

New NMFS Scientific Reports

NOAA Technical Report NMFS Circular 424. Smith, David G. **"Guide to the leptocephali (Elopiformes, Anguilliformes, and Notacanthiformes)."** July 1979. 39 p.

Abstract

Elopiform leptocephali have a large, forked caudal fin, and nonconfluent dorsal and anal fins. Anguilliform leptocephali have a small, rounded caudal fin confluent with the dorsal and anal fins and lack pelvic fins at all stages of development. In the Anguilliformes, larvae of the Macrocephenchelyidae, Myrocongridae, and the subfamily Simenchelyinae of the Synphobranchidae are unknown, and five distinctive kinds of leptocephali cannot be identified to family. Notacanthiform leptocephali are extremely elongate, have a single caudal filament rather than a true caudal fin, and have a short dorsal fin. Three kinds of notacanthiform larvae are known (*Tiluris*, *Tiluroopsis*, and *Leptocephalus giganteus*) that cannot yet be identified below the ordinal level.

NOAA Technical Report NMFS Circular 426. Bigford, Thomas E. **"Synopsis of biological data on the rock crab, *Cancer irroratus* Say."** May 1979. 26 p.

Abstract

The rock crab, *Cancer irroratus* Say, is a common member of the benthic community along the east coast of North America. The species inhabits sandy bottom areas but may occur on gravel or rocky substrates. Bottom trawls and trapping via pots frequently yields high numbers of rock crabs. A growing market may create an increased demand for this underexploited species.

Cancer irroratus typically occurs from Labrador south to Florida. Within this range the crab is distributed in specific patterns with respect to temperature, salinity, depth, substrate, and time of year. Many of these factors, plus light, pressure, and gravity, affect larval distributions.

The literature includes several papers in

general life history. Patterns of molting and growth have been studied in the laboratory and field for all of the life stages. Larval development and responses to environmental variables are also well described.

NOAA Technical Report NMFS Circular 427. Goulet, Julien R., Jr., and Elizabeth D. Haynes (editors). **"Ocean variability in the U.S. fishery conservation zone, 1976."** July 1979. 22 papers, 362 p.

NOAA Technical Report NMFS Circular 428. Kendall, Arthur W., Jr. **"Morphological comparisons of North American sea bass larvae (Pisces: Serranidae)."** August 1979. 50 p.

Abstract

Larvae of 17 of the 23 nominal genera of American serranid fishes are described. Representatives of only two of these genera have been described previously from American waters. The genera fall into four groups which closely follow subfamilial groupings based on adult characters. Larvae of the Serraninae, representing seven genera, appear to be the most generalized and are most similar to *Morone*-like percichthyid larvae. They have some larval specializations but exhibit rather direct development of adult morphology. The serranine genera can be ranked in order of increasing larval specialization as follows: *Serraniculus*, *Paralabrax*, *Centropristis*, *Diplectrum*, and *Serranus*. *Hypoplectrus* and one type of *Diplectrum*, although considered serranines on the basis of adult characters, are quite different from the other serranine larvae observed. One line of divergence from the serranines is the Anthiinae, with larvae of four genera being represented in the present collections. These larvae have variously developed strong spines on the head and in the opercular region, also the pelvic fin spine and some dorsal fin spines are strong and develop precociously. These

spines are serrated in more specialized genera. Among the anthiine genera described there is a progression of larval specialization as follows: *Plectranthias*, *Pronotogrammus*, *Anthias*, and *Hemanthias*. A third general type of serranid larvae is represented by members of the three American genera of the Epinephelinae and *Gonioplectrus*. These larvae all are similar in general appearance and specialized in having elongate, strong serrate spines—primarily the second spine of the dorsal fin and the pelvic spine. The fourth larval type is comprised of three genera whose affinities have been unclear. *Liopropoma* is generally considered by others to be a serranid of the subfamily Liopropominae, *Pseudogramma* has been placed by others in the family Pseudogrammidae, or considered to be a member of a subfamily of the Grammistidae, the family in which *Rypticus*, the third genus, is placed. Because of the similarity of their larvae and evidence from adult characters, I consider these genera to be members of the serranid subfamily Grammistinae. Larvae of these genera share some larval characters with the serranines. Their most outstanding larval feature is the development of one or two greatly elongated flexible dorsal fin spines.

NOAA Technical Report NMFS Circular 429. Yoshida, Howard O. **"Synopsis of biological data on tunas of the genus *Euthynnus*."** October 1979. 57 p.

Abstract

Biological and fisheries data on *Euthynnus affinis*, *E. alletteratus*, and *E. lineatus* from published and unpublished sources were compiled, synthesized, and summarized following the FAO species synopsis outline.

The Fishes of Washington and Alaska

"Inland Fishes of Washington," by Richard S. Wydoski and Richard R. Whitney, has been published by the University of Washington Press, Seattle, WA 98105. It is the first such book for that State readily available to the general public (paper, \$8.95; hardbound, \$17.50), and combines scientific accuracy with excellent illustrations, and a well-written text.

First, the authors describe the State's topography, geology, and major drain-

ages, emphasizing aspects which influence distributions of fish species and the major types of aquatic habitat in the state. The next section provides instruction in basic fish identification and gives a key to the families of fishes.

The authors are, respectively, with the National Fisheries Center, Kearneysville, W. VA, (formerly with the Washington Cooperative Fishery Research Unit), and professor of fisheries at the University of Washington and leader, Washington Cooperative Fishery Research Unit.

The body of the book consists of keys and life histories of the 76 species of freshwater and anadromous fishes in the state, each illustrated by a color photograph of a typical specimen. Each photograph was carefully set up and taken for accuracy and consistency. Descriptions contain capsule information on distribution, habitat, age and growth, reproduction, foods and feeding, and significance of the species. Also included is a summary of those species occurring in Oregon and Idaho which are not treated in the text.

Families represented include Petromyzontidae, Acipenseridae, Clupeidae, Salmonidae, Osmeridae, Umbridae, Esocidae, Cyprinidae, Catostomidae, Ictaluridae, Poeciliidae, Gadidae, Gasterosteidae, Percopsidae, Percichthyidae, Centrarchidae, Embiotocidae, Percidae, Cottidae, and Pleuronectidae.

The 274-page volume has an extensive bibliography and a glossary. Appendixes also provide data on state and selected world record fish, the photographic techniques used to illustrate the volume, and a checklist of Oregon and Idaho fishes not included in the text. Though its references to strictly marine species are limited, its data on anadromous and freshwater species are very useful.

Publication of "**The Freshwater Fishes of Alaska**" has also been announced by Alaska Northwest Publishing Company, 130 Second Avenue South, Edmonds, WA 98020. The 248-page paperbound 8½ × 11 inch volume was written by James E. Morrow, professor emeritus of the University of Alaska, and former chairman of the University's Department of Biological

Sciences, and a former ichthyological editor of *Copeia*. It was illustrated by Marion Dalen, a former illustrator for the Smithsonian Institution. Several years in the making, the volume includes text and illustrations for all 56 species of fish that inhabit—or enter—the freshwater rivers, lakes, and streams of Alaska. It also contains an excellent bibliography and a glossary of terms.

The introduction gives a brief run-down on classification and nomenclature of fishes, common measurements, ageing of fishes, and a brief key to the families treated: Petromyzontidae, Acipenseridae, Clupeidae, Salmonidae (separate chapters for Coregoninae, Salmoninae, and Thymallinae), Osmeridae, Umbridae, Esocidae, Cyprinidae, Catostomidae, Percopsidae, Gadidae, Gasterosteidae, Embiotocidae, Cottidae, and Pleuronectidae. Each chapter begins with a key to the Alaskan species in the particular family, followed by data on distinctive characters (description), range and abundance, habits (biology/life history) and the species' "importance to man."

Numerous line drawings show each species and map its range. These are supplemented by 65 color photographs, and 17 color and 13 black and white illustrations. Three other series of photographs (b&w) illustrate breeding behavior of the Arctic charr, northern pike, and fourhorn sculpin. The book will be useful to anyone interested in the freshwater and anadromous fishes of Alaska. It is available from the publisher for \$24.95 plus \$0.75 for postage and handling.

Farming Mussels in North America

"**Mussel Culture and Harvest: A North American Perspective**," edited by Richard A. Lutz, has been published by Elsevier Scientific Publishing Company, P.O. Box 211, Amsterdam, The Netherlands, and 52, Vanderbilt Ave., New York, NY 10017. It is Volume 7 in the publisher's "Developments in Aquaculture and Fisheries Science" series.

The volume introduces the feasibility of mussel culture in North America, lists recent research efforts and tells the advantages of a cultured mussel in Chapter 1. Chapter 2 provides a historical review of U.S. mussel culture and harvest while the third chapter reviews natural mussel stocks: Their growth, recruitment, and harvest potential. Chapter 4 reviews European mussel culture technology (i.e., bouchot, bottom, and raft and longline culture) and their adaptability to North American waters.

In Chapters 5 and 6, researchers provide a perspective on U.S. east coast and west coast mussel culture, respectively. Succeeding chapters discuss mussel culture in heated effluents, pearl incidence in mussels, accumulation of algal biotoxins in mussels, storage and processing of mussels, evolution of a commercial mussel culture operation, and discusses some economics of mussel culture and harvesting.

The authors of each chapter are experts in their field and the volume will be valuable to anyone interested in mussel culture. The 350-page book costs \$65.75 and is available from the publisher.

Alaskan Seafood Business Profiled

JAI Press, P.O. Box 1678, Greenwich, CN 06830, has announced publication of "**Pioneering a modern small business: Wakefield Seafoods and the Alaskan frontier**," by Mansel Blackford, as the sixth volume in its series titled Industrial Development and the Social Fabric.

Chapters discuss the company's formative years (1945-52), the years of its expansion (1953-63) in the king crab fishery and processing, and the years of decision (1964-68). Another chapter explores "The company in politics" while the final chapter concludes that the company typifies the evolution of other small businesses that succeed. The scholarly volume is well written and contains extensive footnotes and a bibliography. It is available from the publisher for \$24.50.