



Surface Temperatures: January

Description

This map and Map 1.08 form a set depicting sea surface temperatures. Sea surface temperatures affect biological processes and productivity in the upper layers of the water column, with cooler temperatures suppressing biological activity. Seasonal patterns of biological productivity in the upper layers of the water column are shown on Map 2.05. The sea surface temperature isotherms shown were derived from an analysis of bathythermograph data collected between 1941 and 1970 and organized by month for one-degree squares for the entire region. A 7°C temperature gradient occurs in the winter from north to south across the Gulf, mainly over the northern shelf region. Year-to-year variations in minimum winter surface temperatures at the coast are directly related to the intensity and frequency of winter storms moving south from the central USA. The effects of warm water entering the Gulf Mexico within the Loop Current through the Yucatan Channel are evident in the shape of the 25° isotherm. The Loop Current is also apparent on satellite images presented on Map 1.15. Waters over the northern shelf are well mixed during the winter and typically isothermal (of uniform temperature) to depths of at least 40 m.

18 Sea Surface Temperature in Degrees Celsius

Interval is 0.5°C above 19°C; 1° below 19°C.

References

Robinson, M.K., 1973.

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