Fisheries Books Examine Classification, Population Dynamics, Basic Ichthyology

"Fishes of the World," by Joseph S. Nelson (xiii, 416 pp.), is a modern review of all the major fish groups at family and higher levels. Ranges of each family are given, often with maps. The number of valid genera and species for each family is also given, as are life histories and biological data. The volume contains more than 425 line drawings and has an extensive bibliography.

While largely adhering to the classical evolutionary philosophy of classification, the author also explains alternate classification schemes. Nelson is an associate professor of zoology at the University of Alberta. The volume is published by John Wiley & Sons, Inc., 605 Third Avenue, NewYork, NY 10016, and costs $24.00.

"Ichthyology," second edition (xv, 506 pp.), by Karl F. Lagler, John E. Bardach, Robert R. Miller, and Dora R. May Passino, incorporates many new advances since the first edition was published in 1962. In its 14 chapters, the book introduces the diversity of fishes and shows the position and content of the major groups, their classification, relationships and basic structure, with emphasis on living fishes. Also discussed is the comparative anatomy and physiology of the classical ten body systems and their integration into the whole fish.

Principles of genetics, evolution, systematics, ecology, and ichthyogeography are also examined. The book encompasses the broad principles of ichthyology and includes specific references with each chapter for further reading. The authors also discuss such current issues as the effects of pollution on fish and fisheries management. Also published by John Wiley & Sons, the volume costs $18.95.

"Fish Population Dynamics," edited by John Gulland, discusses both theoretical methods and practical experience in a wide range of fisheries. It incorporates 14 papers by internationally recognized authorities.

The book describes how the dynamics of fish populations can be analyzed in terms of the factors affecting their rates of growth, mortality, and reproduction, with particular emphasis on the effects of fishing. Chapters on individual species or families of fish (Pacific salmon, elasmobranchs, North Atlantic cod, North Sea plaice, clupeoids, tuna, and whales) describe how the methods have been applied to some of the major fisheries of the world.

Other chapters discuss the raw material of population dynamics, historical developments, theoretical methods and practical difficulties of tagging, analysis of data and development models, fishing effort, problems of stock and recruitment, and fish communities and aquatic ecosystems. Also published by John Wiley & Sons, the book costs $27.00.

FISH POPULATION ANALYSIS EXPLAINED

Sea Grant, Virginia Polytechnic Institute and State University, has published **"Analysis of Exploited Fish Populations"** by Robert T. Lackey. This 172-page publication summarizes the basic concepts and approaches to analyzing fish populations, particularly those under exploitation. Chapters deal with stock identification, estimating abundance, mortality concepts and estimation, growth models and determination, recruitment, predicting yield and yield models, systems analysis, and decision analysis.

Methods for evaluating the state of a population and techniques which lead to management decisions are presented. "Analysis of Exploited Fish Populations" is intended to be a bridge between introductory fisheries texts and mathematically oriented population dynamics texts. Mathematical models and derivations have been kept to a minimum while explaining the various analytical techniques. Copies may be obtained for $3.00 from Sea Grant, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061.

Japanese Aquatic Laboratories Listed

The Council of Japanese National Marine and Inland Water Biological Stations has published a directory of the 22 aquatic biology labs affiliated with national universities. The directory lists the principal scientists, laboratory facilities, and the research programs of each lab. It also gives the names of the laboratory directors and the addresses and telephone numbers of these laboratories. A copy of the 44-page directory may be obtained from Professor Hideshi Kobayashi, Misaki Marine Biological Station, University of Tokyo, Misaki, Miura-shi, Kanagawaken, 238-02, Japan.

Yellow Perch Culture Risky but Feasible

Yellow perch aquaculture, a promising new food industry in the upper midwest, is the subject of a publication from the University of Wisconsin Sea Grant College Program. **"Fundamentals of Fish Farming,"** a 6-page illustrated brochure, answers 36 commonly asked questions about raising fish in indoor tanks. The questions range from "Can I raise my own fingerlings?" to "Where can I sell my fish?"

The publication concludes that it is now feasible to raise yellow perch to marketable size in tanks in just 10 months, but advises prospective fish farmers to be cautious. Perch rearing will continue to be a high risk venture, the authors caution, until there is further knowledge of fish handling techniques, fish diseases, water treatment systems, and the economics of aquaculture. Still, the UW-Madison Food Science Department scientists

succeeded in growing perch four times as fast as they grow in nature, using the technology they have developed. Economists on the project predict that there will be sufficient demand to take care of both homegrown and lake-grown perch. Free copies of the brochure are available from the U.W. Sea Grant Communications Office, 1800 University Avenue, Madison, WI 53706.

New Books Discuss Fish Farming, World Fishery Catch, Value, Products

"Farming the Edge of the Sea," (second edition), by E. S. Iversen, is a review of sea farming principles in developed nations in temperate and sub-tropical waters of the northern hemisphere. An introductory section discusses the past, present, and future of sea farming. A unit on procedures describes the use of productive areas, feeds, feeding, fertilizers, and improvement through artificial selection. Species discussed in detail include seaweeds, oysters, clams, mussels, scallops, abalones, shrimps, milkfish, yellowtail, eels, mullet, miscellaneous pondfishes, and other vertebrates and invertebrates. Finally, problems of sea farming (diseases, predation, competition, and such man-made problems as pollution and legal and security aspects) are reported.

A chapter on sea farming economics and an index are new additions. Other new material reviews laws affecting fish farming and biological aspects of certain species suitable for farming. "Farming the Edge of the Sea" is a good summary of the state of the art of fish farming in developed countries. Published by Fishing News Books, Ltd., it is available from UNIPUB, Box 433, Murray Hill Station, New York, NY 10016 at $34.00 per copy.

The 1975 fisheries statistics yearbooks of the Food and Agriculture Organization of the United Nations have also been published and are available from UNIPUB. The oft-cited two-volume compilation, **"Yearbook of Fishery Statistics, Volume 40: Catches and Landings, 1975"** and **"Volume 41: Fishery Commodities, 1975,"** provide comprehensive data on international fish catches and utilization.

FAO statistics show that the 1975 worldwide commercial harvest of fish, crustaceans, mollusks, and aquatic plants was 69.7 million metric tons, 85 percent of which came from marine waters. Pacific Ocean areas produced 51.3 percent of the marine production, Atlantic Ocean areas contributed 43.5 percent, and the Indian Ocean accounted for 5.2 percent. The United States again ranked fifth in fishery products with 4 percent of the world's production (Japan again led with 15.1 percent). About 70 percent of world fishery products were marketed fresh, frozen, cured, or canned. The remaining 30 percent were meal, oil, and miscellaneous products.

Volume 40 ($25.00) gives data on nominal catches of all fish, crustaceans, mollusks, aquatic animals, residues, and plants taken for commercial purposes from 1970 to 1975. The statistics are listed by country, continent, major fishing area, and by species group (freshwater fishes, diadromous fishes, marine fishes, crustaceans, mollusks, whales, seals and other aquatic mammals, miscellaneous aquatic animals, animal products, and invertebrates).

Volume 41 ($17.00) provides information on production and trade of fresh, chilled, frozen, dried, smoked, and salted fish, mollusks, and crustaceans. Production of each is given by country and product. The quantity and value of imports and exports are listed by country. Other commodities listed include crude and refined oils, animal feedstuffs, and meals and solubles of aquatic animal origin. Disposition of items produced from fish farming, shellfish culture, seaweed harvest, factoryships, etc. are also given.

Both volumes, printed in English, French, and Spanish, are available from UNIPUB Box 433, Murray Hill Station, New York, NY 10016.

Puget Sound Tidal Movements Charted

"Tide Prints: Surface Tidal Currents in Puget Sound," by Noel McGary and John W. Lincoln, is a detailed atlas with 32 charts showing simulated flow patterns of the Washington State Sound's surface currents at eight stages during a representative tidal day.

To get the data, a dark dye was injected into the waters of the University of Washington's Department of Oceanography's hydraulic model of Puget Sound. Then, the surface was dusted with polystyrene particles, the model's tidal mechanism was set in motion, and "aerial" photos of the effect was taken. The resulting photomosaics were then translated into the booklet's charts. The 48-page booklet was published by the Washington Sea Grant Program and is distributed by the University of Washington Press, Seattle, WA 98105. It costs $4.95.

Mid-Atlantic Continental Shelf Symposia Printed

Publication of the Special Symposia, Volume 2, Middle Atlantic Continental Shelf and the New York Bight, (viii, 441 pp.), M. Grant Gross, editor, has been announced by The American Society of Limnology and Oceanography, Inc. The symposium considered the environmental quality of the middle Atlantic continental shelf and New York Bight and assessed man's impact on this continental shelf ecosystem.

The volume is divided into nine sections: overview, physical processes, geological processes, waste sources and effects, the ecosystem and productivity, fish and fisheries, benthic processes, shellfish and fisheries, and public health. The volume is available (price not listed) from society treasurer A. M. Beeton, Department of Atmospheric and Oceanic Science, The University of Michigan, 2455 Hayward, Ann Arbor, MI 48109.