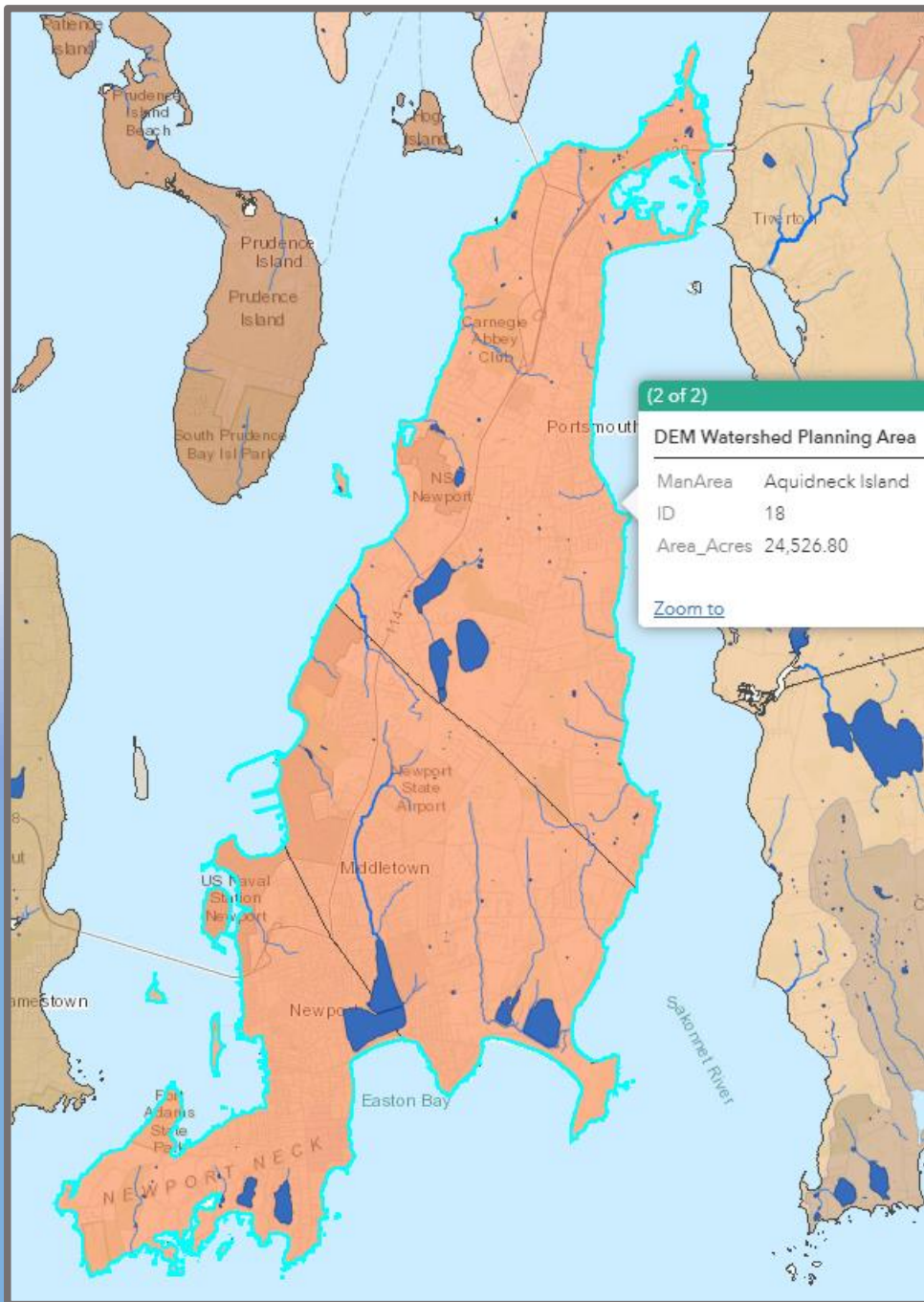


# Aquidneck Island Watershed Plan

## For the Protection and Restoration of Clean Water and Healthy Aquatic Habitats



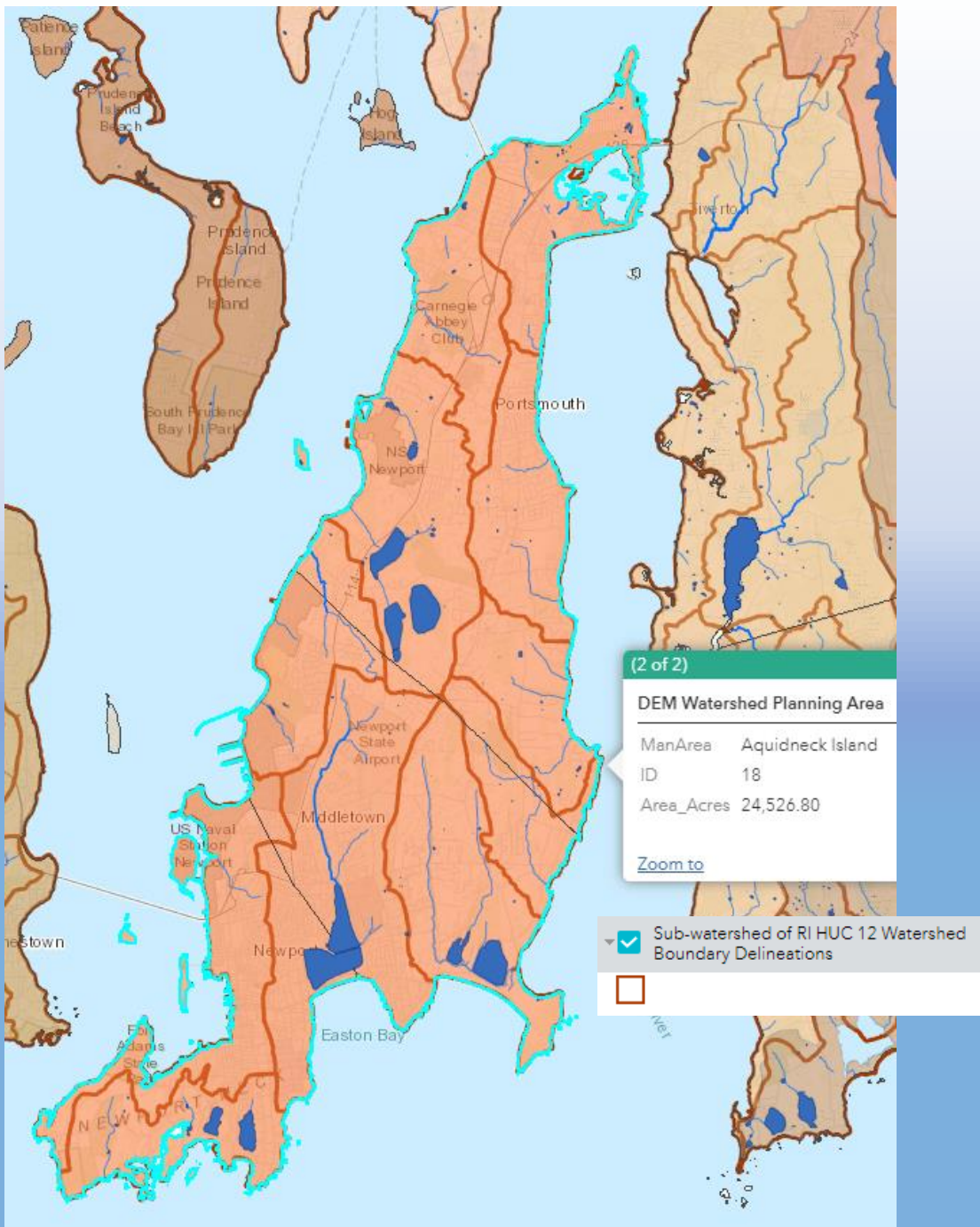
Jennifer Paquet, Senior Environmental Planner  
Nonpoint Source Pollution Management Program  
RIDEM Office of Water Resources



March, 2021

# Aquidneck Island 'Watershed'

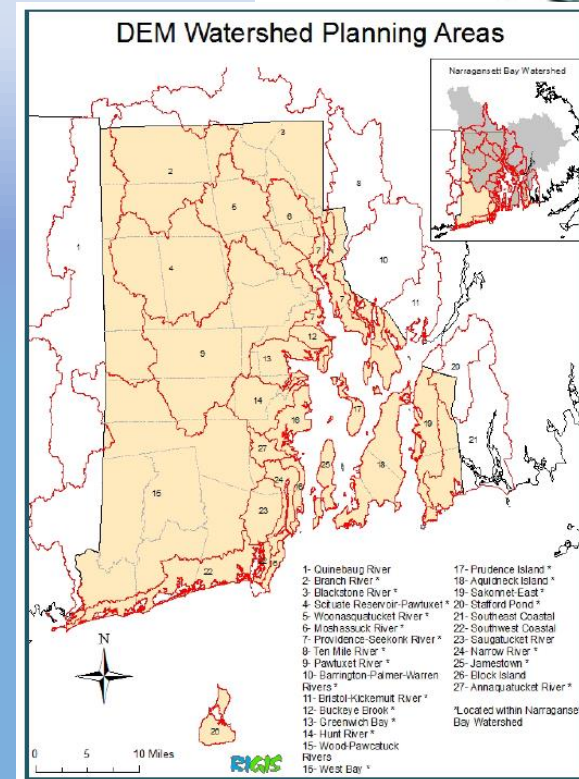
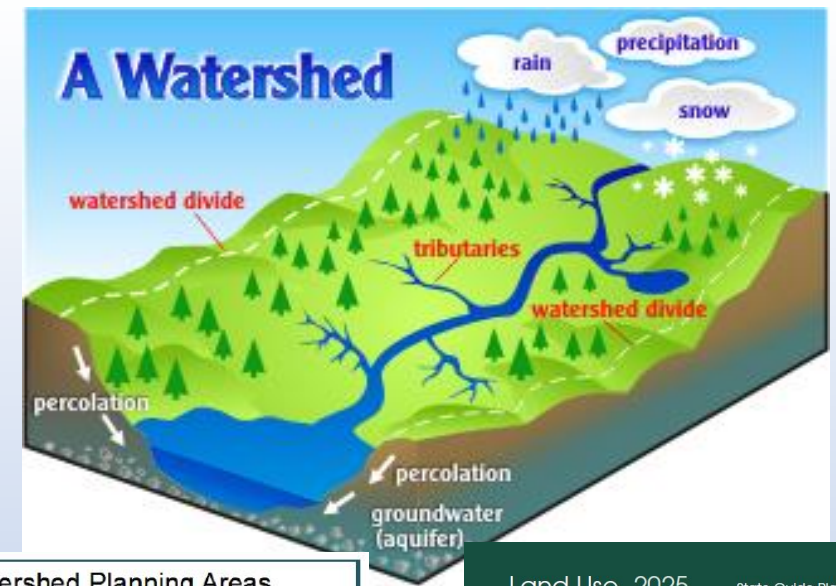
Island made of small  
watersheds





# About Watershed Planning in RI

- Watershed Planning is a framework that recognizes the watershed as the appropriate unit for managing our water resources
- Management Principle supported in
  - Land Use 2025
  - Water Quality 2035
- 27 Planning Areas – prioritized for plan development
- Required for Federal 319 grants
- Holistic approach
- It is a resource



Land Use 2025 State Guide Plan Element 121  
Report Number 109

Rhode Island State Land Use Policies and Plan

Rhode Island Department of Administration  
Division of Planning  
Statewide Planning Program

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RHODE ISLAND DIVISION OF PLANNING

State Guide Plan Element  
Report # 121

## Water Quality 2035

Rhode Island Water Quality Management Plan


October 13, 2016

Rhode Island Department of Administration  
Division of Planning  
One Capitol Hill  
Providence, Rhode Island 02908  
[www.planning.ri.gov](http://www.planning.ri.gov)



# Examples of what goes into the Aquidneck Island Watershed Plan – compile existing information

**Town of Portsmouth  
Rhode Island**




**COMPREHENSIVE  
COMMUNITY PLAN**

September 1992

A cooperative effort of the Town Council, Portsmouth Citizen Advisory Committee, and Planning Board, Comprehensive Plan

**COMPREHENSIVE  
COMMUNITY PLAN**



**Town Pond Restoration Project  
Portsmouth, Rhode Island  
Ecological Monitoring Report (2010 - 2012)**



REPORT  
PARE Project No. 12228.00

CITY OF NEWPORT  
DEPARTMENT OF UTILITIES


**ALMY POND TMDL MANAGEMENT PLAN**

**Town of Middletown  
Rhode Island**

**Phase II  
Stormwater  
Management Plan**

**Source Water Phosphorus  
Reduction Feasibility Plan**

June 2016



Prepared for:  
City of Newport Water Division  
Project #15-033

Prepared by:  
**FUSS & O'NEILL**

This project was funded by an agreement (CE96194201) awarded by the Environmental Protection Agency to the New England Interstate Water Pollution Control Commission in partnership with the Narragansett Bay Estuary Program.


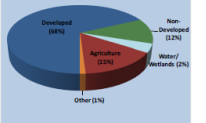
**Bailey's Brook**

Watershed Description

This TMDL applies to the Bailey's Brook assessment unit (RI0007035R-01), a 4.8-mile long stream located in Middletown, RI (Figure 1). The Town of Middletown is located on Aquidneck Island and Bailey's Brook is situated in the northern portion of the island.

Assessment Unit Facts (RI0007035R-01)

- Town: Middletown
- Impaired Segment Length: 4.8 miles
- Classification: Class AA
- Direct Watershed: 3.1 mi<sup>2</sup> (1,956 acres)
- Impervious Cover: 32%
- Watershed Planning Area: Aquidneck Island (#1)

Watershed Land Uses

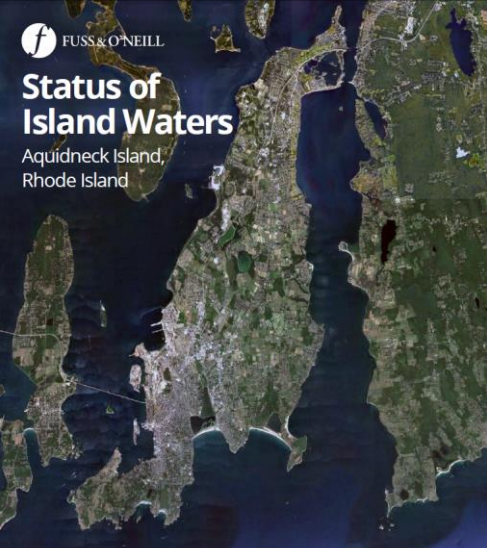
Developed (38%)	Non-Developed (62%)
Water/Waterbodies (2%)	Other (1%)
Agriculture (21%)	



**FUSS & O'NEILL**

**Status of  
Island Waters**

Aquidneck Island,  
Rhode Island




**Aquidneck Island Planning Commission**  
May 2018

**MIDDLETOWN, RHODE ISLAND**

Adopted by the Middletown Town Council, November 16, 2015  
Adopted by the Middletown Town Council, March 2, 2015  
Approved by the Middletown Planning Board, September 10, 2014


**NEWPORT**  
COMPREHENSIVE  
LAND USE PLAN



Rhode Island Department of Environmental Management  
Office of Water Resources  
235 Promenade Street  
Providence, RI 02908

**FINAL  
Total Maximum Daily Load  
The Sakonnet River – Portsmouth Park and The Cove**

March 2005



**Key Features:** TMDL assessment for Total Coliform

**Location:** Portsmouth, RI

**Impaired Area:** Sakonnet River: 180 acres; The Cove: New England Coastal Region, Coastal

**Land Type:** Urban - Residential / Commercial - Industrial

**Pollutants / Stressors:** Pathogens

**Data Sources:** RIDEM, RIDOH

Prepared By: Office of Water Resources  
Rhode Island Department of Environmental Management  
235 Promenade St. Providence, RI 02908  
February 2017


**Maldford River and Paradise Brook  
Water Quality Study and Pollutant Source Identification**

National Water Quality Initiative



December 2003  
Updated May 2008  
Revised April 2009

**MAIDFORD RIVER  
Watershed Assessment & BMP Design**



JUNE 2015

**2015  
Rhode Island  
Wildlife  
Action Plan**



Prepared by: THE UNIVERSITY OF RHODE ISLAND  
Department of Environmental Management

**RHODE ISLAND DEPARTMENT OF HEALTH**

2016 RHODE ISLAND BEACH AND RECREATIONAL WATER QUALITY REPORT




Photo Courtesy of Ricki Weimer  
2017 Beach Program Intern



# Aquidneck Island Water Resources

## Reservoirs, Ponds, and Streams:

- Melville Ponds
- Founder's Brook
- Lawton Valley Reservoir
- Sisson and Saint Mary's Ponds
- Bailey's Brook
- North and South Easton Ponds
- Lily and Almy Ponds
- Little Creek
- Maidford River
- Paradise Brook
- Nelson and Gardiner Ponds

## Coastal/Estuarine:

- Mount Hope Bay
- Portsmouth Cove
- Sakonnet River
- East Passage
- Newport Harbor/ Coddington Cove
- Coastal shoreline- Easton Bay, etc.

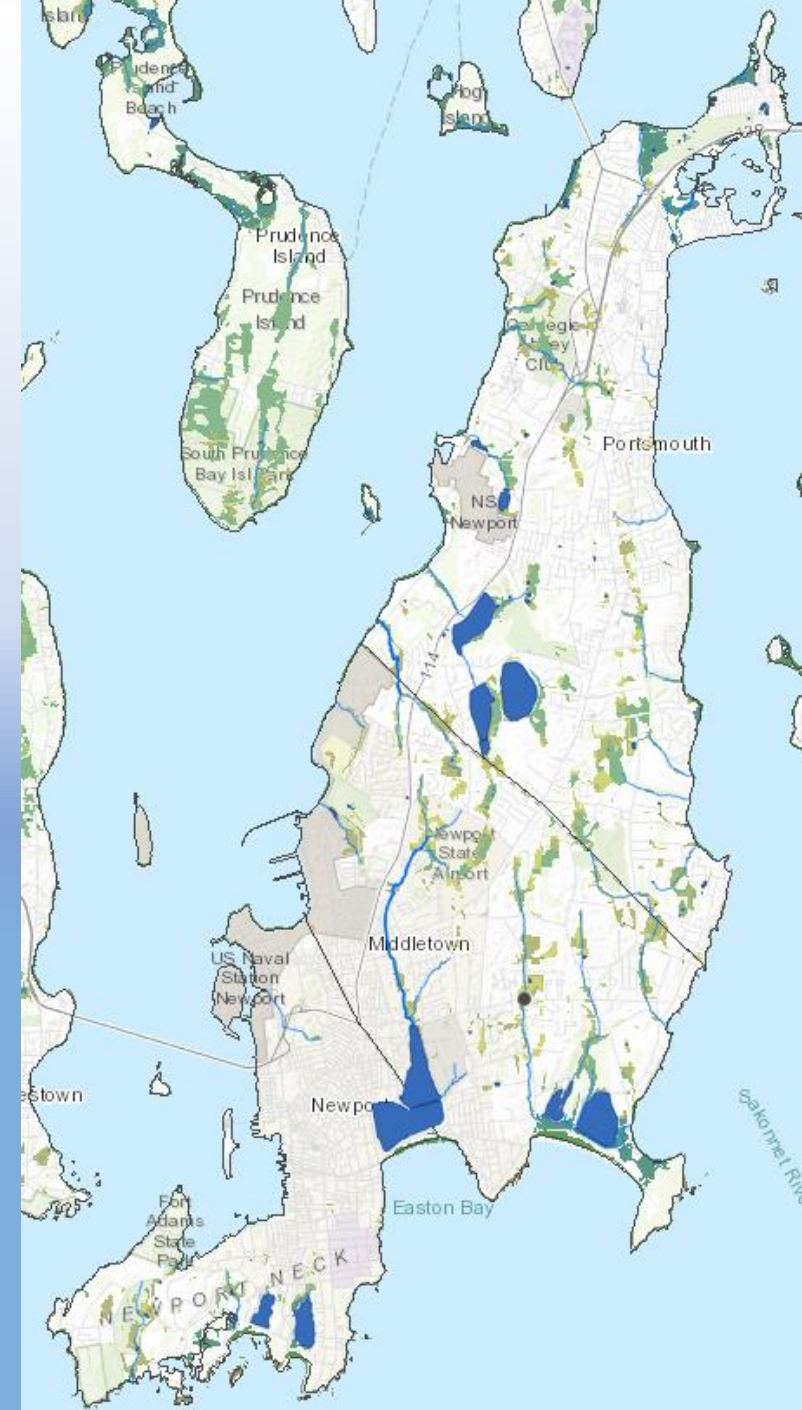
## Groundwater:

- Private and public wells

## Wetlands: Freshwater and Coastal

- Essential Services: water quality, flood control, habitat, more...

Drinking, Irrigation, Swimming, Boating, Fish & Wildlife Habitat, Fishing, Shellfish, Scenic, Picnicking, Historic and Cultural, etc.







# Some Conditions on the Island

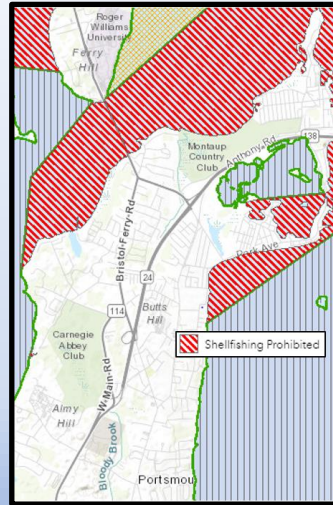
## All Drinking Water Reservoirs

- Excess nutrients (tributaries, too)
- Organic carbon (reacts w/disinfectant, creating harmful byproduct- needs extra treatment)
- Cyanobacteria Advisories

## Melville Ponds- Portsmouth

## Lily and Almy Ponds- Newport

- Excess phosphorus
- Cyanobacteria Advisories



## Mt. Hope Bay, Portsmouth Cove, and Sakonnet River at Island Park

- Wastewater /bacteria
- Closed to shellfishing

**Can't  
eat  
from  
here**

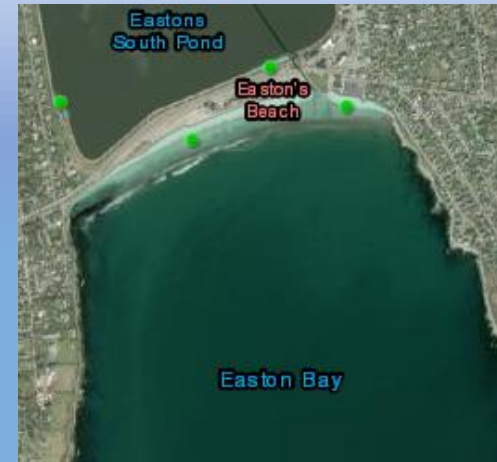


## Turbidity (particles) Impairments

- Maidford River
- Paradise Brook

## Bacteria Impairments

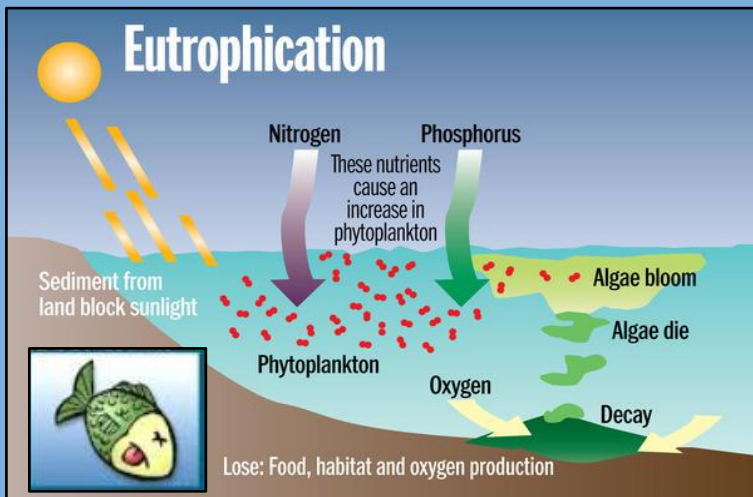
- Portsmouth
  - Founders Brook
  - Little Creek
- Middletown
  - Maidford River
  - Paradise Brook
  - Bailey's Brook
- Newport
  - Lily Pond
  - Newport Harbor/ Coddington Cove



## Also, a lot of missing stream buffers and hydro-modification

## Beaches- frequent closures due to bacteria

- Easton's Beach and Atlantic Beach Club
- Third Beach and Peabody's Beach
- Fort Adams and Kings Park beaches



# Impaired Freshwater Waterbodies

Waterbody (Drinking Water Watersheds)	Impaired for Use(s) of:	Due to:	Schedule for Restoration Plan (aka 'TMDL')
All 7 drinking water reservoirs	<ul style="list-style-type: none"> <li>Public Drinking Water</li> <li>Fish and Wildlife Habitat</li> </ul>	<ul style="list-style-type: none"> <li>Total Organic Carbon</li> <li>Phosphorus</li> <li>Flow regime modification</li> </ul>	<ul style="list-style-type: none"> <li>2020</li> <li>2020</li> <li>(not required)</li> </ul>
<ul style="list-style-type: none"> <li>Maidford River</li> <li>Paradise Brook</li> <li>Bailey's Brook</li> </ul>	Primary and Secondary Contact Recreation	Fecal Coliform or Enterococcus (bacteria species used as indicator for risk of pathogens that make people sick)	<ul style="list-style-type: none"> <li>2011</li> <li>2011</li> <li>2011</li> </ul>
Maidford River	Fish and Wildlife Habitat	<ul style="list-style-type: none"> <li>Phosphorus</li> <li>Turbidity</li> <li>Lead</li> <li>Biological indicators*</li> </ul>	2023 2023 2026 2026
Paradise Brook	Fish and Wildlife Habitat	<ul style="list-style-type: none"> <li>Phosphorus</li> <li>Turbidity</li> </ul>	2023 2023
Bailey's Brook & Tributaries	Fish and Wildlife Habitat	<ul style="list-style-type: none"> <li>Phosphorus</li> <li>Lead</li> </ul>	2023 2026



# Impaired Freshwater Waterbodies, cont.

Waterbody	Impaired for Use(s) of:	Due to:	Schedule for Restoration Plan (aka 'TMDL')
Lawton Brook	Fish and Wildlife Habitat	Biological indicators*	2026
Melville Ponds	Fish and Wildlife Habitat	Phosphorus	2022
Founder's Brook	Primary and Secondary Contact Recreation	Enterococcus (indicator bacteria)	2030
Little Creek	Primary and Secondary Contact Recreation	Enterococcus (indicator bacteria)	2030
Lily Pond	<ul style="list-style-type: none"> <li>• Fish and Wildlife Habitat</li> <li>• Primary and</li> <li>• Secondary Contact Recreation</li> </ul>	<ul style="list-style-type: none"> <li>• Phosphorus</li> <li>• Enterococcus (indicator bacteria)</li> </ul>	<ul style="list-style-type: none"> <li>• 2023</li> <li>• 2023</li> </ul>
Almy Pond	Fish and Wildlife Habitat	<ul style="list-style-type: none"> <li>• Phosphorus</li> </ul>	2007

\*Benthic macro-invertebrate bioassessments-  
biological indicator of ecological conditions

# Impaired Coastal Waters

Waterbody	Impaired for Use(s) of:	Due to:	Schedule for Restoration Plan (aka 'TMDL')
<ul style="list-style-type: none"> <li>Portsmouth Cove/ Island Park/Sakonnet River</li> </ul>	<ul style="list-style-type: none"> <li>Shellfish consumption</li> </ul>	Fecal coliform	2005
<ul style="list-style-type: none"> <li>Mt. Hope Bay                             <ul style="list-style-type: none"> <li>East of CFP, Class SB</li> <li>West of CFP, Class SA</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Fish &amp; Wildlife Habitat</li> <li>Primary &amp; 2ndary Contact Recreation</li> <li>Shellfish consumption</li> </ul>	Nitrogen + Dissolved O2 Fecal coliform Fecal coliform	2024 2010 2010
Newport Harbor/ Coddington Cove	Primary and Secondary Contact Recreation	Enterococcus	2035 (or combined sewer overflow abatement)
East Passage (McAlister Pt.)	<ul style="list-style-type: none"> <li>Fish and Wildlife Habitat</li> <li>Shellfish consumption</li> <li>Primary and</li> <li>Secondary Contact Recreation</li> </ul>	Sediment bioassays (contamination, remedial action complete, long-term monitoring required)	2028
Newport Harbor/ Coddington Cove	Fish and Wildlife Habitat	Sediment Bioassays	2028



# Waters with Data Supporting Designated Uses

Waterbody	Meets Quality for Use(s) of:
Mt. Hope Bay (west of Common Fence Point)	Primary and Secondary Contact Recreation
East Passage	<ul style="list-style-type: none"> <li>• Fish and Wildlife Habitat</li> <li>• Shellfish consumption*</li> <li>• Primary and Secondary Contact Recreation</li> </ul>
Newport Harbor (west of Goat Island)	Primary and Secondary Contact Recreation
South Coastal Shoreline (entire south coast of Island)	<ul style="list-style-type: none"> <li>• Primary and Secondary Contact Recreation</li> <li>• Shellfish Consumption**</li> </ul>
Almy Pond	• Primary and Secondary Contact Recreation

Waterbody	Meets Quality for Use(s) of:
Portsmouth Cove (north half)	<ul style="list-style-type: none"> <li>• Primary and Secondary Contact Recreation</li> <li>• Shellfish Consumption</li> </ul>
Portsmouth Cove (south half)/Sakonnet River at Island Park	• Primary and Secondary Contact Recreation
Most of Sakonnet River	<ul style="list-style-type: none"> <li>• Primary and Secondary Contact Recreation</li> <li>• Shellfish Consumption</li> </ul>

\*in those areas designated for the use of shellfishing, some areas are not designed for this use (classified SB), or are otherwise prohibited.

\*\*shellfishing also prohibited in Goose Neck Cove, Easton Bay, and other areas.

**Always check with DEM 24-hour shellfish hotline (401-222-2900).**

# Proposed Goals for the Watershed Plan

- Improve water quality for drinking water and for fish and wildlife habitat in all of the drinking water reservoirs on the Island (and their tributaries) which are impaired by excess nutrients
- Improve coastal water quality for swimming at areas frequently closed due to bacteria after storm events



# Proposed Goals for the Watershed Plan

- Eliminate the public health threat of contamination from untreated wastewater to shellfishing areas, which has caused permanent closures of this resource around Portsmouth
- Improve water quality for fish and wildlife habitat in the non-drinking water freshwater ponds, which are impaired by excess phosphorus

# Proposed Goals for the Watershed Plan

- Protect and restore freshwater wetlands, streams, and their buffers and floodplains for fish and wildlife habitat and drinking water quality, and as a resiliency strategy for riverine flooding and climate change impacts
- Protect and restore coastal wetlands and marsh migration areas for fish and wildlife habitat and as a resiliency strategy for coastal flooding, sea level rise, and climate change



# Proposed Goals for the Watershed Plan

- **Others?**
- Do you agree or disagree with those proposed goals, or have any ideas to share?

# Next Steps:

- Talk with key stakeholders
- Compile recommendations- and fill in any gaps
- Finish drafting the plan
- Submit to EPA by the end of this year



# Thank you!

Jennifer Paquet, MCP  
Senior Environmental Planner  
NPS Program, Office of Water Resources  
RI Department of Environmental Management  
(401) 222-4700 x 77263 (voice messages)  
[Jenny.paquet@dem.ri.gov](mailto:Jenny.paquet@dem.ri.gov)



**DEM**  
RHODE ISLAND