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SeSCRIPT Analysis Report: Waushakum Pond

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Project Name: Waushakum Pond
Surface Area: 80 feet
Average depth: 15 acres
Date Algae Sample Received: 9/11/2024
SeSCRIPT Analysis Performed: Algae ID and Water Quality Baseline Plus

Algae ID Results

Waushakum Pond

Identification	Classification	Description	Density/Biomass (cells/mL)
			★★
Planktolyngbya sp.	Cyanophyta-Blue-green algae	Filamentous, planktonic, potential toxin producer	73,200
Aphanizomenon sp.	Cyanophyta-Blue-green algae	Filamentous, scum-former, planktonic, potential toxin and taste/odor producer	9,400

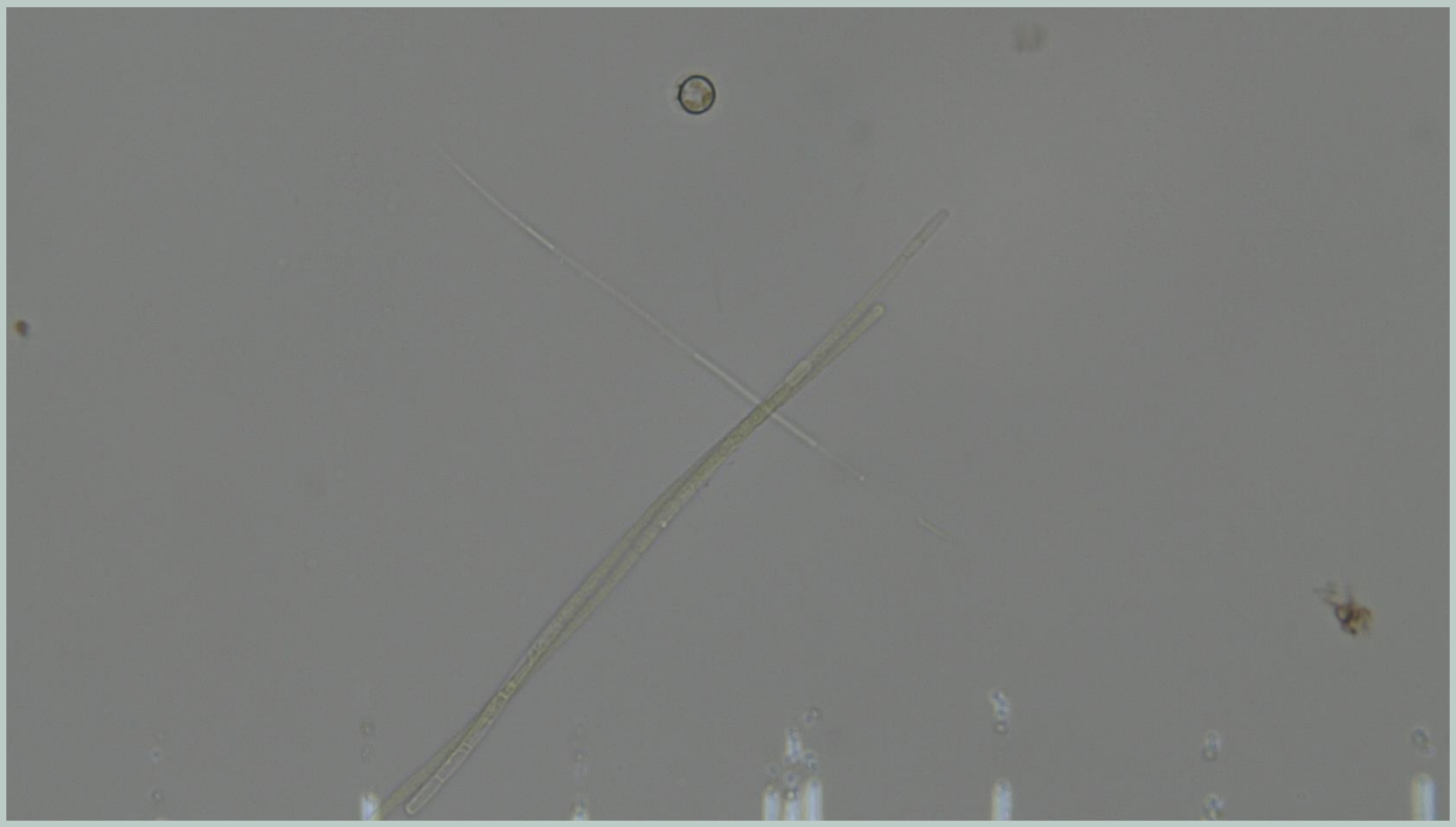
Other algae observed at densities less than 40 cells/mL: *Cyclotella* (Bacillariophyta); *Aphanocapsa, Dolichospermum, Microcystis* (Cyanophyta); *Staurastrum* (Streptophyta); *Trachelomonas* (Euglenophyta)

Some particulate matter observed

SeScript Alert Index	Threat Level	Cyanobacteria Levels (cells/mL)
★	Low	Less than 20,000
★★	Moderate	20,000 to 100,000
★★★	High	More than 100,000
★★★★	Extreme	More than 100,000 with scum/mats

Algae ID Pictures

Waushakum Pond



Water Quality Results

Waushakum Pond

Analysis	Measurements	Description
pH (SU)	7.0	Neutral
Conductivity (µS/cm)	401.1	Typical for freshwaters
Alkalinity (mg/L as $CaCO_3$)	34.9	Low buffered
Hardness (mg/L as $CaCO_3$)	18.8	Soft
Turbidity (NTU)	3.0	Low

Nutrient Results

Waushakum Pond

Analysis	Measurements	Description
Total Phosphorus (µg/L)	17.8	Moderate amount: Mesotrophic
Free Reactive Phosphorus (µg/L)	< 5	Low
Total Kjeldahl Nitrogen (mg/L)	0.55	Low
Nitrates & Nitrites (mg/L)	0.07	Low
Total Nitrogen (mg/L)	0.62	Low
Chlorophyll a (µg/L)	< 10	Low
E. coli (CFU/100mL)	5.2	Low
Total Coliforms (CFU/100mL)	325.5	High

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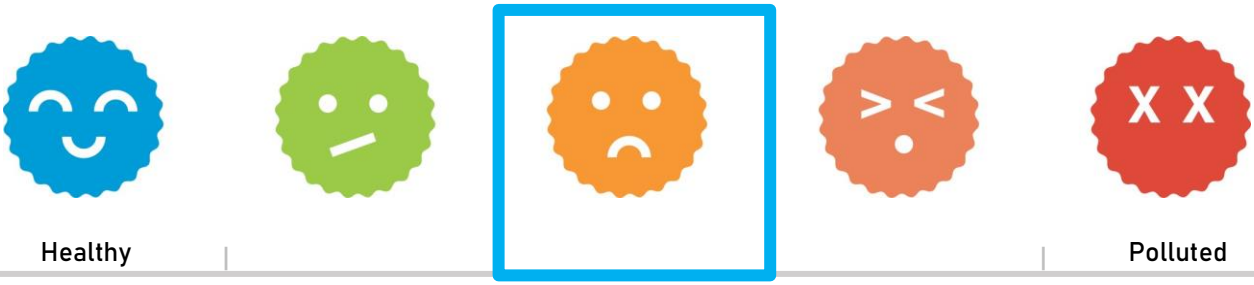
SeSCRIPT Discussion



Healthy | Polluted

The algae and water sample collected from Waushakum Pond was received on 9/11/2024. Based on results from the water quality and algae analyses, proposed treatment recommendations for control of the problematic algae and nutrient management in Waushakum Pond were determined (see below).

For the purpose of this report, the health rating reflects water quality concentrations detected at the time of collection and should only be used as a guide for treatment purposes. Follow product label instructions. Check with the appropriate local and state agencies for product restrictions and permit regulations prior to use.

SeSCRIPT Diagnostic Guidance — Waushakum Pond

To restore *Waushakum Pond* to a more balanced natural state, it is recommended to manage the nuisance algae and the nutrient pollution (or prevent pollution levels to rise to unhealthy levels.

STEP 1: ALGAE MANAGEMENT

In order to control the targeted algae at this site, apply:

SeClear algaecide and water quality enhancer at a rate range of 1.3-2.6 gallons/acre-foot (0.2-0.4 mg Cu/L).

Contact your SePRO Aquatic Specialist for further guidance on final application rate selection, technique and frequency based on project objectives, site conditions, algae location and density at treatment time.

STEP 2: PHOSPHORUS MANAGEMENT

Analysis of the water quality parameters in this pond revealed this system is mesotrophic. Based on these site-specific water parameters, consider implementing one of the following EutroSORB phosphorus removal solutions to restore water quality in your water body.

a. Recovery Solution: Improve or prevent further nutrient pollution by applying EutroSORB WC on an annual basis. The recommended starting dose is 10 PDUs per acre. Integrate with SePRO algaecide applications as needed to control algae and achieve desired water quality objectives.
b. Reset Solution: Reset the ecological clock and restore water quality in your pond by implementing a Reset application strategy customized by water body. EutroSORB G permanently binds phosphorus pollution both in the water and at a source, the sediments.

Always read and follow product labels and applicable permits. Contact your SePRO Technical Specialist for assistance on developing a custom prescription based on site conditions and water quality management objectives

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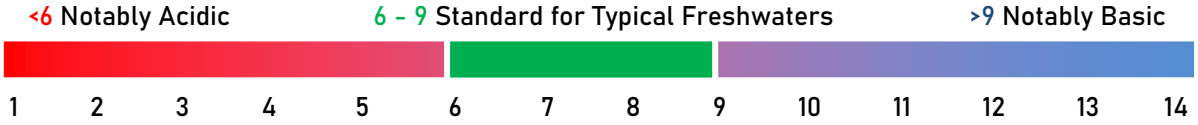
Water Quality Analysis Explanation

These water quality parameters are essential to document the condition of a water body and design custom treatment prescriptions to achieve desired management objectives.

pH: Measure of how acidic or basic the water is (pH 7 is considered neutral).



Hardness: Measure of the concentration of divalent cations, primarily consisting of calcium and magnesium in typical freshwaters. *0-60 mg/L as $CaCO_3$ soft; 61-120 moderately hard; 121-180 hard; > 181 very hard*

Alkalinity- Measure of the buffering capacity of water, primarily consisting of carbonate, bicarbonate and hydroxide in typical freshwaters. Waters with lower levels are more susceptible to pH shifts.
50 mg/L as $CaCO_3$ low buffered; 51-100 moderately buffered; 101-200 buffered; > 200 high buffered.

Conductivity- Measure of the waters ability to transfer an electrical current, increases with more dissolved ions. *50 uS/cm relatively low concentration may not provide sufficient dissolved ions for ecosystem health; 50-1500 typical freshwaters; > 1500 may be stressful to some freshwater organisms, though not uncommon in many areas.*

Phosphorus: Essential nutrient often correlating to growth of algae in freshwaters.

Total Phosphorus (TP) is the measure of all phosphorus in a sample as measured by persulfate strong digestion and includes: inorganic, oxidizable organic and polyphosphates. This includes what is readily available, potential to become available and stable forms.
12 µg/L oligotrophic; 12-24 µg/L mesotrophic; 25-96 µg/L eutrophic; > 96 µg/L hypereutrophic

Free Reactive Phosphorus (FRP) is the measure of inorganic dissolved reactive phosphorus. (PO_4^{-3}, HPO_4^{-2}, etc.). This form is readily available in the water column for algae growth.

Nitrogen: Essential nutrient that can enhance growth of algae.

Total N is all nitrogen in the sample (organic N^+ and Ammonia) determined by the sum of the measurements for Total Kjeldahl Nitrogen (TKN) and ionic forms.

Nitrites and Nitrates are the sum of total oxidized nitrogen, often readily free for algae uptake.
1 mg/L typical freshwater; 1-10 potentially harmful; >10 possible toxicity, above many regulated guidelines

Chlorophyll a: primary light-harvesting pigment found in algae and a measure of the algal productivity and water quality in a system. *0-2.6µg/L oligotrophic; 2.7-20 µg/L mesotrophic; 21-56 µg/L eutrophic; > 56 µg/L hypereutrophic*

Turbidity- Measurement of water clarity. Suspended particulates (algae, clay, silt, dead organic matter) are the common constituents impacting turbidity.
<10 NTU drinking water standards and typical trout waters; 10-50 NTU moderate; > 50 NTU potential impact to aquatic life.