



# RECENT FISHERY PUBLICATIONS

Recent publications of interest to the commercial fishing industry are listed below.

## FISH AND WILDLIFE SERVICE PUBLICATIONS

THESE PROCESSED PUBLICATIONS ARE AVAILABLE FREE FROM THE DIVISION OF INFORMATION, U. S. FISH AND WILDLIFE SERVICE, WASHINGTON 25, D. C. TYPES OF PUBLICATIONS ARE DESIGNATED AS FOLLOWS:

- CFS - CURRENT FISHERY STATISTICS OF THE UNITED STATES AND ALASKA.  
 FL - FISHERY LEAFLETS.  
 SEP.- SEPARATES (REPRINTS) FROM COMMERCIAL FISHERIES REVIEW.

Number	Title
CFS-909	- Fish Meal and Oil, July 1953, 2 p.
CFS-910	- Florida Landings, June 1953, 6 p.
CFS-911	- Texas Landings, July 1953, 3 p.
CFS-913	- Gulf Fisheries, 1951 Annual Summary, 9 p.
CFS-914	- South Atlantic Fisheries, 1951 Annual Summary, 8 p.
CFS-916	- Mississippi Landings, July 1953, 2 p.

Number	Title
CFS-918	- New Jersey Landings, July 1953, 2 p.
CFS-919	- Maine Landings, July 1953, 4 p.
FL -405	- Salmon Cannery Waste For Mink Feed, 31 p.
FL -412	- Menhaden Industry—Past and Present, 17 p.
Sep. No. 357	- North Pacific Albacore Tuna Exploration, 1952.

THE FOLLOWING SERVICE PUBLICATIONS ARE FOR SALE AND ARE AVAILABLE ONLY FROM THE SUPERINTENDENT OF DOCUMENTS, WASHINGTON 25, D. C.

"Changes in the Commercial Fishery on the Alabama Portion of the Tennessee River," by Paul Bryan and Lawrence F. Miller, article, pp. 75-77. (From The Progressive Fish Culturist, vol. 15, no. 2, April 1953, processed, annual subscription \$1.25 domestic, US\$1.65 foreign.) Describes the commercial fishery of the Alabama portion of the Tennessee River; early post-impoundment fishing, 1936-45; later post-impoundment fishing, 1945-52; rebirth of the mussel industry; and discusses the present trends in relation to the sport fishery. Statistical data show the commercial fish catch for Guntersville, Wheeler, Wilson, and Pickwick Reservoirs from 1943 to 1952. Also includes statistical data on the annual harvest of mussel shells in north Alabama Tennessee Valley reservoirs for the years 1945 to 1951.

Dingell-Johnson Quarterly (For the Period July 1, 1951, to June 30, 1952), vol. 1, July 1953, 79 p., processed. This is the first of a series of publications reporting on the Federal Aid in Fish Restoration program which is designed to help the states solve their sport-fishery problems. Achievements of general interest are presented for the first year of the program from investigations, development, and land and water acquisition projects. Federal Aid in Fish Res-

toration became a reality with the passage by Congress and approval by the President of the Federal Aid in Fish Restoration Act, August 9, 1950 (64 Stat. 430). The achievement of this goal was the result of many years of effort and planning on the part of conservationists who envisioned a program designed to benefit sport fishing in the same way that the Pittman-Robertson program has benefited wildlife restoration. In substance, the above Act makes the 10-percent Federal excise tax collected on sport-fishing equipment available for apportionment to the states and territories annually under the general administration of the U. S. Fish and Wildlife Service. The states are responsible for the selection, design, and execution of projects, and expend their own funds for project operation. Upon presenting evidence of satisfactory progress or completion, the state is reimbursed to a maximum of 75 percent of costs incurred. Federal Aid in Fish Restoration is designed to supplement rather than supplant the usual state sport-fisheries program.

Fishery Statistics of the United States 1950, by A.W. Anderson and C. E. Peterson, Statistical Digest 27, 492 p., illus., printed, \$2.00, 1953. Fish and Wildlife Service, U. S. Department of the Interior, Washington, D. C. (For sale by the Superintendent of Documents, Washington 25, D. C.)

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Presents the results of the first complete statistical survey made of the United States and Alaska fishery industry since 1931. Previous complete surveys of the U. S. fisheries were made only in 1908 and 1931. In recent years canvasses of the fisheries of most sections of the country were made annually. However, no data on the fisheries of the Mississippi River area were assembled since 1931, and since 1940 only partial surveys were made of the fisheries of the Great Lakes, South Atlantic, and Gulf States. This sourcebook is the latest in a series of annual statistical reports which contain data on the catch of fishery products and its value, employment in the fisheries, quantity of gear operated, and the number of fishing craft employed in the capture of fishery products. Information on the quantity and value of the production of manufactured fishery products and by-products is also shown. For the first time since 1945, data on the catch and operating units by counties are shown for the entire Atlantic and Gulf coastal areas, except Maryland. Where available, summary information from 1880--when the first comprehensive statistical survey of the fisheries and fishery industries of the United States was made--to date is included. Outstanding developments during 1950 were the record landings of tuna and tuna-like fishes; the continued high production of menhaden; and the expansion of the shrimp fishery in the Gulf area. A total of 161,463 fishermen, 11,496 vessels of 5 net tons capacity or greater, and 80,814 boats were employed in the commercial fisheries of the United States and Alaska in 1950. During this year the catch of fishery products in all sections of the United States and Alaska totaled 4,884,909,000 pounds, valued at \$343,876,000 to the fishermen. This was an increase of 2 percent in quantity and 1 percent in value compared with the partially estimated production of 1949. The average price of all fish to the fishermen decreased slightly from 1949 to 1950, although the values were generally variable and the prices of some species increased. San Pedro, Calif., continued to be the Nation's leading fishing port, both in quantity and value with landings of approximately 940 million pounds, valued at \$43.5 million to the fishermen. Gloucester, Mass., was in second place, with approximately 196 million pounds, followed by San Diego, Calif., with approximately 190 million pounds. The per-capita consumption of fishery products in the U. S. in 1950 totaled 11.5 pounds, edible weight. During the previous year the per-capita consumption was 11.4 pounds. This was considerably above the wartime level of approximately 9 pounds when a large portion of the canned pack was allocated to the Armed Forces and to lend-lease distribution. The 1935-39 average was 11.1 pounds. Fishery statistics of the U. S. and

Alaska are compiled and published annually to make available information on both the economic and biological aspects of the domestic commercial fisheries.

Phosphorus Exchange in Marine Phytoplankton, by Theodore R. Rice, Fishery Bulletin 80 (From Fishery Bulletin of the Fish and Wildlife Service, Volume 54), 16 p., illus., printed, 15 cents, 1953. Phosphorus exchange in Nitzschia closterium, isolated and grown in pure culture, was demonstrated by using radioactive phosphorus and was shown to vary with changes in the phosphorus concentration of the medium and with the physiological conditions of the cells.

"A Report on the Fisheries of East Bengal, Pakistan," by A. R. K. Zobairi, article, pp. 116-20. (From The Progressive Fish Culturist, vol. 15, no. 3, July 1953, processed, annual subscription \$1.25 domestic, US\$1.65 foreign). Describes the fishery resources of the Province of East Bengal, the inland and marine fisheries, and how the Government aids the fishing industry.

Spawning of Yellowfin Tuna in Hawaiian Waters, by Fred C. June, Fishery Bulletin 77 (From Fishery Bulletin of the Fish and Wildlife Service, Volume 54), 21 p., illus., printed, 15 cents, 1953. This paper deals with the spawning of the yellowfin tuna (Neothurus macropterus) in Hawaiian waters, with particular reference to the reproductive process. Frequency distributions of the diameters of ova from 112 yellowfin tuna, captured by long-line gear in Hawaiian waters during 1950, demonstrate that several developmental groups of ova are present in the ovaries of this species during the breeding season. Based on the position of the mode of the most mature group of ova present in the ovaries, 11 arbitrary stages of maturity are defined which trace the development of the ova from the immature or resting stage through the spawning stage. A simple ovary-weight to fish-weight relation is given whereby spawning and nonspawning fish may be distinguished without laborious ova-diameter measurements. Over the size range of fish examined, 36.3 to 94.3 kilograms (80 to 208 pounds), the ovary-weight to fish-weight relation was found to be linear for ovaries in the immature, or resting, stage and in one of the maturing stages. However, the slopes and levels of the two regressions were significantly different. The calculated number of ova produced at a single spawning by individual yellowfin tuna, over the size range 47.2 to 88 kilograms (104 to 194 pounds), increased with fish size and ranged from 2,370,000 to 8,590,000. Spawning of the yellowfin tuna in Hawaiian waters during 1950 took place between mid-May and the end of October, and coincided with the period of best long-line catches of the species.



## MISCELLANEOUS PUBLICATIONS

THESE PUBLICATIONS ARE NOT AVAILABLE FROM THE FISH AND WILD-LIFE SERVICE, BUT USUALLY MAY BE OBTAINED FROM THE AGENCIES ISSUING THEM. CORRESPONDENCE REGARDING PUBLICATIONS THAT FOLLOW SHOULD BE ADDRESSED TO THE RESPECTIVE AGENCIES OR PUBLISHERS MENTIONED. DATA ON PRICES, IF READILY AVAILABLE, ARE SHOWN.

The Conservation Yearbook 1953, 322 p., illus., printed, \$5.50. The Conservation Yearbook, 1740 K Street NW., Washington 6, D. C., 1953. This book is designed as an annual directory and guide to agencies, commissions, boards, associations, foundations, societies, and other organizations concerned with the conservation of renewable natural resources, to the men and women who plan and direct the conservation program, and as an authoritative source of information on the progress of this program. Contains up-to-the-minute facts and figures in all fields—soil and water, forests and forest products, wildlife and fisheries, the rangelands, parks and the wilderness, etc.; a directory of more than 500 conservation organizations; and more than 5,000 names of key policy makers, legislators, planners, executives, managers, technicians, editors and writers, etc. The sections on fisheries include data on apportionment of funds to the states and territories for use in fish restoration and management projects for fiscal year 1952; list of the fish-culture stations maintained by the Fish and Wildlife Service; fishing licenses issued, 1933-1951; fishing license sales by states, July 1, 1950, to June 30, 1951; and a list of state game and fish departments and commissions.

(FOA) Monthly Report of the Foreign Operations Administration to the Public Advisory Board (Data as of May 31, 1953), 79 p., illus., processed. Division of Statistics and Reports, Foreign Operations Administration, Washington 25, D. C. This issue, which contains data through May 31, 1953, summarizes the activities of the Mutual Security Agency. Charts and appendix tables on the European Program cover MSA/ECA operations beginning with April 3, 1948. Charts and appendix tables on the Far East Program cover MSA/ECA operations under the China Area Aid Act of 1950. A section of the report deals with rice in Asia.

"The Future of Echo Detection," by R. E. Craig, article, World Fishing, August 1953, vol. 2, no. 8, pp. 303-7, illus., printed, single copies 2s. 6d. (35 U. S. cents). John Trundell (Publishers) Ltd., London, E. C. 4, England. Some of the possibilities in the development of echosounding apparatus are surveyed in this article. The effectiveness of frequencies rather higher than those used in the British commercial fisheries, means of increasing the signal to noise ratio, method of presentation of paper recording, and methods of mounting oscillators horizontally for fish finding are discussed.

The Gulf of Mexico Sponge Investigation, by Charles E. Dawson, Jr., and F. G. Walton Smith, Technical Series No. 1, 28 p., illus., printed. Marine Laboratory, University of Miami, Coral Gables 34, Florida, 1953. Report on a survey of the Florida commercial sponge beds from Dry Tortugas to Panama City during 1947 and 1948. Studies were made of the oceanographic conditions and fauna at 38 stations. No commercial sponges were found in

depths over 10 fathoms. Commercial sponges were found at 12 stations in depths between 3 and 10 fathoms. Abnormal biological conditions were observed at only one station. Although evidences of recent damage to individual commercial sponges were noted at several locations, no recurrence of the 1939 sponge disease was indicated. Oceanographic conditions were generally within the range common to inshore Gulf of Mexico waters, and at no station did they deviate sufficiently to be considered detrimental to the bottom-living organisms. Few sponges of commercial size were found at any locality, and the scarcity of small commercial sponges precludes the early recovery of the Florida sponge industry. The authors point out that since 1948 the number of diving boats working the Florida sponge beds has steadily declined. A recent inquiry at Tarpon Springs showed that there are now fewer than 20 diving boats operating full time in the Florida sponge fishery. This situation will prove beneficial and hasten the recovery of the beds, state the authors. The reduction in fishing intensity will permit the remaining sponges to reach maximum size. In conjunction with this effect, a widespread seeding of the depleted grounds with small sponges is to be expected. Assuming that there is no further mass mortality, this new growth of sponge should be available for commercial exploitation in from 7 to 8 years. The authors recommend that the State of Florida enact legislation and establish sound procedures for the strict enforcement of the five-inch minimum size limit.

"Missouri Shell Game," by Jim Keefe, article, Missouri Conservationist, August 1953, vol. 14, no. 8, pp. 4-5, 12, illus., printed. Missouri Conservation Commission, Jefferson City, Missouri. Describes briefly the life history of the mussel found in the waters of the Mississippi Valley and the mussel button and novelty industry.

"A Population Study of the Tasmanian 'Commercial' Scallop, *Notovola meridionalis* (Tate) (Lamellibranchiata, Pectinidae)," by W. S. Fairbridge, article, Australian Journal of Marine and Freshwater Research, May 1953, vol. 4, no. 1, pp. 1-40, illus., printed, 7s. 6d. per issue (US\$1.05). Commonwealth Scientific and Industrial Research Organization, 314 Albert Street, East Melbourne, C. 2, Victoria, Australia. Describes a population study of the "commercial" scallop, *Notovola meridionalis*, which supports a dredge fishery in the D'Entrecasteaux Channel, Tasmania. Includes discussions on environment, the fishery and methods of capture, the history of the fishery, populations of the commercial scallop, age determination and growth of the commercial scallop, and the age and size composition of the commercial scallop stocks.

"Predatory Seals and the Commercial Fishing Industry," by Eric Hardy, article, World Fishing, August 1953, vol. 2, no. 8, pp. 310-13, illus., printed, single copies 2s. 6d. (35 U. S. cents). John Trundell (Publishers) Ltd., London, E. C. 4, England. Much controversy exists as to the influence of predatory

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habits of seals on commercial fisheries. On the Skeena River, British Columbia, Canada, it has been estimated that a seal population of 450 destroyed approximately 10 pounds of fish each daily--a serious threat to the salmon fishery there--while salmon fishermen at Whitby, England, have been given permission to destroy seals which, it is claimed, are wreaking havoc with their livelihood. This article deals with the relation between seals and the commercial fisheries in various parts of the world, and describes the four British seals.

Refrigeration in America by Oscar Edward Anderson, Jr., 355 p., printed, illus., \$6.00. Princeton University Press, Princeton, N. J., for University of Cincinnati, 1953. The subtitle "A History of a New Technology and Its Impact" is an accurate summary of the book. There is compiled an exhaustively detailed and referenced account of refrigeration both from ice and mechanical equipment. Beginning with the harvest and use of natural ice, the author traces its application to food preservation in the United States. Mechanical refrigeration is likewise followed through the early developmental period and into the subsequent applications. Some of the other fields covered in the book include the ice industry and domestic refrigeration, refrigerated transport, the cold-storage plant's struggle to attain recognition, impact of refrigeration on food supplies and habits, home and locker-plant applications, and miscellaneous other industrial applications. The bibliographical note is an excellent resume of recommended sources for information on the many fields of research and development that have contributed to the advance of refrigeration to its present importance in the United States. The extensive footnotes are very worthwhile to further highlight the points made in the text.

--Charles Bulter

"Status of the Fishery for Sea Mullet (Mugil cephalus Linnaeus) in Eastern Australia," by J. M. Thomson, article, Australian Journal of Marine and Freshwater Research, May 1953, vol. 4, no. 1, pp. 41-81, illus., printed, 7s. 6d. per issue (US\$1.05). Commonwealth Scientific and Industrial Research Organization, 314 Albert Street, East Melbourne, C. 2, Victoria, Australia. Various shortcomings of the statistical systems in vogue in the fisheries of the eastern States of Australia are discussed from the viewpoint of a biologist. It is impossible to compute an estimate of the catch per-unit-of-effort involving a time factor. The annual mullet catch for the whole eastern seaboard has remained substantially about 11,000,000 pounds for the past 10 years, but the total caught in any subdivision of the area has fluctuated widely. The Clarence River, Fort Macquarie, Maryborough, and Wallis Lake

areas are the most important producers. There is a high degree of correlation between the fluctuations in the mullet catch and those in the total catch of estuarine fish. The size and age composition of the mullet catch have shown only slight variation over the last 10 years, and there is no significant variation in this respect from the composition in 1903. The fluctuations in catch and catch per man are not inconsistent with theories of overfishing nor with those of natural population cycles; but the only theory which receives confirmation independently of the curves of catch and of catch per man is an economic one. Competition from both the trawling industry and the import industry has been responsible for the characteristics of the estuarine catch curves. It is estimated that the weight of meat to be gained from recent changes in the management of the fishery could at best be considerably less than the amount of annual variation in the catch.

(United Kingdom) Herring Industry Board, Eighteenth Annual Report for the Year Ended 31st December 1952, Cmd. 8840, 41 p., printed, 1s. 6d. net (21 U. S. cents). Her Majesty's Stationery Office, London, England, 1952. A report of the British herring fisheries, with data on marketing, research and development, and the herring fleet. A discussion of the commercial and statutory arrangements between or concerning the Herring Industry Board, the catchers, and the shore-based sections of the industry is presented. The statistical tables in this report cover total catch, utilization, exports, and prices of herring. The marketing problem and the program for constructing reduction factories are also discussed.

"Use of Chilled Sea Water in Place of Ice in Transporting Fish," by A. W. Lantz, article, Progress Reports of the Pacific Coast Stations, No. 95, July 1953, pp. 39-44, illus., processed. Fisheries Research Board of Canada, Pacific Fisheries Experimental Station, Vancouver 2, B. C. Describes a study which involves the mechanical chilling of sea water in a fish storage tank and maintaining the water at 29°F. to 30°F. for transporting fish aboard a fishing vessel. An illustration shows one proposed application of this system for the hold of a troller vessel, using eutectic plates spaced to provide chilled sea water in each of six compartments. These compartments or sections replace the fish pens in conventional fish-hold construction. An outstanding feature of the system is that it can be installed in wooden fishing craft without insulating the hull. It also eliminates the carrying and handling of ice, thus reducing operating and labor costs. Another illustration shows a further modification of this system in which the supporting walls or lateral bulkheads replace the eutectic plates; a bank of refrigerating coils is placed at one end and circulation of the sea water is obtained by a pumping system. The equipment can be adapted to any type of boat.

