



Indiana's Blue-Green Algae Monitoring Program: Analyzing Cyanobacteria and Cyanotoxins in Recreational Waters

EPA CyanoSymposium

March 23, 2026



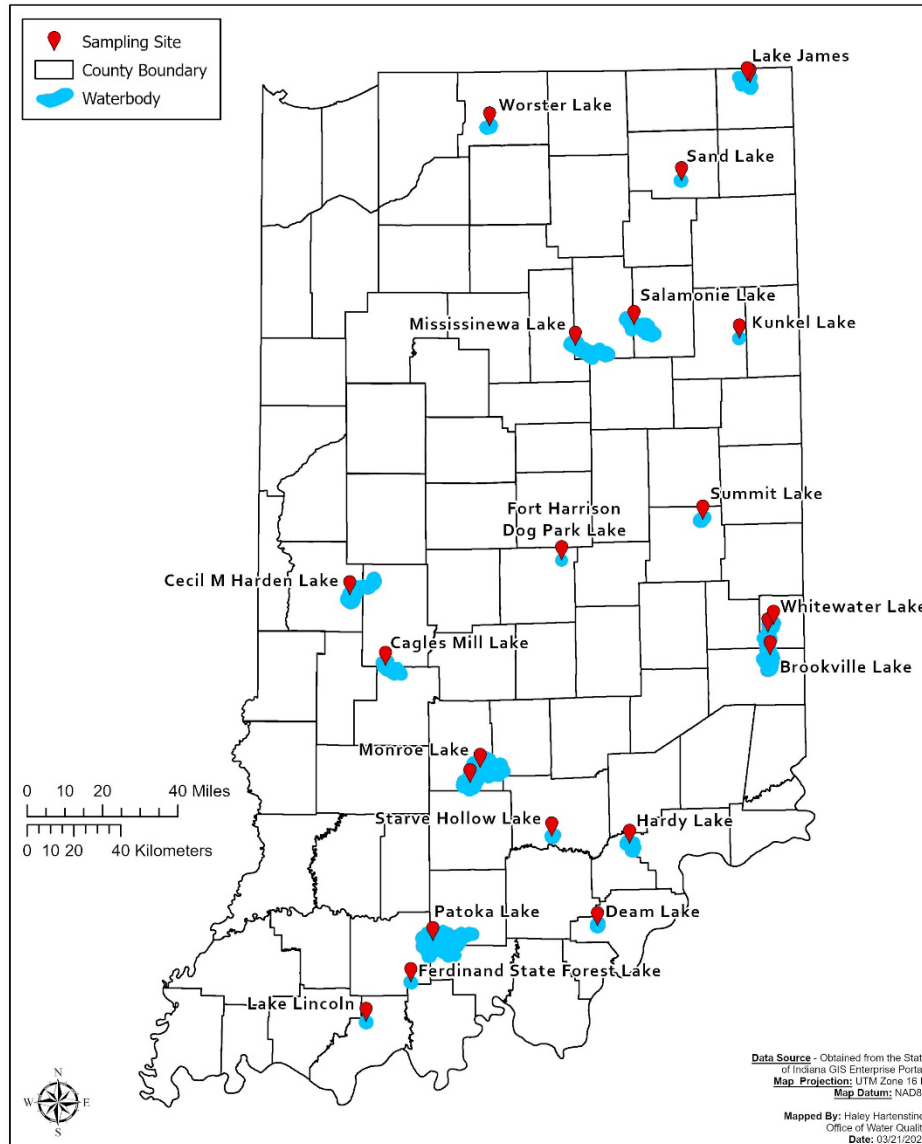
Ali Meils

Indiana Department of Environmental Management

Office of Water Quality

Watershed Assessment and Planning Branch

IDEM's Beach Monitoring Program



Who: IDEM started to monitor for cyanobacteria and cyanotoxins in 2010

Where: We sample 19 lakes, including the Dog Park Lake at Fort Harrison State Park


- 21 public swimming beaches
- DNR managed properties

When: Recreational season from May through Labor Day

What: Analyze for cell counts and 4 cyanotoxins

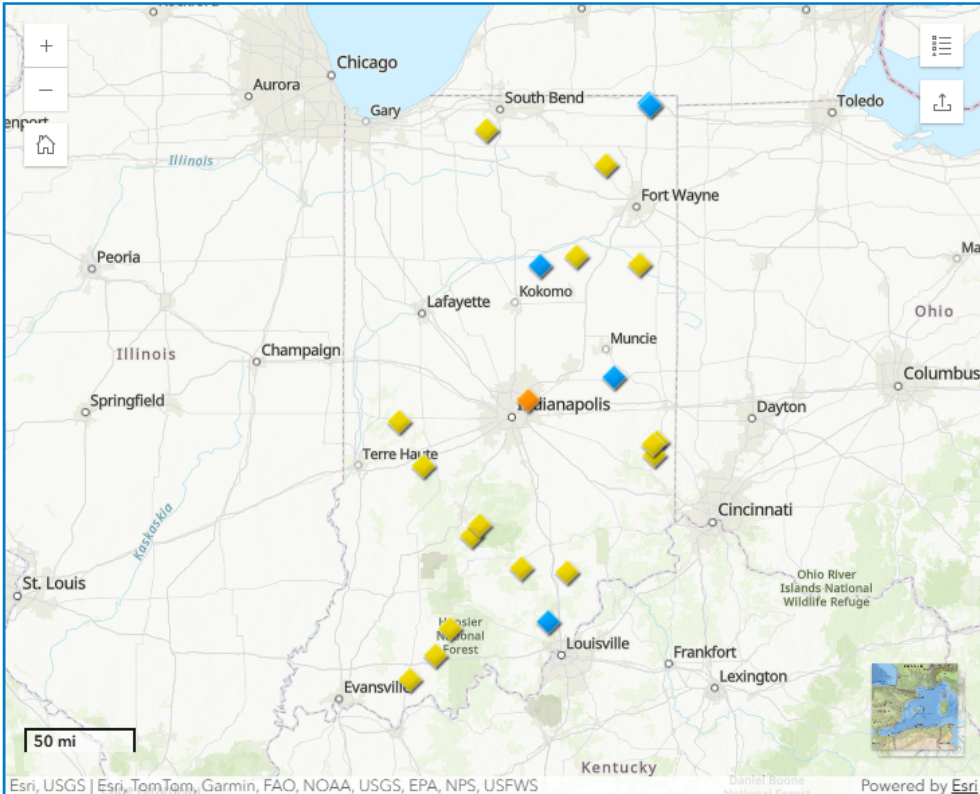
- microcystins
- cylindrospermopsin
- anatoxin-a
- saxitoxin

Blue-Green Algae Dashboard


Blue-Green Algae Dashboard

[Current Advisories](#)
[Past Advisories](#)
[External Resources](#)
[Identify an Algal Bloom](#)

Current Advisories Map >



Esri, USGS | Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, NPS, USFWS Powered by Esri

What do the Diamonds Mean:

- ◆ **Blue: Low Risk** for blue-green algae
 - Don't drink the water. Shower with soap after being in the lake.
 - Cell count and toxin concentrations are below thresholds.
 - The beach will be sampled monthly.
- ◆ **Yellow: Advisory** for blue-green algae
 - Swimming and boating permitted. In addition to cautions above, avoid contact with algae. Do not use lake water for cooking or bathing. Do not allow pets to swim in or drink water where algae are present.
 - Cell count is above 100,000 cells/ml and toxin concentrations are below thresholds.
 - The beach will be sampled biweekly.
- ◆ **Orange: Caution** for high levels of blue-green algal toxins
 - Swimming and wading are not recommended.
 - Toxin concentrations are above thresholds.
 - The beach will be sampled weekly.
- ◆ **Red: NO SWIMMING** due to high levels of blue-green algal toxins
 - Toxin concentrations are elevated above thresholds.
 - The beach will be sampled weekly.

Toxin Exposure Thresholds				
Exposure Reference Values (µg/L)	Microcystin	Cylindrospermopsin	Anatoxin-a	Saxitoxin
Human Recreation Advisory	8	6	8	0.8
Dog Recreation Advisory	0.4	0.5	–	–
Dog Recreation Prohibited	0.8	1.0	0.4	0.05

Note: Dogs are not permitted to swim at Indiana State Park beaches except for the dog park lake at Fort Harrison State Park. The dog park lake is tested by IDEM, and the dog recreation thresholds will apply.

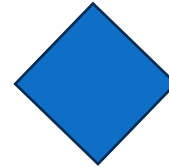
📄 Algal Toxin Test Results

🔄 IDEM Sampling Updates

Disclaimer: This map does not include beach closures due to *E. coli* contamination, please visit [Indiana State Park Alerts](#) and [BeachAlert Map](#) for *E. coli* closures. Harmful algal blooms may be present in waterbodies and not on this map. Please use discretion when swimming in Indiana waters and view our [Identify Harmful Algal Blooms](#) page.

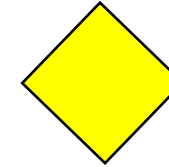


Signage at the Public Swimming Beach



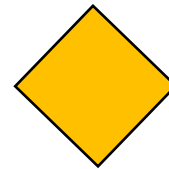
Low Risk for blue-green algae and E. coli

- Don't drink the water
- Shower after being in the lake



Advisory for blue-green algae

- Swimming and boating permitted
- Avoid contact with algae
- Shower with soapy water after swimming
- Do not use lake water for cooking or bathing
- Do not allow pets to swim in or drink water where algae are present
- E. coli levels are currently within normal limits



No Swimming due to high levels of E. coli or blue-green algal toxins

- Swimming and wading are not recommended
- E. coli levels are currently within normal limits

Human Recreation Advisory Thresholds

Exposure Reference Values (µg/l)	Microcystin	Cylindrospermopsin	Anatoxin-a	Saxitoxin
Human Recreation Advisory	8	6	8	0.8

Threshold Value References

Microcystin: U.S. EPA 2019

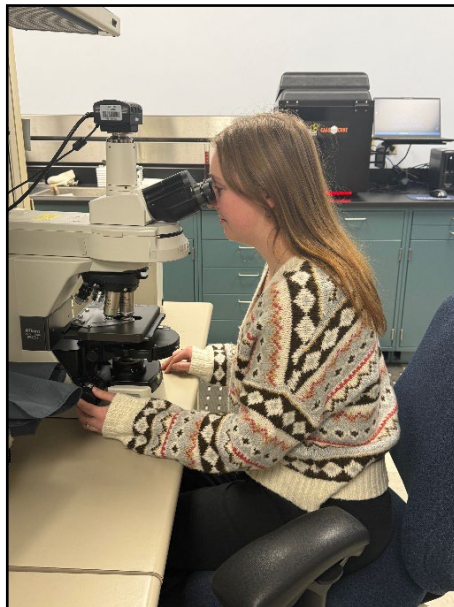
Cylindrospermopsin: WHO 2021

Anatoxin-a: Ohio EPA

Saxitoxin: Ohio EPA

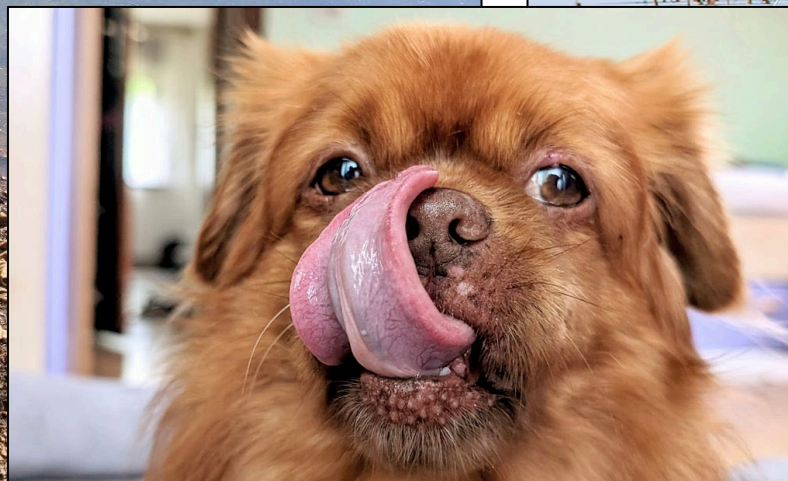
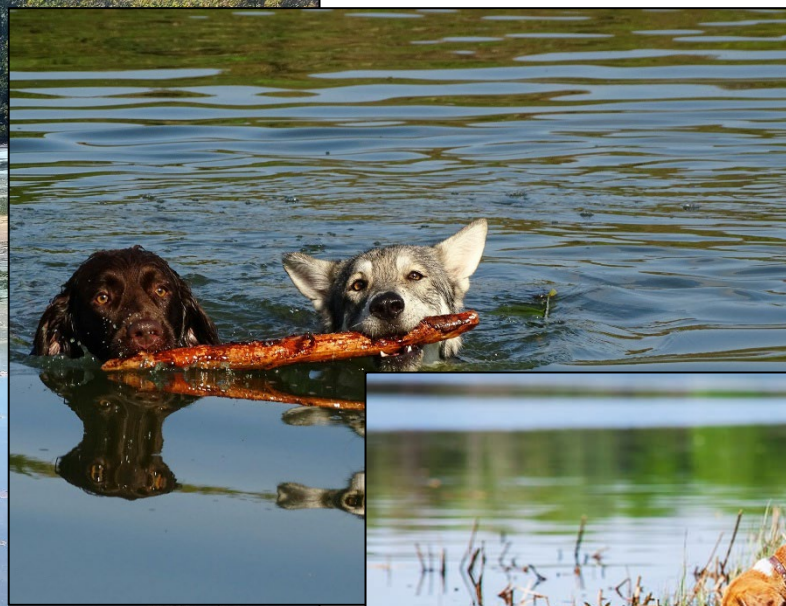


Beach Monitoring Team





Cyanotoxins at the Dog Park Lake



Dog Park Lake at Fort Harrison State Park

- Sampling started in 2017
- Grab samples
- Sampling schedule
 - Before it is opened for the season
 - Monthly from May through June
 - Biweekly from July 1st through October 31st or until the lake is closed
- Analyzed for all 4 toxins and water column cell counts



Dog Recreation Advisory Thresholds

Exposure Reference Values (µg/l)	Microcystin	Cylindrospermopsin	Anatoxin-a	Saxitoxin
Dog Recreation Advisory	0.4	0.5	–	–
Dog Recreation Prohibited	0.8	1.0	0.4	0.05

The reporting limits for anatoxin-a and saxitoxin are the same as the respective closure thresholds.

Threshold Value References

Microcystin: CA Caution Trigger Level

Cylindrospermopsin: CA Caution Trigger Level

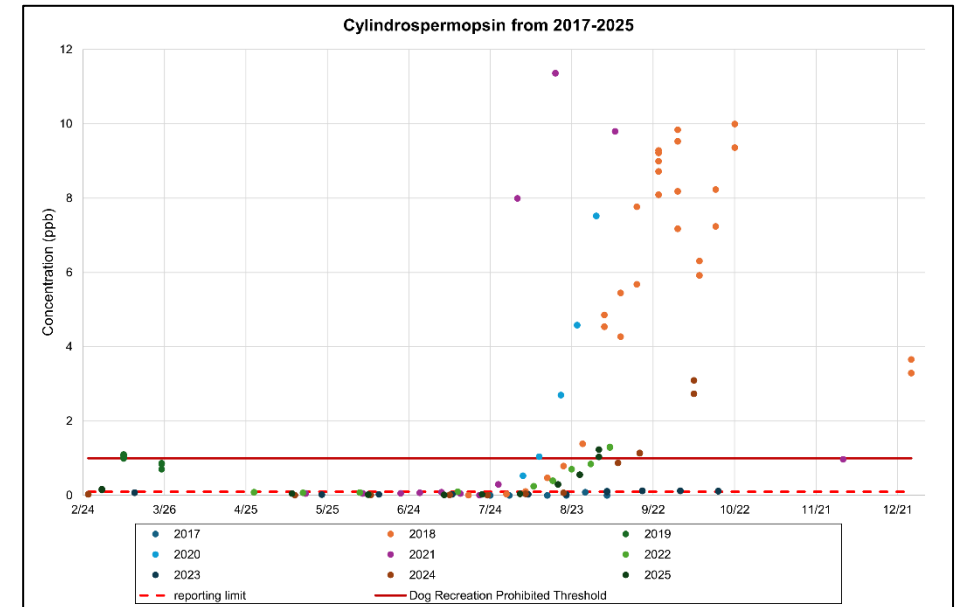
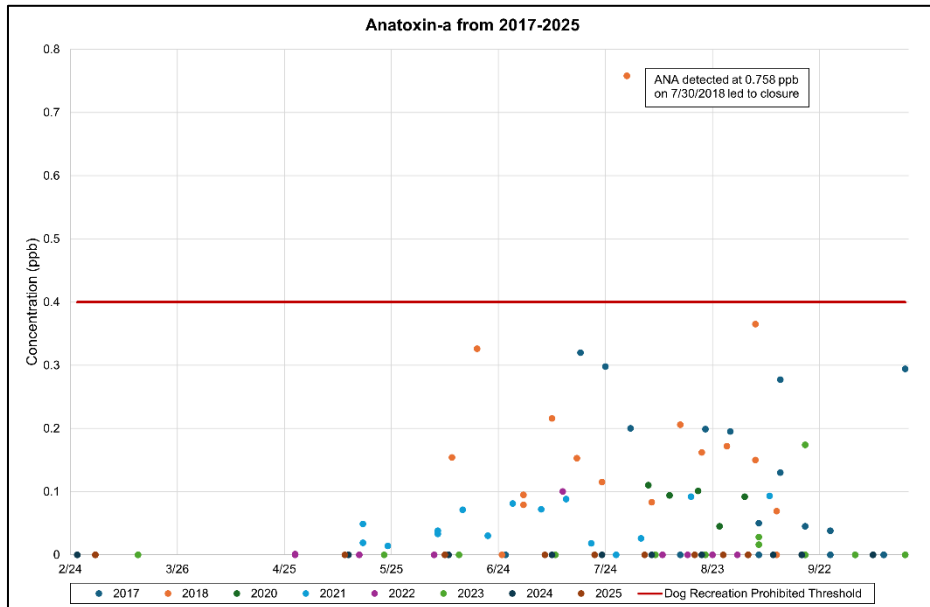
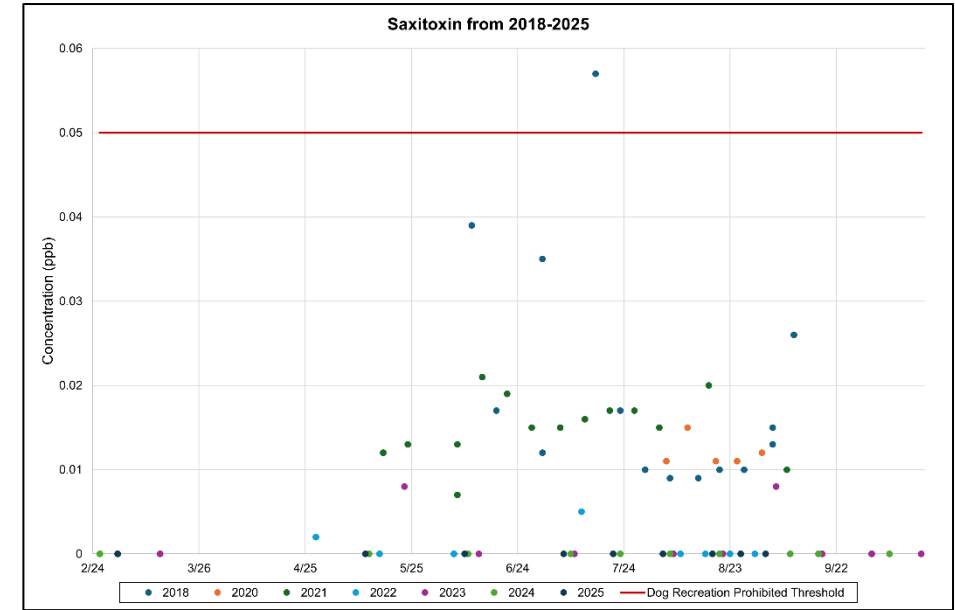
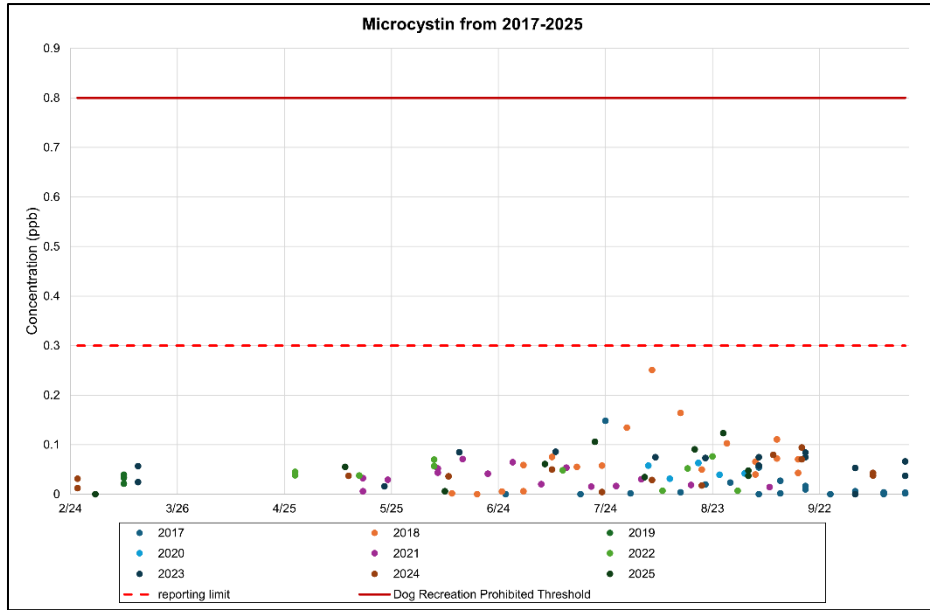
Anatoxin-a: Oregon

Saxitoxin: Reporting limit



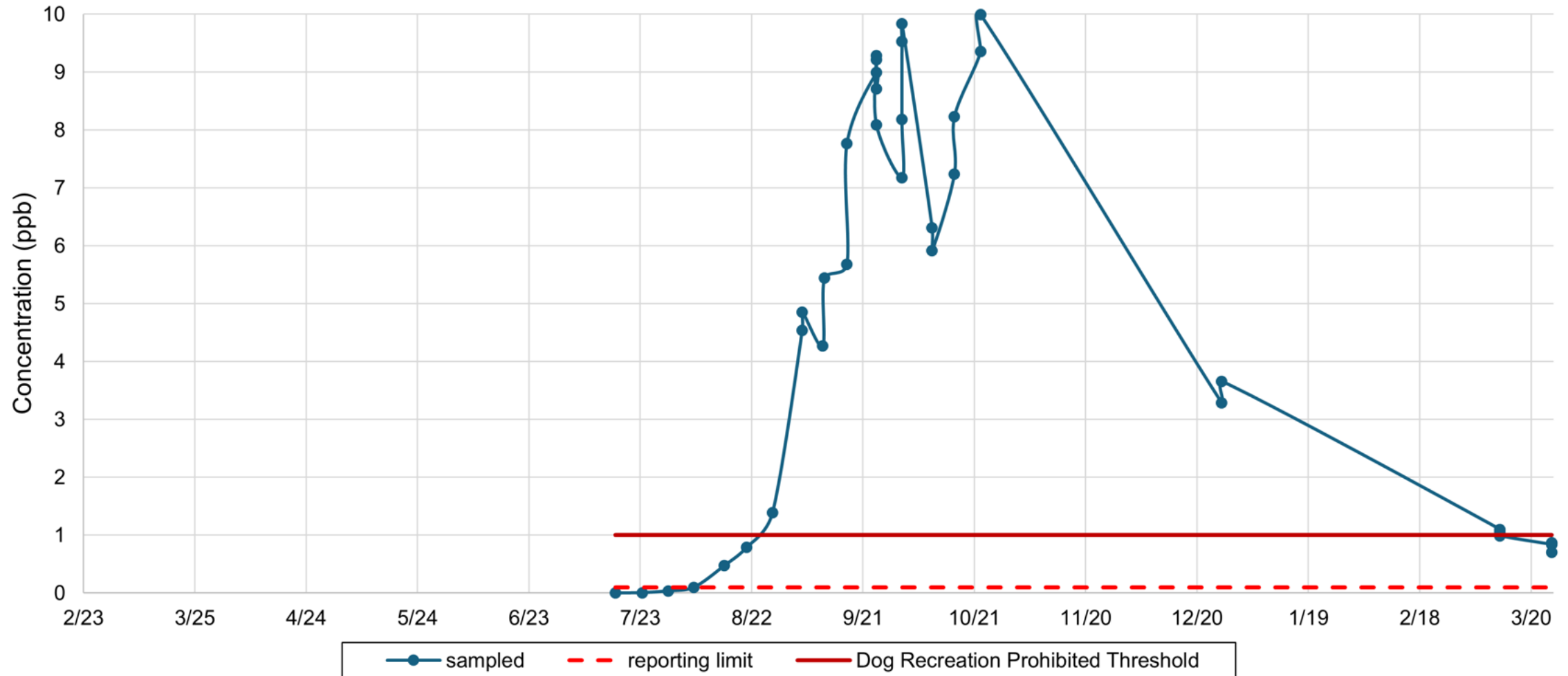


Cyanotoxin Results 2017 - 2025

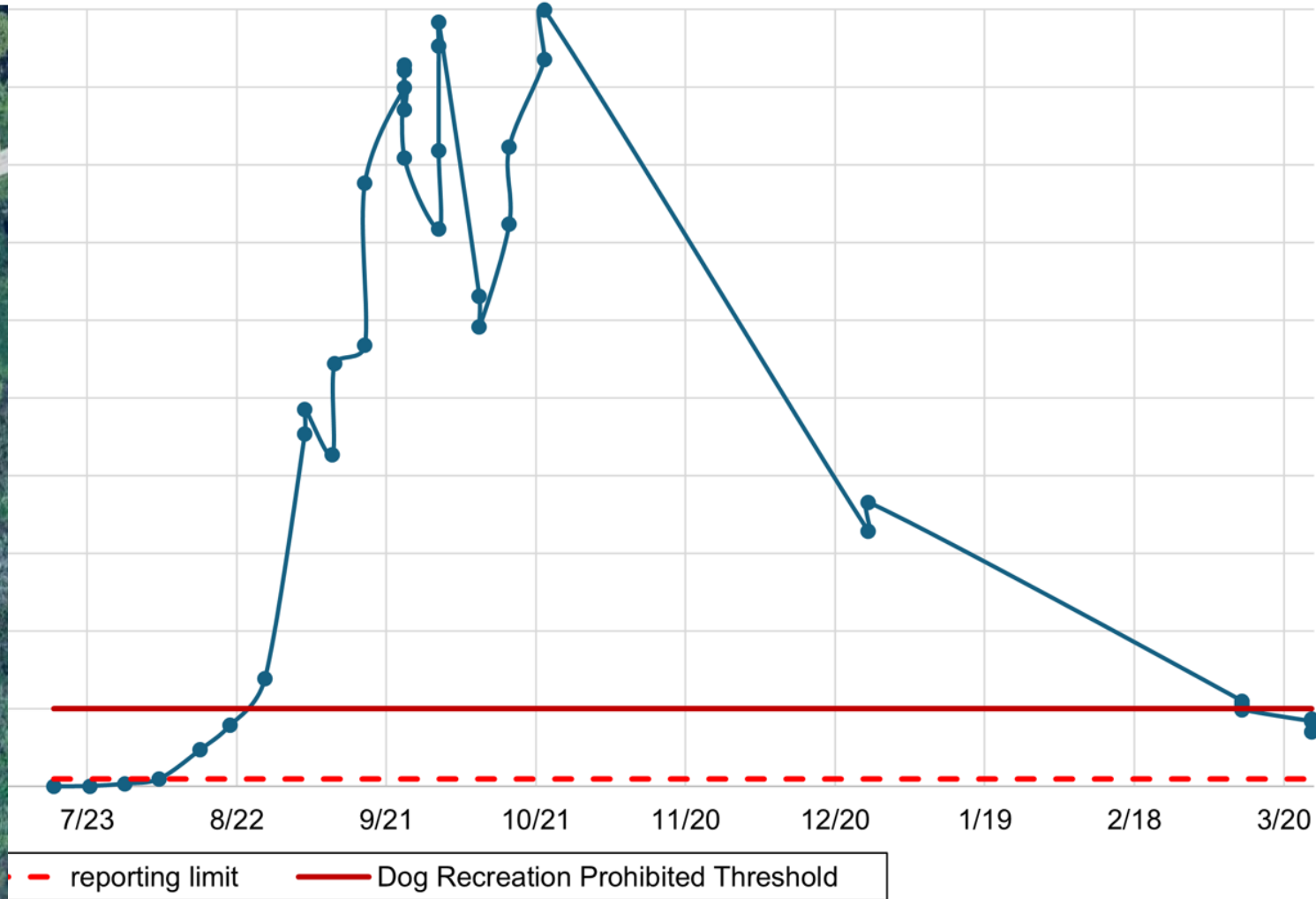
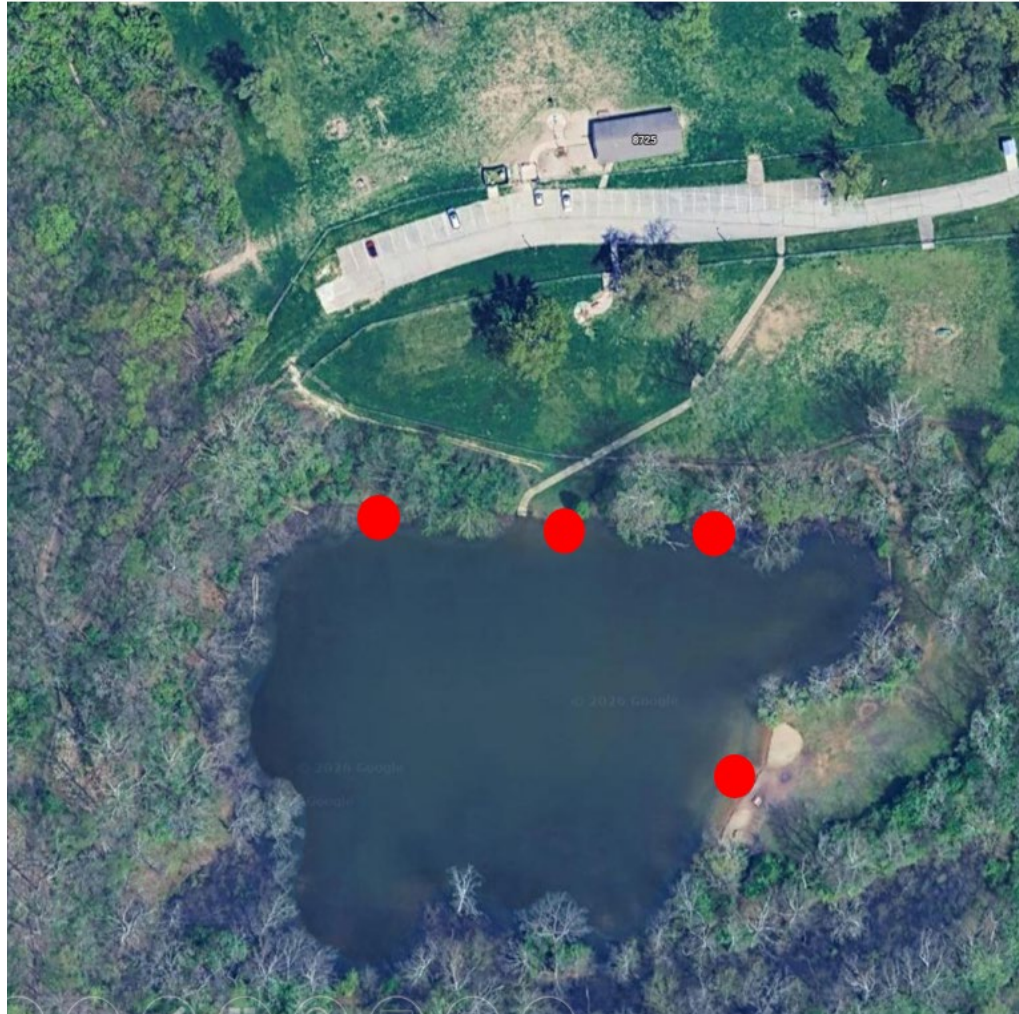




Dog Park Lake 2018



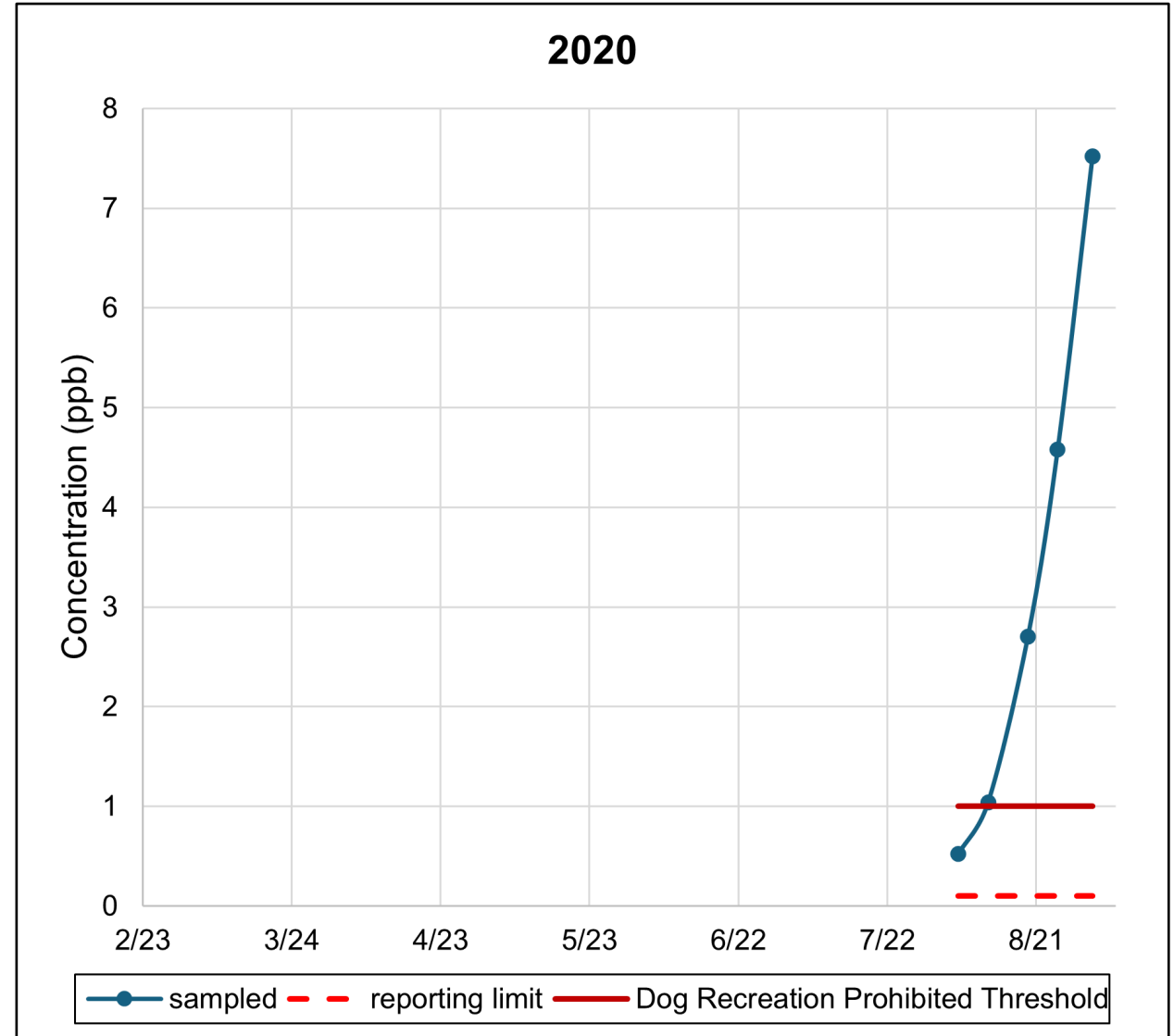
Dog Park Lake 2018





Dog Park Lake 2020

- Algae identification of water column samples beginning in May
- Cyanotoxin testing for cylindrospermopsin began in July
- Beach closure in August

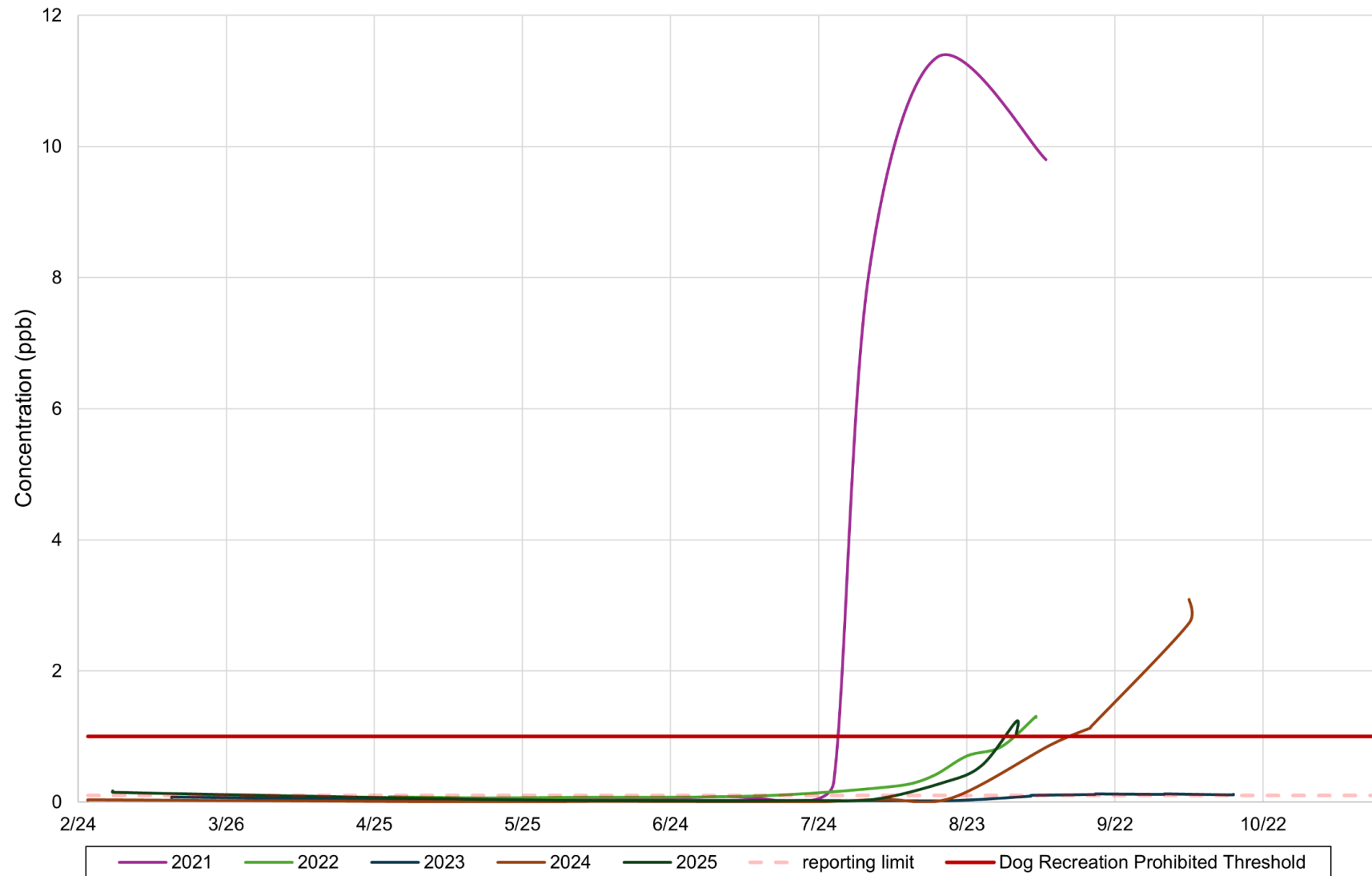


Dog Park Lake 2020





Dog Park Lake 2021 - 2025







For More Information



Ali Meils

Watershed Assessment and Planning Branch

IDEM – Office of Water Quality

Ameils@idem.IN.gov

(317) 308-3204

(800) 451-6027 (toll free within Indiana)