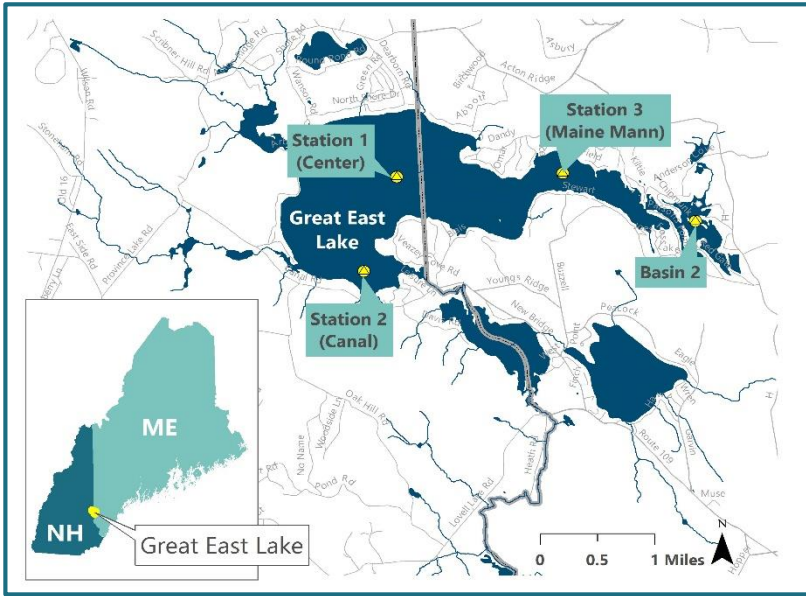


# GREAT EAST LAKE



## LAKE WATER QUALITY REPORT



### LAKE QUICK FACTS

**Towns/States/Co.:** Wakefield, NH (Carroll Co.)  
Acton, ME (York Co.)

**Total Watershed Area:** 15.5 square miles

**Lake Area:** 1,707 acres

**Shore Length:** 18.7 miles

**Max Depth:** 102 ft

**Mean Depth:** 35 ft

**Lake Volume:** 75,589,500 cubic meters

**Flushing Rate:** 0.3 times per year

**Lake Elevation:** 573 ft

**Trophic Classification:** Oligotrophic

**Impairments:** None

**Invasives:** Variable milfoil was discovered by Weed Watcher volunteers near the boat ramp in 2006. The plants were removed by hand and have not returned.

Station 1 (Center) Parameter	Historical Trend	Overall Condition
Water Clarity	●	●
Total Phosphorus	●	●
Chlorophyll-a	●	●
Color	●	●

The current status of each water quality trend or condition is presented as "Stoplights."

● **DEGRADING / POOR**  
● **STABLE / GOOD**  
● **IMPROVING / EXCELLENT**

**Watershed restoration efforts began in 2008 to help improve water quality. Much work is still needed to achieve water quality goals and assess trends.**

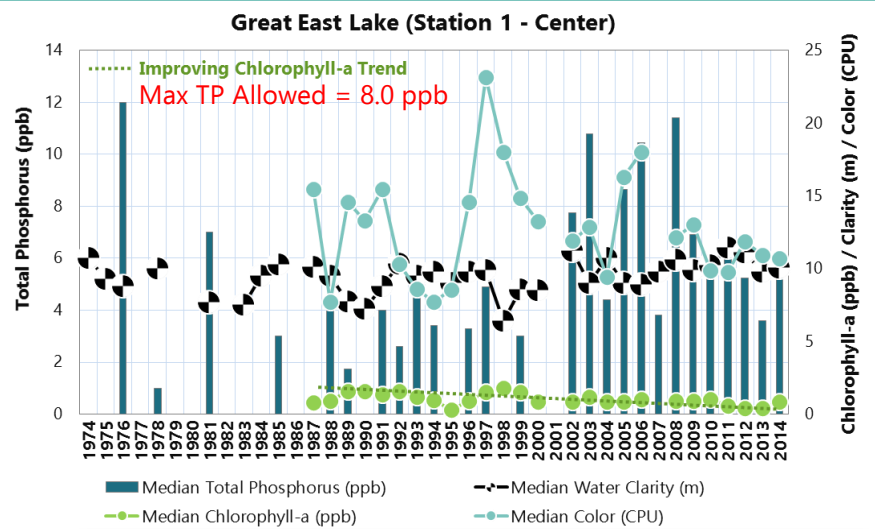
### YCC PROJECTS

**BEFORE**

**AFTER**



### WATER QUALITY



### WATERSHED EFFORTS

**Number YCC Projects:** 56

**Number Erosion Control Features:** 195

**Technical Assistance Visits:** 100

**Amount Sediment Reduced:** 77 tons

**Amount Phosphorus Reduced:** 66 lbs.

# WATER QUALITY REVIEW



LEARN MORE ABOUT LAKE HEALTH

## HELP PROTECT YOUR LAKE

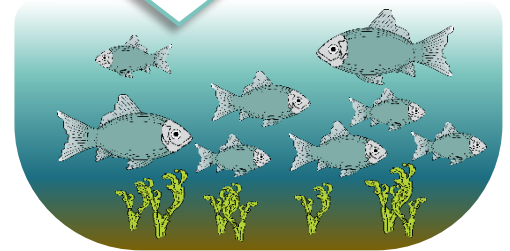
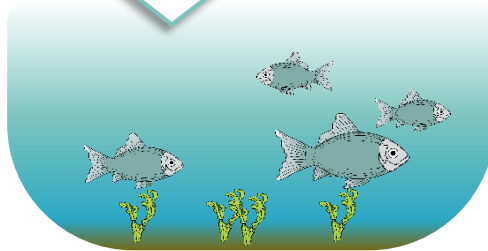
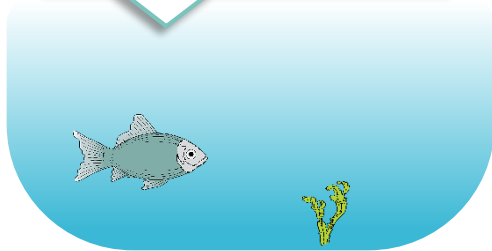
<http://awwatersheds.org/>

The **degree of lake productivity** is determined by multiple factors, including water clarity, phosphorus, chlorophyll-a, plant growth, and dissolved oxygen in bottom waters.

### OLIGOTROPHIC

### MESOTROPHIC

### EUTROPHIC



Deep Water Clarity

Reduced Water Clarity

Shallow Water Clarity

Low Phosphorus

Moderate Phosphorus

High Phosphorus

Low Chlorophyll-a

Moderate Chlorophyll-a

High Chlorophyll-a

Minimal Plant Growth

Moderate Plant Growth

Abundant Plant Growth

High Oxygen Throughout Entire Water Column

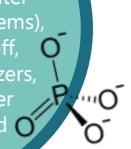
Occasional Oxygen Depletion in Bottom Waters

Frequent Oxygen Depletion in Bottom Waters

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.



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.



Decomposition of excess algae and plant material depletes oxygen in the lake, leading to fish kills. Low oxygen in bottom waters can then release phosphorus back into the water column.



## DEFINITIONS

**Water Clarity** is a vertical measure of water transparency (ability of light to penetrate water) obtained by lowering a black and white disk into the water until it is no longer visible. Water clarity is used as an indirect measure of algal productivity.

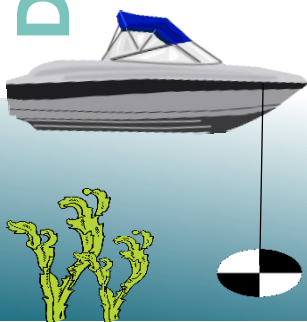
**Phosphorus** is a key nutrient that stimulates algal blooms and excessive plant growth, particularly for invasive species.

**Chlorophyll-a** is a measurement of the green pigment found in plants, and is used as an estimate of algal biomass.

**Color** measures the influence of suspended and dissolved particles in water from weathered geologic material, vegetation cover, and land use activity. Colored lakes (>25 CPU) can have reduced water clarity and increased phosphorus concentrations.

**Dissolved Oxygen** is a measure of the amount of oxygen dissolved in water. Low oxygen can kill or stress organisms and release phosphorus from bottom sediments.

Algal blooms and uncontrolled sediment erosion along the shoreline can decrease water clarity, which can reduce shoreline property values.



Town of Wakefield

