



# Walleye Investigations Pickerel Lake 2020

In part of reporting for FES Project 19-036 –  
Recreational Fisheries Enhancement and Youth  
Angling Opportunities in the Northern Parkland

Author: Megan Paterson

January 2021

Swan Valley Sport  
Fishing Enhancement  
Inc.

## Summary

SVSFE applied to the Fish and Wildlife Enhancement Fund to investigate walleye spawning habitat and population dynamics on three backcountry lakes in the Porcupine Provincial Forest. The purpose of this study was to determine if habitat enhancement could benefit the walleye fisheries. Featured in this report is the data from Pickerel Lake. Walleye fry stocking has never occurred on Pickerel Lake and little is known about the current walleye populations. SVSFE located and assessed the potential spawning tributary. Due to very poor access trail conditions, SVSFE was unable to complete an assessment on the walleye population dynamics within the waterbody. Before any enhancement or management recommendations can be suggested, SVSFE is proposing to complete population assessment when the trail can be improved, or an alternative route becomes available.

## Contents

|                                        |   |
|----------------------------------------|---|
| Summary.....                           | 1 |
| List of Figures .....                  | 2 |
| List of Tables .....                   | 2 |
| Historical Data.....                   | 3 |
| Study Area.....                        | 4 |
| Spawning Tributary Investigations..... | 5 |
| Results.....                           | 5 |
| Discussion.....                        | 8 |
| References.....                        | 8 |

## List of Figures

|                                            |   |
|--------------------------------------------|---|
| Figure 1: Pickerel Lake Contour Data.....  | 4 |
| Figure 2: Tributary Investigation Map..... | 6 |
| Figure 6: Site 2.....                      | 7 |
| Figure 3: "1m width".....                  | 7 |
| Figure 4: Site 1.....                      | 7 |
| Figure 5: Start of inflow "mud".....       | 7 |

## List of Tables

|                                     |   |
|-------------------------------------|---|
| Table 1: Kick-sampling results..... | 5 |
|-------------------------------------|---|

## Historical Data

Pickerel Lake was first biologically investigated in 1952 by Stewart-Hay. The lake was considered remote with little to no access present upon investigations. Stewart-Hay (1952) found resident populations of walleye, northern pike, yellow perch and white suckers. Greater success was found angling for larger bodied fish than in gill-net surveys. He noted walleye were in "fair to poor condition" heavy loads of intestinal parasites. He also stated "Pickerel Lake presents perhaps the most satisfactory lake in the whole Porcupine Mountains area for fisheries control. Fairly small and self-contained, it presents satisfactory depths of water, with plenty of shallows at the south end and at the narrows for forage fish."

The lake was assessed again in 1975 by Manitoba Government Resource Technician, Wayne Antichow. In 1975, the lake was now accessible near the Manitoba-Saskatchewan boundary by means of old logging road and could be drove to with a half-ton in dry conditions. Antichow (1975) recorded catches of yellow perch (4"-6"), walleye (8.5"-20.25") and northern pike(8.5"-23"). He stated "the lake appears to have large quantities of fish and they appear to be reproducing quite well".

## Study Area

Pickernel Lake is located 69.6km from Swan River, MB off of SK RD 980 in the Porcupine Mountain Provincial Forest. The distance from trailhead to Pickernel Lake is 3.5 km. The lake is located along an old haul road and is most commonly accessed by snowmobile in the winter months. The lake is 136.1 hectares with a maximum depth of 25.4 meters and a mean depth of 6.5 meters. Targetable fish species present are walleye and northern pike. Pickernel Lake is one of a few lakes in the area that has historically sustained a naturally recruiting walleye population. Even today, the lake receives no supplemental walleye stocking.

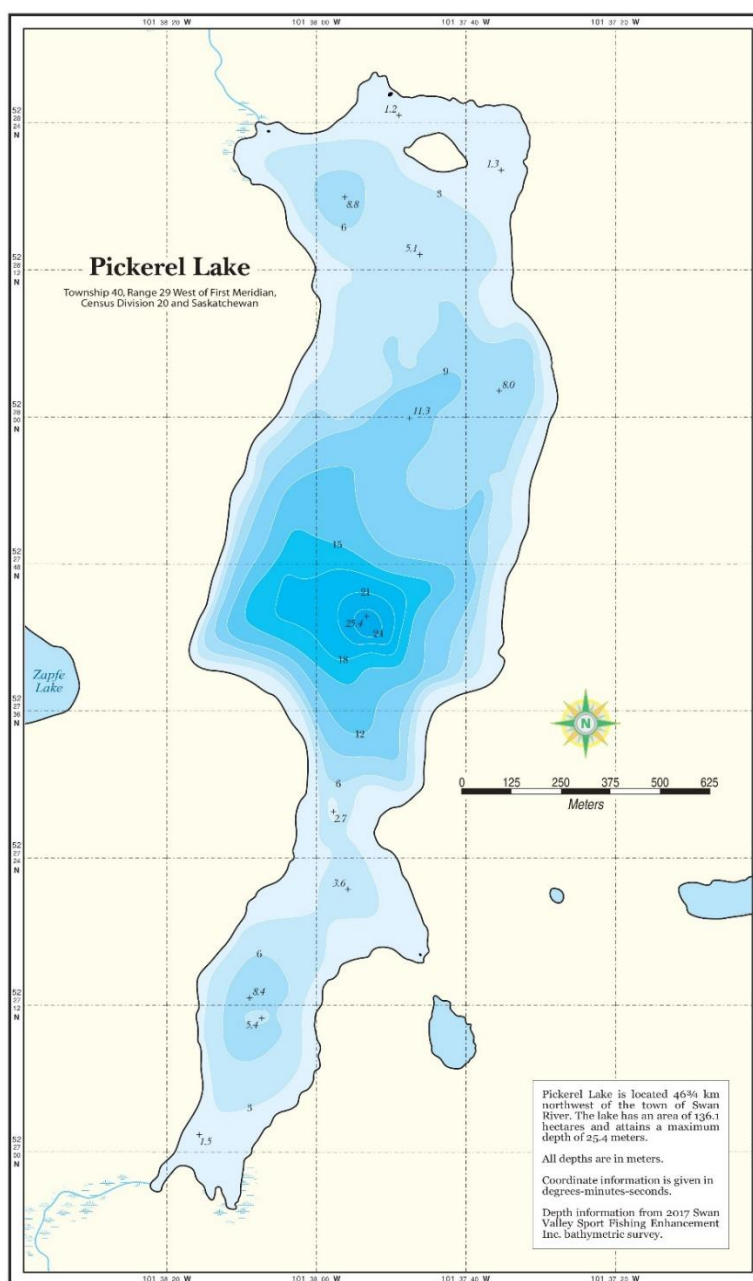


Figure 1: Pickernel Lake Contour Data

## Spawning Tributary Investigations

Technicians explored in-flow tributaries and documented presence/absence of suitable flows and substrates for walleye spawning habitat. Kick net samples were conducted to determine if spawning had occurred. A kick net is made up of 1 m<sup>2</sup> of 0.5 mm (500 micron) mesh screening attached to two poles. Kick netting consists of placing the net poles firmly on the creek and disturbing the substrate by "kicking" the bottom upstream of the net. The current carries the disturbed material onto the net. Each site was kick sampled for 60 seconds with one square meter of area being disturbed. Species, number of eggs and condition of eggs (alive, dead, eyed) were documented and placed back into the stream. With sites of high egg concentrations, counts were estimated in order to return eggs back into the water. In addition, water temperature, weather, substrate presence and additional comments were recorded.

## Results

Investigations on Pickerel Lake were conducted on June 1<sup>st</sup>, 2020. Technicians investigated one potential inflow for walleye spawning habitat. Results are as follows:

Table 1: Kick-sampling results

| SITE #                                                                                            | SUBSTRATE               | AVG WIDTH (m) | AVG DEPTH (m) | WATER TEMP C | pH | KICK RESULTS                                       | Description |
|---------------------------------------------------------------------------------------------------|-------------------------|---------------|---------------|--------------|----|----------------------------------------------------|-------------|
| 1                                                                                                 | boulder, cobble, gravel | 4             | 0.1           | 14.3         |    | scuds, snails, shiners, chironomids, water beetles |             |
| 2                                                                                                 | gravel, boulder         | 0.6           | 0.03          | 12.7         |    | minnow fry, scuds, chironomids                     |             |
| Notes: The inflow is relatively small and flows intermittently with a series of small beaver dams |                         |               |               |              |    |                                                    |             |

Figure 2: Tributary Investigation Map





Figure 6: Start of inflow "mud"



Figure 5: Site 1



Figure 4: "1m width"



Figure 3: Site 2

## Discussion

SVSFE had intended to gather additional information on the current walleye populations in Pickerel Lake via trap netting and seine netting. Due to extremely poor trail conditions, SVSFE was unable to justify further destruction of the trail and associated work equipment (quads, motors, boats, nets, etc.) to do so.

The information that was gathered on the inflow tributary suggests that spawning does not take place there, and the walleye are suspected to be lake-spawners. The inflow does contain small portions of moderately suitable substrate, however water flow does not suggest it would attract walleye for spawning regularly. Stewart-Hay (1952) also investigated the inflow and described it as "shallow, heavily vegetated with a soft silt bottom". Given there was already a naturalized walleye population present at the time of his observation, this information also supports the lake-spawning theory.

The intended population study on Pickerel is strongly recommended before making any habitat enhancement recommendations or suggestions. The trail conditions into Pickerel appear to be deteriorating, year after year. This could perhaps be a saving grace to amount of angling pressure the lake receives, however it also limits the opportunity to complete a full lake study. Until the trail conditions are improved, or an alternative access route is located to complete the study, SVSFE does not have any enhancement suggestions regarding the walleye fishery on Pickerel Lake.

## References

Antichow, W. 1975. Test Netting - Pickerel Lake. Manitoba Department of Natural Resources. Acquired from Pickerel Lake file, Swan River Office

Stewart-Hay, R.K. 1952 An investigation of certain waters in the Porcupine Mountains. Section D - Pickerel Lake. Department of Mines and Natural Resources; Game and Fisheries Branch.