This study investigates various water quality parameters in surface water and wetlands in a geologically diverse area in Mendon Pond Park, Rochester, NY. It also determines the trophic profile of these water bodies in terms of nitrogen and phosphorus levels, and how these parameters change in different locations at Mendon Pond Park during the spring season.

The specific objectives for this study are to:
- Investigate the various water quality parameters in surface water and wetlands.
- Create a trophic profile through measuring the nutrients like nitrogen and total phosphorus.
- Determine the statistical correlation of these measured water qualities to understand the potential sources of the nutrients.

**Introduction**

Mendon Pond Park is a National Natural Historic Landmark due to its 250 acres of woodland, ponds, wetlands, and geologically diverse bedrock. Samples were collected from two different water bodies, a pond (Devil’s Bathtub) and a kettle pond (Devil’s Bathtub) that are separated by an eric, and two wetlands, a vernal pond, and a bog (Kennedy’s Bog).

Each water body and their immediate surroundings displayed significant variation in flora and fauna, indicating a variance in water quality and nutrient profiles as well.

**Results & Discussion**

The pH values at various sampling locations. Data are expressed as mean (n=5) ± one standard deviation. Mean comparison was conducted using Tukey Kramer honest significant difference (HSD) test. Different letters express significant differences among the sample means.

**Conclusion**

Overall, the results from this experiment show that the water quality varies significantly among the tested surface water/wetlands at Mendon Pond Park attributing to its unique geographic characteristics.

The trophic profile of the Deep Pond shows that it is at the greatest risk of eutrophication as compared to the other water bodies observed.

The future directions that can be taken with this project would be to sample the same location at different times throughout the year, to monitor water quality changes. Another experiment aims to measure the trophic profiles after major storm events.