2022 Beaver Lake Walleye Recruitment Survey

In part of reporting for FWEF Project 22-010 SVSFE Initiatives and Monitoring of Recreational Fisheries in the Swan Valley Area

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Summary

SVSFE applied to the Fish and Wildlife Enhancement Fund to continue annual walleye recruitment assessments in Beaver Lake. This report is an overview of 2022 findings along with recommendations for future research, development, and management of Beaver Lake.

History

The artificial spawning shoals in Beaver Lake were created to increase walleye recruitment success in 2014. The east shoal was re-enhanced in 2020 with finer substrate. Monitoring recruitment success through various methods including seining, electrofishing, and trap-netting have been completed since 2014. Shoal guzzling began in 2021 following the enhancement of the east shoal, as it was found to be the least labour-intensive and cost-effective method to quantify walleye usage. For a full history, research, and results please see: *FES PRJ 20-040 SVSFE Recreational Angling Initiatives 2021 – Beaver Lake Stock Assessment*

Methods

The guzzling equipment used for the assessment is a Guzzler model 709010 400H 8.5 gallons per minute or 7 strokes per gallon. Typically guzzling is completed on the water by boat however in this circumstance, technicians were able to collect samples by wading in from shore. Sites were randomly chosen with a three-meter by five-meter area sampled at for 5 minutes at each site. Data recorded at each site included percent of substrate type, percent of clean substrate, depth, number of live eggs and location. Eggs were identified by species, counted, and returned to the water.

Results

Three random sites were guzzled on May 26th, 2022 with an average surface temperature of 11°C. Zero eggs were found during the assessment. Unfortunately, the foot valve housing used to penetrate the substrate broke and a piece of gravel got lodged in the plastic valve affecting suction. This likely influenced results. Another factor worth mentioning was the May 13th rainstorm, which broke multiple beaver dams and increased Beaver Lake's water level by an estimated 2.2m in the days following the storm (Figure 1). This phenomenon may have influenced the walleye spawn as it occurred during these critical periods.

Discussion

At current, Beaver Lake is stocked with 12.5 advanced fingerlings/hectare (n=250) on alternate years. Natural recruitment success has been documented, however not at levels that would be considered sustainable. SVSFE is eager to continue with this low effort method to quantify the success (or lack thereof) of the habitat enhancement efforts. SVSFE intends to work this data into long term development and management of the Beaver Lake Walleye Fishery.

Figure 1: High water mark following May 13th rainstorm