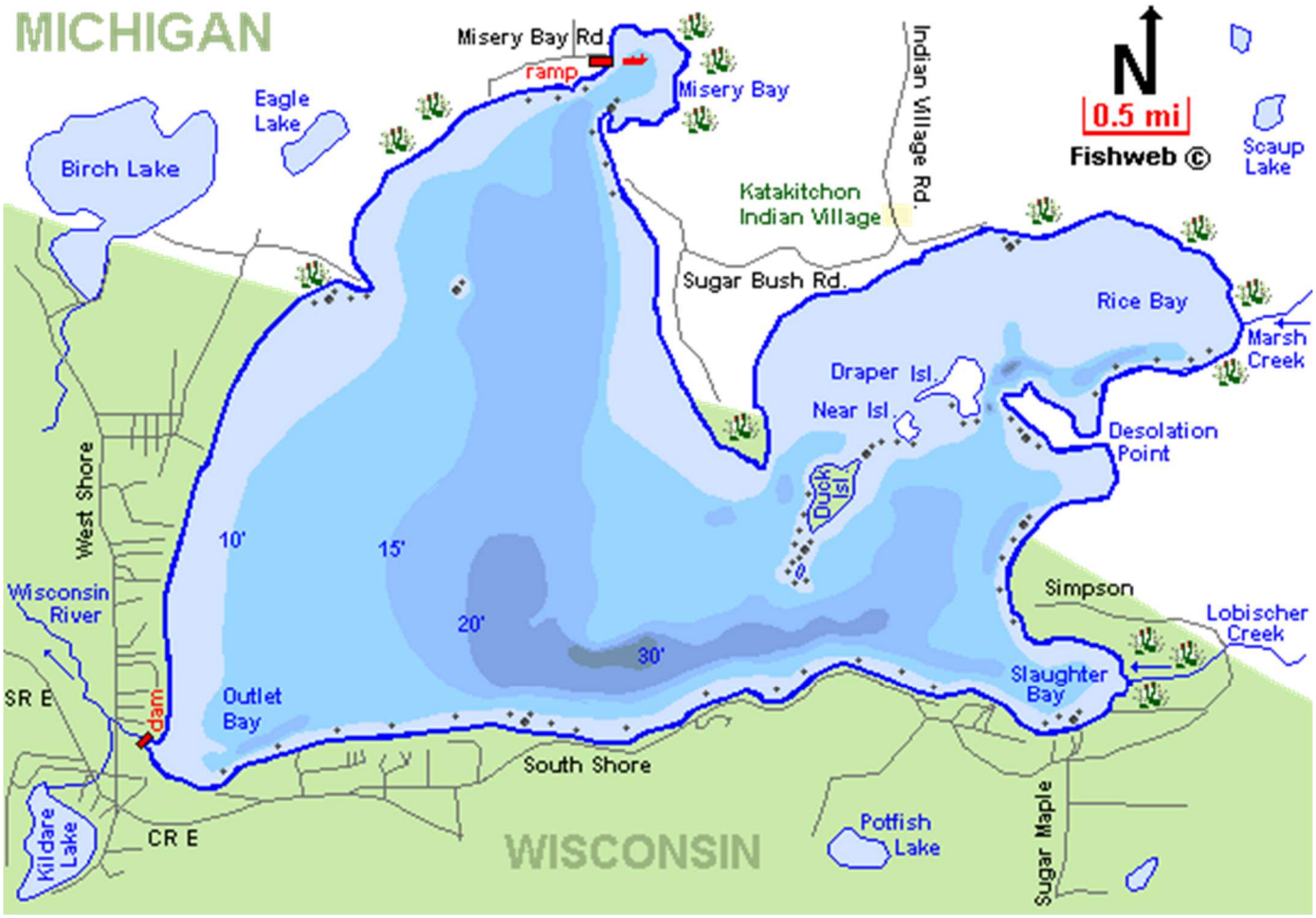
Lac Vieux Desert Walleye Rehabilitation Plan – 2024 Progress Report

1. Plan Overview

The Lac Vieux Desert walleye rehabilitation plan was meant to provide a framework for a cooperative rehabilitation effort involving Lac Vieux Desert Tribe (LVD), Sokaogon Tribe, Great Lakes Indian Fish and Wildlife Commission , Michigan Department of Natural Resources and Wisconsin Department of Natural Resources. Lac Vieux Desert is a 4,300-acre flowage that is the headwaters of the Wisconsin River, located along the state line of Michigan and Wisconsin and within the 1842 Ceded Territory. A dramatic decline in the walleye population was the impetus for the walleye rehabilitation plan in 2017.



Lac Vieux Desert historically provided a naturally reproducing walleye fishery. In the early 2000s a loss of natural recruitment of juvenile walleye was documented in fall surveys and a subsequent decline in the adult population soon followed. By 2016 the adult walleye population had reached an all-time low and a discussion about a cooperative walleye rehabilitation effort began. This led to a formal plan with the goals of increasing adult walleye density to 2.5 per acre and restoring natural recruitment. A cooperative plan was drafted in 2017, recommending actions to reduce overall harvest, increase walleye numbers through stocking and continue monitoring efforts.

2. Survey Data

Juvenile Recruitment and Stocking

Based on fall electrofishing surveys, Lac Vieux Desert walleye were able to naturally produce juvenile walleye from at least 1986 to 2005 at levels high enough to support a strong walleye fishery (Figure 1). By the mid-2000s, juvenile walleye recruitment declined dramatically for reasons still unknown. Little or no natural recruitment has occurred since that time. Stocking of extended growth (EG, 6 to 8 inches long) fingerling walleye has provided the only substantial additions to the walleye population in recent years.

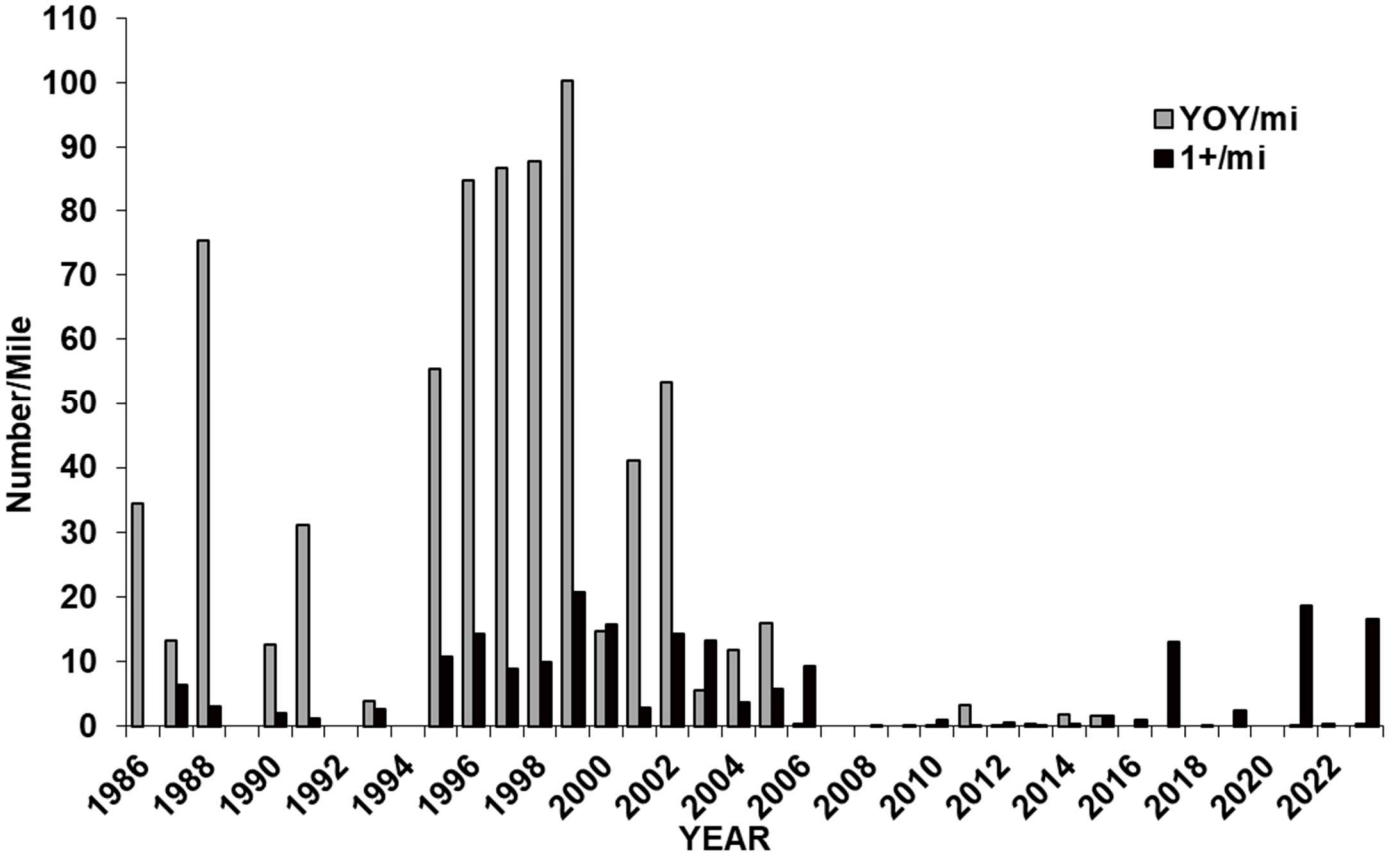


Figure 1. Catch rate of young of the year (YOY) and age-1 walleye from fall electrofishing surveys conducted on Lac Vieux Desert from 1986-2023.

Extended growth fingerling walleye were stocked in smaller numbers in the past, but intensive EG stocking began in 2016 as Lac Vieux Desert was included as part of the Wisconsin Walleye Initiative (Figure 2). The target stocking rate for EG fingerling was 15 per acre on an every other year frequency. While the stocking goal was not reached each year, over 12 per ace have been stocked on average. The EG walleye are stocked after fall electrofishing surveys are completed, so they are not present as YOY, but they show up as age-1 fish the following year. Age-1 walleye catch rates from 2017, 2021 and 2023 indicate very good survival of extended growth walleye fingerlings stocked in 2016, 2020 and 2022 (Figure 1). Other efforts to stock small fingerlings and fry have yielded little return. Based on these results, stocking of EG fingerling walleye will continue as long as hatchery production allows or until natural recruitment returns to a sustainable level.

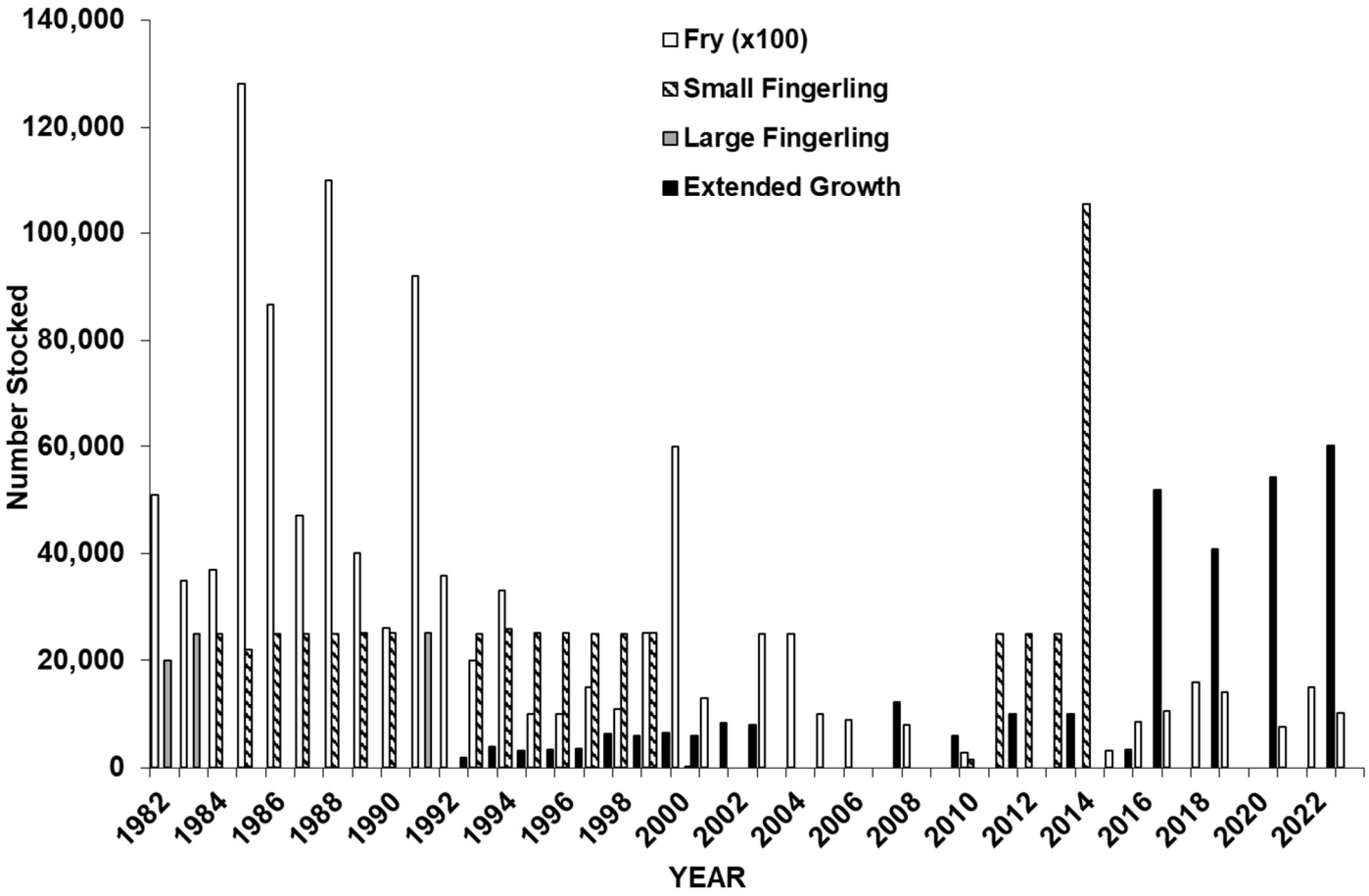


Figure 2. Walleye stocking history in Lac Vieux Desert from 1982-2023. Walleye fry (~0.3”) are stocked just after hatch, small fingerling (1.5-2”) are stocked in late June to early July, large fingerling (~3”) are stocked in late August to early September and Extended growth fingerling (6-8”) are stocked in late September to October.

Adult Abundance

The decline in juvenile recruitment consequently led to a decline in adult walleye abundance. In the 1980s and 1990s walleye estimates ranged from about 2-3 adults per acre (Figure 3). After this period, surveys documented a relatively swift decline to a low in 2016 of 0.5 adults per acre. Since then, management actions included in the walleye rehabilitation plan have yielded an increase in adult abundance to the 2023 estimate of 1.6 per acre. It is anticipated that the 2020 and 2022 stocked year classes were not mature in 2023 and will continue to add to future adult walleye abundance.

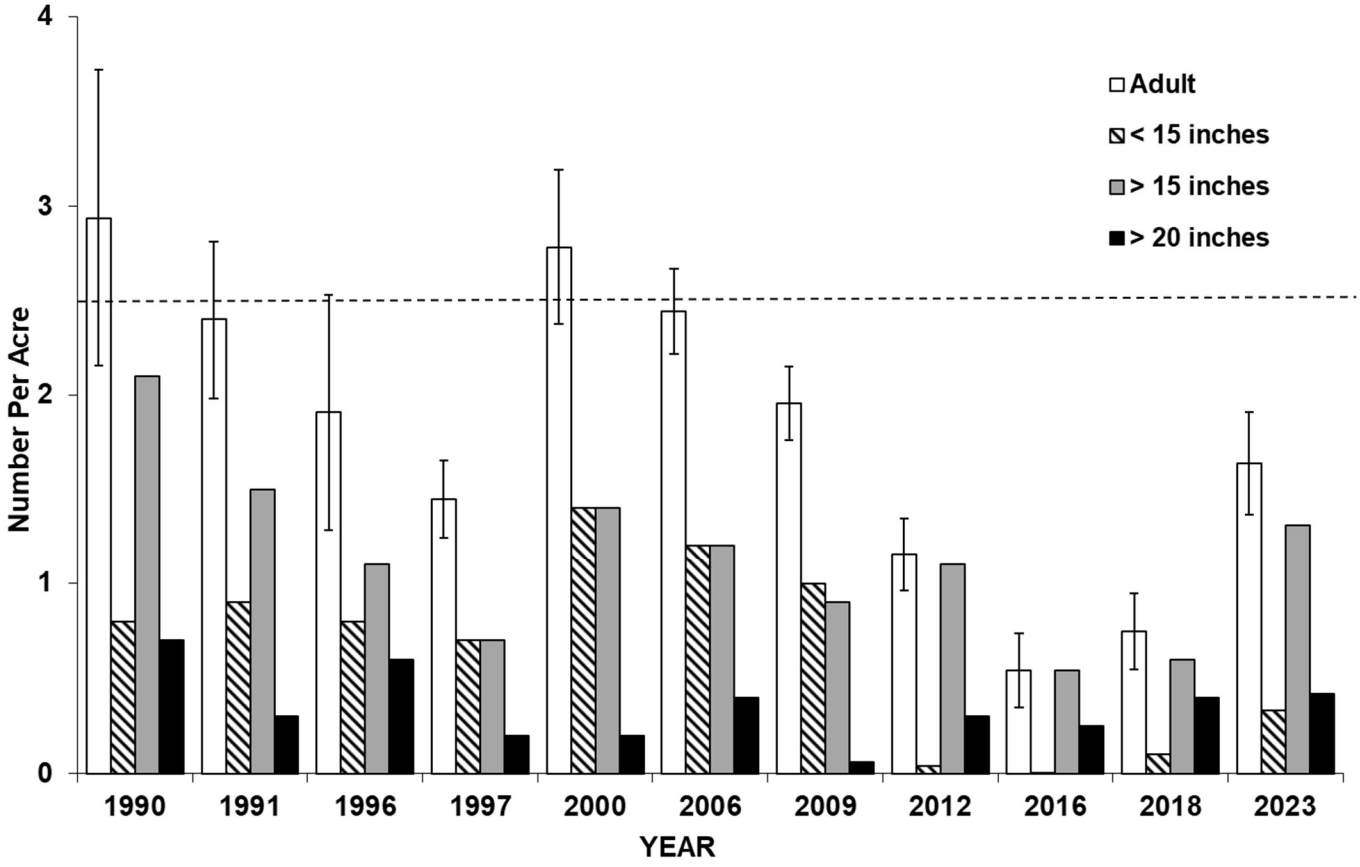


Figure 3. Adult walleye population estimates in Lac Vieux Desert from 1990-2023. Error bars represent 95% confidence intervals. Dashed line represents adult density goal of 2.5 per acre.

Harvest

Additional recovery efforts to rehabilitate walleye have focused on conservative harvest strategies. Beginning in 2010, a voluntary self-imposed walleye harvest closure was implemented by LVD Tribe that reduced the overall spring treaty harvest. Reduced harvest averaged 241 walleye per year from 2010-2016 and no tribal harvest occurred from 2017-2023 (Figure 4).

In 2018, an 18" minimum length limit, 3 fish daily bag limit, for walleye was implemented to replace the 15" minimum length limit and 5 fish daily bag limit. Estimated walleye harvest in the 2018-19 fishing season, under the new size and bag limit, was 155 (Figure 5). Previous angler walleye harvest estimates ranged from 666 to 3,341 for a single fishing season.

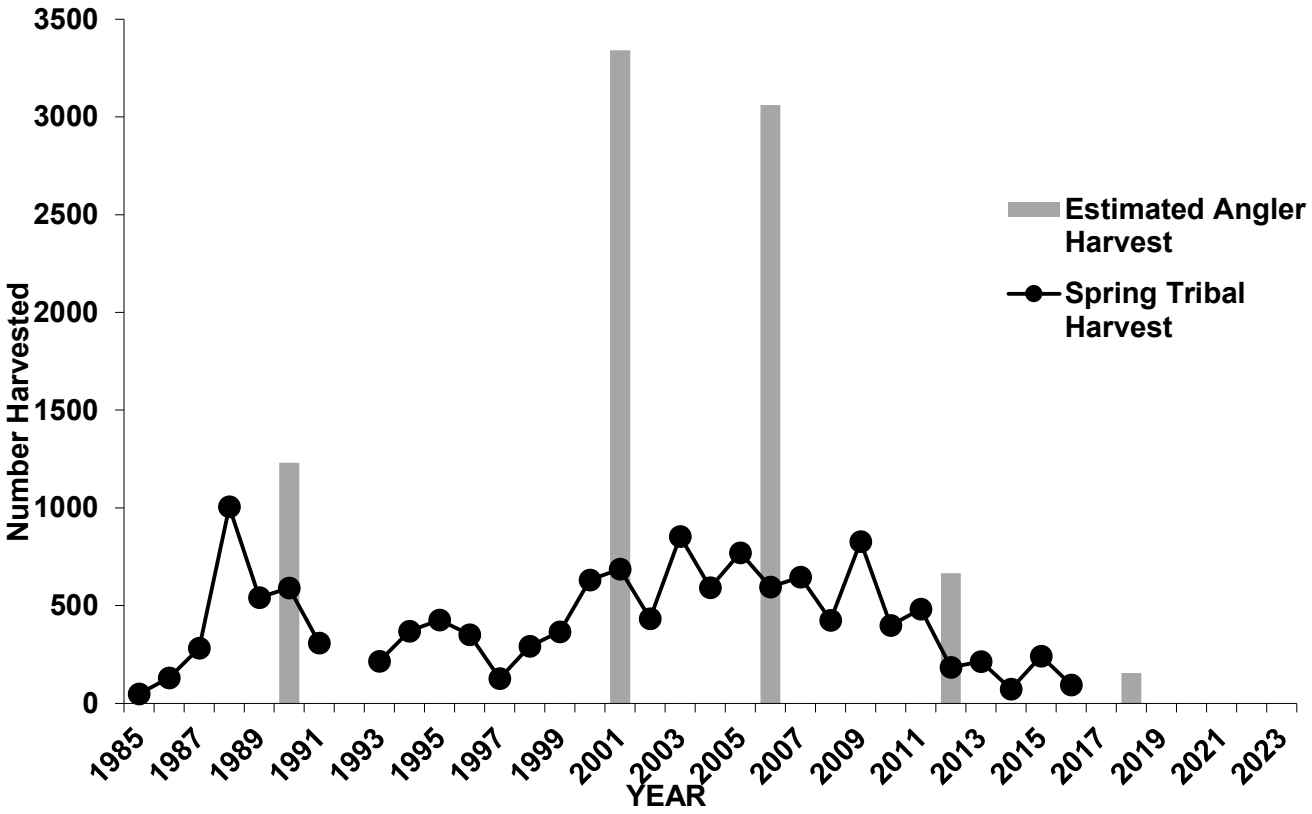


Figure 4. Spring tribal and estimated angler walleye harvest in Lac Vieux Desert from 1985-2023. Spring tribal harvest numbers were collected by creel clerks counting walleye harvested during spring harvest season. Estimated angler harvest was calculated in Lac Vieux Desert from creel surveys conducted during the general gamefish seasons of 1990-91, 2001-02, 2006-07, 2012-13 and 2018-19.

3. Continuing Efforts

Goals for adult walleye density and restoring natural reproduction have not been met, and rehabilitation efforts will continue. Based on fall surveys, survival of stocked EG fingerling walleye appears to good, especially in 2020 and 2022. Wisconsin DNR plans to continue stocking EG walleyes in 2024 and subsequent even years at a rate of 15 per acre. If natural recruitment of juvenile walleye is documented in adequate numbers, then stocking efforts could be reduced or stopped altogether. The operators of the private walleye fry hatchery have also committed to continue their efforts in 2024.

Joint efforts to monitor the juvenile and adult walleye population should continue by partner group members. Annual fall juvenile walleye electrofishing surveys should continue to track the success of stocking and the level of natural recruitment. The next adult walleye population estimate should be scheduled between 2027 and 2029 to determine if the adult density goal has been reached.

At the time of this report there are no plans to change harvest-management strategies. The partner group will continue to discuss harvest as more information is gathered.

For more details contact:

Mark Luehring (GLIFWC) mluehring@glifwc.org

Michael Glubzinski (Michigan DNR) glubzinskim@michigan.gov

Eric Wegleitner (Wisconsin DNR) eric.wegleitner@wisconsin.gov