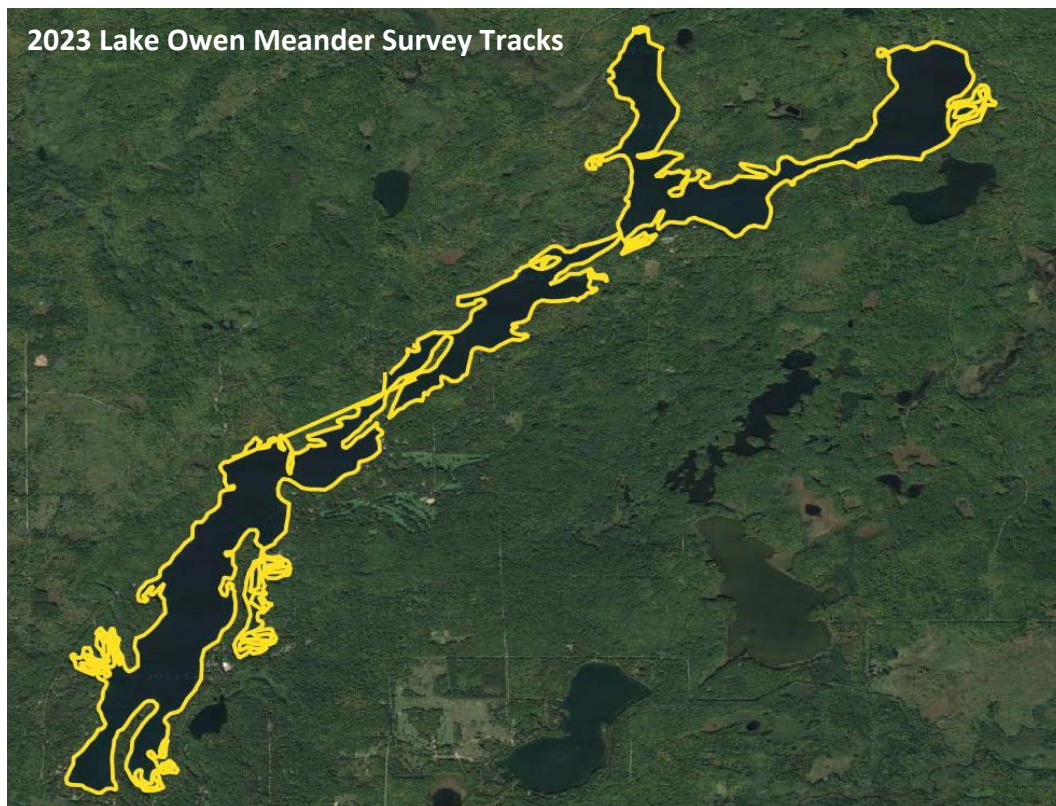


## *Lake Owen 2023 AIS Surveys Summary*

Each month, from June through September, a meander survey is conducted on Lake Owen to evaluate the presence of invasive aquatic species, emphasizing plant species. In addition, the invasive yellow iris has been mitigated and managed in 2021, 2022, and 2023. Zebra mussel samplers were deployed at the two landings as well. This report summarizes the findings and results of the yellow iris herbicide application and manual removal in 2022. It will also show a map of the yellow iris mitigation locations for 2023. Maps of other invasive species are also presented with recommendations.

### **Meander surveys-2023**

Once per month, from June through September, a meander survey is conducted on Lake Owen. The map below shows the tracks of a typical survey that occurs each month.



\*The yellow line is the track from a meander survey in 2023. This track is followed during each meander AIS survey. Due to concerns in Agnus Bay expressed by a riparian owner, an increased survey path occurred compared to past years. No invasive species were observed in Agnus Bay.

## 2023 Yellow Iris and Forget me not Maps

During the June meander survey, yellow iris (*Iris pseudacorus*) was observed (when a yellow iris blooms and is easiest to locate and identify) at two locations. The map below shows the locations mapped. Site 2023-A is where the yellow iris was treated with herbicide a few years ago. Site 2023-B was identified in 2022, but permission was not granted for removal until 2023.

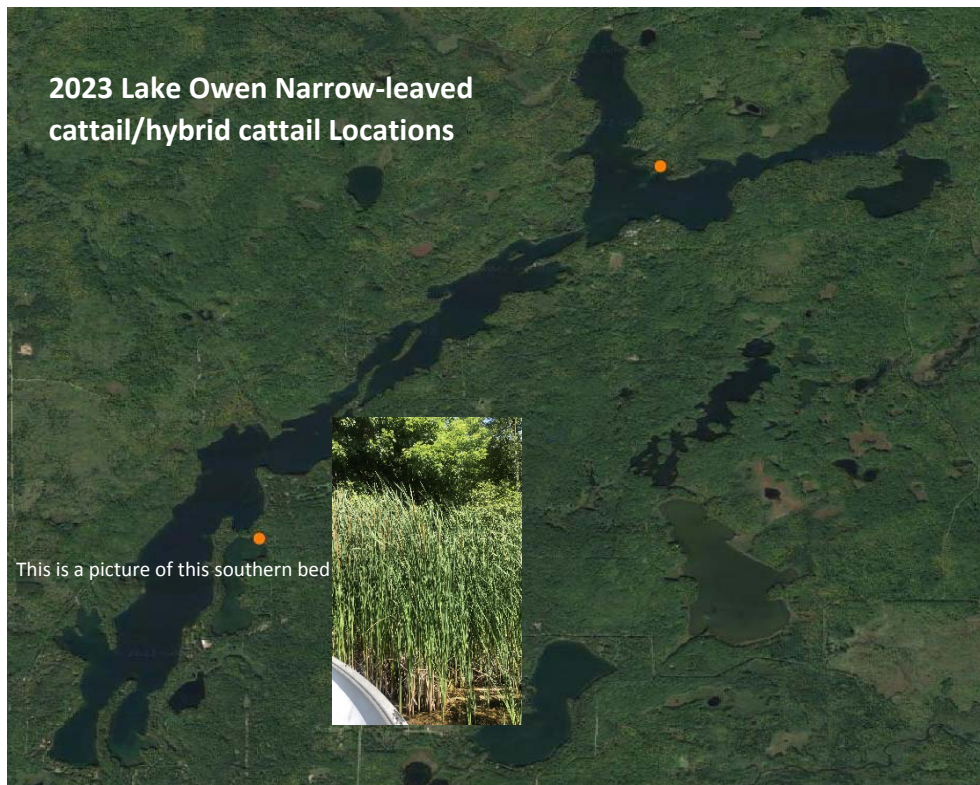


During the June and July 2023 meander surveys, aquatic forget-me-not (*Myosotis scorpioides*) was observed. The map below shows the locations recorded where forget-me-not is present.



There are two locations of likely narrow-leaved cattail (or could include hybrid cattail) (*Typha angustifolia* or *Typha x glauca*) observed on Lake Owen. The hybrid cattail crosses the broad-leaved (native) and the non-native narrow-leaved cattail. Both the narrow-leaved and the hybrid are considered restricted invasive species in Wisconsin. Those sites are shown on the map below. There has been no change in locations from 2022 to 2023.

Narrow-leaved cattail (and the hybrid) are considered invasive, but they can serve similar positive roles in the plant community. Since it hybridizes readily with the native broad-leaved cattail, it is not often managed. Occasionally, this plant can lead to a monotypic wetland, reducing other species. Narrow-leaved cattails can grow in somewhat deeper water than native broad-leaved cattails.



## Yellow Iris 2022 Mitigation Results



In September 2022, all the yellow iris locations on the map above were treated with herbicide except for two (WP995 and WP996). The herbicide was applied by hand using sponges on tongs. Two sites, WP995 and WP996, had manual removal conducted. These points were on US land, which was an agreed method.

In June 2023, each site treated with herbicide and the sites that had manual removal in 2022 were evaluated for mitigation effectiveness. No yellow iris was observed at any of these mitigation sites in 2023. This lack of growth shows that the mitigation efforts had short-term success. The sites will continue to be monitored as the yellow iris could return over time.

The two “new” yellow iris sites in 2023 were also mitigated. Hand removal occurred at both sites. Site 2023-A was on federal land and occurred in an area where herbicide was applied a few years ago. These plants were in a dense sand substrate, so there is concern that the whole rhizome may not have been removed. This site will be evaluated in 2024. At Site 2023-B, the yellow iris plants were embedded in a floating mat of vegetation, so there is a greater chance the entire rhizome was removed. This site will also be monitored for return growth.



Yellow iris plants that were hand removed in 2023.

## Phragmites

In 2019, the prohibited invasive species *Phragmites australis* was discovered. This bed has been monitored annually to make sure there has been no spread. The 2023 check did not indicate any changes in the coverage of Phragmites. The map below shows the location of this invasive plant. The site has not changed since 2019.



## Zebra mussel Samplers

No zebra mussels were observed on the plate samplers. The plate samplers were in position from May 4 until approximately Oct. 15, 2023.

## Recommendations

### Yellow Iris

Since the two locations of the yellow iris were hand removed in 2023, monitoring these two sites will occur in June 2024 to determine if all plant material was successfully removed. The entire littoral/riparian zones will be monitored carefully in June 2024 to locate any new yellow iris plants.

### Aquatic-Forget-Me-Not

The locations of aquatic-forget-me-not are similar from 2023 to 2022, so the spread has not been apparent. However, some sites appear to be slowly growing in size and density. If this plant gets into a wetland area, it could create ecological issues. For this reason, lake riparian owners should be educated

about identifying the plants and encouraged to remove and dispose of the plants by hand. Forget-me-not tends to have shallow roots so that it can be removed with little effort. Riparian owners or the National Forest where more dense growth occurs should be contacted directly to express concern about the increase in growth.

#### Narrow-leaved cattail

Since narrow-leaved cattail is typically of low concern due to serving similar functions to the native broad-leaf cattails, mitigation may not be necessary. The beds of narrow-leaved cattail have little to no native cattail. However, native cattail beds should be monitored, and new narrow-leaved cattail plants should be removed by hand to ensure the invasive version does not take over the native cattail bed.

#### Phragmites

This invasive plant is designated as “prohibited” by the State of Wisconsin. This means this plant is of high concern and needs to be removed as soon as possible. Fortunately, careful monitoring since its discovery in 2019 has not shown any evidence of spread. If this plant spreads to a wetland, it could degrade the ecology of that wetland quickly.

#### Zebra mussels'

Lake Owen has a relatively low susceptibility to zebra mussel. However, the plate samplers should continue to be deployed each year for monitoring. Riparian owners should also be reminded to examine piers, boat lifts, and boats for zebra mussels.

#### All other AIS

Monthly meander surveys should continue annually from June through September. Early detection of AIS is critical, so routine AIS surveys will increase the chance of locating any new AIS infestation. Riparian owners should be reminded to contact the LOA with any concerns.