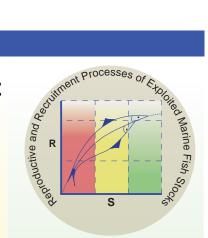
#### **SYMPOSIUM**

# Reproductive and Recruitment Processes of Exploited Marine Fish Stocks

1–3 October 2007 Lisbon, Portugal



The Northwest Atlantic Fisheries Organization (NAFO), the North Pacific Marine Science Organization (PICES), and the International Council for the Exploration of the Sea (ICES), announce a joint symposium on "Reproductive and Recruitment Processes of Exploited Marine Fish Stocks", to be held on 1–3 October 2007, in Lisbon, Portugal.

The symposium will provide a scientific forum to present and discuss study findings on reproduction, early life history and recruitment of exploited marine finfish and invertebrate stocks. Continued low abundance and low recruitment of many stocks necessitates a broad examination of key biological processes underlying potential stock recovery.

#### **Theme Sessions and Invited Speakers**

- Age and Size at Sexual Maturation: Tara Marshall (UK), Mikko Heino (Norway)
- Fecundity and Spawning Success: Yvan Lambert (Canada), David Armstrong (USA)
- Survival of Eggs and Larvae: Brian MacKenzie (Denmark), Yoshiro Watanabe (Japan)
- Stock Assessment and Management Implications: Joanne Morgan (Canada), Louis Botsford (USA)

Contributed oral and poster presentations are welcome. Abstracts should be submitted by 30 June 2007. Papers should be submitted by 31 October 2007 and will follow a peer-review process for publication in a special symposium issue of the *Journal of Northwest Atlantic Fishery Science*. Participants who are not giving presentations must register by 1 September 2007.

The Symposium will be co-convened by:

#### Edward A. Trippel

Fisheries and Oceans Canada St. Andrews Biological Station Canada trippele@mar.dfo-mpo.gc.ca

NAFO



#### Richard D. Brodeur

Estuarine and Ocean Ecology Program Northwest Fisheries Science Center USA rick.brodeur@noaa.gov

**PICES** 



#### Mark Dickey-Collas IMARES

Wageningen University Research
The Netherlands
mark.dickeycollas@wur.nl\_

ICES



Scientific Steering Committee: S. Kim, Korea (PICES), F. Köster, Denmark (ICES), C.T. Marshall, U.K. (ICES), M.J. Morgan, Canada (NAFO), H. Murua, Spain (NAFO), A. Thompson (NAFO Secretariat) and J. Zheng, USA (PICES).

Further information may be obtained at <a href="http://www.nafo.int/symposium.html">http://www.nafo.int/symposium.html</a>

Contact Information (including registration and abstract submission): Barb Marshall, NAFO Secretariat Tel: (+1-902) 468-8598, email: <a href="mailto:bmarshall@nafo.int">bmarshall@nafo.int</a>

# Early Stages of Fishes in the Western North Atlantic Ocean

by Michael P. Fahay

### A hardcover two volume set containing over 1500 pages US \$100

This comprehensive scientific publication is the only up-to-date text-book providing detailed descriptions and accurate drawings of the early life-history stages of the fishes from the Northwest Atlantic Ocean north of 35°N and west of 40°W. The region covers the world's most famous fishing grounds and includes the Davis Strait, southern Greenland, Flemish Cap, Georges Bank, northern Sargasso Sea and Middle Atlantic Bight to Cape Hatteras. This beautifully produced and published work includes:

- A checklist of 1075 fish species occurring in the study area
- Descriptions of egg, larval and juvenile stages of 760 species from 196 families
- Synopses of habitats from estuarine to abyssal
- Updated ranges and many species' range extensions, often based on early stages
- (2) Identification facilitated by numerous descriptive tables
- Morphological characters of developmental stages summarized and tabulated for 28 orders of teleosts, 15 suborders of Perciformes, 26 families of Percoidei and several other major groups
- Appendices with tabulations of meristic characters, museum reference material sources and collection data for original material
- Some 3 000 drawings of eggs, larvae and juveniles and 2 000 references

Print version available in early 2007

40°

Published and distributed by the Northwest Atlantic Fisheries Organization P.O. Box 638, Dartmouth, Nova Scotia Canada B2Y 3Y9 Order from www.nafo.int Phone +1 (902) 468 7139 Fax +1 (902) 468 5538 Email bcrawford@nafo.int Book Review 183

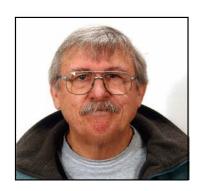
# Review of Michael Fahay's 2007 monograph "Early Stages of Fishes in the Western North Atlantic Ocean"



#### THE HISTORY

In the 1880s, naturalists such as Goode and Bean in the NW Atlantic, and Dannevig, Hjort, Schmidt, McIntosh and Prince in European waters, began to unravel the mysteries of the early development of fishes. There was ongoing conjecture surrounding the survival processes operating during the planktonic phase that generate the enormous and unpredictable variability in year-class strength. In 1914 Johan Hjort introduced the concept of the 'critical phase' in the early life history of fishes. Interest has inevitably surrounded the commercial species and it was as long ago as 1882 that fishermen joined the debate. The Scottish marine biologist William McIntosh was commissioned to study the effects of bottom trawling on the livelihoods of line fishermen. He incubated the reproductive products of captive fish and discovered that the young stages of fish, such as cod, haddock, whiting and lemon sole, were planktonic and hence not threatened by bottom trawling. This enraged the Scottish line fishermen who demonstrated outside his home and burned his effigy! Their actions heralded the first major confrontation between the fishing industry and scientists. For over a century, popular interest and scientific debate have embraced this fascinating world of the ichthyoplankton. In more recent times, fish quotas, growth and recruitment overfishing, species recovery programmes and global warming, have made the study of fish ontogeny even more relevant to our needs.

Survival of the early life history stages of fish and the subsequent strength of each year-class is fundamental knowledge in the management of commercial fish species. As a consequence, understanding the mechanisms which generate annual variability has attracted a considerable body of scientific investigation. Underpinning the biological and physiological research, is a comprehensive knowledge of their ontogeny. Accumulation of such knowledge has progressed steadily on both sides of the Atlantic to the point where the development of most of the commercially important species, plus many others, is now fairly well described. In 1976, F. S. Russell produced the first comprehensive work on the early life history of fishes in NW European waters for nearly seventy years. In 1978, a six volume monograph on the Fishes of the Mid Atlantic Bight was produced containing descriptions of the egg, larval and juvenile stages of over 300 species. In 1983, Michael Fahay published his monograph on the ontogeny of 255 fish species in the western North Atlantic from Cape Hatteras to the Scotian Shelf.



Michael Fahay's professional interest in the early life histories of fishes started in 1965. He published an illustrated atlas of fish eggs and larvae in 1983, and recently spent three years expanding and updating this classic work. Michael retired in June 2006 and is currently coauthoring a book on temperate estuarine fishes.

#### THE REVIEW

Michael Fahay's current contribution represents a further major step forward in synthesising all our current knowledge of fish ontogeny in the western North Atlantic. It is a superbly presented monograph in two large volumes but it still comes as a surprise that the 760 species from 196 families described only represents about 70% of the adult species known to occur in the area. Since his original monograph, the study area has been extended and now covers the area from the Northern Sargasso Sea to the Davis Strait and east to 40° W. The work represents many hours of painstaking research and meticulous attention to illustrative detail. Michael generously acknowledges the help, in various ways, of his colleagues and in particular the skills of the larval fish illustrators whose descriptions of various stages he has been able to use. Those acknowledgements in no way detract from the huge contribution of the author in bringing together all of this information in such a readily accessible and usable form. I found that the summary information, on the essential characteristics of each order of fishes, including meristic characters, presented in tables, to be particularly valuable. The glossary of terms used is extensive and well complemented by clear explanatory figures. The individual species descriptions are a pleasure to read with relevant, useful and consistently clearly presented information. As he rightly points out, the proper identification and description of larval fishes is dependant on ontogenetic series rather than characteristics of individual specimens. It is particularly valuable to be given the full distribution range of each species ensuring that this work has relevance to researchers outside the specific study area. In this context there are many species, particularly deeper water Alepocephalus, Argentina, Argyropelecus, Maurolicus, Myctophids, Macrourids, and many others, which occur on both sides of the North Atlantic.

These two excellent volumes are a 'must' on the book shelves of all professional marine biologists on both sides of the North Atlantic. They will also prove to be of great interest to all keen amateurs who have the good fortune to be able to dip into the fascinating world of plankton and in particular ichthyoplankton.

John Nichols, former head of the Plankton Laboratory, Directorate of Fisheries Research, MAFF, Lowestoft, England, undertook this review. John retired recently with 42 years of ichthyoplankton research experience and sat on numerous ICES working and study groups. He is currently a certification assessor for the Marine Stewardship Council and a Justice of the Peace for the Country of Suffolk.

#### Information for Preparing Manuscripts for NAFO Scientific Publications

#### I. Introduction

The manuscript should be in English. The sequence of the material should be: title page, Abstract, text including Introduction, Materials and Methods, Results, Discussion and Acknowledgements and References. Number all pages, including the title page, consecutively with arabic numbers in the center of the top margin. There is usually no page limitation or page charge for accepted publications.

#### II. Content of Manuscript

#### Title page

This page should contain the title, followed by the name(s) and address(es) of the author(s) including professional affiliation, and any related footnotes. The title should be limited to what is documented in the manuscript and be as concise as possible. Where necessary the scientific names of species should be included.

#### **Abstract**

An informative abstract must be provided, which does not exceed one double-spaced page or about 250 words, the ultimate length being dependent on the size of the manuscript. The abstract should concisely indicate the content and emphasis of the paper. It should begin with the main conclusion from the study and be supported by statements of relevant findings. The scientific names of species where necessary should be included here. It is important that the abstract accurately reflect the contents of the paper because it is often separated from the main body of the paper by abstracting and indexing services.

#### **Text**

In general, the text should be organized into Introduction, Materials and Methods, Results, Discussion, Acknowledgments and References. Authors should be guided by the organization of papers that have been published in the NAFO Journal or Studies and by such authorities as the Council of Biological Editors Style Manual (CBE, 9650 Rockville Pike, Bethesda, MD 20814, USA).

The **Introduction** should be limited to the purpose and rationale of the study. The article should begin with a clear description of the subject (include where necessary the scientific names of species), stating the hypothesis and/or defining the problem(s) the research was designed to solve. Define the time of the study, along with literature review and other information limited to what is relevant to the problem.

The **Materials and Methods** should provide the framework for obtaining answers to the problems which concern the purpose of the study. Describe in sufficient detail the materials and methods used so as to enable other scientists to evaluate the work or replicate the work.

The **Results** should answer the questions evolving from the purpose of the study in a comprehensive manner in an orderly and coherent sequence, with illustrative tables and figures. Ensure only relevant information is presented to substantiate the findings. Avoid any confusion between facts and inferences and the restatement of table and figure captions in the text.

The **Discussion** should give the main contributions from the study, with appropriate interpretation of the results focusing on the problem or hypothesis. Compare with those of other authors. Speculation should be limited to what can be supported with reasonable evidence. In the case of short papers, it may be useful to combine Results and Discussion to avoid repetition.

The **Acknowledgements** should be limited to the names of individuals who provided significant scientific and technical support, including reviews, during the preparation of the manuscript, and the names of agencies which provided financial support.

The **References** represents the list of references cited in the text listed alphabetically. Good judgment should be used in the selection of references, which should be restricted largely to significant published literature. Unpublished data and documents, manuscripts in preparation, and manuscripts awaiting acceptance to other journals may be noted in the text as unpublished data or personal communications, with full contact addresses.

Literature references cited in the text must be by author's surname and year of publication, e.g. (Collins, 1960). The surnames of two authors may be used in a citation, but, for more than two authors the citation should be (Collins *et al.*, 1960). The citation of mimeographed manuscript reports and meeting documents should contain the abbreviation "MS", e.g. (Collins *et al.*, MS 1960). All papers referred to in the text must be cited in the References alphabetically by the first author's surname and initials, followed by the initials and surnames of other authors, year of publication, full title of the paper, name of the periodical, volume and/or number, and range of pages. Abbreviations of periodicals should,

Notices 185

if possible, follow the "World List of Aquatic Sciences and Fisheries Serials Titles", published periodically by FAO (Food and Agriculture Organization of the United Nations). References to monographs should, in addition to the author(s), year and title, contain the name and place of the publisher and the number of pages in the volume. Reference to a paper in a book containing a collection of papers should also contain the page range of the paper, name(s) of editor(s), and actual title of the book. The accuracy of all references and their correspondence with text citations is the responsibility of the author.

#### **III. Comments on Tables and Figures**

All tables and figures must be mentioned or discussed in the text. Tables and figures must be numbered consecutively in arabic numerals, which correspond with the order of presentation in the text. The required position of the tables and figures in the text should be indicated in the left margin of the relevant page. List the captions of figures after the list of references (under the heading "Figure Captions").

#### **Tables**

Each table – including its caption – must be submitted as a separate file in a Word format.

**NOTE**: A well constructed table can eliminate elaborate text descriptions. Each table should be carefully constructed to be easily read and understood. Each column and row must be concisely headed ensuring relevant units of the values are given (usually within parentheses). Each table should have a complete but concise descriptive heading.

#### **Figures**

Each figure must be submitted as a separate file in a graphic format (preferably eps, ai, ps; we also accept tiff, pct, jpg, bmp or gif but advise to pay special attention to quality with these formats). Coloured figures will only be accepted if colour contributes to the content of the figure and is unavoidable (for reasons of consistency, this policy is valid for both the printed and the electronic Journal).

Note that readability of figures on the screen is of key importance: In general, text elements should be proportional to size to the figure size. However, for very small or large figures the choice of a relatively large font size in proportion to figure size might be preferable to (a) ensure readability of small figures and/or (b) allow reduction of a large figure size without compromising readability of its inherent text.

Each figure should be carefully constructed and labelled to be easily read and understood. Each vertical and horizontal axis (e.g. x and y axes on a graph or latitude and longitudes on a map) must have a concise header with relevant units (usually within parentheses). Note that any reference to geographic areas relevant to the study should be shown in a figure (or map) form. Mathematical equations and formulae must be accurately stated, with clear definitions of the various letters and symbols. If logarithmic expressions are used, the type of function (e.g.  $\log_{10}$ ,  $\log_{10}$  or  $\log_{e}$ ) must be clearly indicated.

**Key words**: Authors are requested to include suggested key words based on standard search engines for scientific papers.

#### IV. Manuscript Submission

The NAFO Secretariat receives manuscript submissions in electronic format as email attachments or by providing a link to a web or ftp site or by mail (CD-Rom, etc.) to the following address:

Email: journal@nafo.int Tel: +902-468-5590 Fax: +902-468-5538

*Mailing Address*: NAFO Journal, NAFO, P. O. Box 638, Dartmouth, Nova Scotia, Canada B2Y 3Y9

Vol. 37

## Scientific Publications of the Northwest Atlantic Fisheries Organization

#### Journal of Northwest Atlantic Fishery Science

The Journal provides an international forum for the primary publication of original research papers on fisheries science in the Northwest Atlantic, with emphasis on environmental, biological, ecological and fishery aspects of the living marine resources and ecosystems. (Scientific publications during ICNAF times during 1949–79 are available at the Secretariat).

Vol. 1	_	Miscellaneous papers, (10), December 1980, 112 pp.
Vol. 2	_	Miscellaneous papers, (10), October 1981, 76 pp.
Vol. 3, No. 1, 2	_	Miscellaneous papers, (17), May and December 1982, 180 pp.
Vol. 4	-	Special issue Guide to the Early Stages of Marine Fishes Occurring in the Western North Atlantic Ocean, Cape Hatteras to the Southern Scotian Shelf, July 1983, 424 pp.
Vol. 5, No. 1, 2	_	Miscellaneous papers, (26), January and November 1984, 224 pp.
Vol. 6, No. 1, 2	_	Miscellaneous papers, (17), June and December 1985, 179 pp.
Vol. 7, No. 1, 2	_	Miscellaneous papers, (18), December 1986 and December 1987, 177 pp.
Vol. 8	_	Miscellaneous papers, (7), December 1988, 88 pp.
Vol. 9	_	Miscellanous papers, (13), September and December 1989, 159 pp.
Vol. 10	_	Special issue, (1), The Delimitation of Fishing Areas in the Northwest Atlantic, December 1990, 57 pp.
Vol. 11	_	Miscellaneous papers, (7), February 1991, 80 pp.
Vol. 12	_	Miscellaneous papers, (7), January 1992, 84 pp.
Vol. 13	_	Miscellaneous papers, (7), December 1992, 114 pp.
Vol. 14	-	Symposium papers, (12), on Changes in Biomass, Production and Species Composition of the Fish Populations in the Northwest Atlantic over the Last 30 Years, and Their Possible Causes, December 1992, 160 pp.
Vol. 15	_	Special issue, (1), Decapod Crustacean Larvae from Ungava Bay, December 1993, 170 pp.
Vol. 16	_	Miscellaneous papers, (7), July 1994, 100 pp.
Vol. 17	_	Miscellaneous papers, (6), October 1994, 78 pp.
Vol. 18	_	Miscellaneous papers, (6) (1 Note), April 1996, 115 pp.
Vol. 19	-	Symposium papers, (11), on <i>Gear Selectivity/Technical Interactions in Mixed Species Fisheries</i> , September 1996, 145 pp.
Vol. 20	-	Special issue, (1), North Atlantic Fishery Management Systems: A Comparison of Management Methods and Resource Trends, September 1996, 143 pp.
Vol. 21	_	Miscellaneous papers, (5), April 1997, 83 pp.
Vol. 22	-	Symposium papers, (25) (1 Note), on <i>The Role of Marine Mammals in the Ecosystem</i> , December 1997, 387 pp.
Vol. 23	_	Symposium papers, (16), What Future for Capture Fisheries, October 1998, 277 pp.
Vol. 24	_	Miscellaneous papers, (4), November, 1998, 97 pp.
Vol. 25	-	Symposium papers, (17), (2 Notes), on "Variations in Maturation, Growth, Condition and Spawning Stock Biomass Production in Groundfish", October 1999, 233 pp.
Vol. 26	_	Miscellaneous papers, (6), December 2000, 145 pp.
Vol. 27	-	Symposium papers (22) (1 Note), <i>Pandalid Shrimp Fisheries – Science and Management at the Millennium</i> , December 2000, 289 pp.
Vol. 28	_	Special issue, (1), A Review of the Cod Fisheries at Greenland, 1910–1995, December 2000, 121 pp.
Vol. 29	_	Miscellaneous papers, (5), December, 2001, 99 pp.
Vol. 30	_	Miscellaneous papers, (5), December, 2002, 91 pp.
Vol. 31	_	Symposium papers, (34) (1 Abstract), October, 2003, 496 pp.
Vol. 32	_	Miscellaneous papers, (4), December, 2003, 72 pp.
Vol. 33	-	Symposium papers, (9), <i>Reproductive Potential of Fish Populations of the North Atlantic</i> , December 2003, 214 pp.
Vol. 34	-	Mini-symposium papers, (7), <i>Hydrographic Variability in NAFO Waters for the Decade 1991–2000 in Relation to Past Decades</i> , March, 2004, 120 pp.
Vol. 35	-	Symposium papers, (43), <i>Elasmobranch Fisheries: Managing for Sustainable Use and Biodiversity Conservation</i> , 11–13 September 2001, 544 pp.
Vol. 36	_	Miscellaneous papers, (10), December, 2006, 152 pp.

- Symposium Papers, (14), Flemish Cap, April, 2007, 189 pp.

Notices 187

#### **NAFO Scientific Council Studies**

This publication includes papers of topical interest and importance to the current and future activities of the Scientific Council.

No. 1 Miscellaneous papers, (11), March 1981, 101 pp. No. 2 Manual on Groundfish Surveys, December 1981, 56 pp. No. 3 Miscellaneous papers, (8), April 1982, 82 pp. Special Session papers, (12), on Remote-Sensing Applications to Fishery Science, September 1982, 98 pp. No. 4 No. 5 Symposium papers, (12), on Environmental Conditions in 1970-79, December 1982, 114 pp. Miscellaneous papers, (8), December 1983, 104 pp. No. 6 No. 7 Miscellaneous papers, (9), August 1984, 98 pp. No. 8 Miscellaneous papers, (12), April 1985, 96 pp. No. 9 Special Session papers, (17), on Squids, November 1985, 180 pp. Miscellaneous papers, (9), August 1986, 112 pp. No. 10 No. 11 Miscellaneous papers, (11), March 1987, 127 pp. No. 12 Miscellaneous papers, (8), March 1988, 90 pp. Miscellaneous papers, (5), November 1989, 82 pp. No. 13 No. 14 Miscellaneous papers, (6), May 1990, 74 pp. No. 15 Miscellaneous papers, (7), May 1991, 68 pp. No. 16 Special Session papers, (22), on Management Under Uncertainties, November 1991, 190 pp. No. 17 Workbook on Introduction to Sequential Population Analysis, February 1993, 98 pp. No. 18 Symposium papers, (18), on Changes in Abundance and Biology of Cod Stocks and Their Possible Causes, July 1993, 110 pp. No. 19 Miscellaneous papers, (8), October 1993, 98 pp. Miscellaneous papers, (7), February 1994, 114 pp. No. 20 No. 21 Collections of Papers, (10), Related to Northern Cod and Seals in NAFO Divisions 2J and 3KL, December 1994, No. 22 Miscellaneous papers, (6), May 1995, 95 pp. No. 23 Miscellaneous papers, (5), September 1995, 95 pp. No. 24 Symposium papers, (12), on Impact of Anomalous Oceanographic Conditions at the Beginning of the 1990s in the Northwest Atlantic on the Distribution and Behaviour of Marine Life, September 1994, 155 pp. No. 25 Collection of Papers, (5), Flemish Cap Selected Environmental and Other Papers, July 1996, 91 pp. Selected Papers, (11), (2 Notes), on Harp and Hooded Seals, December 1996, 129 pp. No. 26 No. 27 Miscellaneous papers, (5), (1 Note), December 1996, 81 pp. No. 28 Special Session papers, (6), on Assessment of Groundfish Stocks Based on Bottom Trawl Survey Results, December 1996, 105 pp. No. 29 Selected Papers, (11), Selected Studies Related to Assessment of Cod in NAFO Divisions 2J+3KL, May 1997, No. 30 Miscellaneous papers, (9), December 1997, 117 pp. No. 31 Miscellaneous papers, (8), December 1998, 165 pp. No. 32 Miscellaneous papers, (8), April 1999, 133 pp. No. 33 Miscellaneous papers, (7), May 2000, 135 pp. No. 34 Miscellaneous papers, (3), October, 2001, 91 pp. No. 35 Workshop: The Canada-United States Yellowtail Flounder Age Reading, December 2002, 68 pp. No. 36 Workshop on Assessment Methods, May 2003, 320 pp. Working Group on Reproductive Potential, August 2003, 378 pp. No. 37

#### **NAFO Scientific Council Reports**

This publication contains reports of Scientific Council Meetings held through each year since NAFO replaced ICNAF. (The comparable publication during ICNAF was called the *Redbook*).

Reports of seven meetings in 1979 and 1980, Published December 1980, 190 pp.
Reports of four meetings in 1981, Published December 1981, 148 pp.
Reports of two meetings in 1982, Published December 1982, 110 pp.
Reports of three meetings in 1983, Published December 1983, 152 pp.
Reports of three meetings in 1984, Published December 1984, 126 pp.
Reports of three meetings in 1985, Published December 1985, 146 pp.

#### **NAFO Scientific Council Reports (Continued)**

Reports of three meetings in 1986, Published December 1986, 156 pp. 1986 1987 Reports of three meetings in 1987, Published December 1987, 138 pp. 1988 Reports of two meetings in 1988, Published December 1988, 150 pp. 1989 Reports of two meetings in 1989, Published December 1989, 180 pp. 1990 Reports of two meetings in 1990, Published December 1990, 188 pp. 1991 Reports of two meetings in 1991, Published December 1991, 164 pp. 1992 Reports of four meetings in 1992, Published December 1992, 212 pp. 1993 Reports of three meetings in 1993, Published January 1994, 234 pp. 1994 Reports of four meetings in 1994, Published January 1995, 234 pp. 1994 Reports of four meetings in 1994, Published January 1995, 234 pp. 1995 Reports of three meetings in 1995, Published January 1996, 244 pp. Reports of three meetings in 1996, Published January 1997, 226 pp. 1996 1997 Reports of three meetings in 1997, Published January 1998, 274 pp. 1998 Reports of three meetings in 1998, Published January 1999, 257 pp. 1999 Report of four meetings in 1999, Published January 2000, 327 pp. Report of four meetings in 2000, Published January 2001, 303 pp. 2000 2001 Report of three meetings in 2001, Published January 2002, 339 pp. 2002 Report of three meetings in 2002, Published January 2003, 323 pp. 2002/2003 -Report of four meetings in 2002-03, Published August 2003, 383 pp. 2003 Report of two meetings in 2003, Published January 2004, 104 pp. (Supplement) 2004 Report of three meetings in 2004, Published January 2005, 298 pp. 2005 Report of three meetings in 2005, Published May 2006, 359 pp. 2006 Report of four meetings in 2006, Published February 2007, 311 pp.

#### **NAFO Statistical Bulletin**

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

```
Fishery statistics for 1979, Originally published July 1981; revised edition published November 1984, 290 pp.
Vol. 29
Vol. 30
                 Fishery statistics for 1980, Originally published August 1982; revised edition published October 1984, 280 pp.
Vol. 31
                 Fishery statistics for 1981, Originally published September 1983; revised edition published March 1985,
Vol. 32
                 Fishery statistics for 1982, Published December 1984, 284 pp.
Vol. 33
                 Fishery statistics for 1983, Published December 1985, 280 pp.
Vol. 34
                 Fishery statistics for 1984, Published December 1986, 304 pp.
Vol. 35
                 Fishery statistics for 1985, Published December 1987, 322 pp.
Vol. 36
                 Fishery statistics for 1986, Published October 1989, 304 pp.
Vol. 37
                 Fishery statistics for 1987, Published April 1990, 295 pp.
Vol. 38
                 Fishery statistics for 1988, Published February 1991, 307 pp.
Vol. 39
                 Fishery statistics for 1989, Published February 1993, 300 pp.
Vol. 40
                 Fishery statistics for 1990, Published February 1994, 309 pp.
Vol. 41
                 Fishery statistics for 1991, Published February 1995, 318 pp.
                 Statistical Bulletin Supplementary Issue, 1960–90, (statistics) Published April 1995, 156 pp.
Vol. 42
                 Fishery statistics for 1992, Published October 1995, 310 pp.
Vol. 43
                 Fishery statistics for 1993, Published December 1997, 329 pp.
Vol. 44
                 Fishery statistics for 1994, Published December 2000, 201 pp.
Vol. 45
                 Fishery statistics for 1995, Published October 2001, 207 pp.
Vol. 46
                 Fishery statistics for 1996, Published November 2001, 214 pp.
Vol. 47
                 Fishery statistics for 1997, Published November 2001, 216 pp.
Vol. 48
                 Fishery statistics for 1998, Published November 2001, 210 pp.
Vol. 49
                 Fishery statistics for 1999, Published January 2002, 210 pp.
```

Notices 189

#### **Inventory of Sampling Data**

This publication replaced ICNAF Inventory of Sampling Data 1967-1978 which was completed in 1986.

Inventory of Sampling Data 1979–1984, Published April 1989, 250 pp. Inventory of Sampling Data 1985–1989, Published March 1993, 265 pp. Inventory of Sampling Data 1990–1994, Published October 1999, 287 pp. Inventory of Sampling Data 1995–1999, Published November 2002, 142 pp.

#### **NAFO Index of Meeting Documents**

This publication contains lists of all documents along with a subject and author index of the NAFO Scientific Council documents issued during 5-year periods.

1979-84	_	Index of Meeting Documents, Published March 1985, 146 pp.
1985-89	_	Index of Meeting Documents, Published December 1990, 116 pp.
1990-94	_	Index of Meeting Documents, Published November 1995, 139 pp.
1995-99	_	Index of Meeting Documents, Published December 2000, 141 pp.