

**Ohio Chapter Sierra Club
Water Sentinel Program**

**Little Cuyahoga River
Water Quality Data
2012/2013**

Presented by Amanda Keith and Jack O'Toole

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****Graphs developed by Clean Water, Fellow of Awesome****
Alex Litofsky – Case Western Reserve Graduate 2013

LCR Monitoring Project

- Goal 1: Monitor the Little Cuyahoga River and its tributaries for signs of pollution using visual and chemical parameters.
- Goal 2: Monitor 36 sites every three months to establish trends and better understand seasonal variation (sites chosen based on OEPA historical sampling).
- Goal 3: Partner with NEFCO and provide copies of data to help promote a Balanced Growth Initiative Plan.
- Goal 4: Increase public awareness through watershed festivals, cleanup events, and educational workshops.

LCR Monitoring Team

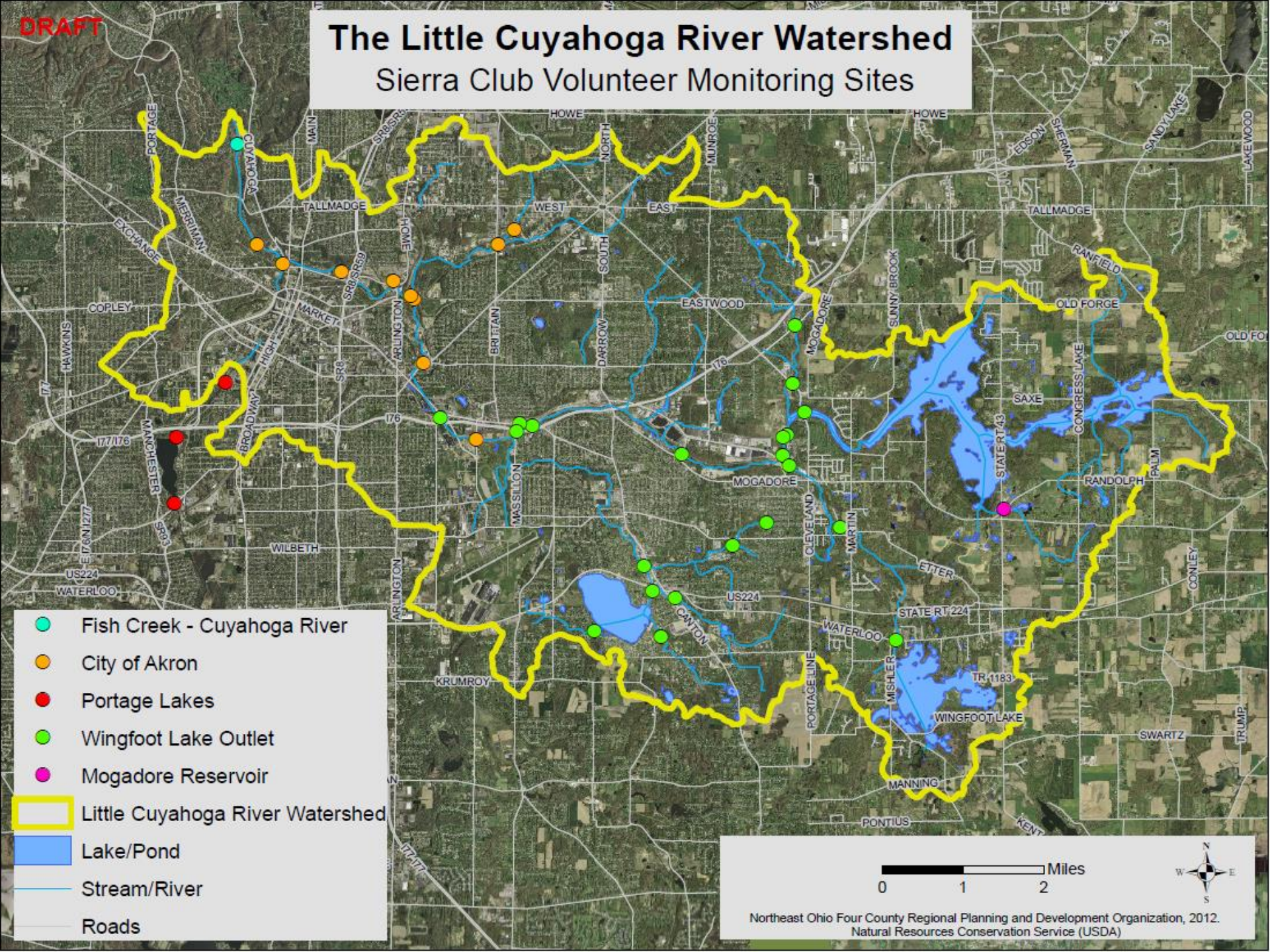
- 12 volunteers led by Lead Water Sentinels Mary Trent and Jack O'Toole
- Chemical Parameters:
 - Conductivity/TDS/Salinity
 - Water Temperature
 - Nitrate/Nitrite
 - pH, Alkalinity, Hardness, and Chlorine
- Visual Parameters:
 - Flow Rate
 - Turbidity
 - 48 Hr Rainfall
 - General Observations



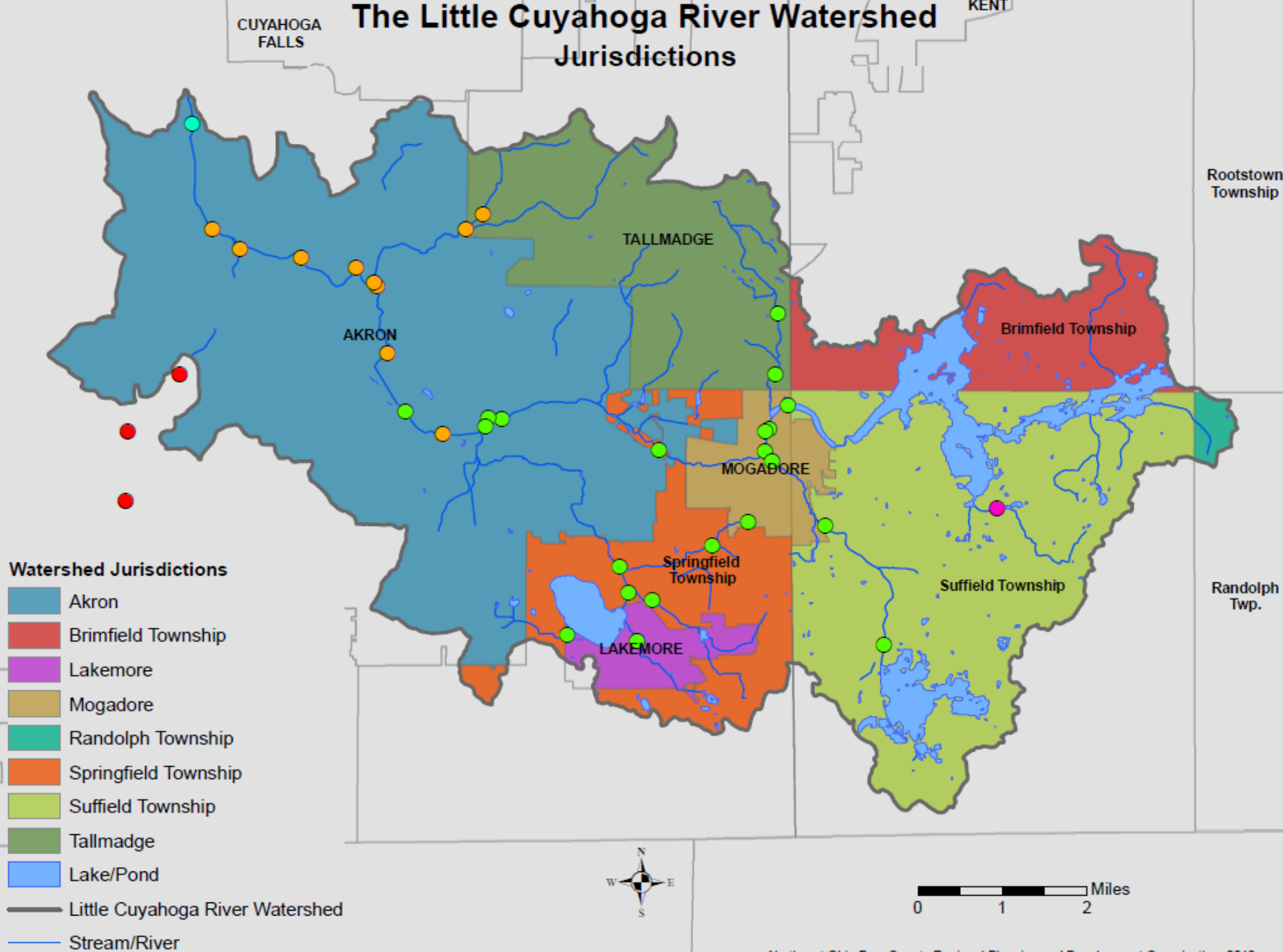
DRAFT

The Little Cuyahoga River Watershed

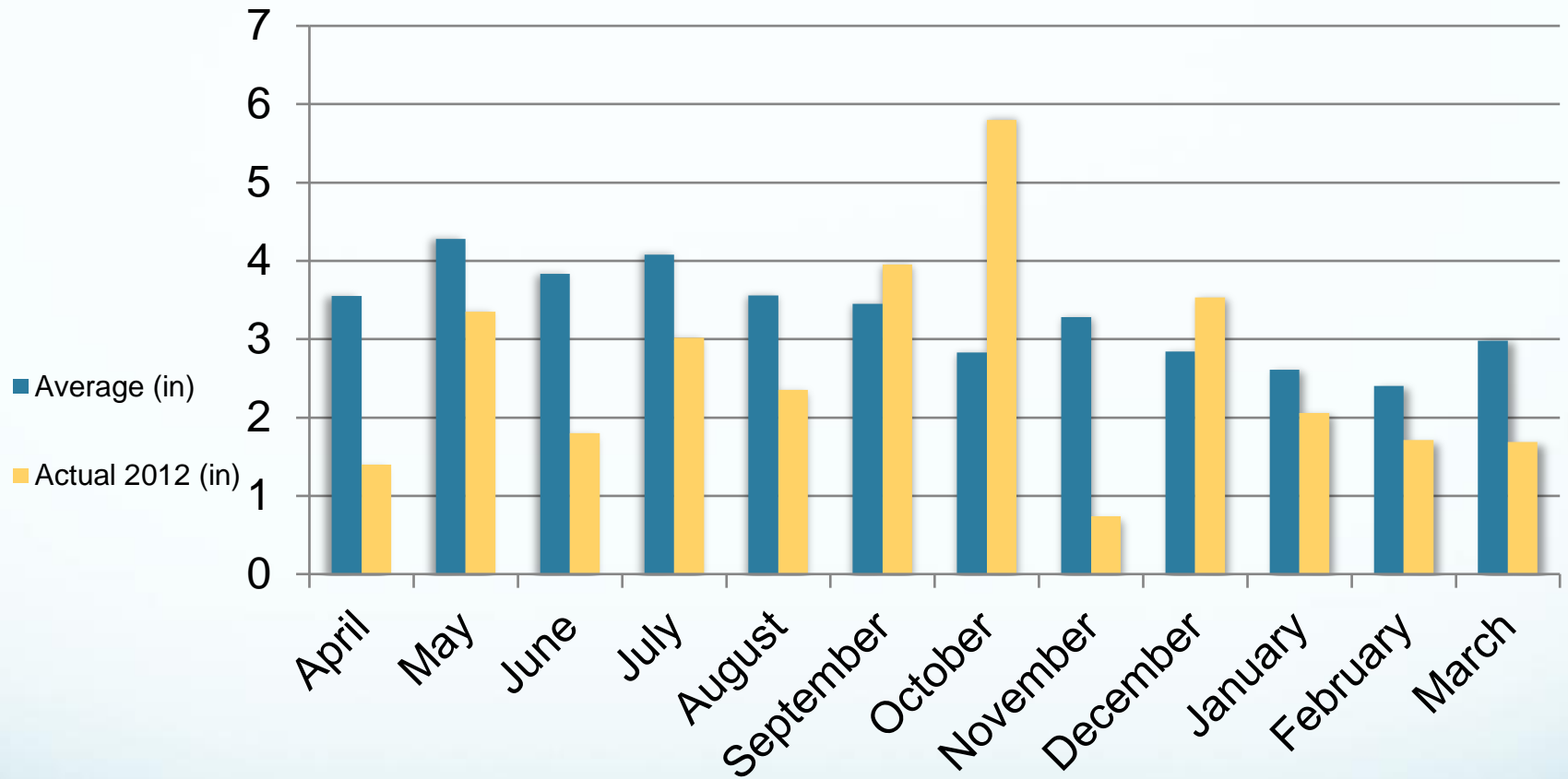
Sierra Club Volunteer Monitoring Sites



The Little Cuyahoga River Watershed Jurisdictions



Precipitation Records for Akron



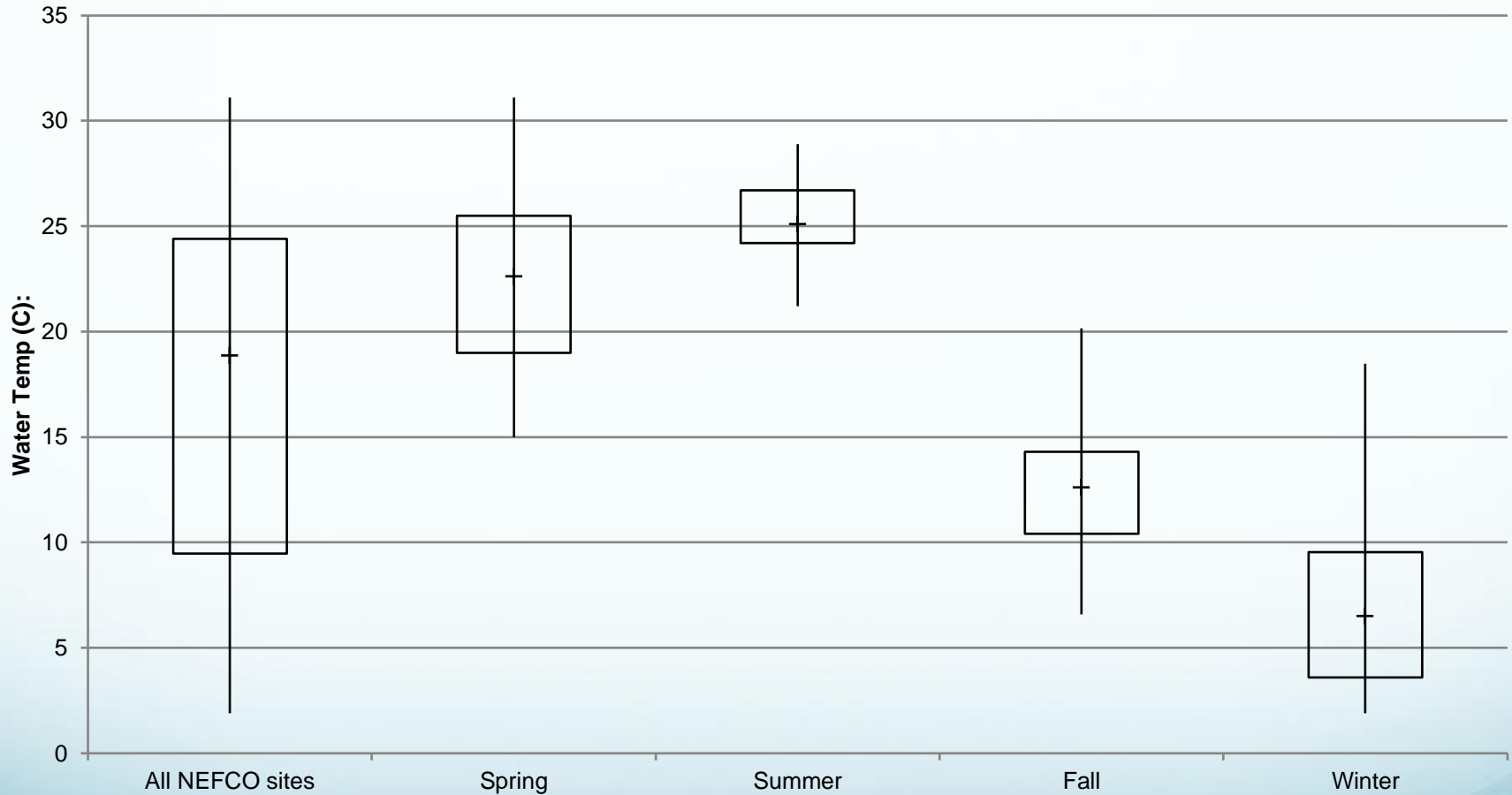
Sources:

Average Precipitation: www.weather.com

Actual 2012 Precipitation: wunderground.com/history

NEFCO Sites and Water Temperature

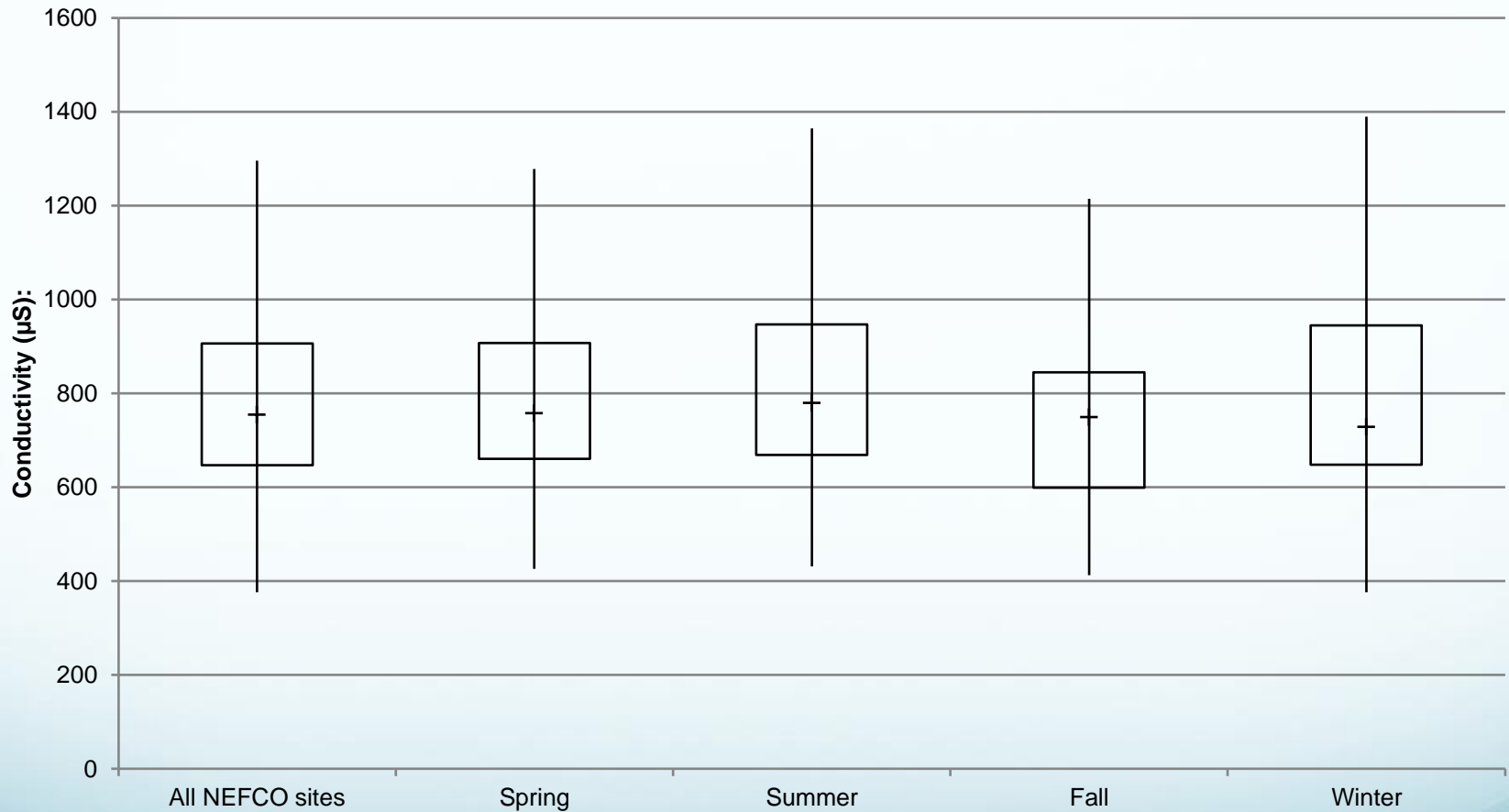
Water Temperature at time sample collected



Seasonal Variation in Water Temperature Present

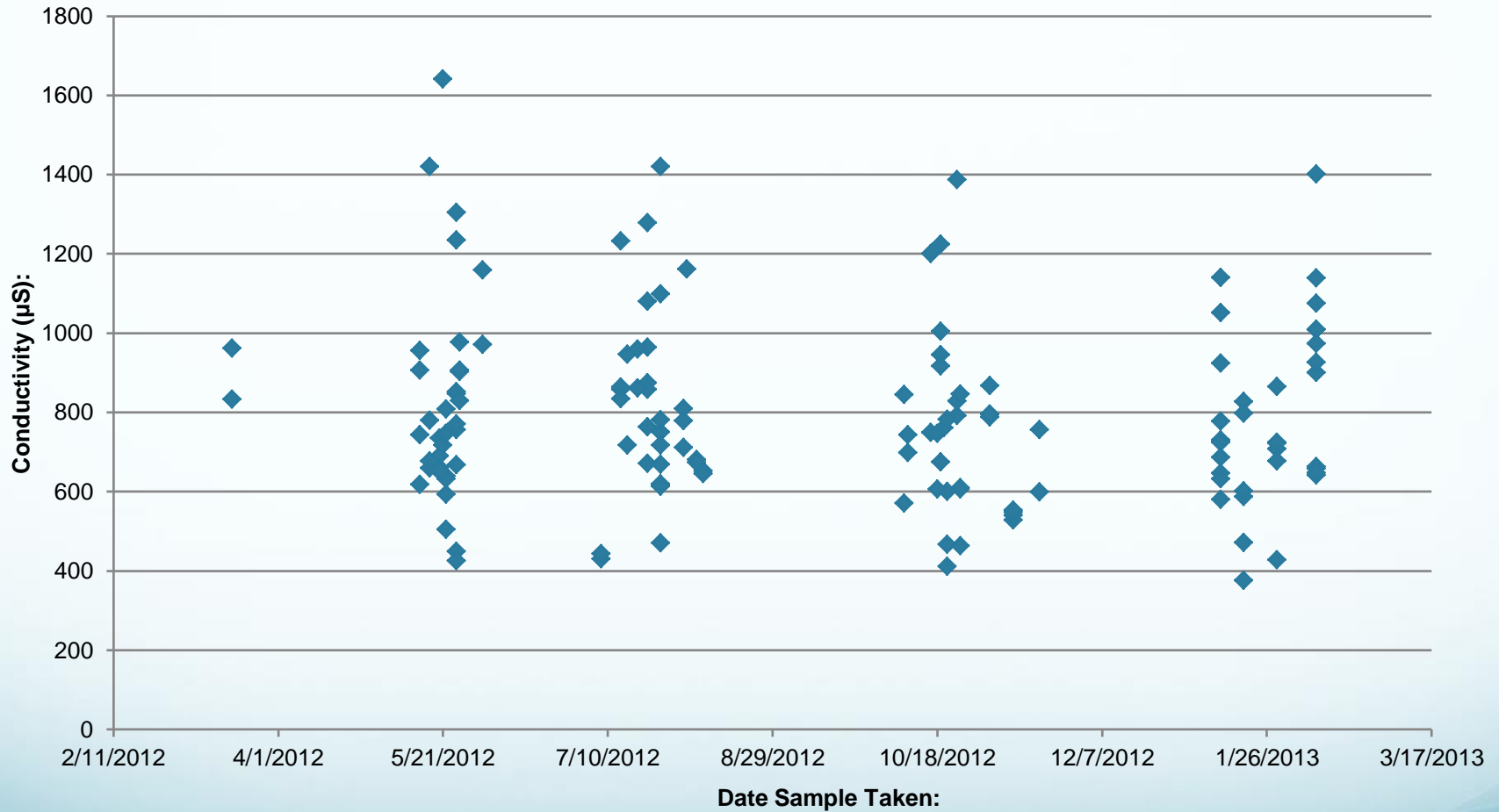
NEFCO Sites and Conductivity

Conductivity indicates amount of metals and salt



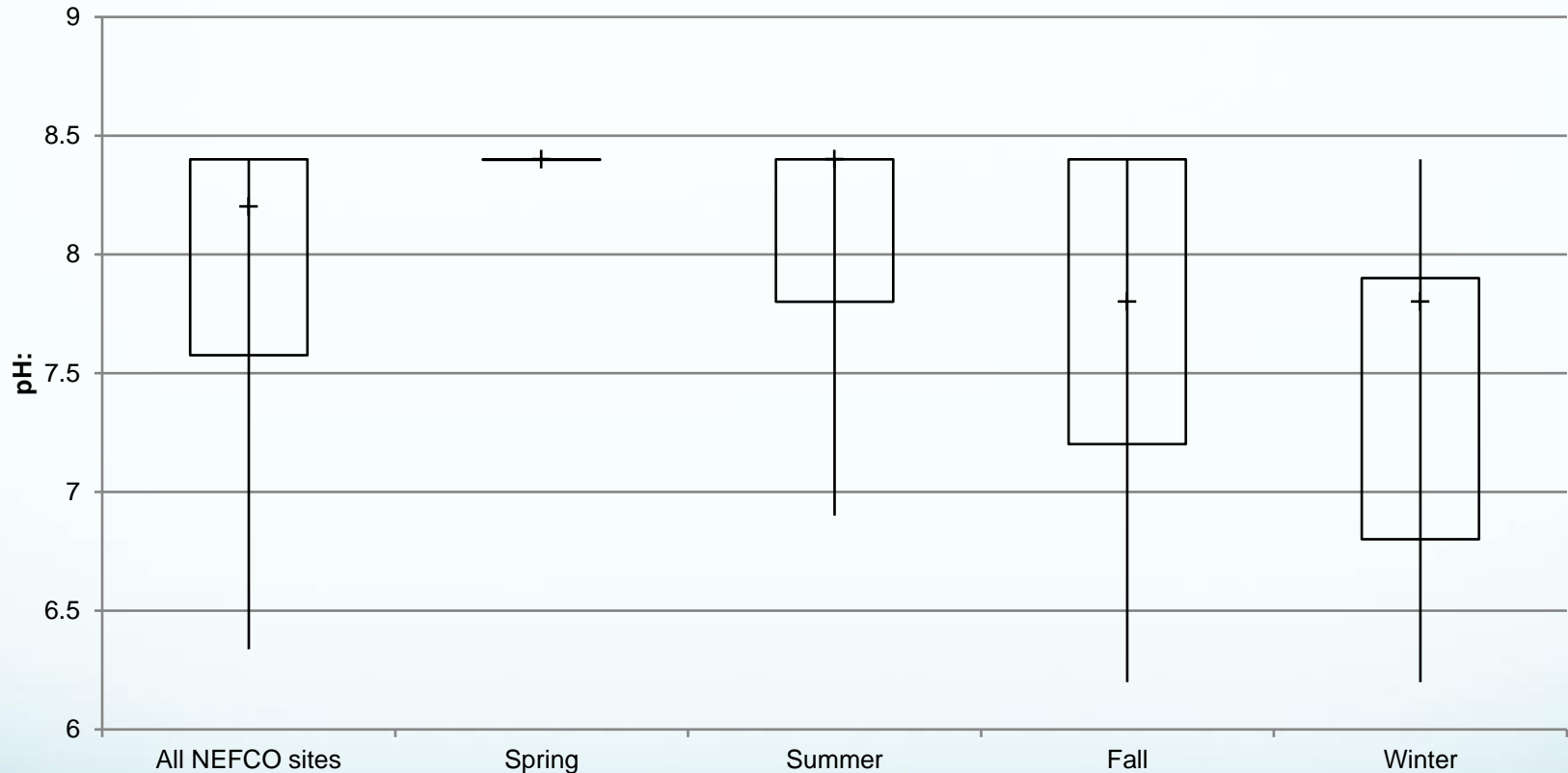
Seasonal Variation in Conductivity Less Present

NEFCO Sites and Conductivity



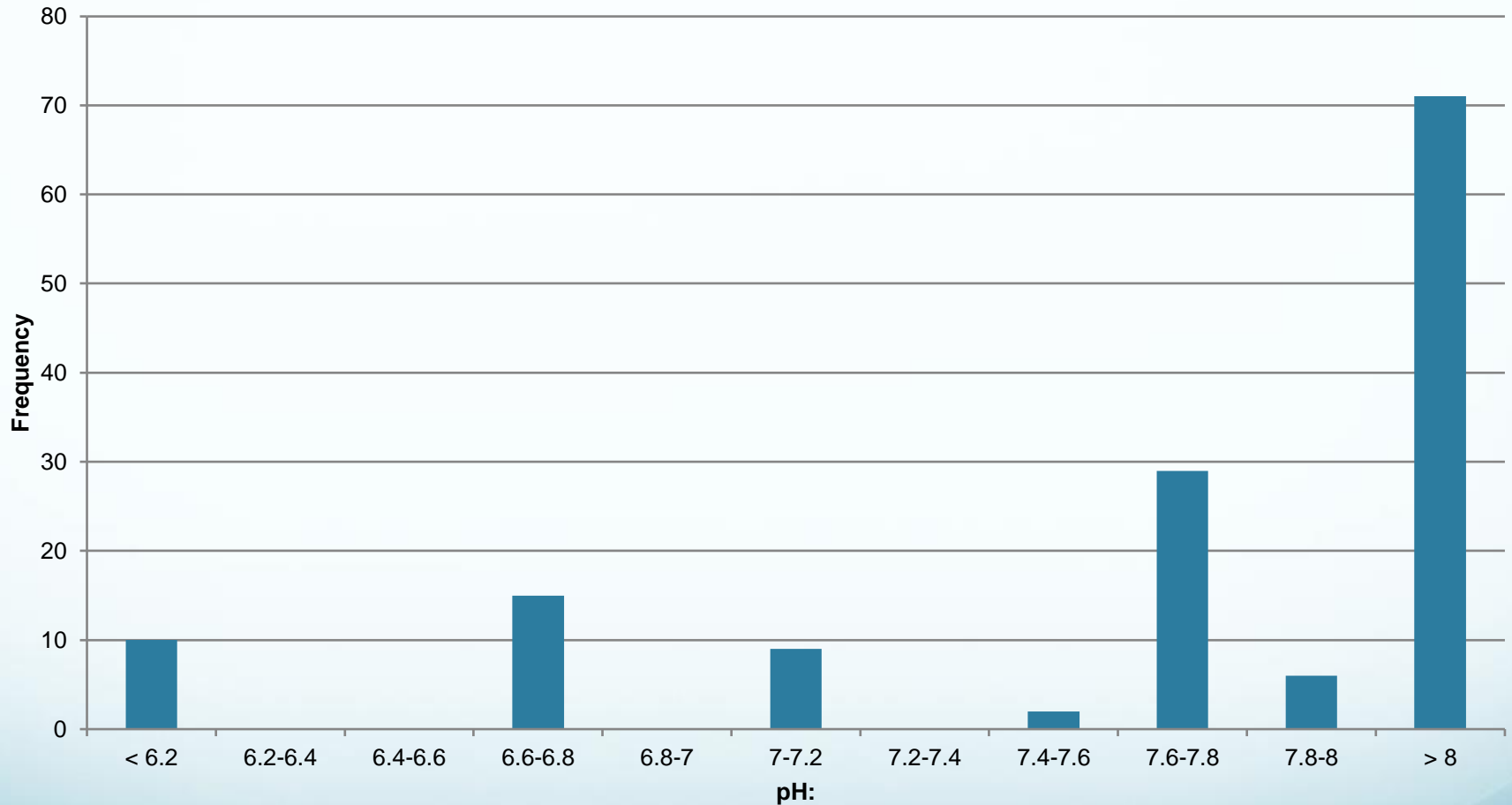
NEFCO Sites and pH

pH indicates acidic or basic conditions



- All NEFCO sites, pH range: 7.5 – 8.5
- Spring: 8.4 with little variation
- Fall and Winter: both have large variation

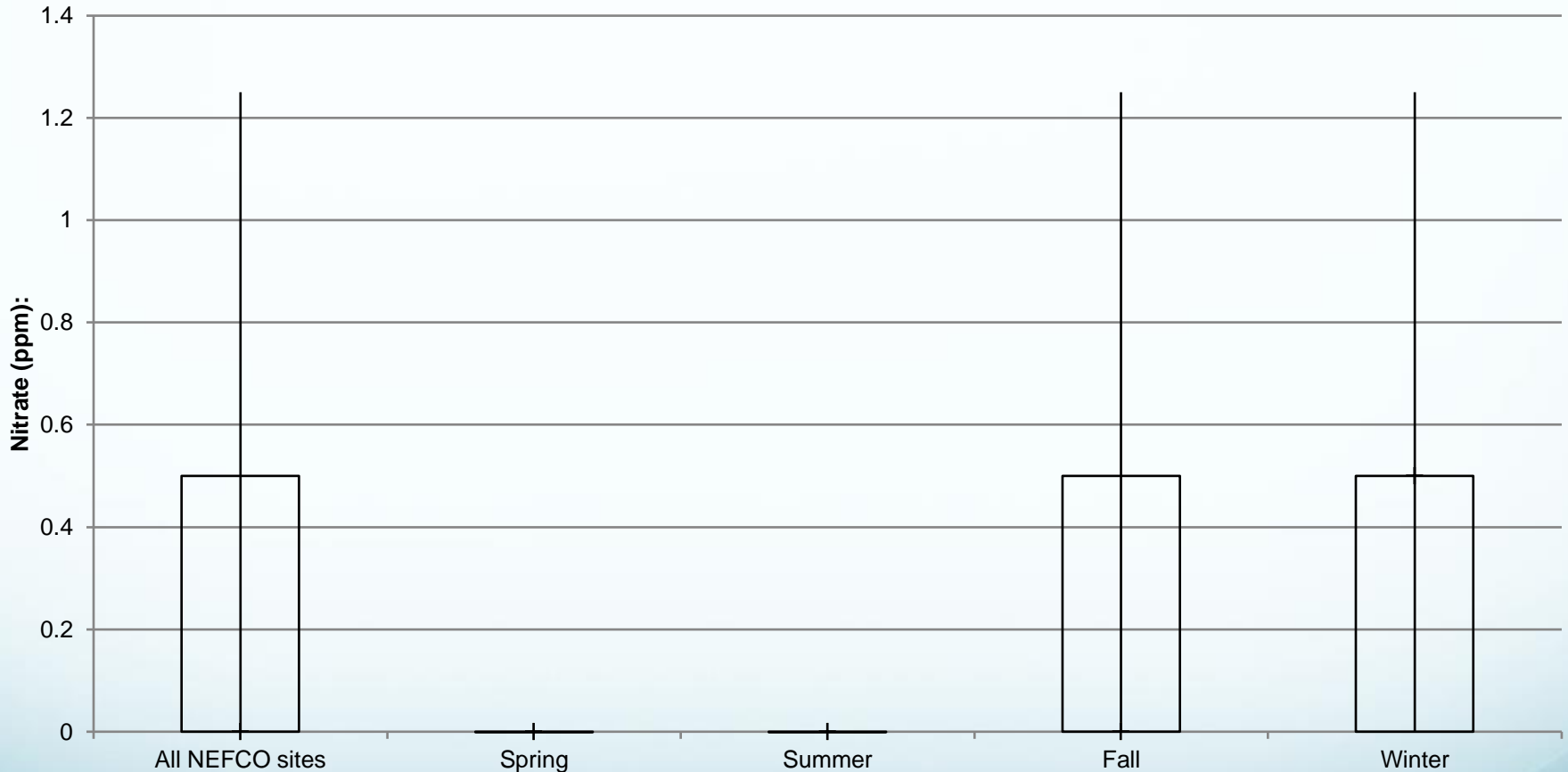
NEFCO Sites and pH Frequency



pH higher than 8.0: 71 times (basic conditions)
pH lower than 6.2: 10 times (acidic conditions)

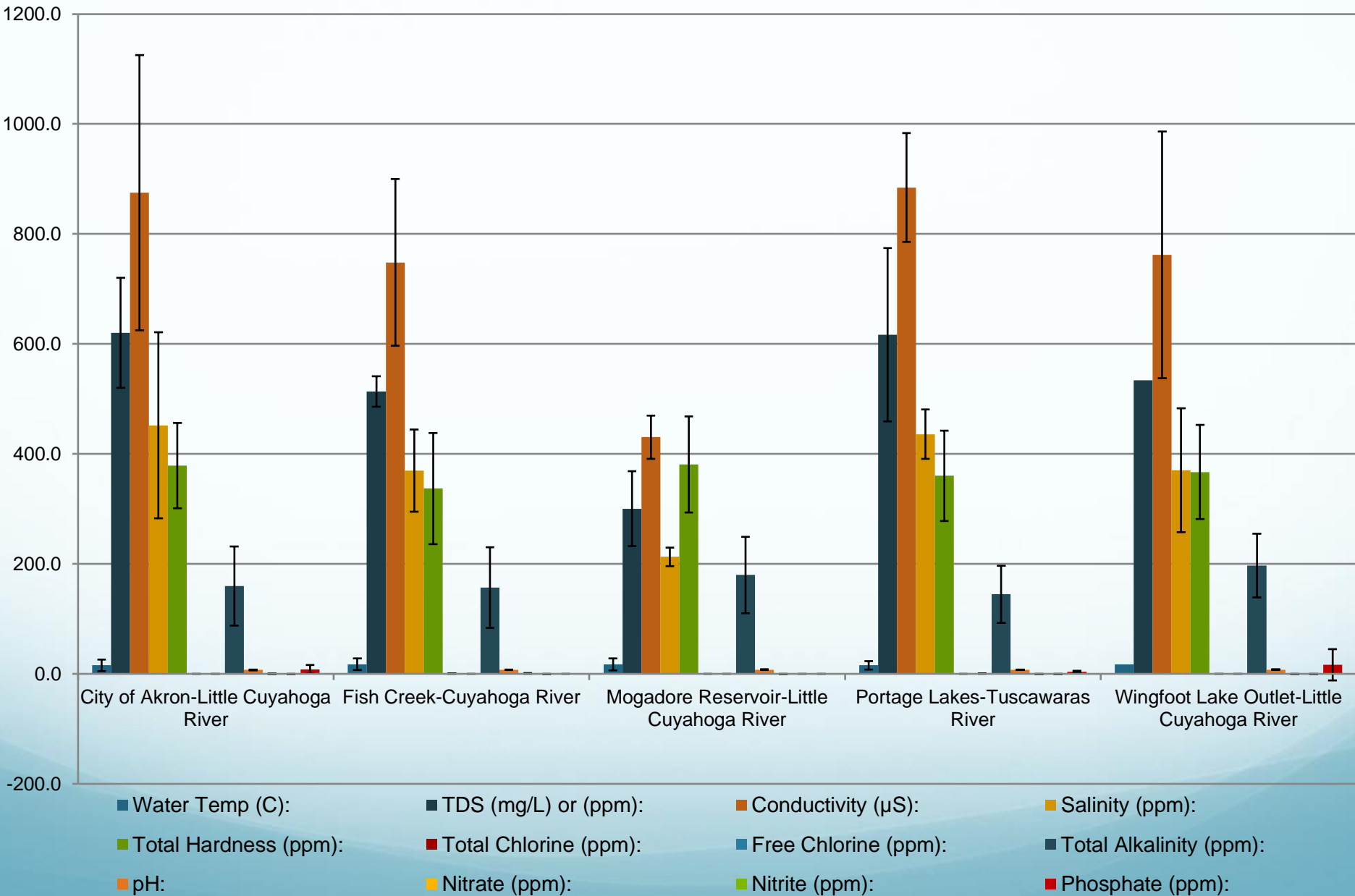
NEFCO Sites and Nitrate

Nitrate indicates level of nutrients, sewage, fertilizer, and/or runoff

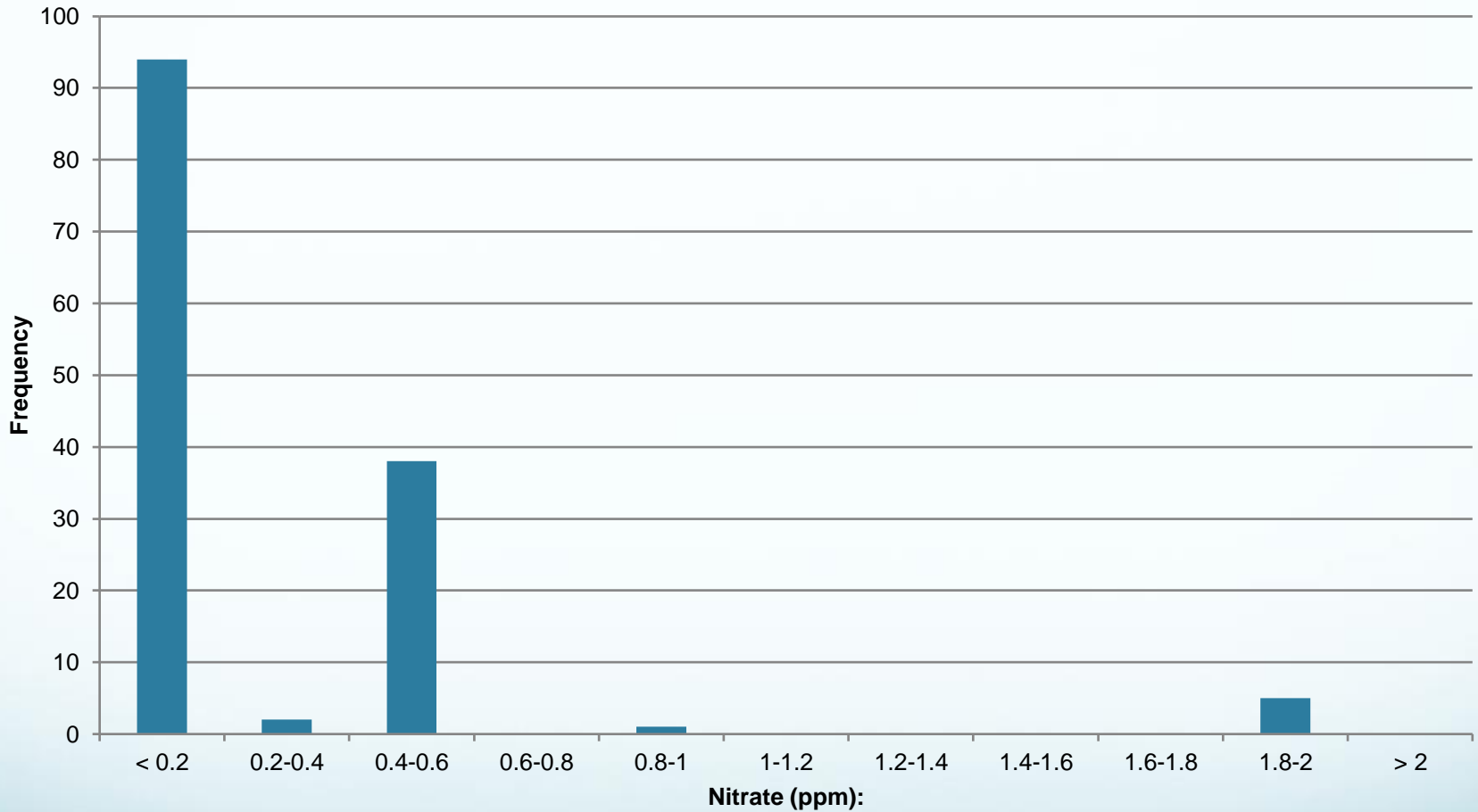


Spring/Summer Nitrate Averages: 0
Fall/Winter Nitrate Averages: 0 – 0.5

NEFCO Sites with Standard Deviation

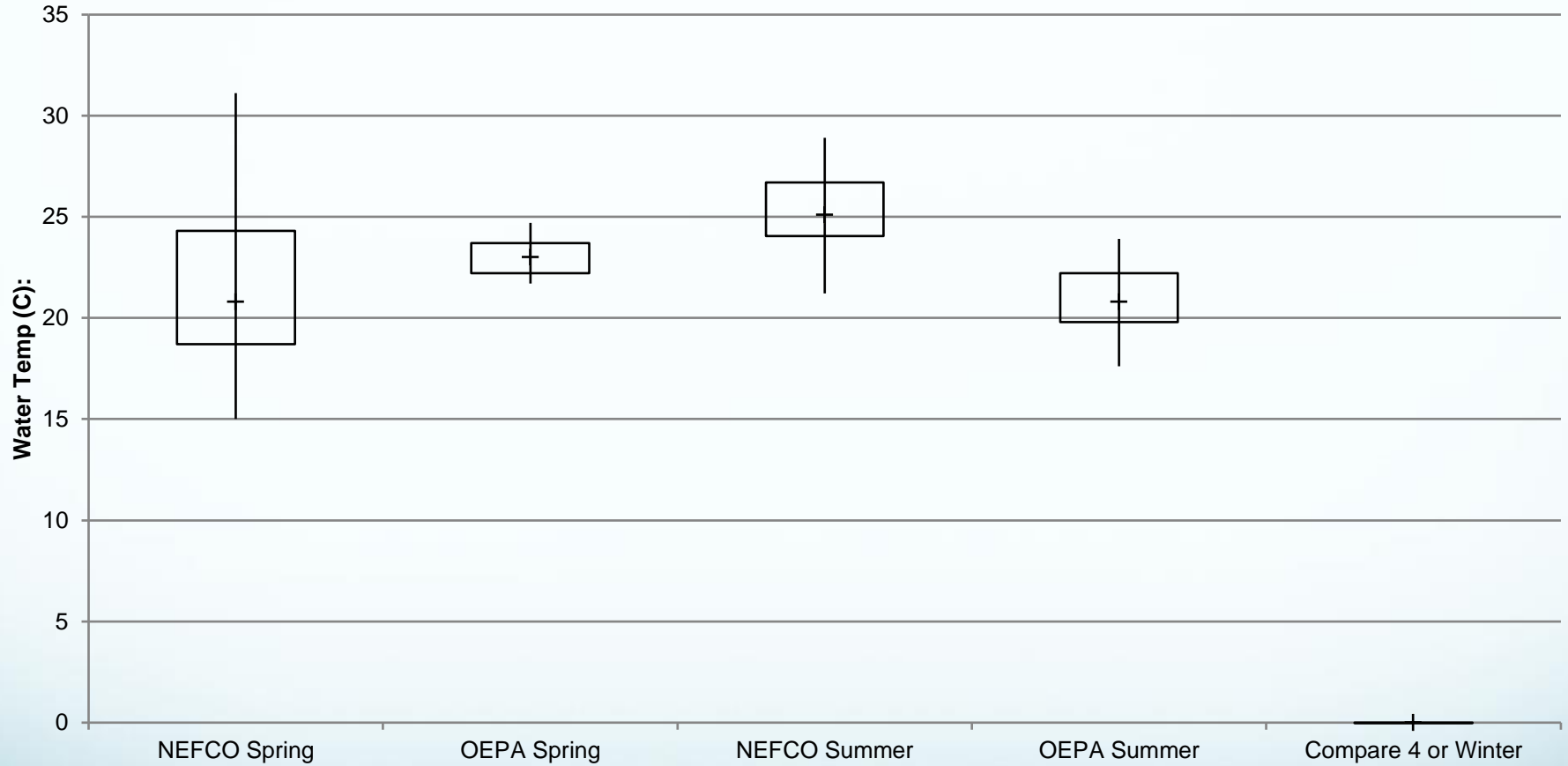


NEFCO sites and Nitrate

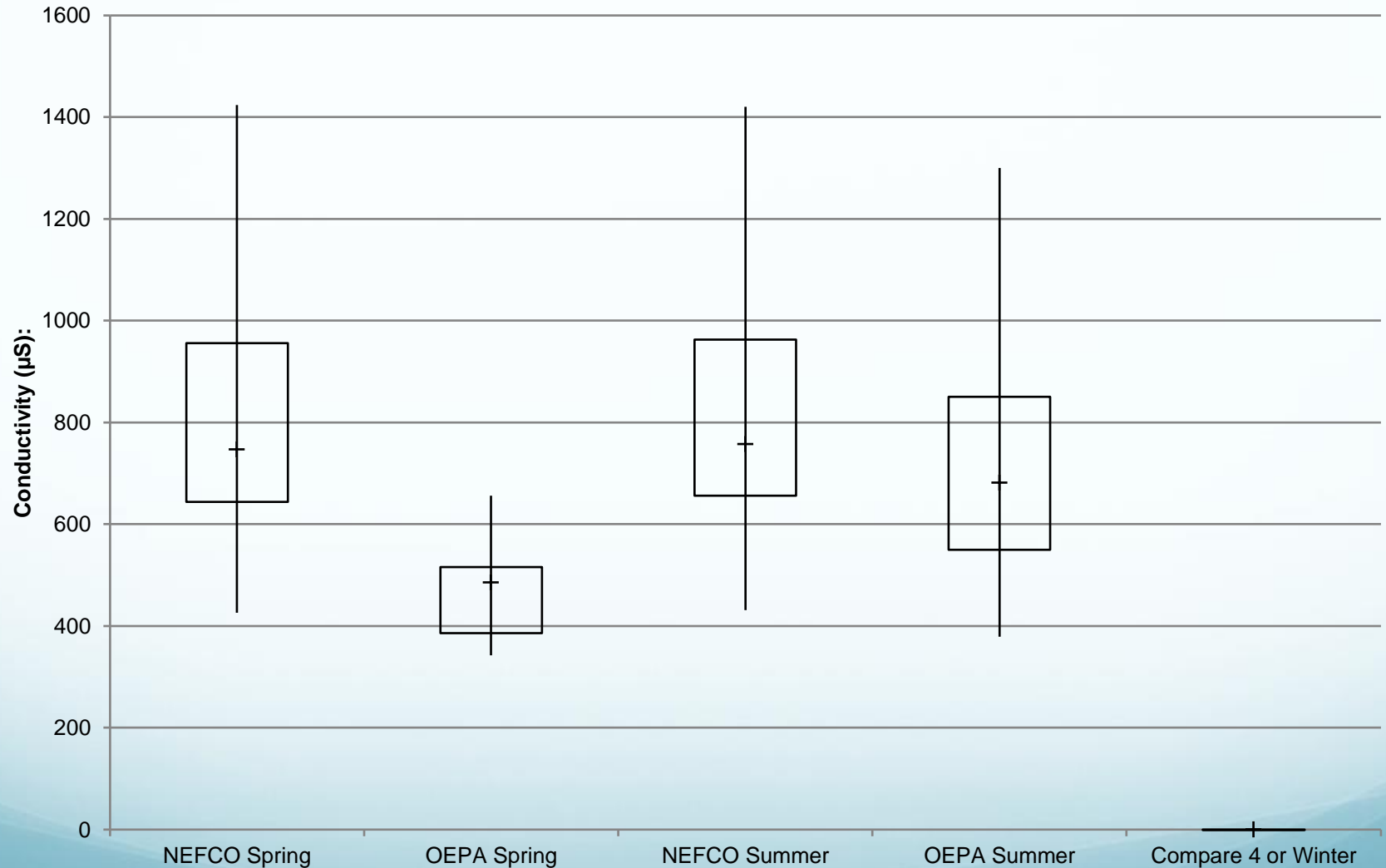


Nitrate less than 0.2: 94 times

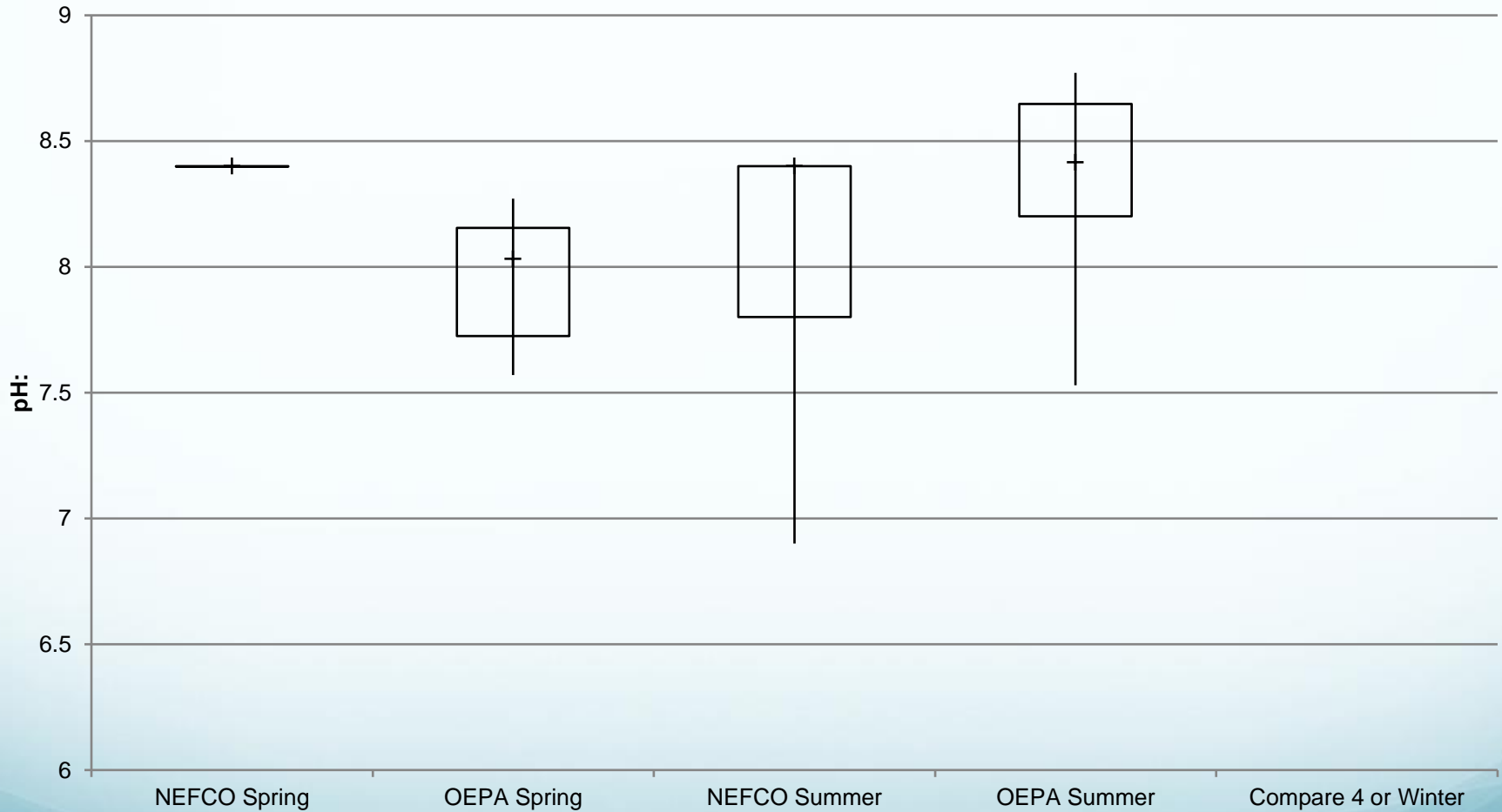
OEPA and NEFCO Comparisons (1996 vs. 2013/2013): Water Temperature & Spring and Summer



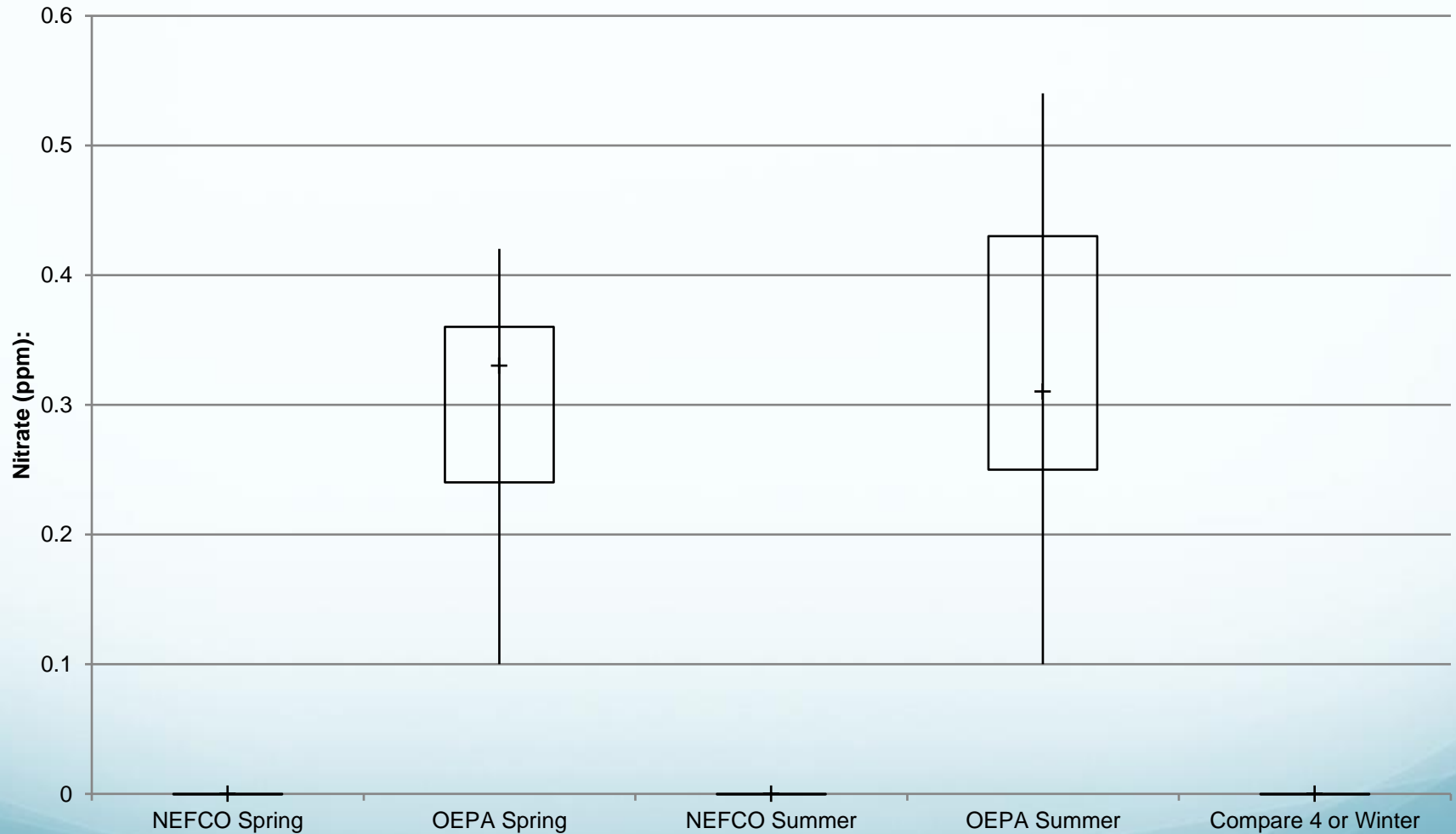
OEPA and NEFCO Comparisons (1996 vs. 2013/2013): Conductivity & Spring and Summer



OEPA and NEFCO Comparisons (1996 vs. 2013/2013): pH & Spring and Summer



OEPA and NEFCO Comparisons (1996 vs. 2013/2013): Nitrate & Spring and Summer



Room for Improvement and Growth

- Goal 1: Improve monitoring, training, and data collection methods
- Goal 2: Split-test monitoring with OEPA 😊
- Goal 3: Examine usefulness of current parameters and research to determine if there are better parameters to monitor
- Goal 4: Increase number of monitors...
Looking at you!