The State of Our Watershed
Narragansett Bay Estuary Program
2017
Watershed Indicators

Open Space  Population
Land Use    Developed Lands
Wastewater  Stream Invertebrates
Freshwater Fish  Water Quality and Aquatic Life
The State of Our Watershed
Geographic Scales

For the Narragansett Bay watershed the report includes various watershed and planning scales:

- 4 major basins (Blackstone, Taunton, Pawtuxet, Narragansett)
- 11 hydrological unit code-10 watersheds (HUC10s) that drain to Narragansett Bay
- 52 hydrological unit code-12 sub-watersheds (HUC12s) within the Narragansett Bay watershed
- 42 Watershed Planning Areas in the Narragansett Bay watershed
- 105 Municipalities in the Narragansett Bay watershed
Bay Indicators

- Seagrass
- Benthic Habitat
- Nutrients
- Water Clarity
- Salt Marsh
- Oxygen
- Chlorophyll
- Toxins
Health and Climate Indicators

Swimming at Our Beaches
Shellfishing
Temperature
Sea Level

Boating and Swimming
Precipitation
Fish Communities
Swimming and Boating

Assessed:
- Estuarine 156 sq. miles
- Rivers and Streams 1,345 miles
- Ponds and Lakes 390 (34,830 acres)

Status:
- Acceptable conditions: 131 sq. miles of the Bay, 291 miles of streams, and 74 ponds
- Impacted by Pathogens: 15.4 sq. miles of the Bay, 484 miles of streams, and 7 ponds
- Unknown conditions: 8.0 sq. miles of the Bay, 580 miles of streams, and 229 ponds

Major Basins:
- Entire Blackstone River is impacted by Pathogens
- Freshwater bodies in the Taunton River Basin have the largest data gap for these designated uses.
Shellfishing

Status & Trends

Narragansett Bay
- 63% of the Bay have approved areas for shellfishing; 13% are approved with some restrictions; and 24% are closed.
- Acreage of “Prohibited” areas for shellfishing are decreasing while “Conditionally Approved” areas are increasing.

Upper Estuary
- Only 6.2% is open without restrictions; 43.7% is conditionally approved; and 49.5% is closed for shellfishing.
- ~1,500 acres upgraded to Conditionally Approved; most notable changes were between 2010 and 2015
Open Space

Status:

- Pawtuxet River Basin
  Natural Open Space: 20.8%
  Unpreserved: 22.3%

- Taunton River Basin
  Natural Open Space: 16.1%
  Unpreserved: 17.6%

- Blackstone River Basin
  Natural Open Space: 14.6%
  Unpreserved: 19.3%

- Narragansett Bay Basin
  Natural Open Space: 13.9%
  Unpreserved: 11.4%

Paul Jordan, Benjamin Smith & Scott Jackson
Wastewater

Status:

Estimated Number of Buildings Served by:

- Sewer Systems: 454,283 (~67%)
- Septic Systems: 221,422 (~33%)
- Hotspots: 90% higher than densities in the rest of the watershed (within 1 hectare)
Freshwater Fish

Brook Trout Habitat in Narragansett Bay Watershed

Status:
• **14.5%** Potential Habitat By Catchments
  - Pawtuxet River Basin: **29.3%**
  - Blackstone River Basin: **20.6%**
  - Taunton River Basin: **9.5%**
  - Narragansett Bay Basin: **6.7%**

Eastern Brook Trout Joint Venture

Brenda Rasheligh
**Seagrass**

**Status:**
Narragansett Bay has **513** acres
- **29** acres in Greenwich Bay

**Trends:**
- Points to recovery of habitat, but no clear trends
- Between 2006 and 2012, saw increased acreage

*RI Eelgrass Task Force, MassDEP, USEPA*
Nutrient Loading

Status & Trends:
Total WWTF Loading
• 2004: 11,196 thou lbs/yr
• 2015: 4,825 thou lbs/yr
• Percent change: 57%

URI-GSO, NBC, RIDEM, USEPA, MassDEP, UBWPAD, CDM
Smith, UMass-Amherst, McLaughlin Research Corp.
Nutrient Loading

**Trends:**
Since 1980s
- Loadings decreased by half
- Largest decreases in rivers and WWTF discharge
- NPS have become relatively more important
Dissolved Oxygen

Status:
2015:
- Hypoxia low for all stations
- Hypoxia eases with distance north to south
- Current hypoxia levels linked with dry summers, and potentially linked with nutrient reductions

Trends:
2001-2015:
- North-south gradient holds each year
- Inter-annual variability linked to wet/dry summers (wet summers = more hypoxia, dry = less)
Fish Species Communities

Status & Trends:
• Warm water species used to come in pulses, now coming and staying for longer periods of time
• Lobster population increased through the 1980s then collapsed

Changes linked to:
• Warming temperatures
• Pollution
• Fishing pressures
• Habitat loss

Emily Shumchenia, Eric Schneider, Jason McNamee, Scott Olszewski, Jeremy Collie
The State of Our Watershed

**Timeline:**
- **End of October** - Written comments - Steering and Science Advisory Committees
- **November** - Science Advisory Committee Meetings
- **End of February** - Meetings in both states to receive additional public input
- **End of March** - Final documents released

**Next Steps:**
- Synthesis Paper
- Website with story maps and Arc GIS online
- Research Grant Program
- Science and Policy Papers