

Technical Memoranda From the Northeast Fisheries Center

In addition to its formal scientific publications, the National Marine Fisheries Service uses the NOAA Technical Memorandum series for informal publication of specialized reports that require multiple copies, but when complete formal review and editorial processing are not appropriate or feasible. However, documents in this series reflect sound professional work and are referenced in formal journals.

This month, the first 12 Technical Memoranda produced by the NMFS Northeast Fisheries Center, Woods Hole, Mass., are listed. Copies may be ordered by number from the National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, VA 22161.

"Overview Document of the Northeast Fishery Management Task Force, Phase I," by Richard C. Hennemuth, Brian J. Rothschild, Lee G. Anderson, and William A. Lund, Jr. U.S. Dep. Commer., NOAA Tech. Memo NMFS-F/NEC-1, 12 p., 1980.

"History and Status of the Atlantic Demersal Finfish Fishery Management Plan," by Guy D. Marchesseault, Richard P. Ruais, and Der-Hsiung Wang. U.S. Dep. Commer., NOAA Tech. Memo NMFS-F/NEC-2, 8 p., 1980.

"Definition of Management Units," by Emory D. Anderson and Guy D. Marchesseault. U.S. Dep. Commer., NOAA Tech. Memo NMFS-F/NEC-3, 4 p., 1980.

"Fishery Management Techniques, A Review," by Michael P. Sissenwine and James E. Kirkley. U.S. Dep. Commer., NOAA Tech. Memo NMFS-F/NEC-4, 10 p., 1980.

"The Status of the Marine Fishery Resources of the Northeastern United States," by Margaret M. McBride and Bradford E. Brown. U.S. Dep. Com-

mer. NOAA Tech. Memo NMFS-F/NEC-5, 13 p., 1980.

"Economic and Biological Data Needs for Fisheries Management, With Particular Reference to the New England and Mid-Atlantic Areas," by Guy D. Marchesseault, Joseph J. Mueller, and Ivar E. Strand, Jr. U.S. Dep. Commer., NOAA Tech. Memo NMFS-F/NEC-6, 13 p., 1980.

"Methodology for Identification and Analysis of Fishery Management Options," by Brian J. Rothschild, Richard C. Hennemuth, Jacob J. Dykstra, Leo C. Murphy, Jr., John C. Bryson, and James D. Ackert. U.S. Dep. Commer., NOAA Tech. Memo NMFS-F/NEC-7, 10 p., 1980.

"Phytoplankton Community Structure in Northeastern Coastal Waters of the United States. I. October 1978," by Harold G. Marshall and Myra S. Cohn. U.S. Dep. Commer., NOAA Tech. Memo NMFS-F/NEC-8, 14 p., 1981.

"Phytoplankton Community Structure in Northeastern Coastal Waters of the United States. II. November 1978," by Harold G. Marshall and Myra S. Cohn. U.S. Dep. Commer., NOAA Tech. Memo NMFS-F/NEC-9, 14 p., 1981.

"Annual NEMP Report on the Health of the Northeast Coastal Waters of the United States, 1980," Northeast Monitoring Program Report No. NEMP IV 81 A-H 0043. U.S. Dep. Commer., NOAA Tech. Memo NMFS-F/NEC-10, 79 p., 1981.

"Proceedings of the Summer Flounder (*Paralichthys dentatus*) Age and Growth Workshop, 20-21 May 1980, Northeast Fisheries Center, Woods Hole, Massachusetts," by Ronald W. Smith, Louise M. Dery, Paul G. Scarlett, and Ambrose Jearld, Jr. U.S. Dep. Commer., NOAA Tech. Memo NMFS-F/NEC-

11, 14 p., 1981.

"Status of the Fishery Resources off the Northeastern United States for 1981." U.S. Dep. Commer., NOAA Tech. Memo NMFS-F/NEC-12, 1982.

Sciaenids and Marine Recreational Fisheries

"Marine Recreational Fisheries 6," the proceedings of the sixth annual Marine Recreational Fisheries Symposium, is devoted to the sciaenids, a territorial sea demersal resource. Edited by Henry Clepper, the volume was published by the Sport Fishing Institute (SFI) for the International Game Fish Association, the National Coalition for Marine Conservation, and the SFI.

The symposium steering committee developed five panels: 1) An overview of sciaenid fishery resources, chaired by Robert Kemp; 2) social and economic aspects of sciaenid fisheries, chaired by Biliana Cicin-Sain; 3) biology of sciaenids, chaired by James E. Weaver; 4) existing institutions and management, chaired by H. A. Rhodes; and 5) restoration, perpetuation, and resource monitoring, chaired by John V. Merriner.

Introductory talks featured a brief look at problems in securing State fisheries legislation by Texas State Senator John Wilson. William Gordon, now NOAA Assistant Administrator for Fisheries, outlined the importance and prospects for marine recreational fisheries. The future for MRF is bright, he notes, "so long as we can maintain and conserve our valuable fisheries resources, provide opportunities for our fishermen to pursue their sport, and encourage activities which will strengthen the marine recreational fishing industry."

Panel 1 presented good reviews of sciaenid resources in the Atlantic and Pacific Oceans and the Gulf of Mexico, by Stuart J. Wilk, Robson A. Collins, and Eugene L. Nakamura, respectively. For Panel 2, James C. Cato reviewed the economic values and uses of sciaenid fisheries; Alan R.

Graefe examined ways of understanding diversity among recreational marine anglers, especially identifying and describing characteristics and motivations of those who fish for sciaenids; and John Maiolo discussed user conflicts and competition in fisheries management.

In the third session, Howard Powles reviewed eggs and larvae of North American sciaenids, suggesting more research on taxonomy and early life history. David L. Thomas reviewed the comparative ecology of drums from the Delaware River estuary and Michael P. Weinstein reviewed the biology of important adult sciaenids of the Atlantic and Gulf coasts, citing a need to clearly identify major genetic stocks and their movement patterns, improve the predicting of year-class success and yield, and better learn the effects of habitat degradation, overfishing, competition and predation, etc., on the species.

In Panel 4, William S. Perret discussed sciaenid management in the northern Gulf of Mexico, Eugene V. Toffoli reviewed management in the Pacific coast states, and Terrance R. Leary related the role of Fishery Management Councils in fisheries management, commenting especially on the Gulf of Mexico Fishery Management Council's work on a groundfish management plan.

In Panel 5, on restoring and perpetuating the resource, Donald E. Wohlschlag provided an overview of natural factors affecting sciaenid recruitment and Robert J. Livingston reported on his studies of human impacts on the distribution and abundance of sciaenids in the northeastern Gulf of Mexico. The possibilities of using artificially propagated sciaenids as a management tool was explored by Walter M. Tatum.

This popular series of symposia, and publications, has been successful in focusing attention on the marine recreational fisheries and its needs, although the thrust has changed somewhat. The original volume, entitled simply "**Marine Recreational Fisheries**," set the course by exploring the basic nature of marine recreational fisheries from economic, sociological, biological, and managerial points of

view.

It included an economic evaluation of marine angling and a look at the economic implications of the allocation of fishery resources between various user groups, based on the Columbia River salmon-steelhead fishery. Likewise, sociocultural values of marine angling, and social aspects in the allocation of marine recreational resources were defined and explored.

Environmental quality programs and marine productivity were discussed, fishery stock assessment programs were reviewed, and differences in management of marine recreational fisheries were aired. Finally, the role of Federal and State governments and nongovernmental organizations in managing and protecting marine resources and angling was reviewed.

Collectively, the series represents an important contribution to the biology, economics, sociology, and management of marine recreational fisheries. Clothbound, all six editions of "**Marine Recreational Fisheries**" are available from the International Game Fish Association, 3000 East Las Olas Boulevard, Fort Lauderdale, FL 33316 for \$15 each or \$50 for the entire set.

The Marine Environment Near Shore: A Symposium

"**The Shore Environment**," edited by J. H. Price, D. E. G. Irvine, and W. F. Farnham, has been published in two volumes (Volume 1: Methods; Volume 2: Ecosystems) by Academic Press Inc. (London) Ltd., 24-28 Oval Road, London, England NW1 7DX, for the Systematics Association. The set constitutes the Proceedings of an International Symposium held at the Portsmouth Polytechnic, and are Systematics Association Special Volume No. 17a and b respectively.

In these volumes, "shore environment" refers to the supratidal (within the sphere of marine influence), intertidal, and adjacent subtidal levels. Volume 1 begins with a personal view on the objectives and phases in littoral ecology by J. R. Lewis, examines critically the pressures to publish rapidly shorter papers and how this affects ecological studies, and identi-

fies several fertile fields of study. W. Eifion Jones relates in chapter 2 the methods used in the field courses in shore ecology from basic needs through organism identification, shore description, recording the biota, and other parameters. Photography, often neglected by scientists, is well-covered as a research tool in Chapter 3 by J. David George. Photo equipment is described as are the many uses it has for the scientists. Such problems as underwater lighting, infrared and ultraviolet light photography, television and remote control photography, and special techniques are covered.

Other chapters (and authors) include biological monitoring and exposure scales (D. H. Dalby), methods of data collection and processing in rocky intertidal monitoring (W. E. Jones et al.), applications of simple numerical methods to the analysis of intertidal vegetation (G. Russell), the permanent quadrat method (P. J. G. Polderman), marine flora of chalk cliffs (Ian Tittley and Kathleen M. Shaw), remote sensing and field sampling of mudflat organisms (M. G. Coulson et al.), data collection and analysis strategies of subtidal vegetation (D. M. John et al.), a computer-based system for habitat and species data (R. C. Earll), and the survey and nature conservation assessment of littoral areas (S. J. T. Knight). Each chapter contains an abstract and list of references.

Volume 2, Ecosystems, presents a chapter on the description and classification of sublittoral epibenthic ecosystems as a basis for the selection and assessment of key marine conservation areas in Britain by Keith Hiscock and Roger Mitchell. Photophilic infralittoral algal vegetation of western Mediterranean rocky surfaces is described by E. Coppejans. Other chapters (and authors) include marine phytobenthos studies in Newfoundland (Robert G. Hooper et al.), a review of estuarine benthic algae and their environment (Martin Wilkinson), niche and community in the inshore benthos (J. H. Price), Southern California rocky intertidal ecosystems (Mark M. Littler), changes in intertidal ecosystems after reclamation work (J. J. P. Clokie and A. D.

work (J. J. P. Clokie and A. D. Boney), relationships of fish and algae in temperate waters (Alwyne Wheeler), predation and community structure (Roger N. Hughes), free-living nematodes and the littoral ecosystem (H. M. Platt and R. M. Warwick), invertebrate epiphytes of coastal marine algae (P. J. Hayward), British rocky-shore lichens (A. Fletcher), algal communities of floating structures in southern England (R. L. Fletcher), alien marine flora of southern England (W. F. Farnham), and daylength and temperature effects on algal life history (K. Luning).

Volume 2 also contains interesting reviews on predator-prey relationships and community structure by Roger N. Hughes and a discussion of the relationships of fish and algae in temperate waters by Alwyne Wheeler. Another lengthy chapter by J. J. P. Clokie and A. D. Boney outlines the changes to intertidal ecosystems in the Firth of Clyde following an iron-ore terminal, including a jetty and filling area.

Both volumes present taxonomic and subject indexes, a list of contributors and symposium participants, and a list of Systematics Association publications. They are available from the publisher for £24.80 (\$57.50) for Volume 1 and £48.20 (\$111.00) for Volume 2.

Squid Resources, Their Harvest, and Marketing

The "Proceedings of the International Squid Symposium" held 9-12 August 1981 in Boston, Mass., and prepared by the New England Fisheries Development Foundation, Inc., has been published by Unipub, P.O. Box 433, Murray Hill Station, New York, NY 10016.

The symposium brought together nearly 200 squid experts and industry representatives from all over the world to discuss all aspects of the utilization of squid resources. Voluminous (at 390 pages) and detailed, the wide-ranging volume contains 27 papers along with the transcripts of discussions on many aspects of squid harvesting, handling, processing, and marketing. Both the papers and discussions printed will be of consider-

able interest and value.

The opening session provided a brief review of the U.S. interest in squid fisheries by Allen E. Petersen, Director, NMFS Northeast Regional Office, and a look at New Zealand's experiences in developing squid fisheries by N. E. Jarman, general manager of the New Zealand Fishing Industry Board. A perspective on the Spanish squid market—second only to the Japanese market—was given by James Milnes, and a panel discussion on squid processing developments was presented by Robert Learson, NMFS Gloucester Laboratory; Rodger Crossman of New Zealand; and Norman Haard of Newfoundland's Memorial University in St. John's.

The second session, "Harvesting Experience," provides a look at the jumbo squid fishery in Mexico's Gulf of California, Canadian squid harvesting, fishing squid off Uruguay and off Cape Anne, Mass., and a discussion of joint venture squid operations. Two Polish scientists relate their observations on the squid behavior during jigging, and spatial patterns in a mixed fishery for *Loligo brasiliensis* and *L. pleii* off southern Brazil are discussed by Marcelo Juanico. Light attraction techniques in squid fishing are reviewed by Efrén Ed. C. Flores and Duncan Amos and Robert DeMello described the application of multifrequency echo sounders to squid detection.

The third session presented reviews of squid handling, processing, and new product development in Spain, southern Europe, Poland, New Zealand, Canada, and South America. Other articles included an overview of the U.S. Pacific coast squid fishery, textural evaluation of *Illex illecebrosus* as affected by cook time, the status of squid processing and preservation technology in the northeastern United States, and the outlook for squid processing and marketing in Uruguay. A fourth session, "International Market Outlook for Squid," provided reviews of squid marketing in Japan and southern Europe, plus the successful introduction of a new squid product made from *Dosidicus gigas* caught off Mexico.

Finally, roundtable discussions on harvesting, processing, and the marketing outlook provide more detailed discussion of fishing gear, techniques (value of colored or white lights, differing colors of jigs, angle of lights, use of trawls, traps, and gill nets), etc. Paperbound in large-format (8½ × 11"), the volume is available from the publisher for \$33.50 plus shipping and handling charges.

More of a how-to-do-it manual is "Squid Jigging From Small Boats." Authors are Mototsuga Hamabe, Chikamasa Homuro, and Michio Ogura—Japanese squid experts—and the book was edited by the FAO Fisheries Technology Service and published by Fishing News Books Ltd., 1 Long Garden Walk, Farnham, Surrey, England.

Beginning with a brief look at the history of squid jigging in Japan, the authors review the general characteristics of squids and describe the primary commercial species, present world production, and development potentials.

The bulk of the book, pages 12-56, consists of well-illustrated descriptions of modern small-boat squid jigging techniques and gear. Included are the use of echo sounders for location of squids and attracting them with artificial lights (lamp arrangement, lighting efficiency and intensity, bulb characteristics, underwater lamps, etc.). Squid jigging gears and the reaction of squid to jigs and lines are also covered, as are various types of automatic and hand-operated jigging reels. Types of vessels and fishing operations are also outlined, and another section relates handling and storage of the catch. Finally, the authors provide guidelines for the development of a new squid jigging fishery.

Squid jigging, one of Japan's oldest coastal fisheries, can often be started with minor modification to existing vessels. It may require relatively little capital investment and is adaptable to local conditions. This book provides sound, basic guidance for anyone interested in this type of fishery. Paperbound, the small (6 × 9") 74-page volume costs £6 plus 60 p postage and is available from the publisher.