HORN POND 2017

WATER QUALITY REPORT 1 DEEP

SITE STATUS SUMMARY OF CONDITIONS

WATER CLARITY	7.4	
TOTAL PHOSPHORUS	5.9	
CHLOROPHYLL *A*	1.9	
DISSOLVED OXYGEN	3.2	

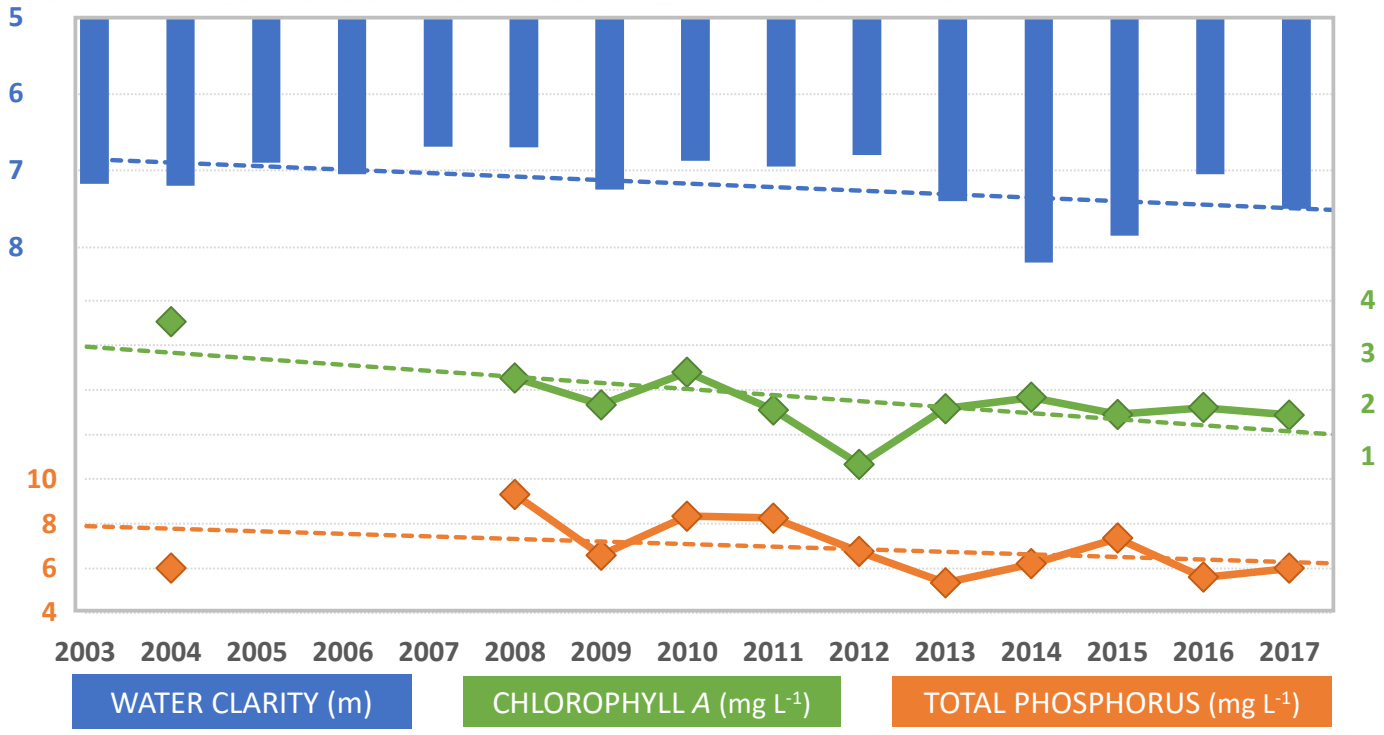
TROPHIC STATE **OLIGOTROPHIC**

At site 1 Deep, water quality is generally excellent. Water clarity, chlorophyll and phosphorus exhibit improving trends. However, low dissolved oxygen in the deep layer reveals potential for to internal phosphorus loading, which could result in degraded water quality.

CURRENT poor good excellent no data

TREND degrading improving flat too few data

SITE RESULTS ANNUAL WATER QUALITY PATTERNS



LAKE BASICS BACKGROUND INFO

Site Depth	1 Deep – 31 feet
Lake Max/Mean Depth	31 feet / 13 feet
Location	Wakefield, NH & Acton, ME
Watershed Area	1.8 square miles
Lake Area	227 acres
Shore Length	4.8 miles
Lake Volume	3.2 million cubic meters
Flushing Rate	8.2 times per year
Lake Elevation	554 feet

Extension

HORN POND 2017

LAKE STATUS AND FUTURE CONCERNS

LOW DISSOVLED OXYGEN at 1 Deep indicates potential susceptibility to internal phosphorus loading, which could increase the amount of phosphorus available to stimulate plant and algal growth.

WATERSHED RESTORATION EFFORTS by the Acton Wakefield Watersheds Alliance began in 2008 to help improve water quality. Work will be ongoing to achieve water quality goals.

Horn Pond is part of the Salmon Falls Headwater Lakes Watershed **MANAGEMENT PLAN**

WATER QUALITY REVIEW

LEARN MORE ABOUT LAKE HEALTH

LAKE PRODUCTIVITY is determined by multiple factors, including

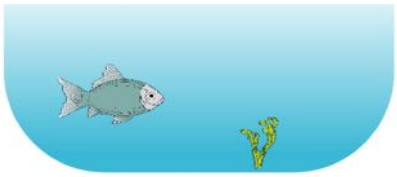
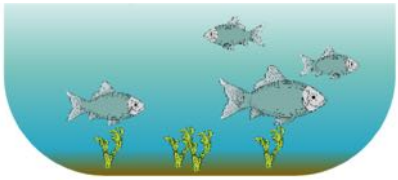
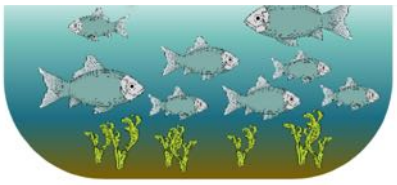
WATER CLARITY Water clarity is used as an indirect measure of algal productivity, but is also influenced by suspended sediments and dissolved color.

CHLOROPHYLL *A* A green pigment found in plants and algae, it is used to estimate algal biomass. Algal growth is promoted by phosphorus, increasing chlorophyll.

PHOSPHORUS A key nutrient that stimulates algal blooms and excessive plant growth, particularly for invasive species.

DISSOLVED OXYGEN Low dissolved oxygen can kill or stress organisms and release phosphorus from sediments, further degrading water quality.

LAKE TROPHIC STATE is generally broken into three categories

OLIGOTROPHIC	MESOTROPHIC	EUTROPHIC
		
DEEP	REDUCED	SHALLOW
LOW	MODERATE	HIGH
LOW	MODERATE	HIGH
HIGH THROUGHOUT WATER COLUMN	OCCASIONALLY LOW IN BOTTOM WATERS	FREQUENTLY LOW IN BOTTOM WATERS
MINIMAL PLANTS	MODERATE PLANTS	ABUNDANT PLANTS

LAKE AGING is both natural and accelerated by human activities

Lakes **NATURALLY** age or become more productive over thousands of years. In recent geologic time, humans have enhanced the rate of nutrient enrichment and lake productivity, speeding up this natural process to tens or hundreds of years.

HUMANS introduce excess phosphorus enters the lake in eroding sediment, groundwater (e.g. aging septic systems), or stormwater runoff, which contains fertilizers, detergents, or other phosphorus-based products. Algal blooms and uncontrolled sediment erosion along the shoreline can decrease water clarity, which can reduce shoreline property values.

Extension