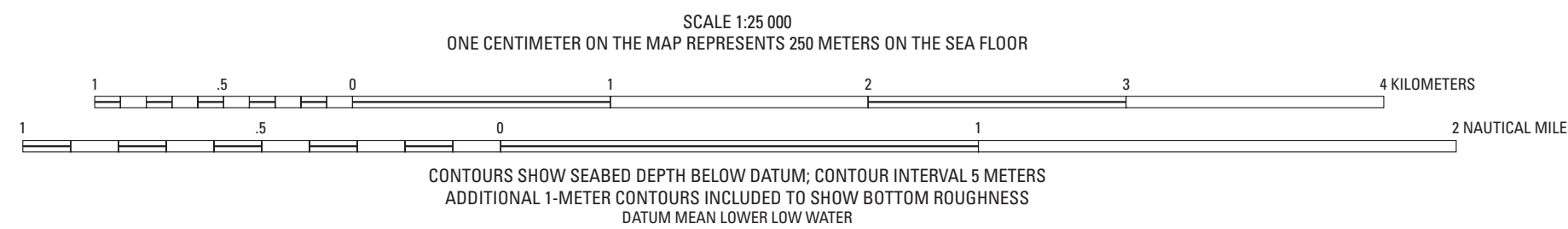


Mercator projection
Geoidetic Reference System 1983; North American Datum of 1983
Longitude of central meridian 70°13' W; latitude of true scale 41°39' N
False easting 0 m; false northing 0 m
This map is not intended for navigational purposes



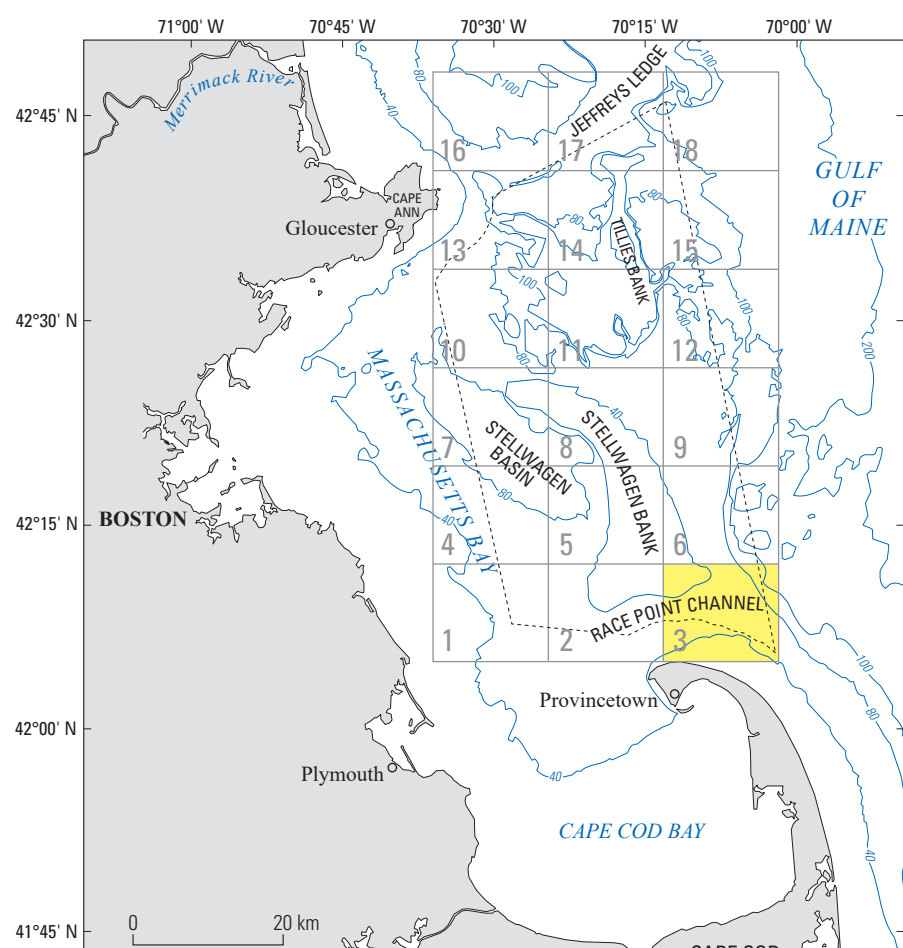
DESCRIPTION OF MAP UNITS

[Unlayered substrates and the upper layer of layered substrates are grouped by the mean weight percent of their fine- and coarse-grained sand contents. For textural characteristics of individual substrates, see the section "Description of Map Units (Substrates)" (in pamphlet), tables 6 and 7 (in pamphlet), and Valentine and Cross (2026b). The southernmost part of the map area was not mapped because multibeam sonar data were not collected there.]

Substrate dominated by fine-grained sand in the sand fraction—Fine-grained sand and muddy, fine-grained sand in which fine-grained sand (3 and 4 phi combined) constitutes the largest portion of the sand fraction; equivalent to substrates G1, AB, and AQ on map D

Substrate dominated by coarse-grained sand in the sand fraction—Coarse-grained sand in which coarse-grained sand (0, 1, and 2 phi combined) constitutes the largest portion of the sand fraction; equivalent to substrates A1, A2, A3, E, F, Y, Z, AC, AG, AI, AJ, AK, AL, AM, AN, AO, and AP on map D

Boulder ridge ≥ 1 m in height—Equivalent to substrate C on map D



Location Map. Map showing the location of quadrangle 3 (highlighted in yellow) of the Stellwagen Bank National Marine Sanctuary region offshore of Boston, Massachusetts. The numbered grid indicates the quadrangles of the U.S. Geological Survey multibeam sonar substrate-mapping project. The dashed line represents the Stellwagen Bank National Marine Sanctuary boundary. Bathymetric contours are labeled in meters and the contour interval is variable. Figure modified from Valentine and Cross (2024d).

Map F.—Distribution of Fine- and Coarse-Grained Sand and Boulder Ridges

Seabed Maps Showing Topography, Ruggedness, Backscatter Intensity, Sediment Mobility, and the Distribution of Geologic Substrates in Quadrangle 3 of the Stellwagen Bank National Marine Sanctuary Region Offshore of Boston, Massachusetts

By
Page C. Valentine and VeeAnn A. Cross
2026

Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government.
For sale by U.S. Geological Survey, Box 25286, Denver Federal Center, Denver, CO 80225; <https://store.usgs.gov>; 1-888-ASK-USGS (1-888-275-2147)
Suggested citation: Valentine, P.C., and Cross, V.A., 2026, Distribution of fine- and coarse-grained sand and boulder ridges, map F of Seabed maps showing topography, ruggedness, backscatter intensity, sediment mobility, and the distribution of geologic substrates in quadrangle 3 of the Stellwagen Bank National Marine Sanctuary region offshore of Boston, Massachusetts, U.S. Geological Survey Scientific Investigations Map 3544, 8 sheets, scale 1:25,000, 30-p. pamphlet, <https://doi.org/10.3133/sim3544>.
Associated data for this publication: Valentine, P.C., and Cross, V.A., 2026, Geospatial datasets of seabed topography, sediment mobility, and the distribution of geologic substrates in quadrangle 3 of the Stellwagen Bank National Marine Sanctuary region offshore of Boston, Massachusetts: U.S. Geological Survey data release, <https://doi.org/10.5066/P13PVHRL>.