

NOTE

This revised edition of *Sampling Yearbook* Vol. 18 for 1973, previously issued in February 1975, became necessary following the receipt of additional data and amendments to existing data upon the preparation of the material for incorporation into the sampling data base. Recipients of this revised edition are requested to remove from their files and destroy the previous issue of Vol. 18.

ICNAF Secretariat

12 September 1979



**INTERNATIONAL COMMISSION**  
FOR THE  
**NORTHWEST ATLANTIC FISHERIES**



**SAMPLING YEARBOOK**

Vol. 18

for the year

1973

(Revised)

Dartmouth • Canada

September 1979



## PREFACE

The ICNAF Sampling Yearbook has been issued annually since 1958 and has played a fundamental role in fish stock assessments carried out by the Assessments Subcommittee. The volume of sampling data has steadily increased in recent years, and new minimum sampling requirements, recommended at the 1974 Annual Meeting, if fully implemented by member countries, would mean a considerable increase in the size of the Yearbook, probably to the extent that more than one volume per year would be necessary. Since only part of the detailed data in Sampling Yearbook is normally used by individual scientists or laboratories, STACRES felt that the need for speedy availability of sampling data to individual scientists made it desirable to circulate data on request instead of in bulky volumes which involved a great amount of work to prepare and issue, and consequently, at the 1974 Annual Meeting, recommended (i) that the publication of detailed sampling data be discontinued, (ii) that lists of commercial and research sampling data available in the Secretariat be published annually, and (iii) that the Secretariat supply detailed sampling data, upon request, to scientists and laboratories involved in the work of the Commission.

This issue of Sampling Yearbook, unlike previous issues, contains lists of sampling data for 1973 contributed by 14 of the 17 member countries of ICNAF. Iceland did not fish in the ICNAF Area in 1973, and no data were received from Italy and Romania. The lists are arranged in a series of tables by species, in which the quantity of length and age sampling data is given by country, division, fishing gear and month.

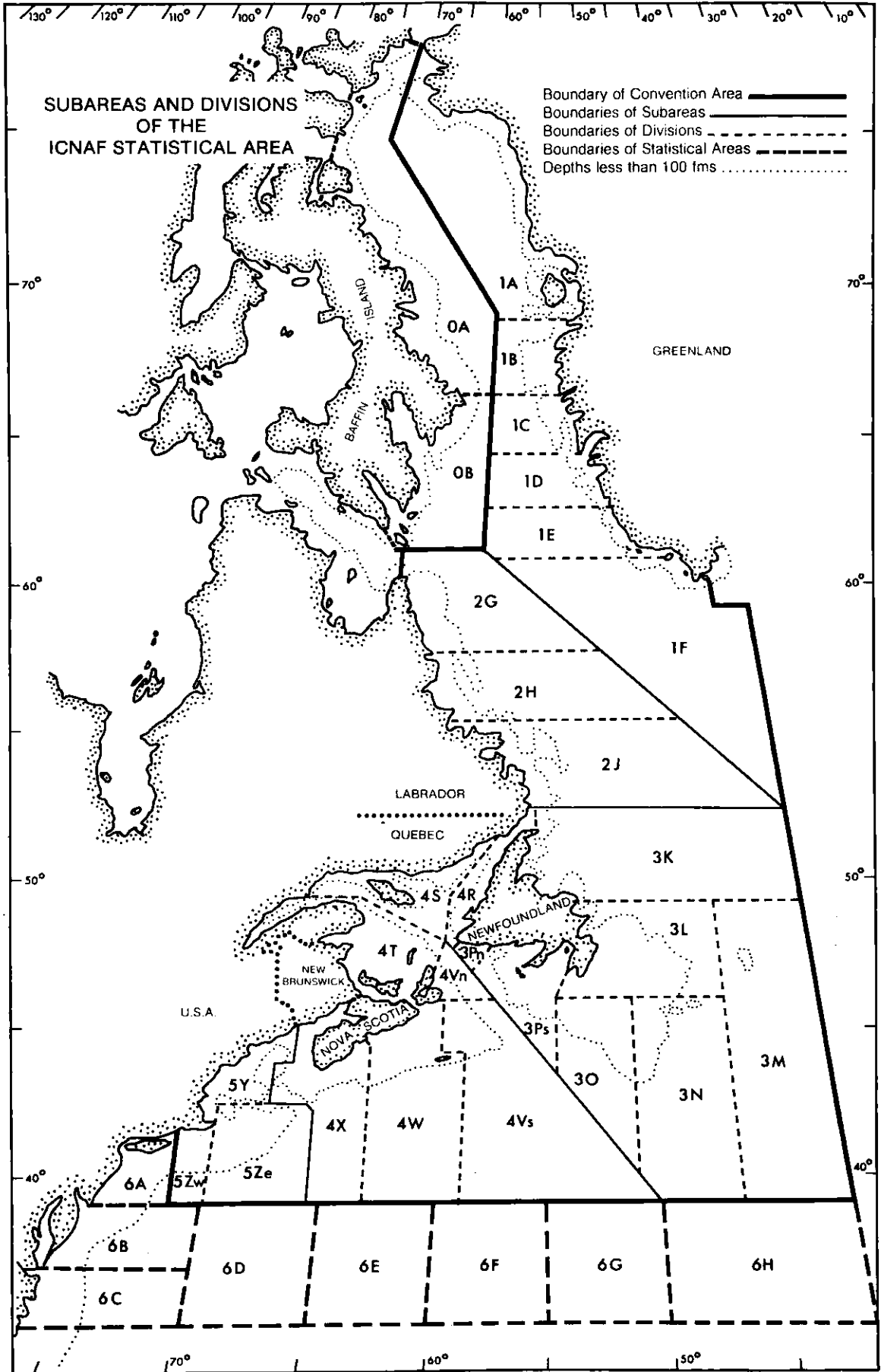
The actual sampling data for 1973, reported to the Secretariat, have been computerized to provide for the rapid retrieval of data on computer printouts to meet specific requests. Copies of such data (length frequencies, age-length keys and computed age frequencies, where applicable) will be forwarded upon request to institutes and/or individual scientists involved in the Commission's work. All requests should specify the actual data required, indicating at least the species, country and division (or subarea).

The Secretariat is grateful to those scientists who have contributed sampling data and who have continued to support the Commission's need for more adequate sampling of the Northwest Atlantic fisheries, with a view to providing better assessments of the stocks.

12 September 1979

V. M. Hodder  
Assistant Executive Secretary

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# PART 1

## Notes on Sampling Data

### 1. Introduction

The notes on sampling data contributed by the reporting countries usually contain information relating to methods of collection and presentation of the length and age frequencies and age-length keys. Some countries update their notes annually with each submission of data, but others do not comply with this requirement. The available information is summarized in Section 5 below. Additional details on sampling schemes used by most of the countries involved in the collection of sampling data in the Northwest Atlantic are documented in ICNAF Sum. Doc. 74/35, with 7 addenda. Sections 2 and 3 below contain a summary of data reported by country, species and division for commercial and research samples respectively.

### 2. Summary of Data Relevant to Commercial Fisheries

The following is a list of species and divisions for which commercially-oriented sampling data (see Part 2) were received from various countries for 1973:

Country	Species	Divisions
Bulgaria	Atlantic mackerel	- 5Zw, 6A
Canada (M)	Atlantic cod	- 4T, 4Vn, 4Vs, 4W, 4X, 5Ze
	Haddock	- 4W, 4X, 5Ze
	Atlantic redfish	- 3Ps, 4R, 4S, 4T, 4Vn, 4Vs, 4W, 4X
	Pollock	- 4W, 4X, 5Z
	American plaice	- 3N, 3O, 3Ps, 4T, 4Vn, 4Vs
	Witch flounder	- 4Vs, 4W
	Yellowtail flounder	- 4W
	Winter flounder	- 4T, 4X
	White hake	- 4W
Atlantic herring	- 4Vn, 4W	
Canada (N)	Atlantic cod	- 2G, 2H, 2J, 3K, 3L, 3Ps, 4R
	Haddock	- 3L
	Atlantic redfish	- 3Pn, 3Ps, 4R, 4S
	American plaice	- 3K, 3L, 3N, 3O, 3Ps
	Witch flounder	- 3K, 3O
	Yellowtail flounder	- 3K, 3L, 3N
Greenland halibut	- 3K	
Denmark (G)	Atlantic cod	- 1C, 1D, 1E, 1F, 3K
	Greenland halibut	- SAO, 1D
Fed. Rep. Germany	Atlantic cod	- EG, 1C, 1D, 1E, 1F, 3K
	Atlantic herring	- 4T, 4X, 5Y, 5Ze, 5Zw, 6A
German Dem. Rep.	Atlantic cod	- 3K, 3L
	Roundnose grenadier	- 1C, 2G
	Atlantic herring	- 5Y, 5Ze, 6A
	Atlantic mackerel	- 5NK, 6NK
Japan	Red hake	- 5Ze
	Atlantic mackerel	- 5Ze
	Atlantic butterfish	- 5Ze, 5Zw, 6A, 6B
	Squid - <i>Loligo</i>	- 5Ze, 6A, 6B
Norway	Capelin	- 3L

Country	Species	Divisions
Poland	Atlantic cod	- 2J, 3K, 3L
	Atlantic redfish	- 2J, 3K, 3M
	American plaice	- 3L
	Witch flounder	- 3K
	Atlantic herring	- 5Z
	Atlantic mackerel	- 5Z, 6NK
	Squid - <i>Loligo</i>	- 5Ze, 6A, 6B
	Squid - <i>Illex</i>	- 4X, 5Ze, 6A, 6B
Portugal	Atlantic cod	- 1B, 1C, 1D, 3L, 3N, 3O
Spain	Atlantic cod	- 1B, 1C, 1D, 3L, 3N, 3O, 3Ps, 4Vn, 4Vs, 5Ze
USSR	Atlantic cod	- 2J, 3K, 3L, 4V, 4W
	Haddock	- 4W, 5Ze
	Atlantic redfish	- 3K, 3M, 4W, 4X
	Silver hake	- 4W, 4X, 5Ze, 5Zw, 6
	Red hake	- 4W, 5Ze, 5Zw, 6
	Pollock	- 4W, 4X
	American plaice	- 1C, 3L
	Yellowtail flounder	- 4Vs, 4W, 5Ze
	Greenland halibut	- 2J
	Atlantic herring	- 4W, 4X, 5Z, 6NK
	Atlantic mackerel	- 4VWX, 5Z, 6NK
	Alewife	- 4W, 5Z, 6NK
	Atlantic argentine	- 4V, 4W, 4X
	Squid - <i>Loligo</i>	- 5Z, 6NK
Squid - <i>Illex</i>	- 4V, 5Z, 6NK	
UK	Atlantic cod	- 1D, 1E, 1F, 3K, 3L, 3M
USA	Atlantic cod	- 5Ze, 5Zw
	Haddock	- 4X, 5Y, 5Ze
	Atlantic redfish	- 4R, 4Vs, 4W, 4X, 5Y, 5Ze
	Silver hake	- 5Y, 5Ze, 5Zw, 6A
	Red hake	- 5Zw, 6A
	Pollock	- 5Y, 5Ze
	American plaice	- 5Ze
	Witch flounder	- 5Y, 5Ze
	Yellowtail flounder	- 5Y, 5Z(E69°), 5Z(W69°)
	Scup	- 5Zw, 6C
	Atlantic herring	- 4X, 5Y(N), 5Y(S), 5Ze, 6B
	Atlantic mackerel	- 5Zw, 6A
	Atlantic butterfish	- 5Zw
	Black seabass	- 6C
	Squid - <i>Loligo</i>	- 5Zw, 6A, 6C
	Squid - <i>Illex</i>	- 5Y, 5Ze
Sea scallops	- 5Y, 5Ze, 5Zw, 6NK	

### 3. Summary of Research Vessel Sampling Data

The following is a list of species and divisions for which research vessel sampling data (see Part 3) were received from various countries for 1973:

Country	Species	Divisions
Canada (Q)	Atlantic cod	- 4S
	Atlantic redfish	- 4S
	American plaice	- 4S
	Yellowtail flounder	- 4S

Country	Species	Divisions
Denmark (G)	Atlantic redfish	- 1A, 1B, 1C, 1D, 1F
	American plaice	- 1A, 1C, 1D, 1F
	Greenland halibut	- 1A, 1B, 1D, 1E, 1F
	Greenland cod	- 1A, 1D
	Wolffishes	- 1A
France (SP)	Atlantic cod	- 3N, 3O, 3Pn, 3Ps, 4R, 4T, 4Vn, 4Vs, 5Ze
	Atlantic redfish	- 3O, 3Pn, 3Ps, 4R, 4Vn, 4Vs, 4W, 4X, 5Ze
	Silver hake	- 4W, 4X, 5Ze
	American plaice	- 3Ps, 4R, 4Vn, 5Ze
	Yellowtail flounder	- 3L, 3N, 3O, 3Ps, 4S, 4Vs, 4W, 5Ze
	Atlantic herring	- 4R, 4T, 4W, 5Ze
	Atlantic mackerel	- 4W, 4X, 5Ze
Fed. Rep. Germany	Atlantic cod	- 1C, 1D, 1F, 2GH, 2J, 3K
	Atlantic mackerel	- 5Ze, 6A, 6B, 6C
German Dem. Rep.	Atlantic cod	- 2J
UK	Atlantic redfish	- 1C, 1D, 1E
	American plaice	- 1C, 1D, 1F

#### 4. Length Groups Applicable to the Various Species

At the 1974 Annual Meeting, the Statistics and Sampling Subcommittee reviewed the length groups to be used for the presentation of length frequencies for most of the species sampled in the ICNAF Area, and specified the species for which the data should be provided by sex, as follows:

Cod	3 cm
Pollock	3 cm
Cusk	3 cm
White hake	3 cm
Wolffish (catfish)	3 cm
Roundnose greandier	3 cm by sex
Haddock	2 cm
Red hake	2 cm
Greenland cod ( <i>G. ogac</i> )	2 cm
Silver hake	2 cm by sex
American plaice	2 cm by sex
Witch	2 cm by sex
Greenland halibut	2 cm by sex
Yellowtail (SA 3 and 4)	2 cm by sex
Herring	1 cm
Mackerel	1 cm
Butterfish	1 cm
Redfish	1 cm by sex
Yellowtail (SA 5 and 6)	1 cm by sex
Squids (by species)	1 cm
Capelin	½ cm or 1 cm by sex
Other species not listed	1 cm

#### 5. Notes on Sampling Data

##### a) Bulgaria

Mackerel length and age data were submitted for 1973. Length measurements were made of the fork length to the nearest millimeter and grouped into 1-cm intervals, i.e. 30 cm includes lengths in the 30.0-30.9 cm range. Ages were determined from otoliths.

Data were submitted by L. Ivanov

b) Canada (Maritimes and Quebec)

Commercial landings in the provinces of New Brunswick, Nova Scotia and Prince Edward Island are sampled by the staff of the Biological Station, St. Andrews, N. B., in cooperation with the Conservation and Protection Branch and Fisheries Information Branch, all of which are agencies of the Fisheries and Marine Service, Environment Canada. Sampling data reported for the province of Quebec were collected by the Marine Research Institute of Quebec.

Landings of cod and haddock are normally culled by market category. Cod are divided into large (steak) and medium (market) categories at about 10 pounds fresh gutted weight. Small (scrod) cod and haddock are mainly less than 2½ pounds gutted weight. Small round haddock are sometimes landed in a separate market category. These market categories are usually sampled approximately in proportion to the relative numbers of each in the trip landing. When the final weightout is available, the length frequency of the landing is determined by applying weighting factors to each category. Other species reported are not usually culled by market category. Length frequencies by sexes are usually given for redfish, American plaice, yellowtail, witch and winter flounder.

Fork length measurements for groundfish are recorded to the nearest centimeter and for mackerel to the ½ cm below. For herring the greatest total length (from the snout to the longest caudal fin rays, when the caudal fin is drawn in line with the body) is measured to the ½ cm below. For both herring and mackerel, the length frequencies are reported to the centimeter below, i.e. fish reported as 10 cm include those in the 10.0-10.9 cm range. Mean lengths reported for herring and mackerel are adjusted upward by 0.5 cm. For groundfish the length frequencies are reported in 1-cm, 2-cm, or 3-cm length groups as required.

Mesh sizes indicated are the manufacturers' specifications and hence are approximations to the actual mesh size. Hook size is given by number, No. 6/0 being the smallest used commercially and No. 14 being the largest hook used on longliners in Quebec.

Length and age data are normally reported in the form of age-length tables. When the age data are inadequate to apply to the corresponding length frequencies, age-length keys and length frequencies are reported separately. Ageing materials are not collected for redfish, and, although occasional samples of such species as cusk and white hake otoliths are collected, these are not aged on a routine basis.

Data were submitted by R. G. Halliday, D. N. Fitzgerald, D. S. Miller, and J. P. Lussiaa-Berdou.

c) Canada (Newfoundland)

i) Groundfish

Length frequencies are based on samples obtained from landings of the commercial groundfish fishery. Research samples from Labrador are taken on commercial gears operated from a small research vessel.

Measurements are recorded to the nearest centimeter for fork length of cod, haddock and redfish, and for total length of flounders (American plaice, witch, yellowtail and Greenland halibut). The measurements are made on shore before appreciable culling has occurred in the processing plants. Samples of landings after discard indicate that some of the catch may have been thrown away at sea prior to landing, whereas samples of landings before discard indicate that no fish was thrown away before landing. The sample frequencies are converted to numbers per mille, but are otherwise unadjusted except for the usual grouping into 2-cm and 3-cm length groups as required for certain species.

The age-length keys, used to calculate the monthly age frequencies from the length frequencies, usually represent combined quarterly stratified otolith samples for the off-shore fishery. However, for some of the inshore gears (i.e. longline, handline, codtrap, gillnets) during the summer period, the age-length keys are derived from a large composite sample collected from all gears combined for a given division and time period. Also, during the peak June-July season the age-length keys have been reported by June-July fishing season rather than by quarter. These points are noted at the bottom of the length and age tables.

The various inshore gears used in coastal waters are operated on boats less than 50 GRT. All otter trawl samples pertain to offshore fisheries.

Length and age data for 1973 are reported for cod, haddock, American plaice, witch,

yellowtail and Greenland halibut. Length data only are reported for redfish. The following table lists the redfish otoliths for which age data have not been reported:

Species	Div.	Gear	Month	No. of pairs of otoliths		
Redfish	3Ps	MT	Mar	30		
			3Pn	MT	Mar	71
			Apr	44		
			Sep	103		
	4R	MT	Apr	41		
			May	193		
			Jun	52		
			Jul	39		
			Aug	135		
			Oct	146		
			Nov	52		
			Dec	99		
				OT	Dec	57
			4RS	MT	Oct	53
	4RST	MT	Jun	49		

All mean weights are in grams and mean lengths in centimeters. Where sample weights were available, mean weights were calculated using these; otherwise the mean weights were estimated from average lengths and length-weight relationships.

Data were submitted by A. T. Pinhorn, R. Wells, T. K. Pitt, and L. S. Parsons.

ii) Herring

Length frequencies for 1973 are based mainly on the sampling of commercial landings from inshore waters using purse seines (about 595 meters long and 82 meters deep with 30-mm mesh, but a few samples were obtained from beach seine catches.

Measurements are total lengths tabulated to the  $\frac{1}{2}$  centimeter below, e.g. all fish whose actual total lengths fall within the 30.0-30.9 cm range are recorded as 30 cm. Mean lengths are calculated directly from the length frequencies as recorded in centimeter length groups.

In addition to the length frequencies, random samples of about 50 fish each are collected for age and growth studies. These are reported in the form of age-length keys with spring- and autumn-spawning types recorded separately. Ages are determined from otolith readings and refer to age-groups, and spawning types are determined from the maturity condition of the gonad in conjunction with the otolith structure.

In Subdiv. 3Ps and also in Div. 4R there are two or more distinct herring stocks, and consequently the length and age data are reported by stock area. Footnotes to the various tables of herring data for Div. 3P and 4R indicate the areas to which the length and age samples pertain.

Data were submitted by R. Chaulk.

d) Denmark (Faroes)

No sampling data reported for 1973.

e) Denmark (Greenland)

Sampling data (commercial and research) were submitted for cod, redfish, American plaice, Greenland halibut, wolffish and Greenland cod.

All length measurements are total length to the centimeter below. Weights are given for whole, round fish. Samples other than those obtained on research vessels are supplied by local fishermen or obtained from the landings of trawlers. However, the method of having local fishermen supply samples on their own initiative is gradually being discontinued and

the sampling of landings from the trawler fleet, which form a steadily increasing part of the total nominal catch by Denmark (G), is carried out by staff of the Research Institute.

The catches of trawlers are stored on board in boxes of 40-60 kg each, as head-on, gutted fish. Samples are taken, as the fish are being landed, by selecting at random a certain number of boxes. All fish in the boxes are measured, and a stratified sample of otoliths taken, normally 10 fish in each cm group where possible. Information on the total landed weight of each species by the vessel is obtained from the factory, and information on discards is obtained by interviewing the captain or other vessel personnel. The ship's log provides information on the areas fished during the trip.

In addition to the species for which sampling data are reported to the Secretariat, samples of capelin, *Mallotus villosus*, were obtained in Div. 1B, 1C and 1D, and samples of queen crab, *Chionoecetes opilio*, in 1A, 1B and 1D.

Data were submitted by Sv. Aa. Horsted.

f) France (St. Pierre and Miquelon)

A substantial quantity of length and age data from research vessel cruises in Subarea 3, 4 and 5, and some commercial sampling data for yellowtail in Div. 3LN, were reported for 1973. The species sampled include cod, redfish, silver hake, American plaice, yellowtail, herring and mackerel.

The sampling data submitted did not contain notes on the methods used, but some information on sampling is contained in ICNAF Sum. Doc. 74/35, Addendum 6.

Data were submitted by J. P. Berthomé, D. Briand, Ph. Decamps, J. P. Minet and J. C. Pouland.

g) France (Metropolitan)

No sampling data reported for 1973.

h) Federal Republic of Germany

Commercial sampling data were reported for cod from East Greenland, Subarea 1 and Div. 3K, and for herring and mackerel from Subarea 5. Also a quantity of cod sampling data from groundfish surveys of the *R/V Anton Dohrn* were submitted.

Length measurements are made of the total length (to end of tail lobes) and recorded to the centimeter below. More detailed information on FRG sampling methods is given in ICNAF Sum. Doc. 74/35, page 11 and Addendum 7.

Data were submitted by J. Messtorff and A. Schumacher.

i) German Democratic Republic

Sampling data were submitted for cod, roundnose grenadier, herring and mackerel for 1973. No notes on the sampling methods used were included, but details of the GDR sampling schemes are given in ICNAF Sum. Doc. 74/35, Addendum 4.

Data were submitted by W. Ranke.

j) Iceland

No sampling data reported for 1973.

k) Italy

No sampling data reported for 1973.

l) Japan

Sampling data were reported for butterfish, squids, mackerel and red hake. The samples are collected from commercial catches of trawlers and measured on deck before discarding.

Length measurements are made of the fork length to the nearest centimeter for fish with a forked caudal fin and the total length for others. The mantle length is measured for squid.

Data were submitted by I. Ikeda.

m) Norway

Sampling data were submitted for capelin in Subarea 3, but no notes on the sampling methods used were included.

Data were submitted by Ø. Ulltang.

n) Poland

Sampling data were reported for cod, redfish, American plaice, witch, mackerel and squids for 1973, but notes on methods were not given. However, as noted in previous issues of the Yearbook, length measurements are made of total length on a measuring board with the scale offset by 0.5 cm to permit measuring to the nearest centimeter. More details of sampling methods are given in ICNAF Sum. Doc. 74/35, Addendum 1.

Data were submitted by J. Janesz, A. Kosior, E. Stanek, M. Lipinski and S. Ueinski.

o) Portugal

Sampling data were reported for cod taken on gillnet vessels fishing in Subareas 1 and 3 in 1973. No notes on sampling data were submitted, but a description of the sampling scheme is given in ICNAF Sum. Doc. 74/35. In previous issues of the Sampling Yearbook, it is noted that length measurements are made of total length and recorded to the nearest centimeter.

Data were submitted by M. Lima-Dias.

p) Romania

No sampling data reported for 1973.

q) Spain

No notes on sampling methods were submitted with the 1973 sampling data for cod. However, as noted in previous issues of the Yearbook, length measurements are made of total length (to end of tail lobes) and are recorded to the centimeter below. More details on the sampling scheme are given in ICNAF Sum. Doc. 74/35, Addendum 5.

Data were submitted by M. G. Larraneta, J. Rucaboda and E. C. Lopez-Veiga.

r) Union of Soviet Socialist Republics

Sampling data for 1973 were reported for cod, haddock, redfish, silver hake, red hake, pollock, American plaice, yellowtail, Greenland halibut, herring, mackerel, alewife, argentine and squid, but no notes on sampling methods were included. However as noted in previous issues of the Yearbook, length measurements are made of total length and recorded to the nearest centimeter. Details of the USSR sampling procedures are given in ICNAF Sum. Doc. 74/35, Addendum 2.

Data were submitted by V. I. Isakov, K. G. Konstantinov, A. S. Noskov, V. A. Rikhter, A. P. Senina and R. P. Volkova.

s) United Kingdom

Sampling data for 1973 were reported for cod, redfish and American plaice.

Measurements are made of the total length to the centimeter below and grouped into the length intervals required for the various species.

Samples designated as landings are of head-on gutted cod sampled after the vessels have returned to port. Samples designated as catches are of round fish sampled on board a research vessel during its voyage and include fish which might have been discarded during commercial fishing. Mean weights are those of whole fish.

Stratification was used in the sampling of fish for otoliths from commercial landings, but for research vessel data the otolith samples were random sub-samples of those measured.

Data were submitted by B. C. Bedford and C. L. Whiting.

t) United States of America

Sampling data for 1973 were reported for cod, haddock, redfish, silver hake, red hake, pollock, American plaice, yellowtail (by ICNAF division and also by management area), witch, scup, herring, mackerel, butterfish, black sea bass, sea scallops and squids. No notes on sampling methods were included with the data, but details on sampling schemes are given in ICNAF Sum. Doc. 74/35.

As noted in previous issues of the Yearbook, length measurements are made of the fork length to the nearest centimeter and grouped into the required length intervals for reporting. Measurements are made to the nearest millimeter for scale and otolith samples.

Data were submitted by E. G. Heyerdahl, R. K. Mayo, A. M. Tibbetts and G. T. Waring.



## PART 2

### List of Sampling Data for Commercial Fisheries, 1973

#### 1. Introduction

The tables in this section of the Yearbook contain information on all available commercial length and age sampling data for 1973, submitted by 14 of the 17 member countries of ICNAF. Most of the data were derived directly from commercial catches or landings, as indicated by the abbreviations "CC" or "CL" in the column headed "Type of sample". However, some samples reported as "research" have been included, where the type of gear used or the gear size reported indicated that they were relevant to commercial fishing operations, and these are designated as "RC" or "RL" in the "Type of sample" column. Sampling data pertaining to pure research vessel operations (survey data not connected with commercial fisheries) are listed in Part 3 of this issue.

In all cases where the data were available by sex, the number of fish of each sex measured and/or aged are listed in the appropriate columns by two numbers, the first being the number of males and the second being the number of females (e.g. 476/565). Entries in the last column under the heading "No. aged" imply that quarterly age-length keys are available and also that "per mille" age frequencies by month have been calculated and can be provided on computer printouts together with the monthly length frequencies.

#### 2. Gear Abbreviations Used

The following abbreviations are used to designate the "gear" in Tables 1 to 24 of this section and also in the listing of research samples in Table 25.

##### GEAR

OTB	-	Bottom otter trawl (side and stern)
OTM	-	Midwater otter trawl (side and stern)
PTB	-	Bottom pair trawl (2 boats)
PTM	-	Midwater pair trawl (2 boats)
SN	-	Seine net (Danish and Scottish seines)
SB	-	Beach seines
PS	-	Purse seines
GN	-	Gillnets (set and drift)
LL	-	Longlines (set)
LHP	-	Handlines and pole-lines
FPN	-	Uncovered pound nets
FWR	-	Weirs, barriers, fences, etc.
DRB	-	Boat dredges
NS	-	Gear not specified

Table 1. Atlantic cod length and age sampling data for 1973.

Country	ICNAF Div.	Gear	Month	Type of sample	Length samples		Age samples		
					No.	No. meas.	No.	No. aged	
Canada (M)	4T	OTB	Apr	CL	2	630	}	6	236
			May	CL	2	400			
			Jun	CL	2	401			
			Oct	CL	2	407			
			Nov	CL	2	400			
			Dec	CL	1	300			
		SN	Jun	CL	1	200	}	1	47
			Aug	CL	1	200			
			Sep	CL	1	200			
		GN	Jun	CL	3	538	}	3	122
			Jul	CL	2	332			
			Aug	CL	3	571			
	Sep		CL	2	400				
	LL	Jul	CL	1	200	}	3	81	
		Aug	CL	2	277				
	4Vn	OTB	Jan	CL	3	884	}	3	143
			Apr	CL	1	330			
			May	CL	1	347			
		OTM	Apr	CL	1	317	}	1	59
			LL	Sep	CL	3			
	4Vs	OTB	Feb	CL	1	312	}	2	116
			Mar	CL	1	248			
			Apr	CL	1	320			
	4W	OTB	Jan	CL	1	252	}	3	146
			Mar	CL	2	686			
			Apr	CL	1	390			
			Oct	CL	1	318			
Nov			CL	1	344				
4X	OTB	Feb	CL	1	249	}	1	51	
		May	CL	1	378				
		Sep	CL	1	93				
		Dec	CL	1	123				
	LL	May	CL	1	170	}	2	112	
		Jun	CL	1	217				
		Dec	CL	1	188				
LHP	Oct	CL	1	89		1	33		
5Ze	OTB	Aug	CL	1	269		1	51	
-----									
Canada (N)	2G	LHP	Aug	CC	2	134		2	134
	2H	LHP	Aug	CC	4	347		4	227
	2J	GN	Aug	CL	9	2017		14	704 <sup>1</sup>
		FPN	Aug	CL	5	3142		14	704 <sup>1</sup>
	3K	GN	Jul	CL	19	3844		16	719 <sup>2</sup>
		LHP	Jul	CL	1	208		16	719 <sup>2</sup>
		FPN	Jul	CL	10	3326		16	719 <sup>2</sup>
	3L	OTB	Feb	CL	1	778		1	111
		GN	Jun	CL	12	3028		21	1614 <sup>3</sup>
		LHP	Jun	CL	4	1844		21	1614 <sup>3</sup>
		FPN	Jun	CL	14	7300		21	1614 <sup>3</sup>
	3Ps	OTB	Feb	CL	1	1047		1	201
			Nov	CL	1	1243		1	201
		GN	Jun	CL	23	3017		26	563 <sup>4</sup>

Table 1. Atlantic cod (continued)

Country	ICNAF Div.	Gear	Month	Type of sample	Length samples		Age samples	
					No.	No. meas.	No.	No. aged
Canada (N)	3Ps	LL	Jun	CL	1	343	26	563 <sup>4</sup>
			Sep	CL	4	3081	4	493
	4R	OTB	Jun	CL	16	5682	26	563 <sup>4</sup>
			Jul	CL	1	296	-	-
			Jul	CL	11	2939	5	606 <sup>5</sup>
	FPN	Jul	CL	2	1576	5	606 <sup>5</sup>	
Denmark (G)	1C	OTB	Jan	CC	2	832	2	715
			Feb	CC	2	1075		
	1D	OTB	Mar	CC	2	877	1	211
			Apr	CC	2	941	1	253
			Nov	CC	2	992	1	370
		FPN	Aug	CC	2	693	1	192
	1E	OTB	Jul	CC	1	763	-	-
			Oct	CC	2	912	1	422
	1F	GN	Oct	CC	1	198	1	198
	3K	OTB	May	CL	2	1128	1	252
Fed. Rep. Germany	EG	OTB	Jan	CL	3	1429	10	1925
			Feb	CL	3	1271		
			Mar	CL	4	1699		
			Apr	CL	3	1328		
			May	CL	1	339		
	1C	OTB	Jun	CC	1	225	1	212
	1D	OTB	Mar	CC	3	1698	2	438
	1E	OTB	Mar	CC	3	980	3	226
			Apr	CC	5	2785	3	441
	1F	OTB	Mar	CC	8	5896	4	673
Dec			CC	1	465	1	154	
3K	OTB	Apr	CC	-	6217	4	947	
German Dem. Rep.	3K	OTB	Jan	CC	6	1437	10	997
			Feb	CC	10	2121		
			Mar	CC	4	506		
	3L	OTB	Feb	CC	5	1398	2	204
			Apr	CC	2	554	1	104
Poland	2J	OTB	Jan	CC	8	3211	-	-
			Mar	CC	2	1039		
	3K	OTB	Feb	CC	5	6841	5	801
	3L	OTB	Jan	CC	3	1267	7	1006
			Feb	CC	7	7695		
Portugal	1B	GN	Jul	CC	8	2338	-	-
	1C	GN	Jun	CC	1	100	-	-
			Jul	CC	6	1688	-	-
	1D	GN	Jun	CC	12	3599	5	501
	3L	GN	Jul	CC	3	652	4	402
			Sep	CC	2	200		
	3N	GN	Aug	CC	10	3111	6	454
			Sep	CC	4	571		
3O	GN	May	CC	7	2012	-	-	
		Aug	CC	9	2570	4	355	

Table 1. Atlantic cod (continued)

Country	ICNAF Div.	Gear	Month	Type of sample	Length samples		Age samples		
					No.	No. meas.	No.	No. aged	
Spain	1B	PTB	Sep	CC	1	353	1	67	
	1C	PTB	Aug	CC	2	308	}	-	356
			Sep	CC	6	2490			
			Oct	CC	3	1374			
			Nov	CC	8	3268			
	1D	PTB	Aug	CC	2	749	}	-	466
			Sep	CC	10	3007			
			Oct	CC	9	3816			
			Nov	CC	6	2336			
	3L	PTB	Apr	CC	6	1777	}	-	290
			May	CC	5	1578			
	3N	PTB	May	CC	5	1917	}	-	422
			Jun	CC	3	1742			
			Jul	CC	4	726			
	3O	PTB	Jun	CC	4	1621	-	196	
	3Ps	PTB	Apr	CC	3	893	-	75	
			Dec	CC	4	2029	-	235	
4Vn	PTB	Feb	CC	3	823	-	72		
		Dec	CC	2	771	-	94		
4Vs	PTB	Feb	CC	5	1614	}	-	273	
		Mar	CC	5	1605				
5Ze	PTB	Feb	CC	7	1492	-	172		
USSR	2J	OTB	Jan	RC	13	2621	-	902 <sup>6</sup>	
	3K	OTB	Jan	RC	60	12039	}	-	902 <sup>6</sup>
			Feb	RC	32	6407			
			Apr	RC	28	5626			
	3L	OTB	Jan	RC	49	9852	}	-	556
			Feb	RC	50	9894			
	4V	OTB	Aug	CC	13	2558	-	-	
4W	OTB	Jun	CC	2	400	-	-		
		Jul	CC	1	200	-	-		
UK	1D	OTB	Nov	RC	7	318	7	247	
	1E	OTB	Jan	CL	1	168	1	28	
			May	CL	1	170	-	-	
	1F	OTB	Jan	CL	1	205	1	22	
			Nov	RC	6	887	6	327	
	3K	OTB	Apr	CL	1	247	}	2	104 <sup>7</sup>
			Jun	CL	1	462			
Jul			CL	2	621				
3L	OTB	Jun	CL	1	249	2	104 <sup>7</sup>		
3M	OTB	Jun	CL	1	499	1	31		
USA	5Ze	OTB	Jan	CL	3	397	}	-	-
			Feb	CL	3	453			
			Mar	CL	3	389			
			Apr	CL	4	643			
			May	CL	6	797			
			Jun	CL	5	706			
			Jul	CL	4	616			
			Aug	CL	4	452			
			Sep	CL	7	790			
			Oct	CL	5	625			
			Nov	CL	9	1362			
			Dec	CL	2	280			

Table 1. Atlantic cod (continued)

Country	ICNAF Div.	Gear	Month	Type of sample	Length samples		Age samples	
					No.	No. meas.	No.	No. aged
USA	5Zw	OTB	Jan	CL	1	104	-	-
			Dec	CL	1	144	-	-

<sup>1</sup> Same key used for GN and FPN.  
<sup>2</sup> Same key used for GN, LHP and FPN.  
<sup>3</sup> Same key used for GN, LHP and FPN.  
<sup>4</sup> Same key used for GN, LL and FPN.  
<sup>5</sup> Same key used for GN and FPN.  
<sup>6</sup> Same key used for 2J and 3K.  
<sup>7</sup> Same key used for 3K and 3L.

Table 2. Haddock length and age sampling data for 1973.

Country	ICNAF Div.	Gear	Month	Type of sample	Length samples		Age samples		
					No.	No. meas.	No.	No. aged	
Canada (M)	4W	OTB	Mar	CL	6	1420	6	225	
			May	CL	1	210	1	34	
			Sep	CL	1	201	1	40	
		LL		Apr	CL	2	496	2	69
				Oct	CL	1	156	1	31
	4X	OTB		Jan	CL	3	785	11	360
				Feb	CL	4	875		
				Mar	CL	4	1573		
				Apr	CL	3	721	4	119
				May	CL	1	176		
				Aug	CL	1	256	1	27
				Sep	CL	1	315		
				Oct	CL	2	815	3	78
				Nov	CL	2	462		
					LL		Jan	CL	1
	Feb	CL	2				315		
	May	CL	2				360	2	60
	Jul	CL	1				228		
	Sep	CL	2				359	3	91
	Nov	CL	1				199		
5Ze	OTB		Aug	CL	1	333	2	72	
			Sep	CL	1	256			
			Oct	CL	1	432	1	38	
Canada (N)	3L	FPN	Jun	CL	1	102	1	102	
USSR	4W	OTB	Feb	CC	1	200	}	-	
			Mar	CC	2	400			
			Apr	CC	1	200			
			Jun	CC	1	227			
	5Ze	OTB		Apr	CC	1	200	}	-
				May	CC	4	800		
				Jun	CC	1	200		
				Sep	CC	1	200		
USA	4X	OTB	Feb	CL	1	78	}	3	
			Mar	CL	2	216			
			Apr	CL	3	247			
	5Y	OTB		Mar	CL	1	99	}	1
				Nov	CL	2	205		

Table 2. Haddock (continued)

Country	ICNAF Div.	Gear	Month	Type of sample	Length samples		Age samples	
					No.	No. meas.	No.	No. aged
USA	5Ze	OTB	Jan	CL	5	607	14	287
			Feb	CL	6	522		
			Mar	CL	3	263		
			Apr	CL	5	499		
			May	CL	10	1037	21	428
			Jun	CL	6	596		
			Jul	CL	8	516		
			Sep	CL	5	417	11	295
			Oct	CL	5	525		
			Nov	CL	3	309	9	200
			Dec	CL	5	456		

Table 3. Atlantic redfish length and age sampling data for 1973.

Country	ICNAF Div.	Gear	Month	Type of sample	Length samples		Age samples	
					No.	No. meas.	No.	No. aged
Canada (M)	3Ps	OTM	Mar	CL	2	122/297		
	4R	OTB	Jul	CL	1	143/124		
			Sep	CL	2	161/268		
		OTM	Apr	CL	4	494/580		
			May	CL	2	297/316		
			Jun	CL	1	103/97		
			Aug	CL	1	107/134		
			Oct	CL	2	207/241		
			Nov	CL	2	232/329		
		Dec	CL	2	294/204			
		4S	OTB	Jul	CL	1	110/90	
	Aug			CL	1	118/166		
	Oct			CL	3	241/359		
	OTM		Jan	CL	1	97/143		
			Apr	CL	1	112/97		
			May	CL	3	342/325		
			Jun	CL	2	197/203		
			Aug	CL	5	434/571		
			Sep	CL	1	129/124		
			Oct	CL	3	274/350		
	Nov	CL	6	666/615				
	Dec	CL	3	318/328				
	4T	OTB	Aug	CL	1	133/138		
		OTM	Jun	CL	1	132/116		
	4Vn	OTB	Aug	CL	1	46/162		
	4Vs	OTB	Sep	CL	1	126/133		
	4W	OTB	Mar	CL	1	121/111		
Jun			CL	1	143/112			
Jul			CL	1	97/126			
Aug			CL	1	97/188			
Oct			CL	1	121/146			
Nov			CL	3	287/384			
4X	OTB	May	CL	2	318/237			

Table 3. Atlantic redfish (continued)

Country	ICNAF Div	Gear	Month	Type of sample	Length samples		Age samples		
					No.	No. meas.	No.	No. aged	
Canada (N)	3Pn	OTM	Apr	CL	1	212/269			
			Sep	CL	2	577/456			
	3Ps	OTM	Mar	CL	2	409/595			
			4R	OTB	Apr	CL	1	211/269	
	Dec	CL			1	334/260			
			OTM	Apr	CL	1	214/237		
				May	CL	4	987/1067		
				Jun	CL	1	357/165		
				Jul	CL	1	319/99		
				Aug	CL	3	862/522		
				Oct	CL	3	702/751		
				Nov	CL	1	337/175		
				Dec	CL	2	550/455		
	4S	OTM	Jun	CL	1	287/205			
Oct			CL	1	280/241				
Poland	2J	OTB	Jan	RC	1	331			
			Mar	RC	1	443			
	3K	OTB	Feb	RC	1	466			
			Mar	RC	1	418			
	3M	OTB	Jan	RC	1	344			
			Mar	RC	2	832			
USSR	3K	OTB	Jan	RC	-	935/1143	-	134/173	
			3M	OTB	Feb	RC	-	646/675	}
	Mar	RC			-	5705/5696			
	Apr	RC			-	755/716			
	4W	OTB	Mar	CC	7	1400			
			May	CC	4	806			
			Jun	CC	4	853			
			Jul	CC	1	200			
			Aug	CC	57	11400			
			Sep	CC	3	600			
			Oct	CC	5	1000			
			Nov	CC	6	1200			
	4X	OTB	Mar	CC	1	200			
			May	CC	1	200			
			Sep	CC	60	12000			
	USA	4R	OTB	Apr	CL	1	41/59		
Aug				CL	3	154/146			
Sep				CL	4	192/208			
Dec				CL	1	57/43			
4Vs		OTB	Apr	CL	1	56/44			
			May	CL	1	52/48			
4W		OTB	Jan	CL	6	270/330			
			Feb	CL	9	425/485			
			Mar	CL	3	130/170			
			Apr	CL	2	77/122			
			May	CL	1	45/55			
			Jun	CL	2	115/85			
			Jul	CL	1	73/43			
			Aug	CL	2	83/117			
			Sep	CL	2	119/81			
			Oct	CL	5	280/224			
			Nov	CL	4	218/182			
			Dec	CL	5	203/297			

Table 3. Atlantic redfish (continued)

Country	ICNAF Div.	Gear	Month	Type of sample	Length samples		Age samples	
					No.	No. meas.	No.	No. aged
USA	4X	OTB	Jan	CL	1	45/55		
			Feb	CL	2	84/116		
			Mar	CL	8	320/480		
			Apr	CL	1	63/37		
			May	CL	5	258/243		
			Jun	CL	8	456/348		
			Jul	CL	3	175/125		
			Sep	CL	1	37/63		
			Oct	CL	6	325/275		
			Nov	CL	3	165/137		
			Dec	CL	4	196/204		
			5Y	OTB	Jan	CL	6	253/347
	Feb	CL			1	48/53		
	Mar	CL			3	124/176		
	Apr	CL			9	403/507		
	May	CL			6	297/296		
	Jun	CL			6	219/381		
	Jul	CL			5	190/312		
	Aug	CL			5	226/274		
	Sep	CL			1	67/38		
	Nov	CL			2	82/118		
	Dec	CL			1	49/50		
	5Ze	OTB			Mar	CL	4	210/190
			Apr	CL	5	304/232		
			May	CL	2	107/92		
			Jun	CL	3	143/160		
			Jul	CL	1	62/35		
			Aug	CL	2	119/82		

Table 4. Silver hake length and age sampling data for 1973.

Country	ICNAF Div.	Gear	Month	Type of sample	Length samples		Age samples		
					No.	No. meas.	No.	No. aged	
USSR	4W	OTB	Feb	CC	1	200	}	-	125/194
			Mar	CC	113	22600			
			Apr	CC	68	13514			
			May	CC	46	9101			
			Jun	CC	175	35060			
			Jul	CC	74	14768			
			Aug	CC	138	27641			
			Sep	CC	18	3600			
			Oct	CC	124	24800			
			Nov	CC	44	8800			
			4X	OTB	Mar	CC			
	May	CC			1	200			
	Jun	CC			3	600			
	Sep	CC			84	16807			
	Oct	CC			5	1000			
	5Ze	OTB	Jan	CC	6	1200	}	-	270/214
			Feb	CC	21	4200			
			Mar	CC	8	1600			
			Apr	CC	16	3212			
			May	CC	15	3000			
	Jun	CC	14	2800					



Table 4. Silver hake (continued)

Country	ICNAF Div.	Gear	Month	Type of sample	Length samples		Age samples							
					No.	No. meas.	No.	No. aged						
USSR	5Ze	OTB	Jul	CC	55	10972	}	-	205/252					
			Aug	CC	17	3410								
			Sep	CC	2	400								
			Oct	CC	9	1800								
			Nov	CC	19	3790								
			Dec	CC	22	4363								
	5Zw	OTB	Feb	CC	1	206	}	-	-					
			May	CC	1	200								
			Jun	CC	5	1000								
			Jul	CC	1	200								
	6NK	OTB	Feb	CC	2	510	}	-	95/144					
			Mar	CC	17	3402								
			May	CC	1	200								
			Sep	CC	2	400								
			Oct	CC	6	1200								
Nov			CC	17	3400									
Dec			CC	3	578									
USA	5Y	OTB	Feb	CL	2	104/118	}	-	-					
			May	CL	1	41/57								
			Jun	CL	5	265/240								
			Jul	CL	5	291/217								
			Aug	CL	5	355/161								
			Sep	CL	5	347/171								
			Nov	CL	3	113/204								
			Dec	CL	2	99/77								
			5Ze	OTB	Jun	CL				1	56/53	}	-	-
					Jul	CL				5	223/289			
	Aug	CL			7	376/356								
	Sep	CL			2	110/92								
	5Zw	OTB	Jan	CL	8	103	}	-	-					
			Feb	CL	6	31								
			Mar	CL	4	11								
			Apr	CL	3	22								
			May	CL	3	60								
			Jun	CL	6	77								
			Jul	CL	2	39								
			Aug	CL	1	110								
	6A	OTB	May	CL	5	100								

Table 5. Red hake length and age sampling data for 1973.

Country	ICNAF Div.	Gear	Month	Type of sample	Length samples		Age samples		
					No.	No. meas.	No.	No. aged	
Japan	5Ze	OTB	Feb	CC	1	199	-	-	
USSR	4W	OTB	Jun	CC	3	677	-	-	
	5Ze	OTB	Jan	CC	2	392	}	3	305
			Feb	CC	4	800			
			Mar	CC	9	1800			
			Apr	CC	2	400			
			May	CC	13	2600			
Jun	CC	6	1277						

Table 5. Red hake (continued)

Country	ICNAF Div.	Gear	Month	Type of sample	Length samples		Age samples		
					No.	No. meas.	No.	No. aged	
USSR	5Ze	OTB	Jul	CC	28	5698	}	2	179
			Aug	CC	1	100			
			Sep	CC	10	1900			
			Oct	CC	32	6389			
			Nov	CC	2	400			
			Dec	CC	7	1400			
	5Zw	OTB	Mar	CC	3	600	}	-	-
			Jun	CC	2	400			
			Jul	CC	1	200			
			Aug	CC	1	100			
	6NK	OTB	Feb	CC	2	300	}	3	257
			Mar	CC	10	2001			
			May	CC	3	600			
USA	5Zw	OTB	Jan	CC	8	642	}		
			Feb	CC	6	59			
			Apr	CC	5	95			
			May	CC	3	152			
			Jun	CC	3	398			
			Jul	CC	2	63			
	6A	OTB	May	CC	5	338	}		

Table 6. Pollock length and age sampling data for 1973.

Country	ICNAF Div.	Gear	Month	Type of sample	Length samples		Age samples		
					No.	No. meas.	No.	No. aged	
Canada (M)	4W	OTB	Oct	CL	2	470	}	7	276
			Nov	CL	4	843			
			Dec	CL	1	251			
	4X	OTB	Feb	CL	1	152	}	3	127
			Mar	CL	2	432			
			May	CL	2	309			
			Jun	CL	2	418			
			Aug	CL	1	232			
			Sep	CL	1	212			
			Oct	CL	1	192			
	Nov	CL	1	124					
	5Z	OTB	Oct	CL	2	493	}	2	66
	USSR	4W	OTB	Apr	CC	3	600	}	
Aug				CC	1	100			
4X		OTB	Mar	CC	1	200			
USA	5Y	OTB	Jan	CL	1	118	}		
	5Ze	OTB	Jan	CL	1	113			
			Feb	CL	1	118			
			Jul	CL	1	100			
			Sep	CL	1	103			
			Oct	CL	1	104			
			Dec	CL	1	102			

Table 7. American plaice length and age sampling data for 1973.

Country	ICNAF Div.	Gear	Month	Type of sample	Length samples		Age samples		
					No.	No. meas.	No.	No. aged	
Canada (M)	3N	OTB	May	CL	1	93/107			
	3O	OTB	Sep	CL	1	57/143			
			Oct	CL	1	102/98			
	3Ps	OTB	Aug	CL	2	152/281			
			Nov	CL	1	43/160			
	4T	OTB	Oct	CL	1	27/173			
			SN	May	CL	1	35/165		
				Jul	CL	1	53/147		
	4Vn	OTB	Aug	CL	1	44/156			
			Apr	CL	1	53/46			
			Dec	CL	1	90/111			
	4Vs	OTB	Feb	CL	1	87/113			
			Dec	CL	1	105/95			
Canada (N)	3K	GN	Jul	CL	12	652/1158	9	99/159	
	3L	OTB	Feb	CL	19	1240/1851	13	108/180	
			Jun	CL	1	337/667	1	80/119	
			Sep	CL	2	411/671	3	144/233 <sup>1</sup>	
			Nov	CL	2	473/836	3	144/233 <sup>1</sup>	
	3N	OTB	Feb	CL	12	567/877	10	50/73	
			May	CL	3	579/844	2	110/185	
	3O	OTB	Sep	CL	2	1166/1346	2	149/209	
	3Ps	OTB	Feb	CL	1	384/660	2	99/166	
			Mar	CL	1	27/43			
Poland	3L	OTB	Mar	CC	2	1977	1	182	
USSR	1C	OTB	Feb	RC	13	136/1201			
			Mar	RC	32	1054/2162			
			Apr	RC	33	1281/2067			
	3L	OTB	Feb	RC	13	573/691			
USA	5Ze	OTB	Jun	CL	1	71			
			Jul	CL	1	139			

<sup>1</sup> Same key used for Sep and Nov samples.

Table 8. Witch flounder length and age sampling data for 1973.

Country	ICNAF Div.	Gear	Month	Type of sample	Length samples		Age samples	
					No.	No. meas.	No.	No. aged
Canada (M)	4Vs	OTB	Mar	CL	1	92/108	1	19/29
	4W	OTB	Feb	CL	1	47/151	1	21/22
			Apr	CL	1	69/133	1	9/27
		SN	Apr	CL	1	123/80	1	14/19
Canada (N)	3K	OTB	Apr	CL	1	23/29	1	23/28
		GN	Jul	CL	13	662/1231	8	173/237
	3O	OTB	Apr	CL	1	49/31	1	48/30



Table 9. Yellowtail flounder (continued)

Country	ICNAF Div.	Gear	Month	Type of sample	Length samples		Age samples	
					No.	No. meas.	No.	No. aged
USA	5Z(W69°)	OTB	Jan	CL	11	358/371	23	570/574
			Feb	CL	11	559/487		
			Mar	CL	14	582/657		
			Apr	CL	6	420/361	13	318/325
			May	CL	4	401/277		
			Jun	CL	3	164/270		
			Jul	CL	4	184/400	8	190/200
			Sep	CL	4	251/393		
			Oct	CL	3	219/248		
			Nov	CL	5	338/507	14	348/349
			Dec	CL	7	396/537		

Table 10. Greenland halibut length and age sampling data for 1973.

Country	ICNAF Div.	Gear	Month	Type of sample	Length samples		Age samples	
					No.	No. meas.	No.	No. aged
Canada (N)	3K	GN	Jul	CL	9	589/996		
Denmark (G)	SAO	OTB	Jul	CC	1	1197		
			Aug	CC	1	895		
			Mar	CL	1	753		
USSR	2J	OTB	Jul	RC	27	1523/1242		

Table 11. Winter flounder length and age sampling data for 1973.

Country	ICNAF Div.	Gear	Month	Type of sample	Length samples		Age samples	
					No.	No. meas.	No.	No. aged
Canada (M)	4T	OTB	Sep	CL	1	39/161	1	17/19
			Oct	CL	1	80/120	1	18/25
			Oct	CL	2	359	2	91

Table 12. Roundnose grenadier length and age sampling data for 1973.

Country	ICNAF Div.	Gear	Month	Type of sample	Length samples		Age samples	
					No.	No. meas.	No.	No. aged
German Dem. Rep.	1C	OTB	Dec	CC	19	7754	3	121
	2G	OTB	Nov	CC	5	2032	3	103

Table 13. Scup length and age sampling data for 1973.

Country	ICNAF Div.	Gear	Month	Type of sample	Length samples		Age samples	
					No.	No. meas.	No.	No. aged
USA	5Zw	FPN	Jun	CL	1	56		
	6C	OTB	Mar	CL	2	204		

Table 14. White hake length and age sampling data for 1973.

Country	ICNAF Div.	Gear	Month	Type of sample	Length samples		Age samples	
					No.	No. meas.	No.	No. aged
Canada (M)	4W	LL	Oct	CL	1	107	1	41

Table 15. Atlantic herring length and age sampling data for 1973.

Country	ICNAF Div.	Gear	Month	Type of sample	Length samples		Age samples		
					No.	No. meas.	No.	No. aged	
Canada (M)	4Vn	PS	Jan	CC	7	1651	5	487	
			May	CC	2	300	3	165	
			Aug	CC	1	74	1	74	
			Nov	CC	18	2399	33	1457	
			Dec	CC	52	7231			
	4W	PS	Jan	CC	13	1564	12	1166	
			Feb	CC	3	501			
			May	CC	2	96	2	96	
			Aug	CC	7	426	7	426	
			Nov	CC	1	202	2	141	
			Dec	CC	3	405			
			Fed. Rep. Germany	4T	OTM	May	RC	1	212
	4X	OTB				Feb	RC	3	410
	5Y	OTM		Aug	CC	4	2514	1	108
5Ze	OTB	Mar		RC	30	8856	8	760	
		OTM		Jul	CC	1	80	20	1483
				Aug	CC	11	6928		
				Sep	CC	67	43232		
Oct	CC	10		7238	2	148			
5Zw	OTB	Mar		RC	5	510	1	104	
6A	OTB	Mar		RC	4	703	1	100	
German Dem. Rep.	5Y	OTM	Oct	CC	3	633	1	100	
			5Ze	OTB	Jan	CC	7	1417	-
	OTM	Aug	CC	8	1683	9	875		
		Sep	CC	24	4812				
		Oct	CC	6	1262			2	201
	6A	OTB	Jan	CC	1	466	-	-	

Table 15. Atlantic herring (continued)

Country	ICNAF Div.	Gear	Month	Type of sample	Length samples		Age samples								
					No.	No. meas.	No.	No. aged							
Poland	5Z	OTM	Aug	CC	20	6750	}	21	2100						
			Sep	CC	37	10152									
			Oct	CC	20	5810									
			Nov	CC	3	1168									
USSR	4W	OTB	Mar	CC	2	400	}	7	520						
			Apr	CC	7	1726									
			Jun	CC	7	1664									
			Aug	CC	3	616									
			Oct	CC	1	69									
	4X	OTB	Jun	CC	7	1390	}	1	102						
			Aug	CC	20	4000									
	5Z	OTB	Jan	CC	13	2631	}	6	606						
			Feb	CC	5	1201									
			Mar	CC	10	2000									
			Apr	CC	6	1300									
			May	CC	30	6100									
			Jun	CC	5	1013									
			Jul	CC	19	3800		}	5	506					
			Aug	CC	85	16990									
			Sep	CC	132	36480									
			Oct	CC	21	4200									
			Nov	CC	18	3530									
			Dec	CC	2	400									
	6NK	OTB	Feb	CC	7	1400	}	4	396						
Mar			CC	22	4323										
Apr			CC	1	243										
Jun			CC	2	500										
USA	4X	NS	Jan	CL	5	180	}	6	109						
			Feb	CL	1	40									
			Mar	CL	3	121									
			May	CL	1	35									
			Jun	CL	4	80									
			Jul	CL	18	696									
			Aug	CL	7	305									
			Sep	CL	3	91		}	13	270					
			Oct	CL	1	35									
			Nov	CL	3	96									
			5Y(N)	NS	Feb	CL					1	20	}	3	106
					Mar	CL					2	75			
					Jun	CL					16	406			
					Jul	CL					28	1209		}	16
	Aug	CL			24	998									
	Sep	CL			20	599									
	5Y(S)	NS	Oct	CL	14	632	}	22	431						
			Nov	CL	3	298									
			Dec	CL	5	92									
			Mar	CL	1	114									
	5Ze	NS	May	CL	5	162	}	5	162						
			Aug	CL	6	262									
			Dec	CL	4	223									
			Feb	CL	8	185									
	6B	NS	Feb	CL	3	96	2	71							

Table 16. Atlantic mackerel length and age sampling data for 1973.

Country	ICNAF Div.	Gear	Month	Type of sample	Length samples		Age samples							
					No.	No. meas.	No.	No. aged						
Bulgaria	5Zw	OTM	Jan	CL	3	1532	}	7	3936					
			Feb	CL	2	1300								
			Mar	CL	2	1114								
			Apr	CL	1	236								
			May	CL	1	418								
			Jun	CL	1	430								
	6A	OTM	Dec	CL	3	1424	3	1045						
German Dem. Rep.	5NK	OTM	Jan	CC	-	5330	}	2	198					
			Feb	CC	-	1110								
	6NK	OTM	Jan	CC	-	2657	1	108						
Japan	5Ze	OTB	Feb	CC	1	201								
Poland	5Z	OTB	Feb	RC	4	1949	}	-	300					
			OTM	May	CC	1				504				
				Jul	CC	3				654				
				Aug	CC	4				1019				
				Sep	CC	4				1588				
				Oct	CC	1				436				
	6NK	OTB	Mar	RC	4	2067	}	-	294					
			Oct	RC	1	123								
		OTM	Jan	RC	3	886								
			Apr	CC	1	441								
Dec	CC	2	484	-	181									
USSR	4VWX	OTB	May	CC	5	1142	}							
			Jun	CC	44	8904								
			Jul	CC	9	1800								
			Aug	CC	6	1207								
			Sep	CC	23	4600								
			Oct	CC	12	2300								
			5Z	OTB	Jan	CC				19	3790	}	7	315
					Feb	CC				33	6540			
					Mar	CC				62	12423			
					Apr	CC				51	10298			
	May	CC			42	8397								
	Jun	CC			26	5190								
	Jul	CC			39	7800								
	Aug	CC			24	4821								
	Sep	CC			16	3250								
	Oct	CC			8	1600								
	Nov	CC			59	11800								
	Dec	CC			21	4200								
	6NK	OTB			Jan	CC	6	1201	}	7	308			
			Mar	CC	8	1598								
			Apr	CC	13	2589								
			May	CC	10	2000								
			Oct	CC	1	200								
Dec			CC	1	200									
USA	5Zw	FPN	Jun	CL	1	54								
	6A	OTB	Mar	CL	1	64								
			Apr	CL	1	64								



Table 17. Atlantic butterflyfish length and age sampling data for 1973.

Country	ICNAF Div.	Gear	Month	Type of sample	Length samples		Age samples	
					No.	No. meas.	No.	No. aged
Japan	5Ze	OTB	Jan	CC	2	391		
			Feb	CC	4	202		
	5Zw	OTB	Feb	CC	1	201		
			Mar	CC	1	198		
	6A	OTB	Jan	CC	2	401		
			Mar	CC	1	200		
			Apr	CC	1	200		
			Jun	CC	2	401		
			Nov	CC	4	354		
			Dec	CC	3	90		
	6B	OTB	Mar	CC	1	197		
			Apr	CC	1	199		
			Jul	CC	1	195		
			Dec	CC	2	60		
USA	5Zw	OTB	Jun	CL	1	31		
			Aug	CL	1	138		

Table 18. Alewife length and age sampling data for 1973.

Country	ICNAF Div.	Gear	Month	Type of sample	Length samples		Age samples	
					No.	No. meas.	No.	No. aged
USSR	4W	OTB	Mar	CC	10	2000	1	100
			Apr	CC	4	864	1	188
			Nov	CC	1	90	1	90
	5Z	OTB	Jan	CC	2	400	2	201
			Mar	CC	1	100		
			Apr	CC	6	1200	3	310
			May	CC	2	400		
			Jun	CC	11	2200		
			Jul	CC	3	600	3	269
			Aug	CC	37	7476		
			Sep	CC	21	4100		
			Oct	CC	6	1200		
			6NK	OTB	Nov	CC	1	200
	Dec	CC			3	600		
	Feb	RC			4	800	-	-
	Mar	RC			1	200		
Feb	CC	3			600	4		
		May	CC	3	600	-	-	

Table 19. Atlantic argentine length and age sampling data for 1973.

Country	ICNAF Div.	Gear	Month	Type of sample	Length samples		Age samples	
					No.	No. meas.	No.	No. aged
USSR	4V	OTB	Jun	CC	1	200		
	4W	OTB	Feb	CC	1	200		
			Apr	CC	2	400		

Table 19. Atlantic argentine (continued)

Country	ICNAF Div.	Gear	Month	Type of sample	Length samples		Age samples	
					No.	No. meas.	No.	No. aged
USSR	4W	OTB	May	CC	4	843		
			Jun	CC	2	431		
			Jul	CC	2	400		
			Aug	CC	1	200		
	4X	OTB	Mar	CC	10	2000		
			Apr	CC	2	300		
			May	CC	3	600		
			Jul	CC	1	200		
			Sep	CC	4	800		
			Oct	CC	7	1400		

Table 20. Black seabass length and age sampling data for 1973.

Country	ICNAF Div.	Gear	Month	Type of sample	Length samples		Age samples	
					No.	No. meas.	No.	No. aged
USA	6C	OTB	Mar	CL	1	97		

Table 21. Capelin length and age sampling data for 1973.

Country	ICNAF Div.	Gear	Month	Type of sample	Length samples		Age samples	
					No.	No. meas.	No.	No. aged
Norway	3L	OTM	Jun	CC	43	2234/3787	11	176/263
			Jul	CC	10	726/610	1	29/25

Table 22. Long-finned squid (Loligo) length and age sampling data for 1973.

Country	ICNAF Div.	Gear	Month	Type of sample	Length samples		Age samples	
					No.	No. meas.	No.	No. aged
Japan	5Ze	OTB	Feb	CC	1	200		
			Dec	CC	7	544		
	6A	OTB	Jan	CC	1	201		
			Mar	CC	1	200		
			Apr	CC	1	200		
			Oct	CC	1	291		
			Nov	CC	3	1019		
	6B	OTB	Nov	CC	1	204		
Poland	5Ze	OTB	Sep	RC	7	605		
			Oct	RC	3	2173		
	6A	OTB	Sep	RC	5	2300		

Table 22. Long-finned squid (*Loligo*) (continued)

Country	ICNAF Div.	Gear	Month	Type of sample	Length samples		Age samples	
					No.	No. meas.	No.	No. aged
Poland	6B	OTB	Sep	RC	8	3690		
	6C		Oct	RC	7	3176		
			Nov	RC	5	2131		
USSR	5Z	OTB	Nov	CC	13	2526		
			Dec	CC	35	7006		
	6NK	OTB	May	CC	2	400		
			Dec	CC	2	400		
USA	5Zw	OTB	Jan	CL	2	100		
			Feb	CL	6	301		
			Mar	CL	1	49		
			Apr	CL	2	102		
			May	CL	2	103		
			Jun	CL	1	51		
			Jul	CL	3	157		
			Aug	CL	2	106		
		FPN	Jun	CL	1	61		
	6A	OTB	Jan	CL	1	51		
			Mar	CL	4	197		
			Apr	CL	6	312		
			May	CL	1	51		
			Jul	CL	2	108		
			Aug	CL	1	51		
6C	OTB	Mar	CL	1	88			

Table 23. Short-finned squid (*Illex*) length and age sampling data for 1973.

Country	ICNAF Div.	Gear	Month	Type of sample	Length samples		Age samples	
					No.	No. meas.	No.	No. aged
Poland	4X	OTB	Sep	RC	3	1109		
	5Ze	OTB	Sep	RC	7	1840		
			Oct	RC	3	756		
	6A	OTB	Sep	RC	5	2124		
6B	OTB	Sep	RC	8	490			
USSR	4V	OTB	Jun	CC	14	2790		
			Aug	CC	1	200		
			Sep	CC	5	1000		
	5Z	OTB	Mar	CC	5	996		
			May	CC	7	1400		
			Jun	CC	3	692		
			Jul	CC	5	917		
			Sep	CC	8	1600		
	6NK	OTB	May	CC	26	5209		
			Nov	CC	14	2712		
USA	5Y	OTB	Oct	CC	2	89		
			Nov	CC	1	52		
	5Ze	OTB	Jul	CC	1	50		

Table 24. Sea scallops length and age sampling data for 1973.

Country	ICNAF Div.	Gear	Month	Type of sample	Length samples		Age samples	
					No.	No. meas.	No.	No. aged
USA	5Y	DRB	Jan	CL	3	836		
			Mar	CL	1	740		
			Apr	CL	1	156		
			Jul	CL	2	1225		
			Sep	CL	1	494		
	5Ze	DRB	Jan	CL	5	2480		
			Feb	CL	1	149		
			Mar	CL	4	1199		
			Apr	CL	1	394		
			May	CL	11	4340		
			Jun	CL	9	2927		
			Aug	CL	1	167		
			Sep	CL	1	163		
			Oct	CL	6	1815		
			Nov	CL	3	670		
			Dec	CL	1	312		
			5Zw	DRB	Jun	CL	1	405
	Jul	CL			1	494		
	6NK	DRB	Mar	CL	1	346		
			Apr	CL	7	2695		
			May	CL	5	1723		
			Jun	CL	1	278		
			Jul	CL	2	639		
			Sep	CL	1	231		
	Oct	CL	1	616				

## PART 3

### Sampling Data from Research Vessel Surveys, 1973

The following table contains a list of available sampling data from research vessel surveys in the ICNAF Area by certain countries in 1973. All of these data were reported as research vessel samples as indicated by the abbreviation "RC" under the heading "Type of sample". The samples were reported as taken from catches retained in small-meshed codends or codends with small-meshed liners. In the case of some species (e.g. herring and mackerel) which are normally caught commercially with small-meshed trawls, both research and commercial samples are listed in the previous section. The abbreviations for gears are defined on page 15.

Table 25. Research sampling data for 1973.

SPECIES Country	ICNAF Div.	Gear	Month	Type of sample	Length samples		Age samples	
					No.	No. meas.	No.	No. aged
<u>ATLANTIC COD</u>								
Canada (Q)	4S	OTB	Jun	RC	11	283	-	-
			Jul	RC	13	4335	4	401
France (SP)	3N	OTB	Jun	RC	4	1425	-	-
			30	OTB	Jun	RC	8	1648
	3Pn	OTB	Feb	RC	1	1177	-	-
			Apr	RC	1	464	-	-
	3Ps	OTB	Feb	RC	10	692	-	-
			Dec	RC	12	422	-	-
	4R	OTB	Jan	RC	22	14090	2	808
			Apr	RC	11	3863	4	812
			Nov	RC	29	1938	-	-
	4T	OTB	Apr	RC	1	959	-	-
	4Vn	OTB	Feb	RC	12	1953	-	-
4Vs	OTB	Mar	RC	6	2668	2	414	
		Apr	RC	1	359			
		May	RC	2	306			
5Ze	OTB	Sep	RC	17	991	-	-	
Fed. Rep. Germany	1C	OTB	Nov	RC	3	110	3	109
			1D	OTB	Dec	RC	5	1727
	1F	OTB	Dec	RC	8	335	8	326
	2GH	OTB	Nov	RC	10	320	10	318
	2J	OTB	Nov	RC	17	2984	17	1272
	3K	OTB	Nov	RC	12	1133	12	792
German Dem. Rep.	2J	OTB	Jan	RC	9	3120	4	1196
<u>ATLANTIC REDFISH</u>								
Canada (Q)	4S	OTB	Jul	RC	2	323/429		
			OTM	Jul	RC	8	3243	
		MIS	Jun	RC	24	9250		
			Jul	RC	12	4817		

Table 25. Research (continued)

SPECIES Country	ICNAF Div.	Gear	Month	Type of sample	Length samples		Age samples		
					No.	No. meas.	No.	No. aged	
<u>ATLANTIC REDFISH</u>									
Denmark (G)	1A	OTB	Jul	RC	6	961			
			Aug	RC	1	633			
	1C	OTB	Feb	RC	1	111			
			Jun	RC	1	328			
	1D	OTB	Feb	RC	2	2584			
			Mar	RC	1	136			
			Apr	RC	2	1290			
			Jun	RC	1	813			
			Oct	RC	2	1205			
	1F	OTB	Sep	RC	3	1112			
			Oct	RC	2	378			
	-----								
	France (SP)	30	OTB	May	RC	7	2413		
Jun				RC	2	607			
3Pn		OTB	Feb	RC	6	2132			
			Feb	RC	6	1644			
3Ps		OTB	May	RC	4	1381			
			May	RC	4	1381			
4R		OTB	Jan	RC	4	1364			
			Feb	RC	2	840			
			Apr	RC	1	410			
			Nov	RC	18	4059			
4Vn		OTB	Feb	RC	2	622			
			Feb	RC	1	401			
4Vs		OTB	Mar	RC	1	281			
			Apr	RC	3	1140			
			May	RC	2	574			
			May	RC	2	574			
4W		OTB	Feb	RC	1	299			
	Mar		RC	3	964				
	Apr		RC	2	422				
4X	OTB	May	RC	2	708				
		May	RC	1	345				
5Ze	OTB	Sep	RC	3	430				
		Oct	RC	2	362				
-----									
UK	1C	OTB	Nov	RC	1	326			
			Nov	RC	7	557			
	1D	OTB	Nov	RC	1	628			
			Nov	RC	1	530			
-----									
<u>SILVER HAKE</u>									
France (SP)	4W	OTB	Feb	RC	1	481			
			Mar	RC	4	1420			
			May	RC	6	1603			
	4X	OTB	May	RC	7	2889			
			May	RC	2	369			
	5Ze	OTB	Sep	RC	16	1330/1593			
			Oct	RC	12	490/332			
-----									
<u>AMERICAN PLAICE</u>									
Canada (Q)	4S	OTB	Jul	RC	3	658			

Table 25. Research (continued)

SPECIES Country	ICNAF Div.	Gear	Month	Type of sample	Length samples		Age samples	
					No.	No. meas.	No.	No. aged
<u>AMERICAN PLAICE</u>								
Denmark (G)	1A	OTB	Jul	RC	3	161		
	1C	OTB	Feb	RC	1	3442		
			Mar	RC	1	3049		
			Jun	RC	1	667		
	1D	OTB	Feb	RC	2	3913		
			Mar	RC	1	919		
			Apr	RC	2	2771		
			Jun	RC	1	430		
			Oct	RC	2	853		
1F	OTB	Sep	RC	3	1222			
-----								
France (SP)	3Ps	OTB	Feb	RC	3	606		
			Dec	RC	12	1191		
	4R	OTB	Jan	RC	1	275		
			Nov	RC	18	1545		
	4Vn	OTB	Feb	RC	11	1447		
5Ze	OTB	Sep	RC	3	257			
-----								
UK	1C	OTB	Nov	RC	1	244		
	1D	OTB	Nov	RC	4	1419		
	1F	OTB	Nov	RC	5	537		
<u>YELLOWTAIL</u>								
Canada (Q)	4S	OTB	Jul	RC	1	229		
-----								
France (SP)	3L	OTB	May	RC	-	1173		
	3N	OTB	May	RC	-	412		
			Oct	RC	-	539		
	3O	OTB	May	RC	2	51/17		
	3Ps	OTB	Sep	RC	3	144/155		
			Dec	RC	1	67/33		
	4S	OTB	Jul	RC	1	88/114		
	4Vs	OTB	Apr	RC	3	141/207		
			May	RC	2	71/74		
	4W	OTB	Feb	RC	1	15/53		
May			RC	4	51/66			
5Ze	OTB	Sep	RC	9	117/49			
-----								
<u>GREENLAND HALIBUT</u>								
Denmark (G)	1A	OTB	Jul	RC	7	1068		
	1B	OTB	Aug	RC	1	2252		
	1D	OTB	Feb	RC	2	432		
			Mar	RC	1	902		
			Apr	RC	2	793		
			Oct	RC	2	114		
	1E	OTB	Sep	RC	1	170		
	1F	OTB	Sep	RC	3	604		

Table 25. Research (continued)

SPECIES Country	ICNAF Div.	Gear	Month	Type of sample	Length samples		Age samples	
					No.	No. meas.	No.	No. aged
<u>GREENLAND COD</u>								
Denmark (G)	1A	LL	Jul	RC	3	443		
	1D	OTB	Feb	RC	2	118		
<u>WOLFFISHES</u>								
Denmark (G)	1A	LL	Jul	RC	3	114		
<u>HERRING</u>								
France (SP)	4R	OTB	Apr	RC	15	8640	-	351
	4T	OTM	Apr	RC	8	4708	-	129
	4W	OTB	Mar	RC	1	368	-	-
			Apr	RC	1	908	-	497
5Ze	OTB	Sep	RC	-	3676	-	209	
<u>MACKEREL</u>								
France (SP)	4W	OTB	May	RC	1	239		
	4X	OTB	May	RC	2	443		
	5Ze	OTB	Sep	RC	2	63		
Oct			RC	6	382			
Fed. Rep. Germany	5Ze	OTB	Mar	RC	2	201		
	6A	OTB	Mar	RC	2	518		
	6B	OTB	Mar	RC	1	112		
	6C	OTB	Mar	RC	1	143		