NMFS Scientific Reports Published

NOAA Technical Report NMFS Circular 413. Cressey, Roger F. **"Marine flora and fauna of the northeastern United States. Crustacea: Branchiura."** May 1978. 10 p. For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

ABSTRACT

Eleven species of *Argulus* are known from the northeastern United States. An illustrated key and an annotated list of these species with notes on their hosts and distribution within and without the study area are included. New host records are included.

NOAA Technical Report NMFS SSRF-724. Sutherland, Doyle F. **"Estimated average daily instantaneous numbers of recreational and commercial fishermen and boaters in the St. Andrew Bay system, Florida, and adjacent coastal waters, 1973."** May 1978. 23 p.

ABSTRACT

In the St. Andrew Bay system and adjacent coastal waters, 92.0 percent of the estimated recreational fishing effort was for finfish, 3.7 percent for crabs, 2.7 percent for scallops, 1.4 percent for oysters, and 0.2 percent for shrimp. Coastal waters were the most used area for finfish fishing (36.2 percent), followed by St. Andrew Bay (31.8 percent), North and West Bays (21.6 percent), and East Bay (10.4 percent). Of the estimated effort, 43.5 percent was from fixed platforms extending over water, 30.8 percent from private boats, and the remaining 25.7 percent from shoreline platforms, charter boats, and water. The most popular method of finfish fishing was with a rod and reel (93.9 percent).

The annual number of daytime anglers was estimated to range from 208,400 to 303,200 with associated expenditures ranging from $4.2 to $6.1 million. The estimates are based on the number of anglers actually seen fishing. The number of transit anglers and other recreational fishermen probably equal or exceed the basic estimates. The average daily instantaneous number of occupants of transit motorboats alone was estimated to reach 52 in North and West Bays, 32 in East Bay, 392 in St. Andrew Bay, and 207 in coastal waters.

The distribution of commercial fishing effort among fisheries was estimated to be 34.7 percent for shrimp, 33.3 percent for oysters, 22.0 percent for finfish, 8.9 percent for scallops, and 1.1 percent for crabs. The principal area for each fishery was: East Bay for shrimp (36.5 percent), oysters (85.7 percent), and crabs (85.2 percent); coastal waters for finfish (44.1 percent); and St. Andrew Bay for scallops (84.4 percent). The highest estimated average daily instantaneous number of active and transit commercial fishermen in each fishery was 66 for shrimp, 37 for oysters, 91 for finfish, 19 for scallops, and 7 for crabs.

NOAA Technical Report NMFS Circular 412. Manooch, Charles S., III, and William W. Hassler. **"Synopsis of biological data on the red porgy, *Pagrus pagrus* (Linnaeus)."** May 1978. 19 p. For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

ABSTRACT

A synopsis of the biology of the red porgy, *Pagrus pagrus,* that includes taxonomy, morphology, distribution, aspects of the life history, behavior, and abundance. Also included are: Discussions of commercial and recreational fishing methods and fishing grounds, and size, age, and sex composition of the recreational catch off North Carolina and South Carolina and commercial catch off Argentina.

NOAA Technical Report NMFS Circular 410. Malone, Thomas C. **"The 1976 *Ceratium tripos* bloom in the New York Bight: Causes and consequences."** May 1978. 14 p.

ABSTRACT

An extensive bloom of the dinoflagellate *Ceratium tripos* occured throughout the New York Bight between January and July 1976. Population size peaked during April-June and declined rapidly during July. A floc consisting primarily of decaying *C. tripos* cells was observed to cover the bottom during July between Sandy Hook and Atlantic City between 5 and 50 km offshore. The distribution of the floc roughly coincided both temporally and spatially with the development of a subthermocline oxygen minimum layer and extensive fish kills.

Prior to the onset of thermal stratification (January-March), the *C. tripos* population was uniformly distributed throughout the water column and was growing photosynthetically. As the water column began to stratify in April, the population aggregated in a layer 1-3 m thick near the base of the thermocline between the 0.1 and 10 percent light depths. If photosynthetic growth was occurring during May-June, it was at a very low rate (about 0.02 g C/m^2d^{-1} at the 1 percent light level). The possibility of no growth or heterotrophic growth cannot be dismissed, especially in the apex of the New York Bight and along the New Jersey coast.

The *C. tripos* bloom resulted in a gradual accumulation of a large quantity of particulate organic matter which did not enter pelagic food chains. Respiration of this biomass and its decay below the thermocline were probably major factors in the development of oxygen-poor bottom waters in June and July. Localization of the oxygen minimum layer off the New Jersey coast probably reflects the bottom topography of the New York Bight and the distribution of the *C. tripos* biomass within the Bight.

The occurence of *C. tripos* blooms per se is not unusual. The bloom was unique only in terms of the size of the population produced, its areal extent, and its duration. Because high densities of *C. tripos* developed throughout the New

York Bight during January-March with maximum densities between midshelf and the shelf break, it is unlikely that the bloom occurred in response to local nutrient enrichment (related to the disposal of domestic and industrial wastes) during the period of the bloom. However, causes of the bloom and its collapse cannot be determined, based on existing information.

Underwater Diving Fatality, Fishing Vessel Casualty Data Given

A study of fishing vessel mishaps is provided in **"A Safety Analysis of Fishing Vessel Casualties."** This is a report prepared by William J. Ecker of the U.S. Coast Guard, Transportation Department, Washington, DC 20590, for the 66th National Safety Congress and Exposition last October.

Documented fishing vessels have grown about 50 percent in the last 12 years, says the author, citing NMFS statistics. The number of fishing vessels involved in marine casualties has increased correspondingly in the same time span, he adds. The paper examines some of the more frequent types of marine casualties involving fishing vessels and highlights salient aspects of the casualties by circumstance, location, fishing fleet type, and the subsequent result of the casualties (ie., loss of vessel, loss of life, or both).

The report briefly profiles the U.S. fishing fleet and analyzes the casualties reported to the U.S. Coast Guard during the 1972-77 fiscal year period. Finally, the report presents some conclusions on fishing vessel mishaps and draws attention to areas for possible further study.

During the 6-year period, over 4,800 fishing vessels were reportedly involved in a vessel casualty, with almost 89 percent consisting of five general types: 1) Groundings, 2) material failures, 3) operational collisions, 4) flooding-foundering-capsizing, and 5) explosions-fires. Each of the general types of casualties are discussed in separate sections. According to the report, the most notable increases appear in the categories of groundings and flooding-foundering-capsizing.

The report also presents the selected casualty types in terms of the seriousness of the consequences of each type relative to personnel deaths and vessels lost. An index of seriousness in the form of a ranking compares casualty types against one another. The highest overall rankings were jointly attained by flooding-foundering-capsizing and by groundings, with the former category being first in the number of deaths and number of vessels lost. The latter was ranked first, second, and third in casualty frequency, vessels lost, and deaths, respectively. The author points out that flooding-foundering-capsizing produced almost four times the number of fisherman deaths as the next closest casualty type.

The category flooding-foundering-capsizing produced the largest death and vessel-lost ratio per incident, the report notes, primarily from founderings. The dollar damages accruing from this casualty grouping were the highest of all casualty types compared and the author recommends further analysis and research into the specifics of these incidents, owing to their serious consequences.

Four appendices give tabular data on: 1) Environmental factors present during each casualty type, 2) characteristics of fishing vessels involved in each casualty type, 3) comparison of selected geographic locations for each casualty type, and 4) casualty results for each casualty type.

Deaths of nonprofessional scuba divers increased slightly in the United States, from 131 in 1975 to 147 in 1976—the latest year for which figures are available—according to a report, **"U.S. Underwater Diving Fatality Statistics 1976,"** released in January by the National Oceanic and Atmospheric Administration.

"With an estimated 2.5 million active scuba divers in the Nation, the number of fatalities is very small," said David H. Peterson, Assistant NOAA Diving Coordinator. "Scuba diving continues to be a safe and enjoyable sport."

Deaths jumped sharply in Hawaii and continued high in Florida in 1976, the report notes. Increasing use of warmwater recreational areas by casual diving visitors account for the relatively high level of fatalities in those states and in California, according to the Commerce Department official. Florida continued to have the nation's highest toll, 40, while fatalities in Hawaii increased from 6 in 1975 to 11 in 1976.

Second highest death toll was recorded by California with 23 deaths, up from the 17 recorded in 1976 but still well below the 36 and 32 set in 1974 and 1975 respectively. California has conducted an intensive scuba safety program in recent years to reduce the number of deaths, NOAA officials said.

"Analysis of the figures shows that in many cases the divers who died ignored the teachings of their scuba instructors or took chances in unfamiliar situations," Peterson said. "The overwhelming majority of divers carefully adhere to good diving practices, and dive safely."

The report shows that scuba diving deaths are not confined to the coasts and Great Lakes states, but also occur in inland lakes, rivers, quarries, and mine shafts. Cave diving is among the most dangerous, the report notes. The National Underwater Accident Data Center (NUADC) at the University of Rhode Island, which compiled the report, recorded seven instances in 1976 where two people died in cave diving accidents, six double deaths in Florida and one in New Mexico. "NUADC has not been able to establish the number of people engaged in cave diving..." the report says, "but there is no question in the author's opinion that cave diving is the most dangerous of all sport diving activities."

The report dismisses equipment failure as a cause of fatal accidents. For example, it says that in 1976 "no fatality could be directly assigned to a properly maintained regulator as the primary cause."

The report, "U.S. Underwater Diving Fatality Statistics, 1976," was prepared by NUADC for the Manned Undersea Science and Technology program, Office of Research and Development, NOAA, and the Underwater Safety Project of the U.S. Coast Guard's Office of Merchant Marine Safety, Department of Transportation. Single copies are available at no cost from either of the two agencies.