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Opinion/Editorial
25 for 25: Tackling Phosphorus in our Lakes. Great progress has been made in 25 years.
By Thomas S. Burack, DES Commissioner

In recognition of the New Hampshire Department of Environmental Services' 25th Anniversary, over the course of the year, I will highlight 25 agency activities, programs, projects and accomplishments of the past 25 years. This article, the 13th in the series, discusses the work done to address phosphorus pollution in our lakes.

In the 1970s, Kezar Lake in Sutton looked more like pea soup than lake water. While it has since been rectified, the lake's high growth of algae was a result of one of New London's wastewater treatment facilities discharging sewage to a tributary of the lake, introducing much more phosphorus into the lake than it could handle. Across New Hampshire in the 1970s, prior to the federal Clean Water Act and State oversight, algal blooms frequently occurred from phosphorus overload, rendering many of our lakes and ponds polluted and scum-filled.

The 1970s, however, was also a decade of great advancement in lake science. This combination of degradation of public water resources and improved scientific knowledge was the catalyst for change regarding how we manage and regulate our lakes. For example, in the 1980s, New Hampshire changed the law to prevent direct discharges of sewage to lakes, ending a common practice of raw waste disposal that seems horrific to us now.

When, in 1987, the Water Resources Council and the Water Supply and Pollution Control Commission came under the single administration of DES, state scientists and regulators were better able to affect change to prevent pollution from entering our precious water bodies. In addition, DES biologists were assisted in their lake monitoring by the fledgling Volunteer Lake Assessment Program--a small group of enthusiastic volunteers representing a handful of participating lakes.

Today, with over 180 lakes now participating, VLAP is one of DES's longest running successful programs. The quality-controlled data collected by this important group of volunteers helps DES assess the health of our lakes and ponds. In addition to phosphorus, the volunteers monitor for clarity, pH, chloride, chlorophyll-a, bacteria and other parameters.

In 1991, the State Legislature enacted the original Comprehensive Shoreland Protection Act, which included requirements for vegetated buffers and setbacks, and limitations for buildings and fertilizer (which contains phosphorus). By limiting fertilizer usage along the shorelines of lakes and rivers, another avenue of phosphorus entering our waterbodies was eliminated. In 1994, New Hampshire banned phosphorus in most household detergents, thus reducing the residual phosphorus in the wastewater that causes pollution.

Lake management efforts since the 1990s have focused on addressing phosphorus sources emanating from the land areas that drain to our surface waters, areas known as watersheds.

While a forested watershed will naturally deliver some phosphorus to waterbodies, human activities have the potential to increase the delivered phosphorus load dramatically. Some sources include septic systems, fertilizers, animal waste and sediment from erosion and winter sanding. Changes in vegetation can also affect phosphorus runoff by making lakeside areas more attractive to geese and ducks that potentially add nutrients to the watershed and waterbody by defecating along the shoreline and in the

waterbody directly.

As lake residents and watershed managers address these sources, there is growing use and acceptance of development techniques that have a low impact on the environment. Low impact development minimizes runoff, and infiltrates stormwater into the ground onsite to the extent possible. Less runoff means less sediment, both from the landscape and from stream bank erosion, and less sediment means less phosphorus delivered to lakes.

While the Shoreland Protection Act, recently renamed the Shoreland Water Quality Protection Act, restricts fertilizer use, it only applies to the first 250 feet from the shore. Since most New Hampshire soils do not require phosphorus to support lawns, except when seeding new areas, there is still great potential for reducing excess phosphorus applied unnecessarily. New Hampshire is working with neighboring states through the New England Interstate Water Pollution Control Commission (NEIWPCC) to develop voluntary guidelines for the manufacture, labeling, and application of fertilizer.

By focusing on this one pollutant – phosphorus – over the last 25 years, fewer of New Hampshire's beautiful lakes look like pea soup. DES is proud to be playing a leading role in helping enhance the quality of life that is unique to New Hampshire by continuing to tackle the problems that are caused by pollution in our lakes.

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