New Technical Reports

NOAA Technical Report NMFS 77. Keppner, Edwin J., and Armen C. Tarjan. **"Illustrated key to the genera of free-living marine nematodes of the order Enoplida."** July 1989, iii + 26 p., 118 figs.

ABSTRACT

A pictorial key to 118 genera of free-living marine nematodes in the order Enoplida is presented. Specific morphological and anatomical features are illustrated to facilitate use of the key. The purpose of this work is to provide a single key to the genera of enoplid nematodes to facilitate identification of these organisms by nematologists and marine biologists working with meiofauna.

NOAA Technical Report NMFS 78. Pearson, Donald E. **"Survey of fishes and water properties of South San Francisco Bay, California, 1973-82."** August 1989, iv + 21 p., 8 figs., 7 tables, 5 app. tables.

ABSTRACT

The objective of this study was to describe the physical and ichthyological changes occurring seasonally and annually in the south San Francisco Bay, based on the results of 2,561 otter trawl and water samples obtained between February 1973 and June 1982. Temperature varied predictably among seasons in a pattern that varied little between years. Salinity also underwent predictable seasonal changes but the pattern varied substantially between years. The most abundant species of fish were northern anchovy (*Engraulis mordax*), English sole (*Parophrys vetulus*), and shiner surfperch (*Cymatogaster aggregata*). The majority of the common fish species were most abundant during wet years and least abundant in dry years. Numeric diversity was highest during the spring and early summer, with no detectable interannual trends. Species composition changed extensively between seasons and between years, particularly years with extremely high or extremely low freshwater inflows. All the common species exhibited clustered spatial distributions. Such spatial clustering could affect the interpretation of data from estuarine sampling programs. Gobies (Family Gobiidae) were more abundant during flood tides than during ebb tides. English sole were significantly more abundant in shallower areas. Shiner surfperch showed significant differences in abundance between sample areas.

NOAA Technical Reports NMFS 79. Wenner, Charles A., and George R. Sedberry. **"Species composition, distribution, and relative abundance of fishes in the coastal habitat off the southeastern United States."** July 1989, iii + 49 p., 35 figs., 6 tables, 1 app. table.

ABSTRACT

Ichthyofauna of the coastal (< 10 m depth) habitat of the South Atlantic Bight were investigated between Cape Fear, North Carolina, and St. John's River, Florida. Trawl collections from four nonconsecutive seasons in the period July 1980 to December 1982 indicated that the fish community is dominated by the family Sciaenidae, particularly juvenile forms. Spot (*Leiostomus xanthurus*) and Atlantic croaker (*Micropogonias undulatus*) were the two most abundant species and dominated catches during all seasons. Atlantic menhaden (*Brevoortia tyrannus*) was also very abundant, but only seasonally (winter and spring) dominant in the catches. Elasmobranch fishes, especially rajiforms and carcharinids, contributed to much of the biomass of fishes collected. Total fish abundance was greatest in winter and lowest in summer and was influenced by the seasonality of Atlantic menhaden and Atlantic croaker in the catches. Biomass was highest in spring and lowest in summer, and was influenced by biomass of spot. Fish density ranged from 321 individuals and 12.2 kg per hectare to 746 individuals and 25.2 kg per hectare. Most species ranged widely throughout the bight, and showed some evidence of seasonal migration. Species assemblages were dominated by ubiquitous year-round residents of the coastal waters of the bight. Diversity (H′) was highest in summer, and appeared influenced by the evenness of distribution of individuals among species.

NOAA Technical Report NMFS 80. Matarese, Ann C., Arthur W. Kendall, Jr., Deborah M. Blood, and Beverly M. Vinter. **"Laboratory guide to early life history stages of Northeast Pacific fishes."** October 1989, iv + 642 p., 272 figs., 50 tables.

ABSTRACT

This laboratory guide presents taxonomic information on eggs and larvae of fishes of the Northeast Pacific Ocean (north of California) and the eastern Bering Sea. Included are early-life-history series, illustrations, and comparative descriptions of 232 species expected to spawn here, out of a total 627 species known to occur in marine waters of this area. Meristic and general life-history data are included, as well as diagnostic characters to help identify eggs and larvae. Most of this information has been gleaned from literature, with the addition of 200 previously unpublished illustrations.

NOAA Technical Report NMFS 81. Estrella, Bruce T., and Daniel J. McKiernan. **"Catch-per-unit-effort and biological parameters from the Massachusetts coastal lobster (*Homarus americanus*) resource: Description and trends."** September 1989, iv + 21 p., 11 figs., 27 tables.

ABSTRACT

A comprehensive description of the Massachusetts coastal lobster (*Homarus americanus*) resource was obtained by sampling commercial catches coastwide at sea and at dealerships between 1981 and 1986. A commercial lobster sea-sampling program, wherein six coastal regions were sampled monthly, with an areal and temporal data weighting design, was the primary source of data.

An improved index of catch per trap haul/set-over-day was generated by modeling the relationship between catch and immersion time and standardizing effort. This 6-year time-series of mean annual catch rates tracked closely the landings trend for territorial waters.

During the study period there was a gradual increase in indices of exploitation and total annual mortality which corresponded to a gradual decline in mean carapace length of marketable lobster. The frequency of culls escalated from 10.0% in 1981 to 20.9% in 1986, while the percentage of lobster found dead in traps was consistently less than 1%. The sex ratio (%F:%M) was significantly different from 50:50 and approximated a 60:40 relationship during the study period.

Male and female weight-length relationships were significantly different. Females weighed more than males at smaller sizes and less than males at larger sizes. A north-south clinal trend was evident wherein lobster north of Cape Cod weighed less at length than those from regions south of Cape Cod.

Functional size-maturity relationships were developed for female lobster by staging cement gland development. Proportions mature at size represent more realistic values than those obtained by analyses of percent of females ovigerous.

Regional variation occurred in most of the parameters studied. Three lobster groups, differing in major population descriptors, are defined by our data.