

International Commission for



the Northwest Atlantic Fisheries

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Report on Statistical Activities during the Year 1974/75

by

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1. Catch and Effort Statistics

ICNAF requirements for fishery statistics are achieved in two ways: (i) through the STATLANT Program operated by the CWP (Coordinating Working Party on Atlantic Fishery Statistics), and (ii) by direct requests to Member Countries through the medium of Circular Letters. The first has been in operation for some years and involves the reporting of annual nominal catch statistics on STATLANT Form 21A by 15 April and the later reporting of detailed catch and effort data on STATLANT Form 21B by 30 June. The second method involves the reporting of preliminary monthly catch statistics for TAC species early enough in the year to be of use to scientists designated to do preparatory assessment work prior to meetings of the Assessment Subcommittee.

a) Advance monthly catch statistics (for assessments)

The first real attempt to obtain these data took place early in 1974, following a specific recommendation that preliminary monthly statistics for 1973 be forwarded to the Secretariat before 31 March 1974. Although few countries actually met the deadline, nearly all had reported by mid-May and the data proved invaluable to the Assessments Subcommittee. The importance of having the 1974 data well in advance of the 1975 Assessments Meeting was strongly emphasized at the 1974 Annual Meeting.

When the time of the 1975 Assessments Subcommittee Meeting was set for April 1975, it was obvious that the preliminary data would be required by February. Consequently, the Secretariat, in Circular Letter 74/58 dated 10 December 1974, issued the necessary forms and urged that the advance monthly catch statistics for 1974 be airmailed to reach designated assessment scientists by 1 February 1975 with copies to the Secretariat. Submissions from 9 countries were received before mid-February and all but 2 countries had reported before 24 March. However, the designated assessment scientists were severely hampered in their tasks by the absence of monthly catch data for Portugal and USSR, despite a number of reminders that the data were urgently required (Circular Letter 75/12 and 5 Addenda issued between 14 February and 24 March 1975); these data did not become available until after the start of the Assessment Subcommittee Meeting on 8 April 1975.

b) Annual Catch Statistics (STATLANT 21A)

While the preliminary monthly catch statistics for TAC species are required for assessments in conjunction with the monthly sampling data, the submission of annual catch statistics by species and division on STATLANT 21A Form (by 15 April) is necessary so that the Secretariat can prepare for the Annual Meeting the information required to review the overall catch trend as well as trends in the catches of all individual species, particularly those not yet regulated by TACs.

Tabulated data for 1973 were issued provisionally in Summ.Doc. 74/38 for the 1974 Annual Meeting. A revision of this document was issued early in July 1974 and represented the "Advance Release of 1973 Catch Statistics for the Northwest Atlantic", pending the publication later of final statistics in the Statistical Bulletin.

Annual catch statistics for 1974 were solicited by the CWP Secretary in January 1975. Few countries had submitted their STATLANT 21A reports by the 15 April deadline, and up to 28 May 1975 reports from Federal Republic of Germany, German Democratic Republic and Portugal were still outstanding. Tabulations of the available data for 1974 (in the format of Statistical Bulletin Tables 1, 2 and 3) are presented in Summ.Doc. 75/32. A revision of this document will be issued as soon as possible after the 1975 Annual Meeting, when all of the STATLANT 21A submissions are received.

c) Statistical Bulletin, Vol. 23 for 1973 (STATLANT 21B)

All Statistical Bulletin tables are compiled from STATLANT 21B submissions of detailed catch and effort statistics (due by 30 June), except in the case of non-members and one or two member countries who do not provide their data on Form 21B.

Vol. 23 for 1973 was issued in January 1975, about a month earlier than the previous issue. Much of the time lag between the 30 June deadline and the actual printing of the Bulletin in December 1974 was due to the late submission of STATLANT 21B statistics by one country whose statistics were mailed in late September but did not reach the Secretariat until early December.

The arrangement of the tabular material in Parts I to III of Vol. 23 is essentially the same as in Vol. 22, except for the following changes recommended at the 1974 Annual Meeting:

- i) The summary table for Flounders in Part I of Vol. 22 has been replaced in Vol. 23 by summary tables for American plaice, witch, yellowtail and Greenland halibut;
- ii) All tables in Vol. 23 have been adjusted to include statistics for the new Statistical Area 0 (zero), and a summary of all available data for this area prior to 1973 is given in the Appendix at page 277;
- iii) The last column of Table 1 in Vol. 23 (page 24), previously used to list the catches of certain species in the ICES Area, now contains the Northwest Atlantic catches by species for 1972, to provide a ready comparison with those for 1973;
- iv) In Vol. 23, the group name "Invertebrates" replaces the previously used term "Shellfish, etc."; the only species item not now unique to the "Invertebrate" group is "Seaweeds";
- v) Greenland cod (*Gadus ogac*) has been added to the ICNAF List of Species under "Other Groundfish".

A significant inclusion in Part IV of Vol. 23 is the presentation of revised nominal catches for the various flounder species for the years 1963-71, which resulted from special requests to several countries for estimated breakdowns by species of the large quantities of flounders previously reported as unspecified flounders. These Statistics supercede all statistical tabulations for flounders contained in previous issues of the Bulletin at least back to Vol. 13 for 1963.

d) Preparation of previous STATLANT statistics for computer processing.

The addition of 3 new staff members, primarily for research and statistical activities, during the latter part of 1974 greatly improved the capability of the Secretariat in its task of inventorizing the large quantities of biostatistical data being received and in preparing statistical data of earlier years for automatic data-processing.

Detailed catch and effort statistics for 1972 and 1973 are available on magnetic tapes in the coded formats used to produce the tables in Statistical Bulletin, Vol. 22 and 23. Copies of these tapes are available upon request to scientists and/or institutes engaged in the Commission's work, provided that a blank tape is received with the request. Data for the years 1967 to 1971 are being prepared to conform with those of 1972 and 1973 and will be transferred to magnetic tapes during the next few months after the preliminary listings have been thoroughly checked.

2. Sampling Data

ICNAF requirements for sampling data are transmitted to member countries through Circular Letters issued by the Secretariat as required, and the submissions are made on prescribed forms, stocks of which are sent periodically to scientists and/or institutes engaged in the Commission's work. The deadline for the final submission of sampling data is 31 July.

a) Advance monthly sampling data (for assessments)

The submission of advance sampling data for TAC species was initiated early in 1974 at the request of the Assessments Subcommittee so that scientists would have the most recent information available for stock assessments prior to the Assessment Subcommittee Meeting. With the 1975 Meeting of the Subcommittee set for April, the Secretariat in a circular letter (on 10 December 1974) issued the necessary forms and requested that the data pertaining to TAC species be forwarded to designated scientists and the Secretariat by 1 February 1975. As in early 1974, the scientists responsible for collecting these data responded promptly and most of the available data were in the hands of assessment scientists well in advance of the April 1975 Meeting.

b) Sampling Yearbook, Vol. 18 for 1973.

Up to Vol. 17 for 1972, the Yearbook contained length and age data for many of the species taken in the major fisheries of the ICNAF Area. At the 1974 Annual Meeting, it was recommended (1) that the publication

of the Yearbook be discontinued, (ii) that an annual list of available data be incorporated in Redbook 1974, and (iii) that the Secretariat supply data upon request to member countries.

When Redbook 1974 was being prepared for printing in July, submissions of 1973 sampling data were still outstanding for some countries, and to wait for the compilation of a reasonably complete list would significantly delay the publication of that volume. Consequently, the Secretariat, in consultation with the Chairman of STACRES, decided to issue a list of 1973 sampling data as a separate volume, pending reconsideration at the 1975 Annual Meeting. Thus, Sampling Yearbook Vol. 18 for 1973, containing notes on sampling data and lists of sampling data by species, was issued in February 1975.

The actual length and age data, on file at the Secretariat, have been arranged on sheets in formats similar to those used in Vol. 17. One series of sheets contains the length and age frequencies and another series contains the available age-length keys. Copies of specified data are available upon request to scientists and/or institutes engaged in the Commission's work.

Plans are in progress to incorporate the sampling data into ICNAF's automatic data-processing system, which is being developed at the Secretariat.

c) Individual samples for pilot study.

In accordance with a STACRES recommendation at the 1974 Annual Meeting, the Secretariat in Circular Letter 74/33 (issued 10 September 1974) requested member countries to submit by 1 February 1975 individual length and age samples for 1972 and 1973 for Silver hake stocks in SA 4, 5 and 6; Mackerel stocks in SA 3 to 6; and the cod stock in Div. 2J+3KL. A special form was designed for this project and stocks were sent to all concerned.

Up to 28 May 1975 data were received from just 4 countries: Canada, Federal Republic of Germany, German Democratic Republic and USA. The absence of data from several countries with significant fisheries on the designated stocks prevented the attempt to carry out any worthwhile analyses in time for the 1975 Annual Meeting.

3. CWP Recommendations re ICNAF Statistical Requirements for Detailed Reporting.

At the 1974 Annual Meeting STACRES again reiterated the need for Member Countries to provide within their national research and statistical offices the facilities necessary to collect and promptly report to the Secretariat such detailed biostatistical data as are required to improve the base for the analytical assessment of all stocks in the Northwest Atlantic that are subject to conservation measures. The Secretariat considered the implications of a STACRES recommendation to the effect that the STATLANT system be modified for ICNAF to provide for the reporting of catch and effort data by 30' X 30' unit areas and by twice-monthly time periods. Proposals for a modified STATLANT B form were presented to the 8th Session of the CWP, which met at Paris, France, in September 1974. These were accepted in principle and are now subject to adoption by STACRES and the Commission at this 1975 Annual Meeting. Details of the proposals are given in the Report of the Eighth Session of the CWP (Summ.Doc. 75/21) and summarized in (Summ.Doc. 75/14).

In anticipation of the possible adoption of the revised form for the reporting of 1975 statistics for Subarea 5 and Statistical Area 6, the Secretariat by Circular letter in December 1974 notified Member Countries of the proposed reporting requirements, so that their statistical offices could initiate plans to collect the statistics in the detail recommended.

4. ICNAF List of Fishing Vessels for 1974.

Late in 1974 Member Countries were requested to submit by 31 January 1975 their updated lists of fishing vessels which operated in the Northwest Atlantic in 1974, with a view to the possible publication of the 1974 List of Vessels prior to the 1975 Annual Meeting. Up to the end of April 1975 only about one-half of the countries had reported and the others were requested by cable/telex to expedite their submissions. The 1974 List is not now expected to be issued until late summer or autumn of 1975.

5. Other Statistical Activities during 1974/75.

a) Compilation of all available stock record data for many of the TAC species and their collation for the April 1975 Meeting of the Assessment Subcommittee (Summ.Doc. 75/4).

b) Tabular presentation for 1975 ICNAF Meetings of the nominal catches of the individual species of finfish and squids in Subarea 5 and Statistical Area 6 for the period 1964-73 (Summ.Doc. 75/10).

c) Updating of historical catches (1964-73) by country for all TAC stocks proposed for regulation at the 1975 Annual Meeting.

d) Compilation of preliminary 1974 monthly catch statistics for TAC species as a working paper for the April 1975 Meeting of the Assessments Subcommittee.

- e) Provisional nominal catches in Northwest Atlantic in 1973 (Summ.Doc. 75/32).
 - f) Provisional sealing statistics for 1973 (Summ.Doc. 75/33).
 - g) Nominal catches in 1974 by country for fish stocks proposed for regulation in 1975 (Summ.Doc. 75/26).
 - h) Summary of trawl materials and mesh size sampling in 1973 (Summ.Doc. 75/23).
 - i) Summary of information on discards for 1973 (Summ.Doc. 75/).
 - j) Efficiency of sampling the major fisheries in the Northwest Atlantic in 1973 (Summ.Doc. 75/11).
 - k) Participation in the 8th. Session of the CWP held at Paris, France, in September 1974 (Summ.Doc. 75/14).
 - l) Preparation of a Commission Working Paper containing the historical catches by country (1964-73) and national allocations (1973-75) for all stocks proposed for regulation in 1976.
 - m) Dissemination to assessment scientists of copies of a considerable quantity of statistical and sampling data prior to ICNAF Meetings in January, April and June 1975.
6. Automatic Data Processing.

a) General

Statistical Bulletin, Vol. 20-23 (for 1970-73) were prepared from computer compilations of catch and effort statistics derived from national STATLANT 21B submissions. The annual nominal catch statistics, reported on STATLANT 21A, with a 15 April deadline, are used primarily to provide the Commission at its Annual Meeting with the information necessary to review the fishery trends for all species taken during the preceding year. These data are classified as provisional for some countries and are not used for Statistical Bulletin, except when STATLANT 21B detailed data are not available.

Through the courtesy of the Canadian Government, the computer facilities at the Bedford Institute of Oceanography, Dartmouth, have been available to the Secretariat at no cost since 1971. The service includes card punch and verifying, advice on programming, and computer processing.

b) Treatment of STATLANT 21A Statistics.

The annual nominal catches by species, division (or subdivision) and country are transferred from the STATLANT 21A reports to punched cards in the following format:

<u>Card col.</u>	<u>Item</u>
1-2	Last 2 digits of calendar year
3-10	Country name (for identification only)
11-12	Country code
14-15	ICNAF division code
16-18	Species code
19-25	Catch (metric tons)

Approximately 3,000 cards are involved and the compilations of the required tables are achieved by FORTRAN programs designed to produce the statistics in the format of Tables 1, 2 and 3 of the Statistical Bulletin (see Summ.Doc. 73/32). Computer time for this operation is less than 10 minutes, and the computer printouts can be prepared for printing in 2-3 hours. A major drawback this year was that the compilations had to be done with data for 3 countries still outstanding as of 30 May (6 weeks after the deadline).

c) Treatment of STATLANT 21B Statistics

The detailed catch and effort statistics are transcribed to 80-column coding sheets, as they are received at the Secretariat, and subsequently on computer cards in the following format:

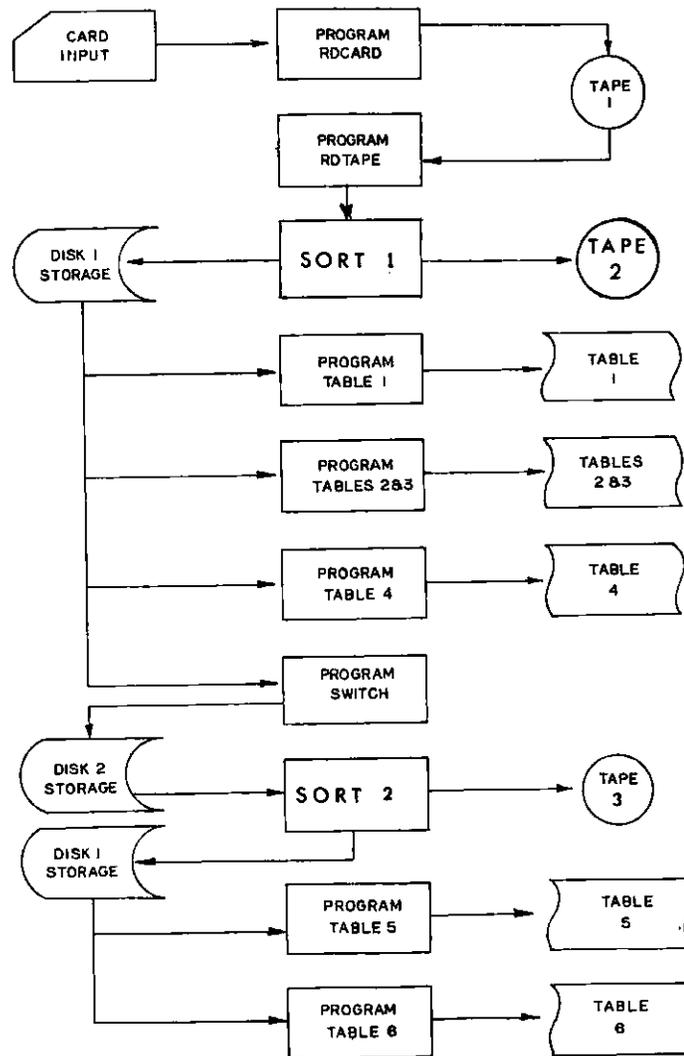
<u>Card col.</u>	<u>Item</u>
1-2	Last 2 digits of year
3-4	Country code
5-6	Gear code
7	Tonnage class code
8-9	Main species code
10-11	ICNAF division code
12-14	Species code
15-20	Catch for Month (NK)

21-25 Catch for January
26-30 Catch for February
31-35 Catch for March
etc.
75-80 Catch for December

The effort categories (hours fished, days fished and days on ground) are dealt with by special codes as if they were species. Approximately 10,000 cards were required for the 1973 STATLANT 21B statistics.

Since the formats of the various Statistical Bulletin tables require different compilation procedures, a generation package, designed to eliminate external card sorting and to produce the various tables in a single computer run, contains a series 10 programs with associated subroutines. A flow-chart of the generation package is at Fig. 1.

Fig. 1. Flow-chart of generation package for Statistical Bulletin.



Tape 1 becomes the basic data file, from which all catch and effort data, as reported on STATLANT 21B sheets, can be retrieved. All monthly catch records on Tape 1 are sorted on Tape 2 by species, division, country, gear and tonnage class. Tape 3 becomes the basic source file for catch/effort statistics, each coded recorded on the tape being equivalent to a horizontal line of Table 5 in Statistical Bulletin.

Copies of Tapes 2 and 3 are available upon request from the Secretariat.

The entire operation may be performed in a single computer run (less than 2 hours) or as individual runs of each program. The computer printout must then be prepared for reproduction and the actual printing may begin within 2 days following the receipt of the computer tabulations.

d) Proposed Computer Terminal.

After moving from the Bedford Institute, the Secretariat acquired an IBM 029 Card Punch. This machine is now being replaced by a 129 Card Data Recorder and a Comterm Series 1000 terminal is proposed for installation in January 1976. The programmable terminal will be equipped with an operator's CRT console, 300 cpm reader, and 300 lpm printer. Communication with an IBM 370 and CDC 6100 will be achieved by a 201A3 Modem and direct telephone line.

7. Some Matters Requiring Consideration at the Meeting of the Subcommittee are as follows:

- a) Deadline for advance monthly catch statistics and sampling data for TAC species dependent on timing of Assessments Subcommittee Meeting.
- b) STATLANT 21A form modifications.
- c) New STATLANT 21B form to accommodate ICNAF requirements for detailed reporting of catches and effort by 30' x 30' unit areas and twice-monthly time periods.
- d) Need for countries to conform to ICNAF tonnage classes and gear categories adopted at the 1972 Annual Meeting.
- e) Consideration of revised fishing effort measures by gear category.
- f) Consideration of proposed international standard abbreviations to be used for gear categories.
- g) Consideration of format for presentation of "discard" data for documentation and inclusion in Statistical Bulletin.
- h) Need for all countries to provide detailed breakdown of squid catches by species item (Illex spp. and Loligo spp.) separately for previous years (even now some countries do not give the required breakdown).
- i) Catch statistics available for 1974 for the following species not now included in the ICNAF List:

Tarpon (Megalops atlantica)
Crab, Jonah (Cancer borealis)
- j) Need for greater consistency between common and scientific names in the ICNAF List of Species and the FAO List of Species Items.
- k) Question of including "Seaweeds" in the Invertebrate group or establishing a separate group.
- l) Requirements for future lists of fishing vessels.
- m) Publication of notes on and lists of sampling data.
- n) Review of various ICNAF forms used for soliciting catch and sampling data and deadlines for the submission of these data.