

Beaver Lake Surveys 2023

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WISCONSIN
LUTHERAN COLLEGE

Overview

- Scuba videography
- Fish surveys
- Vegetation surveys
- Limnology and water chemistry
- Zooplankton analysis



Beaver Lake 2023 Scuba
and Survey Video

Fish surveyed with fyke nets and seine nets



Fish Survey Locations



Key:

★ Fyke Net

■ Seine Net

Common musk turtle



Longnose gar

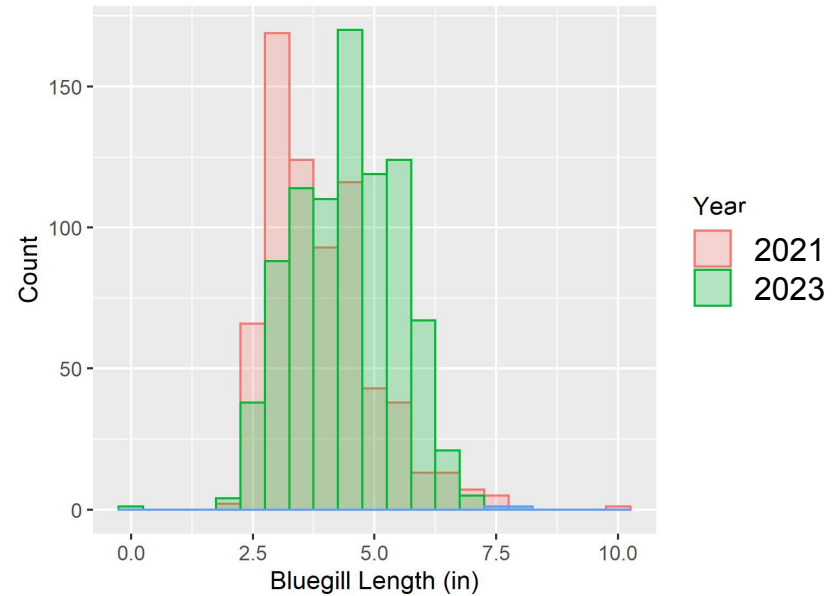


Fish community stable since 2021

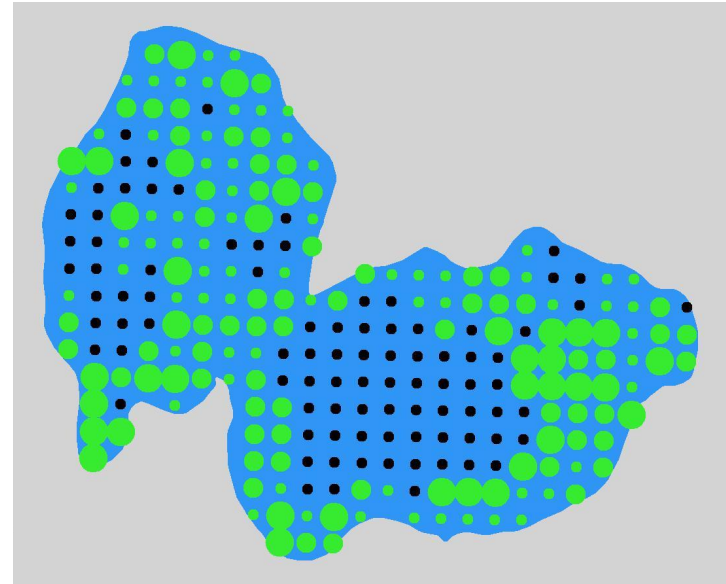
Slight bluegill size increase since 2021

Yearly Totals	2021	2022	2023
Bluegill	691	745	863
Rock Bass	15	12	26
Pumpkinseed	1	1	2
Green Sunfish	13	19	6
Longnose Gar	15	4	6
Largemouth Bass	31	11	12
Smallmouth Bass	13	13	1

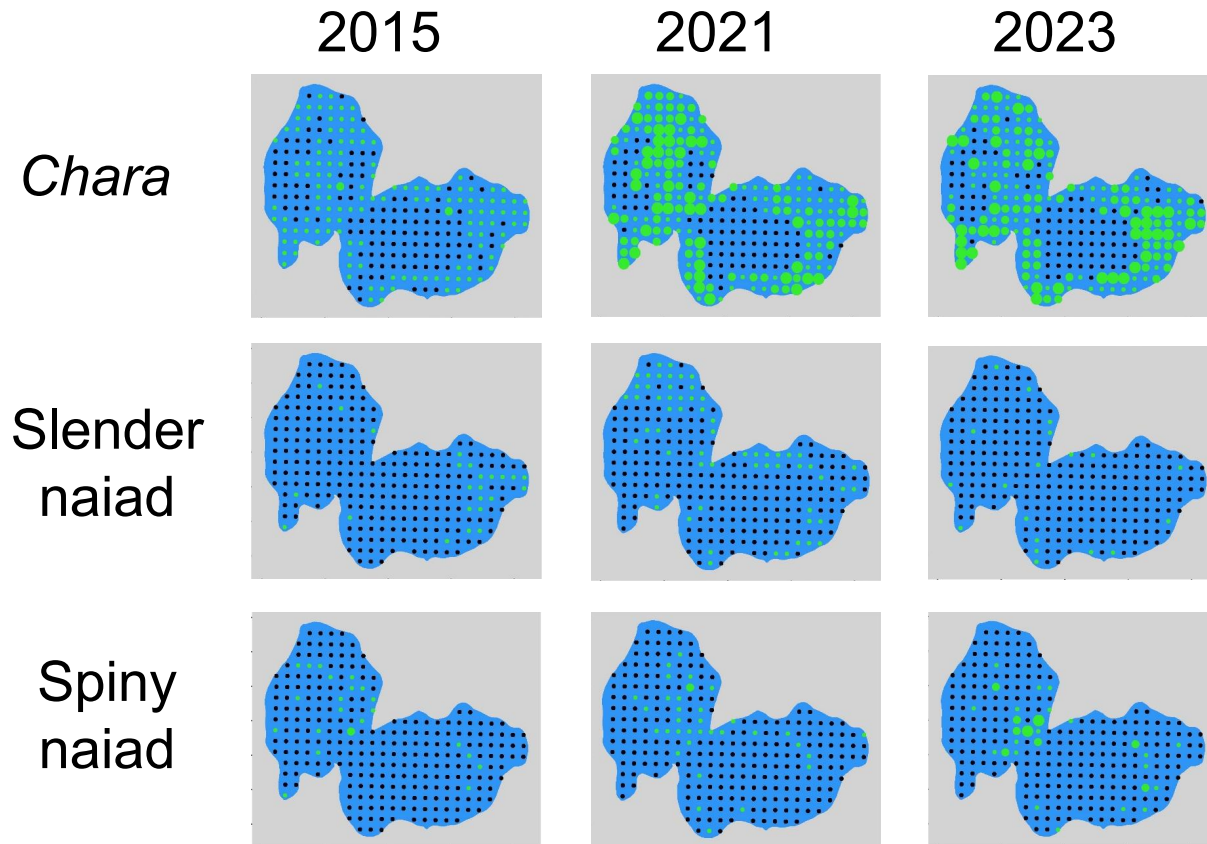
Yearly Totals	2021	2022	2023
Bluntnose Minnow	383	321	289
Brook Silverside	140	40	2
Sand Shiner	299	82	81
Rainbow Darter	1	9	5
Johnny Darter	0	0	1



Aquatic vegetation sampled at 255 points each year

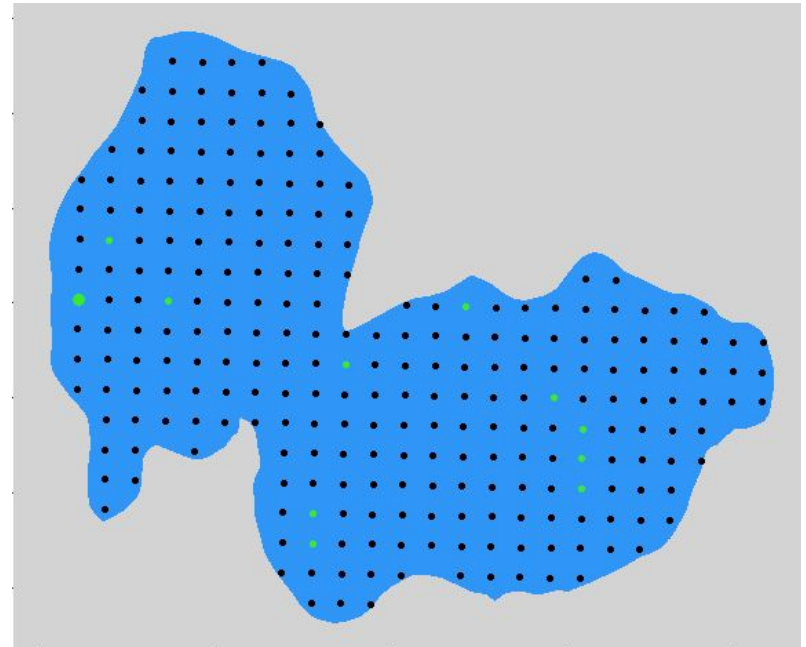


Little change in abundance of most common species since 2015



Nitella species newly recorded in deeper portions of lake

Nitella is a native genus of algae related to *Chara* and commonly inhabits deeper waters.



Compared to 2012 survey, lake plant community is less diverse

Pondweed species declined substantially

Some species not seen since 2012

- Common bladderwort
- Small bladderwort
- Thread-leaf pondweed
- Needle spikerush



Photo: Jason Hollinger
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Survey of shoreline detected 16 sites with milfoil in August.

Plants pulled by hand.



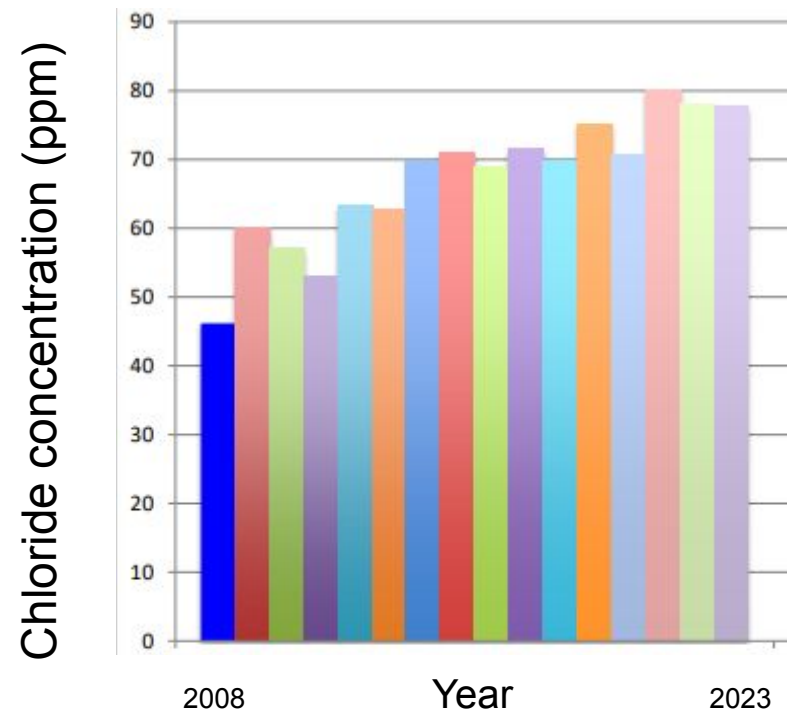
Water chemistry mostly stable; chloride rising

Nitrates and phosphates
stable; still avoid adding!

pH well buffered by marl
(calcium) in sediment

Chloride levels rising (25 –
40% in 15 years)

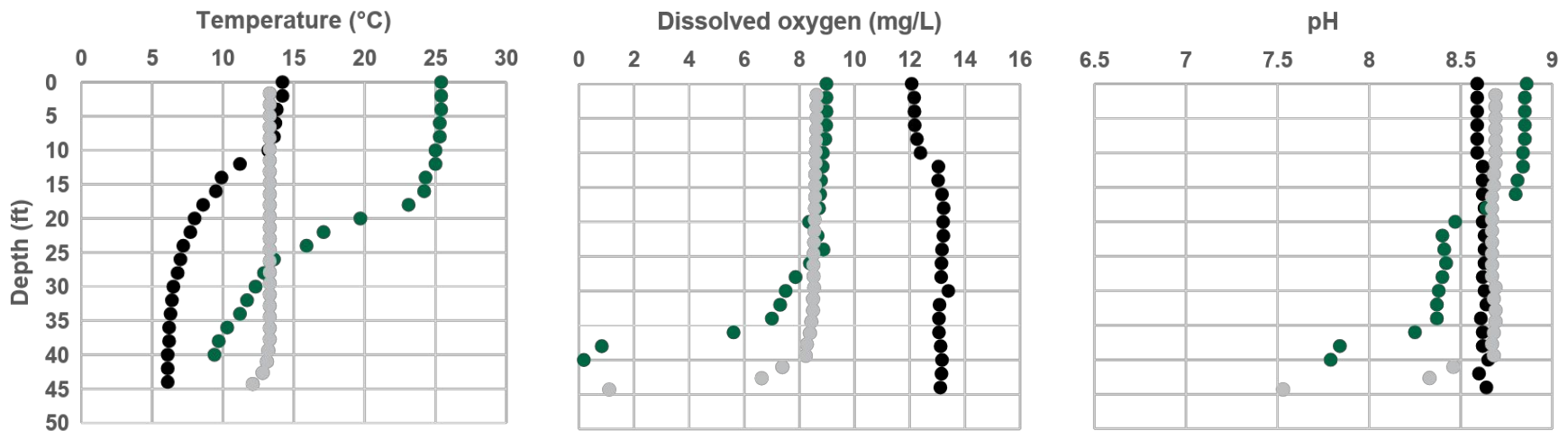
Sampling and data
curation by Mike Hipp



Limnological sampling

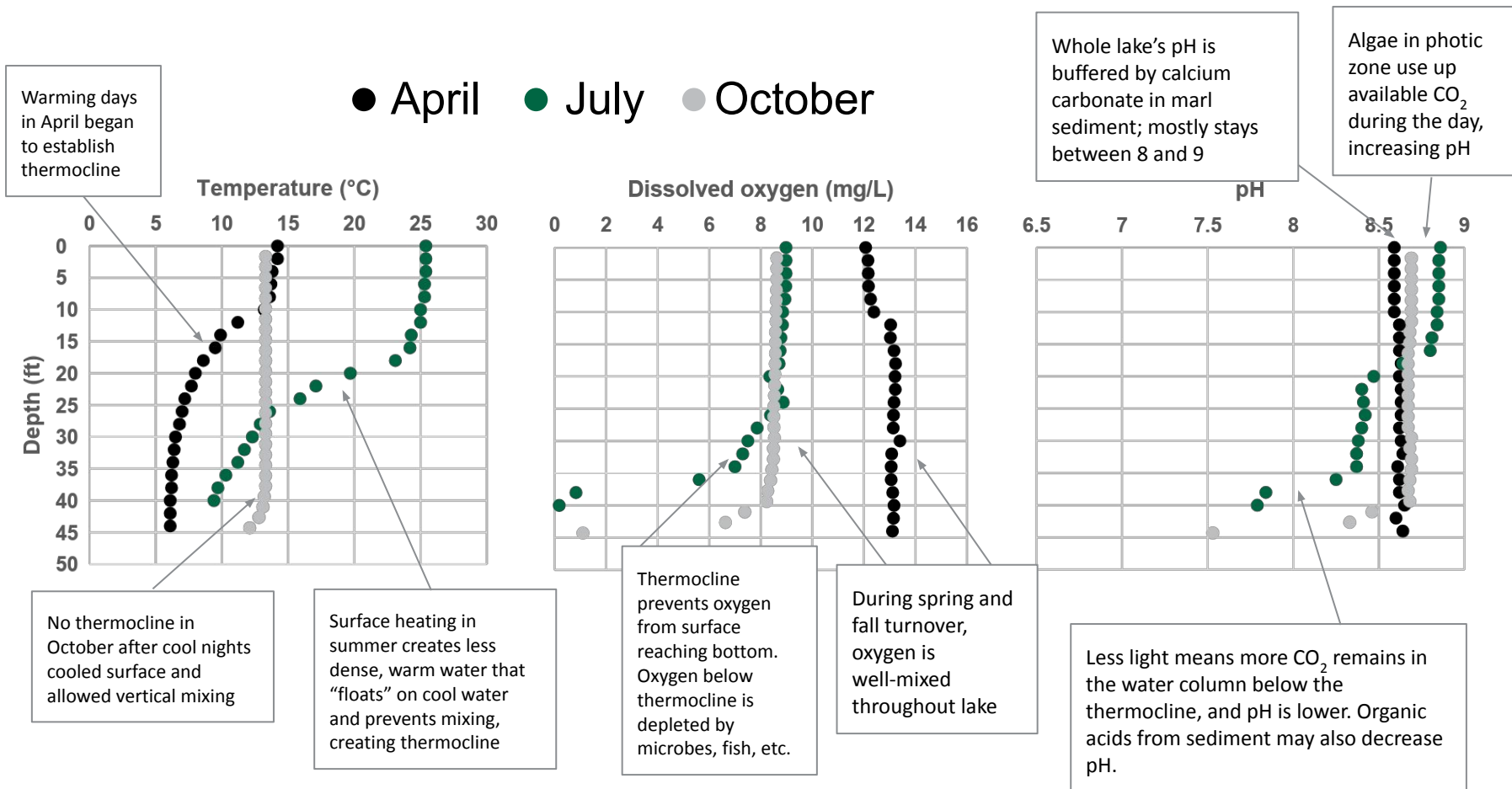
Temperature, dissolved oxygen, and pH profiles taken in spring, summer, and fall demonstrate lake stratification and mixing

● April ● July ● October



Limnological sampling

Temperature, dissolved oxygen, and pH profiles taken in spring, summer, and fall demonstrate lake stratification and mixing



Secchi disk measures water clarity

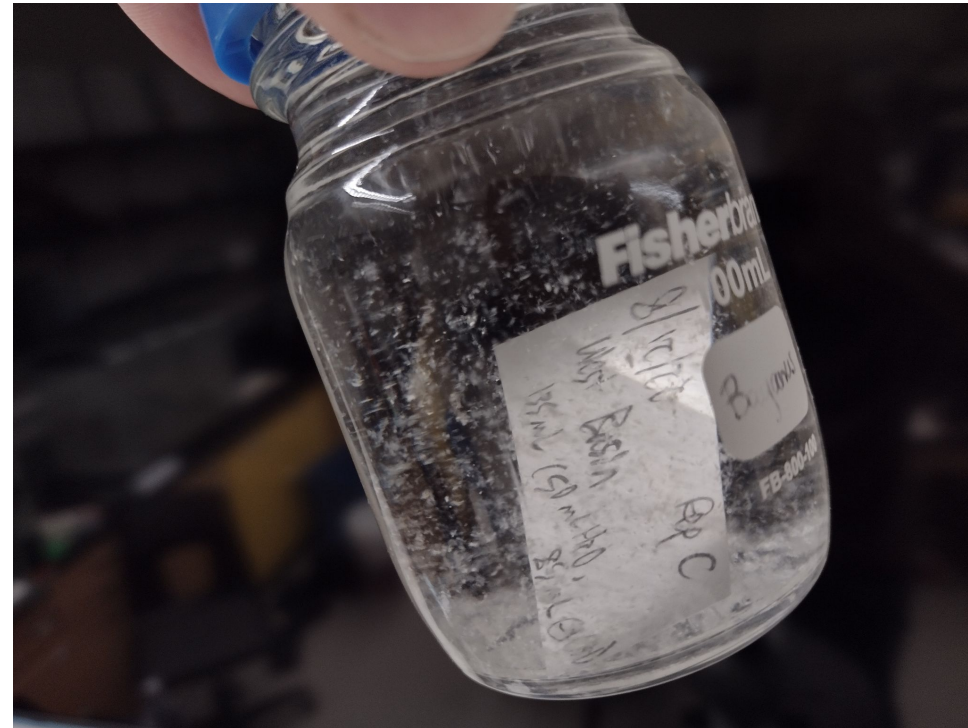
April: 23 ft

July: 8 ft

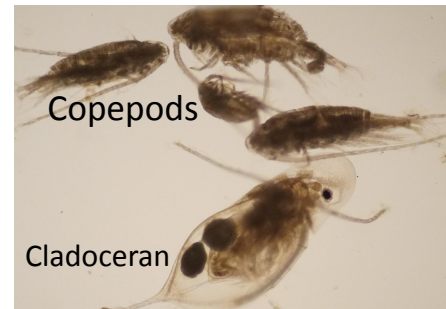
October: 15 ft



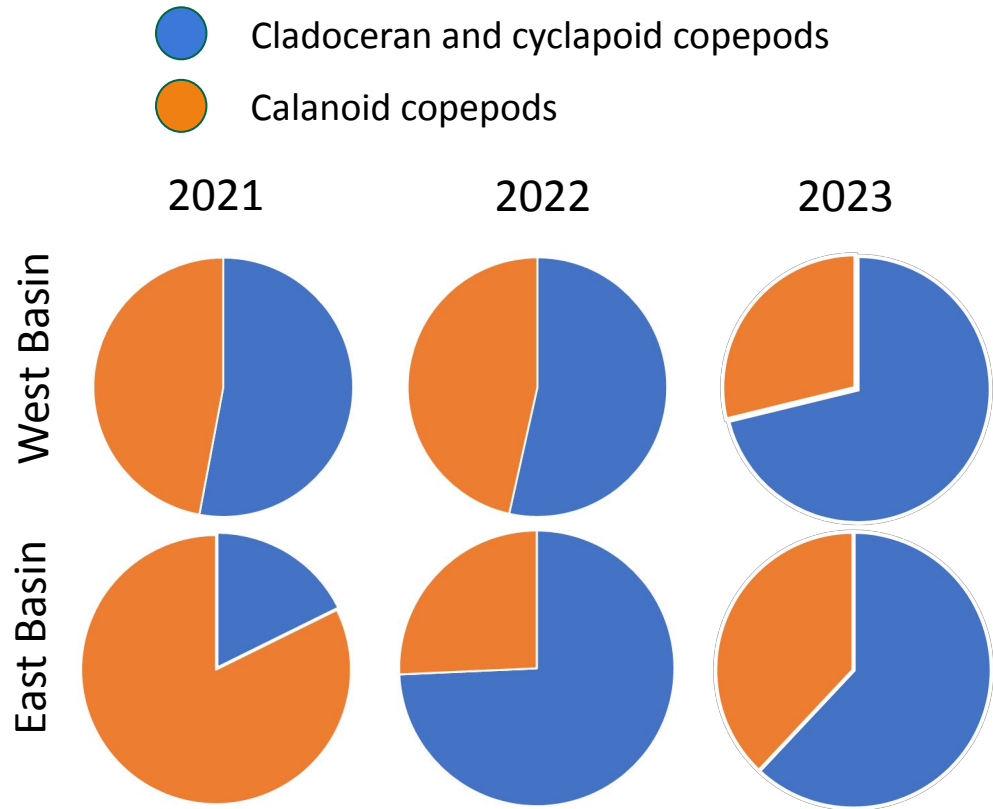
Zooplankton Sampling



Zooplankton Analysis



High proportion of calanoid copepods (orange) correlates with lower nutrient levels.



How can you ensure Beaver Lake stays healthy?

Avoid large wakes

Less is more

- Salt
- Fertilizer

Natural shorelines



Information on developing a natural shoreline can be found at this QR code or on the blfriends.org website