic features relevant to larval herring distribution on Georges Bank.
78/VI/80	5267	<u>Akenhead, S. A.</u> Report of the Canadian Planning Group of the Flemish Cap International Experiment Meeting, St. John's, Newfoundland, 12-14 September 1977.
78/VI/81	5269	<u>Stein, M.</u> Hydrographic conditions on Hamilton Inlet Bank (Div. 2J) in early December 1977.
78/VI/82	5272	<u>Lussiaa-Berdou, J. P., and J. Dube.</u> An assessment of the Subdiv. 3Pn-Div. 4RS cod stock.
78/VI/83	5293	<u>Belzile, L.</u> Report on the discarding of fish in the Canadian offshore fishery in ICNAF Subareas 4 and 5.
78/XI/84	5299	* <u>Lett, P. F., R. K. Mohn, and D. F. Gray.</u> Density-dependent processes and management strategy for the northwestern Atlantic harp seal.
78/XI/85	5301	<u>Sergeant, D. E.</u> Research on harp seals in 1978.
78/XI/86	5302	<u>Sergeant, D. E.</u> Results of tagging and branding of hooded seals, 1972-1978.
78/XI/87	5303	<u>Jones, B. C., and D. G. Parsons.</u> Assessment of pink shrimp ( <i>Pandalus borealis</i> ) fishery potential in Davis Strait and northeastern Canadian waters.
78/XI/88	5304	<u>Veitch, P. J., D. G. Parsons, and A. Duthie.</u> An exploratory survey for shrimp ( <i>Pandalus borealis</i> ) in Statistical Areas OA and OB.
78/XI/89	5305	<u>Kanneworff, P.</u> Density of shrimp ( <i>Pandalus borealis</i> ) in 1978 in ICNAF Subarea 1 based on bottom photography.
78/XI/90	5306	<u>Lavigne, D. M., J. P. Bogart, R. G. H. Downer, R. Danzman, W. W. Barchard, and M. Earle.</u> Genetic variability in Northwest Atlantic harp seals, <i>Pagophilus groenlandicus</i> .
78/XI/91 (Rev.)	5307	<u>Winters, G. H., and B. Bergflødt.</u> Mortality and productivity of the Newfoundland hooded seal stock.

## LIST OF TITLES

<u>Res. Doc.</u>	<u>Ser. No.</u>	
78/XI/92	5308	<u>Øritsland, T.</u> Norwegian report on seal research in 1977 and 1978.
78/XI/93	5309	<u>Horsted, Sv. Aa., P. Johansen, and E. Smidt.</u> On the possible drift of shrimp larvae in the Davis Strait.
78/XI/94	5310	<u>Ulltang, Ø., and P. Øynes.</u> Norwegian investigations on the deep sea shrimp, <i>Pandalus borealis</i> , in West Greenland waters, 1977 and 1978.
78/XI/95	5311	<u>Fontaine, B.</u> Data relative to the French fishery for the northern shrimp ( <i>Pandalus borealis</i> ) at West Greenland in 1978.
78/XI/96	5312	<u>Horsted, Sv. Aa.</u> On the distribution of the shrimp grounds off West Greenland in relation to the local fisheries zone.
78/XI/97	5313	<u>Hoydal, K.</u> Catch-per-unit-effort estimates from the Faroese prawn fishery off West Greenland, 1974-1978.
78/XI/98	5314	<u>Kapel, F. O.</u> Present catches of harp and hooded seals in West Greenland, and a note on the level of catches in previous periods.

## SUMMARY DOCUMENTS 1978

Abbreviation: SD

<u>Sum. Doc.</u>	<u>Ser. No.</u>	
78/VI/1	5149	* <u>ICNAF.</u> Report of Standing Committee on Research and Statistics (STACRES), Special Meeting on Shrimp and Seal Stocks, November 1977 (Publ. in <i>ICNAF Redbook</i> 1978: 5-20).
78/VI/2	5150	<u>CWP.</u> Report of the Ninth Session of the Coordinating Working Party on Atlantic Fishery Statistics (CWP), August 1977.
78/VI/3	5171	* <u>ICNAF.</u> Report of Standing Committee on Research and Statistics (STACRES), Special Meeting on Squid, February 1978 + Corrigendum (Publ. in <i>ICNAF Redbook</i> 1978: 21-33).
78/VI/4	5175	* <u>ICNAF Secretariat.</u> Provisional lists of sampling data for 1976 (Publ. in <i>ICNAF Samp. Yearb.</i> 21: 1-46).
78/VI/5	5176	<u>ICNAF Secretariat.</u> List of Fishing Vessels 50 GRT and over, 1976.
78/VI/6	5177	<u>ICNAF Secretariat.</u> Historical catches of selected species by stock area and country for the period 1967-76.
78/VI/7	5178	<u>ICNAF Secretariat.</u> Extracts from Resolutions passed at the 1977 ICES Meeting relevant to the research and statistical activities of ICNAF.
78/VI/8	5180	<u>NEAFC.</u> Northeast Atlantic Fisheries Commission, Special Meeting of the Commission, November 1977: Press Notice.
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78/VI/10	5211	<u>ICNAF.</u> Report of Silver Hake Ageing Workshop, Dartmouth, Nova Scotia, Canada, 28-31 March 1978.
78/VI/11	5213	<u>ICNAF Secretariat.</u> Efficiency of sampling the major fisheries of the Northwest Atlantic in 1976.
78/VI/12	5215	<u>Hoydal, K., and Sv. Aa. Horsted.</u> Danish Research Report, 1977 + Addendum.
78/VI/13	5218	<u>Lourdes M. Godinho, M.</u> Portuguese Research Report, 1977 + Corrigendum.

<u>Sum. Doc.</u>	<u>Ser. No.</u>	
78/VI/14	5222	<u>Danke, L., R. Eggers, and N. Schultz.</u> GDR Research Report, 1977.
78/VI/15	5223	<u>Paciorkowski, A.</u> Polish Research Report, 1977.
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78/VI/17	5246	* <u>ICNAF Secretariat.</u> Provisional sealing statistics for the Northwest Atlantic, 1977 (Publ. in <i>ICNAF Stat. Bull.</i> 27: in press).
78/VI/18	5253	<u>ICNAF Secretariat.</u> Provisional index and list of titles for ICNAF publications and Meeting Documents, 1976.
78/VI/19	5251	<u>ICNAF Secretariat.</u> Tagging activities reported by member countries for 1977.
78/VI/20	5254	<u>Sandeman, E. J., and J. S. Scott.</u> Canadian Research Report, 1977.
78/VI/21	5255	<u>ICNAF Secretariat.</u> Statistics on discards, 1976.
78/VI/22	5256	<u>ICNAF Secretariat.</u> Major CWP recommendations of direct importance to ICNAF.
78/VI/23	5258	<u>ICNAF Secretariat.</u> Annual return of information on discards, 1977 + Addendum.
78/VI/24	5259	<u>ICNAF Secretariat.</u> Report on ICNAF statistical program, publications and ADP processing.
78/VI/25	5260	<u>ICNAF Secretariat.</u> Notes on statistical items for the Northwest Atlantic (FAO Major Fishing Area 21).
78/VI/26 (Rev.)	5261	<u>ICNAF Secretariat.</u> Nominal catches (1967-76) by country and stock area, with TACs and allocations (1974-78) for species and stocks reviewed by the Assessments Subcommittee in April 1978.
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78/VI/30	5271	<u>Nagasaki, F.</u> Japanese Research Report, 1977.
78/VI/31	5274	<u>Messtorff, J., and H. Dornheim.</u> Federal Republic of Germany Research Report, 1977.
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