

**Janet Coit – opening remarks. Introduces Q Kellogg**

**Thank you Director Coit.** And thanks to all of you for joining us today for our second annual Watershed Counts report. I'm Q Kellogg, Assistant Director of The Coastal Institute at URI, and with me to give you a summary of the 2012 Watershed Counts Report are:

**Tom Uva, Director of Planning, Policy & Regulation at the Narragansett Bay Commission,**

**Linda Green, Director of the URI Watershed Watch Volunteer Monitoring Program**

**Terry Sullivan, State Director of The Nature Conservancy in RI,**

**David Gregg, Executive Director of the RI Natural History Survey,**

**Topher Hamblett, Director of Advocacy & Policy at Save The Bay,**

**and**

**Meg Kerr, Watershed Program Manager at the Narragansett Bay Estuary Program**

By reaching our second year and growing our partnerships across the state and region (46 partners and counting), it's clear that Watershed Counts will become a staple of environmental assessment for the people of Rhode Island. We are so pleased to be here with the many partners who have been working together to examine the status of our natural environment – the land and water resources that are so central to our quality of life and a critical component of the state's economy.

Watershed Counts is a collaborative initiative committed to providing independent, credible, comprehensive information on the Narragansett Bay region's environment with the aim of tracking progress and ensuring accountability as we all work together to protect clean water and special places.

In 2011, we reported on invasive species, beach closures, impervious cover, freshwater flow and climate change. This year, four new indicators were added to the assessment, marine water quality, fresh water quality, open space and natural resource economics.

You can learn more at [watershedcounts.org](http://watershedcounts.org).

Now on to our 2012 report:

**To start us off with Marine Water Quality. Here's Tom Uva of the Narragansett Bay Commission:**

**(TOM UVA)**

A healthy Narragansett Bay needs to support thriving populations of fish and other animals that live in the water. As we all know, marine water quality is a complex issue that requires monitoring a wide range of parameters. This year Watershed Counts is focusing on one of the most complex parameters, dissolved oxygen.

We all know how critical oxygen is to the survival of life on earth and the same is true for life under water. Fish have to breathe too. But sometimes conditions develop when there is just not enough oxygen in the water. We saw this first-hand in August 2003 when millions of fish died in Greenwich Bay due to the lack of oxygen. How can that happen? Well, scientists know that low oxygen is more likely to occur under certain conditions and many things affect the oxygen levels in Narragansett Bay. Rainfall, river flow, temperature, wind speed and direction, bay circulation patterns, tides and nutrient discharges all contribute and interact to affect oxygen levels in Narragansett Bay. Unfortunately the only factor that we can directly control is the amount of nutrients that we discharge.

In Narragansett Bay, plants like algae and seaweed are fertilized by nutrients from sewage discharges, stormwater runoff and even from the air we breathe. You might think this would be a good thing since marine species eat these plants, but when these plants become really abundant, its called a "bloom". When the algae blooms die, the algae drift to the bottom of the bay where they decompose and use up the oxygen. At times the level of oxygen in the water can get very low and

approach zero in the bottom waters, killing all but the hardiest organisms.

Stormwater and river flows also wash pollutants such as nutrients into the bay, and NBC data shows that nutrients from the rivers feeding the Upper Bay can increase from 100% to 400% during rainstorms.

Surprisingly the fresh water inputs themselves significantly exacerbate the low dissolved oxygen problem. Since the fresh water is less dense than the heavier salt water, it forms a layer over the sea water which prevents the oxygen in the air from reaching the bottom salt water layer, a process called stratification.

The DEM has classified approximately 32.5% of Narragansett Bay as being impaired for dissolved oxygen. This is a large area of the bay, but it is important to note that periods of low oxygen can be localized and episodic, but these low oxygen conditions do periodically exist across a widespread area of about one third of Narragansett Bay. The waters of Upper Narragansett Bay are impacted the most by low oxygen levels. The Seekonk River tends to experience the most serious and consistent low dissolved oxygen issues and conditions improve as you move down the Bay along a north to south gradient. Greenwich Bay also is significantly prone to low oxygen levels during the summer months.

Wastewater treatment facilities have been spending millions of dollars on facility improvements to reduce nutrient discharges and impressive nitrogen reductions have already been observed in Narragansett Bay. The Narragansett Bay Commission is spending over \$100 million on facility upgrades that will significantly reduce nitrogen discharges and

has already reduced nitrogen discharges by 34% since 2003, the year of the historic Greenwich Bay fish kill, and by 2014 the NBC nitrogen discharges to Upper Narragansett Bay will be reduced by over 70% compared to 2003 levels. These expensive upgrades should have a dramatic impact on water quality in upper Narragansett Bay, but additional work is needed to address stormwater pollution. As we implement these dramatic nitrogen reductions to the Upper Bay it is critical that we support monitoring initiatives so that we fully understand how these reductions will affect dissolved oxygen levels and the overall water quality and fisheries of our most important resource, Narragansett Bay.

**As you can see, the quality of the water in Narragansett Bay is closely tied to the quality of the freshwater rivers that feed it and here to talk about freshwater quality is Linda Green of Watershed Watch.**

**(LINDA GREEN)**

As you can see, the quality of the water in Narragansett Bay is closely tied to the **quality of the freshwater rivers that feed it and here to talk about freshwater quality is Linda Green of Watershed Watch.**

There are **almost 2,800 miles of rivers and 44,000 acres of lakes in the Narragansett Bay region.**

These fresh waters are a **critical resource**, providing **habitat** for fish and wildlife, opportunities for **recreational boating, fishing and swimming**, plus **drinking water for almost two million people.**

In **future years**, Watershed Counts plans to report on the quality of all fresh waters in the Narragansett Bay region including **lakes and reservoirs.**

To get started we looked at **4 watersheds** – the **Blackstone, Taunton, Woonasquatucket and Wood-Pawcatuck**

and we looked at the **quality of their rivers and streams.**

The **evaluation** was based on the Rhode Island, Massachusetts and Connecticut **state water quality assessments,**

and we looked in particular at the **suitability of the water as fish and wildlife habitat**, a place to **swim and boat**, and whether it is **safe to eat fish that live in the water.**



On the maps there are different symbols for habitat, recreational uses, and fish consumption.

Blue means acceptable,  $\geq 1$  use

Yellow partly acceptable, 1-2 uses accept., 1/3 not acceptable

Red 2/3 uses unacceptable

Dark grey = not assessed

In the four watersheds,

water quality is acceptable in only 12 – 43 percent of the river miles assessed.

Between 10 and 34 percent of the river miles are not assessed for aquatic life and recreational uses

and almost no river miles are assessed for fish consumption.

In general, water quality is in the best shape in the upper, headwater regions of the watersheds.

Since the health of the major rivers is strongly affected by the health of the streams that feed into them, this is good news.

But it is also a cautionary tale reminding us that we have to maintain a balance between environmental health and development.

There are several actions we're taking to protect headwater streams to the benefit of the environment and our residents.

One action is to maintain undeveloped land next to streams and wetlands. This filters pollutants in runoff from roads and lawns – salts, fertilizers, oils are just a few examples.

Another action is to **place road crossings and culverts so that stream flow and the movement of fish and other river animals is not restricted.**

A third is to **remove unnecessary dams that impede fish passage upstream.**

We've all heard since grade school that **we should take pride in the fact that RI Narragansett Bay was the birthplace of the industrial revolution in part due to our flowing rivers.**

But we didn't know then that **industrialization was also damaging to the region's rivers.** There is still pollution from that legacy as **Narragansett Bay's industrial past continues to affect water quality, particularly in urban rivers like the Woonasquatucket and Blackstone.**

However, the mostly rural Wood-Pawcatuck, as well as the more urban Taunton, Blackstone and Woonasquatucket Rivers **are regionally renowned as a beautiful place for canoeing or kayaking.** In urban areas, the rivers do not consistently meet the stringent standards for boating and swimming.

However, **local watershed groups encourage safe enjoyment of the rivers using common sense caution.**

For example, it is best to **avoid contact with urban waters during and right after rainstorms because raw sewage can be discharged through the combined sewer overflows and runoff from urban areas often contains high levels of bacteria from animal waste.**

But **three days after a storm, water quality improves significantly.**

**Paddling, biking, walking and the natural beauty of flowing water** are there to be enjoyed.

The **most important thing** to remember:  
**Protecting lands adjacent to waterways is a good way to protect water quality in our waterways.**

**And while we're talking about land conservation, here's Terry Sullivan of The Nature Conservancy with a report on Open Space.**

## **(TERRY SULLIVAN)**

The Narragansett Bay region is under intense development pressure. Rhode Island's most recent land use plan, Land Use 2025, points out that about a third of the land available for development in 1995 is now gone.

Those of us in Rhode Island and our Connecticut and Massachusetts neighbors have made a significant commitment to preserving open spaces through statewide and local bond referenda and by supporting the work of local land trusts. In Rhode Island, about 20 percent of the land is protected or conserved and about 20 percent is developed. Managing the remaining 60 percent with strategic investments in low impact development and land protection will contribute to the quality of life in Rhode Island and support a vibrant economy.

Investments in land protection have multiple benefits. Let's look at all the different lands we should be protecting:

Water quality: Development and the accompanying increases in impervious cover have a significant impact on water quality. Lands immediately adjacent to waterways are protected by state regulations as coastal and riparian wetland buffers. Extending these buffer areas with protected, undeveloped land provides additional water quality protection.

Flood mitigation: We all remember the floods of March 2010 which displaced over 6,200 people, forcing more than 200 companies to close and causing damage to public infrastructure including roads and

sewage treatment plants. The economic loss to the state was enormous. Undeveloped floodplains reduce the risk of flood damage to other areas of the watershed.

Farms: Today less than 7 percent of Rhode Island – about 40,000 acres – is in active agriculture and only ¼ of the farmland is protected. In fact since the 1940s, Rhode Island has lost more than 80% of its farmland to development. Preserving working farms contributes to the local and state economy, community character, quality of life, local food production and food security. Protecting local agriculture is all the more important give agricultural trends around the world. If we need local energy, we surely need local food.

Parks: Investments in parks and recreational areas provide urban, suburban and rural citizens with access to playing fields and play grounds, which is an investment in our mental and physical health, as well as that of our children.

Rhode Islanders have shown time after time through bond issues that we value open space. We not only vote in support of it, we give money to organizations to purchase it and numerous generous citizens have deeded their lands for protection.

**Invasive species are a reality – on the landscape and in fresh and salt water. David Gregg of the RI Natural History Survey will report on freshwater invasive plants:**

**(DAVID GREGG)**

When plants or animals are released in areas outside their native range, without their natural predators, they can grow out of control, destabilize the environment, harm native species and disrupt human activities. They become “invasive species.”

Last year we looked at the broad picture of terrestrial and aquatic invasive species. This year we’re looking more closely at freshwater invasives, which have been documented as a widespread problem in Rhode Island lakes.

It may be the Ocean State, but Rhode Island has lakes covering 20,000 acres. Rhode Island DEM and partners investigated 133 lakes and found that 80 were infested with one or more aquatic invasives. A total of 13 invasive plant species have been detected. The two most common are variable milfoil and fanwort. Why do these infestations matter? Out of control aquatic plants create dense, floating mats that make it difficult to swim, fish, or boat. Estimates for chemical treatments of aquatic invasive plants range from \$300 to \$1,000 per acre per year. A management plan for aquatic invasive plants in Bowdish Reservoir in Glocester estimated costs at \$35,000 to \$200,000.

Monitoring and early detection are important to slow the spread of invasive plants. Once infestations are established, it takes work by lakeside residents, agency personnel, scientists, and volunteers, not to mention financial resources, to handle the problem long-term. Monitoring and early detection of new species and new infestation sites can minimize the need for such long term efforts.

In the Narragansett Bay region we need to be vigilant to catch new invaders early and develop effective long-term management strategies for invaders that are already established. Rhode Island's capacity to monitor and manage invasive species will be an important contributor to success.

Unstable funding has hampered development of an effective surveillance, preparedness, and response program for Rhode Island, but with your support we'll be there...on the lookout for hydrilla, mitten crab, and other costly invasive species.

**...Finally, our economy depends on how well we manage our natural resources.**

**Topher Hamblett of Save The Bay is now going to illustrate just one way in which the value of our natural resources drives the local economy.**

## (TOPHER HAMBLETT)

Narragansett Bay defines so much of the quality of life Rhode Islanders enjoy.

Beaches are not just a fun part of a summer day in Rhode Island. They are a significant part of the local and state economy. Here is just one, telling statistic from resource economists:

There are over 20 million “beach visits” in Rhode Island per year. The total social value of these beach days is estimated at over \$155 million per year.<sup>i</sup>

And this analysis just looks at the impact of the beach during the summer season! Beaches are important to the RI economy even in the “off” season.

The citizens of our state have made significant investments in clean water infrastructure, such as sewage treatment plants and septic systems.

The biggest recent investment is the Narragansett Bay Commission’s combined sewer overflow tunnel, or CSO tunnel, which went on line in 2008. The CSO tunnel captures and treats a mix of raw sewage and polluted stormwater – which includes oil, gasoline, garbage that would otherwise be washed off of our streets and into the Bay when it rains.

The CSO tunnel project cost \$359 million. This may be a large investment, but it has made a real difference in Upper Bay, cleaning waters that were, just a generation ago, written off as permanently polluted. Since the tunnel went on-line, nearly 4 billion gallons of polluted water has been kept from the Bay.

The CSO tunnel has reduced sewage bacteria in the Bay. At 3 Upper Bay beaches - Barrington, Bristol and Conimicut Point in Warwick – there was remarkable 82% decrease in beach closure days 2010, compared to 2006, before the CSO project went on line.

But there is more to do. In Warwick, Oakland Beach and Conimicut Point Beach have frequent closures from local pollution sources. Around 14,000 people use these beaches each summer. This may sound like a lot, but these beaches are used at less than 25% of their maximum capacity. Imagine how many more people from Warwick, Cranston and Providence might enjoy these beaches if water quality improves.

Every Rhode Islander, regardless of where they live, should have access to a beach. Clean beaches in the Upper Bay will bring more people to Providence and the shore. Restaurants and retailers will grow and expand to serve the beach-going public. Cities and towns, and businesses will generate the revenue they need to thrive.

Keeping our beaches open, and opening more beaches for more people can be done if Rhode Island continues to invest clean water projects. This means improving sewage treatment plants, eliminating cesspools, and controlling polluted stormwater. Fortunately, Rhode Islanders have consistently and resoundingly voted YES for investments in Clean Water Projects.

**I now turn it over to Meg Kerr for final remarks and questions**

**(MEG KERR)**

Rhode Island's future prosperity will depend on the quality of the state's land and water resources.

Watershed Counts is committed to providing independent, credible, comprehensive information on the status of the environment. Watershed Counts' reports rely on sound science, based on monitoring data collected throughout the watershed by university scientists, regulatory agencies and the entities they regulate – such as the Narragansett Bay Commission -- and volunteer citizen scientists.

Funding for these monitoring initiatives is essential as we work together to track progress and ensure accountability.

Watershed Counts is committed to working together with non-profits, business and government. Together we will protect the clean water and special places so essential to Rhode Island's future.

Remember, watersheds count!

That ends our 2012 Watershed Counts presentation. I would like to recognize

**(Recognize Governor, legislators)**

Watershed Counts will now take questions from the audience. We have our experts here with the Watershed Counts posters. Please stand up

and speak clearly so all can hear. I will then direct your questions to one of our panelists.

**At 3:00 PM**

That concludes the Watershed Counts program. We now turn the mike over to Ames Colt, Chair of the RI Bays Rivers and Watersheds Coordination Team. When Ames has completed his remarks, please stand up and stretch and come take a look at the Watershed Counts posters. We will move them to the back of the room as we set up for the ECRI Lobby Day program which will begin at 3:30 PM. Thanks very much for joining us today.

---