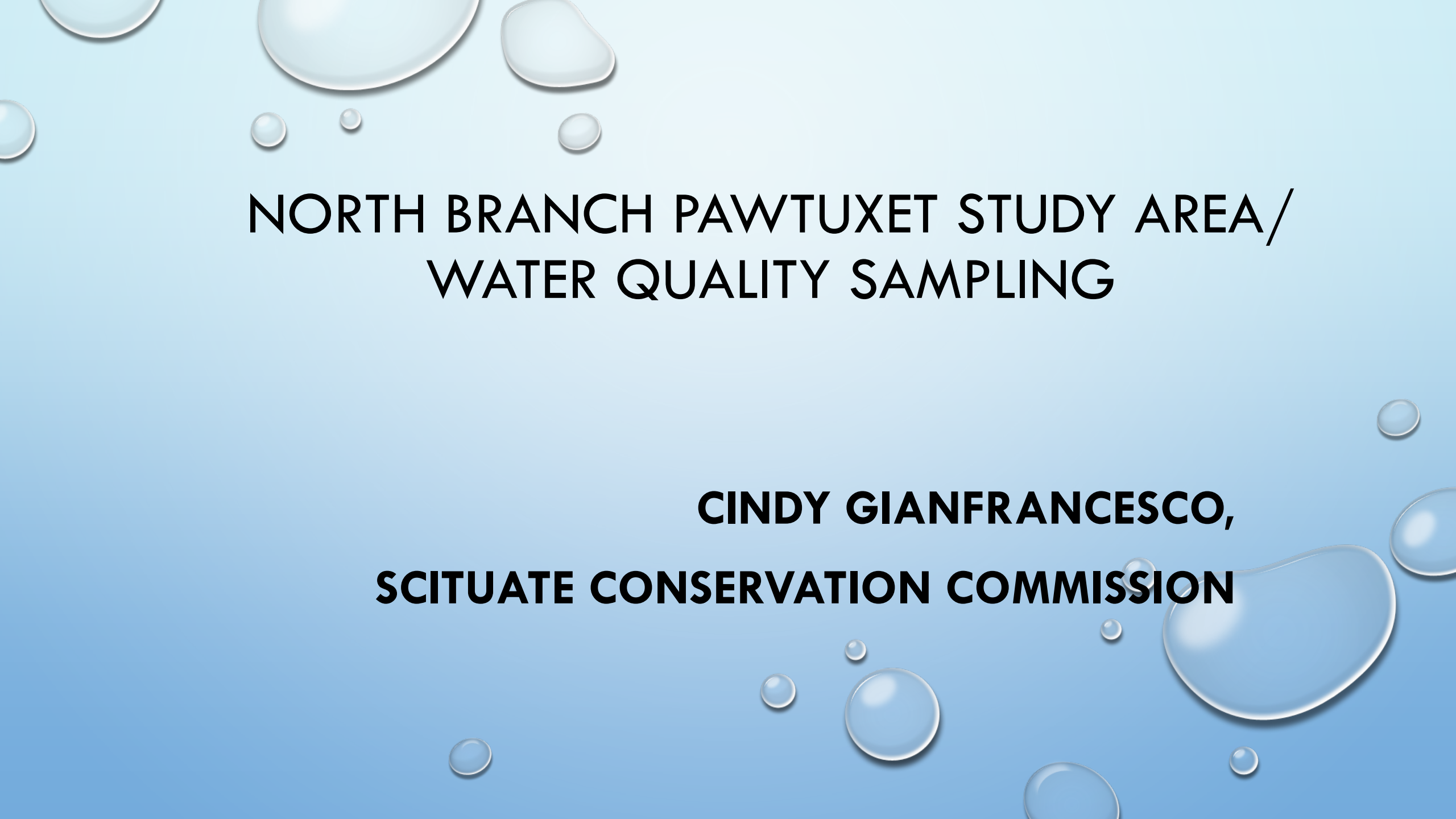


The background is a light blue gradient with several realistic water droplets of various sizes scattered across the surface. The droplets have highlights and shadows, giving them a three-dimensional appearance.

NORTH BRANCH PAWTUXET STUDY AREA/ WATER QUALITY SAMPLING

**CINDY GIANFRANCESCO,
SCITUATE CONSERVATION COMMISSION**

~ 9 million gallons per day from Gainer Dam

~ Pristine water

~ Prime trout habitat



Issues:

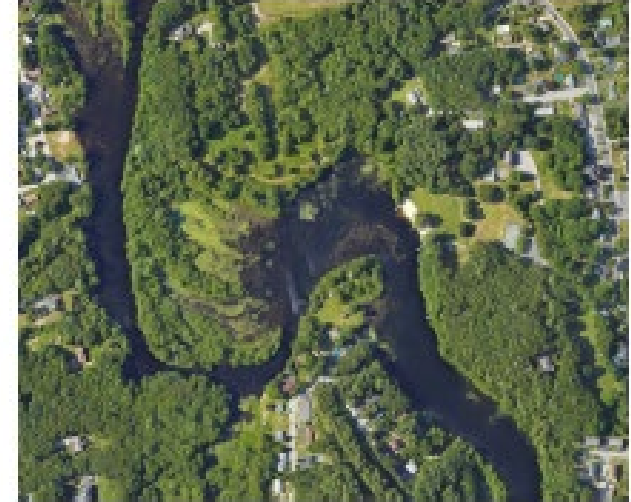
- Dramatic aquatic vegetation increase over the past 20 years
- Numerous beach closures each summer due to high bacteria



SALISBURY BEACH/HOPE POND STUDY INITIATED IN LATE 2024

Purpose

- ~ Conduct desktop study to determine **potential sources** of pollution resulting in beach closures and increase in aquatic vegetation:
 - Underperforming Onsite Wastewater Treatment Systems (OWTS): septic systems and cesspools
 - Overuse of lawn fertilizers
 - Waterfowl: Geese and ducks
 - Stormwater outfalls
 - Livestock (farms, backyard livestock).



SALISBURY BEACH STUDY

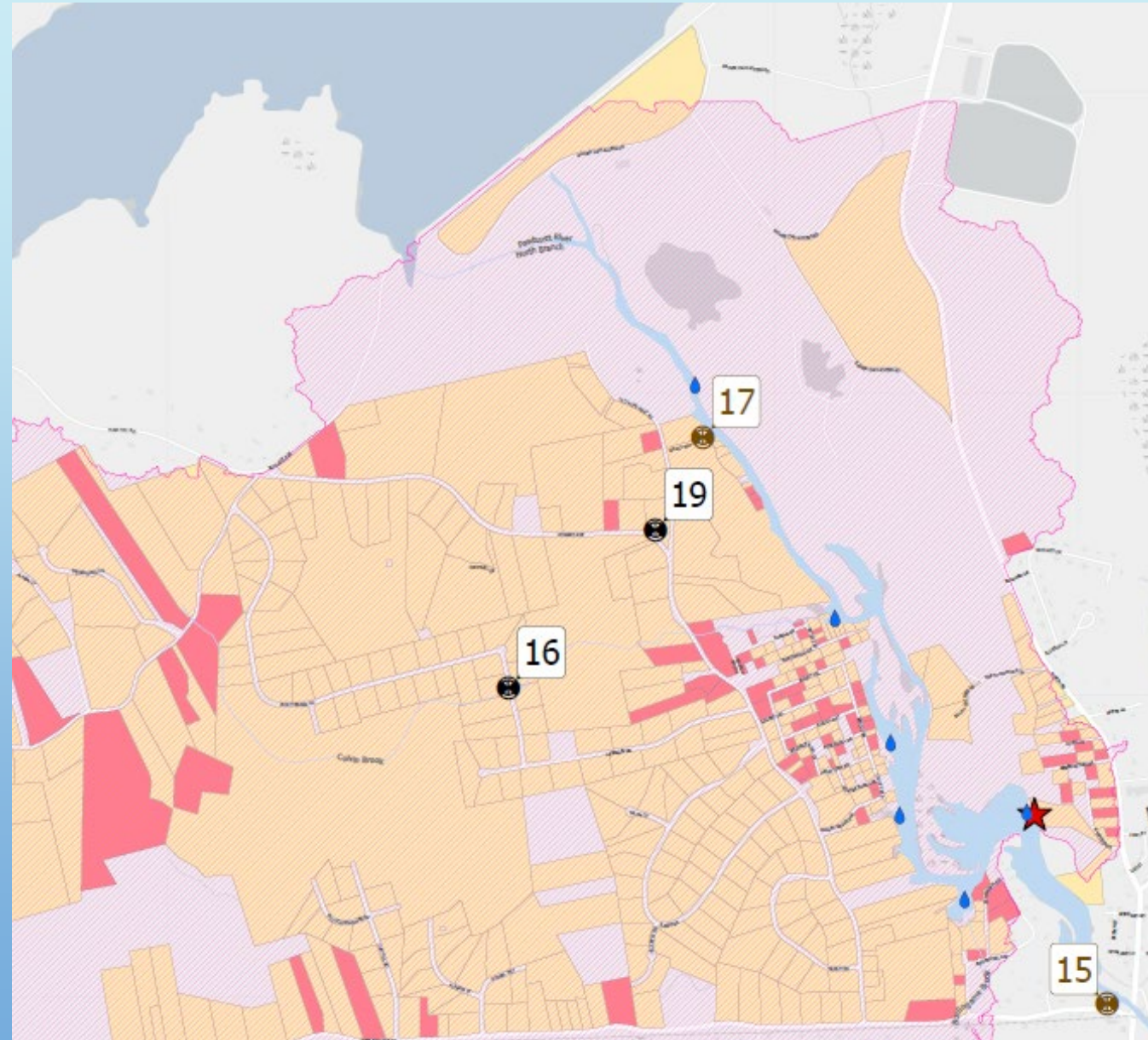
Weston & Sampson



Preliminary Study Results:

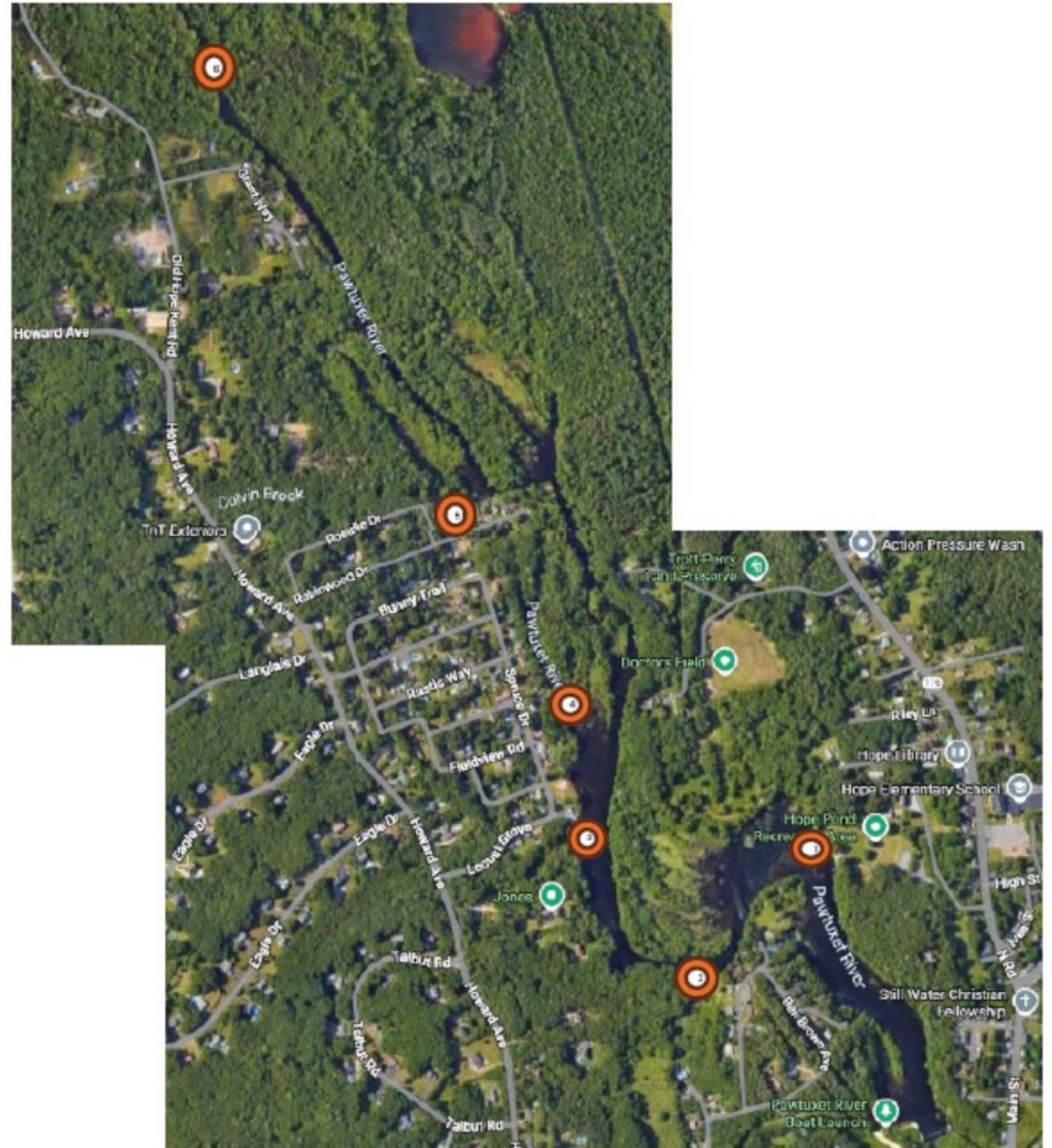
- Approx. 68 cesspools in the beach shed
 - No new cesspools since 1968
 - Required to be replaced upon sale since 2007
- Beach closed by the Dept. of Health 49 times over 2021 – 2024
 - More than any other freshwater beach!
- Stormwater Outfalls not the culprit
 - Testing in 2023 = no bacteria
 - beach closures not associated with rainfall events
- Livestock
 - No farms
 - Backyard chicken coups

NEED ACTUAL DATA!



Started Sampling 2025

- ~ 6 sample locations
- ~ DO/Temp from beach every 2 weeks
- ~ Bacteria, nutrients, pH from canoe once a month



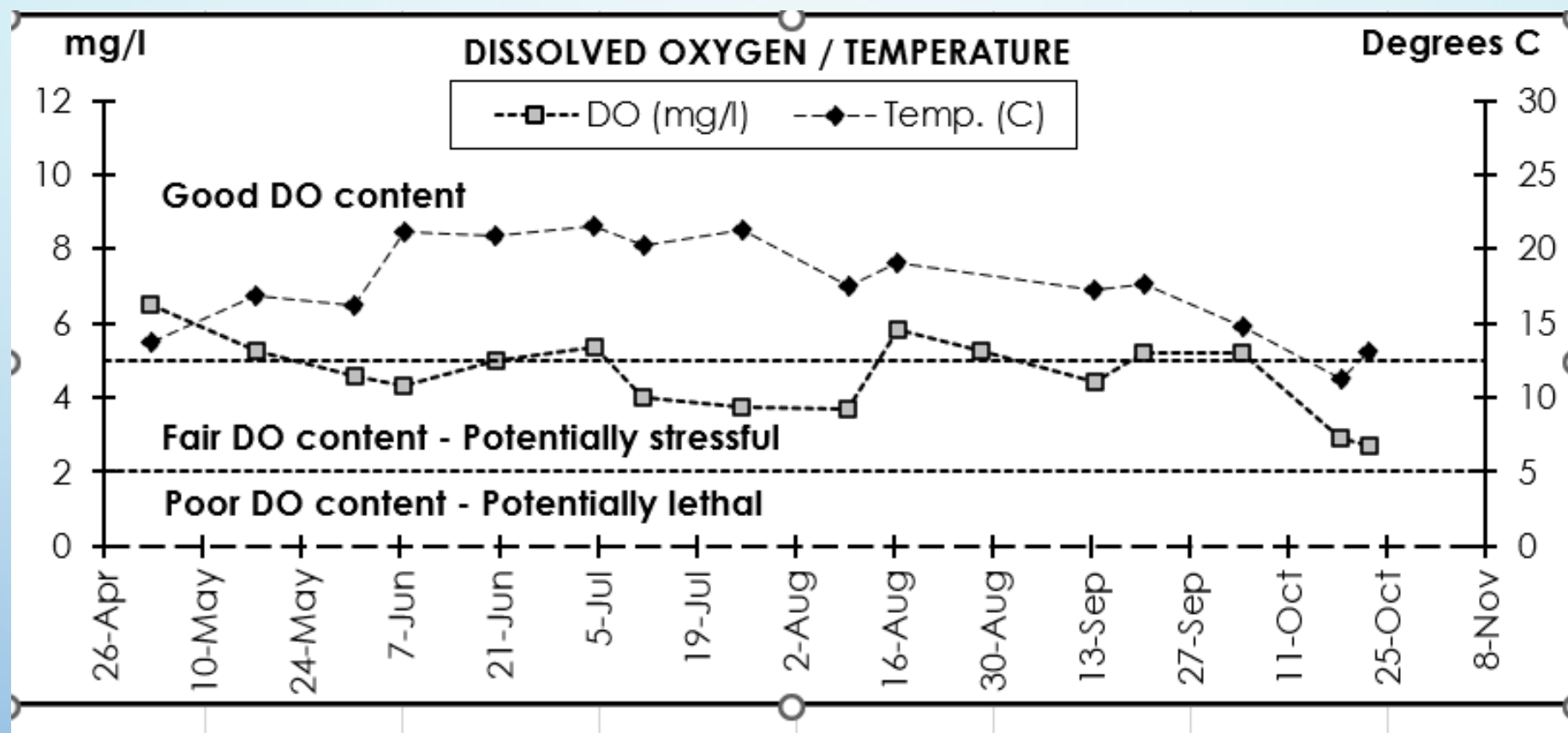


July 25, 2026 – breach at the Hope Dam raceway



River drops 3 feet





Enterococci bacteria results

Enterococci criteria for freshwater beach:

Single Sample Not to exceed **60** enterococci per 100 mL.

Designated Bathing Beach Geometric Mean Density - Not to exceed 33 enterococci per 100 mL.

Non-designated Bathing Beach Geometric Mean Density - Not to exceed 54 enterococci per 100 mL.

2025 Enterococci Bacteria Summary DRAFT									
Reported as Most Probably Number per 100 mls, Maximum Limit of detection = 1 MPN/100									
Station Number	LOCATION	Depth (m)	May	June	July	August	Sept	Oct	GeoMean
WW746	Pawtuxet River - North Branch	0.5	3	8.4	84.4	65.7	14.6	5.2	14.8
WW745	Pawtuxet @ Colvin Brook	0.5	8.5	47.1	341	111.2	35	24	48.3
WW744	Pawtuxet Backwater Near Spruce Drive	0.5	8.6	29	305		41.2	12.4	33
WW743	Pawtuxet Near Locust Grove Ave	0.5	24.6	73.3	650	2599.4	78.6	29.2	138.3
WW742	Pawtuxet @ Burlingame Brook	0.5	34.5	37.9	440	522.6	34.2	6.2	63.2
WW741	Pawtuxet River @ Hope Pond	0.5	9.8	16	265	290.9	14.8	<2	44.7

Low Water

Total Nitrogen Results :

Ecological/Water Quality Targets for healthier aquatic ecosystems:

Total Nitrogen: EPA suggests Rhode Island criteria of **320 ppb** for lakes and **710 ppb** for rivers/streams in Rhode Island which is in Ecoregion XIV

Total nitrogen concentrations in **natural, undisturbed forest ecosystems** generally range between 200 and 6,600 ug/L, according to

2025 Total Nitrogen Summary DRAFT										
Reported as ug/L or ppb, Limit of detection = 15 ug/L, below that reported as 8 ug/l										
Station Number	LOCATION	Depth (m)	May	June	July	August	Sept	Oct	Mean	
WW746	Pawtuxet River - North Branch	0.5	225	1545	560	730	970	823	809	←
WW745	Pawtuxet @ Colvin Brook	0.5	310	240	435	900	855	655	566	????
WW744	Pawtuxet Backwater Near Spruce Drive	0.5	380	490	638		885	865	652	
WW743	Pawtuxet Near Locust Grove Ave	0.5	280	415	620	745	925	1165	692	
WW742	Pawtuxet @ Burlingame Brook	0.5	635	530	805	835	700	810	719	
WW741	Pawtuxet River @ Hope Pond	0.5	263	413	750	765	1000	877	678	

↑
Low Water

Ammonia

Healthy surface waters generally maintain ammonia levels below 100 ug/L. (EPA)

2025 Ammonia Summary DRAFT									
Reported as ug/L or ppb, Limit of detection = 15 ug/L, below that reported as 8 ug/l									
Station Number	LOCATION	Depth (m)	May	June	July	August	Sept	Oct	Mean
WW746	Pawtuxet River - North Branch	0.5	60	45	225	255	690	35	218
WW745	Pawtuxet @ Colvin Brook	0.5	75	45	30	290	530	280	208
WW744	Pawtuxet Backwater Near Spruce Drive	0.5	55	75	160		565	115	194
WW743	Pawtuxet Near Locust Grove Ave	0.5	40	60	25	235	580	63	167
WW742	Pawtuxet @ Burlingame Brook	0.5	70	75	130	150	300	73	133
WW741	Pawtuxet River @ Hope Pond	0.5	65	80	200	225	590	210	228

Phosphorus

The Water Quality Regulations... phosphorus concentration **shall not exceed 25 ppb** in any lake, pond, kettlehole or reservoir, except as naturally occurs, and the average total phosphorus in tributaries at the point where they enter lakes shall not cause an exceedance of this total phosphorus criteria, except as naturally occurs.

2025 Total Phosphorus Summary DRAFT									
Reported as ug/L or ppb, Limit of detection = 4 ug/L									
Station Number	LOCATION	Depth (m)	May	June	July	August	Sept	Oct	Mean
WW746	Pawtuxet River - North Branch	0.5	<4	86	<4	<4	8	<4	17
WW745	Pawtuxet @ Colvin Brook	0.5	<4	<4	14	7	9	6	7
WW744	Pawtuxet Backwater Near Spruce Drive	0.5	<4	<4	6		5	8	4
WW743	Pawtuxet Near Locust Grove Ave	0.5	<4	11	19	4	7	9	9
WW742	Pawtuxet @ Burlingame Brook	0.5	5	9	20	31	14	11	15
WW741	Pawtuxet River @ Hope Pond	0.5	<4	4	11	<4	<4	<4	4

Low Water

WHERE ARE WE AT NOW?

We know there is bacteria and nutrients in the river

We don't know exact source(s)

Most likely cesspools

Other potential sources? Providence Water settling ponds?

Wetlands that have been inoculated with bacteria?

What can we do about it?

NEXT STEPS:

- Public awareness campaign
- Continue monitoring
- Meet with RIDEM re: Providence Water RIPDES Permit
- Move background sample location?
- Add anthropogenic surfactant monitoring (field test kits)
- Update Town Onsite Wastewater Management Plan (ongoing)
 - Inspect OWTS
- Information on financial assistance to replace cesspools
 - Community Septic System Loan Program (ongoing)
 - Grants (apply for congressional appropriation)
- Encourage Town to create an OWTS ordinance
 - mandate cesspool replacement?



