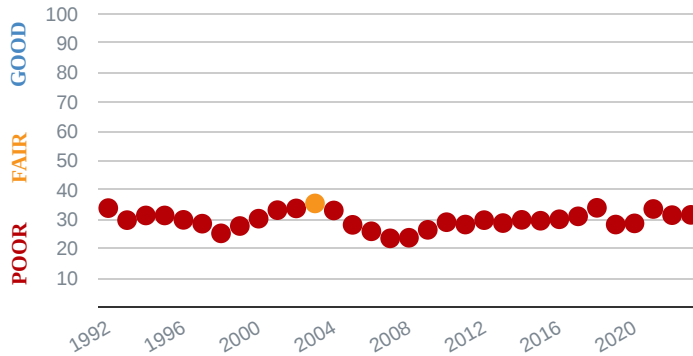


Bay Health Index (5-year average)



32



### What does my Bay Health score mean?

Score Range	Quality	Description
0-35	Poor	There is too much nitrogen pollution in the water. Underwater habitats are unhealthy for fish and shellfish. The waterway is not functioning as a viable ecosystem.
35-65	Fair	These are transitional areas that are either improving or, more likely, becoming more polluted with nitrogen. The habitat health is damaged.
65-100	Good	There is little nitrogen pollution in the water. The waterway offers healthy underwater habitats for fish and shellfish. Overall, the ecosystem is in balance.

**What does this score mean?** The Buzzards Bay Coalition scores the health of local waterways between 0 and 100. A Bay Health score of 100 represents pristine water and 0 represents water severely polluted with nitrogen. (The score does not measure bacteria, and does not indicate swimmability or shellfish bed status.)

To reach this score, the Coalition uses data collected through its Baywatchers monitoring program, conducted in partnership with the Marine Biological Laboratory in Woods Hole. The data that supports this score is on this fact sheet.

**What is nitrogen pollution?** Nitrogen pollution is the greatest long-term threat to the health of our local coastal waters. Nitrogen in Buzzards Bay comes primarily from our home septic systems and older wastewater treatment plants. It also comes in smaller part from manicured lawns, farms, roads, and acid rain.

When nitrogen pollutes the water, it becomes cloudy and murky with algae. Nitrogen pollution also suffocates fish and shellfish by reducing the amount of oxygen in the water.

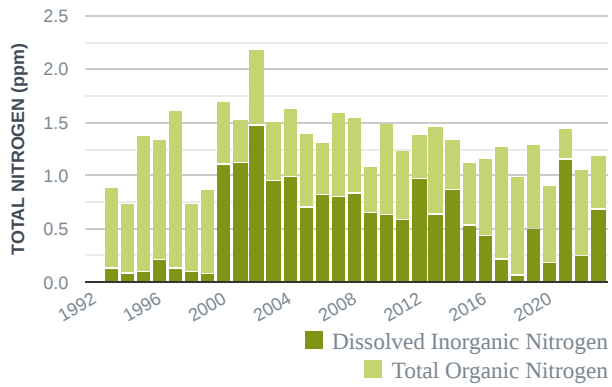
## Supporting Data

### Inner Apponagansett Bay: Russells Mills Road (Station AB1A)

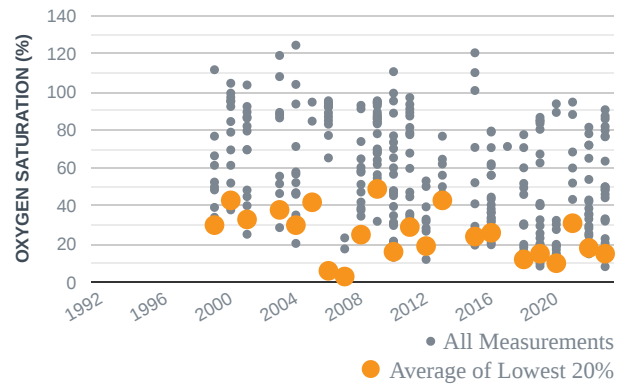
Nitrogen, water clarity, and algae measurements taken from shore at the edge of the marsh on the south side of the culvert at

Russells Mills Road. (41.60078265, -70.96156816)

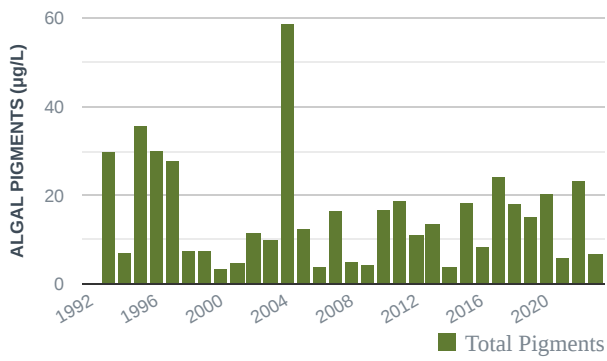
#### Total Nitrogen



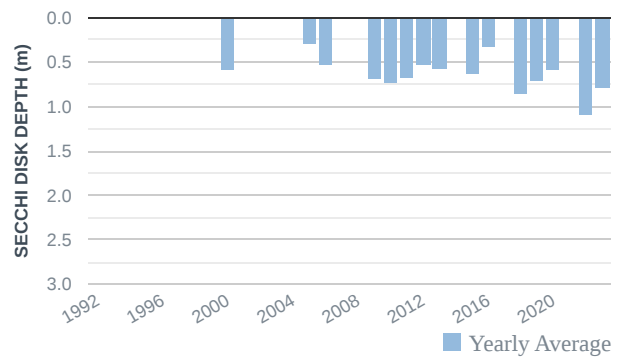
#### Dissolved Oxygen



#### Algal Pigments



#### Water Clarity

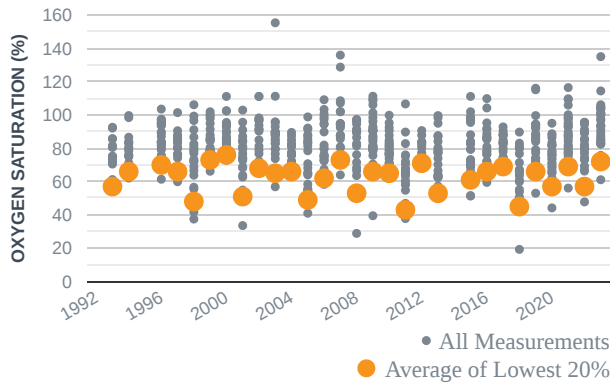


## Inner Apponagansett Bay: Shipyard Lane (Station AB1)

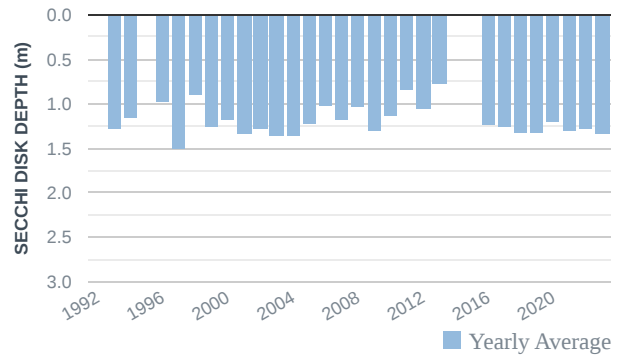
Water clarity and dissolved oxygen measurements taken from a floating dock at Marshall Marine at the end of Shipyard Lane.

(41.59451767, -70.95614487)

### Dissolved Oxygen



### Water Clarity

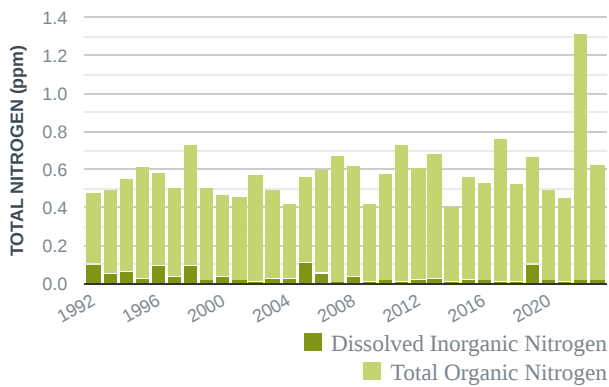


## Inner Apponagansett Bay: Little Island (Station AB4)

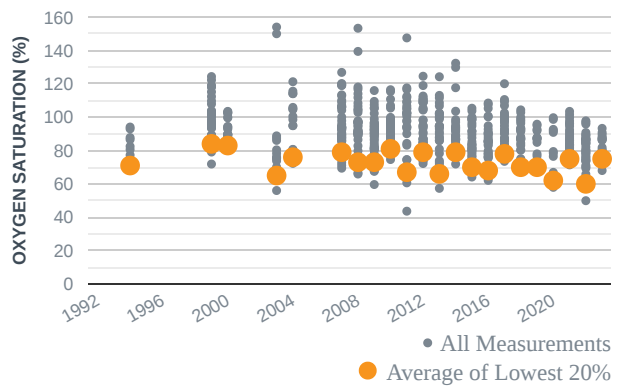
Nitrogen, water clarity, dissolved oxygen, and algae measurements taken from a boat northwest of Little Island. (41.59294442,

-70.95348173)

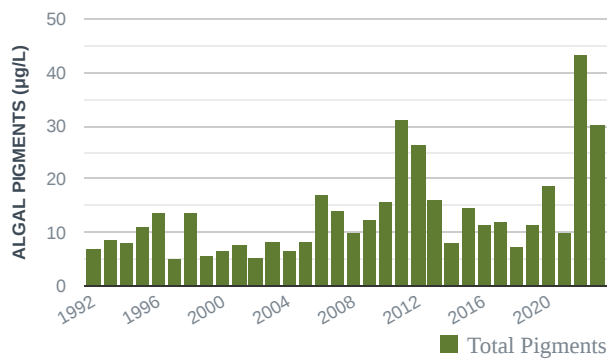
### Total Nitrogen



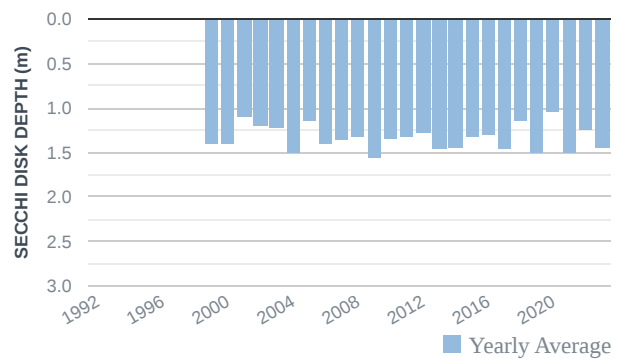
### Dissolved Oxygen



### Algal Pigments



### Water Clarity



### What does the Bay Health measure?

The Bay Health Index is the sum of five health indicators: nitrogen (organic and inorganic), dissolved oxygen, algal pigments, and water clarity. Data are combined and reported as a single score that provides a snapshot of a waterway's health. (Note: The Bay Health Index does not include bacteria and is not an index of swimmability or shellfish bed status.)

### Nitrogen

Nitrogen is a type of nutrient that controls plant production in Buzzards Bay. Some nitrogen is an essential part of any waterway. But when there's too much nitrogen in the water, it can become pollution.

The Coalition monitors two forms of nitrogen in Buzzards Bay: inorganic and organic. Tracking both forms of nitrogen helps to identify their source and potential impact on our water. Our nitrogen monitoring is conducted with the Marine Biological Laboratory in Woods Hole.

### Dissolved Oxygen

Dissolved oxygen is the amount of oxygen in the water. Like you and me, fish, shellfish, and plants all need oxygen to survive. When oxygen levels are low, it's an indication that there is too much nitrogen pollution in the water.

### **Algal Pigments**

Chlorophyll a is a green plant pigment found in algae and most phytoplankton. Plants use chlorophyll a during photosynthesis. Measuring chlorophyll a and its immediate breakdown product, pheophytin a, indicates the amount of algae in the water. High chlorophyll levels are often a sign of nitrogen pollution.

### **Water Clarity**

Water clarity is affected by the amount of algae and sediment particles suspended in the water. Good water clarity is vital to the health of a waterway. When the water is too cloudy, sunlight can't reach eelgrass growing at the bottom.

Water clarity is measured using a Secchi disk: a black-and-white circle attached to a measuring tape. The disk is lowered into the water until it's no longer visible. This depth is known as the "Secchi depth."