Volunteer group focuses on fish habitat restoration in the northeast

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Fish Habitat Restoration Project Committee

As a result of declining water levels, several lakes in NE and Central Alberta that use to be fish-bearing are no longer suitable fish habitats. A Fish Habitat Restoration Committee was formed with the objective of restoring the fish habitat in several lakes.

The water quality and fish habitat suitability for thirteen waterbodies were sampled during the winter of 2019-20. The project was an example of the use of volunteers to collect important fish habitat information and has been called the use of "Citizen Science" to improve the management of fish resources in Alberta.

All of the lakes were assessed by volunteers with some supporting funds from the Alberta Conservation Association (ACA), the Alberta Fish and Game Association (AFGA), Sherwood Park Fish and Game Association, Edmonton Fish and Game Association, St. Paul Fish and Game Association, the Northeastern Alberta Fish and Game Association (Zone 5) and the Cumulative Environmental Management Association. EnviroMak also volunteered considerable time to this project

With increased water levels it is expected that the fish habitat will recover in some lakes and in others some fish habitat restoration (i.e. lake aeration, increasing water levels) could be conducted and fish transplants or fish stocking would lead to increased angling opportunities and increased fish production in Alberta.

Several lakes provided excellent fish habitat and fish production prior to the decline in water levels which resulted in unsuitable fish habitat. The fish habitat in approximately 30 lakes in NE and Central Alberta was lost including some lakes that had been used for commercial fishing.

Fish of different species and of different sizes have different requirements for dissolved oxygen. Whitefish and trout require higher oxygen levels than Fathead minnows and Brook sticklebacks and larger-sized fish require more oxygen than smaller-sized fish of the same species. Northern pike and Yellow perch require oxygen levels normally above 1.0 mg/L; however, some smaller sizes may overwinter in slightly less oxygen. Winter conditions (i.e. days of ice cover, snow cover) and the type of spring breakup also influence the potential for low oxygen that could result in winterkill.

The information gathered should assist fisheries managers to take action that will improve fish resources in the Province. The table below provides the list of the lakes that were sampled along with the conclusions and recommendations.

Citizen Science is scientific research being conducted in whole or in part by amateur scientists or is described as public participation in scientific research. The public interest in fisheries management or environmental management allows for interested publics to monitor and assess fish habitat and water quality.

Conclusions and Recommendations (Winter 2019-20).

Lake	Surface Area (ha)	Conclusions	Recommendations
Upper Mann	459	Suitable fish habitat	Fish transplant could occur after one more year of monitoring
Lower Mann	510	Marginal fish habitat	Aeration should be considered Water levels assessments should be conducted
Bonnie	377	Marginal fish habitat	Aeration should be considered Water levels assessments should be conducted
Cache	206	Marginal fish habitat	Fish transplant could occur after one more winter of monitoring
Frenchman	851	Suitable fish habitat	Fish transplant pike and perch could proceed
Missawawi	2215	Marginal fish habitat	Aeration should be considered Water levels assessments should be conducted
Muriel	6410 (1991) 6800 (1974)	Marginal fish habitat	Fish transplant could occur after one more year of winter monitoring Aeration should be considered Water levels assessments being conducted
Lac Delorme	12.7	Unsuitable fish habitat	Needs aeration devices Fish stocking has been occurring
Jackfish	31.6	Unsuitable fish habitat	Needs aeration devices equipment may still be on site Fish stocking has been occurring
St. Paul Trout Pond	1.0	Suitable fish habitat	Winter aeration device is effective and should be continued
Highway 63 Dugout #1	2.53	Suitable fish habitat	Fish transplant pike and perch could proceed Fish stocking
Highway 63 Dugout #2	2.89	Suitable fish habitat	Fish transplant pike and perch could proceed Fish stocking
Highway 63 Dugout #3	2.50	Suitable fish habitat	Fish transplant pike and perch could proceed Fish stocking

Numerous volunteers generously dedicated their time and energy to help organize and gather the water sampling data presented within this report. EnviroMak also volunteered considerable time to this project with some funding provided by the Alberta Conservation Association for technical assessment and coordination in the field. Sherwood Park Fish and Game Association, Edmonton Fish and Game Association, St. Paul Fish and Game Association and the Northeastern Alberta Fish and Game Association (Zone 5) also provided specialized monitoring and aeration equipment.

The Fish Habitat Restoration Project Committee would like to give a huge thank you to everyone for their contributions and for doing an outstanding job!

Winter Monitoring Volunteers in 2019-20

Crew 1: Upper Mann Lake, Lower Mann Lake – volunteer crew Kim Somerville

Crew 2: Cache Lake, Bonnie Lake - volunteer crew Gerald Tataryn and Brian Tatarin

Crew 3: Frenchman Lake, Missawawi Lake – volunteer crew Doug Petruk and Dwight Lilyadahl

Crew 4: Muriel Lake - volunteer crew Richard Bourgeois, Don Midgley, John Nahamko and Dale Pawliuk

Crew 5. Three borrow pits along Highway 63 monitored in March 2020 – volunteer crew Bryan Fayant with Cumulative Environmental Management Association (CEMA)

Crew 6: Jackfish Lake (south of Myrnam), Lac Delorme and St. Paul Trout Pond monitored March 2020 – volunteer crew Gordon Smereka, Clarence Makowecki and Ray Makowecki