PHOSPHORUS

What is phosphorus?

Phosphorus naturally exists in both freshwater and saltwater in different chemical forms, including orthophosphate and total phosphorus. Phosphorus is an essential nutrient for all growth and reproduction.

How do we measure it?

All forms of phosphorus are measured by collecting water samples in a bottle. Orthophosphate, measured in milligrams per liter (mg/L) or micrograms per liter (µg/L), can be analyzed in the field using either a colorimetric kit or a field colorimeter, or in a lab. Total phosphorus (mg/L or µg/L) is analyzed in a lab.

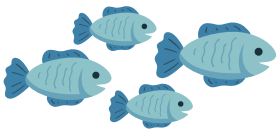
Equipment	Cost	Monitoring Time
Colorimetric kit	$	10–20 mins per site
Field colorimeter	$$	10–20 mins per site
Lab analysis	$$	10–20 mins per site

Photo by the Alliance for Aquatic Resource Monitoring.

Why do we care?

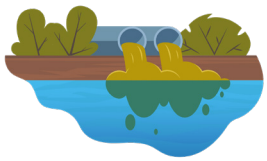
Aquatic Life

Increased phosphorus can result in algae overgrowth or harmful algal blooms that can cause fish kills and disrupt the food web.



Pollution

Phosphorus is often present at unnaturally high levels in fertilizers and wastewater. Phosphorus-rich water from lawns, farms, and overflowing sewers or septic systems can flow into waterways.



Stream Health

Unusually high levels of phosphorus often mean that the ecosystem is unhealthy and habitat quality for organisms is low.

How is my water?

Phosphorus levels have different thresholds based on the type of phosphorus monitored, salinity regime, and surrounding geological features. In most streams, a typical total phosphorus reading of less than 0.05 mg/L indicates a healthy stream. Total phosphorus readings above 0.2 mg/L are notable and may cause concern.

PLEASE NOTE:

This fact sheet provides general information about phosphorus, but water monitoring in specific locations may require more detailed methods and considerations.