



Narragansett Bay Commission Receiving Water Monitoring Programs

**Blackstone River Users Conference
September 22, 2010**

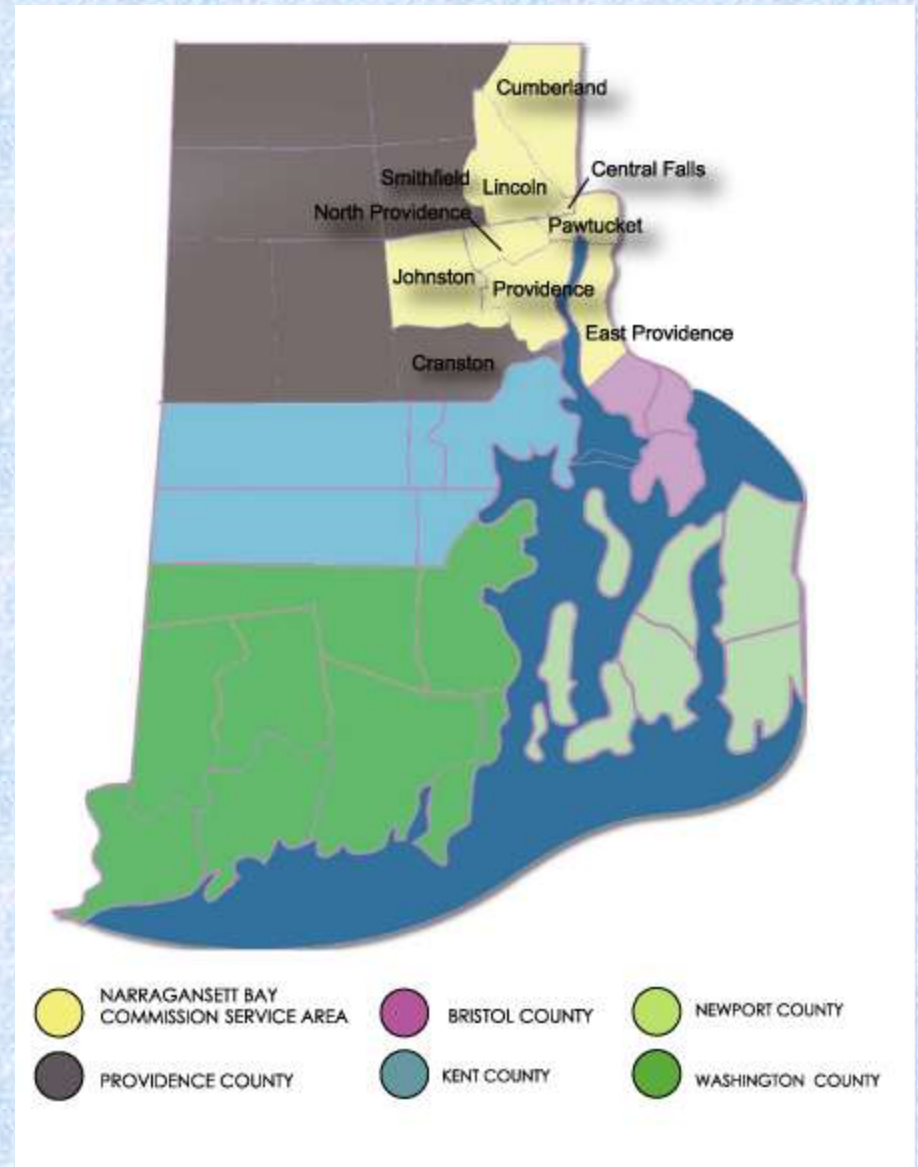
Narragansett Bay Commission

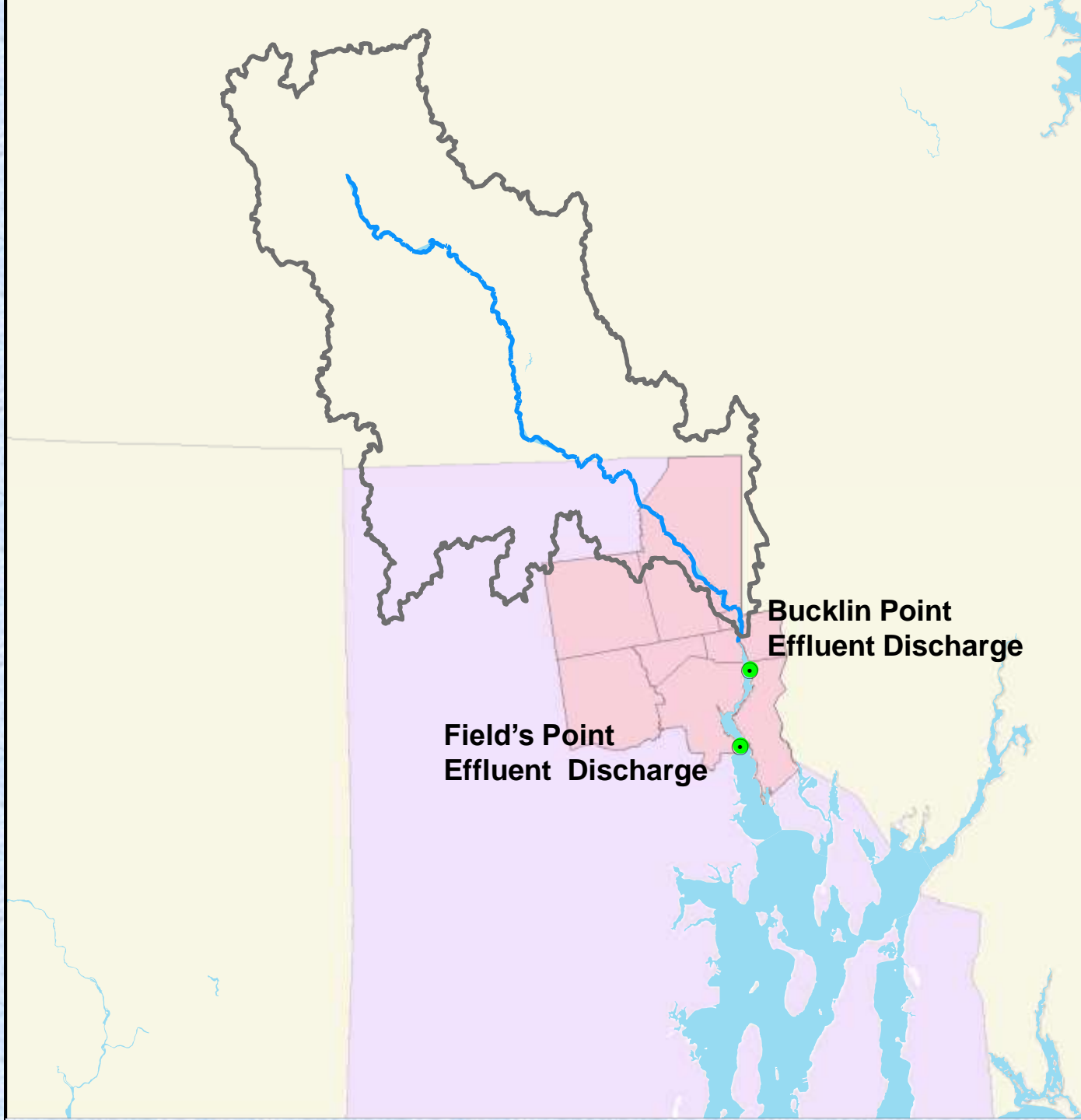
- Narragansett Bay Commission (NBC) is a quasi-state agency which operates the two largest WWTFs in Rhode Island:

- Bucklin Point in East Providence
- Field's Point in Providence

- 10 municipalities in service area

- 360,000 people served including 8,000 commercial and industrial customers

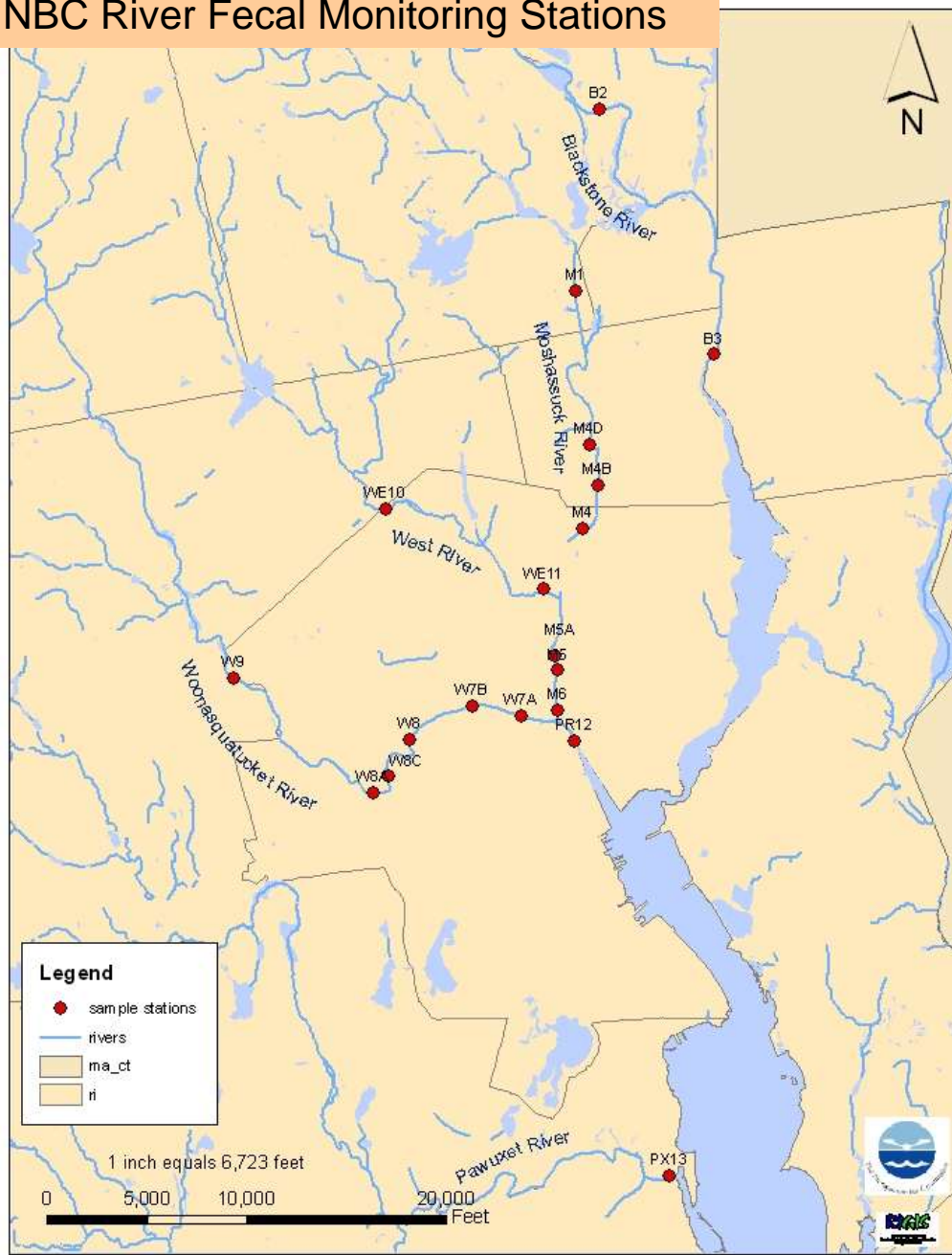




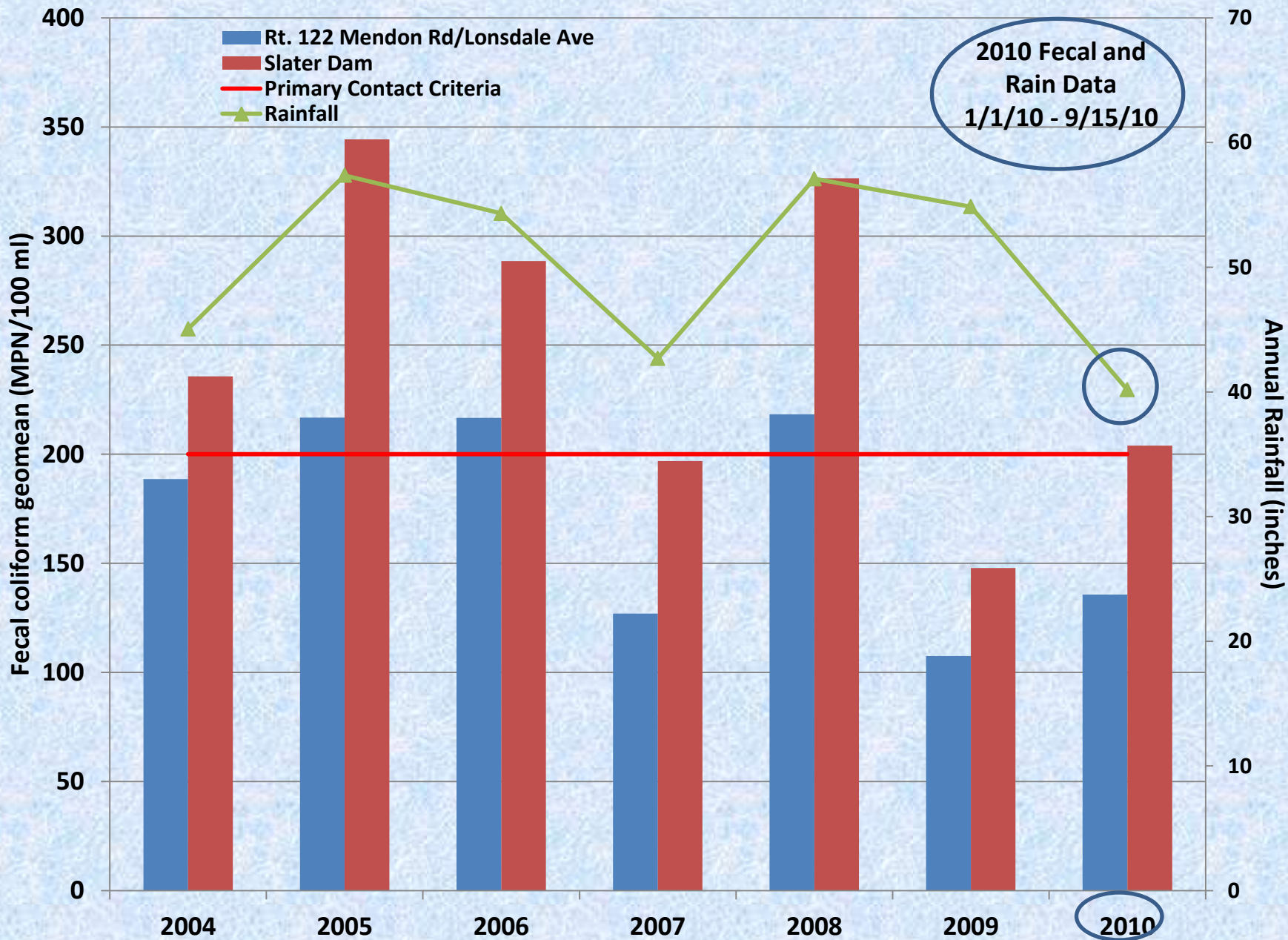
NBC's River Fecal Monitoring Program

- **18 sites collected once/week: Blackstone, Moshassuck, Woonasquatucket, West, Providence, and Pawtuxet Rivers**
- **Two sample locations on the Blackstone:**
 - **1) Bridge over river on Mendon Rd/Lonsdale Ave (upstream of old Drive-In area)**
 - **2) Blackstone River at Slater Dam**

NBC River Fecal Monitoring Stations



Annual Fecal coliform geomean 2004 - 2010



NBC's River Nutrient Monitoring Program



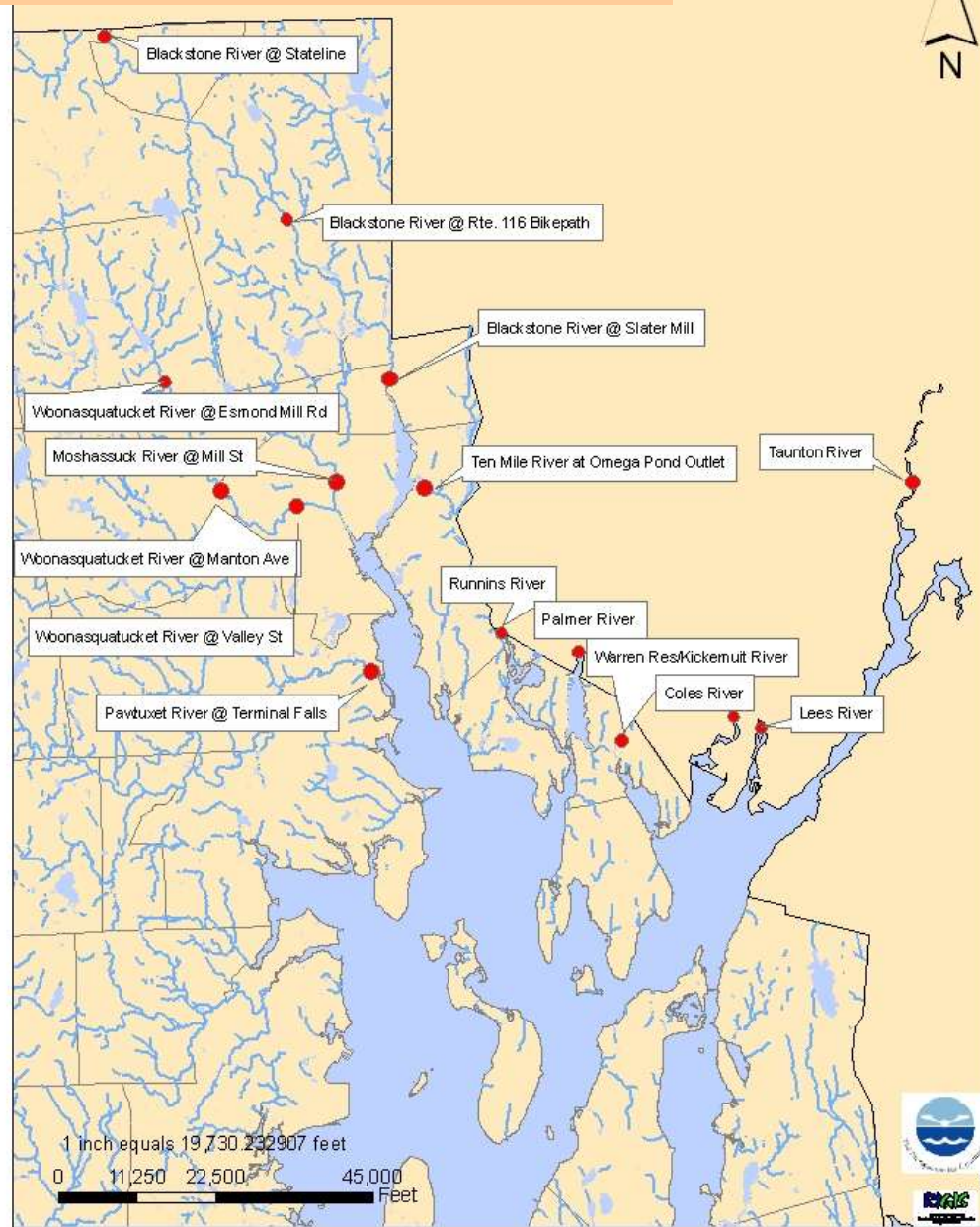
Blackstone River nutrient station



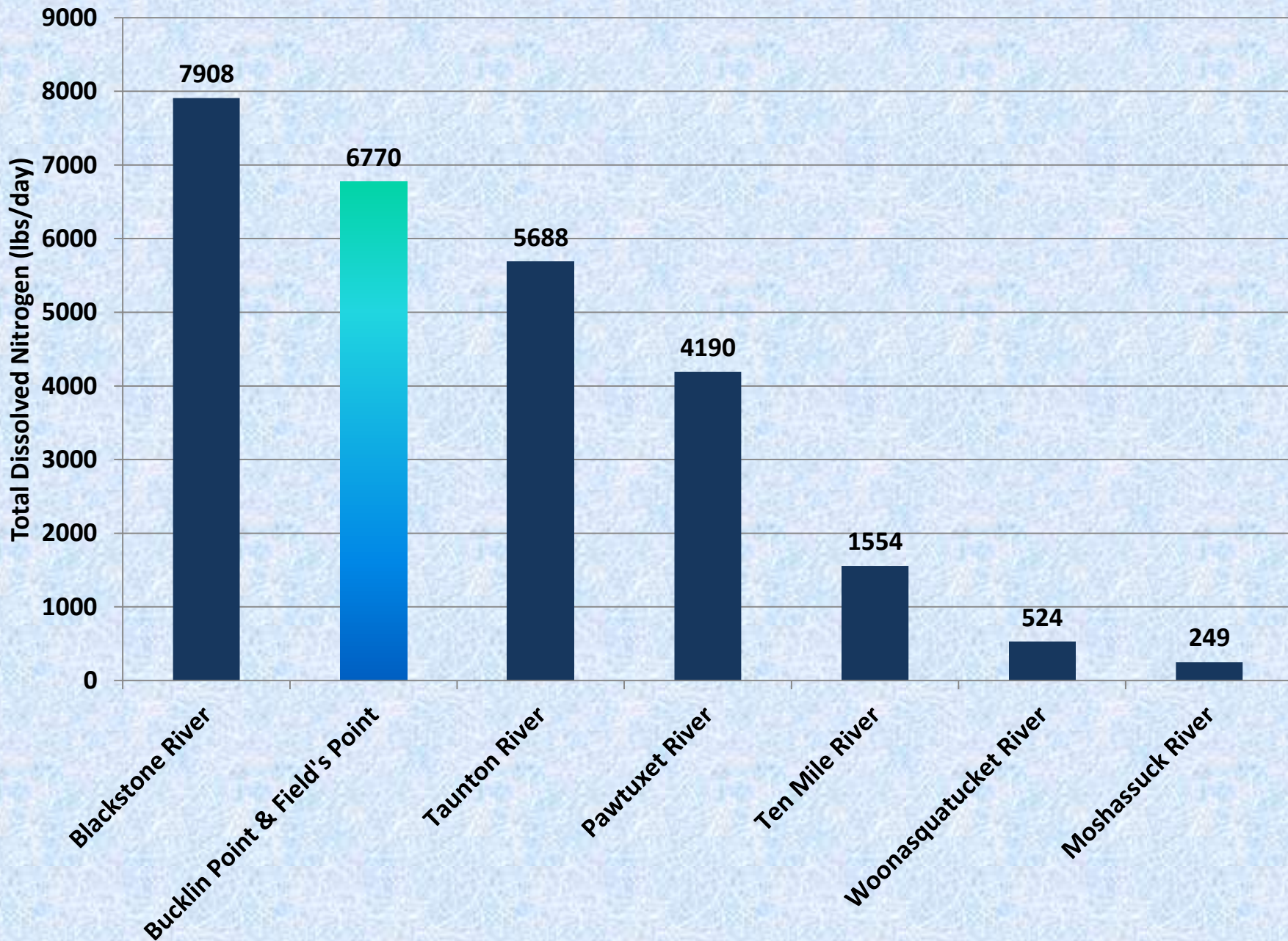
Nutrient Analyzer

- Initiated in 2005
- Purpose: Evaluate sources of nutrient loading coming from urban rivers and Massachusetts that empty into the Upper Narragansett Bay.
- Gather data for TMDL development
- Modeling initiatives (URI/NBC **ROMS** model)
- Inform stakeholders and regulatory agencies.

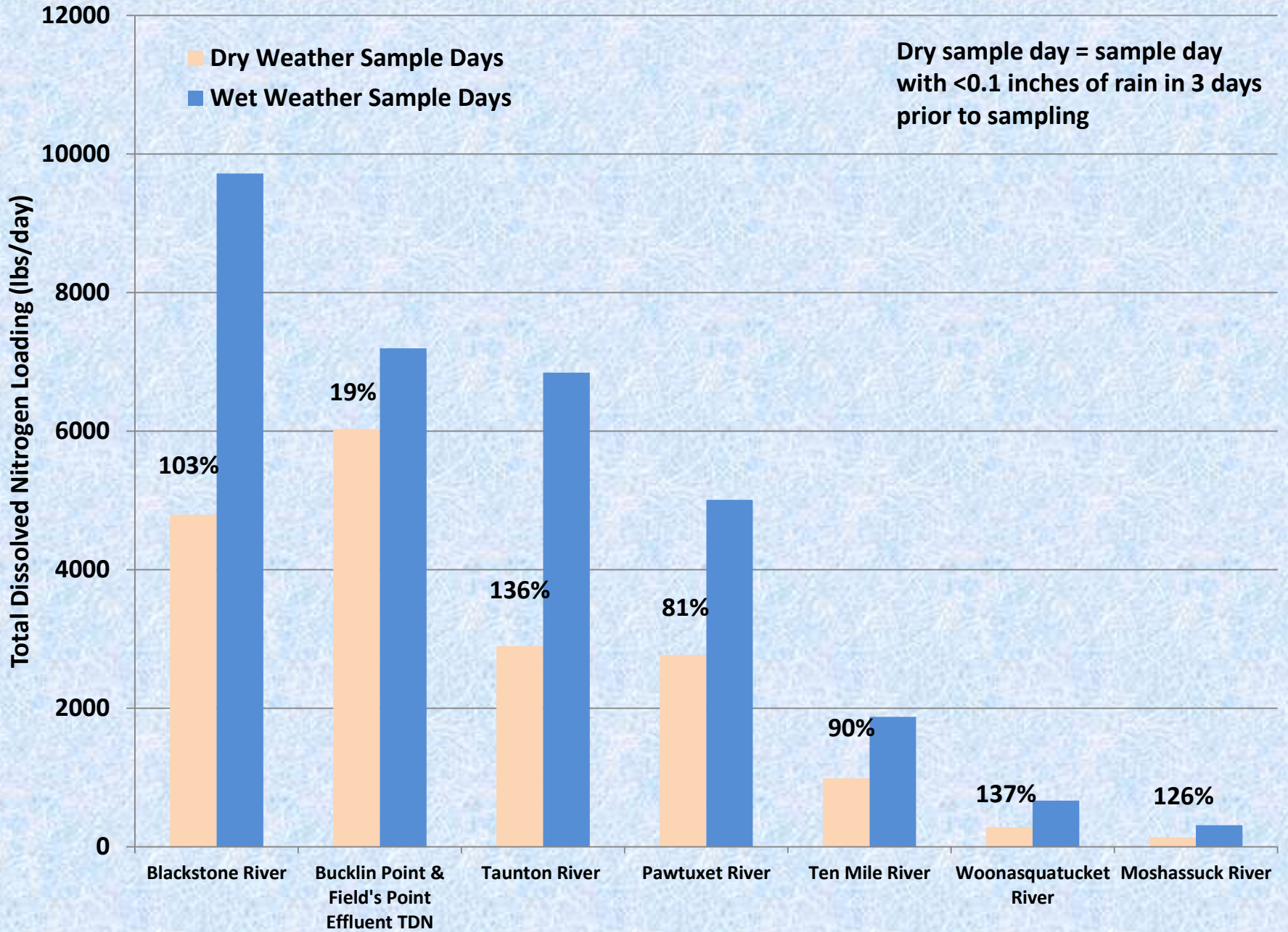
NBC Nutrient Monitoring Stations



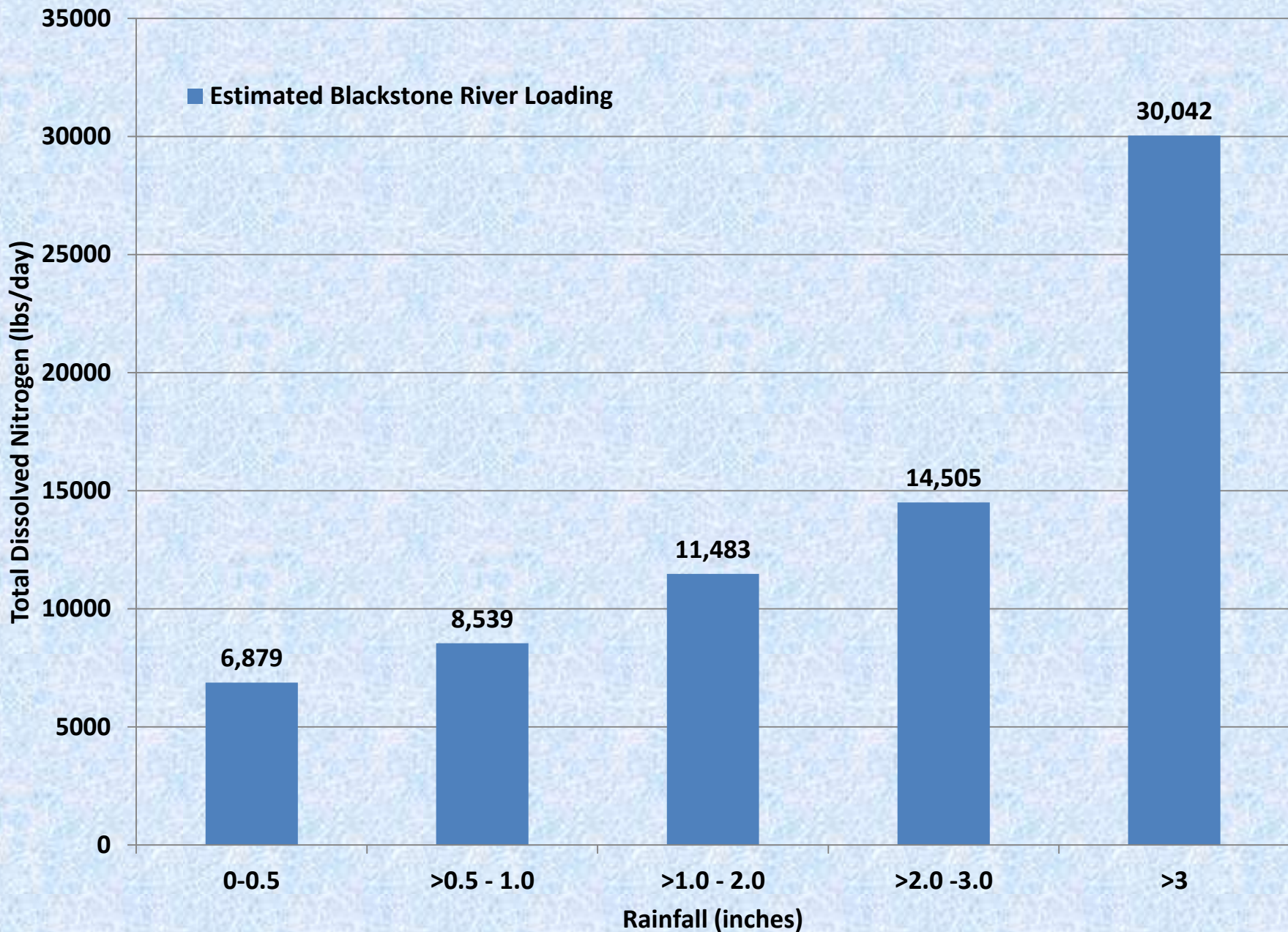
Average TDN Loading to Upper Bay 2006- 2010 (all sample days)



Average TDN Loading to Upper Bay on Dry vs. Wet Sample Days



Average TDN Loading from Blackstone River by Rainfall Amount 2006 - 2010



What NBC has learned from this monitoring

- Blackstone River had the highest estimated Nitrogen loading into the Upper Bay throughout the sampling period.
- Data indicates that the Blackstone accounted for 31% of the total N loading; NBC facilities 26%
- Our results indicate that in wet weather, nitrogen loading from area rivers can increase between 81 – 137%; Blackstone River doubles its input of N.
 - *The big question: Where is the increase in Nitrogen coming from?*
 - *CSO's/SSO's?*
 - *Stormwater Runoff?*
 - *Attenuation behind dams?*
 - *Failing Septic systems?*
 - *Atmospheric Deposition?*

Questions?

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