Conservation Matters

A monthly column focused on conservation education, as the result of collaboration among several area conservation commissions and organizations. If your town's commission or conservation organization would like to contribute articles, please contact Jessica Tabolt Halm jess_tabolt@hotmail.com

Title: The Pemi and You

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With another summer gone, it's a good time to take a closer look at an often overlooked prize resource in our area – the Pemigewasset River - its economic contribution to the watershed, the river's overall health, and some of the effort that goes into ensuring its valued characteristics remain for those communities in the future. The Pemi is a Class B river. Class B waters have high aesthetic value and are acceptable for swimming and other recreational activities, fish habitat, and for use as a public water supply after treatment. It should not be a surprise that several small businesses such as outdoor adventure outfitters find the river attractive for organized canoe, kayak, and associated activities of value to the tourist community. The Pemi's value is also evident in the decision of the Department of Resources & Economic Development to support the inspired effort of the Friends of the Pemi Livermore Falls to create an attractive, accessible state park on both sides of the river in Holderness/Campton. Even wildlife seems to be responding to the lure of the river with several bald eagles taking up summer residence and often seen competing with osprey, heron, and others for river fare. What is most important to the river's wide range of "customers"? It is overall water quality. What are the key indicators of overall river health?

A. Dissolved Oxygen – DO is vital to bottom dwelling organisms, fish, and amphibians. Like people, aquatic life must have oxygen to survive, reproduce, and prosper. (note: warmer water reduces DO, and if persistent will cause loss of important aquatic residents)

B. Specific Conductance – High SC can be indicative of pollution from sources such as urban/agricultural runoff, road salt, and failed septic systems. Thus, low SC levels indicate low pollutant levels.

C. Turbidity – Clean waters are associated with low turbidity. Precipitation often contributes to increased turbidity by flushing sediment, organic matter and other materials from the surrounding landscape into surface waters. Increased sediment in the water column contributes to undesirable warmer water.

D. pH – A measure of acidity level in the water which affects chemical/biological processes important to survival and reproduction of fish and other aquatic life. On the pH scale 7 is neutral. Most aquatic species need a pH between 5 and 9. The Pemi runs on the acidic side (~6) and typically does not meet NH regulation of 6.5 to 8.

E. Temperature – Increased temperature reduces oxygen in the water and determines which fish and macro-invertebrate species can survive in a given river or stream.

The Pemigewasset River Local Advisory Committee's volunteer water testing teams are out bi-weekly testing for all the above elements from April into September sampling at nine stations (6 on the Pemi and 3 on tributaries). PRLAC just completed its 13th year of water quality testing on the Pemi. This effort is supported by NH Department of Environmental Services (DES) Volunteer River Assessment Program in Concord. The stations are authorized by the NH DES and the test data are officially part of their state wide report on surface water quality to the EPA. PRLAC periodically gathers lab samples for E coli in high recreation activity areas. These are submitted to DES lab for analysis.

Some water quality observations noted in the 2014 season. River pH, although modestly improved, remains on the acidic side of the state standard. Water temperature appears to be somewhat warmer. Turbidity "spikes" are seen

after most significant precipitation events, an indication that sediment and organic matter are flushing into the river. All other indicators were fine and consistent with the Pemi's historical profile. In general, good news.

Looking ahead. The news is full these days of water related disasters around the country – major flooding, green lakes, failures of industry to protect critical drinking water sources, etc. In NH, about 80% of current surface water impairments can be traced to stormwater runoff (non-point source pollution). Non-point source pollution comes from construction site erosion, faulty septic systems, leaking automotive fluids, agricultural and residential fertilizers and pesticides, road salt, and other diffuse origins. As landscapes are changed from natural conditions (fields and forests) to highly built conditions (buildings, roads, parking lots), water quality and quantity are adversely affected. NH has been in what can be called a "growth pause" for several years now. That will change. We should take advantage of this pause to introduce improved stormwater practices throughout the Pemi Watershed. One sensible 2015 goal might be to apply a rule or guideline to all new development. For example: all post-development stormwater runoff from a given site must not exceed pre-development stormwater runoff. The highly desired result from such a rule – enhanced groundwater infiltration, cooler temperature surface water, reduced pollution, reduced flood risks.

Together, we can make progress on this important issue in 2015 and protect this prized resource in our local area and beyond.