



# Black Lake Water Clarity – The Best It’s Seen In Decades!

## Have you been to the end of your dock and peered down into the water lately? Go ahead, take a look!

After the recent Alum Treatment on Black Lake, we’ve been overwhelmed by the positive feedback from homeowners and lake visitors. They’re amazed at how crystal clear the lake water is now. Several Black Lake residents have reported they can see the lake bottom for the first time ever!



Not only is the fishing and boating community excited for the newly clear lake, have you noticed the uptick in eagle activity? It’s no wonder with the water clarity depth now over 12 feet! Quite a difference from the brackish water

clarity prior to the Alum Treatment.

Compared to 89 other lakes in the region, the abundant algae and poor water clarity of Black Lake put it in the worse 6 to 12 percent of all lakes, respectively.

It has been decades since Black Lake’s water has been this clear. One resident whose family homesteaded here on the shores of Black Lake, disappointed with the state of Black Lake’s murky waters, said this before the Alum Treatment:

- “When we were kids, some 70 years ago, we used to canoe along the shore, and the water was so clear we could pick out arrowheads from the canoe!”

## Working Towards A Healthy Lake For Future Generations

There may not be any arrowheads left for our kids and grandkids to find, but there’s plenty of new (and safer) experiences to be had now that we can see what’s in and under the water.



Last year, the Department of Ecology and Thurston County Commissioners approved the Black Lake Special District (BLSLD) to proceed with the 1.4 million dollar Alum Treatment to begin March 2021. You may have seen the funny looking barge making several trips up and down the lake this spring. That barge is actually a very sophisticated precise delivery system used in freshwater lakes all over the United States by one of the nation’s leading surface water treatment companies, HAB Aquatic Solutions.



Through GPS Guidance Plotting and Tracking, HAB scientists are able to accurately deliver the appropriate quantity of alum and buffer in a safe dosage to prevent big swings in pH that cause harm to fish and other organisms within the lake.

BLSLD also hired Herrera Environmental Consultants for quality control to ensure proper application and no



environmental impacts in accordance with the Department of Ecology Permit. Herrera’s team of scientists and engineers were responsible for project

oversight, water quality testing, fish kill reporting, and pH testing throughout the Alum Treatment, as well as before and after treatment. Their final report is available on our website.

## What Is An Alum Treatment?

Aluminum sulfate, called alum, is a nontoxic liquid that is commonly used in drinking water treatment plants to clarify drinking water.

It’s use in lakes began in the early 1970’s. When added to lake water, alum removes phosphates through precipitation, forming a heavier than water particulate known as a floc. This floc then settles to the lake bottom, binding with phosphates and other particulates in the water column, and then creates a barrier at the lake bottom that slows sediment phosphorus release.

After an Alum Treatment, algae and toxic cyanobacteria are less likely to thrive because their most critical nutrient is in short supply.

## Post-Treatment Report Better Than Expected

During the entire 21-day Alum Treatment there were no reported distressed fish or fish kills observed. Additionally, there have been no reports during any of the weeks after treatment. Fish & Wildlife stocked 30,000 rainbow trout into



Black Lake during the Alum Treatment. Normally, it is expected that some fish will die during the stocking process, which was concerning as it would be hard to tell if any fish kill

was due to stocking or the Alum Treatment. However, there was not one report of distressed fish observed or a fish kill. Maybe, just maybe the fish all like the clean water too!

## Who Pays For This?

The BLSA Annual Budget is approximately \$165,000/yr. The average Black Lake waterfront homeowner currently pays approximately \$418/yr in rates and charges, which pays for lake maintenance projects and operational costs. Larger lots with more waterfront or dwellings may pay more. County Public Parks and the Fish and Wildlife Public Boat Launch pay over \$40,000 towards the BLSA budget, nearly 25% of the total budget.

The annual cost of the bond payment for the Alum Treatment is approximately \$102,000/yr.

Instead of adding the new \$102,000 to the \$165,000 already paid each year, (which would have resulted in a nearly 62% increase to lakefront property owners), the BLSA Commissioners decided instead to lower the current rates and charges homeowner's already pay, so that the net increase would only be approximately 16%, or \$67/yr for the average lakefront homeowner.

Through responsible fiscal stewardship and ongoing routine maintenance treatments, Black Lake Special District's annual costs have reduced and resulted in surplus funds. Those surplus funds along with reduced annual costs provided a cost savings that resulted in a much lower increase needed to accomplish the Alum Treatment.

## How Long Will It Last?

That depends a lot on you! While the Alum Treatment binds and holds the phosphorus and other algae producing particulates down on the lake floor, it does not prevent those



algae producing ingredients from entering the lake from the watershed and surface water runoff. That means we ALL can help to KEEP the lake looking as clear as it is today by

eliminating the use of fertilizers and getting our septic systems inspected AND repaired. With your help, we have a much better chance of the healthy water quality lasting for years to come.

Remember, YOU can help prevent our new pristine lake from going back to looking like this. —>



This means stop using ALL fertilizers. Yes, even organic fertilizers. Algae blooms are prevalent near agricultural land which is the most organic fertilizer there is. And please, get your septic inspected and repaired if needed.

## Most Lakes Are Dying

Black Lake, like many lakes, is considered 'eutrophic'. In other words, if left in their natural state they will become overrun by invasive aquatic vegetation, algae, bio-matter sludge, and nuisance vegetation, choking the oxygen from the water causing fish and wildlife to suffer.

Eutrophic lakes with high biological productivity and rich in nutrients have higher concentrations of phosphorus and chlorophyll and poorer clarity. Typically, they are shallow and contain an abundance of aquatic plants. Eutrophic conditions form when a lake is 'fed' too many nutrients, especially phosphorus and nitrogen. A Highly Eutrophic Lake has lost so much dissolved oxygen that normal aquatic life will die off.



If a lake is left alone to die, it will end up looking something like Capital Lake in downtown Olympia.

While we cannot reverse some of Black Lake's water characteristics, there are widely accepted scientific solutions

that can slow the rapid growth of invasive weeds that impact fish habitat and boating, and slow or stop the pervasive algae blooms that can become toxic and harmful to wildlife, pets, and children. A healthy balance of native vegetation and community efforts to reduce nutrient loading will make for a much healthier lake.

## We Are Committed To Our Constituents

Since the very first public community meeting held several years ago, homeowners around the lake have consistently asked us for 3 things:

1. **WEEDS-** reduce or eliminate invasive weeds and nuisance weeds that swarm our shores and wrap themselves around our boat props and children’s legs as they swim around the docks.
2. **FLOODING-** reduce or eliminate the beaver dam activity and hold the County accountable to keeping the drainage ditch clear and flowing to prevent lake water levels rising and causing erosion and shore damage.
3. **ALGAE BLOOMS-** reduce or eliminate the unsightly and potentially toxic green swampy Algae Blooms that are increasing in frequency each summer.

Since the community of lake front and lake access homeowners voted to create the Black Lake Special District in 2014, here are just some of the major projects we have accomplished over the years to address those 3 top priorities our constituents tasked us with:

**2014-** Began regular contact with Thurston County to ensure maintenance of the Black Lake Ditch occurs. The Ditch is the primarily outflow of the lake. Beaver dams frequently block the flow causing a rise in lake levels. High levels damage landscaping and erode shoreline. Some structures have been flooded as recently as 2009.

**2014-** Contracted with a weed harvester company to begin controlling submersed water nymph (Najas flexilis). The plant was dominating many acres of the lake. The plant discouraged swimming, fishing, and it clogged watercraft.



**2015-** Contracted with Aquatechnex for plant control in front of homes and parks. The submersed water nymph was reduced to 10% of its previous volume. Aquatechnex has continued to assist BLSD with annual surveys of plant density and plant types as well as recommendations for control.

**2015-** Conducted a study to assess phosphorous in sediments and the water column and external loading of phosphorous from the surrounding basin. The study concluded most phosphorous was coming from accumulations in the lake floor sediment.

**2016-** A light Alum Treatment was completed in April. The treatment was intended to halt harmful toxic algae blooms and lake closures for 4 – 6 years.

**2018-** A second study of phosphorous in the sediments was completed. The study formed the basis for the Alum Treatment in 2021.

**2019-** Herrera Environmental designed and conducted the Pollutant Monitoring, Phase 1 Study. The study sampled 15 streams and rivulets. Phosphorous and E. coli were identified in several locations. A follow up study was recommended.

**2019-** Partnered with Columbus Park for a goose roundup performed by the US Department of Agriculture (USDA). BLSD reimbursed Columbus Park for the USDA fees. Geese



excrement (up to 4lbs a day per goose) can add significant nutrients to the surface water runoff, causing an immense unbalance in the water and overall ecosystem.

**2020-** Herrera conducted the Pollutant Monitoring, Phase 2 Study. DNA analysis was added to determine the human source of E. coli from failing septic systems. Three streams contained E. coli with human DNA markers.

**2021-** A second Alum Treatment was applied in March. The treatment has significantly improved water clarity in the lake.

**2021-** The final report of the Pollutant Monitoring, Phase 2 Study was just published this month. A copy of the report was immediately provided to Thurston County’s Environmental Health section for follow up. The report will also be distributed throughout Thurston County government and the Black Lake Community.

The study identified these three streams discharging septic effluent into Black Lake:

1. Stream flowing under Black Lake Blvd SW near the intersection of Black Lake Blvd SW and Goldsby St SW has a high level of contamination.
2. Stream flowing under Lakeside St SW near the 7400 block of Lakeside St SW has low to moderate levels of contamination.
3. Stream crossing under 56<sup>th</sup> Ave SW near the 4200 block of 56<sup>th</sup> Ave SW also has a low to moderate contamination.

## Look How Far We've Come - A Little History About The Black Lake Special District

In 2011, a few concerned residents on the lake wondered if anything could be done about the lake quality. The weeds were awful, the lake levels kept rising due to beaver dams, and algae blooms in late summer threatened to close the lake due to toxic levels.

No active management of the lake had occurred previously. The lake had been greatly modified over the years by stormwater runoff from housing and road development in the basin, by the virtual shut down of outflow to the Black River due to road and pipeline construction to the south and the creation of the Black Lake Ditch to the north of the lake. In the early 1900s, sawmills were built and operated over the north end of the lake and wood waste was disposed of in the lake. Invasive species such as the white water lily and the American bullfrog were introduced without forethought concerning their impact to the lake, native plants and wildlife.

After some discussions with Environmental Health and Water Resources at the County level, an invitation was mailed to all of the residents around the lake, and a community gathering was scheduled at the Black Lake Bible Camp to see how many residents were interested in finding solutions to the issues that plagued Black Lake.

The room was packed! Standing room only for the very first community meeting! Environmental Health Experts from the Water Resources Dept of Thurston County came and shared what other lakes in the County had done to combat similar issues Black Lake was experiencing. The overwhelming response from those attending was YES! Let's Save Black Lake.

From that beginning, a nonprofit 501c3 was created in 2012 called the Save Black Lake Coalition (which still continues today, working towards additional grants for water quality and other projects like salmon restoration and public education, and they welcome more volunteers!). Save Black Lake worked in conjunction with Thurston County Water Resources to apply for and receive TWO grants from the Department of Ecology. Many of you reading this donated to help Save Black Lake raise the 25% match to be eligible for the other 75% in grant money. That initial grant money helped Save Black Lake pay for water quality testing, lake floor core sampling, and weed Geomapping to identify invasive aquatic vegetation and confirm eligibility for a second, larger grant. The second grant paid for biologists to create the IAVMP or Invasive Aquatic Vegetation Master Plan and begin the work to eradicate the invasive non-native weeds found in Black Lake.

During this time, several more community public meetings occurred where experts and scientists educated our lakefront community about the options available to manage the water quality of the lake. Since the County had limited resources to do much to combat the water quality issues for the many lakes within the county (and still does to this day), it became apparent that once the grant money ran out, it would be up to the residents around the lake to continue the sustained work necessary to complete the IAVMP and the other lake quality issues the community wanted.

A volunteer committee of lakefront homeowners was formed to research the two types of long-term lake management governmental structures- Lake Management Districts and Special Use Districts. After several meetings, the volunteer committee's recommendation to form the Black Lake Special Use District was presented to the Black Lake residents. Overwhelming public support resulted in a well-received signed petition, productive public hearings, and approval by the Thurston County Commissioners to form the Black Lake Special District.

The Black Lake Special District was officially formed in 2014 following a vote of parcel owners within the district boundary. The three BLSD Commissioners that the community elected to represent them are volunteers that live within the district and whose families enjoy the lake just like you.

## A Note From Your Commissioners

We are excited to be a part of cleaning up Black Lake for everyone's enjoyment! Thank you to the many residents that have expressed their appreciation for the work accomplished over the past several years. It means so much to be entrusted with achieving the goals you've asked for, and we are committed to continuing responsible stewardship of our beautiful lake.

Your Black Lake Special District has always been committed to a policy of complete transparency. Meeting agendas, meeting minutes, policies, handbooks, reports, and financial information can all be accessed on the BLSD website: [www.blacklakespecialdistrict.org](http://www.blacklakespecialdistrict.org). Questions are always welcomed as we strive to meet the needs and concerns of our neighbors that have entrusted us to manage the lake water quality responsibly.

Sincerely,

Lake Stintzi, Brian Wilmovski, & Vernon Bonfield

Your Elected Board of Commissioners