



Oswego & Onondaga County Water Quality

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Introduction



We are a group of students from a small rural school located in central New York to the east of Lake Ontario.

This water quality project is important because it affects our local environment and can show if it is worsening or getting better.





Research Question

Our research question was how the water's quality changes throughout the year as we progress through the seasons?

We hypothesized that salt would increase in the winter months due to road salt running off into the rivers and that nitrates would increase in the warmer months due to the large amounts of fertilizer needed for the farmland.

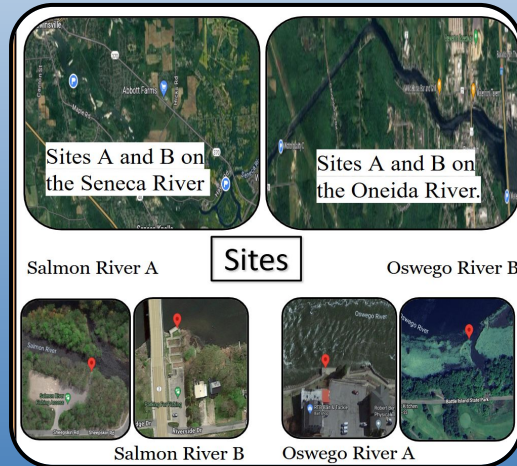
Research Methods



We collected data from 4 different rivers, which include Seneca, Oneida, Salmon, and Oswego River. Two locations at each river.

Data collected:

- Water Temperature
- Water Transparency
- Dissolved Oxygen
- pH
- Nitrates
- Salt



Oneida river
Salmon River



Seneca River
Oswego River

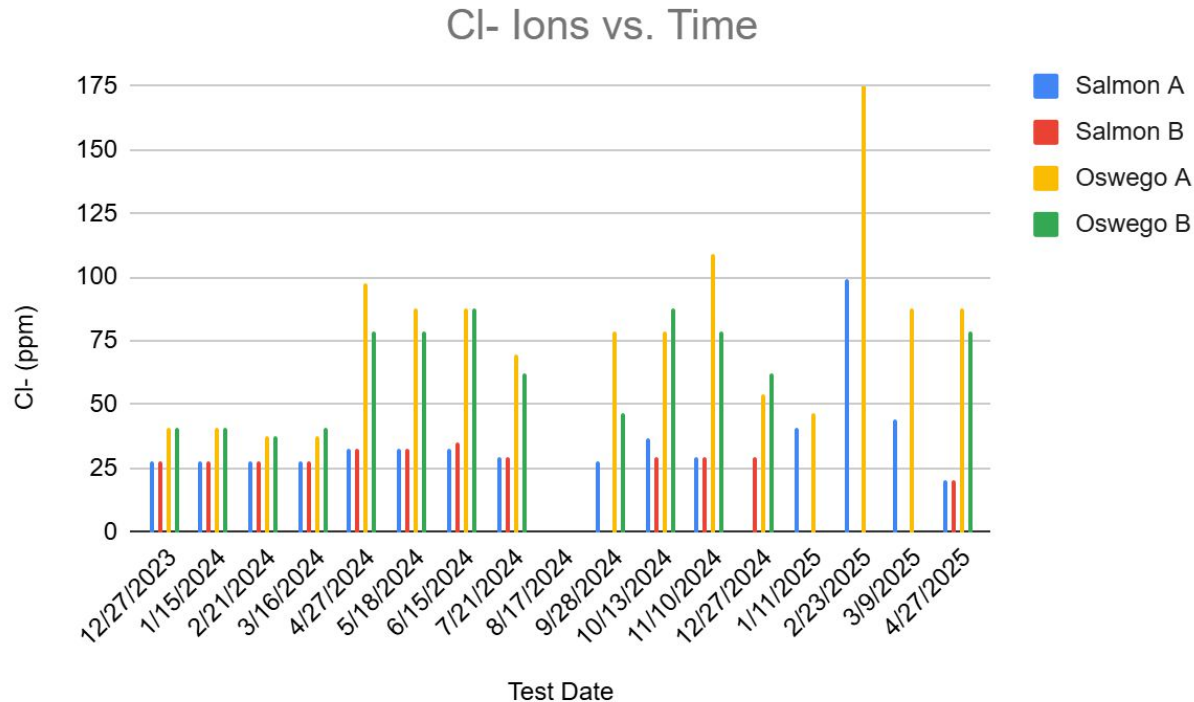


We collected data once every month since december of 2023.

Results



Data Visualization: Oswego County

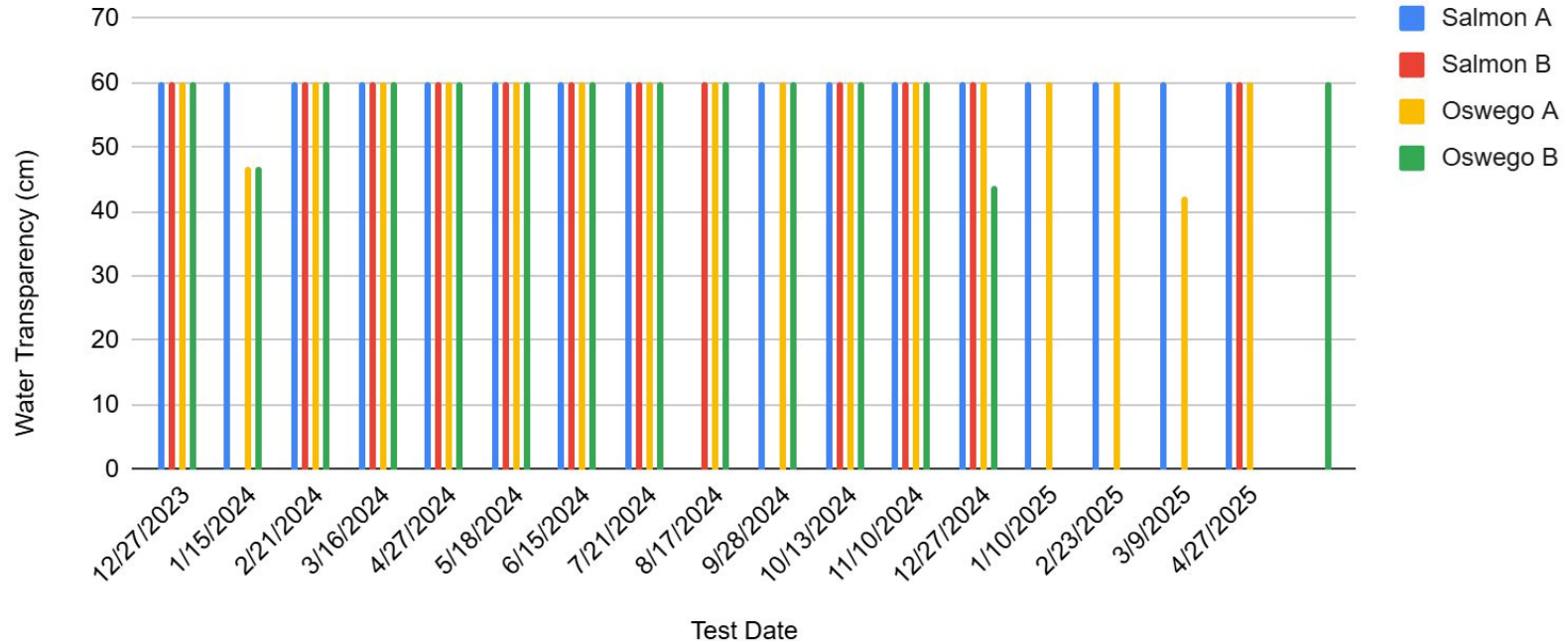


Results



Data Visualization: Oswego County

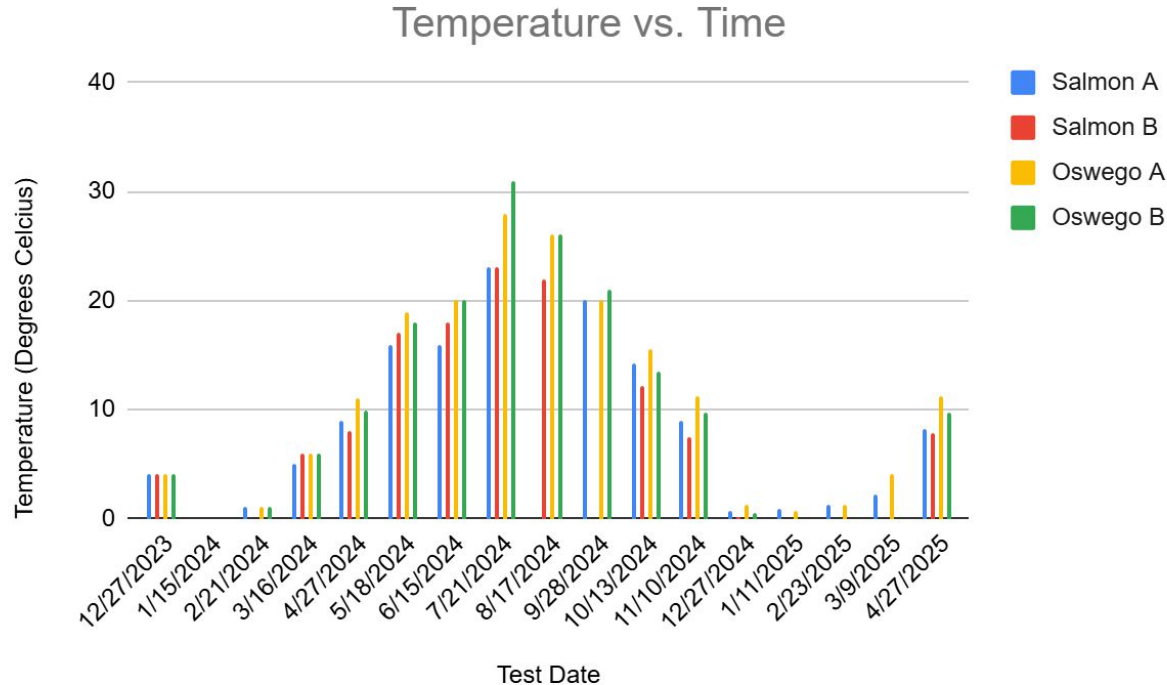
Water Transparency vs. Time



Results

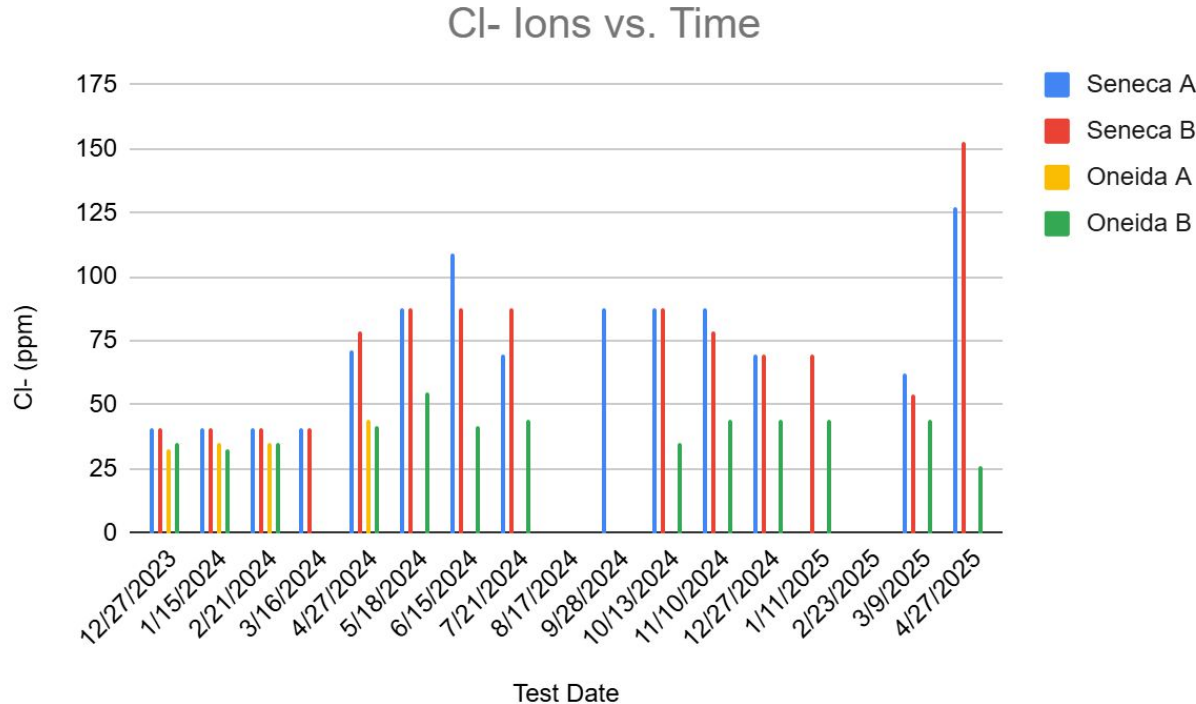


Data Visualization: Oswego County



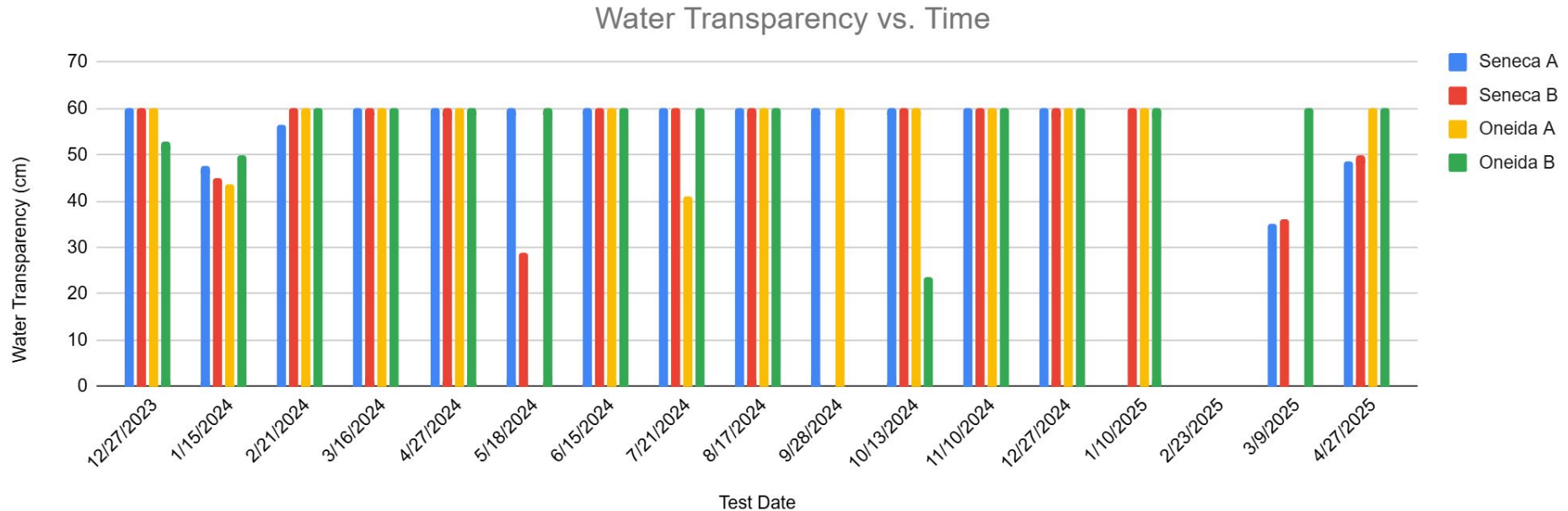
Results

Data Visualization: Onondaga County



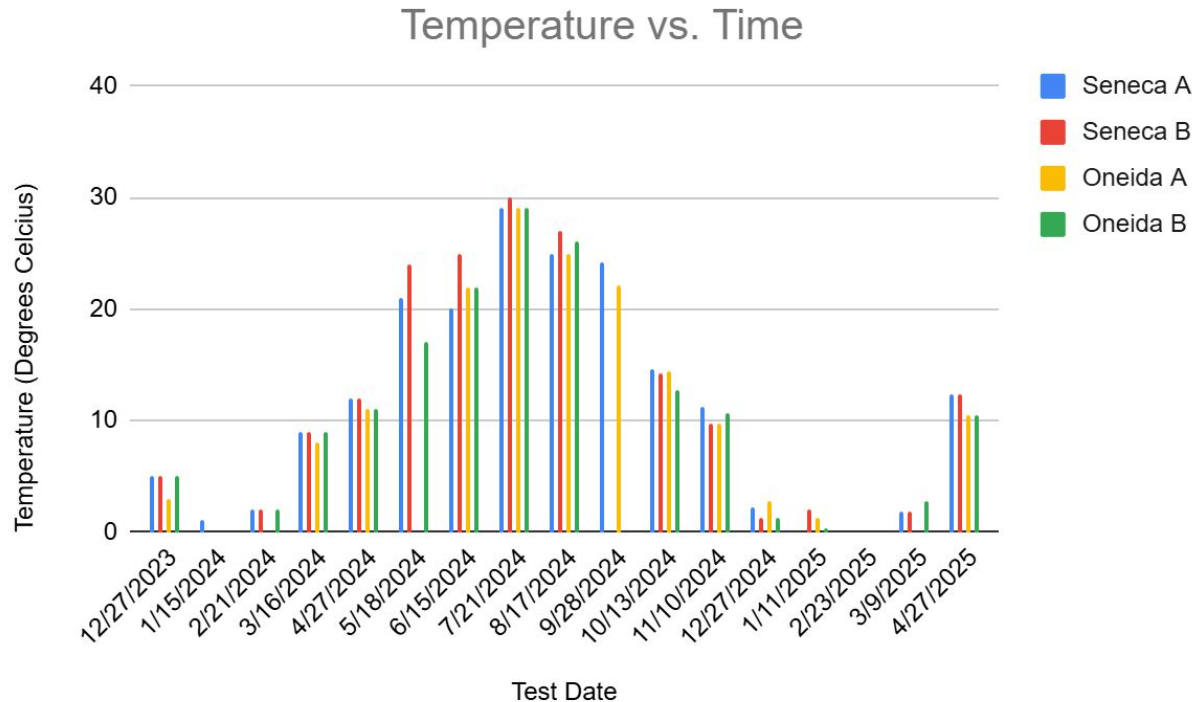
Results

Data Visualization: Onondaga County



Results

Data Visualization: Onondaga County



Discussion



The results show the overall water quality was better than expected, for example the turbidity shows that the rivers are actually quite clear. Not shown but our dissolved oxygen was pretty high. This is a decent indicator that aquatic life will thrive in these rivers.

However there is a concern with salt. The levels overall are low, however you can see spikes during different times of the year. Once the salt is in these rivers it doesn't go away.

Next Steps



Uncertainties and limitations in our investigation were the water freezing, meaning we struggled to get samples, and we only went once a month, four times at two counties we went to. So, it's possible that other places and at other times may have different results. Another uncertainty was the way we were testing Nitrates, our method of testing was unreliable.

We would like to possibly get funding to get a stationary water quality monitor to constantly monitor the water.

References

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Our overall water quality was found to be acceptable.
This helps our community as we know that we can drink, swim, and fish safely from our rivers without fear of harmful effects.
These pictures are an example of this!

