

Developing a Management Plan for a Small Private Lake

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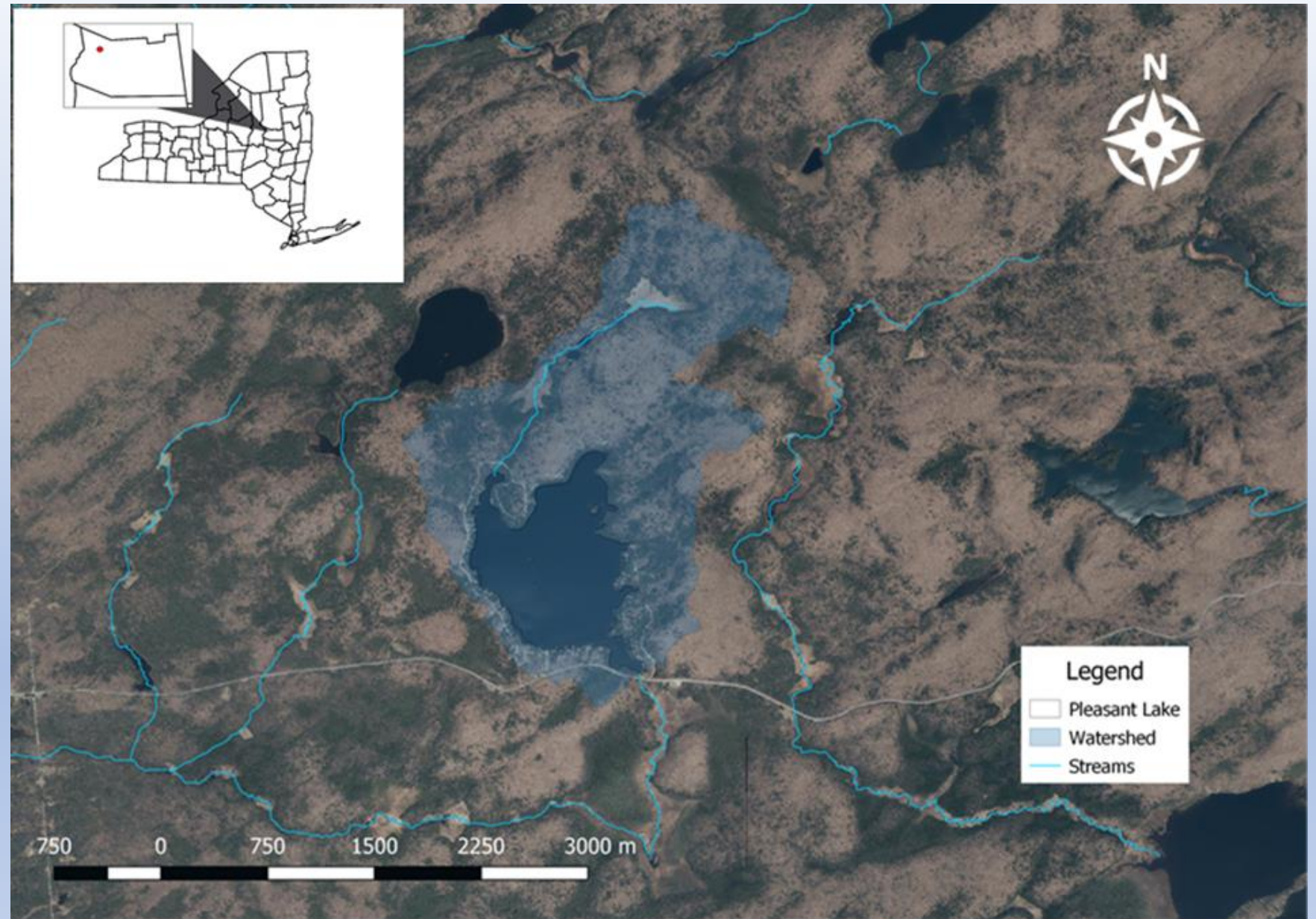
Pleasant Lake

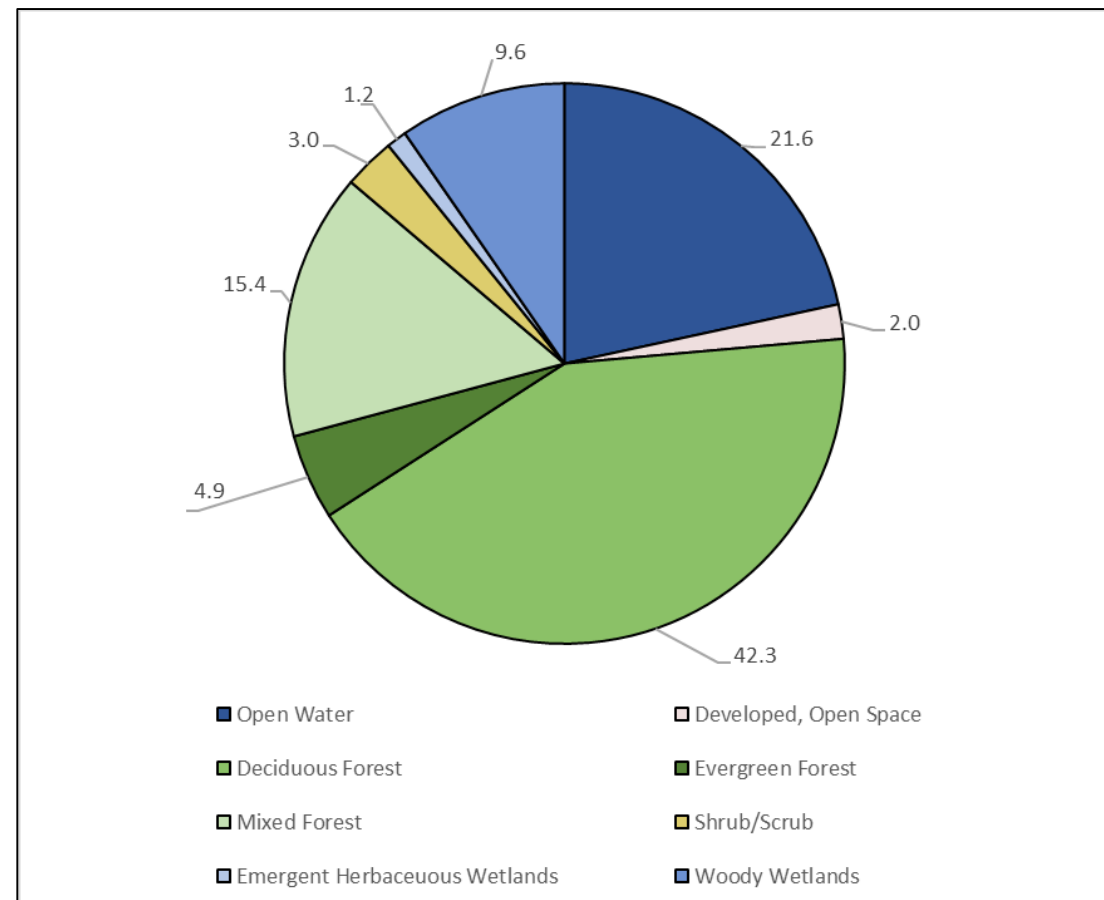
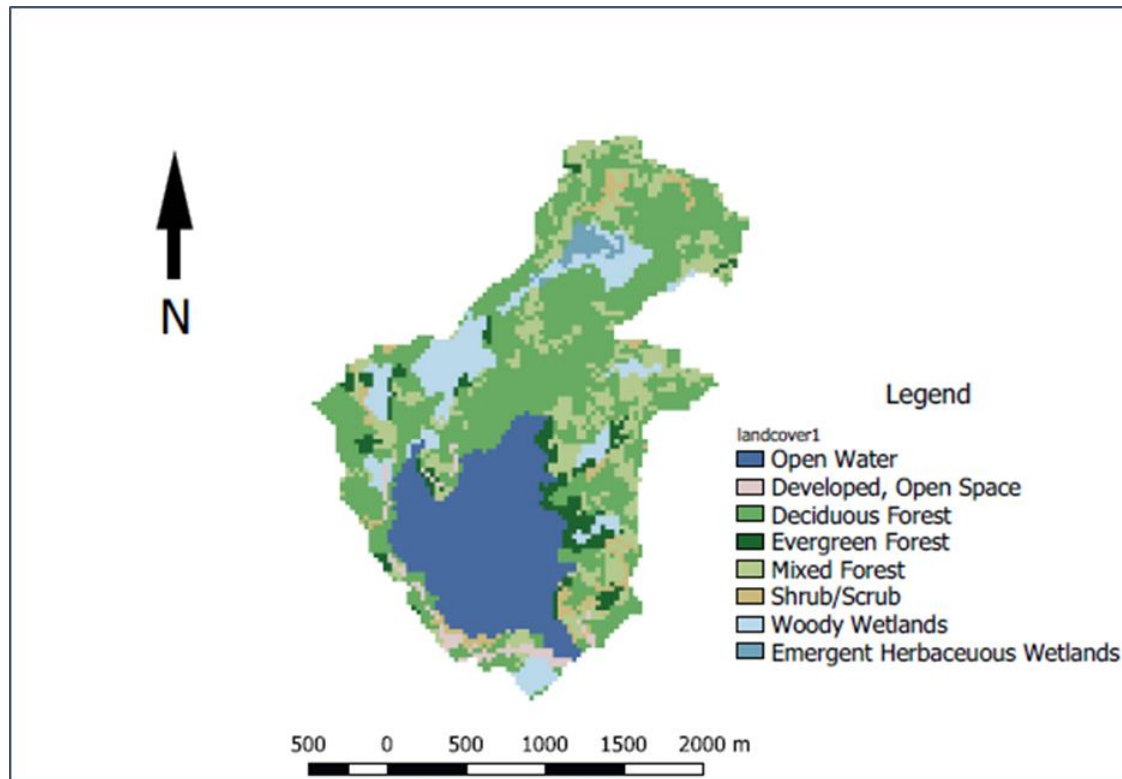
- Located in Town of Stratford, Fulton County NY
- Meso-oligotrophic
- Class B lake
 - Suitable for contact & recreation
- Managed by Pleasant Lake Stewardship Committee



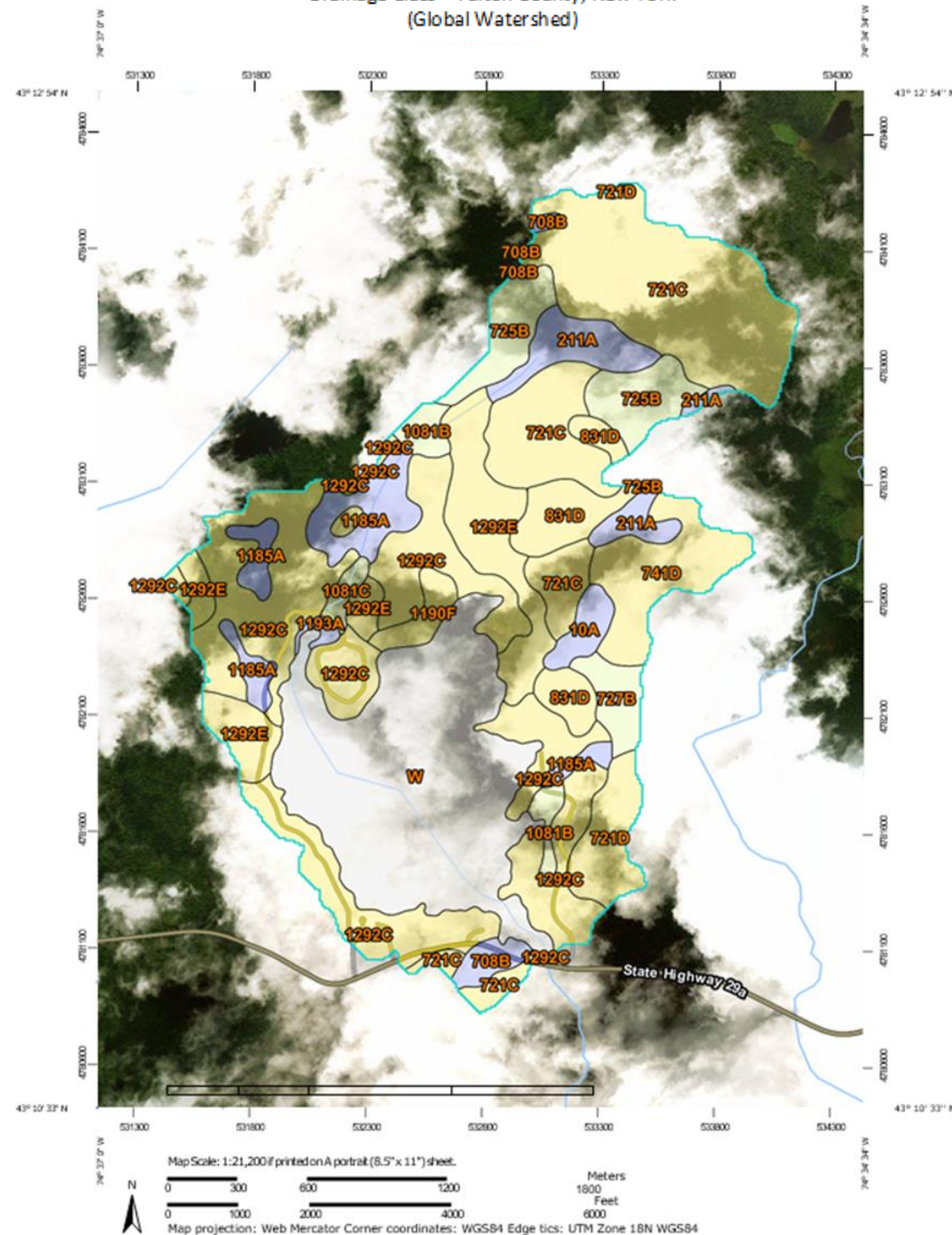
Image Source: Stratford Pleasant Lake Club

- Lake surface Area: 0.98 km²
- Watershed: 5.02 km²
- 1:5 ratio

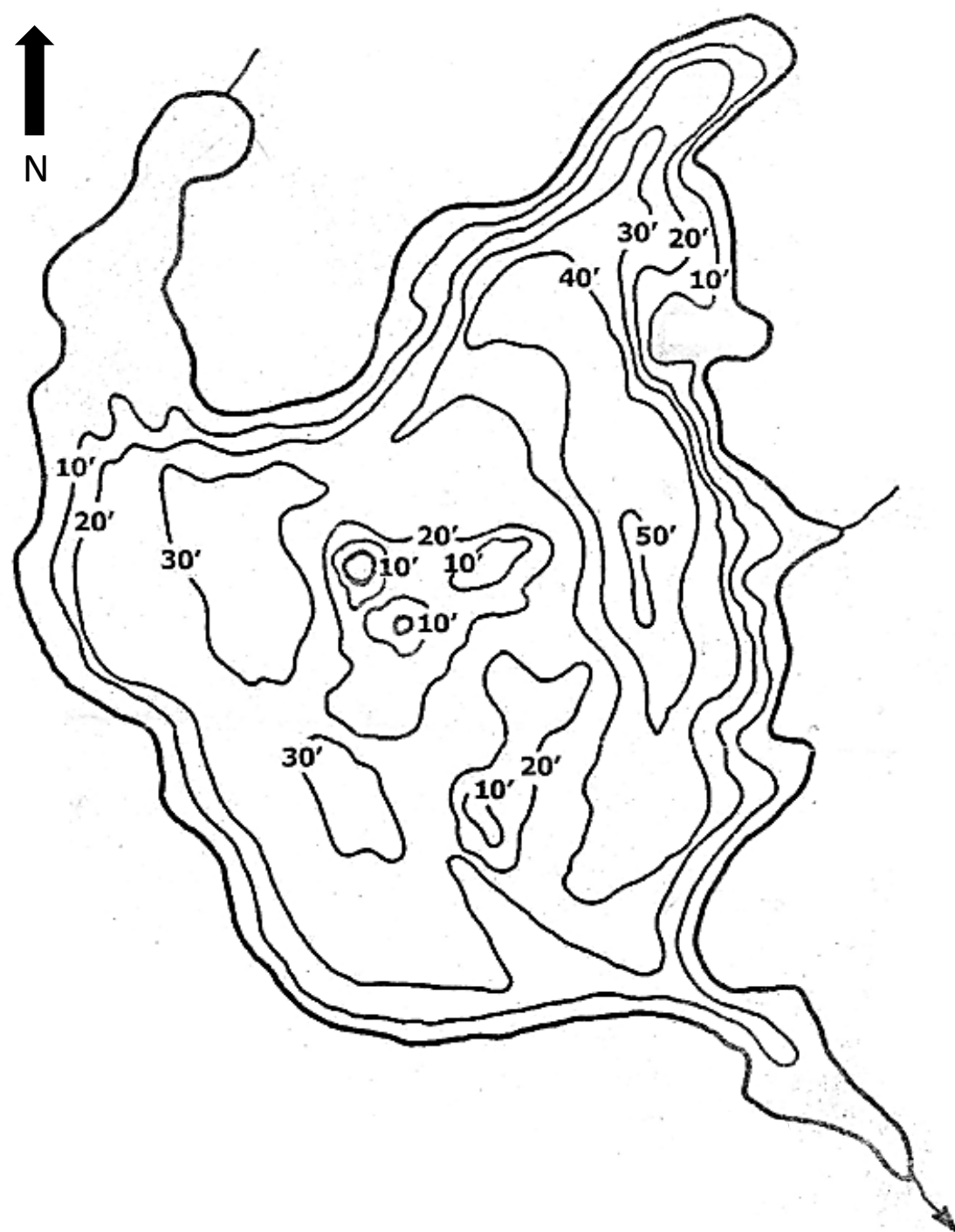




Drainage Class – Fulton County, New York (Global Watershed)



- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available



Past Monitoring

- 1934 by the New York Conservation Department
- 1984 by New York State Department of Environmental Conservation
- CSLAP monitoring since 2000
- AIS surveys by the APIPP
 - No AIS detected
- No formal lake management plan to date



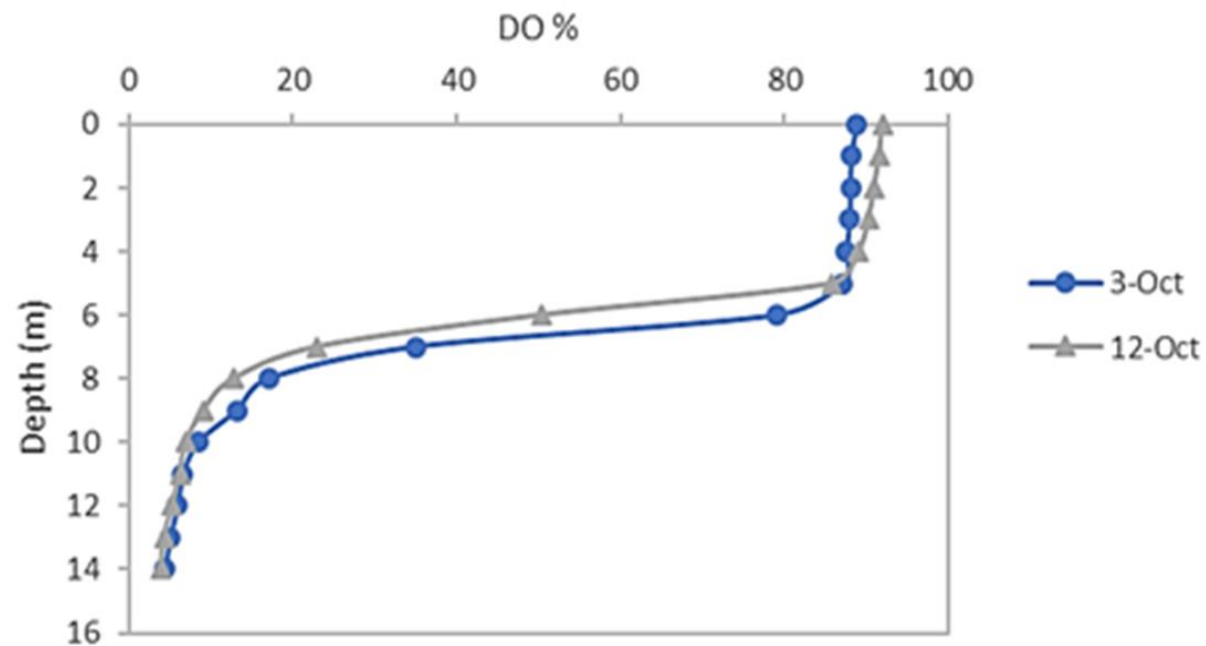
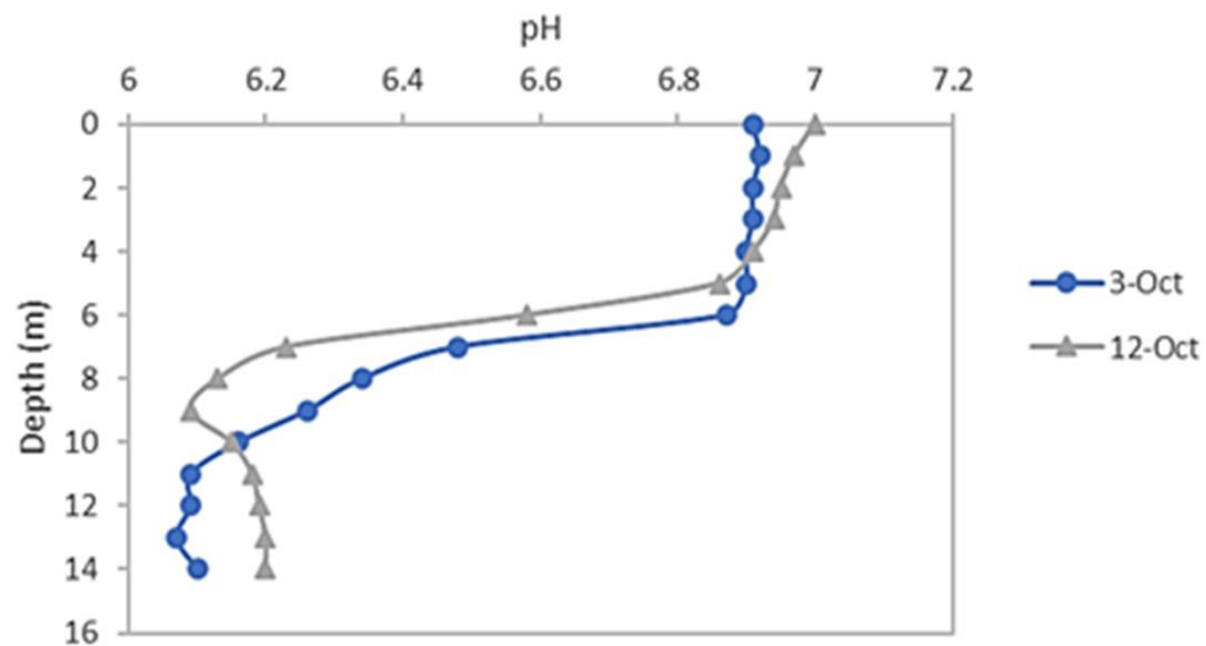
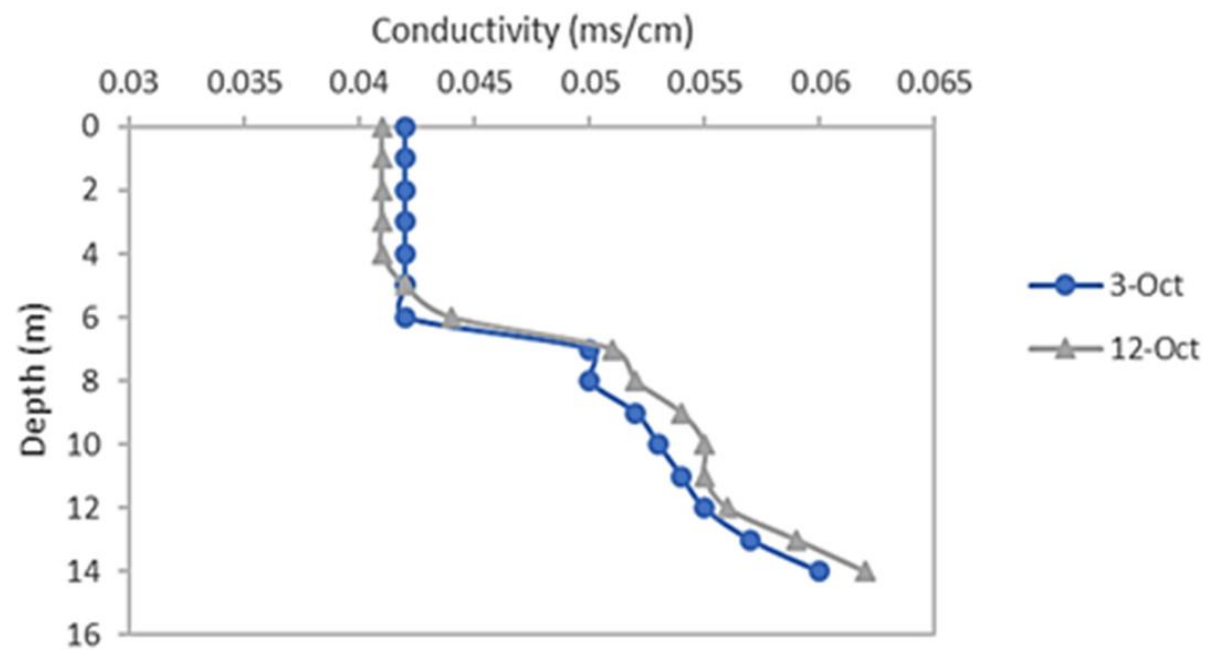
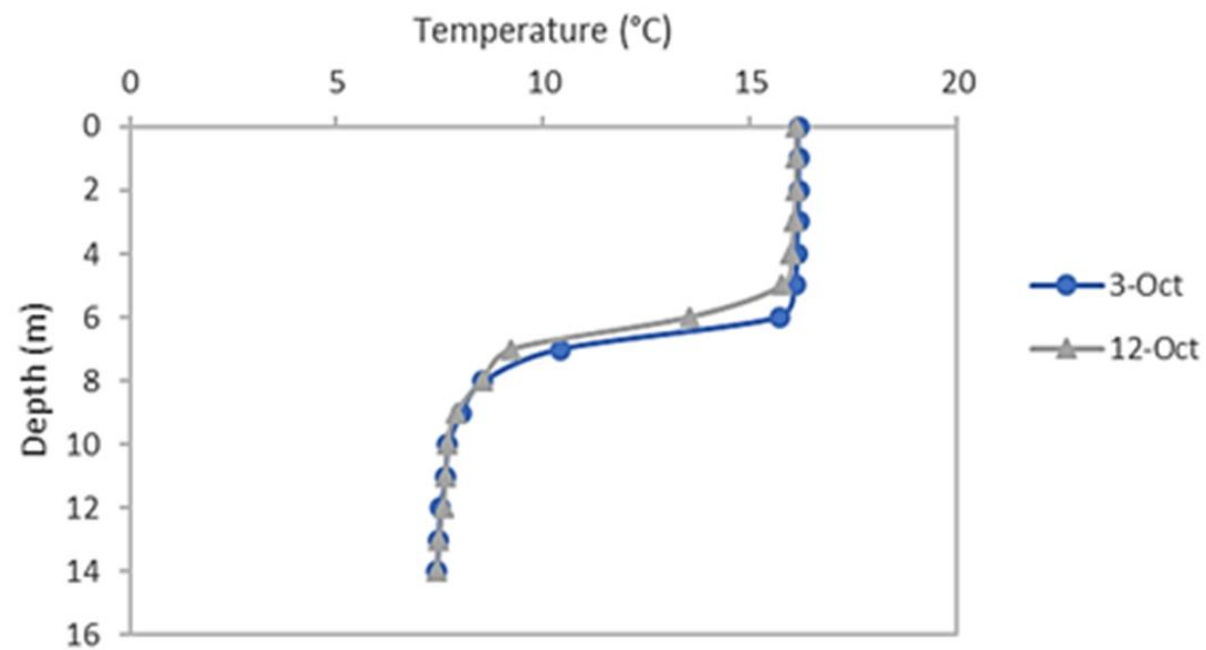
Stake holder Main Concerns

- Maintaining good water quality
- Prevention of invasive species
- Shoreline erosion and dock damage from boat wakes

Water Quality Sampling

- Sampling of Pleasant Lake occurred in October of 2018
 - Water samples taken at 1 m increments
 - Water quality parameters measured at 1 m increments
- Total Nitrogen concentration was determined using peroxodisulfate digestion followed by the cadmium reduction method (Pritzlaff 2003; Ebina et al. 1983)
- Total phosphorus concentration was determined using the persulfate digestion method (Liao and Marten 2001)
- Nitrite+ nitrate was measured using the cadmium reduction method (Pritzlaff 2003)





Results: Nutrients

Date	Site	nitrate+nitrite (mg/L)	Total Nitrogen (mg/L)	Total Phosphorus (ug/L)
10/3/2018	Eastern Basin	bd	0.14	7
10/12/2018	Eastern Basin	bd	0.18	9
	Inlet	bd	0.16	7
	Outlet	bd	0.14	bd
Long Term Avg.		bd	0.40	8

Conclusions

- Water quality parameters were well within the range that can support aquatic organisms
- Total Phosphorus (TP) values were found to be very low within the basins of the lake, and TP for the outlet was below our detection limit of 4 µg/L
- Nitrite + nitrate as well as Total Nitrogen (TN) were both found to be low, with nitrite + nitrate falling below the detection limit of 0.02 mg/L
- The results of our sampling and analysis suggest that stakeholders should take a comprehensive approach to managing their lake looking toward the future

Management Considerations

- Prepare a Early Detection Rapid Response (EDRR) plan for potential introduction of invasive species
- Educate residents on how invasive species spread
- Test for leaking septic systems and update/perform maintenance as needed
- Increase riparian buffer zones to limit runoff and shoreline erosion
- Enforce no wake zone within 100 ft of shoreline as stated by law

Questions?

