

Article from the Rochester Times

Salmon Falls headwaters plan aims to reduce phosphorus, improve lake water quality

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SANBORNVILLE — P is for problem, and in Wakefield lakes the looming problem is phosphorus for which the chemical symbol is P — a neat, circular mnemonic, but not one attached to any neat solution.

On a recent Saturday morning, dozens of warmly-clad people, some of them lake dwellers, others not, attended the rollout of the Salmon Falls Headwater Lakes Watershed Management Plan (WMP) in Wakefield Opera House — a plan than aims to tackle the problem of phosphorus in the headwaters, before it can seriously impair water quality, aquatic life and property values.



John Nolan/Times photo From left, Sally Soule of NH Department of Environmental Services, along with Forrest Bell and Jen Jespersen of FB Environmental Associates, fields questions on the Salmon Falls Headwater Lakes Watershed Management Plan.

The plan, running to around 200 pages, and crammed with facts, figures, maps, analyses and recommendations, was prepared by FB Environmental Associates at the behest of, and with much input from, the Acton Wakefield Watershed Alliance (AWWA) I, thanks to state and federal grants.

The WMP focuses on a 26-square mile area in Acton and Wakefield, and the four lakes — Great East Lake, Ivanhoe Lake, Wilson Lake and Horn Pond, that form the headwaters of the Salmon Falls River. Also contained within this area, and included in the study, is Lovell Lake, which drains into the Branch River, a tributary of the Salmon Falls River.

Environmental scientist Jen Jespersen of FB Associates and AWWA Executive Director Linda Schier, in their introduction of the plan, noted that people in Maine and New Hampshire, in the course of the WMP data collecting, were talking to each other for the first time, being united by a common goal — maintaining high quality water in the lakes and throughout the headwaters watershed Forrest Bell (of FB Associates), in his presentation, noted that the Salmon Falls was list by the Environmental Protection Agency as an impaired Class B river — one with low levels of dissolved oxygen. As the amount of phosphorus in the water increases, so does algae growth, which, along with low flows and impoundments, contributes to oxygen depletion.

He showed slides giving the acreage, depth and flushing rates of the five lakes — with Ivanoe, the shallowest, having the smallest watershed, but, as later slides showed, one of the greatest potentials for future population growth, development and additional phosphorus, which spells concern.

One pound of phosphorous, said Bell, can result in 300 to 500 pounds of algae in a lake.

"It takes 1,000 times less phosphorus to turn a lake green than to keep a lawn healthy," said Bell, showing an alarming slide of a green lake.

Phosphorus causes high growth in ponds, which leads to low light and low oxygen.

"For every three-foot decline in water clarity, the value of shorefront property can decline by as much as 20 percent," said Bell.

He then showed spreadsheets of the calculated amounts of sediment and phosphorus being washed into each lake on an annual basis — 240 tons of sediment in total and 204 pounds of phosphorus.

In the past two years, AWWA volunteers have pinpointed 491 sites within the watershed that are contributing to this state of affairs, and need to be fixed. These were only specified in general terms, and include run off from residential and commercial sites, miles of roadway within 250 feet of the shoreline, water-crossings, suspect septic systems. The next presenter was Sally Soule of the NH Department of Environmental Services, who talked of the different standards of measuring impaired water bodies in New Hampshire and Maine, the former driven more by measurement and the latter by description. She also talked about the Federal Clean Water Act, and the perils of being 303 (D) listed — a fate that recently befell Lake Champlain in Vermont because of a phosphorus overload. The cry was then taken up by a pressure group, the Conservation Law Foundation, which sued the state. As a result, landowners with over two acres around parts of that lake need storm-water discharge permits, she said.

The five lakes in the Salmon Falls Headwaters plan are all healthily classified as Oligotrophic, meaning they have (or should have) less than 8 parts per billion of phosphorus.

None are impaired, as yet, said Bell, "but Ivanoe and Horn could be on the threshold." Another chapter of the WMP addressed the population growth rates in Acton and Maine, calculated the available acreages of developable land, and predicted the years that both communities would be built out — the year 2041 for Acton and by 2054 in Wakefield. The calculation model being used also spat out a prediction of the additional phosphorus that will wind up in the lakes as a result of this development, if current practices continue, and the plan's recommendations are not enacted.

Among the short term goals, knowing that Ivanoe and Horn are on the cusp, is to try and reduce the phosphorus count in these water bodies by 0.8 parts per billion to 7.2 ppb apiece, and to reach a similar concentration in Lovell Lake by lower the P count there by 0.3 ppb.

An action plan, the meeting was told, should be community driven, with objectives and action items spelled out, along with approximate cost estimates and funding sources.

Recommendations include a watershed or regionwide phosphorus control ordinance for all new development; reducing or removing grandfathering for both subdivision and shoreline zones; encouraging cluster development; and passing ordinances to require low impact development

principles with much less run-off and far greater infiltration of storm-water through vegetative plantings porous surfaces.

Increased fines for non-compliance, particularly in the shore land zone, are suggested, along with ban on phosphorus lawn fertilizer (unless soil tests say its needed) and a prohibition on phosphorus-based detergents. Better tracking of failing septic systems is also desirable in the Fight against Phosphorus, along with green roofs, rain gardens and cisterns.

Schier also said that education and outreach were very important, and suggested Lake Association round tables, a survey of seasonal residents, and floating classrooms for both adults and children, all with the goal of persuading people to reduce their phosphorus footprint.

For much more on the Salmon Falls Headwater Lakes Watershed Management Plan, visit www.awwatersheds.org