

**Alberta Conservation Association
2018/19 Project Summary Report**

Project Name: Establishing Walleye Fisheries

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Partnerships

Alberta Environment and Parks

Key Findings

- Review of methods to improve or establish walleye fisheries in Alberta including fish passage for movement between lakes, fish passage to spawning habitat, improvement of spawning habitat, traditional stocking programs, lake specific stocking, triploid walleye stocking, and adult walleye transfer.
- Review of factors influencing productivity and success of walleye fisheries include fishing pressure, recruitment, adult abundance, and food availability.
- Identification of strengths and weaknesses, data deficiencies, and feasibility of different potential techniques for improving or establishing walleye fisheries.

Introduction

Motivation for this project stemmed from the popularity of walleye fishing and the reduction in walleye harvest opportunities with recent fishing regulation changes (Zwickel 2012, Government of Alberta 2018). Historically, numerous walleye stocking and habitat enhancement projects

occurred within Alberta (Johnston and Paul 2006). Many historical walleye establishment and enhancement projects were not sufficiently documented and monitored making it difficult to obtain data on the scope and success of those projects beyond personal communications. More recently, selective walleye fishery rehabilitation projects have occurred including at Lac La Biche and Wabamun Lake (McGregor 2014, Government of Alberta 2017). During the 2018/19 fiscal year, we initiated a project to determine the feasibility of establishing and/or enhancing various forms of walleye fisheries in the province. We treated the 2018/19 fiscal as a scoping year to develop a list of potential methods for enhancement of current walleye lakes and the development of new ones.

Methods

During this scoping year, we accessed peer-reviewed publications, government and related organization reports, summary reports of past walleye expansion programs, news articles and opinion pieces, and engaged in personal communications with fish hatchery professionals and ACA and AEP biologists to complete the following tasks. To begin, we felt it was important to gain a basic understanding on the factors that influence success of a walleye fishery. Then, we collected information on methods to create or enhance walleye fisheries that have been used in Alberta, and other parts of North America. We also explored theoretical methods that may be suitable but are currently data deficient. Finally, we compiled data on the strengths, weaknesses, and feasibility for all potential options.

Results

Identified major influences on walleye fishery success include fishing pressure, recruitment, adult abundance, and food availability in addition to highly specific impacts and interactions between these factors. Methods identified for creating or enhancing walleye fisheries include improving fish passage for movement between lakes, improving fish passage to spawning habitat, improving spawning habitat, traditional stocking programs, lake-specific stocking using eggs and milt from the same source, triploid walleye stocking, and adult walleye transfer. Quantity and quality of data on each method varied widely based on popularity of use throughout

North America with some methods having limited use and some being completely data deficient due to popularity of other easier, more cost-effective methods. A definitive ranking of potential methods is not feasible due to lake specific variation and the condition of the fishery. Current challenges include data deficient methods, inaccessibility and poor reporting of historical efforts, and lack of monitoring of historical attempts of establishing or enhancing walleye fisheries in Alberta.

Conclusion

Several options are available to help bolster existing walleye populations or establish new populations that are worth further evaluation. The appropriateness of each method is dependant on the specific waterbody. Limited reporting and data are accessible on historical establishment of walleye fisheries in Alberta including monitoring of successes and failures of past attempts. Based on the information we have gathered, ACA in collaboration with AEP, will select study lakes and develop lake-specific plans to improve walleye fishing opportunities for anglers.

Communications

- Presentation to ACA fish team, March 2019.

Literature Cited

McGregor, A.M. 2014. Lac La Biche Fisheries Restoration Program Summary Report, 2005 to 2013. Alberta Environment and Sustainable Resource Development, Edmonton, Alberta. 32 pp.

Government of Alberta 2017. Wabamun Lake Fisheries Management Update. Alberta Environment and Parks, Edmonton, Alberta. 2pp.

Government of Alberta 2018. Fisheries Management Changes. Available online at <https://mywildalberta.ca/fishing/regulations/fisheries-management-changes.aspx> [Accessed 24 January 2019].

Johnston, F.D. and Paul, A.J. 2006. Review and assessment of walleye genetics and stocking in Alberta. Technical report (T-2006-002) produced by Alberta Conservation Association, Edmonton, Alberta, Canada. 91pp + App.

Zwickel, H. 2012. Sport fishing in Alberta 2010: summary report from the eighth survey of recreational fishing in Canada. Alberta Sustainable Resource Development, Fisheries Management Branch. Edmonton, Alberta, Canada. 46pp.