



2022 Cross Lake Recruitment Survey

In part of reporting for FES Project 022-010
SVSFE Initiatives and Monitoring of Recreational
Fisheries in the Swan Valley Area

Background

In 2020, one of SVSFE's objectives was to identify natural recruitment success and document available spawning habitat in several backcountry walleye fisheries. The focus was to identify if any improvements were beneficial. Cross Lake was one of several lakes investigated and is located on the south side of the Porcupine Provincial Forest (Figure 1).

The 2020 trap netting results indicated a healthy walleye population (Figure 3). The lake had not been stocked since 2008 and results found walleye in all ages classes from age 3 to 11 indicating natural recruitment was occurring (Figure 3). The recruitment assessments completed on June 1st at LeClair Creek indicated only white suckers utilized the creek for spawning purposes. It was believed walleye eggs may have hatched prior to the survey due to increased temperatures. In 2020, all the sucker eggs found were dead due to the high temperatures and no young-of-the-year walleye were found in seine hauls.

In 2021, recruitment assessments were replicated as an effort to document/quantify the degree of walleye usage and determine if habitat enhancement work was necessary. The 2021 investigations were summarized as "low flows with irregularly dry conditions" (Koutecky, 2021). No fish appeared to access the creek that spring as there was little to no water (Figure 4). Local educator and trapper from the area, Bob Church, stated it was the lowest he could ever remember. "Bob also expressed walleye have been seen spawning in the creek on specific higher water years". With inconclusive results, it was decided to re-evaluate the following spring (Spring 2022).

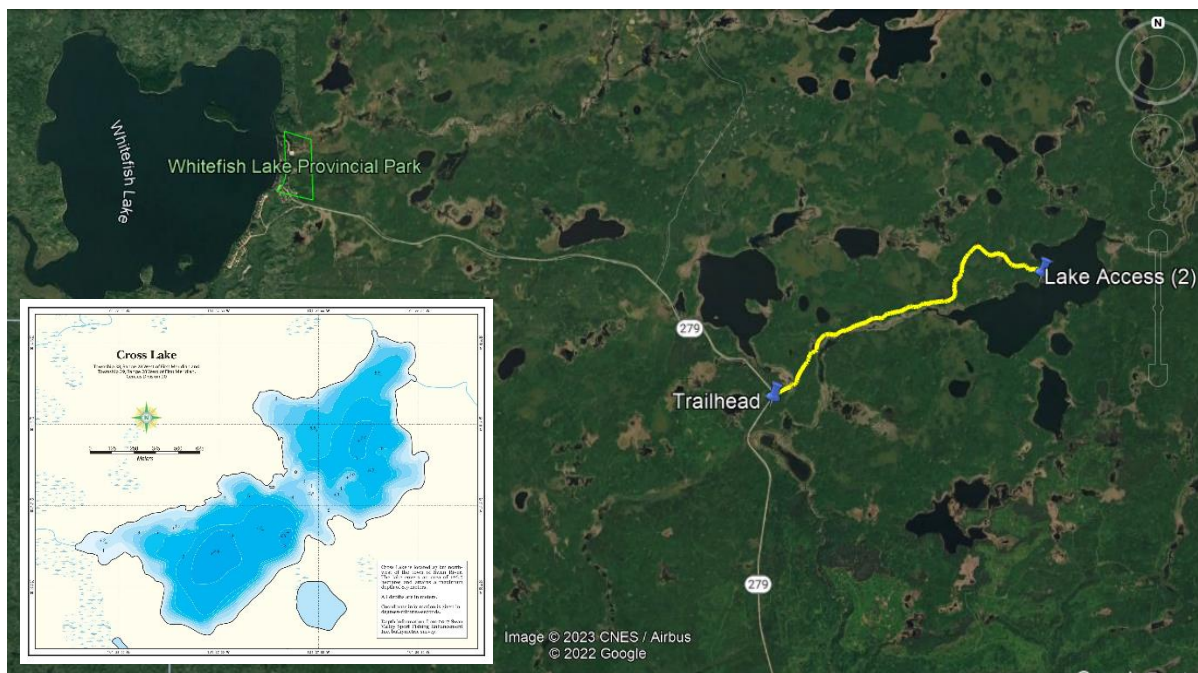


Figure 1: Cross Lake located in the Porcupine Mountains



Figure 2: Mature walleye found in Cross Lake

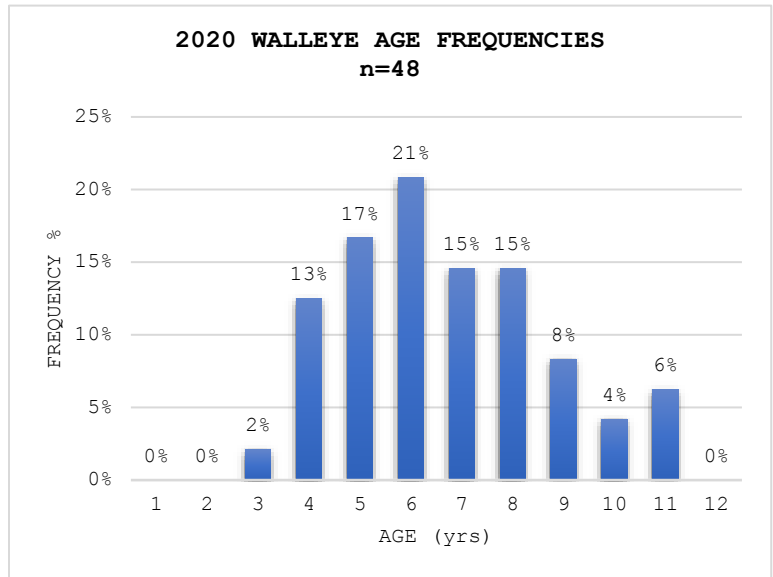


Figure 2: 2020 Walleye age frequencies



Figure 4: 2021 low water conditions on LeClair Creek



Figure 5: Looking for eggs during 2021 kick netting surveys

Objectives

In 2022 the objective was once again to evaluate spawning success in LeClair Creek, and specifically:

- 1) to identify walleye usage of the main tributary and
- 2) to identify if habitat improvements were required.

Methods/Results

To achieve these objectives SVSFE technicians anticipated to visit LeClair Creek following the 2022 spawn to replicate kick sampling sites from 2020. In early preparation, technicians contacted Bob Church on May 10th to accompany them during the proposed assessments. Bob is extremely knowledgeable of the area from his years of fishing and trapping the area and has been a main liaison for SVSFE with Cross Lake over the years. Bob has also assisted in several stocking efforts at Cross Lake by transporting walleye fry to the lake using his own personal equipment on his own time. He has stocked fry in various locations and interestingly identified walleye have done the best when stocked near LeClair Creek or near the outflow Hubbell Creek.

On May 11th, Bob made a trip into Cross Lake and observed a few smaller pike within the creek and stated they “seemed to be done” (spawning). He also noted the lake was still frozen. He assumed the suckers and possibly walleye would be spawning soon. The tentative plan was to evaluate the creek the following days to allow time for the fish to spawn. Unfortunately, the spring conditions of 2022 changed dramatically overnight.

On Friday, May 13th, “communities near of the Porcupine Hills and Duck Mountain endured unprecedented flash-flooding conditions as a Colorado low stormwater poured down the Manitoba Escarpment”(Kives 2022). With the combination of heavy winter snow levels melting and heavy rains, flooding incapacitated travel to many areas. Not only were provincial highways closed due to damaged bridges and crossings, but many rural roads were washed out. Due to poor trail conditions on the old Cross Lake Road, technicians were unable to access LeClair Creek during crucial periods and were unable to complete the spawn assessment.

Discussion

After three years of inconclusive results, it was decided to re-evaluate the objectives and review the information currently available. When considering accessibility, Cross Lake is a backcountry fishery. With most backcountry lakes, there are access challenges and equipment required. The trail has several mud holes to overcome and trailering a boat in can be quite difficult. For this reason, anglers frequent the lake more during the hard water season. The benefit to this is angling pressure remains moderate. Anglers seem to be more attracted to pike fishing during the winter. Walleye and perch angling can peak at times, but most anglers find pike fishing more successful and reliable. This puts less pressure on walleye.

When considering available spawning habitat, stock assessments indicated natural recruitment has successfully occurred over the last 11 years. Both the lake and the main tributary, LeClair Creek offer valuable spawning habitat. It is believed the creek may only function well on years when conditions are ideal.

There is about two kilometers of creek prior to the connected wetland that would be most suited for spawning purposes. Prior to the 2020 assessments, LeClair Creek was extremely flooded by beavers seen below.



In 2020 it was noted that the lakeshore was littered with logs and debris that may have been a result of washouts that spring. That washout uncovered valuable spawning habitat which would have previously been inaccessible. Currently within the first kilometer the creek bed itself is gravel, cobble, boulder substrate through most stretches. Though now, the wetted width of the creek is only a few meters wide (Figure 6).



Figure 6: Uncovered boulder cobble substrate in LeClair Creek



Figure 7: LeClair Creek banks/riparian area lacking shrubs

The areas once flooded have since dried up. This has resulted in little to no stream cover in several reaches (lack of overhanging shrubs) (Figure 7). The consequences of this could be poor egg survival on warmer/drier years. In 2020, 100% of eggs collected (thousands) were dead. Due to creek characteristics, LeClair Creek may not offer sustainable spawning habitat year to year. Apparently, it can attract fish on high water years and likely has facilitated successful recruitment on those years. On low water years, perhaps fish spawn within the lake as the waterbody does provide suitable habitat.

In review, the 2022 objectives were to understand walleye usage in LeClair Creek and the need for improvements. Although SVSFE has not confirmed walleye presence, anecdotal information from Bob Church states walleye (and other species) are attracted to the creek during crucial spawning periods when conditions are favorable. One can confidently say on drier years, it is apparent survival is low or the creek is simply not utilized.

What is beneficial to the fishery is the habitat is present. Currently, there does not appear to be any significant fish barriers within the first few kilometers of LeClair Creek. This is a huge benefit as habitat improvements regarding beaver dam removal can become long term commitments and expensive over time. There may be a time when beaver control is necessary. It's possible the combination of local trapping and lack of shrubs (forage) near the channel may be a contributing factor. One improvement consideration is the planting of native shrubs along creek sections to help with stream cover and stability. This could be discussed but it's believed succession is likely to occur naturally.



In conclusion, there are no recommendations to improve LeClair Creek for walleye spawning purposes. The population appears to be healthy with strong recruitment for the last several years. Continuing communication and working with Bob Church and family, SVSFE can obtain annual updates. The lake remains on the walleye fry stocking list at a lower priority and receives fry when available for supplemental purposes. It is recommended on years when fry are available and creek conditions offer suitable habitat that fry be imprinted in the creek. On other years fry should be stocked on the windward shore to maximize the potential for the fry stocking location to overlap with the location of zooplankton. With continued partnerships, big and small, backcountry fisheries like Cross Lake will continue to offer multispecies angling opportunities.

References

Church, B., (2022). Personal Interview/Conversations. May 2022 & January 2023

Kives, B. (2022) Everything, everywhere, all at once: The 2022 flood season in Manitoba, CBC News, CBC Manitoba, Posted May 26, 2022 <https://www.cbc.ca/news/canada/manitoba/flood-2022-manitoba-analysis-1.6465372>

Koutecky, B., (2021), 2021 Cross Lake Habitat Investigations (LeClair Creek), In part of reporting for FES Project 20-040 Recreational Angling Initiatives for 2021, Swan Valley Sport Fishing Enhancement Inc.