Water Quality of Wangumbaug and Bolton Lakes

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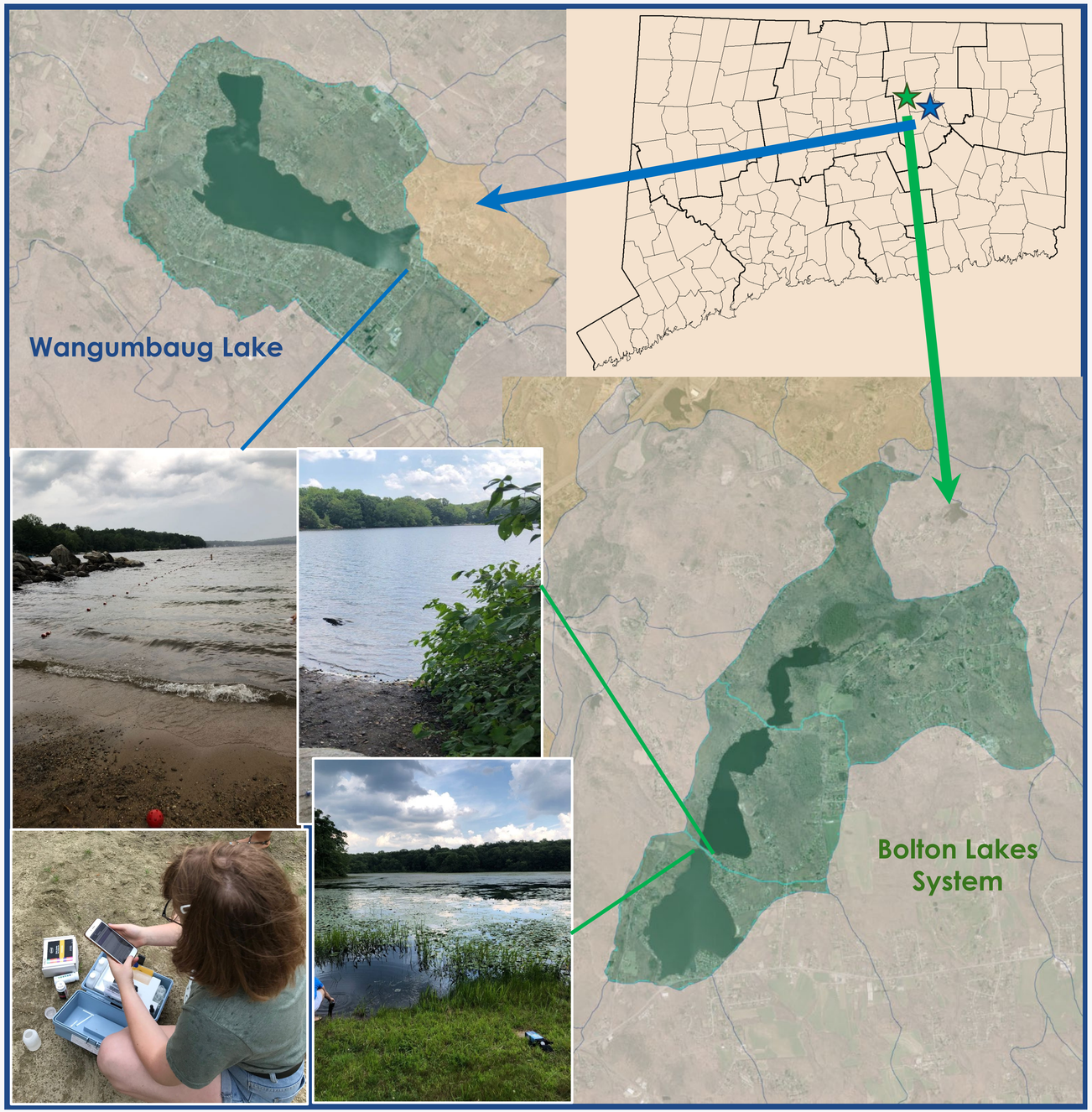
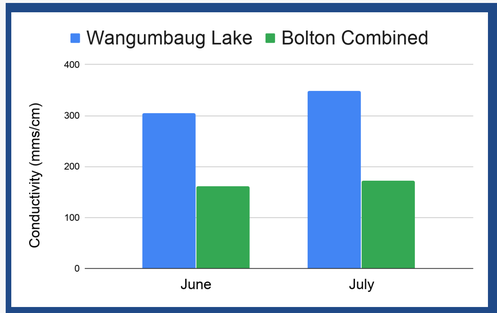


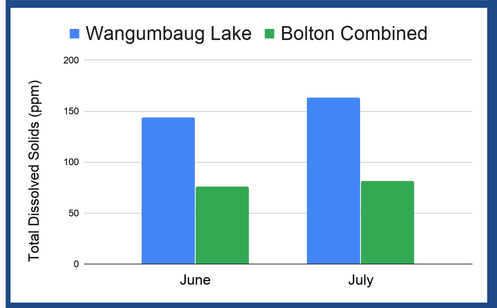
Introduction

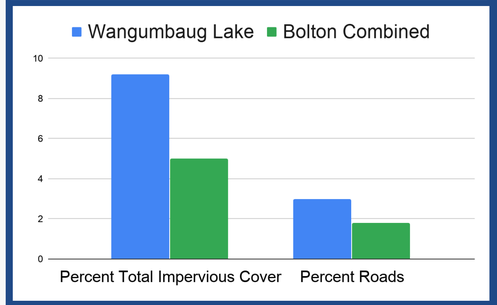
- Lakes are complex ecosystems
- Characteristics of the surrounding landscape can influence lake ecosystem processes
- Lakes surrounded by roads & buildings are vulnerable to negative impacts such as pollutants and runoff
- The goal of our project was to compare the water quality of two local lakes with differing amounts of surrounding development:
  - Wangumbaug Lake has more development around it than the Bolton lakes system

Methods

- We measured the following at two time points during summer 2019 in multiple locations for each lake:
  - Total Dissolved Solids (TDS), Conductivity, pH, Ammonia, Dissolved Oxygen (DO), Nitrate & Phosphate
- We chose sampling locations frequented by people & recorded our data using the Epicollect5 app
- Data from the Bolton lakes (upper, middle & lower) was averaged into one system
- Impervious cover data was accessed through the CT ECO MS4 Viewer (CT DEEP Basins)

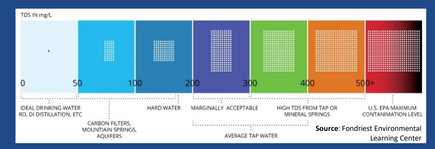




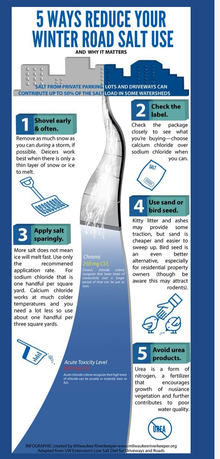


Results & Discussion

- While both lakes had water quality within "normal" range, Wangumbaug Lake had higher **Conductivity** and **TDS** values



- The higher Conductivity & TDS values correspond to a greater percent **Impervious Cover** and percent **Roads** in each lake basin
- Stormwater runoff and pollutants from impervious surfaces might contribute to the differences in water quality we observed
- Chemicals like road salts can be detrimental to aquatic systems
- Chloride is known to inhibit growth & reproduction of fresh-water species, and can also deplete oxygen levels
- Eco-friendly alternatives to road salts can be used to protect these valuable ecosystems



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