



# North Pond Association Watershed-Based Plan & Alum Treatment FAQ

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## Why do we need to treat the lake? What is wrong?

We need to treat the lake to help control and prevent future algal blooms – and ultimately preserve the use of the North Pond for future generations. Algal blooms prevent recreational use of the lake and can be toxic to humans, domestic pets, and wildlife. North Pond has suffered serious algal blooms over the past 6 years due to the high levels of phosphate in the lake sediment and erosion causing runoff of phosphates into the lake.

There are two central elements to the phosphate problem:

1. There are already high levels of phosphate in the lakebed. This is a result of decades of external factors such as erosion, rainwater runoff, leaky septic systems, and more. We need to return phosphate in the lake to natural levels.
2. We want to mitigate the risk of reaching these high levels of phosphate again in the future. We need to embrace measures to reduce more phosphate from entering the lake and lakebed.

Although phosphates are naturally occurring in the sediment, external factors have caused the levels of phosphates to reach a tipping point that required intervention.

## What is the solution to the high levels of phosphate?

After careful consideration, conversations with others in the Belgrade Lakes area who were experiencing similar circumstances, and discussion with experts, the North Pond Association Board has decided to pursue a 10 year treatment plan called the [Watershed-Based Plan](#).

A key element of this Watershed-Based Plan is called an aluminum (alum) treatment. The alum treatment will be a significant undertaking to address the high levels of phosphate already in the lakebed.

The plan will also include treatment methods to prevent more phosphate from entering the lakebed in the future.

Money collected in the North Pond Remediation Fund will be applied to controlling the existing phosphorus in the lakebed (internal load) with an alum treatment and to erosion control projects to mitigate the risk of reaching such high phosphate levels in the future (external load).

## What is an aluminum (alum) treatment?

An alum treatment is a tool to reduce the amount of phosphorus released from the bottom lake sediments. Phosphorus released from these sediments is a major reason for the North Pond algal blooms.



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During the treatment, a large barge applies a combination of aluminum sulfate and sodium aluminate to the water. This combination balances the pH of the water. Aluminum binds the phosphorus and prevents it from entering the water column in low oxygen conditions thus reducing the phosphorus available as a nutrient to the algae.

## **How long will the alum treatment last?**

An alum treatment is expected to result in improved water quality for up to 10 years. Longer success of this treatment depends in part on preventing new sources of phosphorus from entering the lake. Erosion control projects such as building a waterfront buffer to reduce stormwater runoff will extend the longevity of the alum treatment.

## **Are there negative side effects from an alum treatment?**

There are no known side effects to people or wildlife when proper dosing rates, application, and pH monitoring are used. Aluminum applications are used extensively by municipal water treatment plants.

## **What is the treatment timeline and process?**

The timeline is dependent on our ability to raise the funds to complete the work. Permitting takes 90 days once submitted to the Maine Department of Environmental Protection (DEP). Following approval of permits, a contractor will be hired to implement the treatment. The aluminum will likely be applied in early spring 2026 (after ice out).

Treatment takes about 2 weeks depending on the weather. A staging area is established on shore to store large tanks filled with the liquid aluminum and the product is transferred to a barge for application of the aluminum.

It is also possible that the application will be done in two stages – once in Spring 2026 and again in Fall 2026. This depends on the dose of aluminum required as determined by scientists who are monitoring soil samples from the lake.

## **Will lake access and recreation be hindered during an alum treatment?**

The lake will remain accessible during the treatment. There's no need to stay off the lake, but the treatment barge should be given a wide berth (300 feet) for boating safety.

- You can swim in the lake during and after treatment, but you should avoid the treatment zone.
- It is safe to fish and to eat fish from the lake during the alum treatment.



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- You can continue to operate your motorboats – provided that you give the barge a wide berth – as boat wakes will not significantly impact the sediments at the depth of application (13 feet).

### **What are the alternatives to an alum treatment to reduce the internal phosphate load? Why did we choose alum treatment over the other options?**

- **Oxygenation:** While increasing dissolved oxygen can decrease the release of phosphorus from the sediment, the area to be treated would require an extensive system of pipes to deliver the oxygen. The capital cost is estimated to be \$ 1.3 million for installation. However, operating costs could run \$3,000 per day and would be necessary from May through September annually.
- **Dam management:** Dropping the water level 2 feet in late summer would not expect to show appreciable benefits for at least 15 years and possibly could take much longer. Examples of the best selective drawdowns took 20-30 years to reach peak benefit and lessened, but did not prevent, algae blooms. The impacts of lowering the water level on lake recreations and the ecology would need to be taken into consideration. Permitting such a discharge downstream would need to be taken into consideration as well.
- **Dredging:** Removing the top foot of sediment could remove the problem sediment, but the estimated cost of \$50 million makes this option unrealistic. Complex state and federal regulations around dredging can make permitting difficult. Dredging can cause harmful destruction of wildlife habitat.

Ultimately, the North Pond Association Board decided to pursue alum treatment over these alternatives given that it has the highest likelihood of success for the most reasonable cost.

### **Where can I learn more about the Watershed-based Plan and alum treatment?**

You can read the entire Watershed-Based Plan on the North Pond Association website.

### **I have other questions. Who can I contact?**

You can email us at [northpondmaine@gmail.com](mailto:northpondmaine@gmail.com) or fill out the form on the [Contact page](#) of our website.