New NMFS Scientific Reports Published

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NOAA Technical Report NMFS CIRC-393. Diener, Richard A. **"Cooperative Gulf of Mexico estuarine inventory and study—Texas: Area description."** September 1975. 129 p.

ABSTRACT

Seven Texas estuarine areas are described in terms of their dimensions; major vegetation types; geology and geological history; drainage basins and stream discharge records; hydrological, biological and benthic properties; populations and economic development; pollution; and navigation projects. These areas include the Sabine Lake, Galveston Bay, Matagorda Bay-Brazos River Delta, San Antonio Bay, Copano-Aransas Bay, Corpus Christi Bay, and the Laguna Madre. A list of pertinent literature is also presented.

The estuaries cover over 1,532,000 acres (620,460 hectares) of open waters and are surrounded by an additional 1,141,400 acres (462,267 hectares) of marshlands and tidal flats. They are formed from either drowned river mouths or the development of barrier islands and peninsulas, and are late Pleistocene and Recent in age. Approximately three-fourths of the more than 39,000 cubic feet per second entering these waters from gaged streams enters Sabine Lake and Galveston Bay.

Water temperatures are generally lower on the upper coast than the lower coast during the winter but are relatively uniform during the summer. Salinities generally range from about 5 to 25‰ except in the Laguna Madre area where hypersalinity is common. A rich and varied fauna displaying many varied life-history types is supported by these waters.

Human populations in Cameron Parish, La., and Texas counties contiguous to the seven estuarine areas increased from 31,751 persons in 1850 to 2,962,125 persons in 1970. A sharp increase resulted when oil production began in 1901, and an economy based on manufacture of petrochemicals, shipping, and other industries expanded. Beef cattle and cotton are the mainstays of Texas coastal agriculture, with rice important on the upper coast while citrus fruits are important to the economy of the lower Laguna Madre area. The Texas coast is also important for its sport and commercial fisheries and for waterfowl hunting.

Pollution from domestic and industrial sources has forced the closing of about 325,090 acres (131,661 hectares) of open bay waters to shellfishing and an additional 16,600 acres (6,723 hectares) closed on a conditional basis. Over 1,050 miles (1,691 km) of Federal navigation channels are situated on the Texas coast, the most important of which is the Gulf Intracoastal Waterway, which extends from the Sabine River to Brownsville. Large areas of open estuarine waters, especially in the Sabine Lake and Galveston Bay areas, have been displaced by large spoil areas.

NOAA Technical Report NMFS SSRF-696. Husby, David M., and Gunter R. Seckel. **"Large-scale air-sea interactions at Ocean Weather Station V, 1951-71."** November 1975. 44 p.

ABSTRACT

The meterological observations at OWS-V (Ocean Weather Station V, lat. 34°N, long. 164°E) were used to compute large-scale air-sea heat exchange processes and wind stresses for each month from September 1951 to March 1971. The monthly values are tabulated as anomalies from the 1955 to 1971 means. The quality of the data record and the accuracy of the derived heat exchange components are discussed.

The air-sea interaction climatology at OWS-V, which lies in the net annual heat loss area of the western North Pacific, is described. At this station the average monthly heat exchange across the sea surface is estimated to range from a gain during July of 307 cal $cm^{-2}day^{-1}$ to a loss during December of 388 cal cm^{-2} day^{-1} with an annual loss of 32 cal cm^{-2} day^{-1}. The principal process causing monthly and seasonal variations in the net heat exchange across the sea surface, besides the radiation from sun and sky, is the heat used for evaporation. The average monthly heat lost through evaporation is estimated to range from 86 cal $cm^{-2}day^{-1}$ during July to 374 cal $cm^{-2}day^{-1}$ during December with an annual average of 234 cal cm^{-2} day^{-1}. Anomalous evaporation rates are caused by anomalous "vapor pressure differences" (saturation vapor pressure at the sea-surface temperature minus the vapor pressure of air) and/or anomalous wind speeds.

NOAA Technical Report NMFS SSRF-697. Wilk, S. J., and M. J. Silverman. **"Fish and hydrographic collections made by the research vessels *Dolphin* and *Delaware II* during 1968-72 from New York to Florida."** January 1976. 159 p.

ABSTRACT

Information is given in tabular form for fish and hydrographic observations collected during 18 cruises made by the research vessels *Dolphin* and *Delaware II* from New York to Florida during 1968-72. Tables include station locations with related hydrographic observations and number, weight, and size range of fish species caught.

NOAA Technical Report NMFS SSRF-698. Wilk, Stuart J., and Myron J. Silverman. **"Summer benthic fish fauna of Sandy Hook Bay, New Jersey."** January 1976. 16 p.

ABSTRACT

Thirty-eight species and 25 families of fishes were captured during an otter trawl survey in Sandy Hook Bay, N.J. during July to October 1970. Distribution, abundance, length and age composition, and environmental preferences were analyzed for the more numerous species. Winter flounder, *Pseudopleuronectes americanus;* striped searobin, *Prionotus evolans;* windowpane, *Scophthalmus aquosus;* and northern searobin, *Prinotus carolinus*, accounted for 68.3 percent by number and 66.4 percent by weight of the total survey catch.