

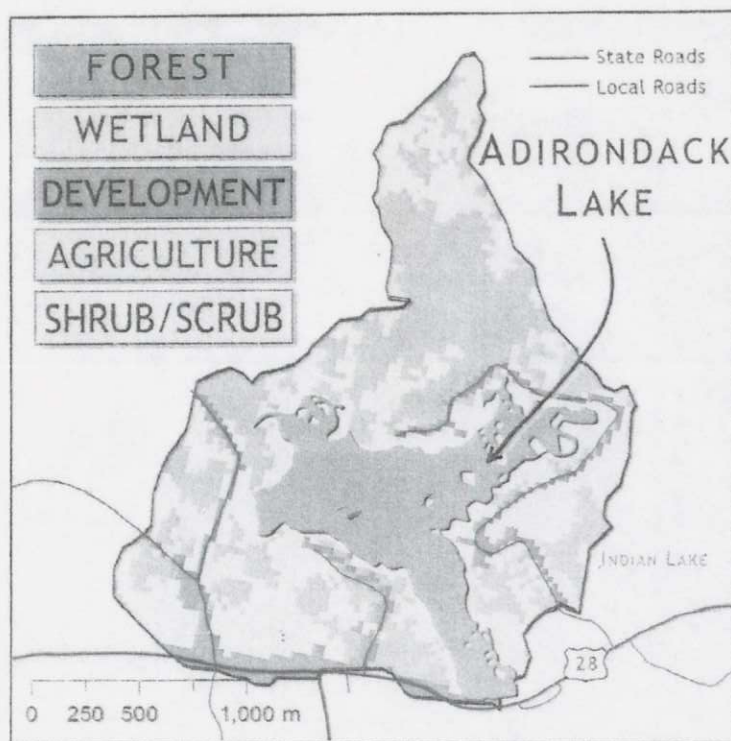
# ADIRONDACK LAKE

## SUMMARY

Adirondack Lake is a 78-hectare waterbody, located within a 379-hectare watershed that is co-dominated by forest cover (33%) and wetlands (33%). Long term monitoring by HCSWCD produced the following findings.

The surface water of the lake is best classified as circumneutral to slightly alkaline, with average annual pH values that were typically in the range of 6.5 to 7.9 standard units. Between the years 2015 and 2017, alkalinity was in the range of 23 to 31 mg/L, indicating that the lake was adequately buffered, and not currently sensitive to acid deposition. The lake is best classified between eutrophic and mesotrophic, with a statistically significant decrease in transparency over time. Adirondack Lake had the highest calcium concentration in the dataset during the 2015 to 2017 period at 9.2 mg/L. The chemistry of the lake was moderately influenced by the 6.3 km of roads in the watershed. The concentration of chloride and sodium between the years 2015 and 2017 averaged 11.1 and 6.5 mg/L respectively, which is approximately 37 times greater than background concentrations for lakes in the Adirondack region. The bottom water of Adirondack Lake experienced significant oxygen depletion, with anoxic or hypoxic water encountered on 58% of sampling trips during the month of August.

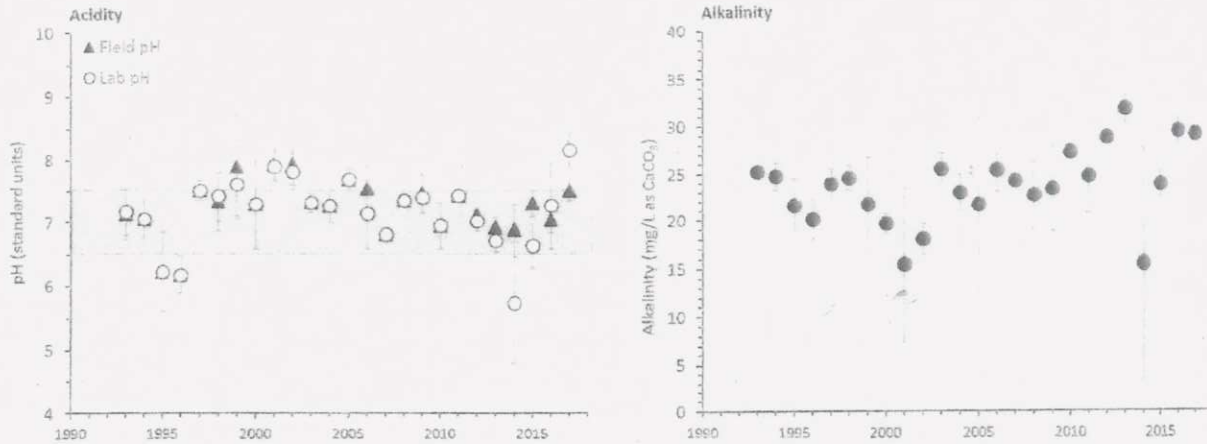
## MORPHOMETRY



Lake Area (ha)	78
Max Depth (m)	5.8
Volume ( $m^3 \times 10^6$ )	1.7
Shoreline (km)	10.4
Watershed Area (ha)	379
Retention Time (yrs)	0.8
Surface Water Area (%)	26
Forested Area (%)	33
Developed Area (%)	7
Wetland Area (%)	33
State Road Length (km)	1.0
Local Road Length (km)	5.3

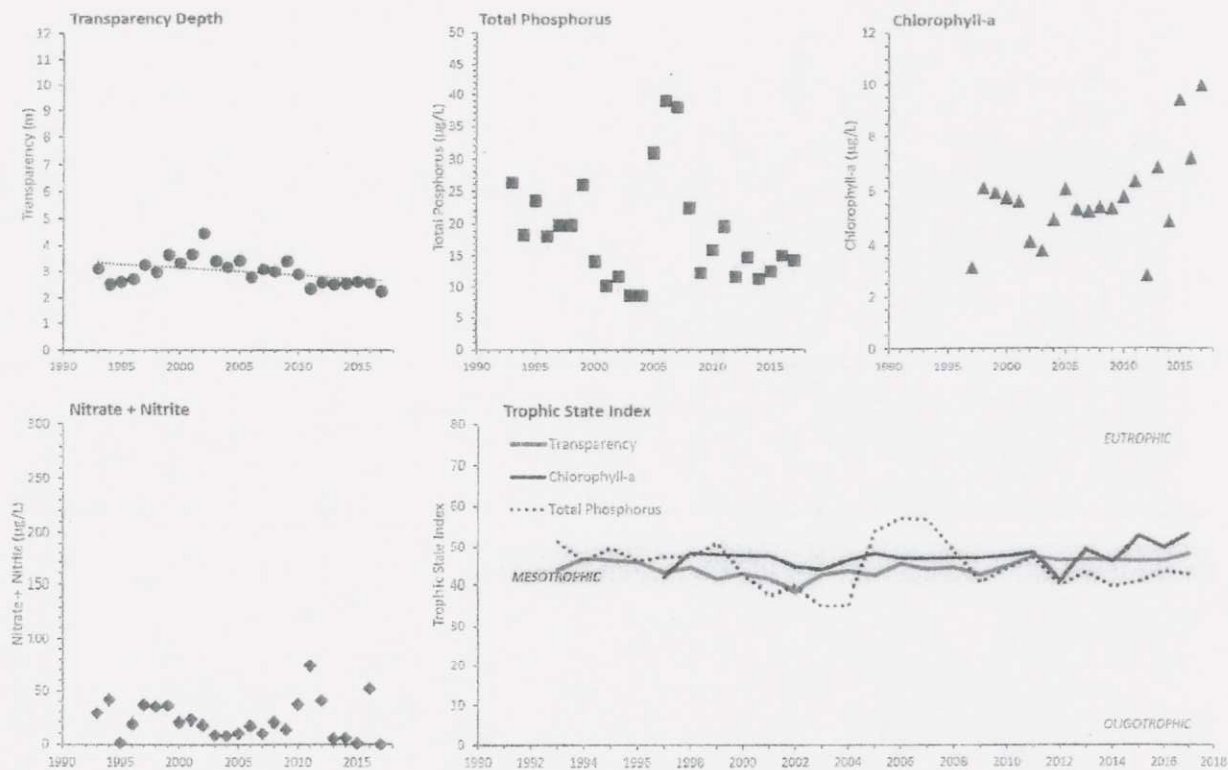


## ACIDITY



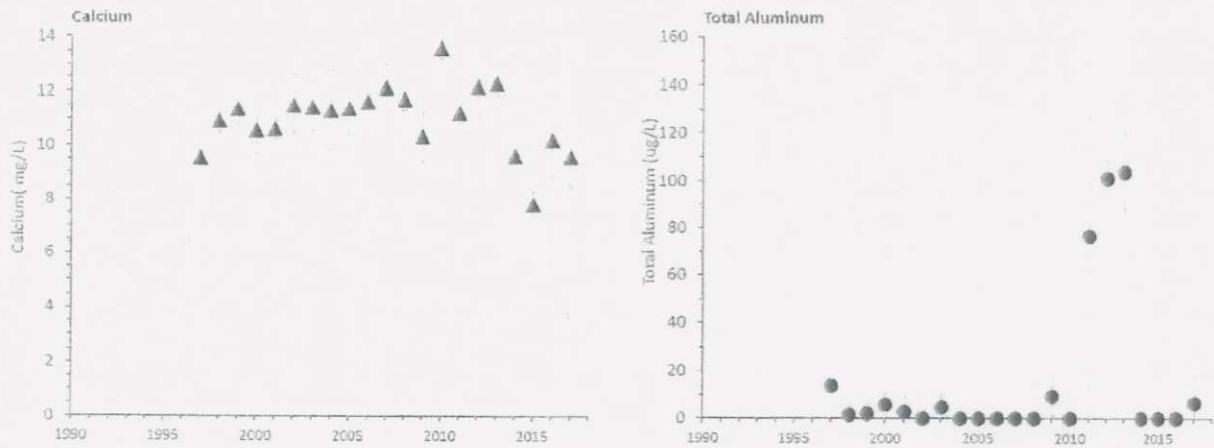
Annual average acidity (left panel) and alkalinity (right panel) of Adirondack Lake, 1993 - 2017. Shaded box denotes range of circumneutral condition (pH 6.5-7.5). Error bars denote one standard deviation of the mean.

## TROPHIC STATE



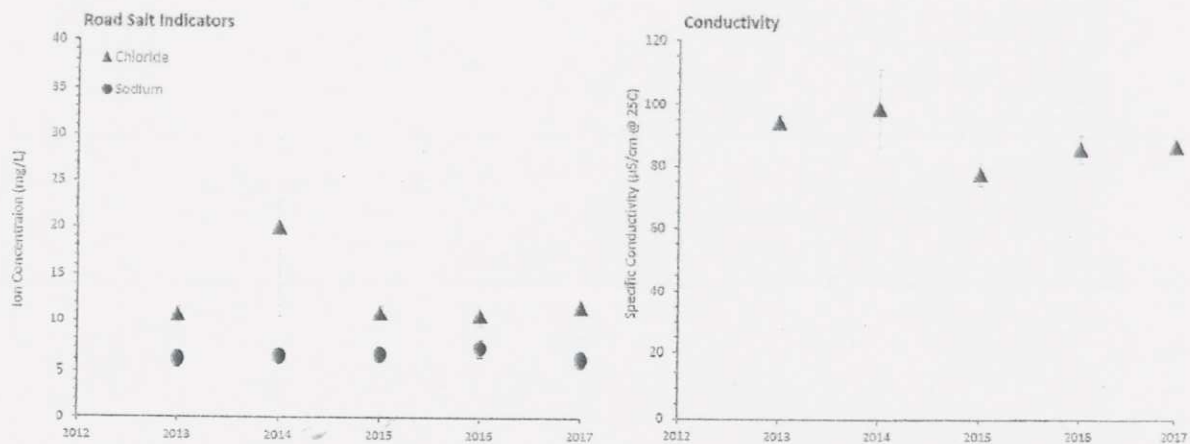
Average values for key trophic state indicators of Adirondack Lake, 1993-2017. Error bars represent one standard deviation of the mean. Transparency has exhibited a decreasing trend since 1993 ( $p = 0.006$ ,  $\tau = 0.40$ ).

## METALS



Annual average concentration of calcium and total aluminum in Adirondack Lake, 1997-2017. Error bars represent one standard deviation of the mean. Aluminum values for 2010 to 2013 represent statistical outliers.

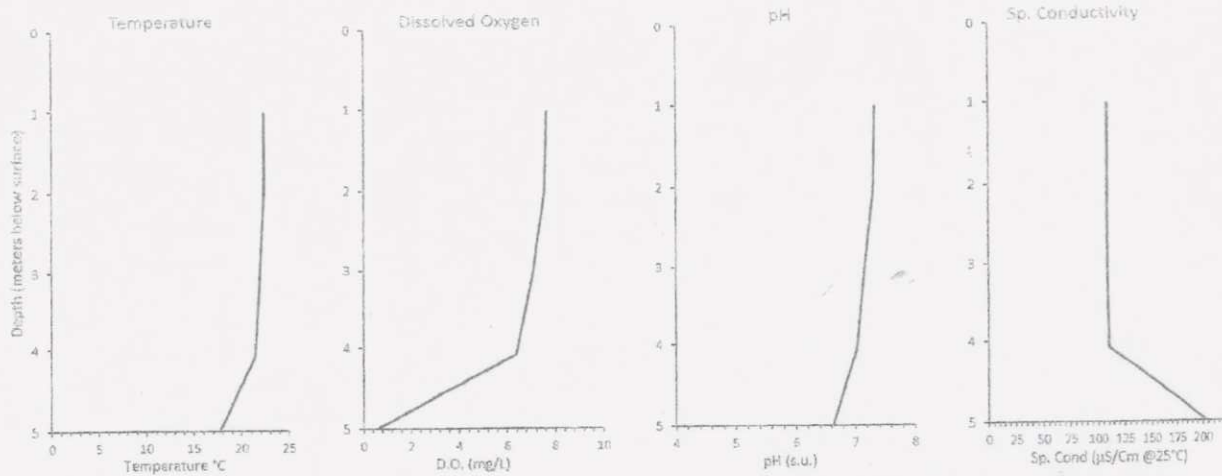
## ROAD SALT



Annual average values of sodium and chloride ions (left panel) and specific conductivity (right panel) in Adirondack Lake, 2013-2017. Error bars represent one standard deviation of the mean.

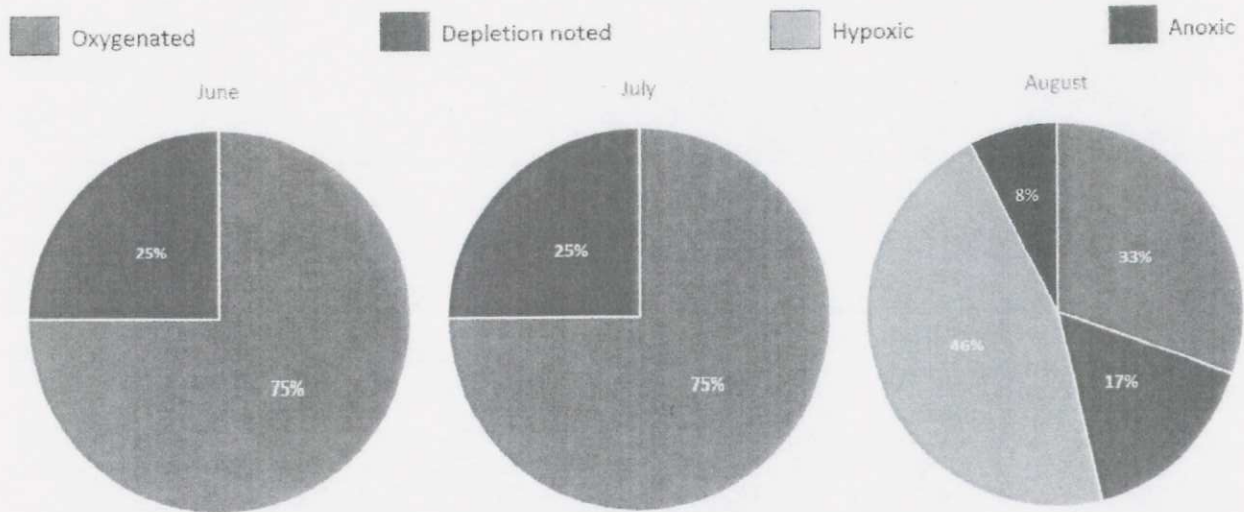


## LAKE PROFILE - AUGUST 2017



Depth profiles of temperature, dissolved oxygen, pH, and specific conductivity in Adirondack Lake during the August 2017 sampling trip.

## DISSOLVED OXYGEN CONTENT



Proportion of monthly sampling trips where the bottom water of Adirondack Lake (1 meter off bottom) was observed to be oxygenated (D.O. > 4.0 mg/L), experiencing noted depletion (< 4.0 mg/L), hypoxic (< 2.0 mg/L) or anoxic (< 0.5 mg/L). Data is from the period of 1993 to 2017.