

lowing: 1) Form a company domiciled in Chile; 2) Comply with the requisites of Decree Law No. 2222 which state inter alia that vessels flying the Chilean flag must have 51 percent Chilean ownership and a Chilean captain and crew (the last two requirements may be waived for the same reasons "special

vessels" above are granted exemptions from flying the Chilean flag); 3) Fishing vessels over 3,600 t are exempt from customs duty while other types of vessels may be imported pursuant to a foreign investment agreement. Under special circumstances, these vessels could be relieved of value added tax and

customs duties, but are subject to all the provisions of the Foreign Investment Act (Decree Law No. 600); and 4) On-shore processing plants are not affected by maritime laws and are subject to the normal foreign investment procedures and regulations. (Source: U.S. Embassy, Santiago; IFR-80/2.)

## Publications

# New NMFS Scientific Reports Published

The publications listed below may be obtained from either the Superintendent of Documents (address given at the 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-734. High, William L., and Donald D. Worlund. "Escape of king crab, *Paralithodes camtschatica*, from derelict pots." May 1979. 11 p.

### Abstract

Loss of 10 percent per season of pots (traps) in the Alaskan fishery for the king crab, *Paralithodes camtschatica*, has raised the question of possible loss of crabs and fishes to the derelict, or lost, pots which continue to fish. We conducted a series of experiments during 1974 and 1975 in which tagged king crab were placed in several types of pots and returned to the bottom (soaked) for periods of 1-16 days. As controls, we released some tagged king crab in Chiniak Bay, Kodiak Island, Alaska. Tagged crab missing from the pots at time of recovery were credited with escape.

The experiments demonstrated that 92 percent of undersize and 80 percent of legal-size king crab readily escaped the derelict pots. Mortality among crab held in pots for various experiments ranged up to 12

percent. Crab that escaped within 1-4 days were recovered by commercial fishermen at about the same rate as those released in Chiniak Bay near the experiment site. However, those released after a 10- to 16-day confinement were returned at a much lower rate. Some commercially valuable fishes—such as Pacific halibut, *Hippoglossus stenolepis*—were also caught in the experimental pots.

NOAA Technical Report NMFS SSRF-738. Reid, R. N., A. B. Frame, and A. F. Draxler. "Environmental baselines in Long Island Sound, 1972-73." December 1979. 31 p. For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

### Abstract

Quasi-synoptic surveys of water column temperature, salinity, nutrients and dissolved oxygen, sediment grain sizes and organic content, and benthic macrofauna were conducted throughout Long Island Sound in July-August 1972 and April and September 1973. Temperatures were fairly uniform both vertically and horizontally except for some vertical stratification in July-August 1972. Salinities increased gradually from east to west, while depth-related differences were minor. Concentrations of all nutrients measured indicated that inputs at the western end dominated nutrient distributions for the Sound. Dissolved oxygen decreased from east to west and with increasing water temperature. Bottom dissolved oxygen values below 2 mg/liter were recorded at several stations in the western Sound in summer 1972. As a rule, sediments of deep waters in the central and

western Sound consisted of silts and clays, whereas sands predominated along the Long Island shoreline and in the eastern basin. Sediments organic matter reached highest values (to 10 percent) in the westernmost Sound. Three assemblages of benthic macrofauna were identified via cluster analyses of 1972 data: A bivalve (especially *Mulinia lateralis*) dominated group in muddy, deepwater regions; a shallow sandy assemblage in which the bivalves *Spisula solidissima*, *Tellina agilis*, and *Ensis directus* predominated; and a third assemblage transitional in both sediment characteristics and species composition, but with increased dominance by several polychaete species. The mud-bottom and transitional fauna underwent large decreases in numbers of species and individuals from 1972 to 1973.

NOAA Technical Report NMFS SSRF-739. Davis, Clarence W. "Bottom-water temperature trends in the Middle Atlantic Bight during spring and autumn, 1964-76." December 1979. 13 p.

### Abstract

Annual variations of bottom-water temperatures on the continental shelf between Cape Cod and Cape Hatteras were examined for the spring and autumn from 1964 to 1976. Temperatures generally were highest since 1972 during both seasons. For waters between Cape Cod and Hudson Canyon, maximum temperatures occurred in the spring of 1976 (8.3°C) and autumn of 1972 (12.8°C); between Cape Hatteras and Hudson Canyon, temperatures peaked in the spring of 1974 (9.0°C) and the autumn of 1972 (15.7°C). Minimum temperatures were in the spring of 1970 (5.1°C) and autumn of

1967 (9.7°C) and in the spring (4.6°C) and autumn (12.1°C) of 1970 in the respective areas.

Some factors that affect bottom-water temperatures, the relationship of the observed temperature variations to temperature fluctuations in other areas of the north-west Atlantic, and the effects of temperature changes on the distribution of several fish species are briefly discussed.

## Reef Fishes Reviewed for the Gulf of California

"**Reef Fishes of the Sea of Cortez**," subtitled "The Rocky-Shore Fishes of the Gulf of California," has been published by John Wiley & Sons, 605 Third Avenue, NY 10016. The authors are Donald A. Thompson, Professor and Curator of Fishes, Department of Ecology and Evolutionary Biology, The University of Arizona; Lloyd T. Findley, Professor and Curator of Fishes, Escuela de Ciencias Maritimas y Alimentarias, Instituto Tecnológico y de Estudios Superiores de Monterrey, Guaymas, Sonora, Mexico; and Alex N. Kerstitch, Research Associate, Department of Ecology and Evolutionary Biology, The University of Arizona, Tucson.

This book is the first comprehensive volume specifically dealing with the fishes of the Gulf of California. Well written, it will be understandable to amateur naturalists and will be valued by professional marine biologists and ichthyologists as well. Natural history of 271 species of reef fishes is given, along with taxonomic data and information on the identification and distribution of each species. A brief section also discusses nonresident fishes that are frequently encountered on reefs or along rocky shores.

The volume is handsomely illustrated with both color and black and white photographs, drawings, and diagrams. Species chosen for major treatment or greater coverage were selected owing to their abundance and ecological importance to the reef community.

An introductory chapter, "The reef-fish community," discusses habitats, reef-fish diversity, and reef-fish communities in the Gulf. A second

chapter, useful to amateurs, details the anatomy of a bony fish and explains taxonomic techniques. But the bulk of the book is devoted to the family and species accounts of the 271 reef fishes. Appendices, which provide a species checklist and give localities of the reef fishes illustrated, are followed by a glossary, general and specific bibliographies, and an index.

The volume is primarily based on collections and observations of reef fishes that the authors and their students and colleagues made between 1963 and 1979. Distribution of species, both inside and outside the Gulf is provided where applicable. Species accounts provide natural history data including information on habitat, depth range, feeding habits, territorial behavior, reproductive habits, physiological tolerances, etc. The 302-page volume is available from the publisher for \$34.50 plus postage.

## Marine Toxins and Other Bioactive Metabolites

Publication of "**Marine Toxins and Other Bioactive Marine Metabolites**," by Yoshiro Hashimoto, has been announced by the Japan Scientific Societies Press, Tokyo. The author is with the Laboratory of Marine Biochemistry, Faculty of Agriculture, The University of Tokyo. Translation into English was done by Shoji Konosu, Kanehisa Hashimoto, Yoshio Onoue, and Nobuhiro Fusetani.

This volume deals with toxic organic compounds derived from either marine or freshwater organisms. In addition to toxins, a large number of compounds with a wide spectrum of biological activity are also included. The toxins are divided into three categories: Those that cause food poisoning; those that are administered by a venom apparatus; and others. Special emphasis is placed on toxins responsible for food poisoning. The book also includes material on the histological, epidemiological, pharmacological, ecological, and biological aspects of the toxins.

The contents are arranged in four chapters. Chapter 1 defines marine toxins and research techniques, details

their public health significance, and examines the exploitation of marine biochemical resources and marine toxins. Chapter 2 lists marine organisms which cause food poisoning (certain freshwater and terrestrial organisms containing related toxins are also listed); chapter 3 lists marine coelenterates, echinoderms, mollusks, and fish with toxic stings or bites. Chapter 4 provides data on such other poisonous marine organisms as algae, flagellates, sponges and coelenterates, echinoderms, mollusks, nemertines, annelids and other invertebrates, and certain fishes.

The 390-page hardbound volume is available from the Business Center for Academic Societies Japan, 20-6, Mukogaoka 1-chome, Bunkyo-ku, Tokyo 113, Japan for \$46.00.

## Advances in Marine Biology Published

Volume 15 of "**Advances in Marine Biology**," edited by Sir Frederick S. Russell and Sir Maurice Yonge, has been published by Academic Press, London. The book begins with a 231-page review of the biology of the small copepod *Pseudocalanus* by C. J. Corkett and I. A. McLaren of Dalhousie University, Halifax, Nova Scotia, Canada. The second short article by Russell briefly considers the realm of "Marine biology and human affairs."

A review of recent research on the nutritional ecology of Ctenophores is provided by M. R. Reeve and M. A. Walter of the University of Miami's School of Marine and Atmospheric Science, Miami, Fla. Two reviews of pollution and plankton round out the edition. The first, by E. D. S. Corner, of The Laboratory, Marine Biological Association, Plymouth, England, deals with petroleum hydrocarbons and related compounds. The second, by A. G. Davies, also with The Laboratory in Plymouth, reviews similarly the levels of heavy metals present in the sea. The 563-page volume is available from Academic Press, Inc. (London) Ltd., 24-28 Oval Road, London, NW1 7DX England at a cost of £31.00.