

Saw Kill Watershed Community Meeting  
Wednesday, February 21, 2018, 7:00-8:30 PM  
Elmendorph Inn, Red Hook, NY

**7:00 – 7:10pm Welcome and Introductions**

**7:10 – 7:40pm "Emerging Threats to Saw Kill Water Quality" Robyn Smyth  
(Assistant Professor, Environmental Sciences, Bard College)**

- Robin attended graduate school at University of Vermont
- Worked with the Lake Champlain Basin Program management, and a part of the National Science Foundation at the policy level
- Interdisciplinary water scientist
- Interests: Climate change triggering physical and ecological processes, and how the physics of a water body affect the biological process
- Teaching focus – sustainability nexus of water, energy, food
- Current research: harmful algal blooms, assessing climate change risk to freshwater resources, THuRST (road salt), designing a study on how constructive wetland addresses road salt issue
- **Issue:** harmful algal blooms
- Found presence at impoundment at Annandale dam and they occur everywhere in frequency and spatially
- The blooms are event driven (Ex: increases during a heat wave), and we can miss them during monthly sampling
- Toxic algae and their overgrowth kills fish and other aquatic life
- Cyanobacteria lives in warm conditions
- **Issue:** Road salt
- Salt leaves fast over land and surface runoff; however, it filters very slow through the soil and groundwater. This means that the salt will stay in groundwater for a very long time
- There may be a relationship between the increase of salt and the increase of algae
- About half of salt we apply is retained in watershed!
- Even if we stopped putting salt on the roads, the Saw Kill watershed will still increase in salinity
- Desalination of our drinking water supply is very expensive
- A lot of salt loading are from personal homeowner/business owners, so the town's trucks are only a portion of the problem
- Does Bard's Green Infrastructure reduce salt loading from campus?
- **Questions and Answers:**
- What are impacts of salinity in lakes?

- Salinity changes hydrodynamics of water. The cold salty water that enters ponds are very dense so they settle to the bottom. They then decrease the oxygen levels that releases phosphorus
- Fish, and amphibians can be sensitive due to salt
  - What does cyanobacteria do?
- They bloom and overgrow, and as a result, they shade out other aquatic life and the aquatic life will die, which then decreases oxygen in the lake. Sometimes they make toxins. They are more salt tolerant.
  - What are some alternatives to salt?
- Brine – pretreat with brine,
- Magnesium chloride; however, we have to double the amount of chloride we put into the roads
- Organics; however, it doesn't help with eutrophication
- We can use our salt more carefully
- Use roadside vegetation, but it gets damaged by salt. Could use block spray
  - How does the salt affect the Hudson River?
- By the time the salt reaches the Hudson, it is mostly diluted. Adirondacks is taking a big the lead on the issues of salinity.
  - What kind of stream you have? If it's a higher gradient stream is it less of a problem?
- Salt is less of a problem in streams because it flushes out. The problem is when it infiltrates very slowly through soil into groundwater and it begins to accumulate. Then, it will take decades to flush out
  - Do town records have records of salinity in wells?
- Yes, they should have.
  - What are other effects of salt?
- They can mobilize heavy metals in soil. In addition, in non-nutrient loaded water bodies, salt can be the key factor in triggering blooms.

#### **7:40 – 8:00pm Community Conversations**

- How can we bridge what we are finding in science/research to communities and what people are reading in the news?
- How much of salt do we need?
- Salt gives a lower freezing point. So, at a certain temperature, applying salt doesn't help
- Can use computerized truck that releases the right amount of salt.
  - How do you change people's perceptions on salt?
- Highway superintendents, and the conversation from trade journals are changing. However, change starts from the demand by communities!
  - Ideas on what we can do (for the over salting issue):
- Identify recharge ground zones so we won't pour salt there. Can use GIS to help.

- Have regulation on salting. European countries such as Sweden and Finland do this!
- Instead of salting, we can upgrade our plow technologies to rid the snow in a more efficient manner
- Can use cat litter and sand as an alternative

**8:00 – 8:25pm Updates:**

- **Eels** (Clara Woolner)
  - Citizen science program run from DEC from Staten Island all the way to Troy
  - One of the sites on the Saw Kill is one of the longest running sites
  - Most of the volunteers are Bard students
  - Program runs from 6 to 8 weeks and we install a net at the Saw Kill. At least 2 volunteers go out at low tide every day to catch the eels from the net, weigh them, and release them back into the river. The eels are at the early stages in their lives, known as glass eels.
  - Looking for more volunteers!
- **Salamander migrations** (Laurie Husted)
  - Big citizen science effort started by DEC
  - Amphibians are important indicator species
  - When weather gets to 40°F, and during the rains, and in the evenings, they decide to migrate to temporary woodland pools. In order to do so, they have to cross the road which can lead to micro extinctions due to cars running them over.
  - Need volunteers to scout, and to be on call to help
  - Look to Facebook page
- **Red Hook Vernal pools project** (Karen Schneller-McDonald)
  - 2010 study on vernal pools – was never completed due to funding
  - Citizen science project that looked for vernal pools
  - Use data in state of the Saw Kill
- **Micro-hydro project** (Laurie Husted)
  - Bard won state competition – proposal for micro hydropower on the Saw Kill
  - Question: Can you get rid of dam and do hydropower?

**8:25 – 8:30pm Wrap up and Adjournment**

Upcoming SKWC events:

Water Quality Monitoring of the Saw Kill on March 9, 2018.

Next SKWC Meeting , Wednesday, March 21, 7:00pm-8:30pm at the Elmendorph Inn.