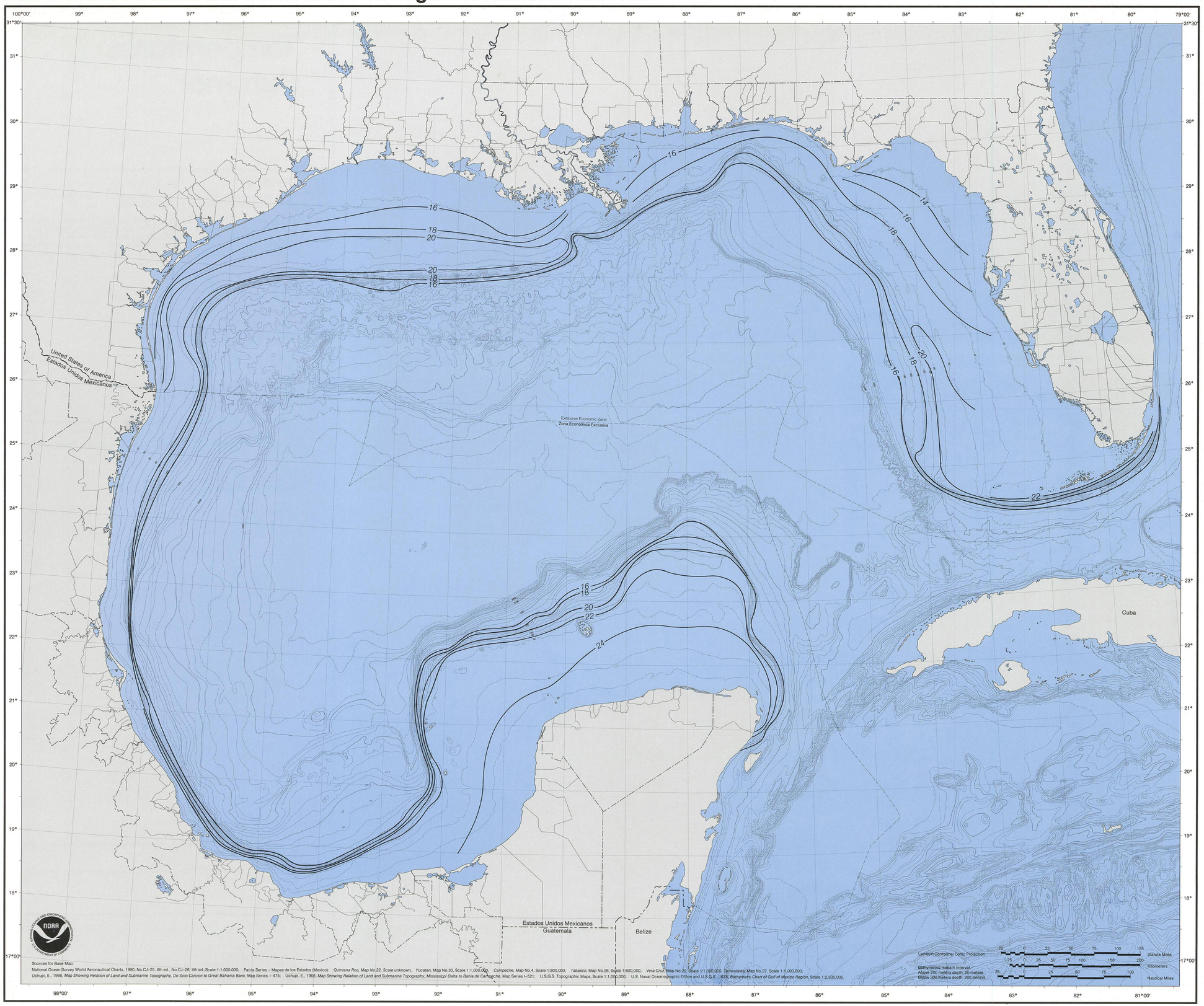

Bottom Temperatures: Winter

Description

This is the first map of a set (1.09 and 1.10) depicting bottom temperatures. Since comprehensive data on regional bottom temperatures for the region do not exist, estimates were made based on available data. Bottom temperature is a key factor in the seasonal distribution of many demersal fishes and invertebrates.
Bottom temperatures were derived from temperature/depth profile data augmented with hydrographic cast data. The analysis divided the shelf region into 14 subregions and estimated a composite temperature/depth profile for each. Bottom temperatures for each subregion were approximated from these profiles.
In the winter, northern shelf waters are well mixed by storm activity resulting in an isothermal water column. Nearshore bottom temperatures in the northern Gulf of Mexico are 8°-10°C cooler than those offshore. Annual variations in bottom temperatures along the coast are strongly related to the frequency and severity of winter storm activity.

A permanent seasonal thermocline occurs in deeper offshelf waters throughout the Gulf. The intersection of this offshelf thermocline structure with the isothermal water structure on the shelf results in a bottom temperature of about 20°C in two areas, off Texas and off West Florida. Bottom temperatures there are always above 20°C, providing important winter refuge for marine life.

18 **Bottom Temperature in Degrees Celsius**

Bottom temperatures are shown only to a depth of 200 meters.

References

Berryhill, H.L., 1977; US DOC, NOAA, National Environmental Satellite, Data and Information Service, 1982b.

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1.09