

# The Impact of Storm Drain Emissions on the Mill River

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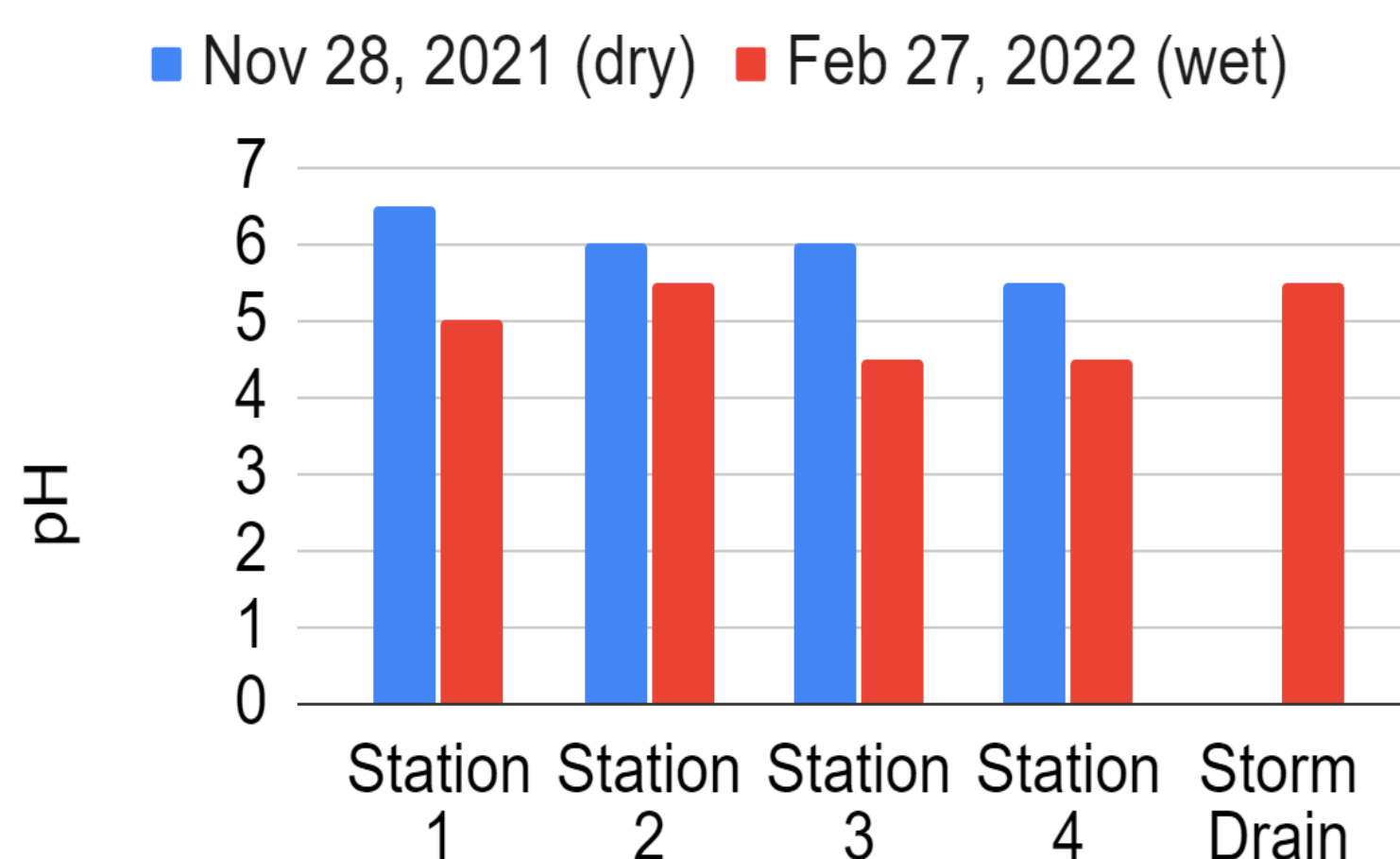


## Water Quality Parameters—Comparison of Dry and Wet Days

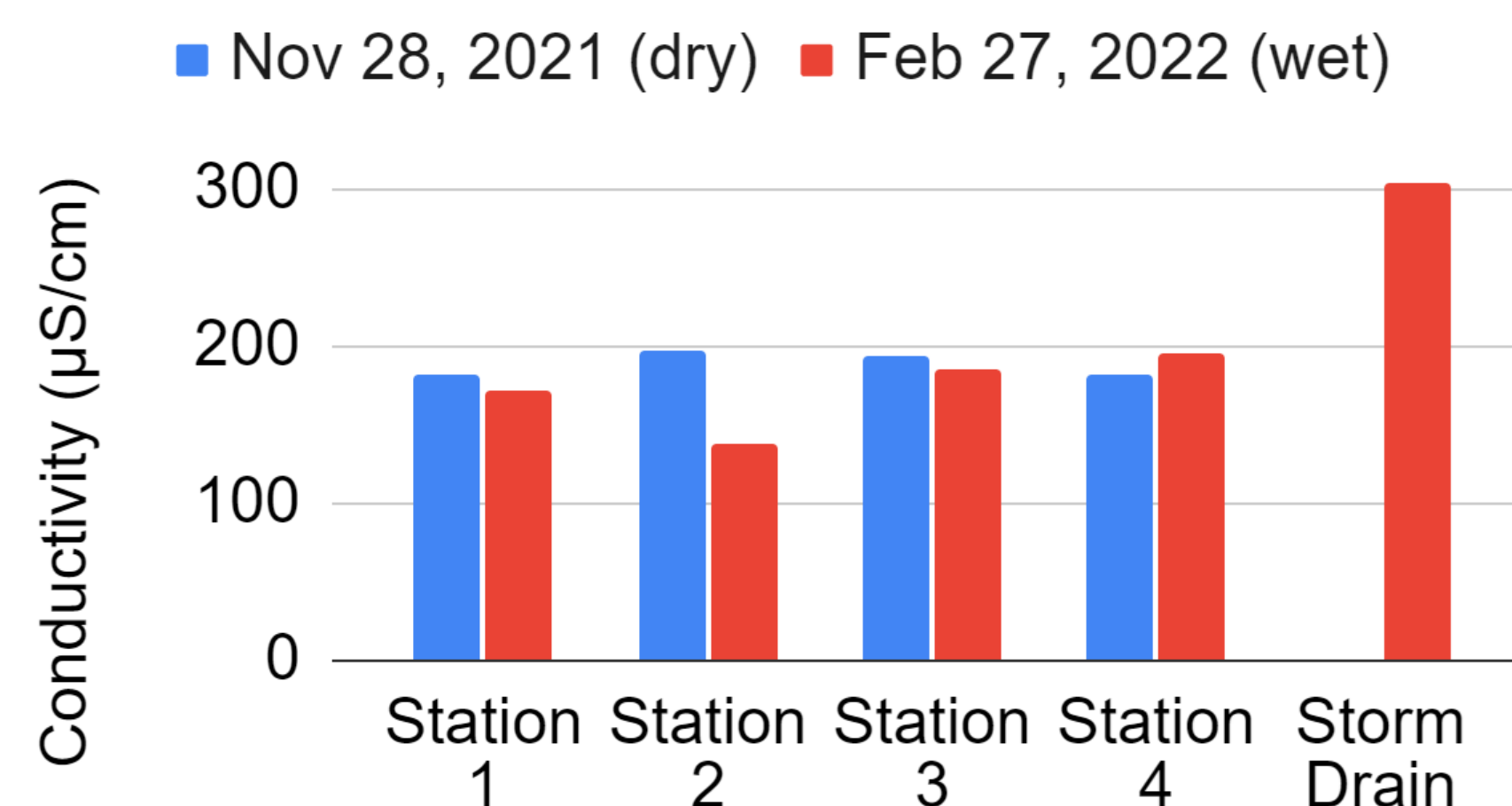
- pH was lower (more acidic) at every station on the day when snow melt was entering the river
- Electrical conductivity (a measure of salinity) was lower in most parts of the river on the melting day, but slightly higher around the storm drain
- Conductivity of the water coming from the storm drain was much higher than that of the river

	Conductivity (µS/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

pH variation



Conductivity variation



## Introduction

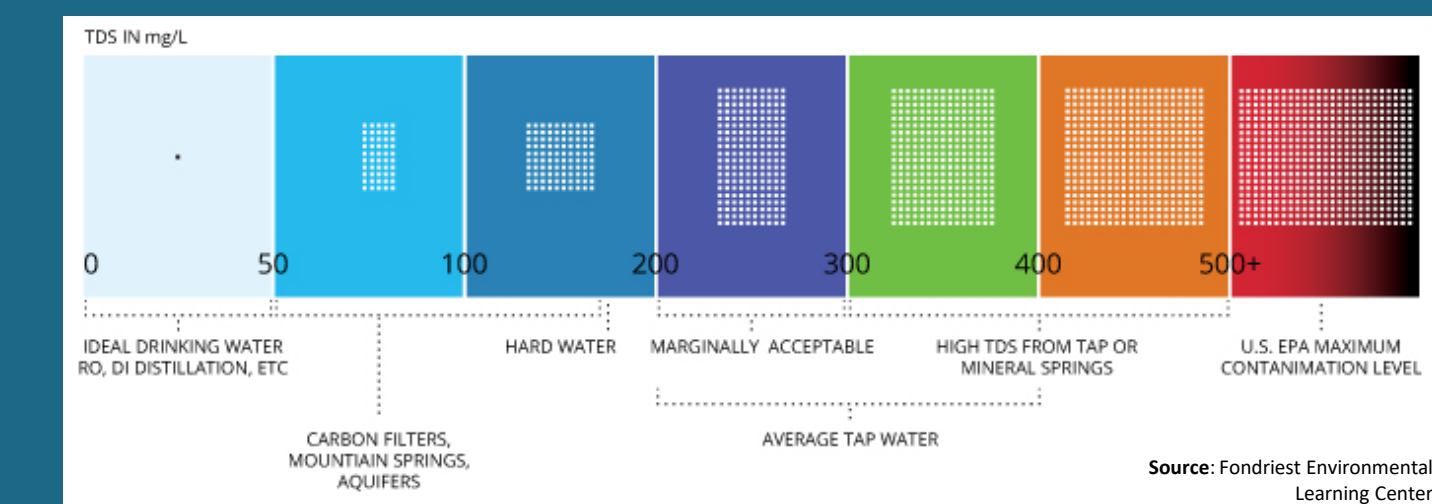
- Road salt is used in large quantities during New England winters and its effects on the environment may be significant
- Pollutants such as salts, heavy metals and fertilizers can change the ecological balance of aquatic ecosystems
- Salts can benefit invasive species, contaminate drinking water, and hurt wildlife
- This project sought to find the effect of precipitation on the water quality of the Mill River in Hamden, CT

## Methods

- Measured water quality of Mill River in Hamden on two testing dates:
  - 11/28/2021: light snow, no storm drain discharge
  - 2/27/2022: after 2-3" of snow, storm drain discharge from melting snow
- Recorded measurements of:
  - pH, nitrate/nitrite, ammonia, conductivity, temperature, total dissolved solids & water clarity
- Sampling equipment included paper test strips, Secchi disk, and digital UBante TDS Meter

## The Take-Away

- Precipitation can result in increased pollution of waterways like streams and rivers, especially during the winter
- During precipitation events, storm drains can release water contaminated with substances from land directly into waterways
- Salinity and conductivity were higher on the day when the storm drain was active
- The highest salinity and conductivity values were observed in the water directly flowing from the storm drain



Many different sources can contribute to the total dissolved solids level in water.

