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State of the Bay

Casco Bay Estuary Partnership (CBEP)

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2010

## Bay Water Quality (2010 State of the Bay Poster)

Casco Bay Estuary Partnership

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# Bay Water Quality

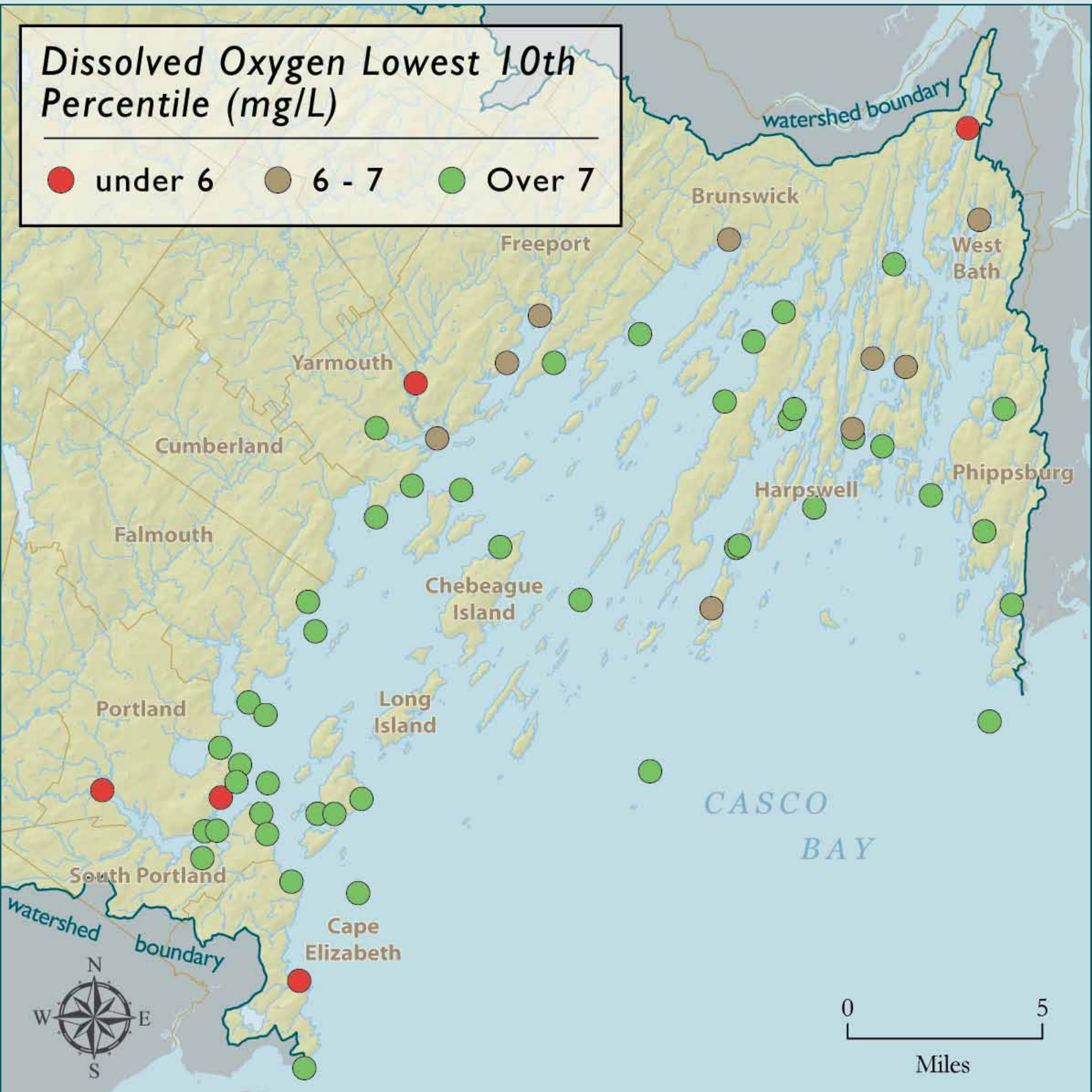
The overall water quality of Casco Bay is good, although there are a few sites where indicators have been measured at levels of concern.

Low dissolved oxygen near urban areas suggests that the Bay is experiencing localized pollution problems, most likely due to over-enrichment with nitrogen.

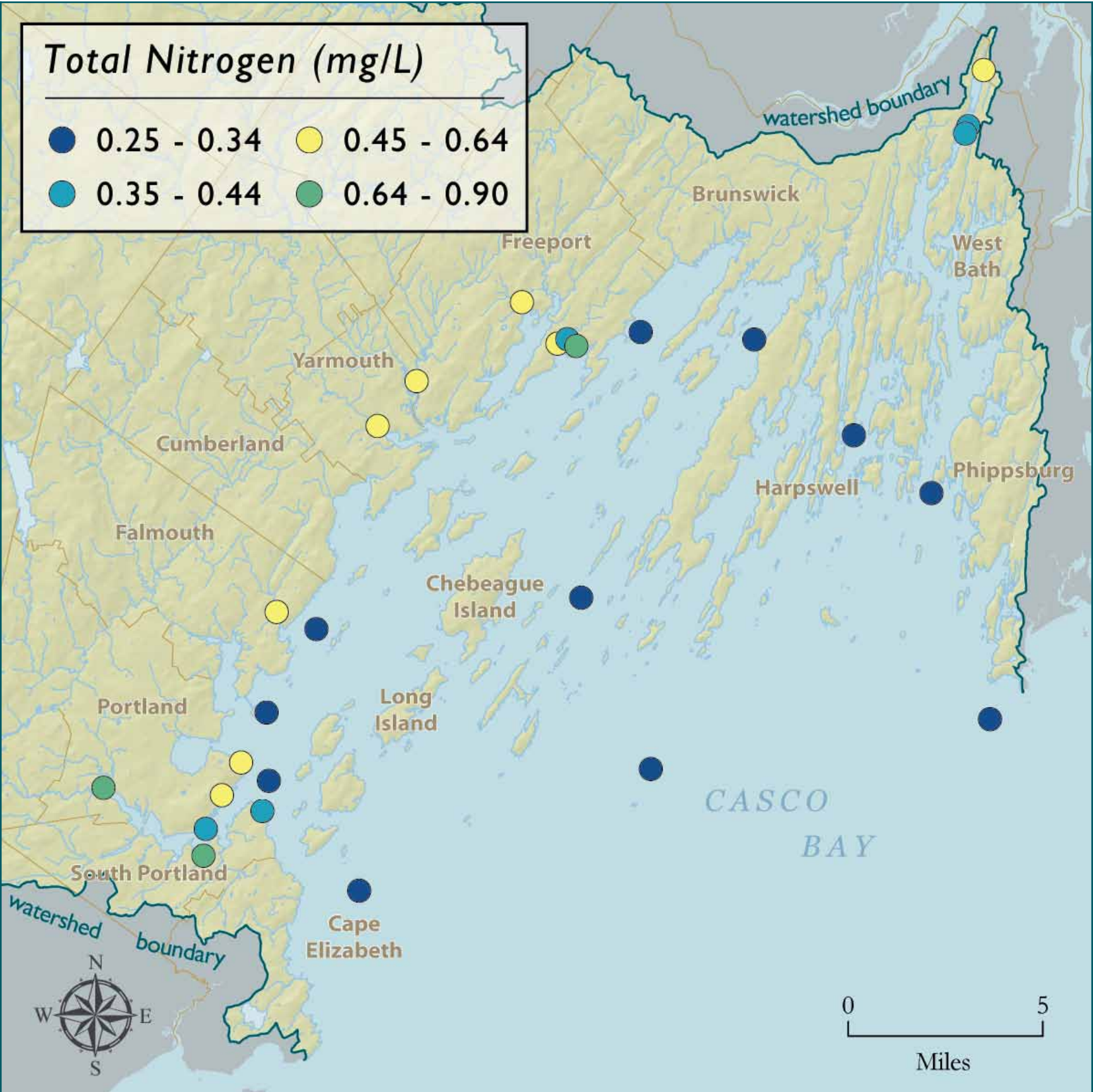
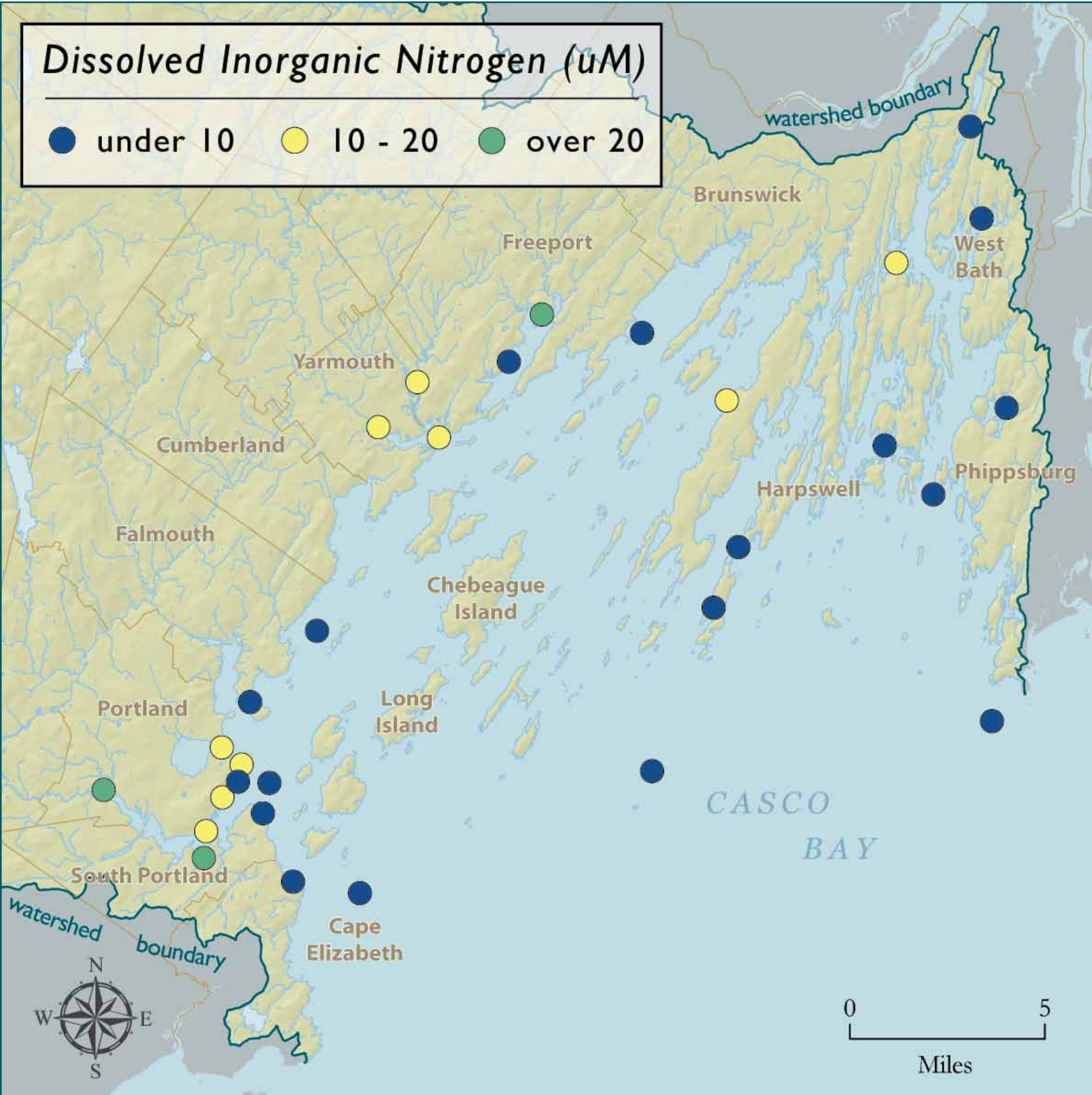
The distribution of all of the DO data – including more than 7,600 measurements – shows that 90 percent of the DO values in Casco Bay were above 7.2 mg/l. Only 0.5 percent fell below 5.0 mg/l. On the whole, those values are typical of well oxygenated, healthy coastal waters. Low dissolved oxygen levels that may be of significant management concern are still rare in Casco Bay.



If temperatures, sunlight levels and nutrient levels are high enough, green slime proliferates, especially in more protected areas such as mudflats, around piers and docks, and in sheltered harbors.

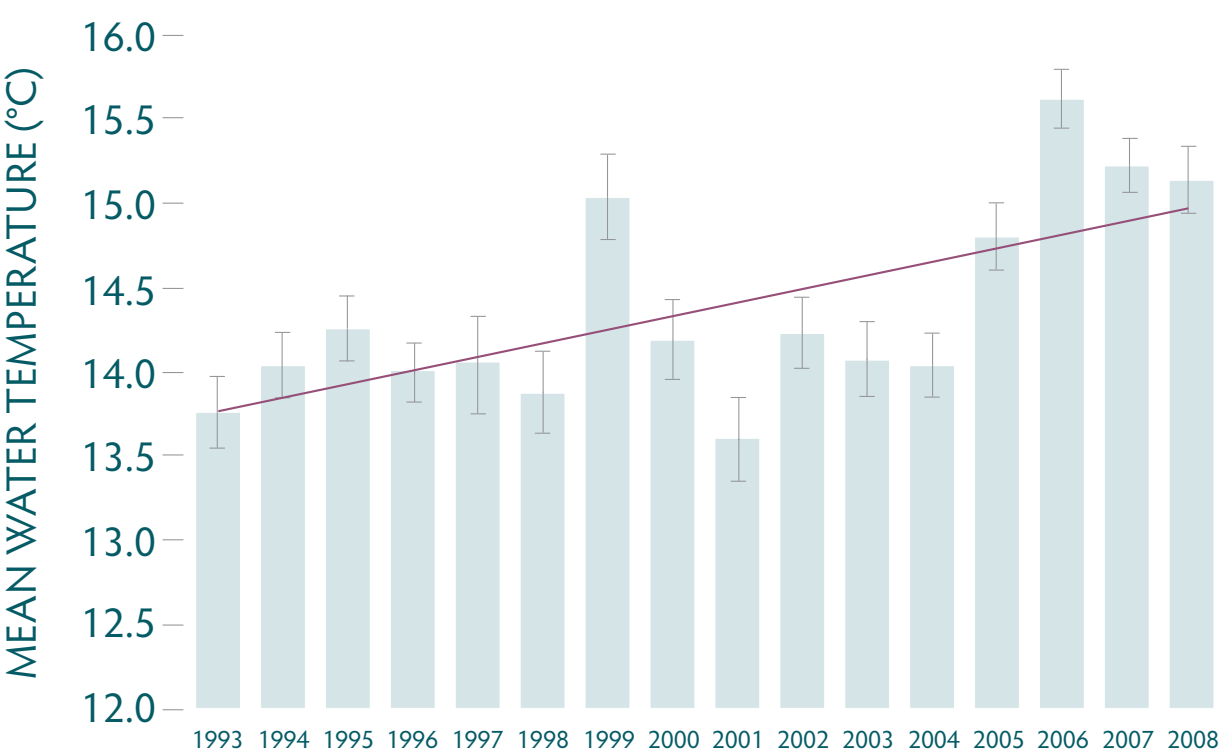


The lowest 10th percentile values for DO show where issues with dissolved oxygen may be occurring. There is a strong inshore to offshore trend of improving DO conditions. Sites that exhibit more frequent low levels of DO include Stroudwater Creek and Custom House Wharf in Portland Harbor, the Cousins River and the upper New Meadows River. The Peabbles Cove site in Cape Elizabeth occasionally experiences low levels of DO, probably as a result of decomposing storm-cast seaweed (FOCB 2010).



A clear decreasing trend from inshore to offshore can be seen for both parameters. This pattern of more nitrogen in areas with lower salinity, most likely from runoff, suggests that there is a significant contribution of nitrogen to Casco Bay from terrestrial sources (FOCB 2010).

## Increase in Water Temperature in Casco Bay Since 1993



## Water Quality Conditions in Casco Bay by Region



Regions are sorted the same way in all panels (in order of average DO levels, from highest to lowest) so comparisons can be made among parameters. For each region, 90 percent of observations had DO above the the orange line. The error bars show +/- one standard deviation among measurements taken in a region to show the magnitude of local, seasonal and annual variability (FOCB 2010).