



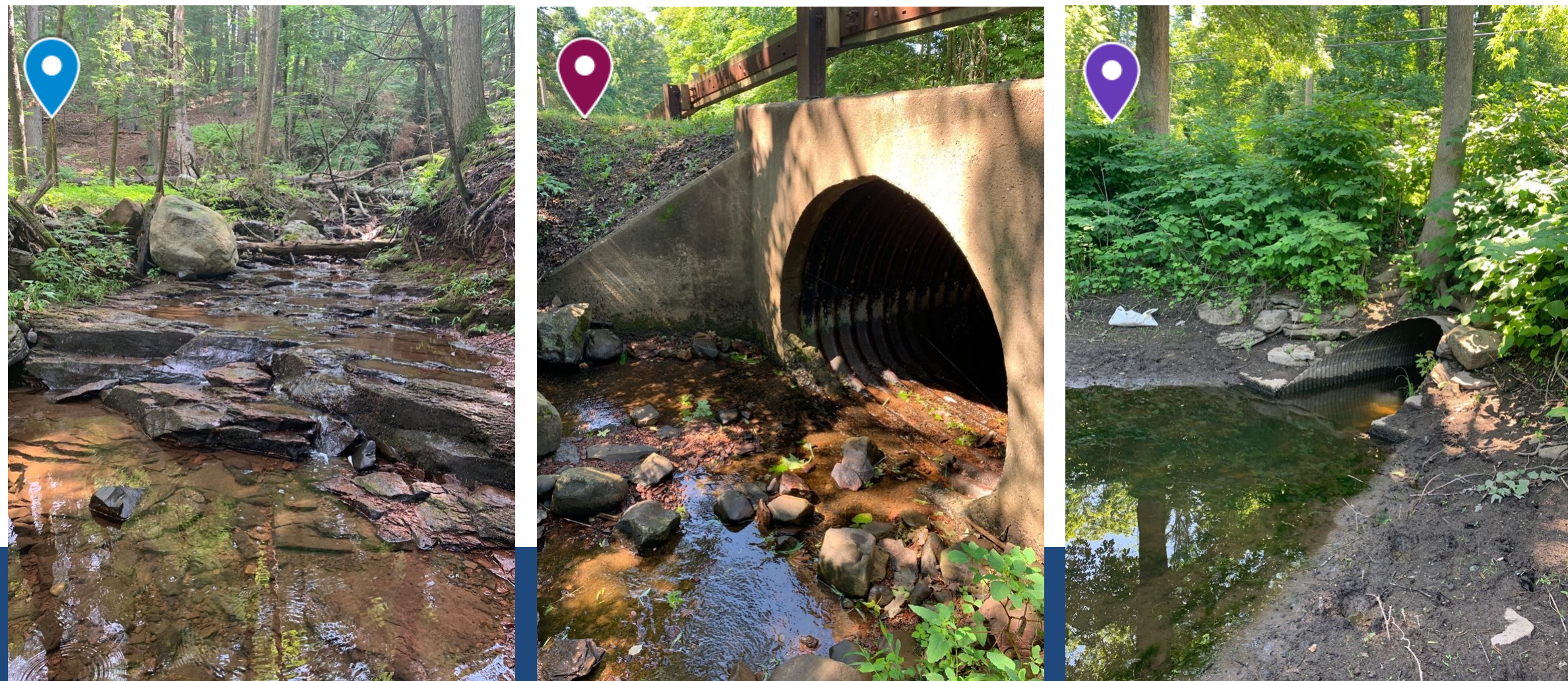
# Water Quality Testing In Lucy Brook

Khushi Singh & Susan Van Kleef

University High School of Science and Engineering & Simsbury Land Trust

## Introduction & Objectives

- The purpose of this project was to test the water quality of Lucy Brook, a tributary of the Farmington River
- Our goal was to better understand how the surrounding landscape might impact the brook's water quality



Lucy Brook is in Simsbury, CT

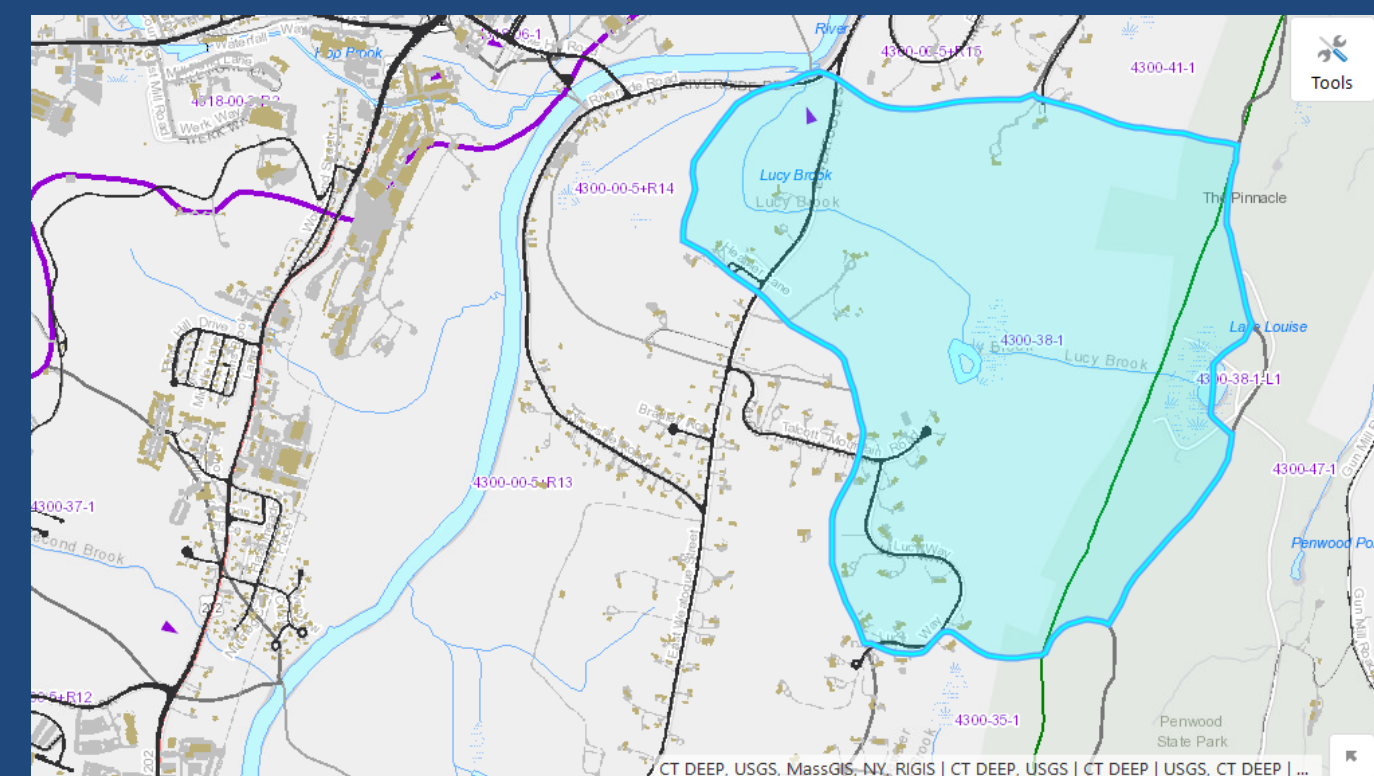
Site 1: Upstream

Site 2: Next to road

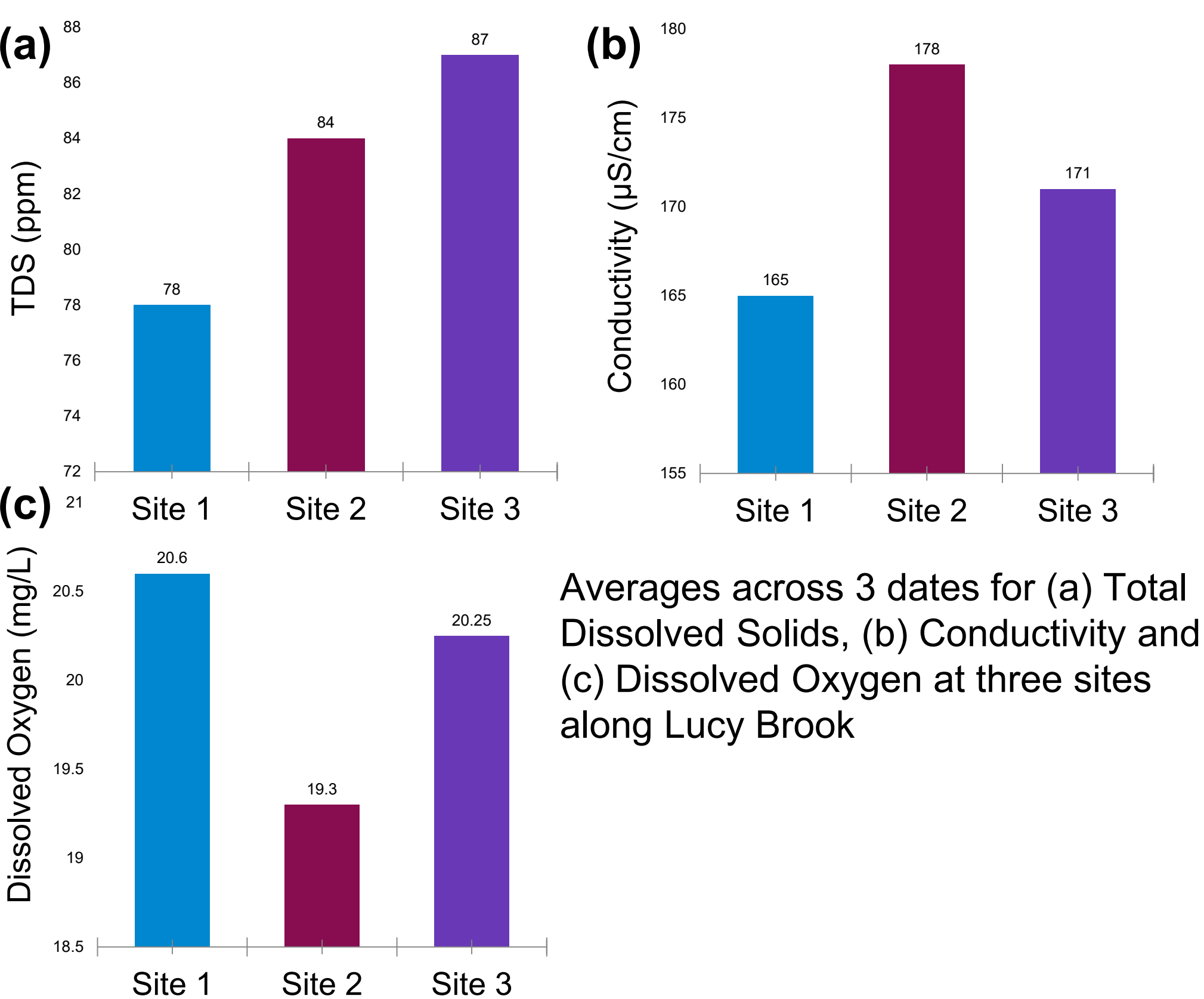
Site 3: Passed under two roads

## Methods

- We used the Epicollect5 app to record the following parameters at three sites along Lucy Brook on three different days during summer 2019:
  - Conductivity
  - Dissolved Oxygen (DO)
  - Temperature
  - Total Dissolved Solids (TDS)
  - Nitrate
  - Phosphate
  - pH
- We averaged the data over the three dates & report a subset in results
- We used the CT ECO MS4 Viewer to determine the amount of Impervious Cover (buildings, roads) in the Lucy Brook Watershed Basin

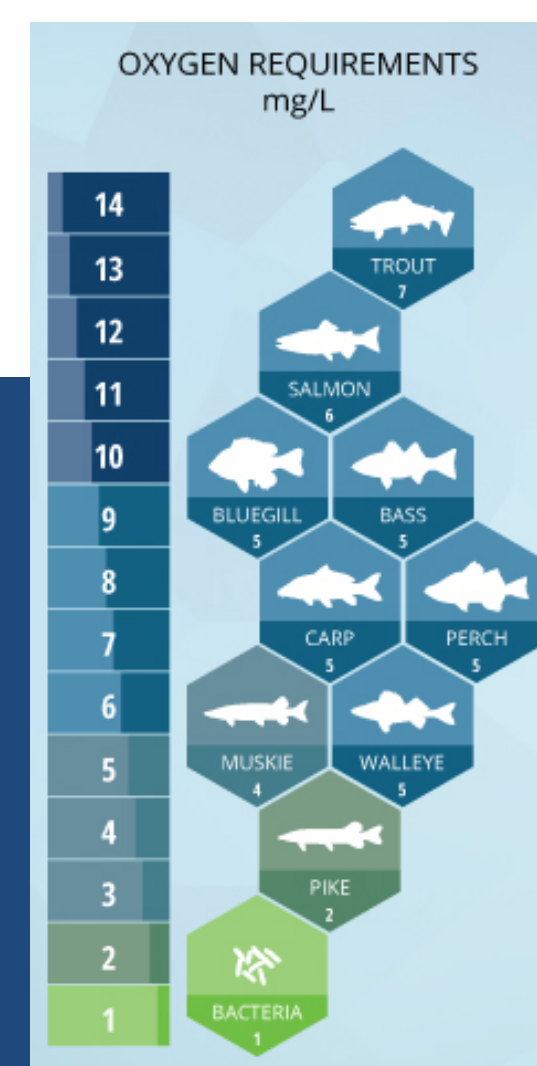


The **Lucy Brook Watershed Basin** comprises a total area of 386 acres



## Results

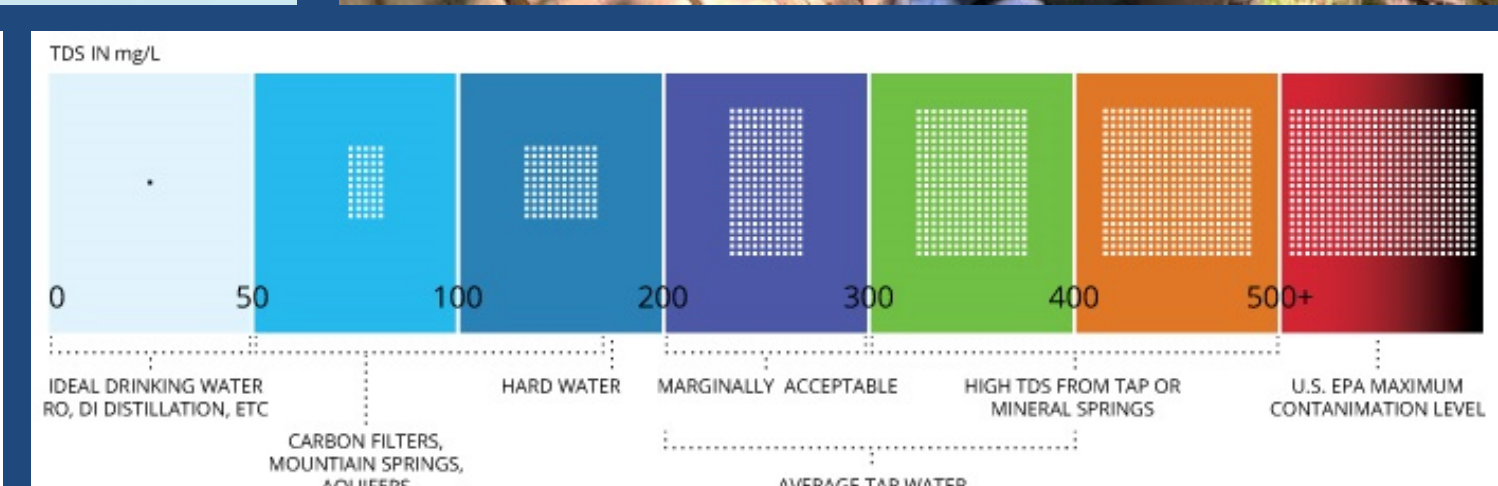
- While Site 1 (upstream) had lower Total Dissolved Solids and Conductivity values than the other two sites, all of the data we measured was within “normal” range for a healthy stream
- We observed a variety of wildlife in and near the brook, including birds, amphibians, and insects
- The total amount of Impervious Cover in the Lucy Brook Watershed Basin is 3%, which corresponds to very little surrounding development



## Conclusions

- Based on our data, the small amount of impervious cover in the surrounding landscape does not appear to negatively affect Lucy Brook's water quality
- The heavily forested area (seen in the satellite image above) and low development within the Lucy Brook watershed basin helps to keep the brook environment healthy

Conductivity	
	$\mu\text{S}/\text{cm}$
DISTILLED WATER	0.5 - 3
MELTED SNOW	2 - 42
TAP WATER	50 - 800
POTABLE WATER IN THE US	30 - 1500
FRESHWATER STREAMS	100 - 2000
INDUSTRIAL WASTEWATER	10000
SEAWATER	55000



Fondriest Environmental, Inc. "Conductivity, Salinity and Total Dissolved Solids." Fundamentals of Environmental Measurements. 3 Mar 2014. Web. <https://www.fondriest.com/environmental-measurements/parameters/water-quality/conductivity-salinity-tds/>