

**Alberta Conservation Association**  
**2023/24 Project Summary Report**

**Project Name:** Walleye Fisheries Enhancement

**Fisheries Program Manager:** Peter Aku

**Project Leader:** Brad Hurkett

**Primary ACA Staff on Project:** Valerie Bilodeau, Jason Blackburn, Tyler Johns, and Kelly Riehl

**Partnerships**

Government of Alberta

Quattro Farms Incorporated

St. Mary River Irrigation District

**Key Findings**

- Stocked 90,000 sac-fry walleye directly in Forty Mile Coulee Reservoir in early June after poor dissolved oxygen conditions prevented us from growing fish in the rearing pond as originally planned.
- Dissolved oxygen increased to optimal fish growing conditions shortly after the aeration system was installed in June.
- Water temperatures remained optimal for growing fingerling walleye in the rearing pond the entire summer.
- In 2024/25, we plan to reattempt rearing fingerling walleye that will be stocked into Forty Mile Coulee Reservoir.

## Details

Following the Government of Alberta's (GOA) provincial stocking program in the 1980s and 1990s, walleye populations in several lakes across the province rebounded from previous declines. With this success, the stocking program was discontinued in the early 2000s but relaunched in 2021 to supplement walleye populations where recruitment is low, including those in Forty Mile Coulee Reservoir. The Forty Mile Coulee rearing pond was constructed as part of a habitat mitigation offset with the creation of the Forty Mile Coulee Reservoir in 1988 and used to grow fingerling walleye for stocking into the reservoir as part of the GOA stocking program. In 2023, we reactivated the rearing pond in part with the provincial stocking program to enhance the Forty Mile Coulee Reservoir walleye population. The drainable rearing pond is designed with a valved inflow pipe that fills the pond from an irrigation canal and a valved outflow pipe that drains the water into a harvest kettle where fish are collected before being stocked. The pond is approximately 0.4 ha in area with a maximum depth of 3.5 m. In early May, we filled the pond with irrigation water up to full supply level. Before filling the pond, we cut down overgrown vegetation along the bottom to remove potential entanglements that could trap fish and prevent them from draining into the kettle. We fertilized the pond in May using alfalfa meal to stimulate production of fish forage organisms (primarily zooplankton). From May to August, we monitored dissolved oxygen (DO), water temperature, and zooplankton densities in the pond. Sac-fry walleye were stocked directly in the Forty Mile Coulee Reservoir in June after poor DO conditions prevented us from growing fish in the rearing pond as originally planned. Once we detected a drop in DO, we installed a subsurface aeration system in the pond to increase DO and improve water quality conditions. Once the aeration system was activated, we detected an immediate improvement in DO, turbidity, and zooplankton density, which were maintained for the rest of the summer. Water temperature remained optimal for growing fingerling walleye in the rearing pond the entire summer. In August, we drained the pond to test run the kettle and learn about the fish harvest process in anticipation for the 2024/25 walleye stocking season.

## Photos



Photo 1. Forty Mile Coulee walleye rearing pond at full supply level. Photo: Brad Hurkett



Photo 2. Sac-fry walleye in carboy container while in transport. Photo: Brad Hurkett



Photo 3. Partially decomposed vegetation that remained in the pond basin after draining. Photo: Brad Hurkett



Photo 4. Alfalfa meal fertilizer application used to stimulate production of fish forage organisms. Photo: Brad Hurkett



Photo 5. Alberta Conservation Association Fisheries Resource Program Manager observing pond water draining through the fish harvest kettle before flowing back into Forty Mile Coulee Reservoir. Photo: Brad Hurkett