

## Allister M. Fleming

13 December 1920-18 April 1984



Allister Fleming, who was well known for his work in the early days of the International Commission for the Northwest Atlantic Fisheries (ICNAF), died at St. John's, Newfoundland, Canada, on 18 April 1984. Allister was born in Stellarton, Nova Scotia, but moved to Newfoundland at a very early age. He received his early education at Bonavista, Newfoundland, and later graduated from Dalhousie University, Halifax, Nova Scotia, with the degree of BSc in Biology. He commenced his career in 1944 as a research scientist at the Newfoundland Government Fisheries Research Station, which became a part of the Fisheries Research Board of Canada in 1949. He graduated from the University of Toronto, Toronto, Ontario, in 1952 with the degree of MA in Zoology.

Allister's early work as a fisheries biologist involved research on cod in the Newfoundland region and this interest continued throughout his entire career. In fact, his early studies formed the basis for his MA thesis. In 1954, he was appointed Investigator-in-Charge of Groundfish Population Studies, which included responsibility for research on cod as well as sampling and statistics of all commercial groundfish species. As the staff increased and other investigators shared the research on cod, Allister still maintained interest in that work as well as the ever increasing responsibility for statistics and sampling. He was

appointed Assistant Director of the Biological Station in 1955. In 1964, he was seconded to work for a year in the office of the Chairman of the Fisheries Research Board of Canada at Ottawa. In 1974, he was appointed Head of the newly-reorganized Pelagic Fish, Shellfish and Marine Mammals Program. All the while, he filled the position of Assistant Director from 1955 to 1976, at which time he became Director. He retired from Federal Government service in 1977 after 33 years of service.

During his career, Allister played a key role in the logistics and operations of exploratory fishing by mechanized longlining vessels, which resulted in the establishment of longlining as an important method for the inshore fishery. He also established the original system of collecting sampling and statistical data for the Newfoundland groundfish fisheries, and he was solely responsible for the compilation and submission of all Newfoundland commercial catch and effort statistics and sampling data to ICNAF in the 1950's and early 1960's. After the formation of ICNAF in the early 1950's, Allister was a regular attendee at meetings of that organization and, in fact, contributed to and participated in meetings during 1952-72. The last ICNAF meeting which Allister attended was held at Washington, USA, in 1972, when the first total allowable catches with national allocations were established for many groundfish stocks in the Northwest Atlantic. During the 1950's, ICNAF was deeply involved in the management of fisheries by minimum mesh size regulations, and Allister contributed to the scientific advice that led to such regulations both at meetings and in scientific papers. Also, ICNAF was concerned in its early years with stock separation and migration questions as well as the effects of the environment on fish abundance, and Allister authored or co-authored many papers on these subjects.

On the local scene, Allister made a major contribution to fisheries research in Newfoundland, not only by virtue of his research and administrative functions within the laboratory but also by the guidance which he provided to those who worked with him. He was always ready to listen to his colleagues' problems and to provide suggestions for solution of such problems. One never entered Allister's office with a problem without leaving with a sense that the problem had been solved or at least was much less significant. In his many dealings with the fishing industry of Newfoundland, Allister was well respected and his advice was sought by many industry representatives. All of this was done with a gentleness of nature, a respect for the feelings and

rights of others, and a rare sense of humor that endeared him to the hearts of many. The fisheries research community in general has lost a valued col-

league in the death of Allister Fleming and those of us who knew him personally have lost a quiet friend and one rare among the bustle of our modern world.

A. T. Pinhorn  
Northwest Atlantic Fisheries Centre  
St. John's, Newfoundland, Canada

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## NOTICE

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### **Design and Evaluation of Biological Surveys in Relation to Stock Assessments**

Special Session of the Scientific Council of NAFO  
Dartmouth, Nova Scotia, Canada, 4-6 September 1985

#### **Specific Topics**

1. Survey design and operations
  - a) Stratified-random groundfish surveys (standard bottom trawls)
  - b) Surveys designed for pelagic species (hydroacoustic, midwater-trawl and aerial surveys)
  - c) Surveys of invertebrate stocks (e.g. photographic and trap surveys)
  - d) Surveys of marine mammals (e.g. aerial surveys)
  - e) Surveys of early life stages of fish and invertebrates (e.g. eggs, larvae and juveniles) for stock assessment purposes
2. Survey gear, performance and catchability
  - a) Determination of gear parameters
  - b) Variability of parameters according to towing speed, bottom conditions and topography, currents, etc.
3. Environmental factors affecting variation in catchability of survey gears
4. Evaluation of survey data
  - a) Survey indices
  - b) Abundance and biomass estimates
  - c) Reliability of survey estimates
5. Importance and value of survey data for stock assessments

#### **Deadlines**

Authors are requested to send titles and brief descriptions of their potential contributions to the Convener by **15 April 1985**. Papers will be selected on the basis of their relevance to the topics indicated above. Authors of selected contributions will be informed by 15 May 1985.

Completed manuscripts (typescript or good quality photocopy) must arrive at the NAFO Secretariat for mimeographing by **20 August 1985**, addressed to Assistant Executive Secretary, Northwest Atlantic Fisheries Organization, Bedford Institute of Oceanography, P. O. Box 638, Dartmouth, Nova Scotia, Canada, B2Y 3Y9.

#### **Publication**

Publication in the *Journal of Northwest Atlantic Fishery Science* or *NAFO Scientific Council Studies* will depend on the nature and quality of individual contributions.

#### **Convener**

Further information may be obtained from the NAFO Secretariat or from the Convener:

Dr J. Messtorff  
Institut für Seefischerei  
Fischkai  
D-2850 Bremerhaven 29  
Federal Republic of Germany  
Telex: 41-215716



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NOTICE

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**Recent Advances in Understanding Recruitment in Marine  
Fishes of the Northwest Atlantic, with Particular  
Emphasis on Georges Bank and Flemish Cap**

Special Session in September 1986

This theme was chosen by the Scientific Council of NAFO for a 3-day special session in advance of its Annual Meeting in September 1986. Details of organizational arrangements, including time and place, outline of topics to be covered, and deadlines for the submission of abstracts and completed manuscripts, will be finalized at the September 1985 Meeting of the Scientific Council.



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## NOTICE

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### **International Conference on Marine Living Systems of the Far North**

Institute of Marine Science  
Fairbanks, Alaska, USA

13-15 May 1985

This conference, sponsored by the Comite Arctique International and the University of Alaska (Fairbanks), will synthesize the current status of knowledge about arctic and subarctic marine ecosystems and their component organisms. The need to understand these systems is increasing due to exploitation of new resources for food and energy. At the same time, and in potential conflict, is the increasingly recognized and urgent need to protect the global environment from deterioration. The various developmental events should not occur without adequate knowledge of the complex relationships among the physical, chemical and biological variables operating to maintain the high overall ecosystem productivity of the northern high latitude seas. The true polar arctic sea is very unproductive at the lower trophic levels, although in coastal regions there appear to be localized areas of greater activity. Nevertheless, these seas do support a unique and important mammal component, some being resident during all seasons and others which migrate north each summer to feed. The marginal seas, which extend as arms into the subarctic, support the most extensive fisheries in the world. Yet, during a significant portion of the year, they are ice-covered and subject to long hours of darkness.

The biological regimes of these regions have recently received much attention and the basic scientific importance of the findings is now apparent. Technological and instrumental developments have played an important part in allowing progress in high latitude seas. Remote sensing, acoustic methods, buoys and submersibles are among the tools which can be applied. Future progress will inevitably require these and other techniques for acquiring data. This conference will examine the living systems, the contemporary approaches to their investigations, and the tools available in support of the research.

#### **Inaugural Lectures**

1. Challenge of the Arctic (Prof. Louis Rey)
2. Highlights of arctic marine biology (Prof. Vera Alexander)

#### **Session I. Ecosystems of Northern Seas**

1. The Arctic Ocean as a biological environment (M. J. Dunbar)
2. Some unique features of ecosystem structure and function in far northern seas (E. Sakshaug).
3. A comparative examination of high latitude shelf ecosystems (J. Walsh and J. J. Goering).
4. Current perspectives on the role of ice margins and polynyas in high latitudes (H. J. Niebauer and V. Alexander).
5. Fjord ecosystems (T. H. Pearson)
6. Benthos, an important compartment in northern aquatic ecosystems (G. H. Petersen).

#### **Session II. Arctic Marine Biota**

1. The marine ecology of arctic seabirds (R. G. B. Brown)
2. Polar bear populations of the Arctic (T. Larsen).
3. A new focus on pinniped populations and their biology (J. J. Burns).
4. The cetacean populations of the arctic and subarctic seas (R. Gambell).
5. Bowhead whale ecology (M. A. Fraker).
6. Subsistence whaling (E. Brower).

**Session III. Major Northern Maritime Compartments**

1. The Baltic Sea (B. O. Jansson).
2. The Barents Sea (H. Loeng).
3. The Norwegian Sea (G. Sundnes).
4. Northern Svalbard waters (J. O. Stromberg).
5. Icelandic waters (J. Jakobsson).
6. The Greenland Sea (Sv. Aa. Horsted).
7. Labrador-Newfoundland waters (J. P. Minet).
8. Bering Sea ecosystem (T. Tsujita).

**Session IV. New Ventures in Arctic Marine Environmental Studies**

1. Potential application of satellite remote-sensing techniques to the arctic regions (L. Rose).
2. Marine biological assessment by remote sensing (J. Gower and G. A. Borstad).
3. Large-scale arctic experiments (W. F. Weeks and D. J. Baker).
4. Monitoring and management of the arctic marine environment as exemplified by the north-eastern USSR (N. A. Shilo).
5. Sound and vibrational environment in arctic seas (W. C. Cummings).
6. Hydroacoustic instrumentation for biological investigations in the next decade (J. Ehrenberg).
7. Acoustic evaluation of fish populations (O. Mathisen).

**Panel Discussion. Management of Arctic Seas and Protection of the Environment**

**NOTE:** Further information about this conference may be obtained from the Director, Institute of Marine Science, University of Alaska, Fairbanks, Alaska, 99701, USA.



# Information For Authors

## Form of Manuscript

Authors should submit the original manuscript and two good reproductions (preferably photocopies instead of carbon copies). The manuscript should be typed in English on good quality paper about 21 × 28 cm in size. All typing should be double-spaced with at least 2.5 cm margins around the page. Avoid breaking words at the end of lines. Number all pages consecutively with arabic numerals in the center of the top margin. The sequence of the material should be title page, abstract, text, tables, list of figures and figures.

## Content of Manuscript

### Title Page

This page should contain the name(s) and complete address(es) of the author(s), including professional affiliation. Short titles of papers are preferred.

### Abstract

An informative abstract, not a summary of the contents, should not exceed one double-spaced page or about 250 words, the ultimate length being dependent on the size of the manuscript.

### Text

In general, papers should be organized with Introduction, Materials and Methods, Results, Discussion, Acknowledgements, and References. Authors should be guided by papers published in the Journal and by the Council of Biological Editors (CBE) Style Manual. All measurements should be given in numerals in the metric system. If other units are essential to the material presented, equivalents in metric units must be included. Footnotes should be avoided, but where necessary they should be numbered consecutively in the text and placed below a horizontal line at the bottom of each relevant page. Only those words to be printed in italics should be underlined.

### Tables

All tables must be discussed or mentioned in the text. Tables should be carefully constructed so that the data presented are readily understood. Each table should start on a separate page and be headed by a

description which, together with the column headings, makes the table intelligible without reference to the text. Tables should be numbered consecutively with arabic numerals. The required positions of tables in the text should be clearly indicated in the left margin of the relevant pages.

### Figures

Each photograph or drawing, described or mentioned in the text, must be on a separate sheet in a form suitable for good quality reproduction and numbered consecutively with arabic numerals. Lettering must withstand reduction of the figure to page width (17 cm) or half-page (single column) width (8 cm). To avoid using excessive space, many kinds of illustrations are adequately intelligible if reduced to half-page width, provided that some thought is given to the design and lettering. Black-ink line drawings or glossy photographs are acceptable. Over-sized line drawings should be submitted as glossy photographs no larger than 17 cm wide and about 20 cm high, preferably smaller. The original drawings, if larger than 17 × 20 cm, should be retained by the author and forwarded only if requested by the editor. The figure number should be indicated on the back or in the margin of each illustration together with the name(s) of the author(s). Figure legends should be typed double-spaced on a separate sheet, which follows the tables in paging sequence. The approximate location of each figure in the text should be indicated in the left margin of the relevant page. Three complete sets of illustrations must accompany the original and two copies of the manuscript.

### Bibliographic style

Literature references cited in the text must be by author's surname and date, viz,

It was reported that (Collins, 1960) ...

Collins (1960) reported that ...

The names of two authors may be used in a citation, but if more than two authors are involved the citation should be (Collins *et al.*, 1960). All papers referred to in the text must be listed alphabetically by the senior author's surname and initials in the References, followed by the initials and surnames of other authors (if any), the year of publication, full title of the paper, abbreviated name of the periodical, volume or number, and range of pages. Abbreviations of periodicals

should, if possible, follow the "World List of Aquatic Sciences and Fisheries Serial Titles" published periodically by the Food and Agriculture Organization (FAO). References to monographs should, in addition to the author, year and title, contain the name of the publisher, place, and number of pages in the volume. Reference to papers submitted but not yet published should be indicated as being "In press" or "Submitted for publication". The accuracy of all references is the responsibility of the author.

### **Proofs**

All proofs of manuscripts must be corrected and returned to the Editor within 3 days of receipt. Only corrections of typographical errors are permitted at the proof stage. Any proposed additional alterations to the text will be at the discretion of the Editor.

### **Reprints**

A total of 50 free reprints will be provided to the senior author and 25 free reprints to each additional author. Additional reprints may be ordered, when page proofs are returned at charges based on the length of the paper.

### **Submission of Manuscripts**

Manuscripts to be considered for publication (original and two copies) should be addressed to:

Editor

Journal of Northwest Atlantic Fishery Science  
Northwest Atlantic Fisheries Organization  
Bedford Institute of Oceanography  
P. O. Box 638  
Dartmouth, Nova Scotia  
Canada B2Y 3Y9

# Scientific Publications of the Northwest Atlantic Fisheries Organization

## Journal of Northwest Atlantic Fishery Science

This publication replaced the ICNAF Research Bulletin which terminated with No. 14 in September 1979. Each annual volume consists of one or more numbers.

- Vol. 1 — One number, 10 papers, 112 pages (Published December 1980)
- Vol. 2 — One number, 10 papers, 76 pages (Published October 1981)
- Vol. 3 — Two numbers, 17 papers, 180 pages (Published May and December 1982)
- Vol. 4 — One number, special issue on early stages of marine fishes, 424 pages (Published July 1983)
- Vol. 5 — Two numbers, 26 papers, 224 pages (Published January and November 1984)

## NAFO Scientific Council Studies

This publication replaced ICNAF Special Publication, which terminated with Number 11 (revised) in August 1980, and ICNAF Selected Papers, which terminated with Number 6 in January 1980. One or more numbers are published annually.

- No. 1 — Miscellaneous papers (11), 101 pages (Published March 1981)
- No. 2 — Manual on groundfish surveys, 56 pages (Published December 1981)
- No. 3 — Miscellaneous papers (8), 82 pages (Published April 1982)
- No. 4 — Papers on remote-sensing applications to fishery science (12), 98 pages (Published September 1982)
- No. 5 — Papers on environmental conditions in 1970-79 (12), 114 pages (Published December 1982)
- No. 6 — Miscellaneous papers (8), 104 pages (Published December 1983)
- No. 7 — Miscellaneous papers (9), 98 pages (Published August 1984)

## NAFO Scientific Council Reports

This publication (issued annually) replaced ICNAF Redbook which terminated with the issue in December 1979.

- 1980 — Reports of seven meetings in 1979 and 1980, 190 pages (Published December 1980)

- 1981 — Reports of four meetings in 1981, 148 pages (Published December 1981)
- 1982 — Reports of two meetings in 1982, 110 pages (Published December 1982)
- 1983 — Reports of three meetings in 1983, 152 pages (Published December 1983)
- 1984 — Reports of three meetings in 1984 (To be published December 1984)

## NAFO Statistical Bulletin

This publication (issued annually) replaced ICNAF Statistical Bulletin which terminated with Vol. 28 (revised). The volume numbering continues the series.

- Vol. 29 — Fishery statistics for 1979, 290 pages (Originally published July 1981; revised edition published November 1984)
- Vol. 30 — Fishery statistics for 1980, 280 pages (Originally published August 1982; revised edition published October 1984)
- Vol. 31 — Fishery statistics for 1981, 276 pages (Originally published September 1983; revised edition to be published early 1985)
- Vol. 32 — Fishery statistics for 1982, approximately 280 pages (Published December 1984)

## NAFO List of Fishing Vessels

This triennial publication replaced ICNAF List of Fishing Vessels which terminated with the 1977 list in April 1980.

- 1980 — List for 1980, 48 pages (Published March 1983)
- 1983 — List for 1983, (To be published early 1985)

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*A price list for these publications may be obtained upon request. Orders for current and back issues and standing orders for future issues should be forwarded to the Executive Secretary, Northwest Atlantic Fisheries Organization, Bedford Institute of Oceanography, P. O. Box 638, Dartmouth, Nova Scotia, Canada B2Y 3Y9.*





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