



**Developing a consensus based water quality indicator for  
Narragansett Bay region freshwater  
November 22, 2011**

**Attendees:** Meg Kerr, Tammy Gilpatrick, Eugenia Marks, Priscilla Chapman, Alicia Lehrer, Peter Coffin, Denise Poyer, Elise Torello, Alexander Houtzager, Carolyn LaMarre, Sue Kiernan

**Each watershed group gave a presentation summarizing assessments on their river system and recommending an approach for shared water quality indicators.**

**Blackstone River – Tammy Gilpatrick**

BRC recommends using:

- 1) Bacteria as an indicator for recreational water use. BRC's experience has shown that people understand bacteria and it provides an important connection to stormwater issues. The assessment can be based on the MA and RI integrated reports as both show areas impacted by elevated pathogen concentrations.
- 2) Fish species diversity as indicator for habitat quality. MA did study looking at target fish communities vs what is actually there. The Wood-Pawcatuck was included as a reference. In addition, Alan Libby (RIDEM) has the studies for all of RI although some data are old (2003). **(Meg will email MA report to everyone and Bruce will post it on the Watershed Counts web site.)** It would be important to show river reaches, not just the entire river. This is also an opportunity to inform public about fish tissue data/lack of data.

Discussion: There was disagreement within the group about whether or not to highlight fish tissue data with the following questions raised: Do we want to focus on fish presence/absence? If we decide to highlight fish communities, we might get some fishermen who would like to cooperate. Peter mentioned that it would be nice to also focus on some positives – fish assemblages are improving. Do we need to highlight causes? It can get very confusing. We can provide link to Health Depts. USGS has also done a lot of work on fish species and habitat. Taunton – fish studies were done before and after desal plant. Peter also asked if we should include nutrients – or N and P separately – in the indicator presentation.

Format: BRC likes the report card format similar to their existing report card with green/red/yellow colors. When presented on-line, the report can include links for more detail.

A map is also useful and the thumbs up/down presentation used in some of the examples we reviewed was particularly understandable.

### **Taunton River – Carolyn LaMarre**

Data: TRWA has done water quality testing since the group began, but they still do not have an approved QAPP. Have increased # locations where testing done. The company that runs the local WWTP (Veolia Water of North America) does water quality testing pro-bono.

TRWA reviewed the MA Integrated report and found that it is based on the 2001 MA DEP study of river. The river has not been re-studied and is not on the schedule until perhaps 2013. The reported state assessment has not changed since 2001.

Other sources of information:

- \* Flow data. Some of the river is handicapped by low flow. Have 5 USGS gages and you can get data on-line for all of these.
- \* Riffles program (MA Riverways) – also has flow data and identify low flow streams. Used by Bridgewater State College who also do additional studies on the river.
- \* TMDL for Taunton 2005 draft bacteria. June 2011 finalized. Very generic. May be using 2001 data. \* \*
- \* Draft TMDL for Narr Bay 2010 (RI) that includes input from Taunton.
- \* Freshwater fish consumption advisory list from MA Dept of Public Health, Bureau of Public Health done on a as-requested basis.
- \* Aquaria did water quality monitoring and fish assemblage monitoring in vicinity of desal plant coming out every 6 months as well as water quality data.

Recommend – working off 2001 data, using impaired waters list. Problem – so many unassessed streams.

Carolyn recommends CA web site that shows map of impaired waters

([http://www.swrcb.ca.gov/water\\_issues/programs/tmdl/integrated2010.shtml](http://www.swrcb.ca.gov/water_issues/programs/tmdl/integrated2010.shtml)) (I think)

### **Woonasquatucket River – Alicia Lehrer**

Indicators should track the uses of concern – 1) primary and secondary contact recreation, 2) fish consumption, 3) ecosystem health (river habitat health)

1) Primary and secondary contact recreation – we should use bacteria

2) Fish consumption. There are limited data. Alicia is interested in working with Brown University Environmental Studies program and has begun a conversation with them. Fish consumption is a major concern on Woonasquatucket.. EPA has thresholds for different contaminants that we could use. The Woonasquatucket has been well studied for contaminants and for sources of contaminants. (Also have fish counts for herring. Taunton has fish ladders, unsure of data – think most fish counts done by watershed association. Dominion Energy also does fish counts along Prov River.)

3) Ecosystem health – like fish diversity compared to a target. Could also use macroinvert. Or temp/DO/nutrient surveys.

Data display: WRWC liked the Australia example, where they separated out the different concerns. Also liked the Charles River daily data and how it is displayed.

Human contact—happy/sad swimmer  
Fish Consump – fish on platter  
Wildlife habitat – happy/sad fish  
Would want a map view (not chart/table)

### **Wood-Pawcatuck – Denise Poyer**

The Wood-Pawcatuck system is data rich and information poor (see handout).

The Wood-Pawcatuck system has high quality wadable streams as well as main stem and the indicator project should convey the message that these areas are important and need to be protected.

Have fish assemblage data and macroinvertebrate sampling done by WPWA volunteers. The challenge with macroinvertebrate data is that the needed identification down to species level is difficult for untrained volunteers (can get to family) and we need to develop indices that are true to RI (IBI). Would actually need a couple of indices for state. Sue Kiernan said that the rotating basin studies include macroinvertebrate data which are used in state assessments. The assessments will be refined with new IBI indices.

WPWA collects stream temperature- I-buttons allow continuous measurement and provide useful information on habitat.

Indicators recommend indicators for 3 USES – 1) Recreational contact, 2) wildlife habitat and 3) fish consumption

- 1) Recreation – use bacteria
- 2) Habitat – prefer macro invert to fish assemblages (RI has data on over 200 stations sorted into good/bad etc.). Blackstone has data, not sure about Taunton.

### **General Discussion (Time Limited)**

MA has fish “index” but may or may not be applicable to RI. Although the report did use the Wood-Pawcatuck as reference.

We should think about continuing to update the indicators. When we think about habitat metrics, if we select macroinvertebrates, it would be easier to re-sample to get trends. In RI would get data every 5 years with rotating basin.

For the Recreational Use -- Do we just use bacteria?

Also need to consider blue green algae – or is it just lakes? (In Ten Mile River). MA has monitoring program, RI does not. Experience is that once algae are there, they persist. Tend to show up later in Summer and toxins persist.