



INDIAN LAKE, CUBA, MO

FOOD WEB BIODIVERSITY REPORT – MAY 2024

WHAT WE MEASURE AND WHY IT MATTERS:

1. **FOOD WEB BIODIVERSITY:** We want to see good biodiversity and ensure HABs, or cyanobacteria is small as a percentage of the total. HABs are not a good food source for fish, crustatians or zooplankton and can make fish populations smaller and weaker.
2. **GOOD GREEN ALGAE VERSUS HABs:** We want the good green algae to out-complete and crowd out the HABs from flourishing. Good green algae is important to promote a healthy food web.

OUR TIMELINE:

It is important to note that 2023 was the first year that we were able to run the system continuously for an entire year and that clearly is driving positive results. Here are highlights from the timeline:

OCT 2021	-	RADOR System Installed
WINTER 2021/2022	-	System Shutdown for RLS Water Chemistry Analysis
APR 2022	-	RADOR System Turned Back On
WINTER 2022/2023	-	System Shutdown due to Cut Airlines
SPRING 2023	-	RADOR System Repaired and Turned Back On

Having the system run continuously for 12 months drove positive results in the spring of 2024.

RESULTS

1. FOOD WEB DIVERSITY:

In 2021, 83% of the taxa of phytoplankton, or Food Web, were HABs which is high and not good for the ecosystem. By 2024, we decreased HABs as a percent of the total down to 14% which is exceptional!

Food Web Diversity

Year	Total Species	Non-HAB Species (Good)	HABs (Bad)	HABs as a % of the Total (Lower is Better)
May 2021	6	1	5	83%
May 2022	10	8	2	20%
May 2023	19	14	4	21%
May 2024	28	23	4	14%

KEY FINDINGS:

1) HABs as a % of the Total Food Web Decreased by almost 70%!

2) Total Species Increased Significantly!

Total Species, Good Green Algae and HABs



RESULTS

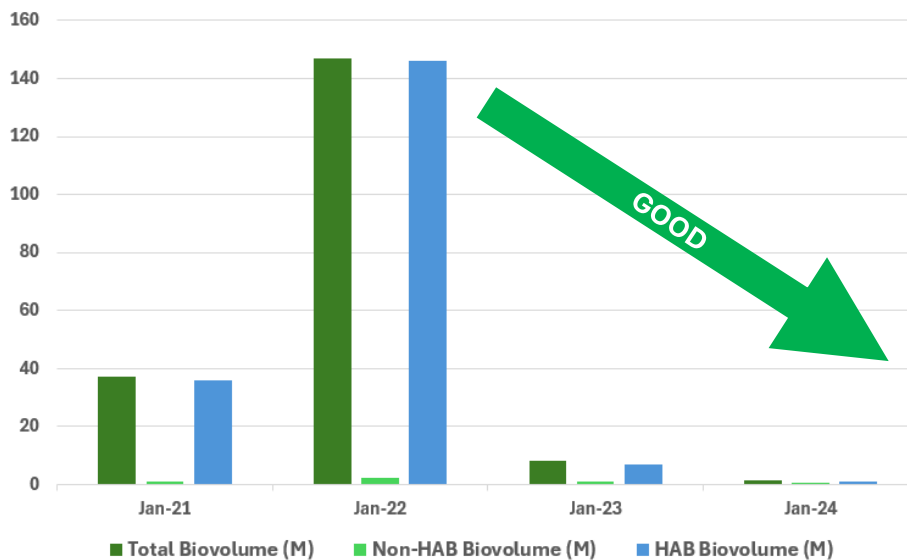
2. GOOD GREEN ALGAE VERSUS HABs

We have decreased the overall biovolume significantly from 37M in 2021 to only 1.4M in 2024 and the HABs as a % of the Total Biovolume has decreased from 97 % to 54%, respectively.

Year	Total Biovolume (M)	Non-HAB Biovolume (M)	HAB Biovolume (M)	HAB Biovolume as a % of Total Biovolume (Lower is Better)
May 2021	37	1	36	97%
May 2022	147	2.4	146	99%
May 2023	8	1	7	87%
May 2024	1.4	0.5	0.8	57%

KEY FINDINGS: 1) Total Biovolume has been significantly reduced !
 2) Water Clarity Improved from 4” to over 4 Feet!

Total Biovolume, Good Green Algae Biovolume and HABs Biovolume



SUMMARY AND PATH FORWARD

We have made fantastic progress and look to be in good shape for 2024. With the bioaugmentation products applied in May, we are hoping to see the “good green algae” maintain its dominance.