

A Color Guide to the World's Lobsters

Another outstanding book spawned by a *Marine Fisheries Review* article is "Lobsters of the World, an Illustrated Guide" by Austin B. Williams, and with additional materials prepared by publisher Ian Dore. Williams' initial article was "Lobsters—identification, world distribution, and U.S. trade," published in issue number 2, 1986, of the MFR. The book is important because it makes widely available the series of excellent color photographs of lobster tails along with the illustrated key for identification of the lobster tails found in world trade. Combined, they greatly facilitate identification of lobsters for fishermen, fish wholesalers and purchasers, seafood inspectors, restaurateurs, and others.

In addition to Williams' fine and well illustrated article, Dore has included range maps for most species and a full-body color illustration of many of them to help facilitate identification. In addition, the original color tail photographs are reproduced in a larger format. Also, a Part 3 has been added providing supplementary information on other types of lobsters, including black and white drawings, size data, and vernacular names in many languages for species including various crayfishes, lobsterettes, rock lobsters, slipper lobsters, and langostinos. Bibliographic references are provided as well as general and scientific name indexes. An appendix provides a selective (noninclusive) list of lobsters and lobster-like species. Part 1, also added by Dore, discusses what a lobster is, the different types, their anatomy, how they are classified scientifically, commercial lobster nomenclature, warm and cold water lobster information, and describes how to use the book. Part 2 is Williams' article

and key to lobsters. When scientists identify or classify lobsters they normally work with the whole animal, while the seafood trade often deals with tails only which, alone, are much more difficult to identify; thus, this book serves a very real need and gives global coverage of the major species traded; it also lists or describes certain others that might be confused with commercial forms. Hardbound, the 186-page volume is available now from Van Nostrand Reinhold, 7625 Empire Dr., Florence, KY 41042 at US\$80.00.

An Illustrated Guide to the Tunas and Billfishes

Back in 1977 the *Marine Fisheries Review* published Witold Klawe's review "What is a Tuna?," which was both popular and widely cited. It also served as the basis for a book "Tuna and Billfish—Fish Without a Country," well illustrated with fine watercolors by marine artist George Mattson and with the text expanded by James Joseph, Witold Klawe, and Pat Murphy to present information on the species biology and life history, human commercial and recreational uses of them, and important aspects of research and management.

Now an augmented and much improved fourth edition of that book has been published by the Inter-American Tropical Tuna Commission. Considerably revised, it includes 28 full-page color plates of the various species, including 23 of Mattson's watercolors. The book is further enhanced by many other photographs, color species distribution maps, and line drawings of 61 species. Maps were prepared by Tamotsu Nakata and other art was by Kenneth S. Raymond, Henry M. Orr,

Makoto Miyake, Sigeiti Hayashi, Harry and Christina Bremner, Joan Cooley, and Andrzej Lojszczyk. The cover photograph is a striking underwater color photograph of yellowfin tuna by NMFS scientist Bill High. The publication will likely be appreciated by anyone, professional or not, who has an interest in these species. The 69-page paperbound book also includes world records of the species and a bibliography, and it is available from "Tuna and Billfish Book," P.O. Box 271, La Jolla, CA 92038 for \$15.75 postpaid.

Northeast Pacific, Bering Sea Fishes: Life History Notes

"Species Synopses: Life Histories of Selected Fish and Shellfish of the Northeast Pacific and Bering Sea", edited by Norman J. Wilimovsky, Lewis S. Incze, and S. J. Westrheim, has been published by the Washington Sea Grant Program and Fisheries Research Institute, University of Washington, 3716 Brooklyn Ave. N.E., Seattle, WA 98105. It presents a fine series of refereed review papers on life history aspects of several commercially important marine species which should be useful for fishery biologists and managers, oceanographers, and those doing related modelling work.

Species reviewed include the northern pink shrimp, *Pandalus borealis*; Pacific sand lance, *Ammodytes hexapterus*; Pacific herring, *Clupea harengus pallasii*; walleye pollock, *Theragra chalcogramma* (two articles discuss this species, separately, in the eastern Bering Sea and the Gulf of Alaska); market squid, *Loligo opalescens*; and Pacific halibut, *Hippoglossus stenolepis*. Information and literature is current up to about 1986-87 and includes some gray literature that may be difficult to find but still important from various NMFS research cruises. Paperbound, the 111-page volume, is WSG 88-2, is available from the publisher at US\$10.00.

A Guide to Frozen Fish and Products

Publication of "**The New Frozen Seafood Handbook**" by Ian Dore has been announced by Osprey Books, now an imprint of Van Nostrand Reinhold, 7625 Empire Drive, Florence, KY 41042. Subtitled "A complete reference for the seafood business," it is an expanded edition of Dore's first book, "Frozen seafood—the buyer's handbook," which has been completely revised and updated with about twice the information.

It is presented in encyclopedia form, alphabetically, from Abalone, Additives, and Aden tails to Yellowtail, Yields (of fish flesh), and Zoos and aquaria. Concise and authoritative descriptions of the terms are provided for aspects of the frozen fisheries trade, including descriptions of hundreds of fish and shellfish items, information on how to recognize and identify various products and to avoid substitu-

tions, data on names and naming and related rules and approved market and common names, methods of determining and maintaining fish quality, problems to watch for with certain types of products. Also included is a 33-page section on scientific, common, and market names of commercially traded fishes.

Information on "economic fraud in the seafood business," is presented, along with health and nutrition data, delivery terms, defrosting methods, products available from the various species, FDA inspection and rejection of imported foodstuffs and rejection insurance, recalls, and much more. A reference section lists many other useful books and periodicals, newsletters relating to fisheries and the fish trade. Indexed, the 360-page hardbound volume costs \$69.00, and would be a handy reference for those involved in the fish trade from processing and distributing to marketing or the restaurant trade.

or information might be improved in the future, and he calls for the treatment of stock assessment as a well-integrated part of the management process. With author and subject indexes, the 422-page hardbound volume costs \$49.95, and it remains a fine text/reference on the topic.

Some Questions and Answers on Sharks

"**Sharks in Question**," by Victor G. Springer and Joy P. Gold, has been published by the Smithsonian Institution Press, 470 L'Enfant Plaza, Suite 7100, Washington, DC 20560. Subtitled "The Smithsonian answer book," it provides authoritative data on the biology and lives of many important species of sharks. Springer is a curator in the National Museum of Natural History's Division of Fisheries and Gold is an information specialist in the NMNH Department of Vertebrate Zoology, and they have combined to produce a handy reference on the many questions asked by the public about sharks, drawing on recent scientific research.

The book is divided into five parts, with Part I presenting a broad array of "shark facts," including how and why they swim, whether they sleep, their color, speed, sounds, size, lifespan, reproduction, prey detection, intelligence, food and feeding, and much more. Part 2 briefly reviews the "supersharks," the great white, whale shark, hammerheads, bull shark, blue shark, shortfin mako, basking shark, thresher shark, tiger shark, and the blacktip, gray, and whitetip sharks.

Part 3 is devoted to shark attacks—how serious the threat is, which species are dangerous, where and how attacks occur, and how to avoid or repel attacks. Part 4 discusses the utilization of sharks, how to become a shark specialist, and what more we can learn about them, while Part 5 provides appended material on shark classification, common and scientific names, and lengths of selected sharks. Indexed, the 187-page paperbound volume is a useful reference on shark

Progress and Practices in Fisheries Management

Publication of a considerably revised and augmented second edition of "**Fish Population Dynamics**," edited by J. A. Gulland, has been announced by John Wiley & Sons, Inc., 605 Third Ave., New York, NY 10158. This second edition is subtitled, "The implications for management."

Included is a new and good introductory chapter by T. D. Smith, "Stock assessment methods: The first fifty years," which, based primarily on English language literature, analyzes important developments in assessing the abundance of fish stocks. Additional chapters review the relationship between the type of stock assessment and the data required for it, the collection of fisheries assessment data, length-based methods of fish stock assessment, and some fisheries management implications of recruitment variability.

Subsequent chapters discuss the fisheries, stocks and recruitment, and

management of particular species or species assemblages: Pacific salmon, North Atlantic cod, tropical penaeid prawns, marine mammals, small shoaling pelagic fish stocks, and multispecies fisheries of the Irish Sea. D. Pauly then discusses fisheries research and the demersal fisheries of Southeast Asia, K. J. Sainsbury reviews the ecological basis of multispecies fisheries and management of a demersal fishery in tropical Australia, and editor Gulland concludes with an overview of the problems of population dynamics and contemporary fishery management.

Since the first edition of this book appeared about 10 years ago, there have been a number of changes in the field, both politically and scientifically. The new edition reflects such changes, emphasizing practical applications and presenting the experiences of management of the various fisheries. In the last chapter, Gulland notes the degree to which stock assessment scientists can and have provided information to managers, how such advice

lore that can help answer most of the questions a general audience would have. Cost is \$39.95 (cloth) and \$15.95 (paper).

Mollusks, Crustaceans and Their Management

Publication of "**Marine Invertebrate Fisheries, Their Assessment & Management**" has been announced by John Wiley & Sons, Inc., 605 Third Ave., New York, NY 10158. The editor is John F. Caddy, a senior fishery resource officer with the Food and Agriculture Organization of the United Nations in Rome. The book presents case studies and review chapters in two parts, for crustaceans and for mollusks, coelenterates, and echinoderms, with altogether 31 contributions by more than 40 authorities in their respective fields.

In sum, the volume presents the current practices in the assessment and management of the various natural or "wild" stocks of marine invertebrates. In addition, methods of assessing and managing various finfish stocks are examined for their application to certain invertebrate resources.

The first set of case studies relate to shrimps, prawns, and krill—evaluating potential resources and ecological concerns with Antarctic krill; management of brown shrimp, *Crangon crangon*, in Dutch coastal waters; northern shrimp, *Pandalus borealis*, fisheries in the northwest Atlantic; research and management of U.S. Gulf penaeid shrimp fisheries by Edward F. Klima; and resource assessment and management perspectives of the penaeid prawn fisheries of Western Australia.

Additional case studies are given for lobsters and crabs—the southwestern Nova Scotia-Bay of Fundy lobster fishery, Western Australia rock lobster fishery, modeling the Norway lobster component of the Irish Sea multi-species fishery, managing the cyclic U.S. Pacific Coast Dungeness crab fishery by Richard D. Methot, the Florida stone crab fishery (in which only claws are harvested), British Isles

crab fisheries and management, and the Northwest Atlantic snow crab fisheries. Special reviews are presented on coastal penaeid shrimp fisheries management, performance and selectivity of trap fisheries for crustaceans, population biology of decapods, and effort limitation in the Australian rock lobster fisheries.

For mollusks and other invertebrates, case studies are given for the California abalone by Mia Tegner; the Caribbean's queen conch; the impacts of the precious shell harvest and trade on conservation of rare or fragile resources; traditional management practices in the Chesapeake Bay oyster fishery; mechanized shellfish harvesting and its management in the offshore clam fishery of the eastern United States by Steven A. Murawski and Fredric M. Serchuk; hydraulic dredging of clam resources in the Adriatic Sea; Mutsu Bay scallop culture, stock enhancement, and resource management; giant clam fisheries and stock enhancement; management of the Saharan trawl fishery for cephalopods; population assessment, management, and fishery forecasting for *Todarodes pacificus*; Pacific and Mediterranean precious coral fisheries, and world echinoderm fisheries. Review chapters cover population dynamics and assessment of scallops, especially the sea scallop, *Placopecten magellanicus*; recent developments in research and management of wild stocks of bivalves and gastropods, and forecasting yield and abundance of exploited invertebrates by Michael J. Fogarty.

Indexed, the 752-page hardbound volume presents a great deal of well documented important information and sound reviews that would be useful to a broad audience, including invertebrate culturists, managers, and scientists. Cost is \$79.95.

Arrangements for Local Fisheries Management

"**Co-operative Management of Local Fisheries**," subtitled "New Directions for Improved Management & Community Development," edited by

Evelyn Pinkerton, has been published by the University of British Columbia Press, #303 — 6344 Memorial Road, Vancouver, B.C. V6T 1W5 Canada. It may be the first book to draw together information and experiences on the processes in Canada and the United States in which the management of fisheries resources is participated in by local groups or communities—often Native American.

Here, various authors, representing such communities as anthropologists, environmental planners, biologists, economists, fishery managers, and various tribal and government leaders, examine from their different perspectives the process of arriving at co-management of such resources as salmon, marine mammals, lobsters, clams, and other fishes. Since the need for many of these arrangements seem constitutionally mandated, this book will be of interest to a wide variety of persons in the fisheries field who are or will be involved in working with or toward such co-management arrangements. The various contributors examine the successes and setbacks under such arrangements and provide various guidelines for viable cooperative resource management.

Part one describes Indian-state co-management of fisheries in the U.S. Pacific Northwest, and specific topics include the evolution of tribal involvement in the region's fisheries management (primarily Washington), social learning in the redesign of fisheries management, and negotiating salmon management on the Klamath River.

Part 2 deals with nonindigenous commercial fishermen creating regional and local co-management programs—specifically examining lobster management in southwest Nova Scotia and the sharing of a clam revitalization project in New Jersey (the "spawner sanctuary" program), and Alaska's regional aquaculture associations and co-management of salmon in Southeast Alaska.

Part 3 addresses the evolving aboriginal management regimes under new state regulation—the Alaska Eskimo Whaling Commission's work, prospects for co-management of marine

mammals in Alaska, and the development of state/tribal co-management of Wisconsin fisheries. Part 4 looks at provisions in comprehensive claims for Native self-management, while Part 5 reviews tradition and innovation among Native fishermen in coastal British Columbia. A final chapter provides a multidisciplinary assessment of the future of fisheries co-management. As noted in the last chapter, co-management has been a difficult process with a number of problems yet to be overcome. This volume does a good job in outlining many of the problems, techniques, and successes used in a variety of fisheries co-management arrangements. The 299-page volume is indexed and costs \$36.95 (cloth) and \$21.95 (paper.).

Estuaries, Resources and Their Functions

Publication of "Estuarine Ecology" by John W. Day, Jr., Charles A. S. Hall, W. Michael Kemp, and Alejandro Yanez-Arancibia has been announced by John Wiley & Sons, Inc., 605 Third Avenue, New York, NY 10158. Day is with the Center for Wetlands Resources, Louisiana State University, Baton Rouge; Hall is with the State University of New York's College of Environmental Science and Forestry, Syracuse; Kemp is with the Horn Point Environmental Laboratories, University of Maryland, Cambridge; and Yanez-Arancibia is with the Instituto de Ciencias del Mar y Limnología, Universidad Nacional Autónoma de México, Mexico City.

The book is divided into six parts, with the first reviewing estuaries and estuarine ecology on simulated "trips" through three different estuaries (Massachusetts' North River, Louisiana's Barataria Bay, and Mexico's Laguna de Terminos), wherein readers are introduced to pertinent introductory material, basic definitions, theory, and selected issues. The second section discusses various physical considerations (estuarine geomorphology and chemistry and physical oceanography). Section three reviews

estuarine plants (phytoplankton, salt marshes and mangrove swamps, and seagrasses) and primary productivity. Sections four and five, respectively, deal with reduced carbon and its fate in the estuary and the estuarine consumers—zooplankton, the estuarine bottom and benthic subsystem, the nekton, and the role of wildlife (the higher vertebrates—mammals, birds, reptiles, and amphibians) in estuarine ecosystems.

Finally, Section six, "humans and estuaries," devotes one chapter to estuarine fisheries—their variation, harvest, and management; and another to the human impact on estuaries. The "meat" of the book, of course, is in the central sections, where the authors review and discuss the estuarine primary producers, microbial ecology and organic detritus, and the estuarine consumers, following the flow of organic matter from production by plants, to processing and cycling by microbes, and onward through the consumer levels.

Information is provided on rates, patterns, and factors controlling primary production, the role of detritus in ecosystems, and on estuarine consumers—the zooplankton, benthos, nekton, and vertebrates. There are a few minor typographical errors (i.e., the caption for Figure 12.1 refers to trawl, "pursp" seine, and "long time" fishing gear), but overall this will be a fine textbook on estuarine ecology. Indexed, each chapter also contains many useful and rather recent citations to the literature. Hardbound, the 558-page volume costs \$54.95.

HOW TO MANAGE A FISH FARM

Publication of the AVI book "Aquaculture Management" by James W. Meade has been announced by Van Nostrand Reinhold, 115 Fifth Avenue, New York, NY 10003. Compared with some other nations, the author notes that aquaculture opportunities in the United States still have great potential. Not a fish-culture manual, this new book is actually a handbook for the manager of a fish

farm that gives guidance for the physical, biological, and human resources utilized by or impinging upon fish farms. Indeed, it includes an interesting chapter on business, government, and environmental ethics, discussing, among other items, whether fish have rights. In addition, professionalism and legislated ethics are reviewed for public domain resource managers.

The book is divided into two basic parts, with part one providing an overview of such topics as the principles of fresh and salt water fish culture systems, principles of culture systems management, approaches to using and managing human resources, aspects of marketing, fish life cycles and production strategies, water and health management, and ethics.

Part two then delves into quantitative approaches, such as production economics, necessary records for managerial analyses, production system limits, and production capacity assessment. Other chapters review decision-making tools and their use, and computer assisted decision support systems. Appendices provide specialized information on attributes and expectations for aquaculture system managers, suggested steps for learning to understand or "read" people, examples of enterprise budgets, cash flow, and credit repayment schedules; life-cycle costing, a sample calculation to determine how many fish can be reared in a tank getting 5 gallons per minute of water, and sample problems on production capacity assessment (PCA).

The author is section leader for fish culture and bioengineering research at the FWS National Fishery Research and Development Laboratory in Wellsboro, Penn. The book is a good, up-to-date handbook with sound information on business and people management, and it covers problems ranging from site selection through planning, production, water quality management, worker relations, aquatic health management, marketing, and much more. In addition, many selected references are listed for each chapter to guide managers to more specific information. Indexed, the 175 page hardbound book is sold for \$49.95.

On the Development of Small-scale Fisheries

Publication of "**Deep Water, Development and Change in Pacific Village Fisheries**" by Margaret Critchlow Rodman has been announced by Westview Press, 5500 Central Avenue, Boulder, CO 80301. The volume is part of the Press' Development, Conflict, and Social Change Series, and it presents the results and analyses of a 15-year anthropological case study of general development issues from the point of view of both canoe fishermen and development workers in the Vanuatu Islands of the South Pacific.

Here, the author offers a case study of a fisheries development program of moderate, though not complete, success, and she describes how various Vanuatuans view it as well. She tells how the Vanuatuans are responding in cultural, as well as political and economic terms to the commercialization of their craft of small-scale fishing, and how, with their traditional self-reliance and independence, the islanders are coping with the change to more of a capitalist economy. The volume thus helps readers see the various development issues through the islanders' eyes. Beyond the small-scale fisheries, however, such large fishing nations as Russia and Japan are vying for entry or influence into the region's fisheries. Change is coming and the volume helps to highlight various important issues and problems for the small island communities and for the aid donors and development workers as well. Paperbound, the 173-page volume costs \$18.95.

Rivers, Resources, and Channelization Projects

Rivers have been modified—straightened, diked, dredged, etc.—for many decades, and controversy

over the processes has probably existed almost as long. Certainly there are a wide range of environmental impacts associated with it, particularly on the fisheries. Dealing with these issues is "**Channelized Rivers, Perspectives for Environmental Management**," by Andrew Brookes, published by John Wiley & Sons, Inc., 605 Third Avenue, New York, NY 10158. The author is a Reading, U.K., environmental consultant and he utilizes case studies from both U.S. and U.K. projects to illustrate his points.

Rivers have been channelized for many reasons, including flood control, land drainage, navigation, erosion control or prevention, and the like, but rarely, it seems, for fisheries enhancement. Here, the author reviews information from a variety of disciplines to illustrate various factors involved in the stability of natural river channels and how one might anticipate the consequences of a decision to modify a channel. Recovery of aquatic populations in modified channels often depends upon adjustments or alterations of the channel morphology, he notes, and he also discusses how geomorphology is used to develop alternative designs and strategies to minimize the impact on natural resources.

The author provides an overview of the needs and problems in channelization, and the methods and limitations of conventional engineering design. Legislation has altered some approaches to channelization and these are discussed in chapter 3.

Physical and biological impacts of channelization are covered in the third section, including data on impacts on fish and fisheries from studies in various nations, and the effects on riparian and wetland ecosystems, etc. Another chapter relates consequences downstream and well beyond the bounds of the channelization project. Another section lists many recommendations regarding revised construction

procedures, as well as techniques for mitigation, enhancement, and restoration of aquatic ecosystems. A "post-script and prospects" section describes continued pressures for floodplain development, the increasing roles for environmental scientists, impact assessment, management measures, etc. The book seems more oriented to the engineering profession, but environmental assessment personnel who have to deal with the consequences of channelization projects may also find it useful. Hardbound and with author, geographical and subject indexes and a lengthy list of references, the volume costs \$79.95.

Age, Growth References on Various Billfishes

NOAA Technical Memorandum NMFS-SEFC-224 by Dennis Lee is entitled "**Annotated List of Selected References on Age and Growth Studies of Istiophoridae and Xiphiidae**," and it is available from the author at the NMFS Miami Laboratory, 75 Virginia Beach Drive, Miami, FL 33149. This useful bibliography presents 83 annotated references with specific emphasis on ageing, ageing methods, growth rates, and regression and growth equation parameters that have been published on Istiophoridae and Xiphiidae. Also included is a subject index to facilitate data location.

Determination of age and growth is an integral part of life history investigations and a critical component for stock assessment of these species. This will be a handy reference for specialists, for the author has combed the billfish literature, particularly English language literature, and presented references which provide estimates of age and growth based on analyses of skeletal structures, tag release-recapture data, and size frequencies. Inference to age or derivation of various growth parameters is also included.