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## THE LARGEST APPLICATION OF "PHOSLOCK" IN THE NORTHEAST OCCURRING THIS WEEK ON LAKE HOPATCONG TO MITIGATE HARMFUL ALGAL BLOOMS

**LAKE HOPATCONG, NEW JERSEY** – To prevent harmful algal blooms (HABs) in New Jersey's largest lake, a clay-based nutrient inactivating technology called Phoslock, is being applied in Lake Hopatcong this week. This is the largest Phoslock treatment to occur in the Northeastern U.S. The Phoslock treatment, which is happening in the southern end of the lake called Landing Channel, is expected to take approximately one week depending on the weather conditions.

Lake Hopatcong suffered from large-scale and persistent HABs over the course of the 2019 summer season, where local and county health agencies closed off all beaches and issued advisories over large sections of the lake. These unprecedented conditions had significant negative impacts on the ecological, recreational, and economic resources of the lake and region. So, to combat HABs in the upcoming 2020 summer season, the Lake Hopatcong Commission has partnered with the Lake Hopatcong Foundation, four municipalities (Jefferson, Hopatcong, Mt. Arlington, and Roxbury), two counties (Morris and Sussex), and their environmental consultant, Princeton Hydro, to develop both short- and long-term management strategies for the lake.

"The negative effects of HABs in our lake last year were numerous, widespread, and in some cases devastating," recalled **Donna Macalle-Holly of Lake Hopatcong Foundation**. "It is imperative for every stakeholder to pool our resources to keep it from happening again. Collaboration is the only way to protect public health, as well as the health of New Jersey's largest lake."

In an effort to evaluate a variety of innovative in-lake and watershed-based measures to prevent, mitigate, and/or control harmful algal blooms in Lake Hopatcong, the Lake Hopatcong Commission was awarded a \$500k grant as part of New Jersey Department of Environmental Protection's (NJDEP) new \$13.5M initiative to reduce and prevent future harmful algal blooms in New Jersey. In addition to the \$500k grant, the aforementioned local government and nonprofit stakeholders provided \$330k in matching funds to implement and evaluate a variety of ways to address HABs in Lake Hopatcong.

“Our lake community cannot sustain another year like 2019,” said **Lake Hopatcong Commission Chairman Ron Smith**. “Since the news of our grant award in early March, we have been working with our partners to make sure the projects are implemented in time for the 2020 season.”

This week, the water resource engineering and natural resource management firm, Princeton Hydro—a lake management consultant to Lake Hopatcong for over two decades—is implementing the first and largest innovative measure as part of the NJDEP HABs grant-funded project. This involves treating 50 acres of the southern end of the lake with Phoslock, a clay-based product that inactivates phosphorus in both the water column and the sediments, making this critical nutrient unavailable for algal growth. The Phoslock treatment, which requires proper permitting by NJDEP, is applied as a slurry and will be distributed from a boat. The slurry will temporarily make the water appear turbid, but should disperse approximately two to six hours after each treatment.

“We are expecting the Phoslock treatment to limit the growth of algae and therefore reduce the occurrence of harmful algal blooms in the lake this summer, keeping it open for recreation and business,” said **Dr. Fred Lubnow, Director of Aquatic Resources at Princeton Hydro and leading HABs expert**. “If this technology is deemed successful and cost-effective in Lake Hopatcong, we could set the precedent for large-scale HABs prevention in other lakes throughout New Jersey, and even across the nation.”

Developed by the Australian national science agency CSIRO, Phoslock is frequently used to strip the water column of dissolved phosphorus, as well as to inactivate phosphorus generated from deep, anoxic sediments. Recently, at a smaller scale, it has been shown to inactivate the mobilization of phosphorus from shallow sediments where there is a mobilization of phosphorus from both chemical and biological processes.

Algae uses phosphate, the biologically available form of phosphorus, as a food source to grow. When there is an excessive amount of phosphorus in a lake, algal growth can be dense and can negatively affect water quality. This excessive plant growth, caused by eutrophication, can both cause a lack of oxygen available, leading to fish kills, as well as produce harmful algal blooms with cyanotoxins, which are harmful to humans and pets.

After Phoslock is applied, it sinks through the water column, binding phosphate as it moves towards the sediment. Once settled at the bottom of the lake, it forms a very thin layer and continues to bind phosphate released from the sediment, thus controlling the release of phosphorus into the lake. One pound of phosphorus has the potential to generate up to 1,100 lbs of wet algae biomass. However, 1.1 tons of Phoslock is capable of removing 24 pounds of phosphorus -- that's over 26,000 lbs of wet algae biomass not growing in the lake for every 1.1 ton of Phoslock applied. In turn, Phoslock's ability to suspend biologically available phosphorus is therefore a major step towards improving a lake's water quality.

As part of the NJDEP HABs grant funding, the stakeholder group will be evaluating the relative effectiveness of this treatment strategy. Because of its shallow depth and separation from the main lake, the Landing Channel area was a good candidate for evaluation of this technology. Princeton Hydro will conduct pre- and post-treatment monitoring of the Phoslock treatment area in order to conduct an objective evaluation of the cost effectiveness of the treatment as a means of preventing the development and/or mitigation of HABs. If the study indicates that Phoslock is a cost-effective treatment, the Lake Hopatcong Commission may consider additional trials in other sections of the lake, if funding is available.

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**\*\*PHOTOS AND DRONE FOOTAGE AVAILABLE UPON REQUEST\*\***

**ABOUT LAKE HOPATCONG COMMISSION**

The Lake Hopatcong Commission (LHC) is an independent state agency created in, but not of, the New Jersey Department of Environmental Protection. The LHC is recognized as a steward of the lake and watershed. The 11-member Board of State and local appointees include representatives of the four municipalities and two counties surrounding Lake Hopatcong. The LHC is responsible for fulfilling the obligations of the Lake Hopatcong Protection Act, to safeguard Lake Hopatcong as a natural, scenic, and recreational resource. To learn more, visit [lakehopatcongcommission.org](http://lakehopatcongcommission.org).

**ABOUT LAKE HOPATCONG FOUNDATION**

The Lake Hopatcong Foundation, acting as a partner in this project, is a nonprofit 501(c)(3) organization, established in 2012 that has worked to improve the Lake Hopatcong region through programs and initiatives centered on the environment, education, community and historical preservation, recreation, arts, and culture. Their mission is dedicated to protecting the lake environment and enhancing the lake experience, bringing together public and private resources to encourage a culture of sustainability and stewardship on and around New Jersey's largest lake, for this and future generations. To learn more, visit [lakehopatcongfoundation.org](http://lakehopatcongfoundation.org).

**ABOUT PRINCETON HYDRO**

Princeton Hydro was formed in 1998 with the specific mission of providing integrated ecological and engineering consulting services. Offering expertise in natural resource management, water resources engineering, geotechnical design & investigation, and regulatory compliance, our staff provides a full suite of services throughout the Mid-Atlantic and New England states. We take great pride in producing high-quality products, which is achieved by our highly skilled staff. Our capabilities are reflected in our award-winning projects that consistently produce real-world, cost-effective solutions. For more information, visit: [PrincetonHydro.com](http://PrincetonHydro.com).