

# Update on Pine River Watershed: Headwaters to St. Louis Dam

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Healthy Pine River Group

October 10, 2024

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Alma College

# First: THANKS!!!!

- This season's work was funded by:
  - HPR: \$7500
  - Small Grants from AC Donors: \$2300
- What did we do with the money?
  - Olivia's salary
  - Media and *E. coli* kits
  - Reagents for running nitrogen and phosphorus testing
  - Gloves and other incidental necessities



We thought this would make a great “field car.” But decided not to buy it!

# Goals for 2024 Season

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- Continue to monitor watershed:
  - upstream (headwaters), main trunk, and downstream of Alma Dam
- Continue to sample downstream to assess potential algal bloom sources in St. Louis
- Put together historical data:
  - Compare how the river is now with 4 years ago
  - Do a 20-year compilation of what's happened in the watershed
- Identify potential sites that exhibit impacts after manure application

Before Results: Some Pleasantries...





Taken from Gary's House on Riverview

Pictures of the second manure dump, mid-May, 2024







Some “interesting” outflow at Sugar Creek





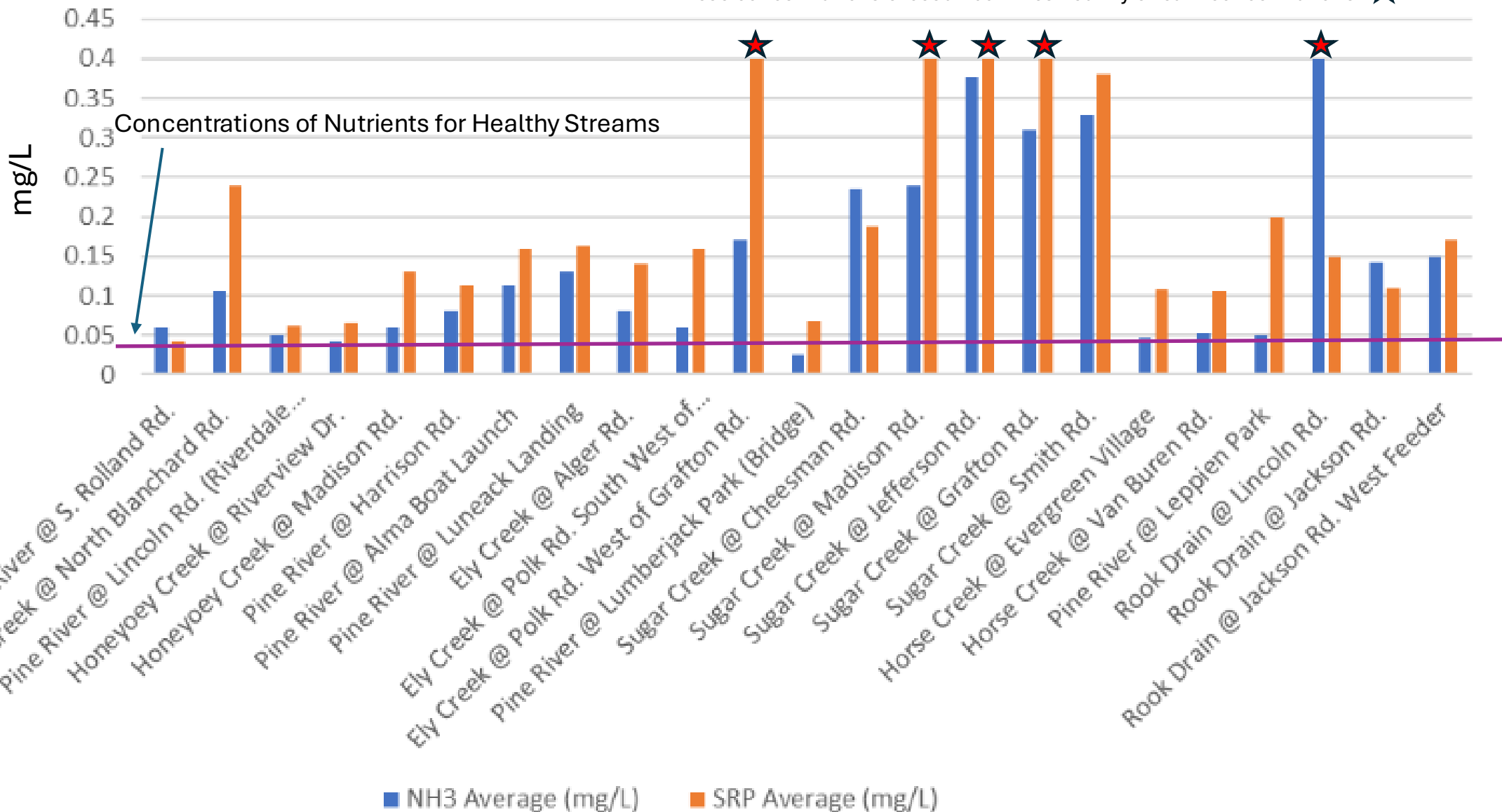
# Quick Summary of 2024 Findings



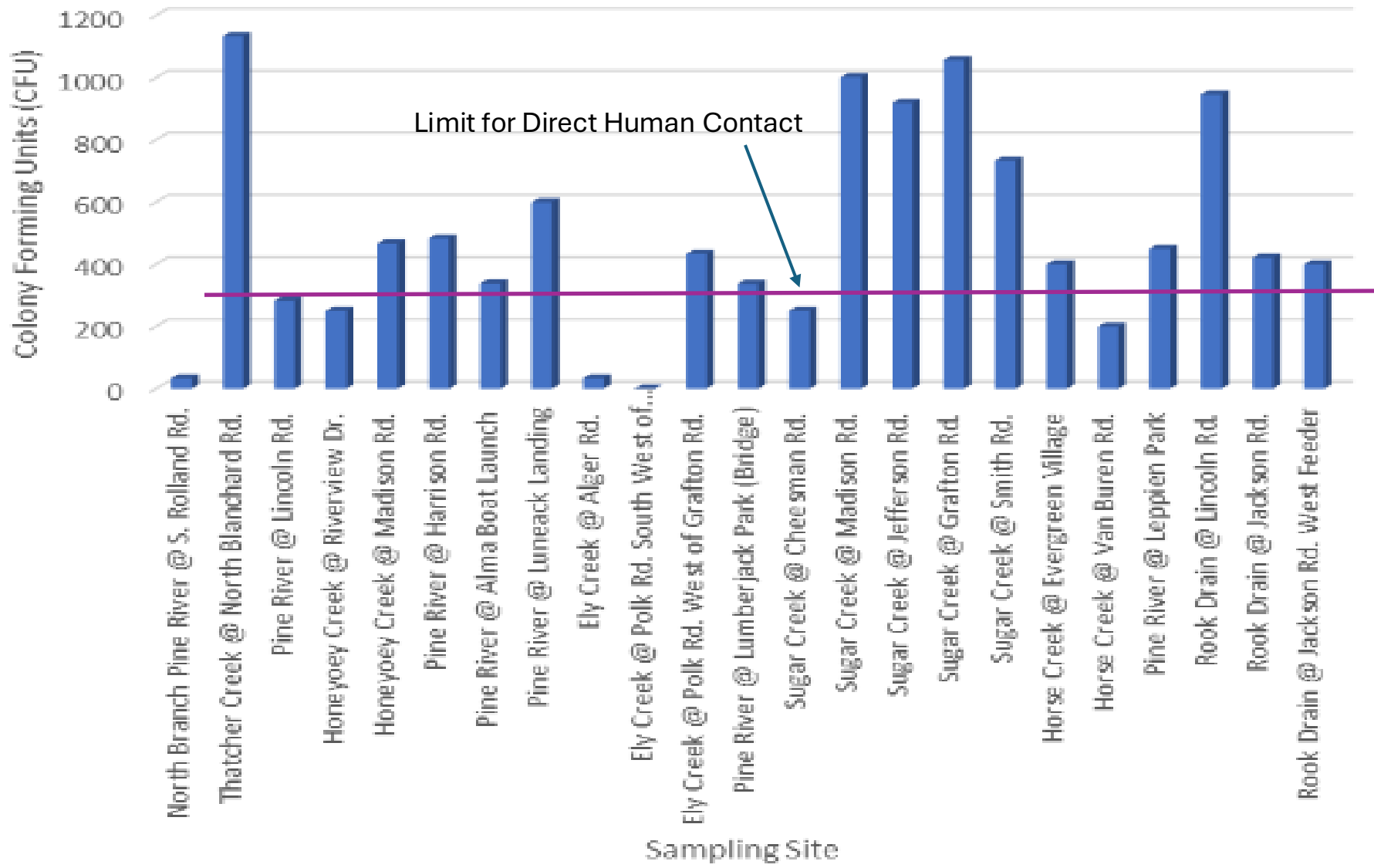
# Overview of Summer 2024 Data

## Average Nutrients for Summer 2024

These concentrations exceed 100 times healthy stream concentrations ★



# Average Thermotolerant E. Coli for Summer 2024



# How We Divided Up the Watershed

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- Headwaters Sites
  - Above Lumberjack Park
- Mid-Section / Main Trunk
  - From Lumberjack Park to Alma Dam
- Downstream Sites
  - Downstream of Alma Dam to St. Louis Dam



# Status of the Headwaters

# Headwaters Sampling Sites: 2024

Chippewa River Watershed

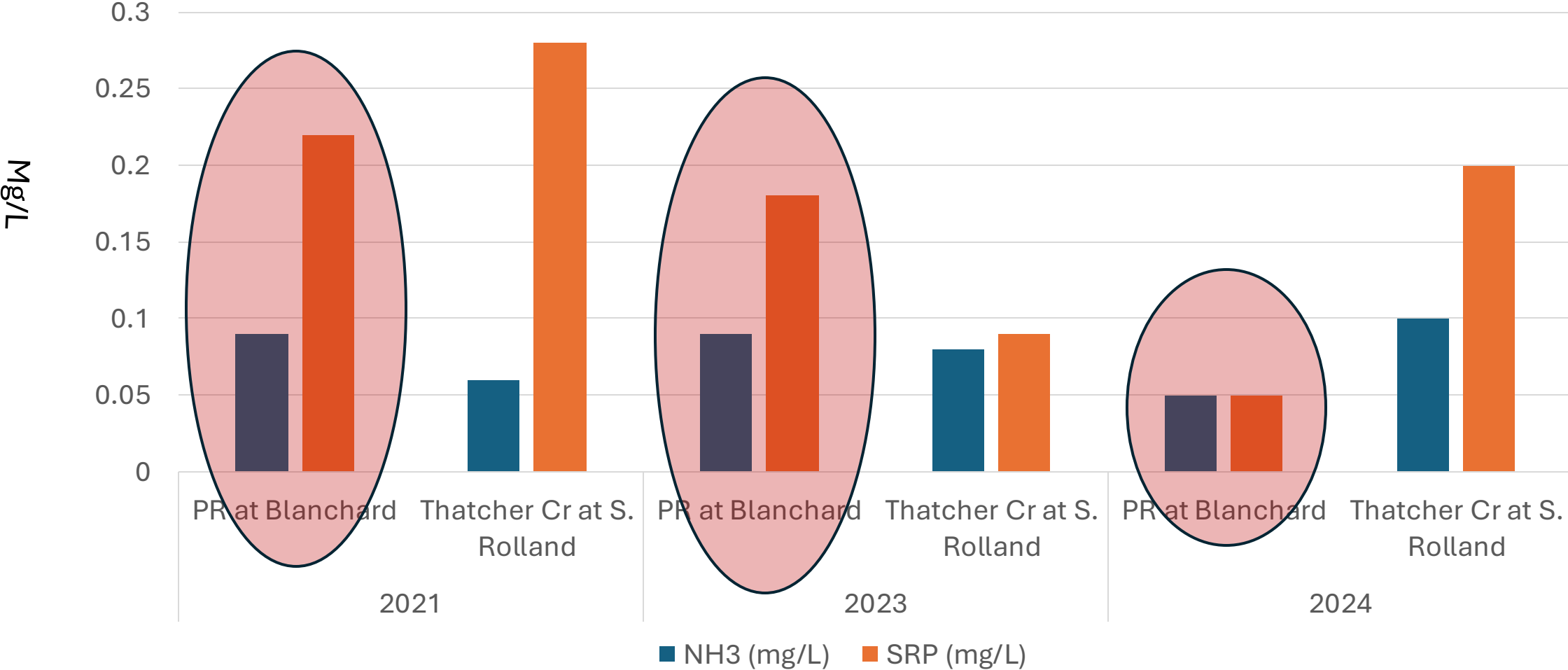
Pine River Watershed



Google

# Blanchard Rd. Site has gotten cleaner – perhaps as a result of the Peacock CAFO closing?

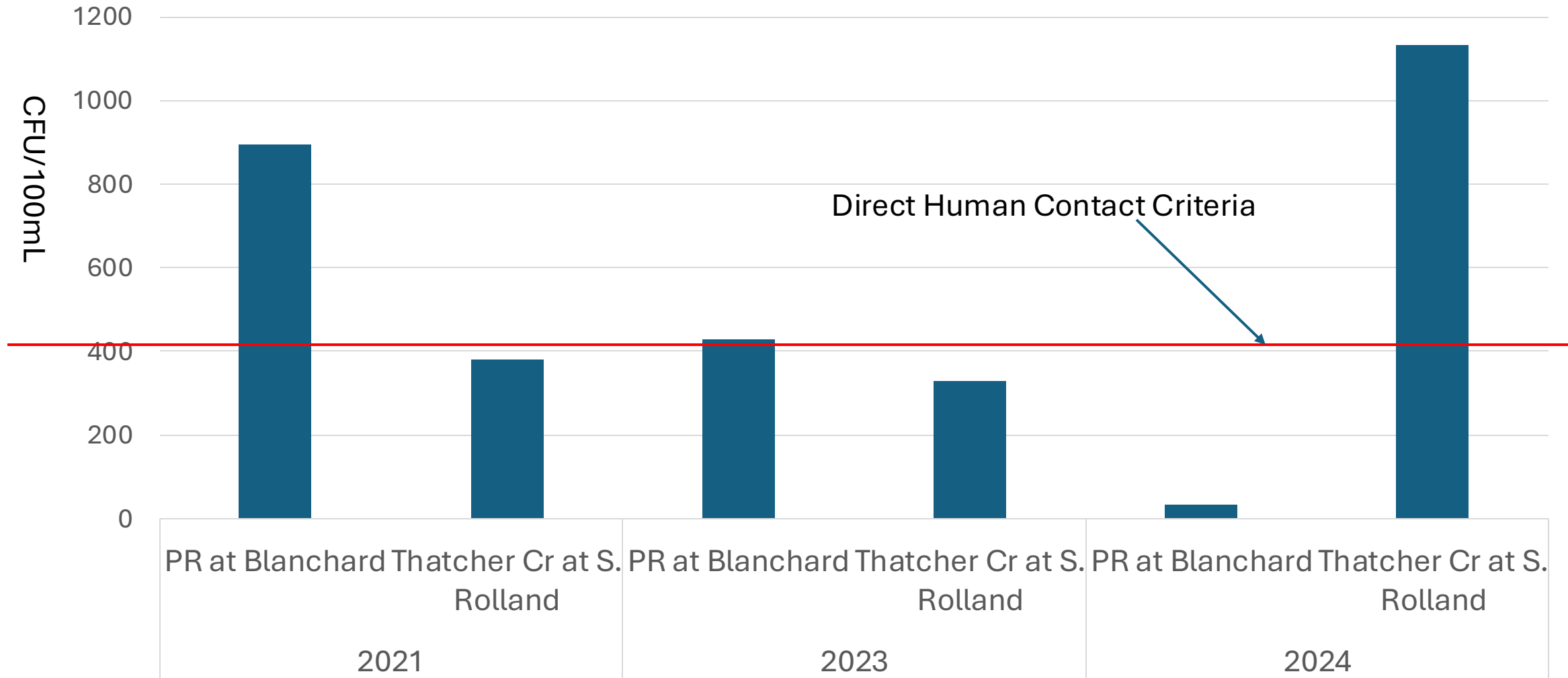
Average Nutrient Concentrations for Headwaters Pine River: 2021 - 2024



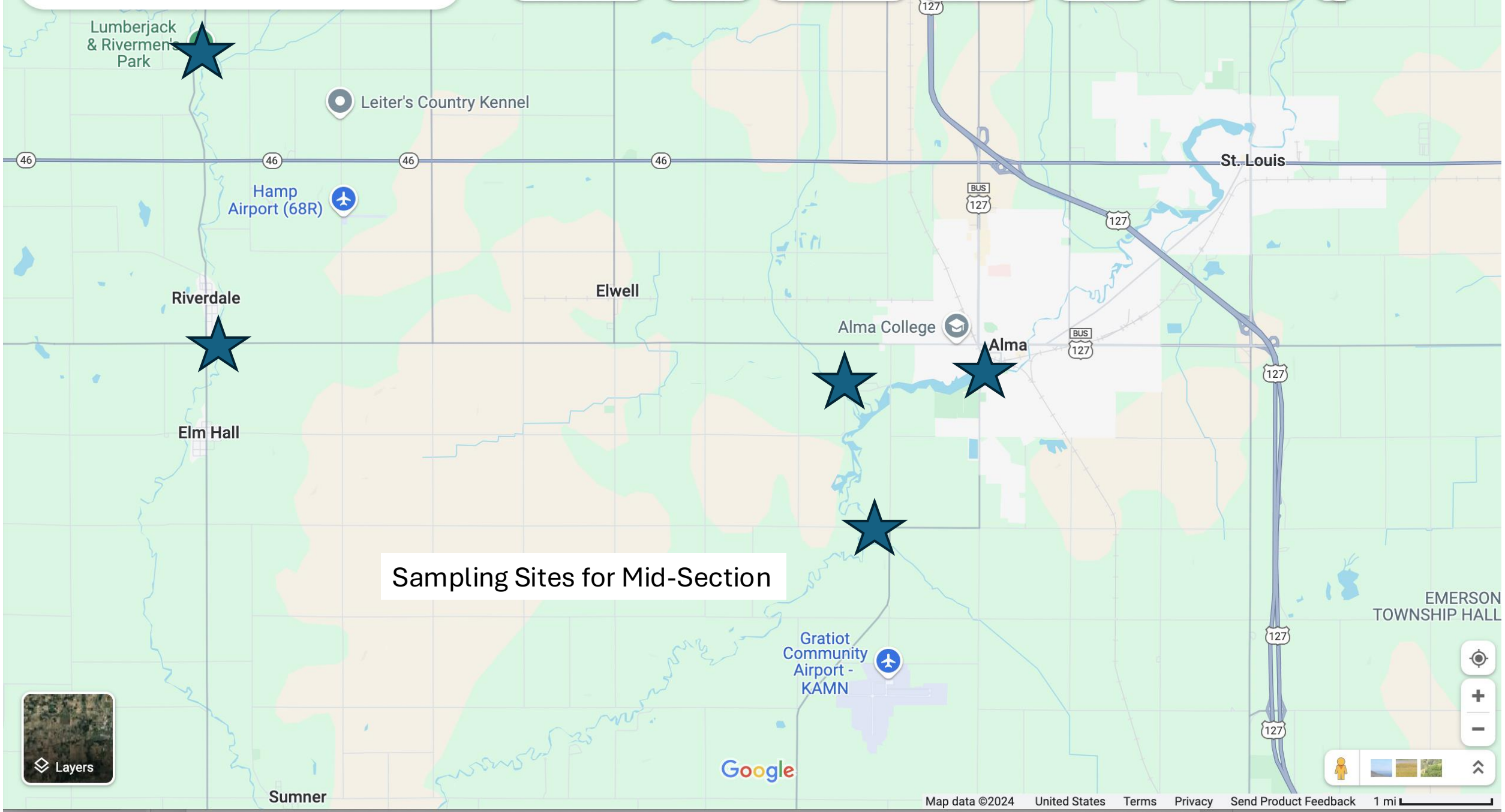


# Thatcher Creek site needs to be monitored more often as it may be increasing in Thermotolerant *E. coli*.

Thermotolerant *E. coli* Concentrations for Pine River Headwaters, Comparing 3 years 2021 - 2024



# Status of the Mid-Section Sites



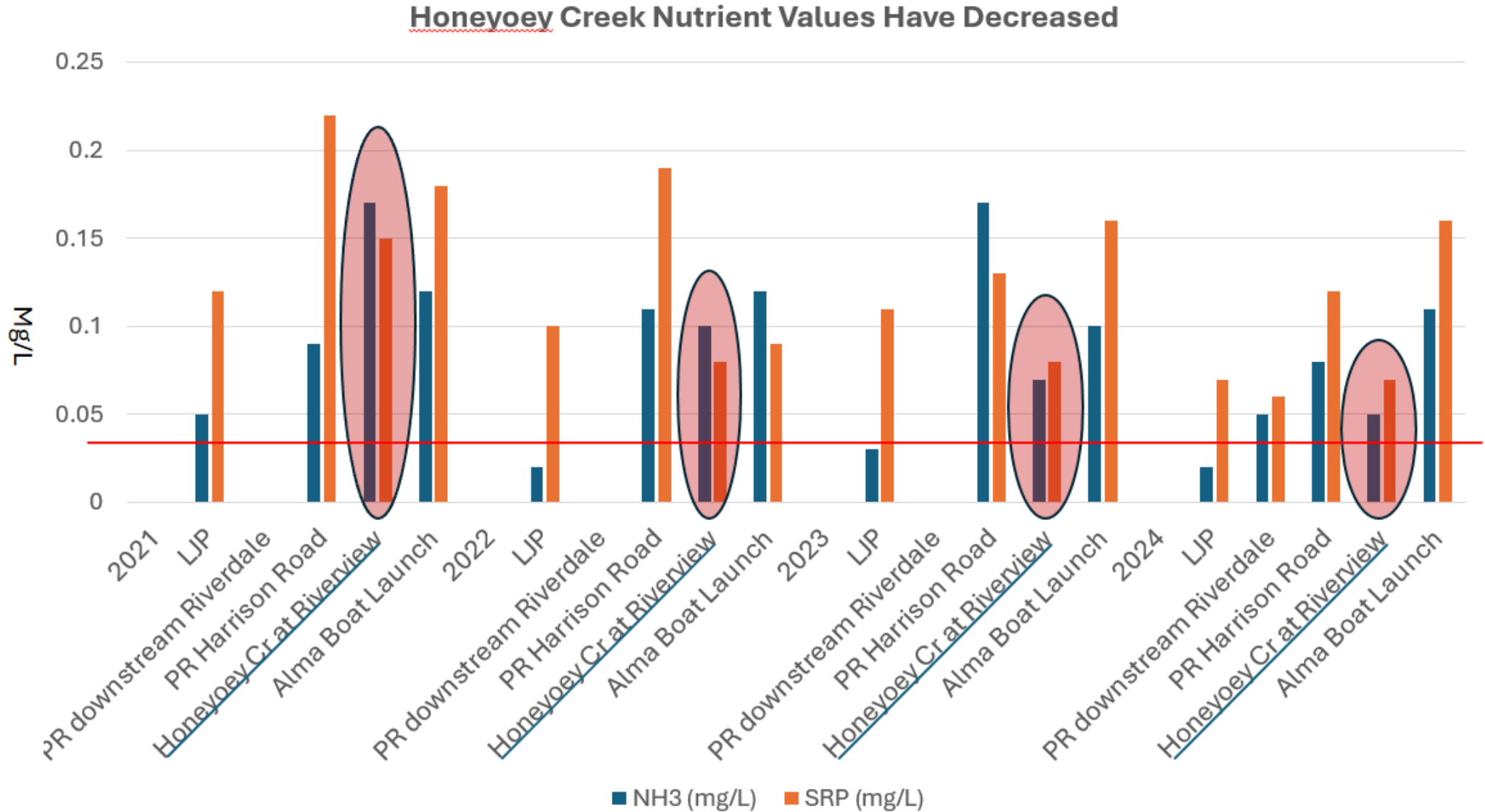
Sampling Sites for Mid-Section

Layers

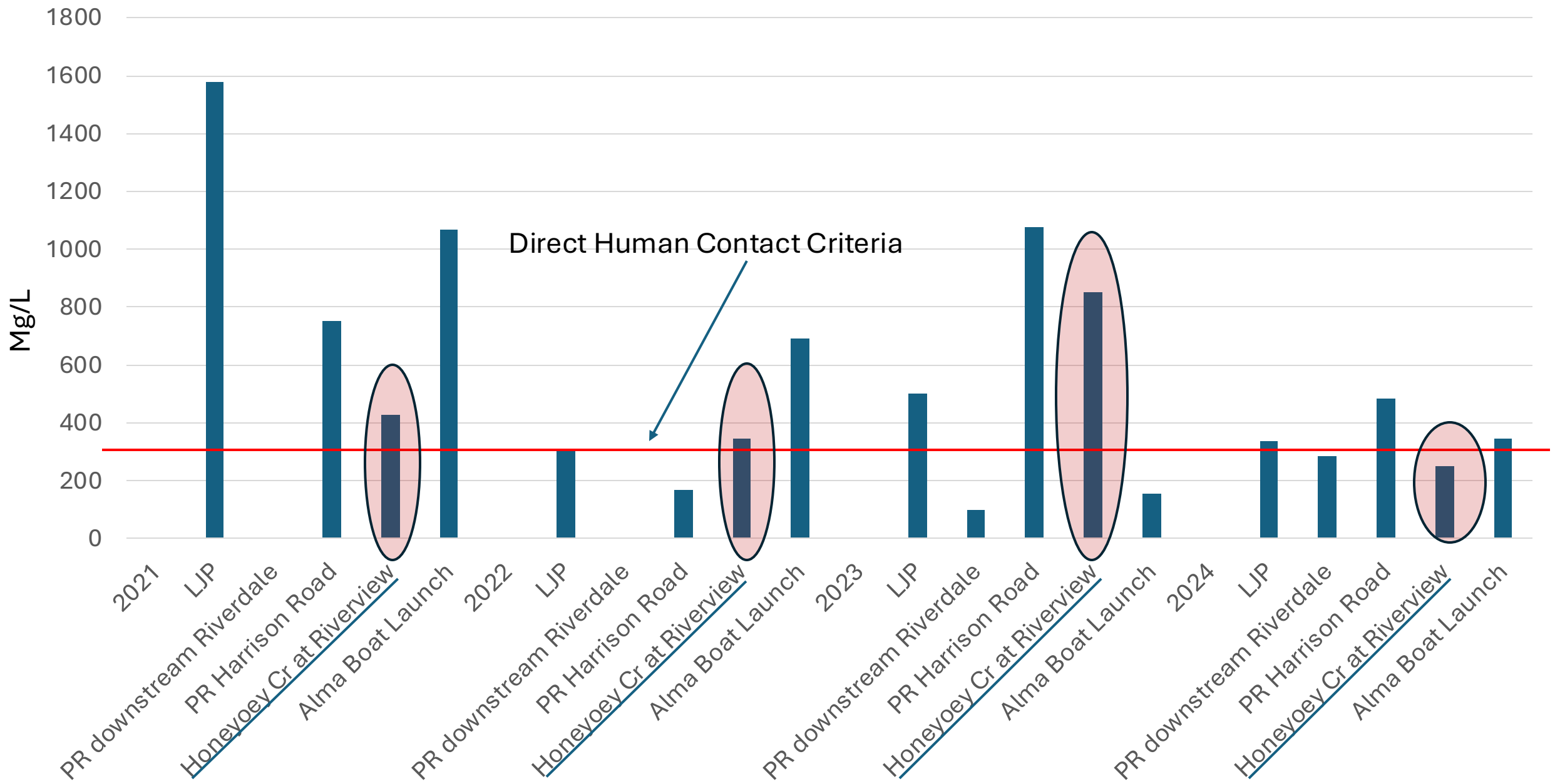
Google



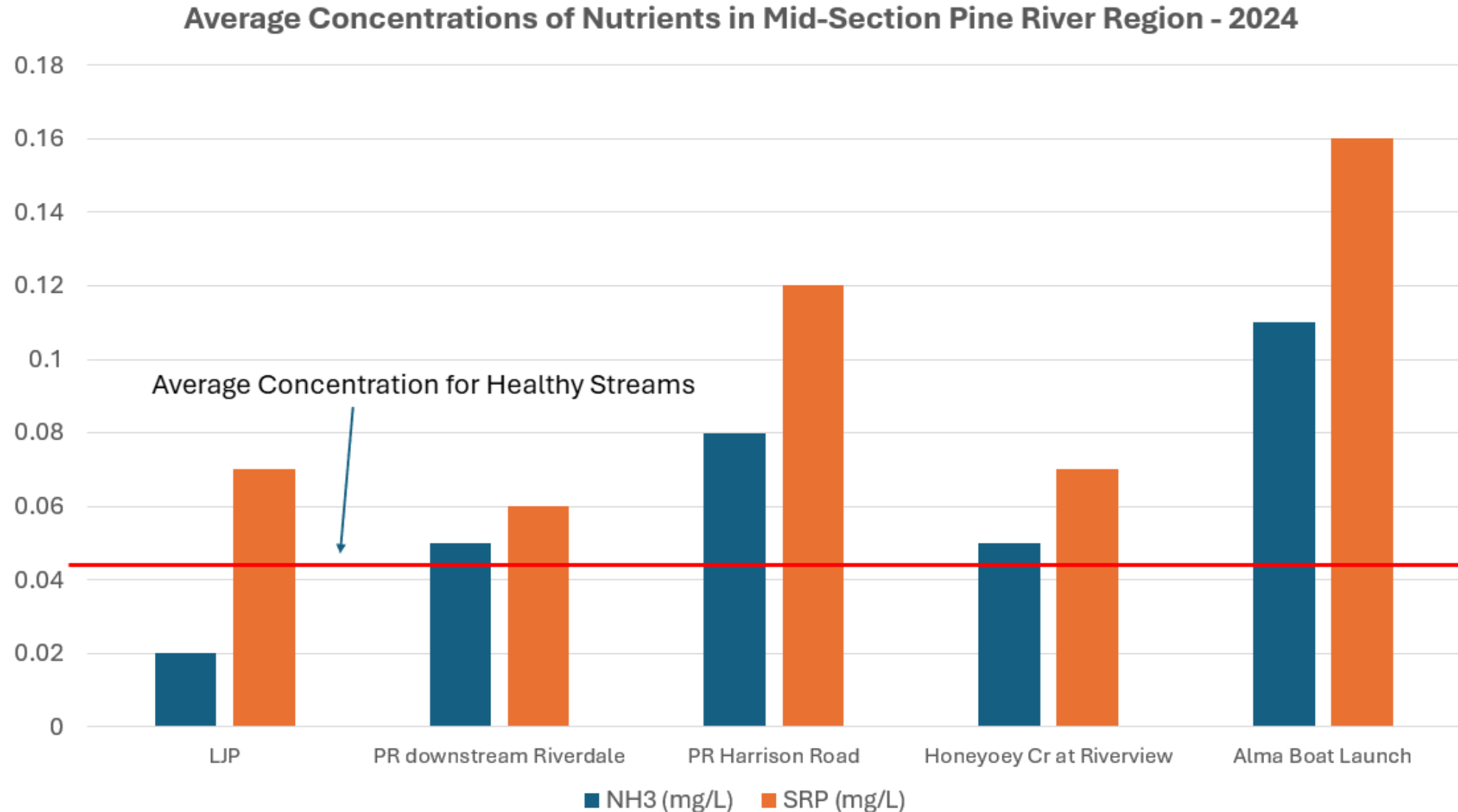
# Honeyoey Creek appears to be improving – possibly because the source is moving to another outlet.



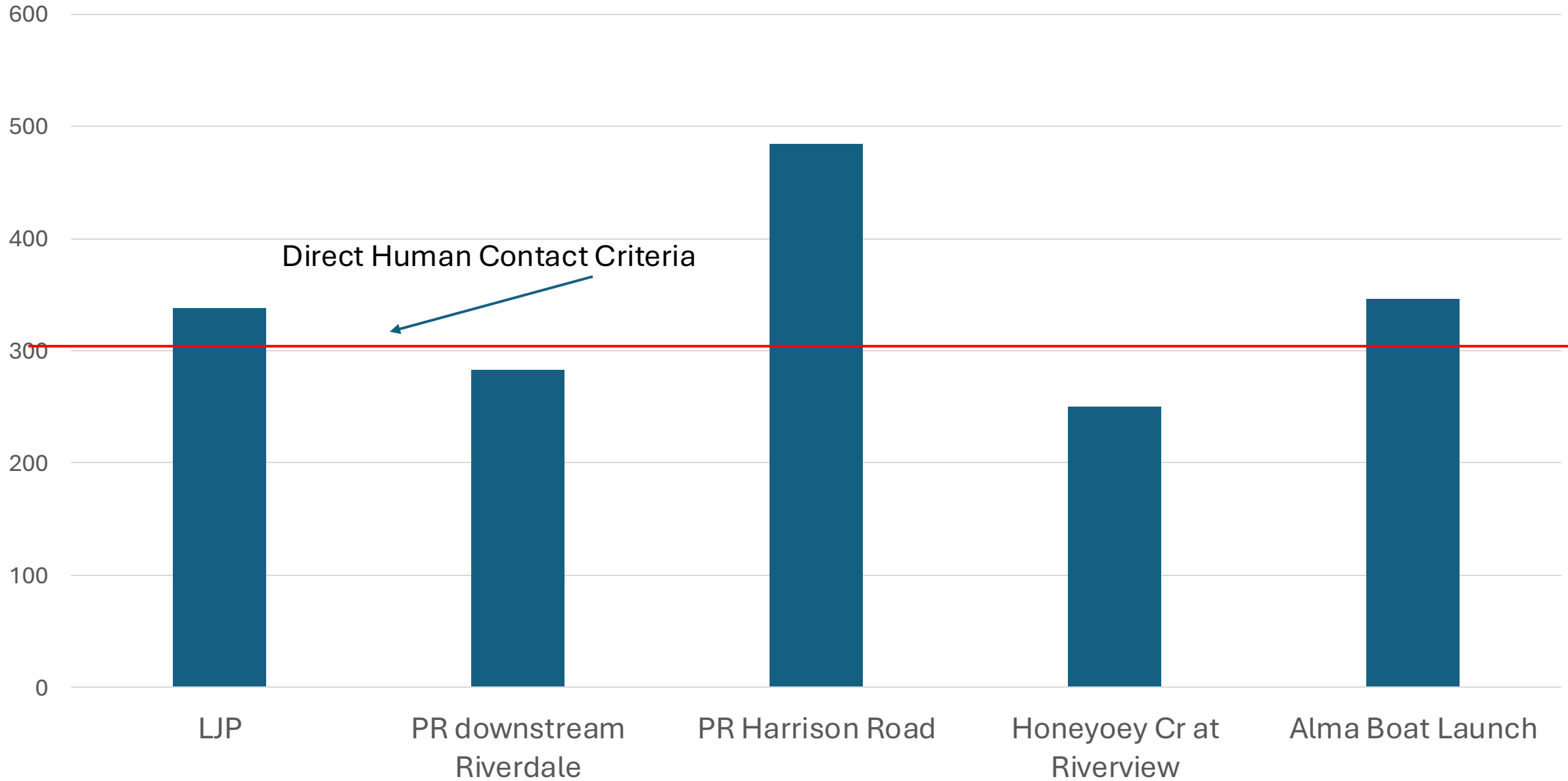
# Average Thermotolerant *E. coli* Concentrations for Mid-Section Pine River – Comparing Years: 2021 - 2024



# Compared with most other sites, Riverdale does not appear to have a significant impact on Pine River water quality



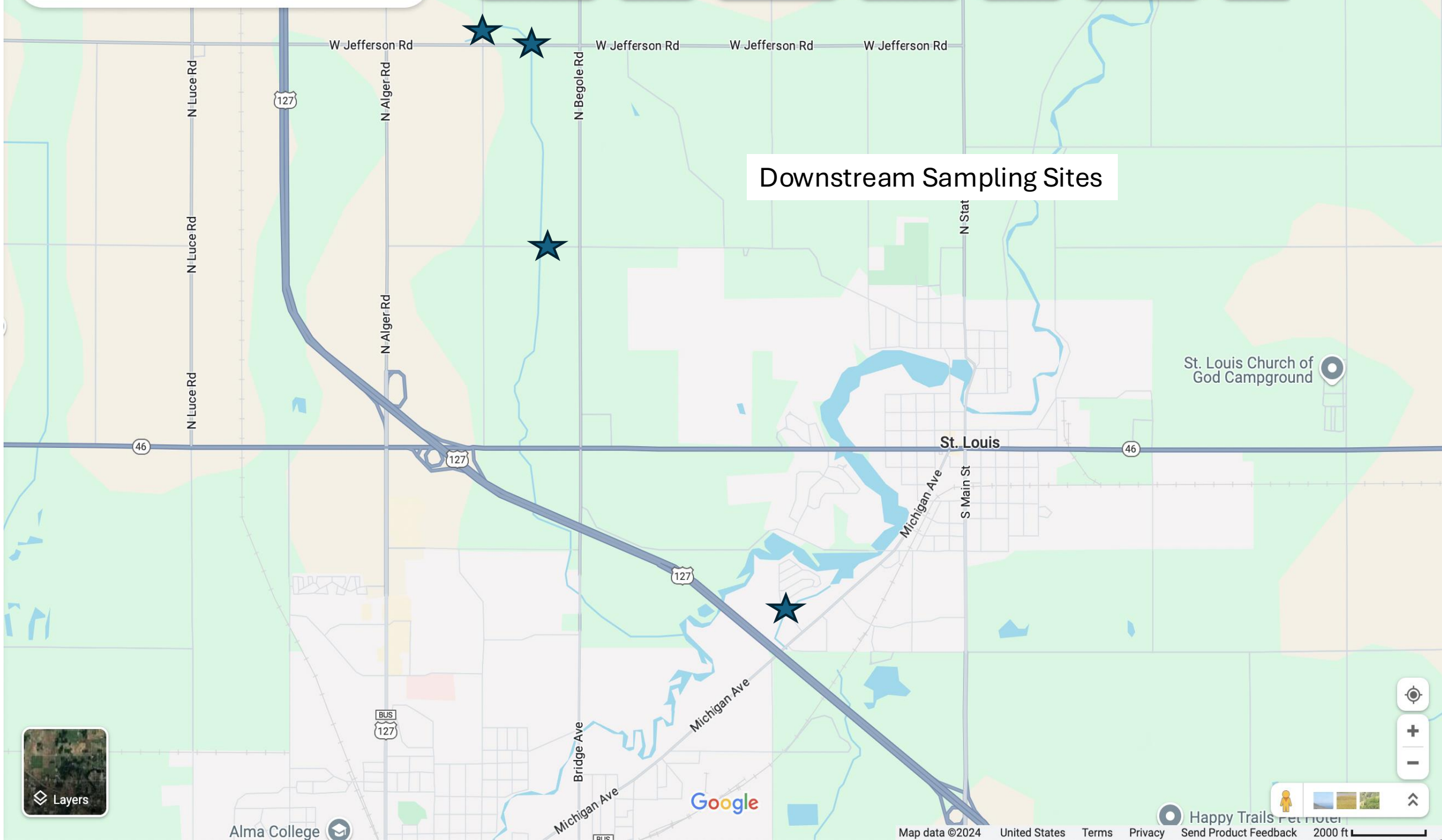
# Average Thermotolerant *E. coli* Concentrations for Mid-Section Pine River Sites - 2024



# Status of Downstream Sites



# Downstream Sampling Sites



St. Louis Church of God Campground

St. Louis

127

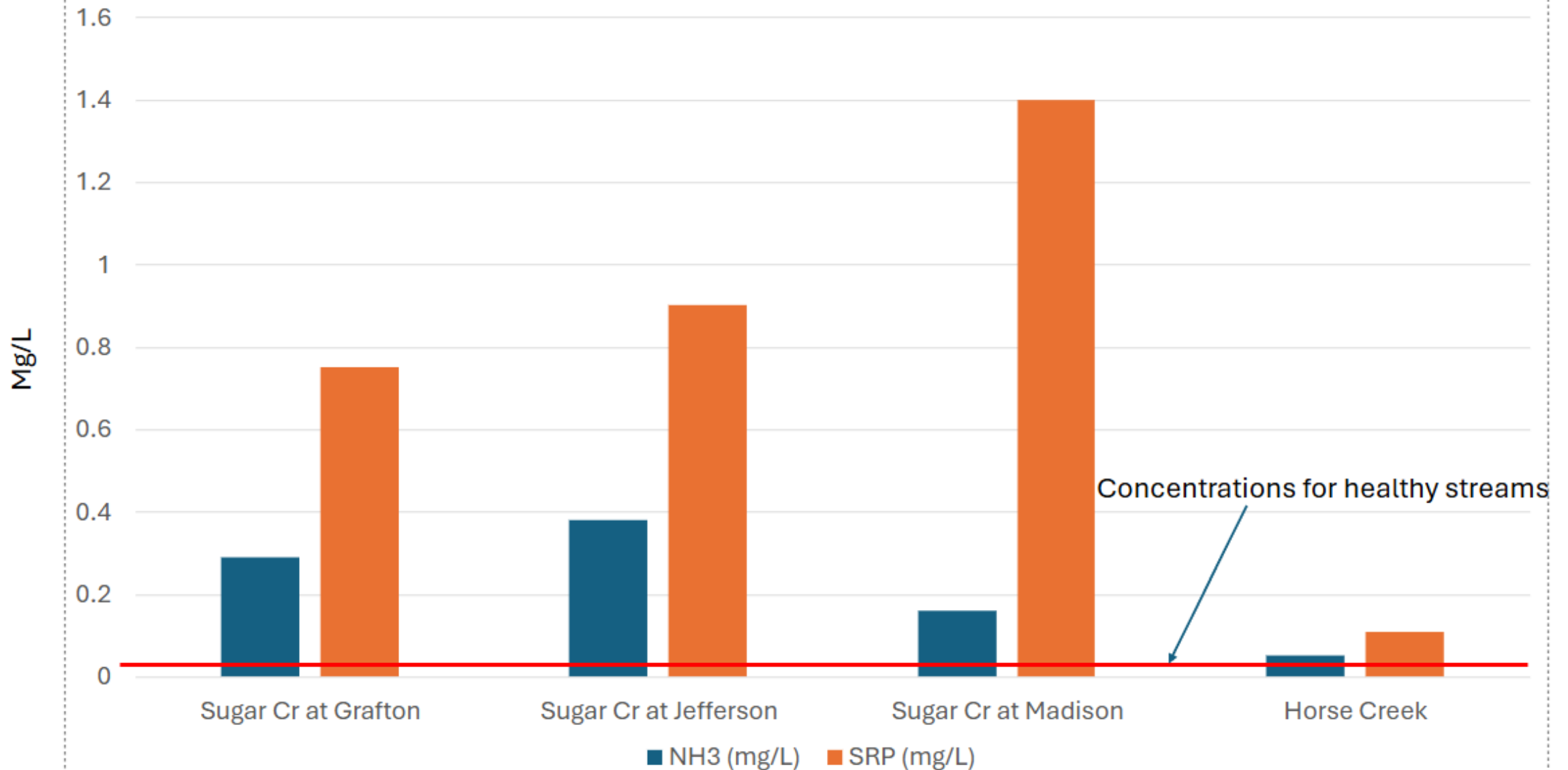
46

46

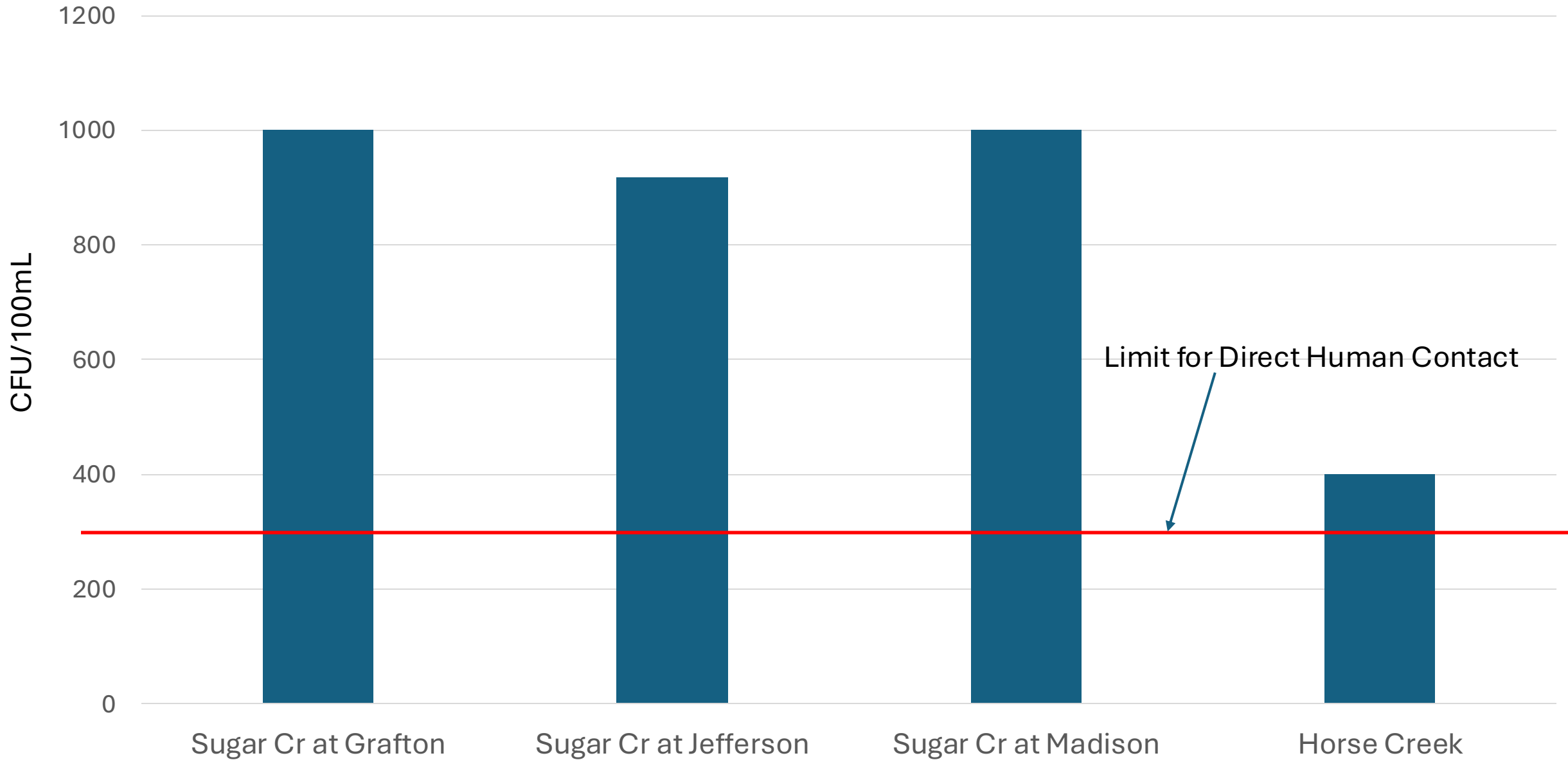
127

BUS 127

**Average Nutrient Concentrations for Sites Downstream of Alma Dam- 2024**



# Average Thermotolerant *E. coli* Concentrations Downstream of Alma Dam - 2024



Search Google Maps



🍴 Restaurants

🏨 Hotels

📷 Things to do

🏛️ Museums

🚇 Transit

🏪 Pharmacies

🏧 ATMs



erson Rd W Jefferson Rd N Luce Rd N Alger Rd N Begole Rd N State Rd

127

127

127

46

127

127

127

127

metery

nis Bicycle Shop

W Monroe Rd

NCG Cinemas - Alma

Petticoat Junction

Walmart Supercenter

Meijer

Mini Mac Mackinac Bridge Replica

Francesco's Bistro

Oak Grove Cemetery

The Blue Shamrock Pub

Subway Dollar-Genera

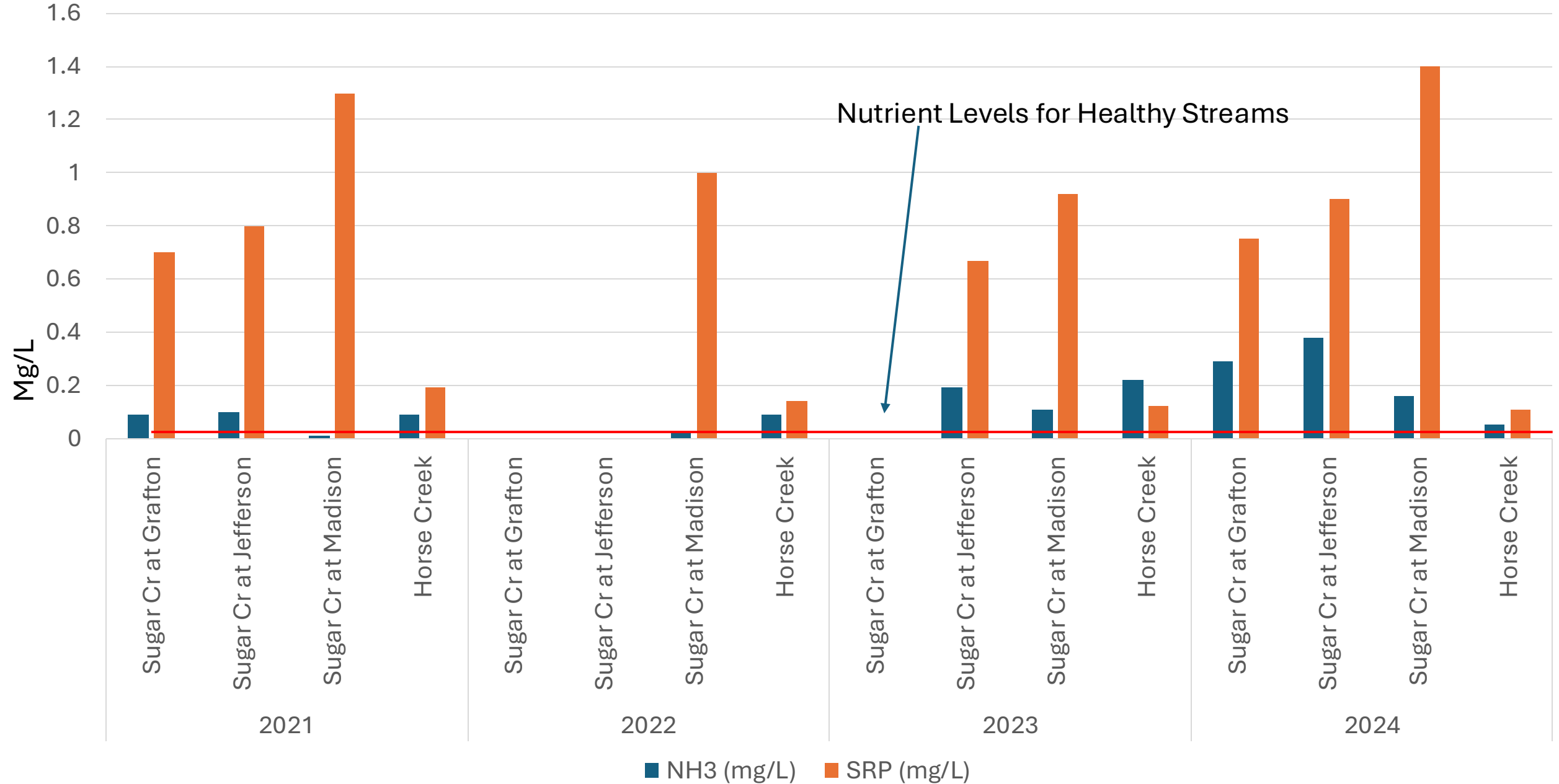
Evergreen Village



Google

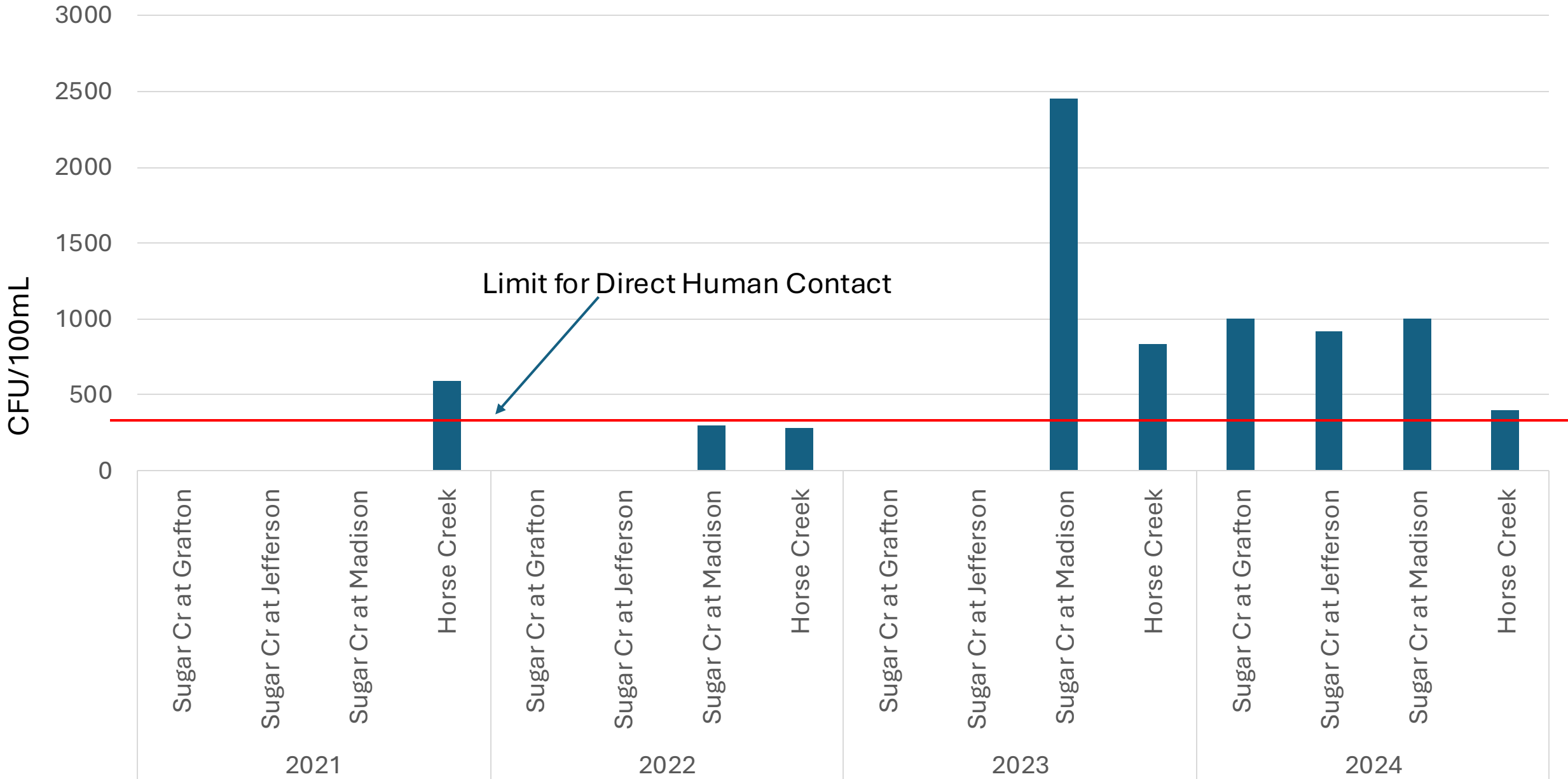


# Average Nutrient Concentrations for Sites Downstream of Alma Dam – 2021 - 2024

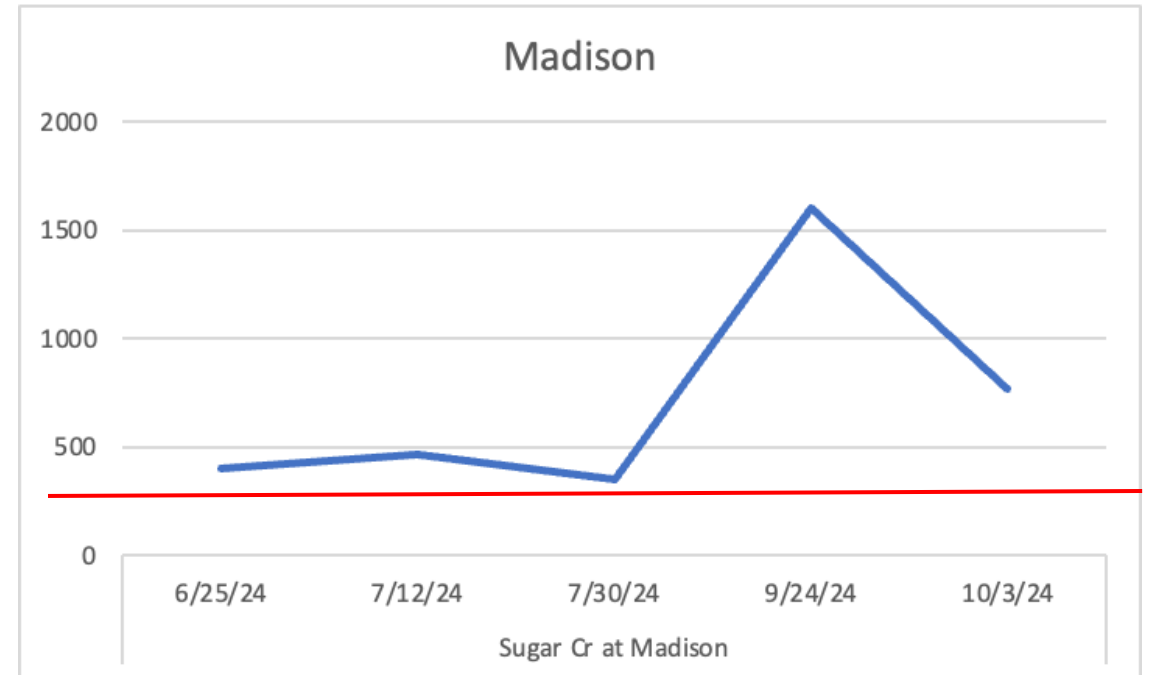
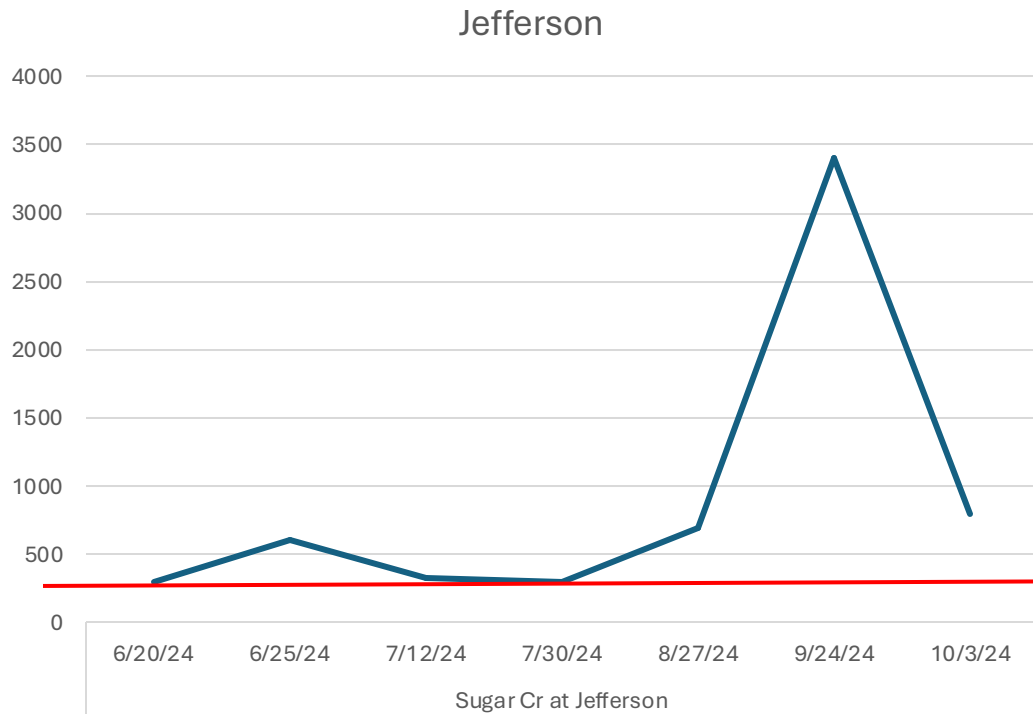
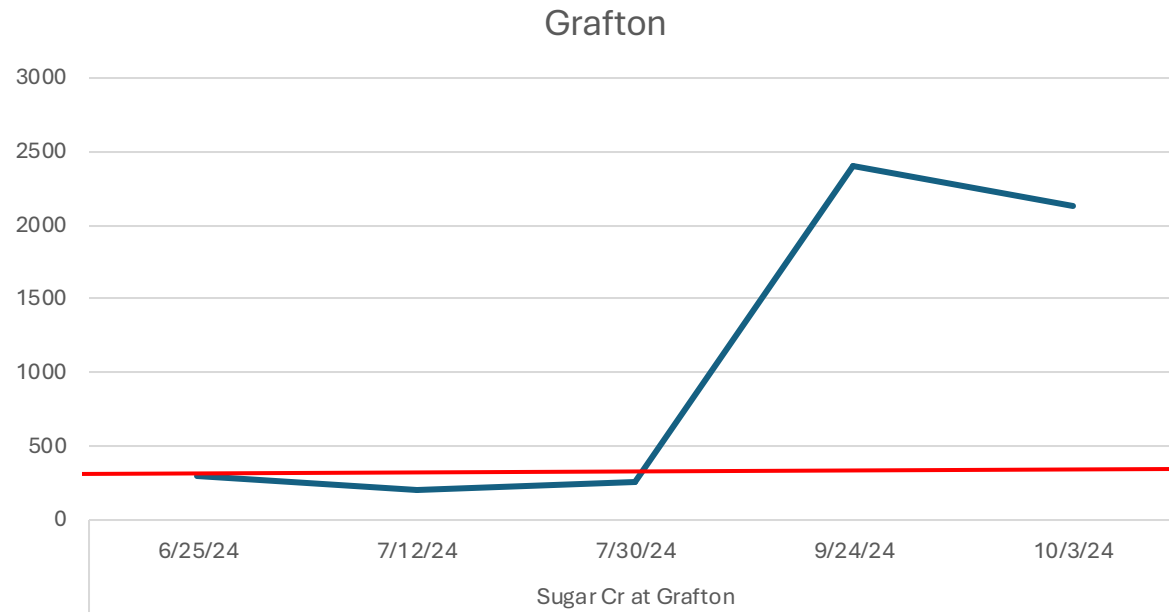




# Average Thermotolerant *E. coli* Concentrations for Pine River Sites Downstream of Alma Dam: 2021 - 2024



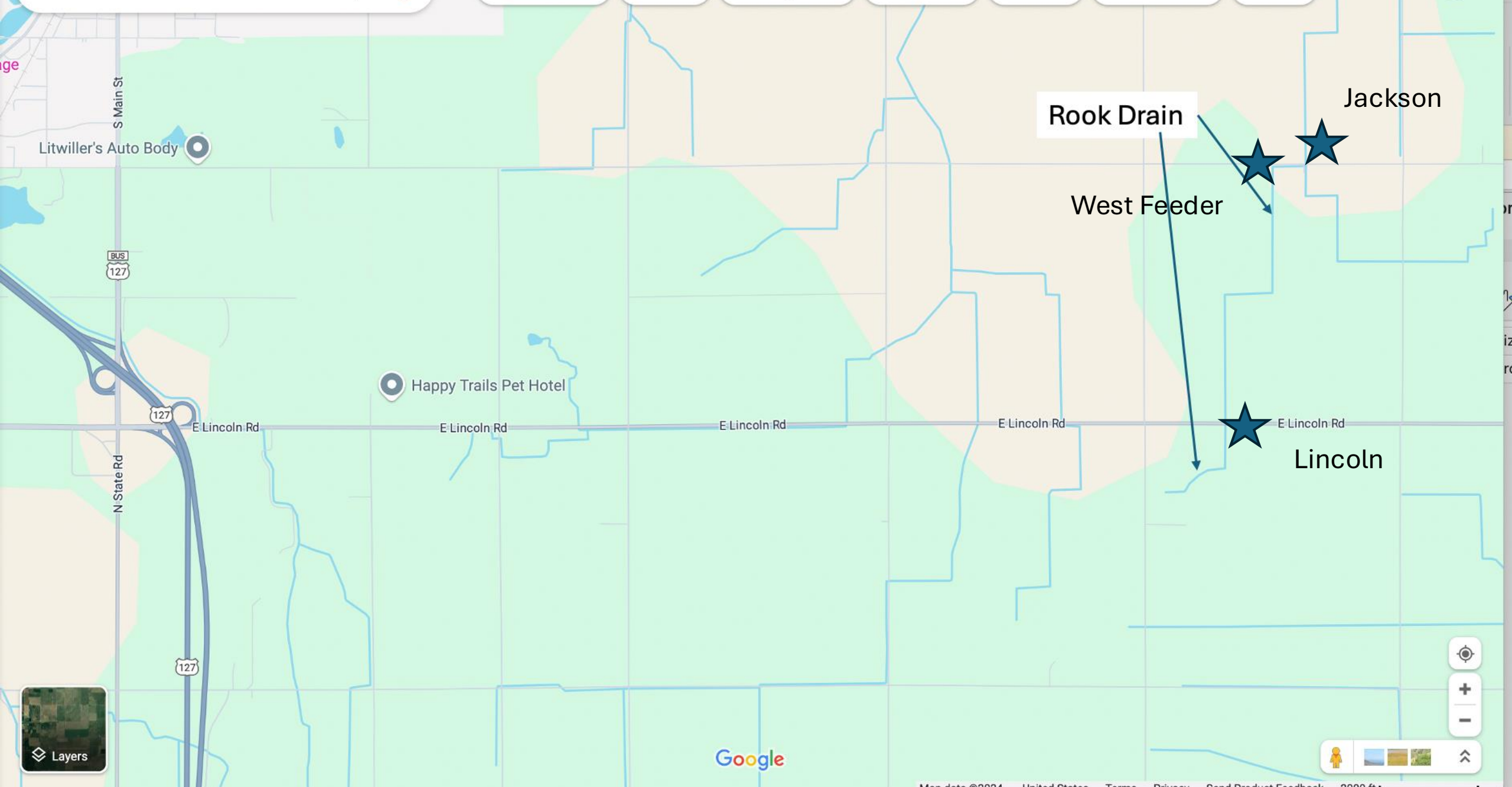
# *E. coli* Concentrations for Summer, 2024 – Sugar Creek Sites





# The Case of Rook Drain





Litwiller's Auto Body

S Main St

BUS 127

127

E Lincoln Rd

Happy Trails Pet Hotel

E Lincoln Rd

E Lincoln Rd

E Lincoln Rd

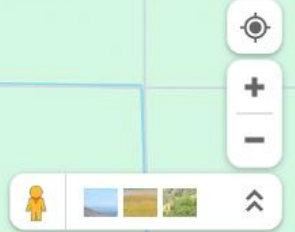
E Lincoln Rd

Lincoln

Rook Drain

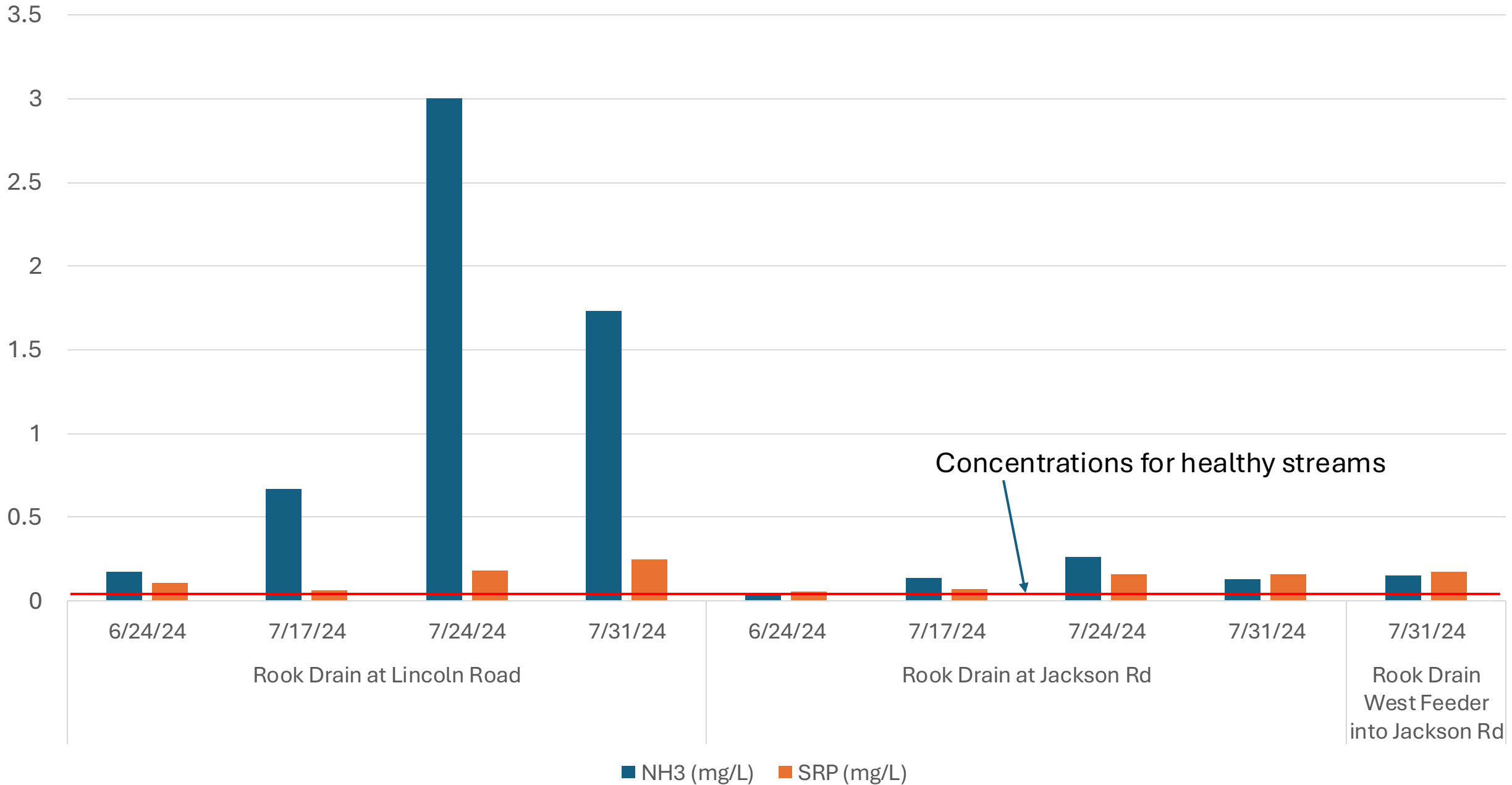
West Feeder

Jackson

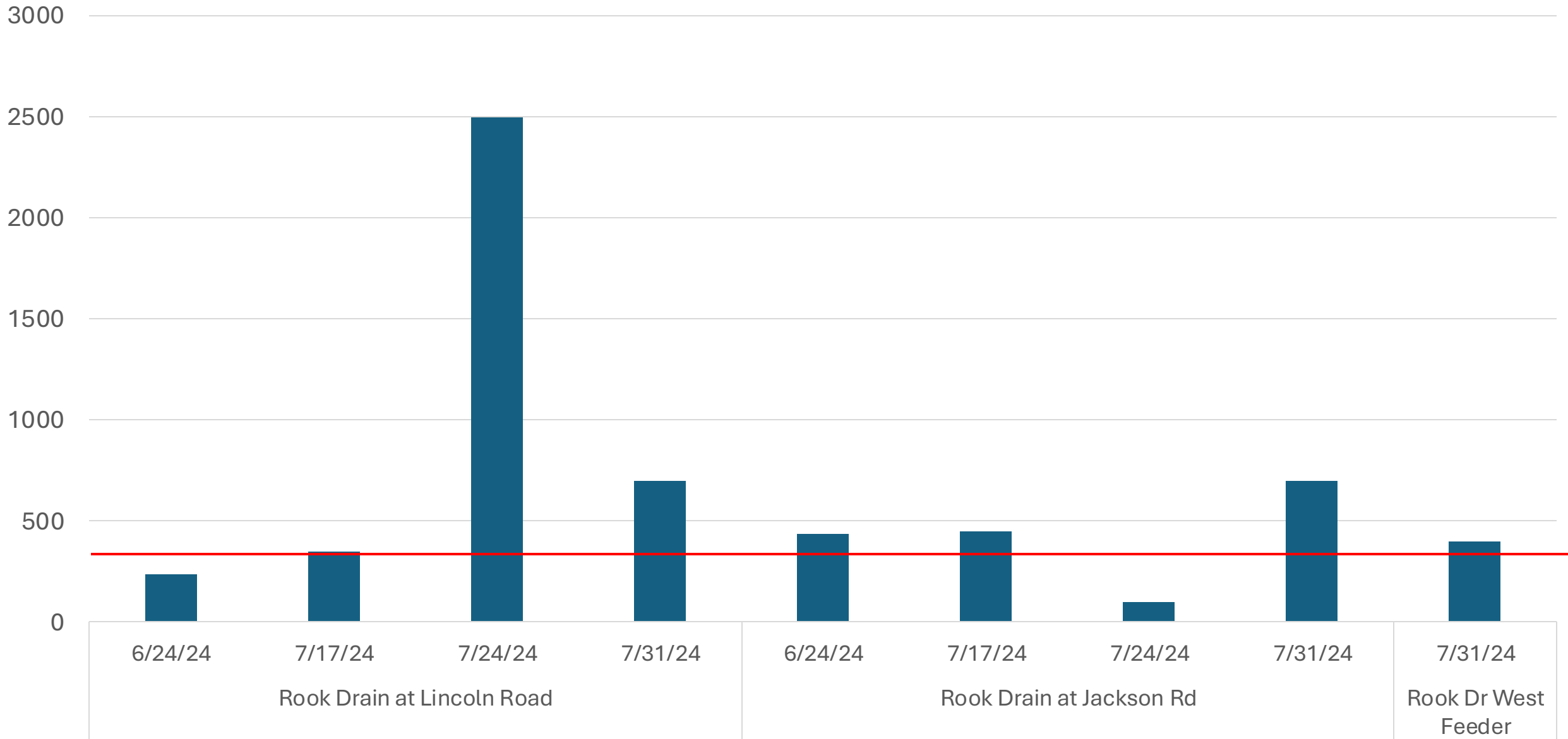




# Nutrients at Rook Drain from Headwaters to Jackson Rd, 2024



# ***E. Coli* Concentrations for Rook Drain from Headwaters to Jackson Rd, 2024**



[Map navigation controls: zoom in, zoom out, search, overview mini-map, etc.]

02-034-001-02  
\*Click for more info

Rook Drain

Start of Rook Drain

This is another site we were measuring this summer

0.6km  
0.4mi

POWERED BY  
esri

# Coming Up

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- Twenty year analysis of the watershed
- Focus on "hot spots" and risks
  - Hazard Mitigation and Planning for the County
  - Implications for Dam Removal