

New NMFS Scientific Reports Published

The publications listed below may be obtained from either the Superintendent of Documents (address given at end of title paragraph on affected publications) or from D822, User Services Branch, Environmental Science Information Center, NOAA, Rockville, MD 20852. Writing to the agency prior to ordering is advisable to determine availability and price, where appropriate (prices may change and prepayment is required).

NOAA Technical Report NMFS SSRF-730. Temple, Robert F., and John A. Martin. **"Surface circulation in the northwestern Gulf of Mexico as deduced from drift bottles."** May 1979.

13 p. For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

Abstract

Drift bottles were released monthly at predetermined stations in the northwestern Gulf of Mexico from February 1962 to December 1963. Of the total 7,863 bottles released, 12 percent (953) were recovered within 30 days after release. Analysis of the monthly recoveries revealed seasonal shifts in the flow of surface waters. Between September and February the dominant flow was west along the Louisiana and east Texas coasts, shifting southwest along the southern Texas coast. Between March and May, currents underwent a transitional period, shifting to the north and onshore, particularly along the south and central Texas

coast. Converging currents, also apparent along the south Texas coast, appeared to progress up the coast with time. In June and July the surface flow was to the northeast and east. August was another transitional period with currents appearing to weaken and turning onshore. Movements of surface waters appeared directly related to prevailing winds.

NOAA Technical Report NMFS SSRF-735. Dahlberg, Michael L. **"History of the fishery and summary statistics of the sockeye salmon, *Oncorhynchus nerka*, runs to the Chignik Lakes, Alaska, 1888-1966."** August 1979, 16 p. For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C 20402

Abstract

Annual runs of sockeye salmon to the Chignik Lakes, Alaska, decreased from an average of 1.9 million during the period 1922-39 to an average of 0.9 million from 1949 to 1966. To study the dynamics of the runs' historic catch, escapement and age

The Fisheries of Australia

Australia, with its 20,000 km coastline, possesses considerable fisheries resources which are reviewed in **"Fisheries of Australia"** by Peter Pownall and published by Fishing News Books Ltd., 1 Long Garden Walk, Farnham, Surrey, England. The author, long-time editor of *Australian Fisheries*, has produced probably the most comprehensive survey of Australia's fisheries, from Captain Cook's 1770 voyage of discovery, to the 20th century.

Though not a detailed technical text, the book does delve deeply into both past and present developments in Australia's fisheries. Chapters treat rock lobsters, prawns, demersal fish, pelagic fish, reef fish, scallops, abalone, pearls, whales, freshwater fish, and aquaculture. Others examine fishing vessels and gear, fishing methods, fish marketing, research, fishery administration and management, sport fishing, and fishing in

neighboring nations. The book is indexed and a list of volumes for further reading is included. All in all, it's a good close look at Australia's fisheries. The volume is available from the publisher for £7.24

Tunas and Billfishes

Publication of **"Tuna and Billfish, Fish Without a Country"** by J. Joseph, W. Klawe, and P. Murphy has been announced by the Inter-American Tropical Tuna Commission, P.O. Box 1529, La Jolla, CA 92093. Authors Joseph and Klawe are, respectively, Director of Investigations and Senior Scientist, IATTC; Murphy is a science writer in La Jolla, Calif.

The volume is both well written, accurate, and handsomely designed and printed. It features eight full-color paintings of tunas and billfishes by George Mattson, also of La Jolla, plus about 70 other illustrations. The Foreword is by Roger Revelle.

In brief, the book discusses tuna and

billfish biology and migrations, world harvest, conservation, and management. Specific data is presented, with line art, on the names and geographic distribution of tunas and related species; all-tackle world records (from the International Game Fish Association) are listed, as is a bibliography for in-depth reading. The volume is available from the IATTC at the above address for \$7.95 postage paid.

Early Life of Fish Discussed

Publication of **"Early Life History of Marine Fish: The Egg Stage"**, by Gotthilf Hempel, has been announced by the University of Washington Press, Seattle. It is a product of the author's lectures at the University of Washington in the spring of 1975 and describes briefly the early life history of fish and outlines objectives for future studies.

The author covers the development of egg cells and details variations in fecundity and egg size in marine fish. The incubation period of demersal and

structure data were compiled by spawning stock and brood year. The history of fishing and management of the runs from inception of the fishery until 1966 is described. The high seas and coastal distributions of Chignik sockeye salmon indicated significant interception by the fishery in only one area other than the Chignik Bay and Chignik Lagoon; the fishery at Cape Igvak started in the mid-1960's. Results of the study were used to construct parent-progeny relationships that formed the basis for a management strategy to restore the runs to their former level of abundance.

NOAA Technical Report NMFS SSRF-736. Wahle, Roy J., and Robert Z. Smith. "A historical and descriptive account of Pacific coast anadromous salmonid rearing facilities and a summary of their releases by region, 1960-76." September 1979. 40 p. For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

Abstract

A brief history of the artificial culture of

salmonid fishes in North America is presented. The report contains a Pacific coast section followed by sections for each of six major regions on the coast: Alaska, British Columbia, Washington coastal and Puget Sound, Columbia Basin, Oregon coastal, and California. The Columbia Basin is further divided into three subregions. The Pacific coast section provides information on current production of anadromous salmon (*Oncorhynchus* spp.) and trout (*Salmo* spp.). Each regional or subregional section contains a short history and background, a map with current rearing facilities located, a general hatchery information table, and migrant release tables summarized by species. In the final portion of the report, changes in numbers of facilities, species reared, rearing techniques, and size at time of release are discussed.

NOAA Technical Report NMFS SSRF-737. Perrin, W. F., W. E. Evans, and D. B. Holts. "Movements of pelagic dolphins (*Stenella* spp.) in the eastern tropical Pacific as indicated by results of tagging, with summary of tagging operations, 1969-76." Sep-

tember 1979. 14 p. For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

Abstract

Through 1976, 3,712 small cetaceans were tagged in the course of research cruises operating out of the NMFS Southwest Fisheries Center. These included 2,996 spotted dolphins, *Stenella attenuata*; 324 spinner dolphins, *S. longirostris*; 193 common dolphins, *Delphinus delphis*; and 113 bottlenose dolphins, *Tursiops truncatus*. Others tagged in small numbers included Pacific white-sided dolphins, *Lagenorhynchus obliquidens*; striped dolphins, *Stenella coeruleoalba*; and a short-finned pilot whale, *Globicephala macrorhynchus*. Several types of tags were used. Tags have been recovered from 97 spotted dolphins and 7 spinner dolphins. Time at liberty ranged from less than 2 hours to more than 4 years. Net distance traveled ranged from 7 to 582 n.mi. Average short-term movement in the spotted dolphin is 30-50 n.mi./day; range is 200-300 n.mi. in diameter, and seasonal onshore-offshore migrations may exist.

pelagic eggs is considered mainly in relation to ecological aspects.

The paperbound 70-page volume is available from the University of Washington Press, Seattle, WA 98195 for \$7.50.

Japan's Fish Import Rules

The Southwest Region, National Marine Fisheries Service, has compiled a report entitled "A Survey of Japan's Import Regulations on Fish and Shellfish Products." This 78-page report provides information on import inspection procedures, government regulations on food sanitation and additives, government requirements for labeling, and industry quality standards by species.

A free copy of the report, in limited quantities, can be obtained upon request in writing to the author: Sunee C. Sonu, Southwest Region, National Marine Fisheries Service, NOAA, 300 South Ferry Street, Terminal Island, CA 90731.

The Atlantic Salmon Symposium Proceedings

"Atlantic Salmon: Its Future," edited by A E J Went and published by Fishing News Books Ltd, 1 Long Garden Walk, Farnham, Surrey, England, presents the papers and discussions of the second International Atlantic Salmon Symposium held in Edinburgh, Scotland, September 1978, under the sponsorship of the International Atlantic Salmon Foundation and the Atlantic Salmon Research Trust.

The objective of the symposium was to discuss the apparent bleak prospects for the species and to consider the role which the species could and should play in the future. The volume provides a wealth of data, beginning with a general review of the state of the Atlantic salmon fisheries of the north Atlantic, with papers stressing the many international aspects involved and the complications of the present legal systems.

A notable part of the book gives individual review of the ecological factors affecting stocks and their management

in Scotland, England, Wales, Eire, Canada, France, and New England. Practical methods of improving the situation are dealt with in papers on ocean ranching, genetic variation in production traits between strains, management in floating sea pens, and the role of genetics in management.

The volume winds up with an extensive look at the future and stresses the need for new harvesting policies. Chapters also discuss Atlantic salmon harvests by commercial and sport fishermen—and poachers. The 272-page book is available from the publisher for £10.50 and is a valuable addition to the Atlantic salmon literature.

A Special Atlantic Halocyprid Ostracod Issue

Volume 8, Numbers 1-2 (1979) of *Progress in Oceanography* has been devoted to a lengthy report entitled "Studies on Atlantic halocyprid ostracods: Their vertical distributions and community structure in the central gyre

region along latitude 30°N from off Africa to Bermuda” by Martin V. Angel, a coeditor of the journal.

In comparing the vertical ranges and abundances in the surface 2,000 m of the water column, the author shows how the planktonic ostracods change clinally between two widely different North Atlantic positions. The order of species abundances were very different at the two localities and analysis of size spectra showed the trend towards more larger organisms with increasing depth was reversed below 800 m.

Most data covers the detailed information on the species sampled (over 60), and the interpretation of the data gives insights into the community structure, the size frequency distributions, the reproductive strategies of the species, and the patterns and possible reasons for their vertical migrations.

The 124-page softbound issue is available for \$27.50 from Pergamon Press, Fairview Park, Elmsford, NY 10523.

A Review of Fish Behavior

“**Diversity and Adaptation in Fish Behavior**”, by Miles H. A. Keenleyside, published by Springer-Verlag, New York, outlines fish behavior and its influence on their adaptation to a variety of marine and freshwater habitats. Chapters examine locomotion, feeding behavior, anti-predator behavior, selection and preparation of a spawning site, breeding behavior, parental behavior, and social organization of fishes. Numerous references are cited and the volume has a subject and systematic index.

Though not an exhaustive review, the volume does provide a sampling of pertinent and relatively recent (1978) literature. Examples have been selected to illustrate the range and variety of behavioral adaptations that enable fishes to cope with the problems of food, predation, and reproduction. The 208-page hardbound volume, eleventh in the series “Zoophysiology and Ecology,” costs \$37.90 and is available from the publisher at 44 Hartz Way, Secaucus, NJ 07094.

Bering Sea Shellfish and Fish Resources Charted

In May through August 1979, an extensive, demersal crab-groundfish resource survey was conducted in the eastern Bering Sea by the Northwest and Alaska Fisheries Center. The results of this survey are available as data sheets representing the catch in pounds per hour trawled. These sheets are scaled to overlay National Ocean Survey Chart No. 16006.

The data sheets provide a comprehensive picture of the distribution and relative abundance of each resource within the area 54-61° N latitude, 156-176° W longitude. Data is available on the following fish: Total groundfish, walleye pollock, Pacific cod, yellowfin sole, Pacific halibut, total flounder, and total rockfish. Shellfish charts include: Red king crab, blue king crab, Tanner crab (*C. bairdi*), Tanner crab (*C. opilio*), Korean horsehair crab, and total snails. Miscellaneous charts are for total cephalopods and pollock average lengths.

Send orders to the Bering Sea Project, Resource Assessment Division, Northwest and Alaska Fisheries Center, 2725 Montlake Boulevard East, Seattle, WA 98112.

Marine Invertebrates

“**Marine Life**”, subtitled “an illustrated encyclopedia of invertebrates in the sea” has been published by John Wiley & Sons, Inc., One Wiley Drive, Somerset, NJ 08873. Containing 1,300 photographs in full color, the volume presents a comprehensive discussion of 27 phyla with marine representatives.

Author David George is a Principal Scientific Officer in the Zoology Department of the British Museum (Natural History) where he specializes in marine worms. Coauthor Jennifer George is a Principal Lecturer in Life Sciences at the Polytechnic of central London.

An account of general morphology and ecological relationships precedes a classification into classes, orders, and families, incorporating recent views on taxonomy of the groups. The majority

of the commonly occurring families are illustrated by representative species, in color where possible, alive and in their natural environment. Photo captions include biological, behavioral and ecological notes.

The volume is intended both for students and for amateur and professional biologists. Covering such a wide area forced the authors to omit discussion of nonparasitic forms and to give little more than passing reference to larval stages. The large format volume contains 288 pages and is available from the publisher for \$39.95 plus \$1.25 postage.

World Game Fish Records Published

Publication of the 1980 edition of “**World Record Game Fishes**” has been announced by the International Game Fish Association, 3000 East Las Olas Boulevard, Fort Lauderdale, FL 33316. Completely updated, the 288-page volume contains rules for the new World Record Freshwater Fishing Contest, which marks the beginning of the first comprehensive international program for freshwater records. Rules have also been revised for the annual saltwater contest to encourage anglers to demonstrate their interest in species not currently included on the world record list.

The records listing is fleshed out with interesting articles on sportfishing and conservation, selecting a fly fishing outfit for fresh or salt water, an overview of the results of the marine game fish tag and release efforts in the Atlantic Ocean by Frank Mather, an illustrated history of the IGFA, a perspective on outriggers, how fishing lines perform under stress, plus concise but detailed data on the salmonids (salmons, trouts, charrs) and on the tunas and other marine game species. Appendices provide data on fishing knots, splicing multifilament line, saltwater sportfishing terms, marine gamefish tagging programs, and converting weights and measures. The volume will be of interest to anyone involved in marine angling.

The paperbound book is available from the IGFA for \$4.95 plus \$1.00 postage and handling.