Implementation Report

McLeod Dam Water Management Plan (MDWMP)

Moira River, Belleville, Ontario

Date: December 2022

Prepared by: C Phillibert

Christine Phillibert, P.Eng.

Water Resources Manager, Quinte Conservation

Verified By:

Brad McNevin

Chief Administrative Officer, Quinte Conservation

Contents

1.0 Introduction

On June 29, 2018 the Ministry of Natural Resources and Forestry (MNRF), under the authority of section 23.1 (6) of the Lakes and Rivers Improvement Act, amended the McLeod Dam Water Management Plan (MDWMP). This amendment was undertaken to align the MDWMP with the 2016 Maintaining Water Management Plans Technical Bulletin. The changes were identified in MNRF's letter notifying of intent to amend, dated March 23rd, 2018. The changes to the MDWMP were updated in June 2018.

The 2018 MDWMP established December 31st, 2022 as the date for submission of the initial Implementation Report in accordance with the Maintaining Water Management Plans technical Bulletin (2016). Implementation Reports must be submitted every 5 years thereafter.

2.0 Amendment Requests

There have been no amendments made to the original WMP. No amendment requests have been received.

3.0 Standing Advisory Committee (SAC) Status

A standing advisory committee was not a requirement of the 2018 MDWMP and thus has not been implemented.

4.0 Effectiveness Monitoring Plan (EMP)

The EMP in the 2018 MDWMP was written as such:

> *The purpose on an Effectiveness Monitoring Program is to confirm that operational changes from the implementation of the WMP result in the expected ecological, social and economic improvements. The Environmental Screening for the project identified potential improvements in waterfowl habitat, the fish community, and recreational fishing along the shoreline. No changes were noted to the potential for downstream flooding in the winter due to frazil ice formation and pack ice movement. Groundwater levels along the east shoreline will be monitored to assess potential changes.*
>
> *The Effectiveness Monitoring component of this Plan will consist of routine baseline data gathering as part of Quinte Conservation's ongoing stewardship activities for use in the future during the subsequent plan renewal. Reporting on the results of the effectiveness monitoring program will occur through submission of the Implementation Report, as outlined in Section10.*

The following studies exist prior to the construction of the 2010 McLeod Dam and act as a baseline to compare against any future studies.

- Moira River Study (Coy, 1986);
- Fisheries Study of the Wishart Head-pond (Scott, 1991);
- The McCormick Rankin Corporation Study (MRC, 2000);
- Fisheries Assessment for the Ministry of Transportation Road Improvements (Tottem Simms Hubicki);
- Fisheries Assessment as reported on a MNR Licence to Collect Fish for Scientific Purposes (G. Coke, 2003);
- McLeod Dam Waterpower Project Environmental Screening and Draft Water Management Plan (Quinte Conservation, July 2006, revised March 2007)

4.1 Waterfowl Habitat

Quinte Conservation contacted the local field naturalist group (Quinte Field Naturalists) to gather data on bird sightings within the project area. The members have recorded sightings of the subject area during the migration period. Anecdotally, staff have seen Canada Geese and other common waterfowl using the area.

The McLeod Environmental Screening and Water Management Plan (2006) included table 3-5 which is shown below:

Table 3-5: Birds Observed near McLeod Dam – Fall 2005

Common Name	Scientific Name
American Black Duck	*Anas rubripes*
American Crow	*Corvus brachyrhynchos*
American Goldenfinch	*Carduelis tristis*
Black-capped Chickadee	*Parus atricapillus*
Blue-winged Teal	*Anas discors*
Canada Goose	*Branta canadensis*
Common Grackle	*Quiscalus quiscula*
Downy Woodpecker	*Picoides pubescens*
Great Blue Heron	*Ardea herodias*
Herring Gull	*Larus argentatus*
Killdeer	*Charadris vociferus*
Mallard Duck	*Anas platyrhynchos*
Mourning Dove	*Zenaida macroura*
Red-winged Blackbird	*Agelaius phoeniceus*
Ring-billed Gull	*Larus delawarensis*
Ring-necked Duck	*Aythya collaris*
Rock Dove	*Columba livia*

Birds Canada operates Nature Counts, an online platform that allows users to collect, archive, interpret and access wildlife data across the western hemisphere. The platform shows up to date counts of waterfowl in many regions including the McLeod Dam region. The below link can be used as shortcut to this data. Breeding Bird Atlas - Square Summary Sheet (naturecounts.ca)

4.2 Fish Community

Quinte Conservation collected fish in the tailwater of the dam in September 2011 using a Halltech HT 2000 Backpack Electrofishing Unit. The findings are summarized below:

Species	Code	No. Caught	No. Kept	No. Live Released
ROCK BASS	311	141	0	66
LOGPERCH	342	19	0	2
SMALLMOUTH BASS	316	102	0	59
PUMPKINSEED	313	18	0	1
BANDED KILLIFISH	261	17	0	1
BURBOT	271	1	0	1
FANTAIL DARTER	339	3	0	3
JOHNNY DARTER	341	5	2	2
Bluntnose Minnow	208	2	0	2
Channel Darter	343	1	0	1
Longnosed Dace	211	17	0	17
Fallfish	213	11	0	11
White Sucker	163	1	0	1
Brown Pullhead	233	1	0	1
American Eel	251	10	0	10

A fish survey was conducted on October 3, 2016 using a Halltech HT 2000 Backpack Electrofishing Unit. All habitat types were covered within the tailwater study area. The area was blocked off with nets to ensure fish could not enter the search area. All fish collected were placed into buckets, identified to species, and enumerated. The most common species collected throughout the PSA was rock bass (Ambloplites rupestris) at 47 individuals and pumpkinssed (Lepomis gibbosus) at 46 individuals. All fish were released into the large open pool at the bottom of the weir outside of the PSA and block nets.

The following fish were present during the survey:

Species	Total # of Individuals	Number Caught
Ambloplites rupestris	rock bass	47
Micropterus salmoides	largemouth bass	14
Micropterus dolomieu	smallmouth bass	37
Lepomis macrochirus	bluegill	11
Lepomis gibbosus	pumpkinseed	46
Anguilla rostrata	american eel	16
Percina caprodes	log perch	23
Fundulus diaphanus	banded killifish	1
Semotilus corporalis	fallfish	7
Rhinichthys cataractae	longnose dace	11
Lota lota	burbot	8

4.3 Groundwater Levels Along the East Shore

Following construction in 2007 it was observed that the groundwater on the east side of Cannifton Road had risen to the level that it affected a local business and apartment building. An engineering solution was subsequently found which included a new liner on the east riverbank and two monitoring wells. The monitoring wells are located at 151 Cannifton Road and 197 Cannifton Road in Belleville. The sensors in the wells now consist of a Solinst L5 logger. The data is uploaded, reviewed, and compared against the baseline data. There have been no observable spikes that warranted concern. This has been reinforced in that the local business and residents have not had any water issues.

These sensors will continue to be maintained and all data will be reviewed to ensure that the east liner maintains it's integrity.

4.4 Monitoring and Reporting of Water Levels and Flows

As noted in table 7.1 of the McLeod 2018 WMP – Quinte Conservation and section 5.1 of the 2018 Maintaining Water Management Plans – MNRF, the records associated with the head-pond levels and water flows shall be made available to the Ministry upon request.

4.5 Effectiveness Monitoring Program Updates

Going forward, the Effectiveness Monitoring Program will consist of data gathering prior to, during or after an event is expected to occur whereby the ecosystem may undergo duress. The details and the timing of the future studies will be dependent on the risk imposed by said event. The MNRF will be involved throughout the process of these future events.

5.0 Conclusion

Overall, in review of the MDWMP and it's governing objectives regarding the environmental and social implications with the Moira Watershed, no amendments to the MDWMP document are recommended at this time.