

State of the Bay - 2025

KEY FINDINGS / RECOMMENDATIONS

Duxbury Bay is a vital ecological and economic resource—supporting shellfish aquaculture, recreation, and wildlife. But increasing nutrient pollution, habitat loss, and climate pressures threaten its health. Together, we can protect and restore this treasured coastal ecosystem.

Key Findings

- **Water quality is generally good, but showing signs of decline** especially in the upper bay areas which are stressed by excess nutrients, such as nitrogen from septic systems and fertilizers, and warming temperatures.
 - **Eelgrass meadows have declined by over 60%**, impacting fish habitat and water clarity.
 - **Short-term high-water temperature, low oxygen events** during summer can harm aquatic life.
 - **Oyster aquaculture helps clean the water**, but faces challenges from invasive species and climate change.
 - **Duxbury Beach and wetlands buffer storms and support rare wildlife**, but face rising sea levels and erosion.
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What We Can Do

1. Identify and Reduce Nutrient Pollution

- Identify sources of nutrient pollution, upgrade septic systems and reduce fertilizer use – particularly in Bluefish River and Back River watersheds. **Failure to do so could result in future declines in water quality and fisheries, and additional septic system regulations, or restrictions on development in Duxbury.**

2. Monitor and Adapt

- Maintain and if possible expand water quality monitoring
- Use data to guide aquaculture, habitat restoration, and policy decisions.

3. Restore Coastal Habitats

- Replant eelgrass and protect marshes and dunes.
- Consider nature-based solutions like marsh and eel grass restoration, and oyster reefs to filter water and prevent erosion.

4. Combat Invasive Species

- Remove green crabs and tunicates that damage habitats and aquaculture gear.
- Support resilient aquaculture activities that improve water quality, provide economic benefits, and can better withstand climate changes.



● Areas of greatest concern for nitrogen pollution which drives algae growth and reduces available oxygen for fish, shellfish and other biota.