

ADDISON COUNTY RIVER WATCH COLLABORATIVE

Water Quality Chat

PROCEEDINGS

January 18, 2015, in Cornwall, VT

Participants

Community members from Cornwall and Salisbury attended, including several farmers, scientists, ACRWC volunteer samplers, and Conservation Commission members from both participating towns. Total number of people present was 15.

Among those present were: Barrie and Wally Bailey (Salisbury), Jim Andrews (Salisbury), Mary Dodge (Cornwall), Rene Langis (Cornwall), Marc Cesario (Cornwall), John Roberts (Cornwall), Brian Howlett (Cornwall), Bethany Meinkart (Cornwall), Ethan Swift (Vermont DEC Watershed Planner, who is also a member of the Collaborative), Amy Sheldon (Middlebury), Kip Andres, Barb Karle (Salisbury), Eric Severy (Cornwall), and Matt Witten (presenter from the Addison County River Watch Collaborative).

Welcome & Introductions

Heidi Willis welcomed the gathering of people. Participants went around the circle to introduce themselves.

ACRWC Data

Matt Witten gave a brief overview of what Addison County River Watch does. ACRWC has been monitoring Addison County streams for 20 years, usually about 30 sampling stations on 6 rivers, 6 months per year. Each river has two or three “sentinel” sites monitored every year. During two “focus” years out of every six years, each river gets additional sites based on study needs. Otter Creek and Middlebury River are the current “focus” rivers.

Using maps provided by the Addison Regional Planning Commission, as well as reports prepared by South Mountain Consulting, Matt presented selected River Watch data from 2012-2013 as well as provisional data from this past year (2014). He focused on three watersheds: Otter Creek, Middlebury River and Lemon Fair. The latter two flow into the Otter Creek.

Witten pointed out salient trends in these drainages:

- Otter Creek is impacted by *E.coli* and nutrients in its lower reach and also upriver of Middlebury Town.
- The Lemon Fair shows an unusual trend of increased levels of nutrients and *E.coli* in a middle reach rather than increasing steadily toward its mouth. In addition, one small tributary, Beaver Brook, showed high *E.coli* but relatively normal turbidity and nutrient loading in the 2012-2013 water testing. These results imply some type of fecal contamination, whether it be from failing septic, wildlife, or farms.
- The Middlebury River is impaired for *E.coli* from the Rte 7 bridge to the mouth. A new sampling station below a state-run fish hatchery on Halnon Brook in Salisbury, a tributary to the Middlebury River, shows elevated levels of nutrients and *E.coli*. State DEC stream bioassessments confirm there is some stream degradation in this reach.

Questions/Comments

Discussion was lively, and ranged widely in geographic and scientific scope. Ethan Swift's expertise as a water quality specialist was highly valuable. Other expertise also came to the fore, including:

- John Roberts, resident of Cornwall and also agricultural specialist for Vermont Department of Agriculture
- Eric Severy, contract manure operator, who was able to explain in detail some methods farmers can currently use to reduce erosion and manure run-off
- Jim Andrews, herpetologist, who was able to address some issues regarding wildlife
- Amy Sheldon, recently elected to the Vermont House of Representatives, and on the House Committee on Fish, Wildlife and Water Resources, who offered some insights into H. 586, a bill to tighten regulation of farms in order to improve water quality

Concerning Middlebury River Watershed

There was some question as to who monitors the old Salisbury landfill. Information may be available through the groundwater protection division of the VT DEC. ACRWC's Halnon Brook sample station (MRHT0.3) is below what would be the outflow from the landfill. Ethan Swift mentioned that the State is putting water quality data up on the state Natural Resources Atlas. Bio Finder can also be found on this site.

Several questions arose concerning testing that might distinguish among types of bacterial contamination. Called "PCR" or DNA testing, these methods are able to parse out the difference between bacteria hosted by water fowl, small mammals, humans, or farm animals. One landowner stressed that, in this day and age, with existing technology (even if it is expensive), it is becoming imperative to be able to distinguish between different kinds of contaminants, so that problems can be rooted out. Shelburne Farms used this type of testing and determined that some bacterial contamination was coming from geese.

Concerning Otter Creek Watershed

This year, one of the 2014-15 focus years, Ethan sampled at a station 30 miles from the mouth, where levels of nutrients and *E.coli* generally complied with water quality standards. The relatively good water quality at this reach may be partly due to the large wetland complexes in this area.

Some comments were made about Lake Dunmore and its outflow, the Leicester River, a tributary to Otter Creek. This river is not monitored, partly because of sampling logistics and partly because of its impounded flow. Mercury concentrations are high in Lake Dunmore and apparently the source is not clear. Is it natural? Is it due to fluctuations in lake level? Mercury coating of glass in past glass factories?

Concerning Lemon Fair Watershed

Matt said that sampling done in 2012-2013 on Beaver Brook, a tributary to the Lemon Fair in Cornwall, showed low turbidity but high *E.coli*, possibly indicating fecal matter in the water. We cannot know yet the source of this contamination or how recent NRCS-funded work has impacted these waters since there was no assessment of the Beaver Brook tributaries in 2014.

Jim Andrews pointed out that, at some times of the year, near its mouth the Lemon Fair flows backwards due to the high flows of Otter Creek. The Lemon Fair is also a slow flowing river in clay soils. Much of the land draining to the Lemon Fair is ditched and drained, with few natural wetlands. It was stated that, if you plugged the ditches, you could recreate the wetlands. There is a section on land that Marc Cesario farms, placed in the Wetland Reserve program....when would the impact of these restored wetlands be seen?

Farm-related issues

A number of accepted or best management practices on farms were discussed. For example, instead of ditching to direct water runoff, allow for swales and wet places, to accommodate field needs as well as wetland needs. Other practices mentioned were: cover crops, injection of manure into the ground, and aeration of soil.

Ethan explained that there is a “legacy phosphorus” issue that transcends the current application of nutrients. In the 30’s to 50’s, farmers were encouraged to use a lot of phosphorus to improve crop yields. So there is still phosphorus bound to particles in the soil and released in high water events via erosion.

John Roberts said that where you get very high nutrients and high *E.coli* this can be an indication of farm runoff. He said that his department (Vermont Department of Ag) is more focused on nutrient loading than on pathogens.

Possible next steps

Land on the Salisbury side of Otter Creek is farmland, ditched to some extent, much of it conserved. Could there be more water quality conservation work done? If you increase the organic matter in soil, then you greatly increase the ability of soil to absorb water,

rather than run off. Perhaps it is possible to work with the Vermont Land trust to pressure for increased water quality components in easements. Water quality may become a criteria for accepting or denying a VLT project, but such requirements will probably not be retroactive.

Matt mentioned that the Conservation Commissions may be a good place to start local projects that may have significance on a watershed level. The two Conservation Commissions present may consider fostering wetland restoration or buffer enhancement projects.

Amy Sheldon said that her legislative committee is looking for comments on the new Omnibus Water Quality Bill.

These proceedings were compiled by Matt Witten, with notes/contributions from Heidi Willis and Mary Dodge.