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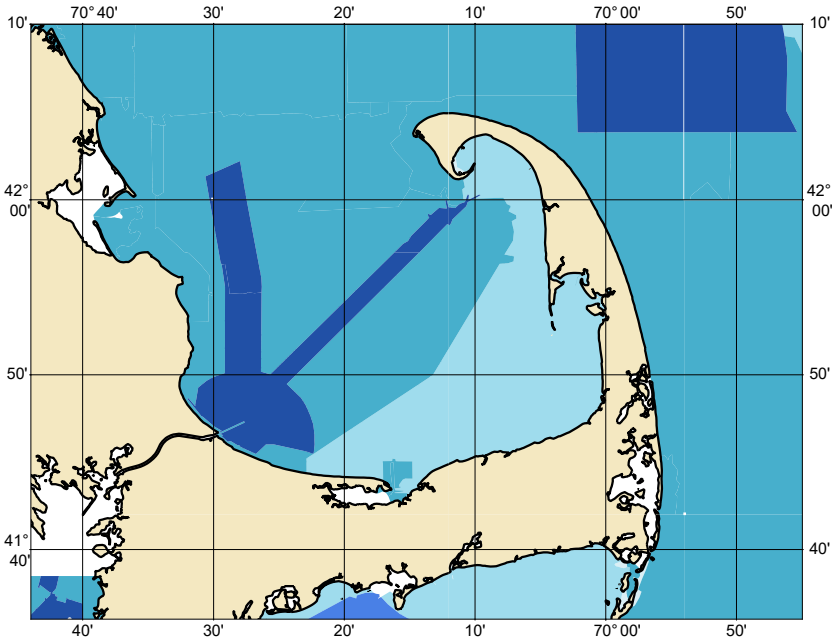
Zone of Confidence (ZOC) Diagram



ZOC CATEGORIES

ZOC	COLOR	POSITION ACCURACY	DEPTH ACCURACY	SEAFLOOR COVERAGE
A1		± 5 m + 5% depth ± 16.4 ft + 5% depth	= 0.50 m +1% d = 1.6 ft +1% d = 0.3 fm +1% d	All significant seafloor features detected.
A2		± 20 m ± 65.6 ft	= 1.00 m +2% d = 3.3 ft +2% d = 0.6 fm +2% d	All significant seafloor features detected.
B		± 50 m ± 164.0 ft	= 1.00 m +2% d = 3.3 ft +2% d = 0.6 fm +2% d	Uncharted features hazardous to surface navigation are not expected but may exist.
C		± 500 m ± 1640.4 ft	= 2.00 m +2% d = 6.6 ft +2% d = 1.1 fm +2% d	Depth anomalies may be expected.
D		Worse than ZOC C	Worse than ZOC C	Large depth anomalies may be expected.
U		Unassessed - The quality of the bathymetric data has yet to be assessed.		

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NOAA CUSTOM CHART
NOTES GEOSPATIAL DATABASE
VERSION 3.0C - 17 MARCH 2026

The records of the NOAA Custom Chart Notes Geospatial Database are current as of March 17, 2026. Subsequent additions and refinements are to be expected. Please refer to all available navigational publications for complete information about the charted area.

CAUTION
CHART UPDATES

This NOAA Custom Chart contains up-to-date information only as of the time of creation, and will become outdated. Mariners are advised to visit https://distribution.charts.noaa.gov/navigation-updates/ to check for critical and routine updates, and to render a new NOAA Custom Chart when the ENC data used to make the chart is updated. Notices to Mariners are not issued for corrections to this NOAA Custom Chart.

AUTHORITIES

Hydrography and topography by the National Ocean Service, Coast Survey, with additional data from the Corps of Engineers, Geological Survey, U.S. Coast Guard and National Geospatial-Intelligence Agency.

COMMENTS REQUESTED

NOAA encourages users to submit inquiries, discrepancies, or comments about this chart via NOAA's ASSIST tool at https://nauticalcharts.noaa.gov/customer-service/assist/ .

CAUTION
AUTOMATED CHART GENERATION

This NOAA Custom Chart has been automatically rendered from NOAA Electronic Navigational Chart (NOAA ENC®) data. Mariners using this NOAA Custom Chart are advised that this is a static reproduction of the NOAA ENC®. This NOAA Custom Chart has not been individually quality checked or adjusted for optimal use for navigation. The portrayal may be at a different scale from that of the original NOAA ENC®. Mariners are advised to use caution when using this NOAA Custom Chart for navigation and are encouraged to use the latest NOAA ENC® to access the most up-to-date information. Mariners must also comply with all applicable regulatory requirements.

HEIGHTS

Heights of fixed aids to navigation and vertical clearances of overhead obstructions will be shown in feet if the units are set to feet or fathoms. If units are set to meters, heights will be shown in meters. Land elevation values are shown in meters only.

WATER LEVELS, CURRENTS, AND TIDES

Real-time water levels, tide predictions, and tidal current predictions are available on the internet from NOAA’s Center for Operational Oceanographic Products and Services (CO-OPS) at https://tidesandcurrents.noaa.gov/water_level_info.html and https://tidesandcurrents.noaa.gov/currents_info.html .

ABBREVIATIONS

For complete list of Symbols and Abbreviations, see Chart No. 1.

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POLLUTION REPORTS

Report all spills of oil and hazardous substances to the National Response Center via 1-800-424-8802 (toll free), or to the nearest U.S. Coast Guard facility if telephone communication is impossible (33 CFR 153).

WARNING

The prudent mariner will not rely solely on any single aid to navigation, particularly on floating aids. See U.S. Coast Guard Light List and U.S. Coast Pilot for details.

SUPPLEMENTAL INFORMATION

Consult U.S. Coast Pilot 1 for important supplemental information.
Refer to charted regulation section numbers.

SOUNDING DATUM

Soundings referred to Mean Lower Low Water (MLLW).

NOTE A

Navigation regulations are published in Chapter 2, U.S. Coast Pilot 1. Additions or revisions to Chapter 2 are published in the Notices to Mariners. Information concerning the regulations may be obtained at the Office of the Commander, 1st Coast Guard District in Boston, MA or at the Office of the District Engineer, Corps of Engineers in Concord, MA.
Refer to charted regulation section numbers.

AIDS TO NAVIGATION

Consult U.S. Coast Guard Light List for supplemental information concerning aids to navigation.

RADAR REFLECTORS

Radar reflectors have been placed on many floating aids to navigation. Individual radar reflector identification on these aids has been omitted from this chart.

ADDITIONAL INFORMATION

Additional information can be obtained at www.nauticalcharts.noaa.gov

SUPPLEMENTAL INFORMATION

Consult U.S. Coast Pilot 2 for important supplemental information.
Refer to charted regulation section numbers.

VERTICAL DATUM

Overhead clearances are referred to Mean High Water (MHW).

NOTE A

Navigation regulations are published in Chapter 2, U.S. Coast Pilot 2. Additions or revisions to Chapter 2 are published in the Notices to Mariners. Information concerning the regulations may be obtained at the Office of the Commander, 1st Coast Guard District in Boston, MA or at the Office of the District Engineer, Corps of Engineers in Concord, MA.
Refer to charted regulation section numbers.

COLREGS DEMARCATION LINE

The Inland Navigational Rules Act of 1980 is in effect for vessels transiting this area. The seaward boundaries of this area are the COLREGS demarcation lines. In the area seaward of the COLREGS demarcation lines, vessels are governed by COLREGS: International Regulations for Preventing Collisions at Sea, 1972. The COLREGS demarcation line is defined in COLREGS 33 CFR 80.135b.

RECOMMENDED VESSEL ROUTE

Recommended vessel routes for deep draft vessels (including tugs and barges) entering and departing Rhode Island Sound, Narragansett Bay and Buzzards Bay. While not mandatory, deep draft commercial vessels (including tugs and barges) are requested to follow the designated routes at the master's discretion. Other vessels, while not excluded from these routes, should exercise caution in and around these areas and monitor VHF channel 16 or 13 for information concerning deep draft vessels (including tugs and barges) transiting these routes. See U.S. Coast Pilot Volume 2, Chapter 5, 6 or 7 as appropriate.

CAUTION
LIMITATIONS ON THE USE OF RADIO SIGNALS

Limitations on the use of radio signals as aids to marine navigation can be found in the U.S. Coast Guard Light Lists and National Geospatial-Intelligence Agency Publication 117.

Radio direction-finder bearings to commercial broadcasting stations are subject to error and should be used with caution.

COLREGS, 80.135A (SEE NOTE A)

International Regulations for Preventing Collisions at Sea, 1972. The entire area of this chart falls seaward of the COLREGS Demarcation Line.

COLREGS, 80.145 (SEE NOTE A)

International Regulations for Preventing Collisions at Sea, 1972. The entire area of this chart falls seaward of the COLREGS Demarcation Line.

RECOMMENDED TWO-WAY WHALE AVOIDANCE ROUTES AND TRACK

The two-way routes shown are RECOMMENDED for use by all vessels traveling into or out of Cape Cod Bay. This routing has been established to reduce the likelihood of ship strikes of endangered North Atlantic right whales. Mariners are warned that some vessels might not be able to keep to the starboard side of the route at all times. CAUTION: Full bottom coverage surveys have not been conducted within the entire route, so uncharted dangers may exist. See Chapter 1, U.S. Coast Pilot.

TRAFFIC SEPARATION SCHEME

One-way traffic lanes are RECOMMENDED for use by all vessels traveling between the points involved. They have been designed to aid in the prevention of collisions at the approach to Boston Harbor, but are not intended in any way to supersede or alter the applicable Rules of the Road. The separation zone is intended to separate inbound and outbound traffic and to be free of ship traffic. The separation zone should not be used except for crossing purposes. When crossing traffic lanes and the separation zone use extreme caution.

CAUTION
FISH TRAP AREAS

Uncharted stakes, piles and, fishing structures, some submerged, may exist within this area.

CAUTION
UNEXPLODED ORDNANCE

This area is a former firing range active from 1952 to 1961. Mariners are cautioned against anchoring, dredging or trawling in this area due to the possible existence of unexploded ordnance.

CAUTION

USACE conducts hydrographic surveys to monitor navigation conditions. These surveys are not intended to detect underwater features. Uncharted features hazardous to surface navigation are not expected but may exist in federal channels. For more information visit https://navigation.usace.army.mil/Survey/Hydro.

RESTRICTED AREA
RIGHT WHALE SEASONAL
MANAGEMENT AREA
(50 CFR 224.105)

All vessels greater than or equal to 65 feet / 19.8 meters in length must slow to speeds of 10 knots or less in seasonal management areas.

CAUTION
SUBMERGED CABLES AND PIPELINES

Additional uncharted submarine pipelines and submarine cables may exist within the area of this chart. Not all submarine pipelines and submarine cables are required to be buried, and those that were originally buried may have become exposed. Mariners should use extreme caution when operating vessels in depths of water comparable to their draft in areas where pipelines and cables may exist, and when anchoring, dragging or trawling.

Covered wells may be marked by lighted or unlighted buoys.

CAUTION

Improved channels are subject to shoaling, particularly at the edges.

CAUTION

Temporary changes or defects in aids to navigation are not indicated on this chart. See Local Notice to Mariners.

During some winter months or when endangered by ice, certain aids to navigation are replaced by other types or removed. For details, see U.S. Coast Guard Light List.

NOTE Z
NO-DISCHARGE ZONE, 40 CFR 140

Under the Clean Water Act, Section 312, all vessels operating within a No-Discharge Zone (NDZ) are completely prohibited from discharging any sewage, treated or untreated, into the waters. All vessels with an installed marine sanitation device (MSD) that are navigating, moored, anchored, or docked within a NDZ must have the MSD disabled to prevent the overboard discharge of sewage (treated or untreated) or install a holding tank. Regulations for the NDZ are contained in the U.S. Coast Pilot. Additional information concerning the regulations and requirements may be obtained from the Environmental Protection Agency (EPA) website: https://www.epa.gov/vessels-marinas-and-ports .

RIGHT WHALE CRITICAL HABITAT
(PRECAUTIONARY AREA: 50 CFR 226.203, 224.103C; SEE NOTE A)

It is illegal to approach any right whale anywhere closer than 500 yards/ 457.2 meters.

NORTH BEACH CUT AIDS

The North Beach Cut Mid-Channel Buoys are not charted due to their frequent changes in position to mark the best passage through the inlet.

CAUTION

Mariners are warned to stay clear of the protective riprap surrounding navigational light structures.

CHANGEABLE AREA

The channel into Wellfleet Harbor is subject to frequent changes.

RECOMMENDED TWO-WAY WHALE AVOIDANCE ROUTES

The two-way routes shown are RECOMMENDED for use by all vessels traveling into or out of Cape Cod Bay. This routing has been established to reduce the likelihood of ship strikes of endangered North Atlantic right whales. Mariners are warned that some vessels might not be able to keep to the starboard side of the route at all times. CAUTION: Full bottom coverage surveys have not been conducted within the entire route, so uncharted dangers may exist. See Chapter 1, U.S. Coast Pilot.

MANDATORY SHIP REPORTING SYSTEM AREA
33 CFR 169 (SEE NOTE A)

Navigation regulations are published in Chapter 2 of the U.S. Coast Pilot for this geographic area. Refer to regulation section numbers.

STELLWAGEN BANK
NATIONAL MARINE SANCTUARY
(PROTECTED AREA: 15 CFR 922)

The following activities are prohibited within Stellwagen Bank Marine Sanctuary: certain discharging or dumping, industrial exploring or developing, drilling and dredging, removing historical artifacts, lightering. Refer to 15 CFR 922 for details of sanctuary regulations.

CAUTION

Mariners are warned to stay clear of the protective riprap surrounding navigational light structures.

CHANGEABLE AREA

The bar and harbor channels approaching Barnstable Harbor are subject to continual changes.

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CHANGEABLE AREA

Chatham Roads and Stage Harbor areas are subject to continual change. Buoys are frequently relocated and mariners are cautioned that depths and buoys may differ. Use only with local knowledge.

NOAA WEATHER RADIO BROADCASTS

The NOAA Weather Radio station listed below provides continuous weather broadcasts. The reception range is typically 20 to 40 nautical miles from the antenna site, but can be as much as 100 nautical miles for stations at high elevations.
Boston, MA KHB-35 162.475 MHz

NOAA WEATHER RADIO BROADCASTS

The NOAA Weather Radio station listed below provides continuous weather broadcasts. The reception range is typically 20 to 40 nautical miles from the antenna site, but can be as much as 100 nautical miles for stations at high elevations.
Providence, RI WXJ-39 162.400 MHz

CHATHAM HARBOR

This area is subject to continual change. Buoys are not charted because they are frequently shifted in position. Use only with local knowledge.

TIDAL CURRENTS

In Nantucket Sound the tidal currents are strong and their times and velocities vary considerably from place to place. For supplemental information consult NOAA's Center for Operational Oceanographic Products and Services.

NOAA WEATHER RADIO BROADCASTS

The NOAA Weather Radio station listed below provides continuous weather broadcasts. The reception range is typically 20 to 40 nautical miles from the antenna site, but can be as much as 100 nautical miles for stations at high elevations.
Bourne/Hyannis, MA KEC-73 162.550 MHz