



8950 Martin Luther King Jr. Street N. #202  
St. Petersburg, Florida 33702-2211  
Tel: (727) 563-9070  
Fax: (727) 563-0207  
Email: [MRAG.Americas@mragamericas.com](mailto:MRAG.Americas@mragamericas.com)

President: Andrew A. Rosenberg, Ph.D.

## **Marine Stewardship Council Assessment**

**Manitoba boreal forest lakes walleye, northern pike, yellow perch,  
lake whitefish, and lake cisco commercial gillnet fishery**

***Waterhen Lake walleye and northern pike UoAs only***

## **Public Certification Report**

**March 24th 2020**

***MRAG Americas, Inc.***

8950 Martin Luther King Jr. Street N, Suite 202, St Petersburg, FL 33702, USA

Jodi Bostrom, Sara Adlerstein-Gonzalez, and Tom Jagielo

### **Client:**

***Government of Manitoba  
Manitoba Sustainable Development, Wildlife and Fisheries Branch  
Winnipeg, Manitoba***

***Skownan First Nation  
Waterhen, Manitoba***

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MSC Fisheries Certification Requirements (FCR) Version 2.0

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Checked/Approved by:	Amanda Stern-Pirlot

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# 1. Executive Summary

This report sets out the results of the Marine Stewardship Council (MSC) reassessment of the Waterhen Lake walleye (*Sander vitreus*) and northern pike (*Esox lucius*) commercial gillnet fishery against the MSC Principles and Criteria for Sustainable Fishing. As part of this reassessment, additional lakes are being assessed for inclusion in the overall fishery (to be known as the “Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet fishery”). This larger fishery has 14 proposed units of assessment (UoAs); however, this report only covers 2 UoAs – Waterhen Lake walleye and northern pike.

MRAG Americas was contracted in 2018 by the Government of Manitoba (Manitoba Sustainable Development, Wildlife and Fisheries Branch) and the Skownan First Nation to undertake the reassessment of the Waterhen Lake walleye and northern pike fishery and the initial assessment of the other UoAs within the larger Manitoba boreal forest lakes walleye, northern pike, yellow perch (*Perca flavescens*), lake whitefish (*Coregonus clupeaformis*), and lake cisco (*C. artedii*) commercial gillnet fishery. Waterhen Lake was originally certified in June 2014.

The assessment was undertaken in accordance with the MSC Fisheries Certification Requirements (FCR) v2.0 and using the MSC Guidance to MSC FCR v2.0, which sets out the assessment and certification process. As a result, to date, the following steps have been undertaken:

- Announcement of the assessment
- Appointment of the assessment team
- Notification on the use of the assessment tree
- Notification and undertaking of the site visit
- Production of the client draft report that describes the background to the fishery, the fishery management operation and the evaluation procedure and results
- Production of the Peer Review Report
- Response to Peer Review comments, and report revisions where necessary
- Production of the Public Comment Draft Report
- Response to stakeholder comments on the Public Comment Draft Report
- Review by MRAG Americas’ qualified nominated Reviewer and Decision Maker
- Consultation on the Final Report and Determination
- Production of the Public Certification Report

The assessment of the fishery was performed by Tom Jagielo, Jodi Bostrom, and Sara Adlerstein-Gonzalez covering Principle 1 (target stock), Principle 2 (ecosystem), and Principle 3 (management) components of the MSC Standard, respectively. Jodi Bostrom was also the Team Leader.

A site visit was conducted in Winnipeg, Waterhen, Easterville, The Pas, Moose Lake, and Swan River in Manitoba, Canada, March 16-19, 2019 with other meetings held remotely after the site visit. During the site visit, the assessment team met with scientists, fishery managers, fishers, and stakeholders as well as client representatives. The site visit was conducted in conjunction with the fourth annual surveillance audit for the fishery. There were no meetings requested from additional stakeholders.

## Principle 1

**Strengths:** An annual fishery-independent index gillnetting survey is conducted in with a standardized survey protocol. The survey provides annual stock assessment data for walleye and northern pike.

Weaknesses: There are no estimates of removals of walleye or Northern pike in the recreational or subsistence fisheries. There are no internal or external reviews of the stock assessments for walleye or northern pike.

### **Principle 2**

Strengths: The UoAs have no primary species and only a five secondary species, and they interact with no ETP species. The information about the main secondary species is adequate to support a partial strategy. The size and intensity of the UoAs are limited so their impact on habitats and the ecosystem are minimal.

Weaknesses: There is limited information directly about the UoAs and the secondary species so it is not known with some objective basis for confidence that the measures will work to manage the main secondary species. Additional investigations into the main impacts of the UoAs on the key ecosystem elements within Waterhen Lake would be useful.

### **Principle 3**

Strengths: The fishery is relatively small in terms of scale with a limited number of fishers and takes place when there is ice on the lake, thus its spatial and temporal nature is also reduced. The approach to fishery management has been a focus of substantial attention by the clients and over recent years it has been developed as a model for the sustainable harvest of other lakes in the Province of Manitoba. The fishery incorporates the fishers into management and responds positively to the responsibility. This has been promoted by an active Fishery Unit that continues to work closely with the fishers.

Weaknesses: There is a lack of transparency and documentation in the management system to support that the consultation process is open to stakeholders and that any information is viewed. By-laws of the fisher's association, where some of the information contributed to management is detailed, are not written down, and there is no paper trail on how information is used or not used or notes about scheduling meetings, inviting stakeholders, and of formal attendance. A further weakness is in the ability to enforce relevant management measures, strategies and rules. There is limited effort to monitor the fishery, and enforcement reports are not available; catch monitoring and control through sale slips is now questionable as sales through the Freshwater Fish Marketing Corporation (FFMC) is no longer mandatory. The involvement of the FFMC that had monopoly on the commercial sales provided a strong basis to allow confidence in the veracity of reported landings. Further, fishers do not complete logbooks while required by department officers. Data are important to monitoring overall catch, particularly with regard to bycatch, and for the assessment process, in particular in this fishery where there is no monitoring of harvest.

The final determination of the assessment team and the decision of the CAB is that the Waterhen Lake walleye and northern pike should be certified. The additional UoAs are still being assessed and will follow a separate timeline than these UoAs. This determination is made on the basis that all UoAs scored 60 or higher on each individual Performance Indicator (PI), and 80 or higher on each of the three Principles. There are five conditions raised for both stocks in this assessment covering two PIs in Principle 1 and three PIs in Principle 3 (Tables 14-18) and one recommendation covering one PI in Principle 2 (Table 19).

## **2 Authorship and Peer Reviewers**

The assessment of the fishery was performed by Tom Jagielo, Jodi Bostrom, and Sara Adlerstein-Gonzalez covering Principle 1 (target stock), Principle 2 (ecosystem), and Principle 3 (management) components of the MSC Standard, respectively. Jodi Bostrom

was also the Team Leader. A discussion between team members regarding conflict of interest and biases was held, and none were identified.

**Ms. Jodi Bostrom** (team leader and Principle 2) joined MRAG Americas as a Senior Fisheries Consultant and MSC Fisheries Program Manager in 2015. Prior to joining MRAG Americas, she spent five years working at the MSC in London as a Senior Fisheries Assessment Manager. Among many other things, she developed the MSC's benthic habitats policy and the Consequence Spatial Analysis (a risk-based framework for assessing habitat impacts in data-deficient situations) as part of the MSC Standard revision. Prior to the MSC, Jodi spent 11 years with the National Academy of Sciences' Ocean Studies Board in Washington, DC. She received an M.Sc. in Environmental Science at American University in 2006 and a B.Sc. in Zoology at the University of Wisconsin in 1999. Jodi's main areas of work at MRAG Americas are serving on MRAG Americas' MSC fisheries assessment teams and reviewing MSC assessment reports for technical quality and compliance. Ms. Bostrom has training in carrying out an MSC Risk-Based Framework (RBF).

**Mr. Tom Jagielo** (Principle 1) has a wide breadth of experience in fisheries science and habitat studies in marine and freshwater systems. He has been a consultant in quantitative fisheries science since 2008. Previously he served for 24 years with the Washington Department of Fish and Wildlife, and 6 years with the Fisheries Research Institute at the University of Washington in Seattle. He has specialized in groundfish stock assessment and survey design, to assess marine fish populations for sustainable fisheries management. He has produced groundfish stock assessments for the Pacific Fishery Management Council, including analysis of lingcod, black rockfish, and yelloweye rockfish populations. Tom has experience working with government agencies, commercial and recreational fisheries groups, Native American tribes, community organizations, and both national and international advisory groups. He has received appointments to the Scientific and Statistical Committee of the Pacific Fishery Management Council, the Technical Subcommittee of the US-Canada Groundfish Committee, and the Pacific Coast Ocean Observation System. He has published in peer-reviewed journals and symposium proceedings and has presented papers at national and international meetings. Tom received a B.S. degree in Biology from the Pennsylvania State University, and a M.S. degree in Fisheries from the University of Washington, where he also conducted post M.S. graduate studies in fisheries population dynamics and parameter estimation. Tom has served as either an MSC Team Member or a Peer Reviewer for fish populations in Iceland, Europe, Australia, New Zealand and the US. Mr. Jagielo has training in carrying out an MSC RBF.

**Dr. Sara Adlerstein-Gonzalez** (Principle 3) has been a research faculty at the School of Natural Resources and Environment (SNRE) at the University of Michigan for 17 years. She obtained MS degrees in Biology at the University of Concepcion, Chile, and MS and PhD in Fisheries at the University of Washington. She has worked in academia (University of Hamburg in Germany) as well as in organizations devoted to fisheries management (Chilean Fishery Ministry, the International Pacific Halibut Commission) and as an expert on ecosystem effect of fisheries for a number of Marine Stewardship Council certifications for sustainable fisheries. Most recently she participated in the assessment of Lake Erie commercial fisheries and Chilean shrimp fisheries. She teaches statistics, applied ecology and classes that explore multilayer relationships between culture and the environment. Her research program is centered on applied aquatic ecology, with emphasis on population assessments and ecosystem dynamics with the goals of: (i) improving monitoring and increasing the value of available information; (ii) understanding processes that determine distribution and abundance of aquatic organisms; and (iii) quantifying responses of aquatic communities to stressors and management. Major contributions of her research are in applications for management, including diagnostics of environmental quality and advances in concepts related to fish movement and ecosystem food web models.

## PEER REVIEWERS

The peer reviewers for this report were Rob Blyth-Skyrme and Randy Ericksen.

**Dr. Rob Blyth-Skyrme** has worked in aquaculture and then in marine fisheries science, management and policy since 1996. Following his PhD which focussed on fisheries management and the environmental effects of fishing, he worked at the Eastern Sea Fisheries Joint Committee, the largest inshore fisheries management organization in England, where he became the Deputy Chief Fishery Officer. He then became a senior advisor to the UK Government on marine fisheries and environmental issues, leading a team dealing with fisheries policy, science and nationally significant fisheries and environmental casework. Rob now runs Ichthys Marine Ecological Consulting Ltd., a marine fisheries and environmental consultancy. As well as working for Government and industry on fisheries science and management issues, he has undertaken all facets of MSC work as a Lead Assessor, expert team member and peer reviewer across a wide range of fisheries.

**Randy Ericksen** has over 30 years of experience working in the areas of fish stock assessment, monitoring, escapement goal evaluation, run forecasting and international fisheries sustainability. He received a M.S. degree in Fisheries Science from the University of Alaska, Fairbanks and has worked with government agencies, commercial and recreational fisheries groups, indigenous groups, and national and international nongovernmental organizations. Randy is the author of numerous reports, fishery assessments, management plans, and scientific articles on fish population dynamics, fish conservation, fishery and hatchery management. He has been a speaker at international forums in the US, Canada and Russia. He has conducted preassessments for Russian salmon fisheries and assessed fisheries for the Monterey Bay Aquarium Seafood Watch Program. In addition, he completed an assessment of tuna fishery improvement efforts in Indonesia for WWF. Randy is currently Fisheries Science Director with Ocean Outcomes, a global fishery improvement organization that works with high-risk fisheries that face big conservation challenges.



## 3 Description of the Fishery

### 3.1 UoAs and Scope of Certification Sought

#### 3.1.1 Final Units of Certification (UoCs)

MRAG Americas has confirmed that this fishery is within scope for MSC fisheries certification, meeting all scope criteria as laid out in FCR v2.0 section 7.4. It is not an enhanced fishery and not based on introduced species.

The UoCs for this fishery are as follows:

Species	Walleye ( <i>Sander vitreus</i> ) Northern pike ( <i>Esox lucius</i> )
Stock Name	Walleye and northern pike within Waterhen Lake, Manitoba, Canada
Geographical Area	North America inland waters (FAO Area 02)
Fishing Method	Commercial gillnet
Management System	Managed by Manitoba Sustainable Development and Department of Fisheries and Oceans, Canada

These UoCs were chosen on the basis of their economic importance, information availability, stock status, and management. The walleye and northern pike stocks make up 70% of the total catch in this fishery by weight.

The final UoCs are identical to the UoAs, with all fish coming from the UoAs eligible to be sold as certified if the reassessment is successful. The eligible fishers are those who are members of the Waterhen Lake Winter Fishers Association. There are no other eligible fishers.

#### 3.1.2 Total Allowable Catch (TAC) and Catch Data

Table 1a. TAC and Catch Data – Walleye

TAC	Year	2018/2019	Amount	36,300 kg
UoA share of TAC	Year	2018/2019	Amount	36,300 kg
UoC share of total TAC	Year	2018/2019	Amount	36,300 kg
Total green weight catch by UoC	Year (most recent)	2018/2019	Amount	14,644 kg
	Year (second most recent)	2017/2018	Amount	18,889 kg

Table 1b. TAC and Catch Data – Northern Pike

TAC	Year	2018/2019	Amount	TAC of 40,000 kg takes effect only if total annual mortality index exceeds 64%
UoA share of TAC	Year	2018/2019	Amount	No TAC (see above)
UoC share of total TAC	Year	2018/2019	Amount	No TAC (see above)
Total green weight catch by UoC	Year (most recent)	2018/2019	Amount	16,443 kg
	Year (second most recent)	2017/2018	Amount	21,659 kg

### 3.1.3 Scope of Assessment in Relation to Enhanced Fisheries

An enhanced fishery assessment tree was developed for some of the other UoAs (i.e., ones not being assessed in this report) where the team did conclude that enhancement needed to be addressed. As part of this development, all lakes/species, including Waterhen Lake's UoAs, were reviewed. It was determined that a minor level of walleye stocking occurred in 2011 when 1.2M fry (intended for Chitek Lake) were released in Waterhen Lake. Given the maximum age expected for walleye (9 years for males; 10 years for females), a de minimis number of these fish are expected to contribute to the fishery in 2020-2021. In short, this is not an enhanced fishery.

### 3.1.5 Scope of Assessment in Relation to Introduced Species Based Fisheries

This fishery is not based on introduced species.

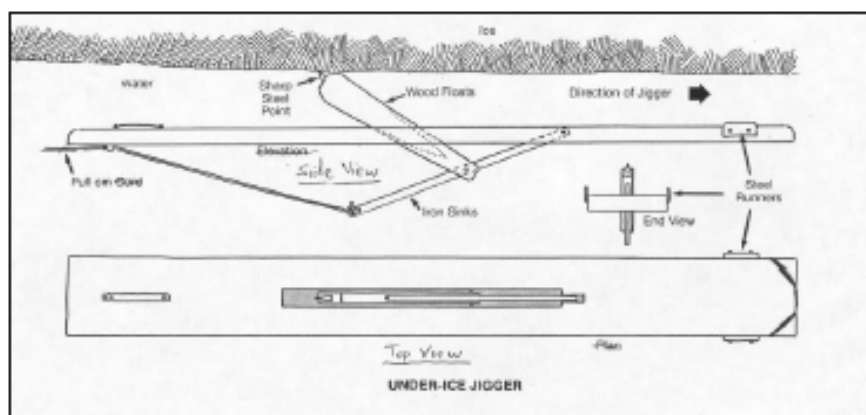
## 3.2 Overview of the Fishery

Waterhen Lake is located between Lake Winnipegosis and Lake Manitoba in the province of Manitoba (Figure 1). It is approximately 34 km long and 8 km wide. In general, it is shallow, with a maximum water depth of 4.4 m. Through the Little Waterhen and West Waterhen Rivers, Lake Winnipegosis empties into Waterhen Lake, which drains southward through the East Waterhen River into Lake Manitoba. The distribution of fish within Waterhen Lake varies according to species (Klein and Galbraith, 2019).



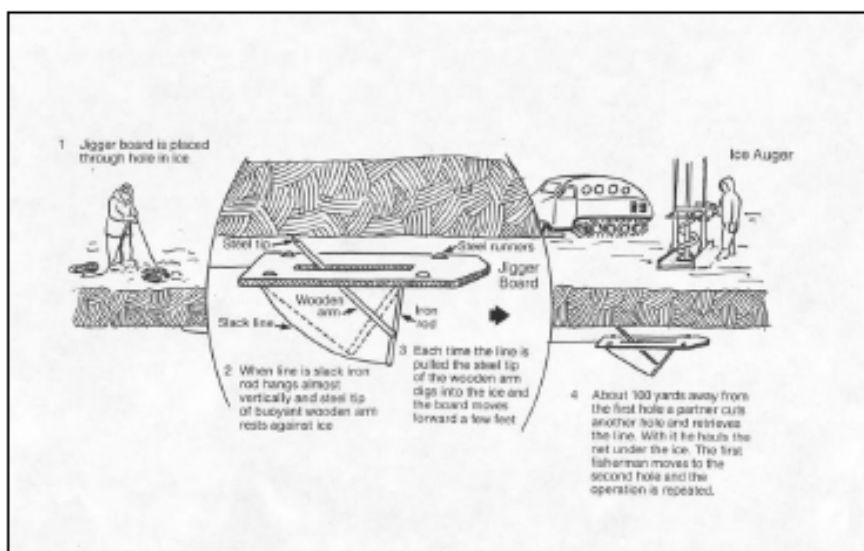
**Figure 1. Location of Waterhen Lake. Source: Klein and Galbraith, 2019**

Walleye and Northern pike are the main commercial species in Waterhen Lake. The other harvested species include lake whitefish, yellow perch, sauger (*S. canadensis*), white sucker (*Catostomus commersoni*), and shorthead redhorse (*Moxostoma macrolepidotum*) collectively marketed as “mullet”, lake cisco marketed as “tullibee”, and common carp (*Cyprinus carpio*). The fishery operates in the winter using gillnets with a minimum mesh size of 96 mm (Figures 2-4). The gillnets are set under the ice using jiggers, which is a plank of wood about six feet long equipped with a steel-tipped wooden arm hinged to an iron rod. A long rope is attached to the end of the iron rod (Klein and Galbraith, 2019; Figure 2).

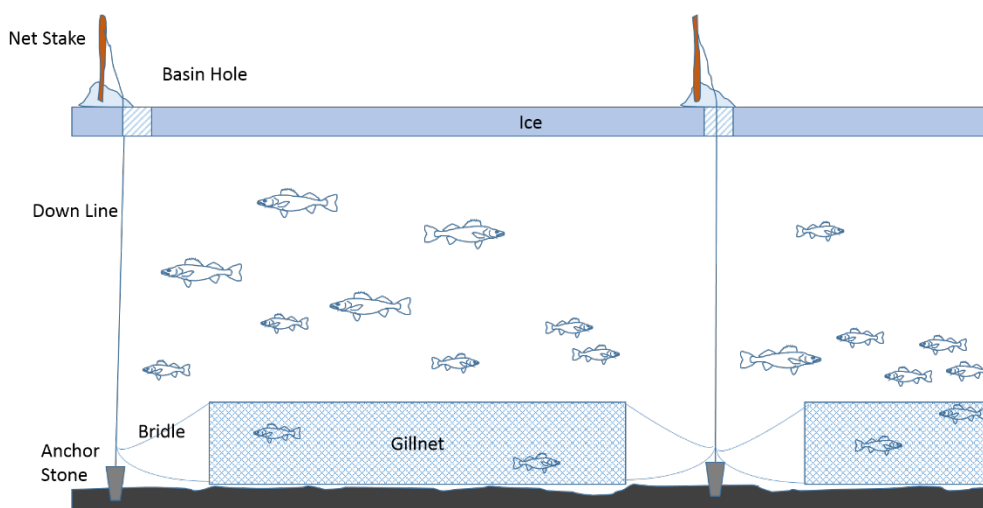


**Figure 2. Diagram of an ice jigger. Source: Klein and Galbraith, 2019**

In order to set the gillnets under the ice, a hole is drilled through the ice. Once the jigger is in the water, the fisher pulls at the rope, forcing the steel tip to dig into the ice and sliding the jigger ahead a few feet. The rope is released, and the steel-tipped arm loses its grip on the ice. The pull/release technique is repeated by the fisher until the jigger has advanced the length of the net. A second hole is then drilled, and the jigger and rope are retrieved (Figure 3). The net is tied to the running line and pulled back between the two holes. The running line is removed, and downlines with anchor stones are tied at each end of the net. (Klein and Galbraith, 2019; Figure 4). Water temperatures are less than 4°C under the ice, resulting in high-quality fish even after five to seven days (depending on current and oxygen levels). Fishers might leave a net for only a day when they are searching for fish or lift it weekly if they are satisfied with the catch rates. To lift a net, the ice in the basin hole is broken or drilled out, and a net hook is used to snag the downline below the ice at one end of the net. The same is done at the other end. At the first end, the bridle is untied from the downline, and a running line is attached to the bridle. The running line will follow the net under the ice as it is lifted and be used to pull the net back between the two basin holes when the net is reset. With the running line attached, the net is now drawn out at the second hole where it is spread out on the snow while the fish are removed.



**Figure 3. Diagram of jigging under the ice. Source: Klein and Galbraith, 2019**



**Figure 4. Diagram of gillnet set under the ice. Source: Klein 2018a**

Waterhen Lake is classified as a multi-use fishery consisting of indigenous domestic/subsistence harvest, commercial gillnetting, and recreational fishing. The indigenous domestic harvest occurs year-round. The following two commercial fisheries operate on Waterhen Lake:

1. Limited-entry winter commercial fishery (maximum 22 fishers) using gillnets subject to harvest control rules (HCR), such as quotas, seasons, and gear.
2. Year-round carp and sucker gillnet fishery subject to gear restrictions (however, no licenses are currently issued for this fishery).

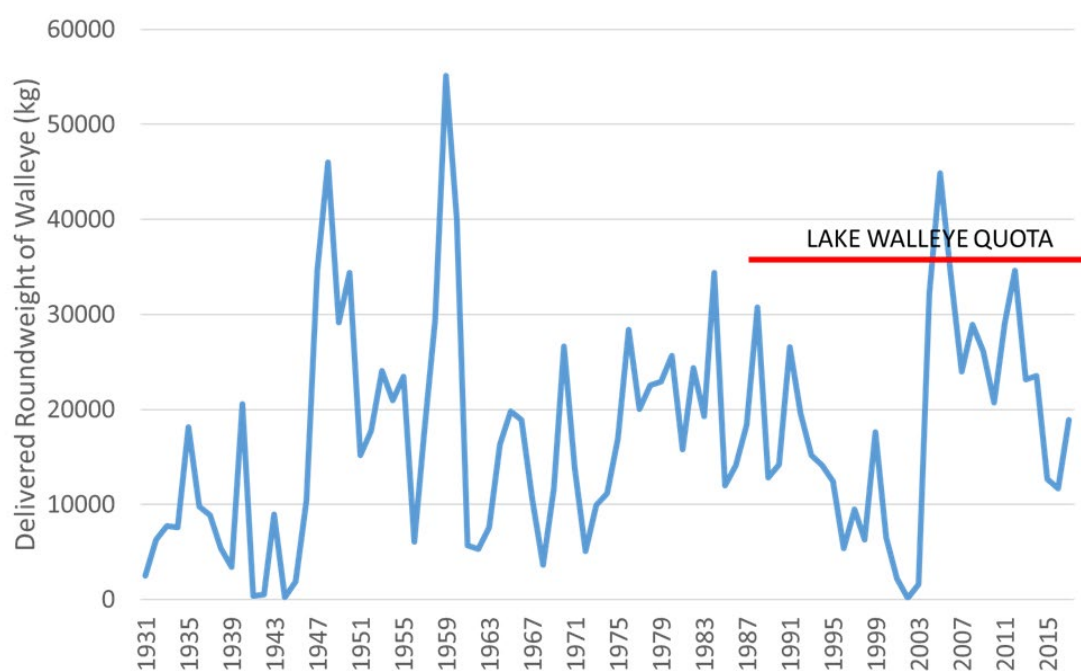
In order to participate in the commercial fishery, individuals are required to be members of the Waterhen Lake Winter Fishers Association, which operates within the bounds of a series of by-laws that limit the number of commercial fisher licenses. Recreational fishing is confined mainly to the tributaries of the Waterhen Lake (Little Waterhen and West Waterhen Rivers) and East Waterhen River, which drains the lake (Klein and Galbraith, 2019). Edwards and Howard (1980) documented walleye movements between the rivers and the lake, but net exchange rates are not known. Additional details on the history of the fishery and management are discussed below.

### 3.3 Principle One: Target Species Background

#### 3.3.1 Walleye

##### 3.3.1.1 History of Walleye Fishing and Management in Waterhen Lake

A detailed review of the history of walleye fishing and management in Waterhen Lake was provided by Klein and Galbraith (2019); the following brief description is summarized from that source. The commercial gillnet fishery on Waterhen Lake has been predominantly a winter fishery, and since 1971 has been open from ‘*when ice makes on or after November 1st to March 31st*’. A single species walleye quota was first put in place in 1980, at 27,200 kg. In 1983, the quota subsequently changed to 30,900 kg, and then to 36,300 kg in 1987. Following the Waterhen Lake Fisheries Management Plan, the lake quota was reduced to 34,600 kg during the 2012/2013 commercial fishing season, for one year. Since the 2013/2014 season, the quota has been maintained at 36,300 kg. Over the past decade, walleye removals have been consistently below that level (Figure 5). Commercial harvest during the winter fishing season is limited to the use of gillnets with a mesh size not less than 96 mm and a maximum length of 5,700 m. The lake quota, gillnet minimum and maximum mesh sizes, and the total yardage allowed are regulated by the walleye Harvest Control Rules (HCRs) as per the Waterhen Lake Fisheries Management Plan (see Status of the Stock section below).



**Figure 5. Walleye production, Waterhen Lake, 1931/32 to 2017/18 commercial fishing season, including the current lake quota of 36,300 kg, set in 1987. Source: Klein and Galbraith 2019**

Walleye account for approximately one third of the commercial landed catch from Waterhen Lake in recent years. Walleye are also taken by the recreational and subsistence fisheries; however, estimates of the removals from these fisheries are not available (Klein and Galbraith 2019). (See Section 3.5.5 for more details on the recreational and subsistence fisheries.) There is also the potential for walleye to be taken in the carp fishery, but no licenses have been purchased in the last decade, and it is safe to consider that no walleye are caught as bycatch in that fishery (G. Klein pers. comm.).



### 3.3.1.2 Life History

Walleye are a predatory fish in the subfamily Luciopercinae, Family Percidae, Order Perciformes. A common name for walleye is pickerel; however, they are not true pickerel of the family Esocidae (DFO 2016). The natural distribution of walleye spans the Arctic river basins from Labrador to the Mackenzie River drainage in the Northwest Territories, the St. Lawrence River drainage including the Great Lakes, and the Mississippi River basin south to Alabama. Walleye are adapted to low light and are found in large, shallow turbid lakes and the deeper waters of clear lakes. They form a dominant part of the fish fauna of central Canada, particularly in the boreal forest zone (DFO 2016). Detailed reviews of the life history of walleye are available in Colby et al. (1979) and Bozek et al. (2011).

Adult walleye migrate to nearshore areas for spawning, shortly after ice breakup in spring. Eggs are deposited and adhere to firm/rocky substrates, where fertilization occurs. Fry drift to open waters upon leaving the spawning beds, and at a length of approximately 25-30 mm become benthic and move back inshore. All age groups move to deeper waters in summer (Colby et al. 1979).

Annual growth rates of walleye are highly variable by latitude, and are driven primarily by the input of thermal energy, measured as Growing Degree Days (GDD) (Colby and Nepszky 1981, cited by Bozek et al. 2011). Growth also varies by sex; after maturation, females tend to grow faster and larger than males (Bozek et al. 2011). Klein and Galbraith (2017) reported that male and female walleye in Waterhen Lake have very similar growth rates until their fourth year; values of  $L_{inf}$  were 713 mm and 526 mm for females and males, respectively. In a 2011 study of walleye in Waterhen Lake, Geisler (2012) reported  $L_{inf}$  of 696.6 mm for females and 522.7 mm for males; ages ranged from 0 to 10 years for females and 0 to 9 years for males.

Male walleye reach maturity at younger ages than females (Bozek et al. 2011). In Waterhen Lake, males were found to mature at 1-4 years, and females at 4-6 years (Geisler 2012); Klein and Galbraith (2017) reported age at 50% maturity was 2.4 years for males, and 4.3 years for females.

Walleye diet shifts from invertebrates to fish as they increase in size; as adults, yellow perch, cyprinids and ciscoes are common food items. Northern pike is a dominant predator of walleye of all age classes. Juvenile walleye are consumed by yellow perch, sauger, adult walleye, and double-crested cormorants (Casselman et al. 2014).

The natural mortality rate of walleye is positively correlated with the number of Growing Degree Days (GDD) and increases from approximately 0.13/year at 1000 GDD to 0.39/year at 3000 GDD (Bozek et al. 2011). In Waterhen Lake, Klein and Galbraith (2017), citing (Lester et al. 2000), assume natural mortality to be near 24% for the available 1575 growing degree days above 5° C.

### 3.3.1.3 Status of the Stock

#### *Assessment Method*

Walleye in Waterhen Lake are assessed using an annual fishery-independent index gillnetting survey conducted in September (Table 2). Nets are set at the same 30 index sites each year and are soaked for approximately 16 hours covering two crepuscular periods. Weight, length, sex, maturity, and gut contents are recorded, and otoliths are taken for age determination (Klein and Galbraith 2019).

**Table 2. Waterhen Lake Index gillnetting fish counts for 10 species (2010-2018). Index nets are North American Standard nets, stretch mesh sizes 38, 51, 64, 76, 89, 102, 114, and 127 mm. Each panel is 3 m long and 1.8 m deep. The survey nominally uses 30 net sets annually. Source: Klein and Galbraith 2019**

Species		Index Gillnetting Fish Counts											
Common Name	Scientific name	2010	2011	2012	2013	2014	2015	2016	2017	2018	Mean	SD	CV
Northern Pike	<i>Esox lucius</i>	72	55	76	53	45	58	76	70	97	66.9	15.8	0.24
Walleye	<i>Sander vitreum</i>	155	174	195	228	125	162	125	145	131	160.0	34.6	0.22
White Sucker	<i>Catostomus commersoni</i>	42	59	26	43	43	38	54	47	51	44.8	9.6	0.22
Yellow Perch	<i>Perca flavescens</i>	33	136	149	123	58	68	108	132	10	90.8	49.9	0.55
Lake Whitefish	<i>Coregonus clupeaformis</i>	13	18	10	7	6	6	5	8	5	8.7	4.4	0.50
Shorthead Redhorse	<i>Moxostoma macrolepidotum</i>	4	1	6	8	3	5	2	8	10	5.2	3.0	0.58
Brown Bullhead	<i>Ameiurus nebulosus</i>	0	2	41	77	34	52	144	27	33	45.6	43.8	0.96
Common Carp	<i>Cyprinus carpio</i>	1	26	37	25	1	1	0	3	1	10.6	14.5	1.37
Cisco	<i>Coregonus artedii</i>	130	42	20	7	19	8	12	6	7	27.9	39.9	1.43
Freshwater Drum	<i>Aplodinotus grunniens</i>	0	4	0	5	3	0	0	14	0	2.9	4.6	1.60

### Stock Indicators and Biological Limits

Four indicators of walleye stock status are tracked annually using data collected from the index gillnetting survey. Harvest control rules (HCRs) with associated target and limit reference points (TRPs and LPRs), are in place for each of the stock status indicators. As discussed in Table 3, the stock status indicators are:

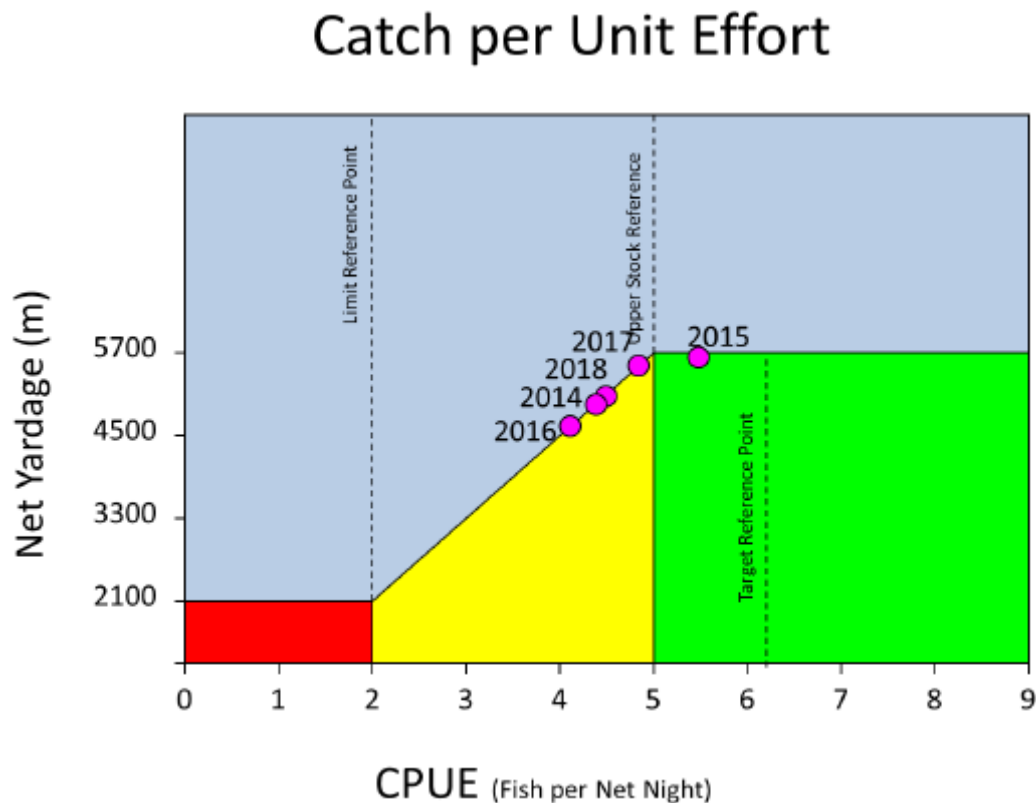
1. Catch Per Unit Effort (CPUE)
2. Spawning Stock Biomass (SSB)
3. Spawning Age Diversity
4. Total Mortality

**Table 3. Walleye HCR indices for Waterhen Lake (2010-2018), derived from the annual index gillnetting survey (see Figures 6-9). Actual and relative values of the four indices are provided. Relative values are with respect to the TRP. A relative value greater than 1.0 indicates the index is above the HCR target; a relative value less than 1.0 indicates below target. Index gillnetting is conducted in September prior to the winter commercial fishing season. Data from Knapman and Casselman (2018); updated by G. Klein.**

	Harvest Control Rule							
	Catch Per Unit Effort		Spawning Stock Biomass		Spawning Age Diversity		Total Mortality	
Limit Reference Point	2.0		20		0.31		0.70	
Target Reference Point	6.3		50		0.60		0.53	
Year	Actual	Relative	Actual	Relative	Actual	Relative	Actual	Relative
2010	5.7	0.90	55	1.10	0.42	0.70		
2011	4.8	0.92	40	0.80	0.71	1.18		
2012	6.5	1.03	45	0.90	0.76	1.27		
2013	7.6	1.20	81	1.62	0.55	0.92		
2014	4.3	0.68	92	1.84	0.44	0.73	0.38	0.72
2015	5.4	0.85	112	2.24	0.60	1.00	0.35	0.66
2016	4.17	0.66	92	1.84	0.72	1.20	0.36	0.68
2017	4.83	0.77	79	1.58	0.74	1.23	0.33	0.62
2018	4.52	0.72	67	1.34	0.72	1.20	0.37	0.70

### HCRs and Current Status of the Reference Indicators

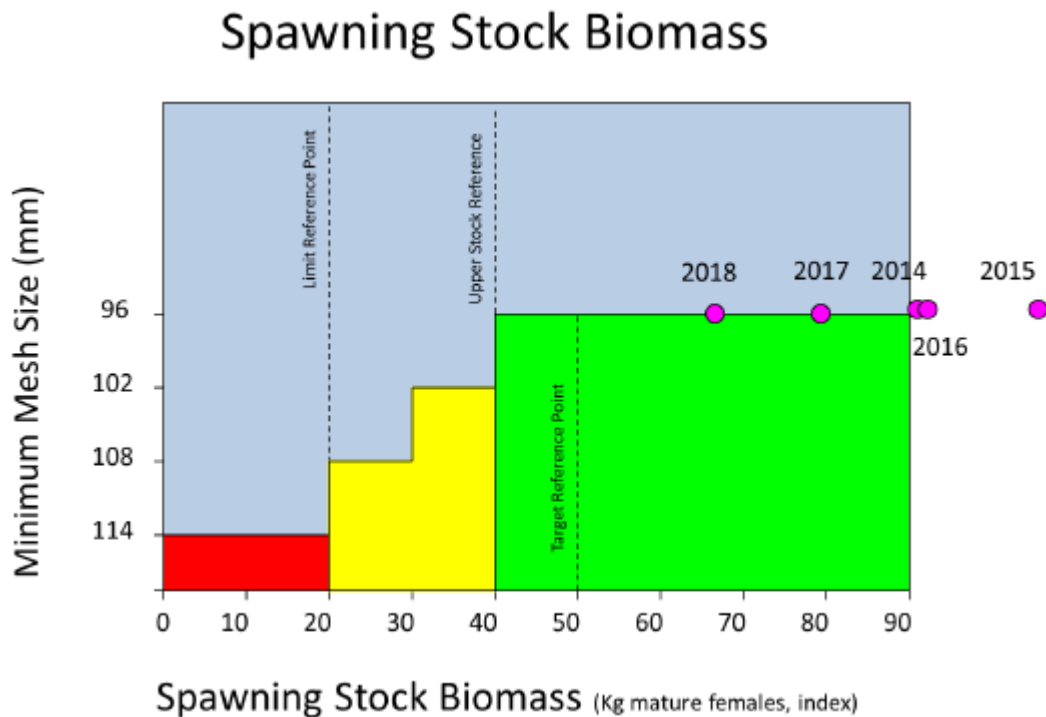
The CPUE control rule was established to reduce fishing effort, should survey CPUE (fish per net night) indicate a decline in walleye abundance below an upper stock RP. In recent years, the survey CPUE values have fallen below the upper stock RP of 5.0, placing the fishery in the medium risk zone (Table 3 and Figure 6). The CPUE was 4.52 in 2018, compared to 4.83 in 2017 and 4.17 in 2016. As per the HCR, the CPUE values below 5.0 triggered a reduction in fishery netting effort. The allowable fishing net-length per licensee was reduced from the baseline (5,700 m) to 4,275 m in 2016, and was 5,500 m in 2017, and 5,100 m in 2018 (G. Klein pers. comm.).



**Figure 6. HCR governing allowable fishing net length per licensee for the Waterhen Lake commercial walleye fishery. Circles (pink) mark catch-per-unit effort (CPUE) in the annual index gillnetting survey (2014-2018). Survey CPUE values (fish per net night) falling in the medium-risk (yellow) zone result in fishing net length reductions per licensee. The LRP (2.0) and TRP (6.3) are shown, along with the upper stock RP (5.0). Source: Klein and Galbraith 2019**

The intent of the SSB HCR is to allow a greater number of young females to escape the fishery and spawn, should survey abundance fall below an upper threshold level, by increasing the minimum mesh size allowed in the fishery (Table 3 and Figure 7). In recent years, index values (total kilograms of gravid female walleye caught in the index gillnetting survey) have been well above the TRP (50 kg) and thus have not required any changes to minimum mesh size. The SSB reference indicator was 67 kg in 2018, compared to 79 kg in 2017 and 92 kg in 2016 (Table 3).

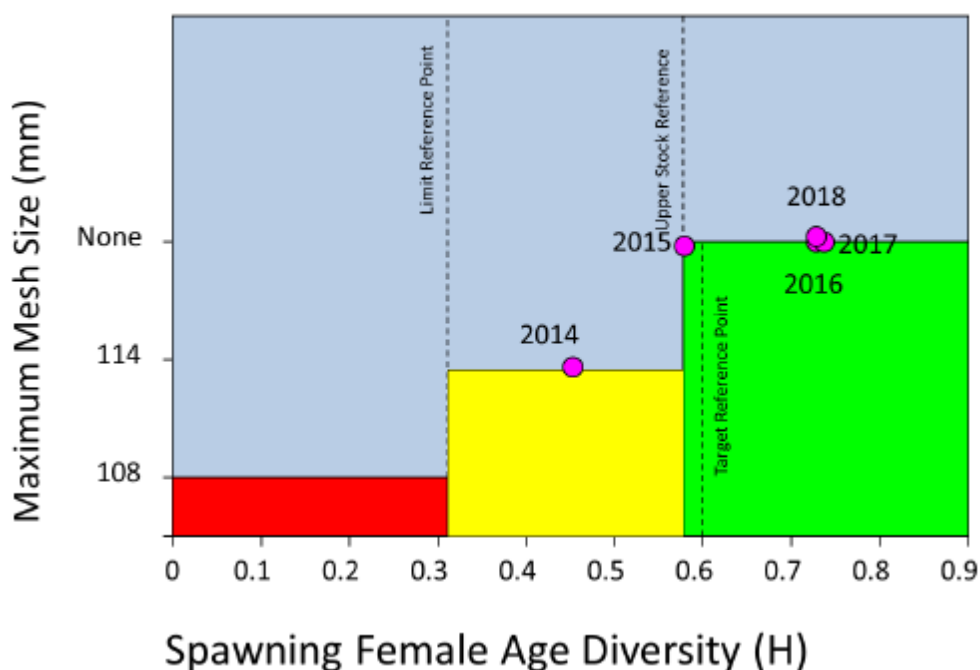




**Figure 7. HCR to avoid recruitment overfishing in the Waterhen Lake commercial walleye fishery. Circles (pink) mark SSB (total kilograms of gravid female walleye) caught in the annual index gillnetting survey (2014-2018). As SSB decreases below the upper stock RP (40 kg), the minimum mesh size allowed in the commercial fishery increases, to allow more females to recruit to spawning size. The limit and TRPs are 20 kg and 50 kg, respectively. Index values off scale are given in parentheses. Source: Klein and Galbraith 2019**

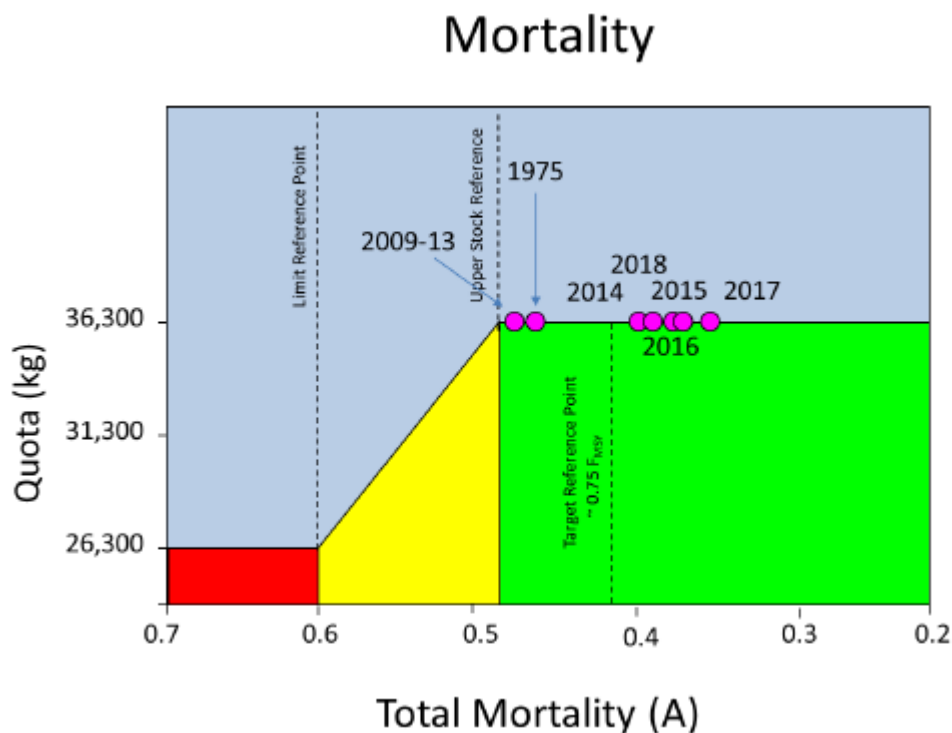
The purpose of the spawning female age diversity (SFAD) HCR is to allow a greater number of older females to escape the fishery and spawn, should age diversity in the population fall below an upper stock RP, by reducing the maximum net mesh size allowed in the fishery (Table 3 and Figure 8). This indicator is derived from catches in the index gillnetting survey, using the Shannon Diversity Index (H). In recent years, the SFAD has been above the upper stock RP (0.58), and the HCR has not been triggered since 2014. The SFAD was 0.72 in 2018, compared to 0.74 in 2017 and 0.72 in 2016 (Table 3).

## Spawning Female Age Diversity



**Figure 8. HCR to maintain female walleye age diversity in the population. Circles (pink) mark the age diversity values (H) (2014-2018). When SFAD is above the upper stock RP (0.58), no maximum gill-net mesh size is applied. Index values below 0.58 trigger a reduction in the maximum gillnet mesh size allowed in the fishery to 114 mm or 108 mm. The limit and TRPs are 0.31 and 0.60, respectively. Source: Klein and Galbraith 2019**

This HCR is designed to reduce the Waterhen Lake walleye quota should total annual mortality, estimated from samples collected in the annual index gillnetting survey, increase beyond an upper stock RP (0.60). In recent years, total annual mortality has been well below the upper stock RP (Table 3 and Figure 9). The value of total annual mortality was 0.37 in 2018, compared to 0.33 in 2017 and 0.36 in 2016 (Table 3).



**Figure 9. Total annual mortality HCR. Circles (pink) mark the total annual mortality, as estimated from index gillnetting survey samples (2014-2018). Values of total annual mortality over the upper stock RP (0.60) result in lake quota reductions. The LRP and TRP are 0.70 and 0.53, respectively. Source: Klein and Galbraith 2019**

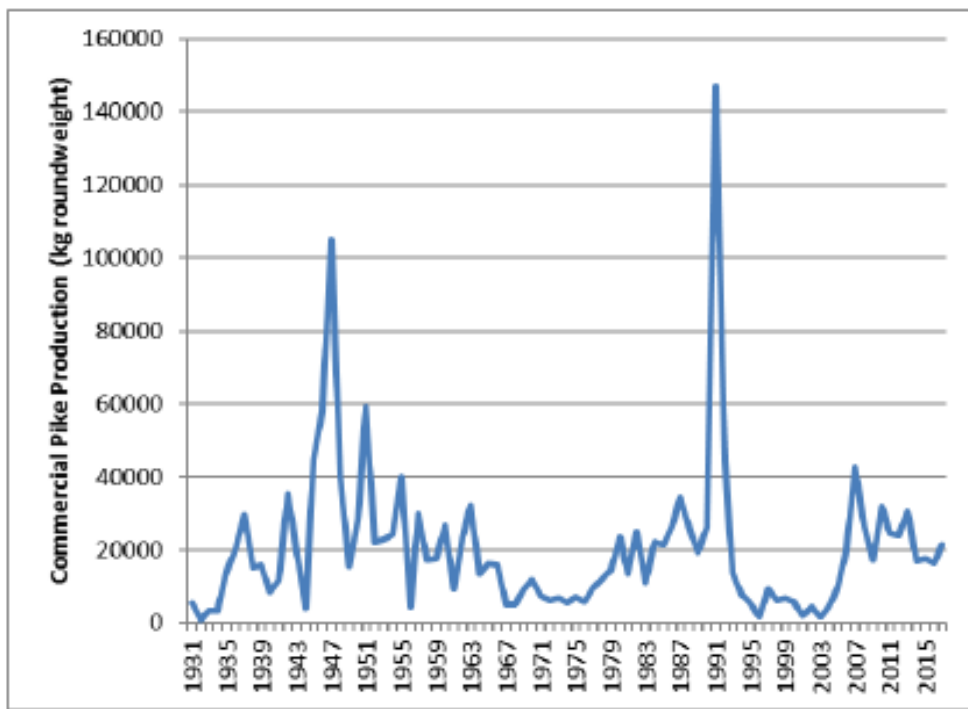
In summary, since the original certification (Casselman et al. 2014), the status of walleye in Waterhen Lake has remained healthy. The CPUE index remained in the medium risk zone in 2018 and declined slightly from 2017; however, the other three indices showed the stock to be in the low risk zone and well above the TRPs. Walleye harvest in 2017-2018 (18,889 kg) was above the previous year (11,708 kg) (a year when the fishing season began late) and well below the lake quota (36,300 kg) (Figure 5).

### 3.3.2 Northern Pike

#### 3.3.2.1 History of Northern Pike Fishing and Management in Waterhen Lake

Klein and Galbraith (2019) reviewed the history of Northern pike fishing and management in Waterhen Lake; the following brief description is summarized from that source. Northern Pike is considered resilient to large mesh gillnet fishing; the minimum mesh size allowed in the Waterhen Lake fishery (96 mm) was put in place to protect walleye, and it is estimated that female pike will have spawned two or three times before they are susceptible to harvest by the commercial fishery.

Historically, annual removals of Northern pike in the range of 10,000 to 35,000 kg from Waterhen Lake have been common; however, exceptionally large removals occurred in the late 1940s and early 1990s (Figure 10). Klein and Galbraith (2017) noted that these spikes in the catch time series were associated with reductions in the minimum mesh size allowed at the time, and they attributed the stock collapse in the 1990s to the sustained use of 76 mm mesh nets during that period.



**Figure 10. Annual commercial harvest levels of northern pike from 1931/1932 winter commercial fishing season through the 2017/2018 winter commercial fishing season. Source Klein and Galbraith 2019**

Northern pike account for approximately one third of the landed catch from Waterhen Lake in recent years (Klein and Galbraith 2017). No quota is in place for northern pike in Waterhen Lake; however, a quota of 40,000 kg would be triggered by the northern pike Fishery Management Plan (FMP) (Klein 2018b) if an HCR reference point is reached (see Status of the Stock section below).

### 3.3.2.2 Life History

Northern pike, family Esocidae, order Esociformes are “lie in wait” predators that are circumpolar in distribution. They occur throughout Canada, except in the Maritimes, Gaspé, most arctic coastal areas, and all but the Northeast corner of British Columbia (Crossman 2015). Common names for northern pike include jack, jackfish, and if small, “hammer handles” (Casselman et al. 2014).

Several sources provide detailed reviews of the life history of northern pike (Raat 1988; Craig 1996, 2008; Harvey 2009). Spawning occurs after ice break up in spring, when eggs are deposited and fertilized in shallow vegetated areas. Upon hatching, larvae swim upward and attach vertically to available substrate during yolk absorption. Aquatic macrophytes provide important cover for adults, attachment for eggs and larvae, and both food and cover for juveniles (Harvey 2009). In summer, adults move to deeper, cooler water with at least 30% submerged macrophyte cover (Casselman 1995). The northern pike population of Waterhen Lake is assumed to be non-migratory and resident, with the best conditions for spawning, nursery, and summer habitat found in the low flow conditions of the Northern part of the lake (Casselman et al. 2014).

Female northern pike tend to grow faster and larger than males. For Northern pike populations in Ontario, mean  $L_{\infty}$  for females was 1,052 mm, and for males 854 mm (Casselman et al. 2014). Using length data from a study of northern pike in Waterhen Lake by Pellissier (2012), Casselman et al. (2014) reported that northern pike in the relatively

small sample (n = 51) were growing only slightly, but not significantly, faster than is standard for the species (up to 6 years of age,  $102.5 \pm 2.7\%$ ).

The onset of sexual maturity of northern pike varies by latitude, with fish in the south tending to mature at a younger age than fish in the north (Raaf 1988). Casselman et al. (2014) reported that age at first maturity for northern pike sampled in Ontario was 1.97 years of age for females (462 mm), and 1.82 years of age for males (424 mm). Pellissier (2012) reported that all fish sampled at 2 years of age in Waterhen Lake (n = 5 females and n = 7 males) were mature.

Harvey (2009) reviewed the feeding ecology of northern pike. They are top predators, relying frequently on camouflage within aquatic vegetation for ambushing prey. The diet of juveniles shifts from invertebrates to fish as they increase in size. Adults are opportunistic feeders; they are known to feed on a variety of fishes, as well as leeches, frogs, crayfishes, mice, muskrat and ducks. In North America, yellow perch are a common diet item, with opportunistic use of invertebrates when fishes are unavailable. Both juveniles and adults are known for cannibalism when the diversity of available prey is low (Harvey 2009). Other predators on young Northern pike include percids, centrarchids, and cormorants (Casselman et al. 2014).

There are few estimates of northern pike natural mortality in the scientific literature (Casselman et al. 2014, Klein 2018b). Natural mortality for northern pike in Waterhen Lake was estimated by Klein (2018b), using the maximum age method of Hoenig (1983). Based on a maximum age of 9, observed in a sample from 5 years of index gillnetting (n = 304), natural mortality was estimated to be 37%. Klein (2018b) noted that, by comparison, an estimate of 32% was calculated by tagging in Windermere Lake (Haugen et al. 2007).

### **3.3.2.3 Status of the Stock**

#### *Assessment Method*

The annual fishery-independent index gillnetting survey (described above for walleye) is also used to assess Northern pike in Waterhen Lake. Additionally, since 2014, northern pike have been sampled opportunistically from the commercial fishery, during lake patrols from fishers lifting their nets, or from nets seized during enforcement activities. Bony structures (Cleithra) are collected for age determination; sex, and length, and mesh size of the commercial gillnets are recorded (Klein and Galbraith 2017).

#### *Stock Indicator and Biological Limits*

Two indicators of northern pike stock status (total mortality and CPUE) are tracked annually using data collected from the index gillnetting survey. One HCR, with an associated reference point for total mortality, is in place.

#### *HCR and Current Status of the Reference Indicator*

The index of total mortality (A) is calculated annually. If total mortality should happen to exceed 64% (the estimated  $A_{MSY}$ ), a quota of 40,000 kg is triggered, and the quota is reduced by 10% every year the total mortality rate remains above 64%. Subsequently, should total mortality decline and the value fall below the 64% threshold, the quota is then increased by 10% per year for as long as the quota is caught and total mortality remains below 64% (Klein 2018). The value of total mortality for 2018 was 53%, compared to a value of 49% in 2017 and is well below the TRP (64%) (G. Klein pers. comm.).

In summary, since the original certification (Casselman et al. 2014), the status of northern pike in Waterhen Lake has remained healthy. Northern pike CPUE in the last five years has been stable or increasing (Table 2). The new HCR has been in place since the 2017-2018 fishery, and survey values of the reference indicator (total mortality) have not triggered management action. Northern pike harvest in 2017-2018 (21,659 kg) was above the previous year (16,219 kg) and well below 40,000 kg (i.e., the quota that would be triggered if the total mortality index should exceed the stock reference point of 64%).

### 3.4 Principle Two: Ecosystem Background

#### 3.4.1 Primary and Secondary Species

The MSC defines a primary species as a species that is caught but is not the target species, that is within scope of the MSC program (i.e., not an amphibian, reptile, bird, or marine mammal), and that has management tools and measures in place. A secondary species is defined as a species that is not considered primary or is a species that is out of scope (i.e., amphibian, reptile, bird, or marine mammal) but is not endangered, threatened, or protected (ETP; see ETP definition below). Further, the MSC defines a main species as one that makes up 5% or more by weight of the total catch of all species by the UoAs, that is classified as less resilient, or that is caught in exceptionally large numbers.

Based on these definitions and the catch data, which is inferred from sales receipts, from 2013-2017, there are two main secondary species: lake whitefish and mullet (Table 4). White sucker, longnose sucker (*C. catostomus*), and/or shorthead redhorse are collectively sold as “mullet”. (See more detail on this below.) Additionally, there are no primary species caught by these UoAs.

**Table 4. Catch data (inferred from sales receipts) in kg for the UoAs for the 2013-2017 including the five-year average. The target species (UoAs) are shown in blue; the main non-target (secondary) species are in red; and minor, non-target (secondary) species are in black. (“Other” includes, for example, northern pike roe and mullet heads.)**

Year	Walleye	Northern Pike	Lake Whitefish	Mullet	Yellow Perch	Common Carp	Other	Total Catch
2017	18,889	21,659	5,576	10,076	46	46	818	57,110
2016	12,277	16,380	841	8,351	130	31	589	38,599
2015	12,650	17,562	2,206	12,629	185	32	3,650	48,914
2014	23,531	16,814	2,361	5,300	71	22	318	48,417
2013	23,163	30,588	4,145	6,972	118	34	673	65,020
Five-Year Average	18,102	20,568	3,012	8,458	110	33	1,020	51,303
% of Five-Year Total Catch Average	35%	40%	6%	16%	0%	0%	2%	

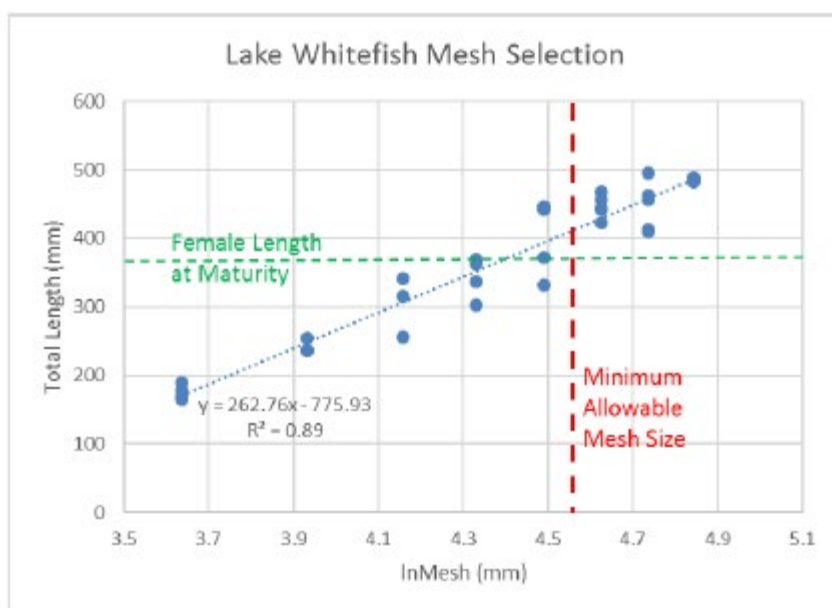
##### 3.4.1.1 Lake Whitefish

As noted in the fourth surveillance report (MRAG Americas 2019), lake whitefish was not a main retained species when the UoAs were first certified in 2014. While the lake whitefish catch did not increase consistently, the five-year average is now above the 5% main species cutoff. The assessment team did not consider lake whitefish or rescore PIs 2.1.1-2.1.3 at surveillance since (1) it concluded that the addition of lake whitefish scoring element would not result in a material change to the score and (2) the UoAs were being rescored against FCR v 2.0 (versus v1.3) during this reassessment.

In recent years, there have been extended periods of high water in Waterhen Lake, causing an increase in the commercial harvest of lake whitefish. The high water enables lake whitefish to pass through dammed areas that typically block their migration into Waterhen Lake (Klein and Galbraith 2019).

The Waterhen Lake index netting program does not catch many lake whitefish, averaging less than nine per year (Table 2). However, with the population increase the last few years, the program data are likely not wholly representative of the current lake whitefish population. The index netting program is targeted toward walleye, which has a higher temperature preference than lake whitefish. Since that index netting occurs in September, it is hypothesized that this is before large numbers of lake whitefish have moved into Waterhen Lake from adjacent Lakes Manitoba and Winnipegosis, which offer better summer habitat (G. Klein pers. comm.).

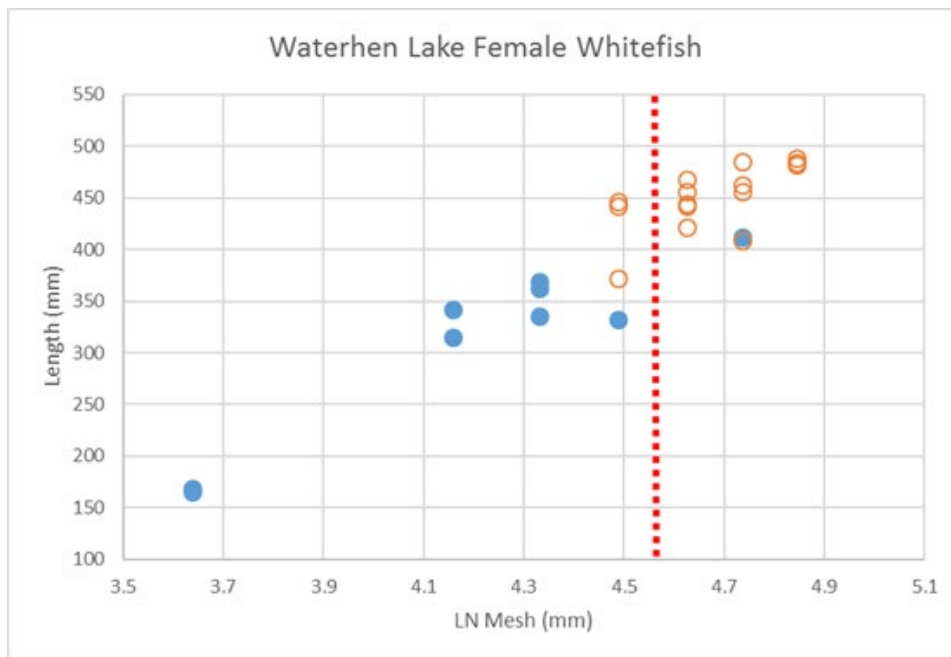
Female whitefish in the Waterhen index netting program exhibit knife-edge maturity at 370 mm. With 96 mm mesh gear, the mesh-size vulnerability of lake whitefish was 423 mm in length so even the smallest fish caught in 96 mm mesh would be mature (Figure 11). Lake whitefish spawn between the September index netting program and the late November start of the fishing season.



**Figure 11. The relationship between mesh size and length of lake whitefish in Waterhen Lake. The red dashed line represents the minimum mesh size allowable in the Waterhen Lake commercial net fishery, 96 mm. Only meshes to the right of the red line can be used in the fishery. The green dashed line approximates the knife-edge maturity of female whitefish in the index program at 370 mm. All females above that line are mature. Source: Klein and Galbraith 2019**

Figure 12 shows the index meshes and the size of lake whitefish each mesh caught. One immature female was caught in the 114 mm mesh, and there were 12 mature females caught in the meshes legal for use by the UoAs. This means that 92% spawned by first vulnerability. The measured mortality is low with a total annual mortality of 33-35%. (During the RBF workshop, fishers stated that they catch lake whitefish somewhere between “rarely” and “regularly” since whitefish are benthic, and the target species are not. This was interpreted to mean that there is low to medium encounterability with lake whitefish, which echoes the estimated total annual mortality rate.)





**Figure 12.** The size of lake whitefish caught in each of the index mesh sizes (38, 51, 64, 76, 89, 102, 114, and 127 mm). The minimum mesh allowed for these UoAs is 96 mm, which is shown by the dashed red line. The solid blue circles are immature females, and the open red circles are mature females. Source: G. Klein

Using 35%, the actual number of spawnings is 2.6 per fish on average; therefore, the UoAs do not violate the Myers and Mertz (1998) “spawn at least once” policy, which was designated to prevent a collapse of stocks impacted by fishing mortality. The lake whitefish mortality rate will continue to be monitored as more are part of the index netting data. In summary, there is a higher relative abundance of lake whitefish in Waterhen Lake due to increased lake connectivity (Klein and Galbraith 2019). (This statement is also supported by information gathered at the RBF workshop where fishers said that lake whitefish are always present in the lake.)

#### 3.4.1.2 Mullet

As noted above, “mullet” can include three different species, but based on index netting (Table 2), the mullet in Waterhen Lake includes white sucker and shorthead redhorse. Since white sucker and shorthead redhorse are collectively marketed as mullet, individual catch data are not maintained for these species in Waterhen Lake.

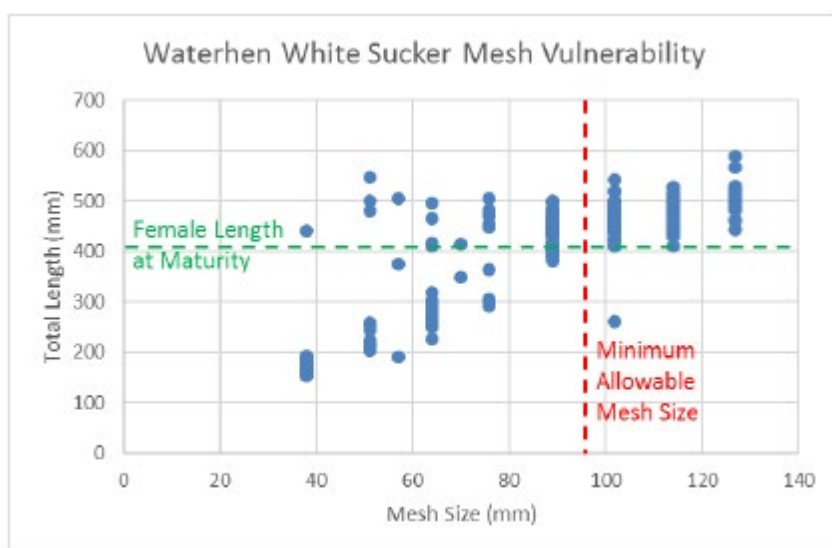
The index netting program mesh sizes range 1.5-5 in whereas the UoAs have a minimum size of 3.75 in. Klein and Galbraith (2019) determined that shorthead redhorse caught with 3.75 in or larger mesh averaged only 6.9% of the mullet in the index data. (The fishers estimated that shorthead redhorse made up 5-10% of their “mullet” catch; therefore, the qualitative information gathered at the RBF workshop support this statement.) It is likely that the catch representation is similar in the commercial fishery; therefore, we can extrapolate an estimate for shorthead redhorse in the UoAs’ catch.

Over the last five years, mullet made up 16% on average of the total UoAs’ catch (Table 4). The shorthead redhorse portion of the combined mullet catch in the index netting program multiplied (6.9%) by the mullet portion of the UoAs’ catch (16%) calculates the shorthead redhorse average catch portion as 1.1%. Therefore, white sucker is a main secondary

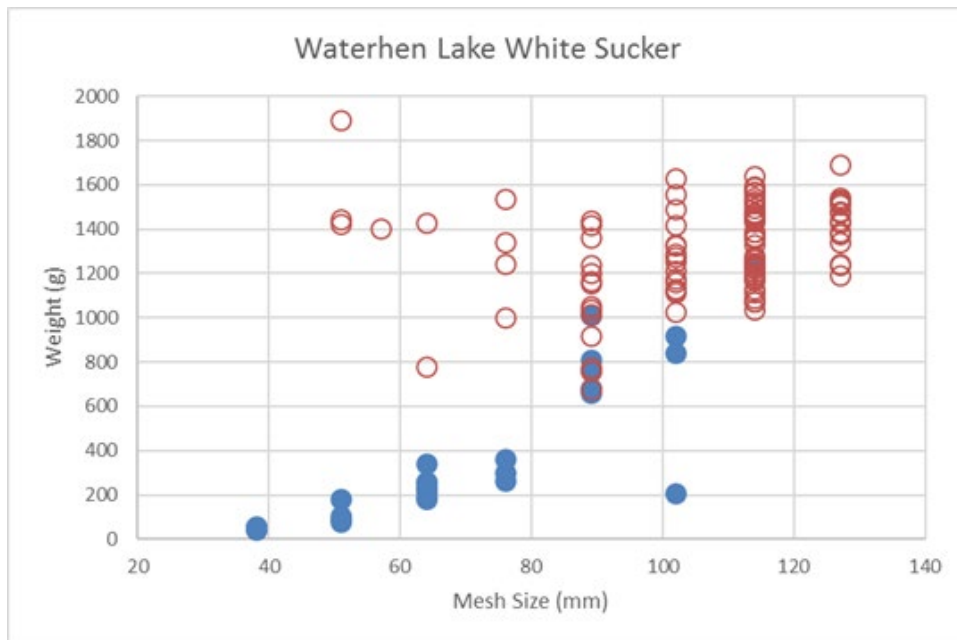


species with a five-year average of 8,365 kg, and shorthead redhorse is a minor secondary species with a five-year average of 93 kg.

White sucker are more often the target of removal efforts rather than conservation (e.g., Colby et al. 1987, Brodeur et al. 2001). The species has shown itself to be prolific. Female white sucker reach maturity at a length of 410 mm, which is a size that they are susceptible to a 96 mm mesh (Klein and Galbraith 2019; Figure 13). Figure 14 shows the index meshes and the size of white sucker each mesh caught. The result from the index netting program is that 92% of vulnerable females are mature, and in the minimum allowable mesh, 77% are mature. After full recruitment to the index netting gear, white sucker experience a total annual mortality of 31%. (During the RBF workshop, fishers stated that they catch white sucker somewhere between “rarely” and “regularly” since whitefish are benthic, and the target species are not. This was interpreted to mean that there is low to medium encounterability with lake whitefish, which echoes the estimated total annual mortality rate.) Additionally, each fish (on average) spawns 2.6 times. Therefore, the UoAs do not violate the Myers and Mertz (1998) “spawn at least once” policy. The index netting program “shows the white sucker population in Waterhen Lake to be stable, exhibiting the lowest coefficient of variation among all the species caught in the index program without any apparent trend” (Klein and Galbraith 2019; Table 2). The annual mortality rate for white sucker is 31%, the minimum allowable mesh size is precautionary, and the population is stable. (This statement is also supported by information gathered at the RBF workshop where fishers said that white suckers are always present in the lake.)



**Figure 13. The relationship between mesh size and length of white sucker in Waterhen Lake. The red dashed line represents the UoAs’ minimum mesh size (96 mm), with allowable meshes to the right of the red line. The female white sucker’s length at maturity (410 mm) is represented by the green dashed line. All females above that line are mature. Source: Klein and Galbraith 2019**



**Figure 14. The size of white sucker caught in each of the index mesh sizes (38, 51, 64, 76, 89, 102, 114, and 127 mm). (The minimum mesh allowed for these UoAs is 96mm.) The solid blue circles are immature females, and the open red circles are mature females. Source: G. Klein**

### 3.4.1.3 Ghost Fishing

The MSC Guidance notes potentially appropriate PIs in which to discuss ghost fishing:

- PIs 2.1.2, 2.2.2, and 2.3.2 – Scoring issue e considers unwanted catch, which can include observed and unobserved mortality (e.g., ghost fishing).
- PI 2.4.2 – Scoring issue a considers the management strategy, which should be in place for all UoAs even those that do not regularly contact benthic habitats since gear loss could occur.
- PI 2.5.x – The indirect effects of lost gear that are not considered directly under other PIs are considered here since the Ecosystem PIs consider how the UoAs impact the wider ecosystem structure and function.

For more detail on each of these points, refer to the text below as well as the PIs' scoring tables.

Due to the nature of this fishing, nets can become frozen in the ice. When oxygen concentrations are high, fishing can last for almost a week without spoiling fish. If ice continues to form, some of the net floatline freezes into the ice, and the net can no longer be lifted. This can occur if ice forms more rapidly than anticipated by the fisher, if wind blows insulating snow off the ice, or if very cold weather comes after the net is set. Another cause of frozen nets can be an irregular bottom where a topographic rise in the lake bottom between the two basin holes brings the center of the net in contact with forming ice. A net set over reeds can have the same result of being raised too close to the ice and the floatline becoming encased in the downward-forming ice.

When a fisher accidentally freezes in a net, he/she must mark the net stake to indicate the frozen net and to avoid the fine for spoiling fish. The fisher loses a great deal of time attempting to remove the frozen net, sometimes ruining the net in the effort to extract it, so it is certainly something he/she wants to avoid. In accordance with the fishing license requirements, in the event that nets freeze, fishers are supposed to contact the local District

Office of the Department of Sustainable Development and advise them that the nets are frozen in the lake. The Waterhen Lake Winter Fishers Association would then organize efforts to remove nets after the spring melt if there were lost nets. The fishing license and the FMP require the fisher to return and retrieve the net once the lake becomes open in the spring. Commercial fishers will also retrieve any gill nets lost during the open-water season when notified or if found (Klein and Galbraith 2019). Overall, nets are rarely lost. Sometimes nets become frozen in the forming ice, and the fishers will work to get them out if possible. Rarely, a net is lost and continues to fish in the open water. In the last decade, there have been three lost nets found by managers in Waterhen Lake that were later retrieved (G. Klein pers. comm.). Additionally, there is no record of a fisher contacting the District Office to report a lost net in recent years.

A net with spoiled fish is an offense. Enforcement penalties have no set fine but are determined by the court if the net can be linked to a fisher. The courts are generally gentle; the penalty is usually for the value of lost gear plus 250 CAD. In the case of a rotted net in winter where the fisher has let fish spoil, the landed value of the spoiled fish would be added to the fine (G. Klein pers. comm.).

#### **3.4.1.4 Cumulative Impacts**

There is no appreciable recreational fishing of lake whitefish and white suckers on Waterhen Lake since the methods of angling do not intercept them. In the 2015 recreational angling survey, there are 94 angling days reported on the Waterhen River or Waterhen Lake, and there are no reports of anyone catching (retaining or releasing) a lake whitefish or a white sucker on those days (G. Klein pers. comm.). Manitoba Sustainable Development has no estimate of the amount of subsistence harvest that occurs in Waterhen Lake. However, angled subsistence catches will have neither lake whitefish nor white sucker, and gillnet subsistence harvest will be similar in ratio to the commercial catches in the winter but lower in lake whitefish in the summer (G. Klein pers. comm.)<sup>1</sup>. While information is limited, the scale and intensity of these other activities can be inferred so there is likely a minimal cumulative impact on lake whitefish and white sucker from these other fisheries.

#### **3.4.2 ETP Species**

The MSC defines an ETP species as a species recognized by national ETP legislation; species listed in a binding international agreement; or out-of-scope species that are listed in the IUCN Red List as vulnerable, endangered, or critically endangered. Therefore, based on UoAs' catch data and the Species at Risk Act (SARA) registry (<https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry.html>), there are no ETP species that interact with these UoAs.

#### **3.4.3 Habitats**

##### **3.4.3.1 Impact and Information**

Waterhen Lake averages a depth of around 3 m and is mostly soft-bottom sediment, including fine sand with cobble and boulders and mud, covered with organic substrate (e.g., dead algae, zooplankton, and macrophytes) (G. Klein pers. comm.). Overall, bottom-set gillnets have minor impacts on the physical habitat and structure (e.g., ICES 1995, Kaiser et al. 1996, Morgan and Chuenpagdee 2003), particularly in these shallow, limited-vegetation boreal lakes. When a winter gillnet is lifted, it is dragged along the same track between the

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<sup>1</sup> Subsistence catch data are not collected since there is no authority to compel subsistence users to declare their harvest (as per R. v. Sparrow 1990). Therefore, it has been reasoned that subsistence catches would be similar to commercial catches in the winter and to large mesh in the index program in the summer. (Used commercial nets are what is available to the subsistence fishers who net instead of angle.)

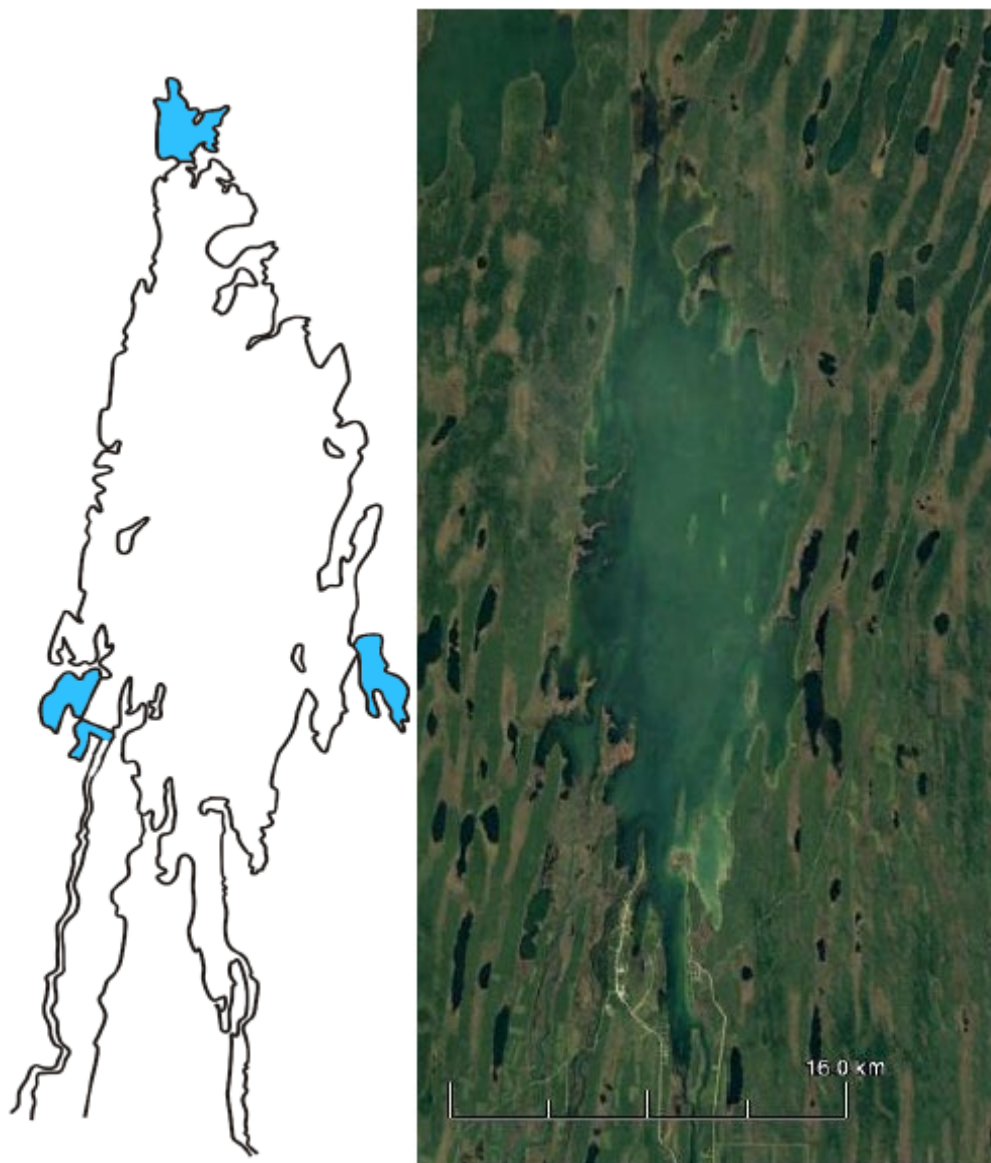
two ice holes through which it was set originally. The leadline will mix the sediments to a depth of a few inches in that track (Figure 4). The net is anchored on either side with stones the size of a fist, and they only move vertically when the net is set or lifted. While these stones may move, it is minimal, and the subsequent impact is likely minimal.

According to the MSC Guidance (v2.0), vulnerable marine ecosystems (VMEs) have one or more of the following characteristics:

- Uniqueness or rarity – an area or ecosystem that is unique or that contains rare species whose loss could not be compensated for by similar areas or ecosystems
- Functional significance of the habitat – discrete areas or habitats that are necessary for survival, function, spawning/reproduction, or recovery of fish stocks; for particular life-history stages (e.g., nursery grounds, rearing areas); or for ETP species
- Fragility – an ecosystem that is highly susceptible to degradation by anthropogenic activities
- Life-history traits of component species that make recovery difficult – ecosystems that are characterized by populations or assemblages of species that are slow growing, are slow maturing, have low or unpredictable recruitment, and/or are long lived
- Structural complexity – an ecosystem that is characterized by complex physical structures created by significant concentrations of biotic and abiotic features

Waterhen Lake does have some areas that are important for the spawning and rearing of the target and non-target species present in the lake (Figure 15). However, since they are voluntary closures and have not been given formal protective designation, the team concludes that these areas do not constitute VMEs and that no VMEs exist within these UoAs. Therefore, the main habitat types within Waterhen Lake are:

- Fine sand with cobble and boulders (commonly encountered)
- Mud (commonly encountered)



**Figure 15. Spawning and rearing areas (in blue) within Waterhen Lake that are closed voluntarily to commercial fishing (left) and aerial view of Waterhen Lake (right). Source: Klein and Galbraith 2019**

Waterhen Lake is approximately 272 km<sup>2</sup> though the entire lake is not fished. The maximum water depth of 4.4 m, and most fishing occurs where the depth is 1.5 m or more. (A minimum depth of 0.6 m is needed to operate the fishing gear.) The maximum number of fishers operating in a particular year appears to be 16, and most of the effort is concentrated in the southern half of the lake (G. Klein pers. comm.). Additionally, fishers stated during the RBF workshop that while the target species are benthic, the mesh and floatline are usually off the bottom, unless they get pulled down by the weight of fish in the net.

#### **3.4.3.2 Management**

According to the FMP (Klein and Galbraith 2019), the Manitoba Sustainable Development's (Wildlife and Fisheries Branch) mandate is to ensure "the rational, orderly use of our fisheries resource within the resource's capacity to produce harvestable surplus." The goals of this mandate are as follows:

- ensure "No Net Loss" of quality and quantity of fish habitats;

- *ensure that adequate supply exists to meet Constitutional obligations for Indigenous peoples to fish for food;*
- *have sustainable, community supported fishery management strategies;*
- *provide a diversity of angling opportunities;*
- *provide consistent, professional, high quality service to our clients and recommendations to elected decision makers; and*
- *facilitate public participation in resource management and decision making process. (Klein and Galbraith 2019)*

Further, the management of the Waterhen Lake commercial gillnet fishery is based on the following objectives:

- *The fishery must be conducted in a manner that does not lead to over-fishing or depletion of the harvested populations and, for those populations that are depleted the fishery must be conducted in a manner that demonstrates activities leading to stock recovery.*
- *Fishing operations (commercial, recreational and domestic/subsistence) should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including 6 habitat and associated dependent and ecologically related species) on which the fishery depends.*
- *The fishery is subject to an effective management system that incorporates applicable federal and provincial legislation, policies and regulations and operational frameworks that require use of the resource to be responsible and sustainable. (Klein and Galbraith 2019)*

Management decisions are made to achieve and maintain these objectives and are based on the following principles:

- *Fish Habitat – Healthy aquatic ecosystems / fish habitat is a prerequisite to healthy fish stocks.*
- *Public Trust – Fish stocks are natural capital and represent a public trust managed by Manitoba on behalf of all Manitobans.*
- *Biological sustainability – Sustainability of fish stocks is paramount for long-term industry viability.*
- *Precautionary Principle – Fish management decisions and actions, whose impacts are not entirely certain but which, on reasonable and well informed grounds appear to pose serious threats to either the economy, the environment, human health or social well-being will be anticipated, mitigated and prevented as avoidance of serious threats to the fishery is less costly than rehabilitating a collapsed fish stock.*
- *Integrated Management – Consultation with government agencies, development proponents, fishers and the public will enhance awareness and understanding and the efficiency of fisheries management.*
- *Tenure – Individual allocations and tenure of access right will reduce over-capitalization and facilitate fishery rationalization.*
- *Fairness – Where adjustments to tenure or reallocation to another use or user is necessary, a fair process will facilitate transition to a desired state. (Klein and Galbraith 2019)*

As mentioned above in Figure 15, there are three areas within Waterhen Lake that are closed voluntarily to commercial fishing. This management decision was made by the Waterhen Lake Winter Fishers Association to protect these habitats, which are important to the overall sustainability of the Waterhen Lake ecosystem (Klein and Galbraith 2019).

Lastly, as mentioned above, management should consider gear loss even for those UoAs that do not regularly impact benthic habitats. While gillnets do contact the bottom, gear loss from these UoAs is rare. As noted above, there have been three lost nets found by managers in Waterhen Lake in the last decade (G. Klein pers. comm.).

### 3.4.3.3 Cumulative Impacts

The impact from recreational fishing will be negligible since recreational fishers do not use gillnets. There is no estimate for the amount of subsistence harvest that occurs in Waterhen Lake. However, as noted in Section 3.4.1.4, gillnet subsistence harvest will be similar in ratio to the commercial catches in the winter but lower in lake whitefish in the summer (G. Klein pers. comm.) so will likely have a similar level of habitat impact as the commercial fishery. Recreational and subsistence fishers are not required to abide by the closed areas, but there is no record of either group using the closed areas. Lastly, while licenses are given for gillnet carp fishing in Waterhen Lake, no one is actively targeting carp. Even though information is limited, the scale and intensity of these other activities can be inferred so there is likely a minimal cumulative impact on Waterhen Lake's habitats from these other fisheries.

### 3.4.4 Ecosystem

#### 3.4.4.1 Impact and Information

Waterhen Lake is a shallow lake with an average depth of around 3 m. Other consumers of fish in the ecosystem potentially impacted by the UoAs are natural predators of fish: fish-eating water birds, such as the double-crested cormorant (*Phalacrocorax auritus*); river otters (*Lontra canadensis*); and mink (*Mustela vison*).

There are no known breeding colonies of double-crested cormorant on Waterhen Lake; however, cormorants visit to feed from colonies on nearby lakes. On Waterhen Lake, investigations of cormorant regurgitation suggest yellow perch constitutes more than 90% of the cormorant diet with northern pike being second (G. Klein pers. comm.). "Many waterbird species, including those that breed in Manitoba, suffered severe declines at various periods from the late 19<sup>th</sup> century to about the mid-20<sup>th</sup> century related to overhunting, direct persecution, habitat loss or disturbance, and DDT pollution" (Wilson et al. 2014). Colonial-nesting bird numbers have declined from estimated peaks in the late 1980s, and while they are still many times greater than historic numbers, these low numbers are from a very low period. Having said that, the long-term population stability of fish-eating birds in the area suggests there is no negative impact to these birds from the UoAs.

Most walleye and northern pike are headless and dressed on the ice at the basin holes where the nets are lifted. This offal provides a winter supplement to ravens (*Corvus corax*) with bald eagles (*Haliaeetus leucocephalus*) a very distant second consumer of fish offal. Also, wolf (*Canis lupus*) tracks are sometimes seen to have visited fish offal left on the ice.

In wetter years, the white sucker population could increase since white suckers would benefit from higher water because they have great success spawning in small streams, and they can ascend these streams to a greater extent in wetter years. Additionally, fry survival is higher with protracted runoff. White sucker biomass is antagonistic to walleye biomass since white sucker outgrow their vulnerability to walleye after a year and a half. These changes could (at least temporarily) alter the food web. However, there are also drier years when this connectivity does not exist, swinging the food web back to prior levels. Waterhen Lake appears to adapt to these changes, maintaining a functioning ecosystem. Walleye relative weights have remained stable over the past decade; therefore, the food web appears to be intact with naturally occurring species interacting as they would in a "normal" ecosystem.



As mentioned above, the indirect effects of ghost fishing can also impact the wider ecosystem structure and function. However, gillnets from these UoAs are rarely lost. In the last decade, there have been three lost nets found by managers in Waterhen Lake there were later retrieved (G. Klein pers. comm.). Additionally, there is no record of a fisher contacting the District Office to report a lost net in recent years.

#### **3.4.4.2 Management**

As mentioned above, the UoAs' management is based on, in part, allowing "for the maintenance of the structure, productivity, function and diversity of the ecosystem (including 6 habitat and associated dependent and ecologically related species) on which the fishery depends" (Klein and Galbraith 2019). This goal works to ensure that the overall ecosystem will remain a healthy, sustainable one for the entire food web. Additionally, management decisions are made to achieve and maintain such an ecosystem. The voluntarily area closures are an example of a management decision to protect the overall sustainability of the Waterhen Lake ecosystem (Klein and Galbraith 2019).

#### **3.4.4.3 Cumulative Impacts**

As stated above, the impact from recreational fishing is likely minimal since recreational catches in Waterhen Lake are presumed to be small, and the fishers' impact on the habitat is negligible. There are no data for the level of subsistence harvest (either angling or gillnetting) that occurs in Waterhen Lake. However, as noted in Section 3.4.1.4, gillnet subsistence harvest will be similar in ratio to the commercial catches in the winter but lower in lake whitefish in the summer (G. Klein pers. comm.) so will likely have a similar level of ecosystem impact as the commercial fishery. Even though information is limited, the scale and intensity of these other activities can be inferred so there is likely a minimal cumulative impact on Waterhen Lake's ecosystem from these other fisheries.

### **3.5 Principle Three: Management System Background**

#### **3.5.1 UoAs' Area of Operation**

The area of operation of the Waterhen Lake walleye and northern pike gillnet winter commercial UoAs is Waterhen Lake, Province of Manitoba (Figures 1 and 16). The UoAs operate when the ice season is open, and constitute the only commercial fishery in Waterhen Lake targeting walleye and northern pike. Waterhen Lake is a 25,000-hectare waterbody receiving water from Lake Winnipegosis via the West Waterhen River and draining into Lake Manitoba by the Waterhen River (Figures 1 and 16). The lake is approximately 34 km long, 8 km wide, with water depths ranging from 1 m to 4.4 m. The operations exclude three areas closed to the commercial fishery (Figures 15 and 17). Fishing follows the distribution of the target species within the lake: while walleye prefers areas where there is greater water movement, northern pike is distributed in shallower areas towards the north where there are reeds (Casselman et al. 2014).



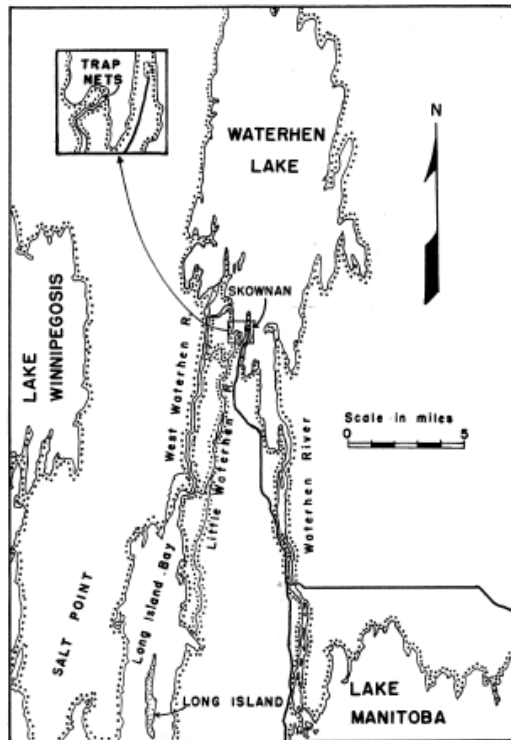


Figure 16. Connecting rivers with Lake Manitoba and Lake Winnipegosis. Source: Edwards and Howard 1980

### Fishing Divisions

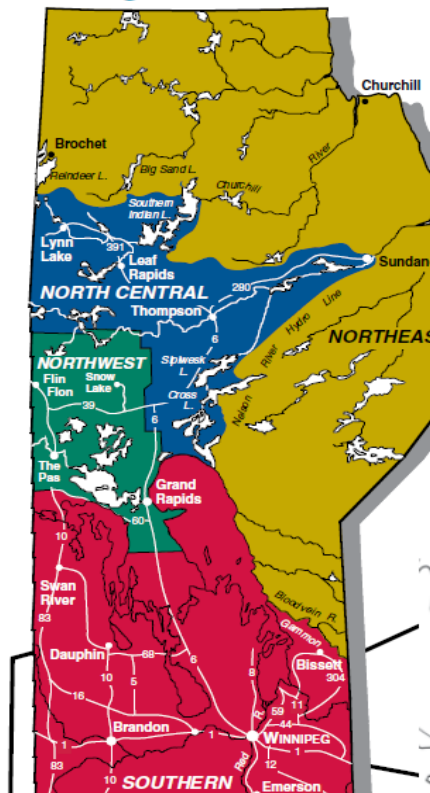
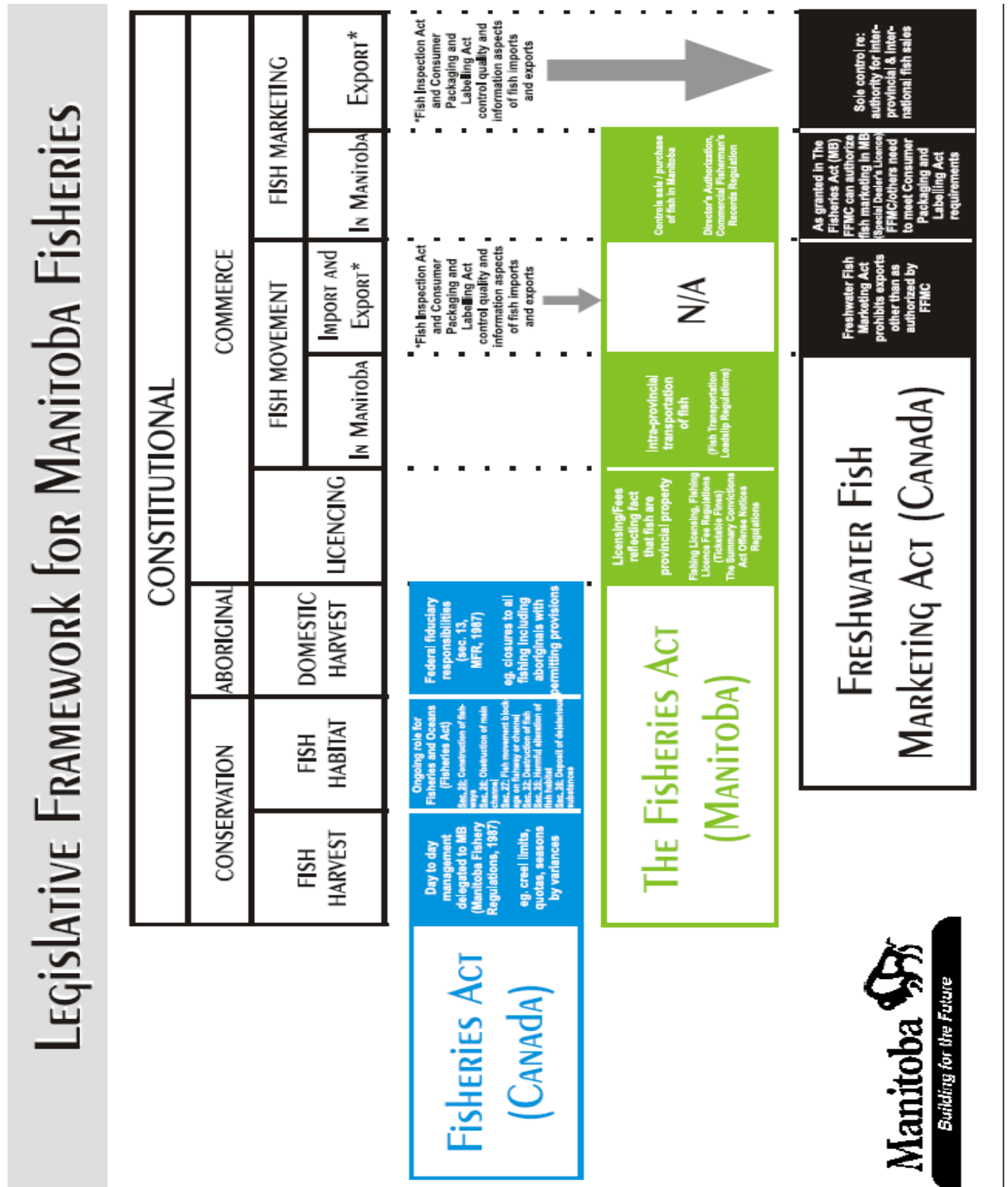


Figure 17. Waterhen Lake is located within the Manitoba Southern Fishing Division (area in red). Source: Manitoba Fishing Guide 2018

Freshwater fisheries in the Province of Manitoba are subject to mixed federal and provincial Jurisdictions (Figure 18). Protection, ownership, allocation, use and management of fish, and fish habitat in Manitoba are governed by the Canadian constitution, duly signed treaties, and federal and provincial legislation (Klein 2018a). The management of the Waterhen Lake (and 'shallow lakes' complex) fisheries is shared by the Province of Manitoba, indigenous groups, the Waterhen Lake Winter Fishers Association, and Canada.



**Figure 18. Legislative framework for Manitoba fisheries. Note that the Freshwater Fish Marketing Act is no longer in effect. Source: W. Galbraith, Indigenous Services Canada**

The Legislative Framework Overview is found in the Manitoba Government official website ([https://www.gov.mb.ca/sd/pubs/fish\\_wildlife/fish/leg.pdf](https://www.gov.mb.ca/sd/pubs/fish_wildlife/fish/leg.pdf)). With respect to Conservation of fish Resources in Federal Jurisdiction, the Constitution Act of 1867, under section 92.12 established that the Canadian Parliament has exclusive legislative authority to make laws respecting “Sea Coast and Inland Fisheries.” In 1868, a year after Confederation, the Fisheries Act (Canada) was enacted (Figure 18) and under its authority, regulations were made to address fish management issues in each province. Until 1930, the Government of Canada administered and controlled all Crown lands (land owned by the federal or provincial governments) and resources in Manitoba.

The Constitution Act of 1930 gave legal effect to Natural Resources Transfer Agreements (NRTA) in each of the Prairie Provinces and gave administrative control of Crown lands and resources to provincial governments: *“Except as herein otherwise provided, all rights of fishery shall, after the coming into force of this agreement, belong to and be administered by the Province, and the Province shall have the right to dispose of all such rights of fishery by sales, licence or otherwise, subject to the exercise by the Parliament of Canada of its legislative jurisdiction over sea-coast and inland fisheries.”*

Thereafter responsibility for fisheries was shared by the two levels of government (Nicholson 2007). Consequently, the Canadian Parliament has exclusive constitutional jurisdiction to make laws for the conservation of fish. This includes setting fishing seasons, quotas, size limits and gear restrictions under the authority and regulations of *The Fisheries Act* (Canada); while the Legislature of Manitoba under *The Fisheries Act (Manitoba)* maintains constitutional jurisdiction to make laws relating to the use and allocation of fish in Crown (Manitoba) waters as part of the public property. This comprises the right to determine who can fish on provincial Crown land (licensing), what conditions may be included in a license and what fee would be paid for the license. In summary, the Fisheries Act (Canada) addresses matters dealing with conservation of the fish resource and the Manitoba Fishery Regulations made under the Act, while *The Fisheries Act (Manitoba)* covers matters relating to property rights in fish on Manitoba Crown land (water) and regulations to that Act.

Part of the legislative framework for Manitoba fisheries has been the Freshwater Fish Marketing Act (FMA), which in 1969 established the FFMC. The Federal Crown Corporation was given exclusive rights to interprovincial and export trade of designated freshwater fish products supplied from the Manitoba, Alberta and the Northwest Territories (<http://www.freshwaterfish.com/content/pages/introduction-info-source>). FFMC, listed under Schedule III - Part I of the Financial Administration Act, is governed by a Board of Directors, and reports to parliament through the Minister of Fisheries and Oceans Canada (DFO). The Fisheries Act (Manitoba) requires FFMC to purchase all legally caught fish offered for sale by licensed fishers, subject to price and terms and conditions of purchase. Operations were to be on a self-sustaining financial basis without appropriations by Parliament with the objectives to market fish in orderly manner, increase returns to fishers, and promote markets and export trade. Nevertheless, FFMC was scrutinized through studies, task forces, and auditors' reports (Envoy 2017), and fishers often questioned viability of the single desk selling system and the returns they realized through FFMC ([https://www.gov.mb.ca/sd/pubs/fish\\_wildlife/fish\\_processor\\_licence\\_app.PDF](https://www.gov.mb.ca/sd/pubs/fish_wildlife/fish_processor_licence_app.PDF)).

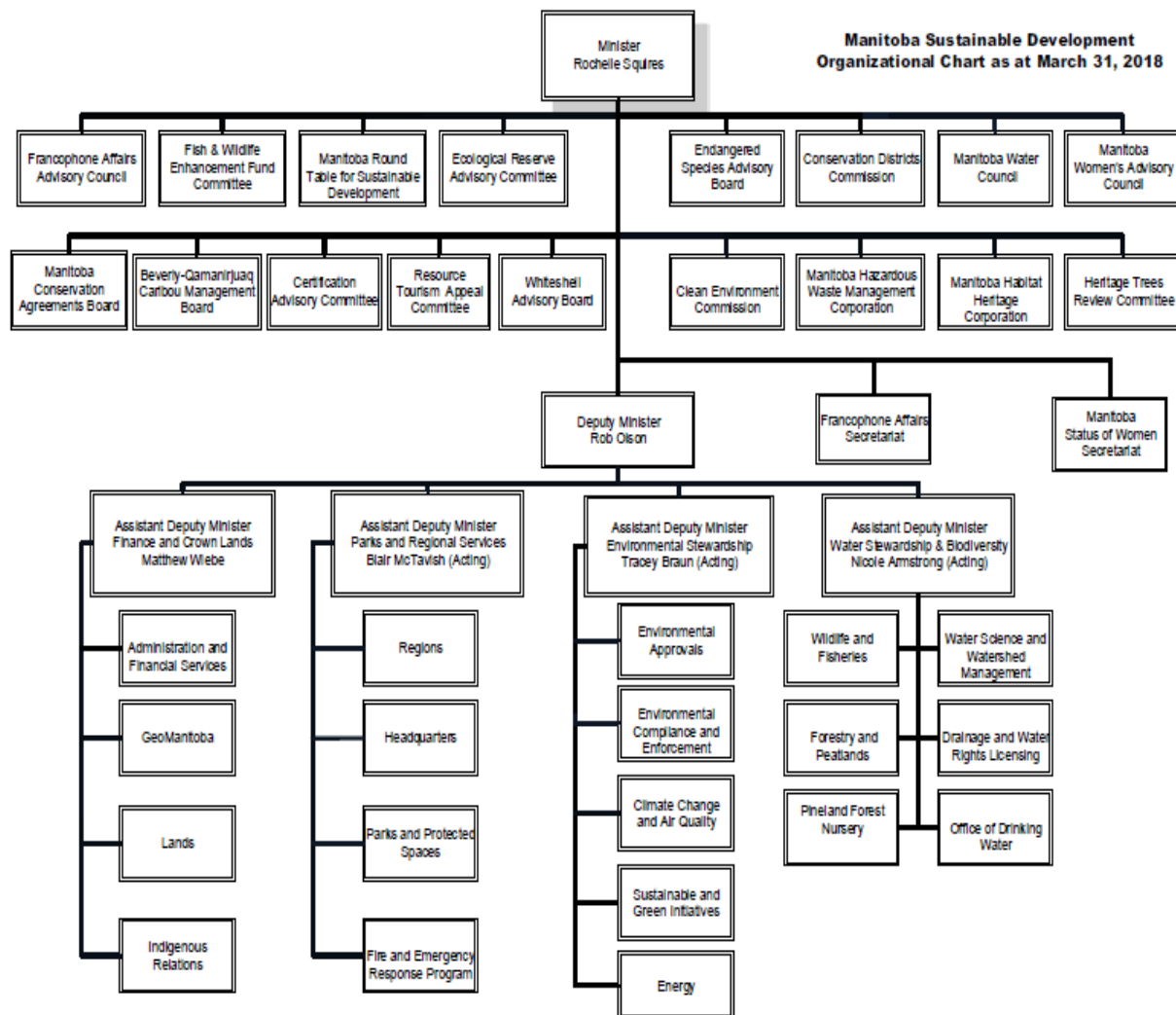
Fishers claimed the price they received for their fish had remained stagnant and not kept pace with rising costs and inflationary pressures. For example, while fishers in 2000 received as much as 70% of the gross sales, they were paid 45% in 2016. For some, this was a

reason to look forward to an open market system; for others, it pointed to the need for improved marketing and sales efforts on the part of the Corporation. Northern Manitoba fishers said changes to the FPMC could devastate the industry in the region and the livelihood of many families and accused the government of poor communication and weak consultation with people in the industry (<https://www.cbc.ca/news/canada/manitoba/freshwater-fish-marketing-pc-government-ndp-fishers-1.3889896>). However, some fishers in southern Manitoba who can more easily bring their catch to market were supportive of an open market and potential to earn more for their fish. On October 2016, the Provincial Government, acting on a campaign promise, announced it had instructed the DFO that Manitoba would be withdrawing from the FPMC and engaged the services of Fisheries Envoy to usher in a smooth transition to opening marketing.

New legislation in 2017 gave Manitoba fishers independence from the FPMC monopoly who can now explore markets, as they are able to sell their catch within the province and interprovincial and international markets through a provincially issued fish dealer's license. Unfortunately, some of the fishers who opted to sell fish to these dealers instead of signing a contract with FPMC were not paid for their catch by one of the dealers. While there was an investigation by Manitoba Sustainable Development's Enforcement Services, there was no prosecution as they felt there was no case. A new Directive by the Wildlife and Fisheries Branch on Fish Dealer/Fish Processor Licence Suspension originated out of concern by the Department.

While the Government of Canada, under the authority of the *Fisheries Act*, retains ultimate legal authority and responsibility for fish and fish habitat conservation matters, some of the daily management and administration of federal fisheries regulations are in practice delegated to Manitoba officials (Klein and Galbraith 2017). Under the *Manitoba Fishery Regulations* (last amended 2017), these officials have been given the authority to vary close times, species, quotas and gear types established under those regulations. Until 2016, this was the role of the Minister of Conservation and Water Stewardship and Director of Fisheries. These are currently the Minister of the Government of Manitoba Department of Sustainable Development and the Director of the Wildlife and Fisheries Branch of the Department ([http://www.manitoba.ca/sd/pubs/fish\\_wildlife/fish\\_processor\\_licence\\_app.PDF](http://www.manitoba.ca/sd/pubs/fish_wildlife/fish_processor_licence_app.PDF)).

There have been changes in Department names although authorities or responsibilities by the Province of Manitoba have not changed (W. Galbraith pers. comm.). In the early 2000s, the Government of Manitoba split the Department of Natural Resources into the Department of Conservation and the Department of Water Stewardship. The Department of Conservation largely retained all terrestrial focused branches/agencies, such as Wildlife, Forestry, and Parks including enforcement. The Department of Water Stewardship incorporated all of the "water" based or focused branches/agencies of the former Department of Natural Resources, such as water quality, water management, and fisheries. Each Department had a Minister. In 2012, the Departments of Conservation and Water Stewardship merged again into a single entity known as the "Department of Conservation and Water Stewardship" under a single Minister. In 2016, with the election of the current government, the name of the Department changed to Sustainable Development. Sustainable Fisheries Unit is within the Wildlife and Fisheries Branch under the Water Stewardship and Biodiversity Division (Figure 19). The clarification is made here as many official documents in the Manitoba Government website and relevant reports for this assessment retain past administration organization names and links directed to defunct website locations.



**Figure 19. Organizational Chart Manitoba Sustainable Development as in March 2018.**  
**Source: Manitoba Sustainable Development 2018**

Currently there are three fisheries sections reporting to the Director of Wildlife and Fisheries (B. Parker pers. comm.). This recent restructuring of the Branch is presented here but, while in the midst of a pre-election blackout period, the new organizational structure cannot be promoted until after the election has been held on September 10.

1. Fish Science and Fish Culture (FSFC) section, which replaced Aquatic Ecosystem Management
2. Sustainable Fisheries Unit (SFU) section, which replaced Aboriginal, Recreational and Commercial Management, and
3. Regional Operations section, which includes all of the fisheries staff from the former Regional Operations Division.

Winnipeg is Head Office and home to the Director and the FSFC and SFU staff. There are five regions hosting seven local offices staffed by fisheries from Regional Operations. A Senior Fish/Wildlife Scientist position also reports to the Director through Head Office.

Regional managers are responsible for resolving local issues in a timely and decisive manner according to approved government policy. The Director provides managers with guidelines, flexibility and authority to resolve issues locally. Fisheries Branch Head Office and managers work together to develop annual work plans to address specific subjects and



informational requirements within the regions. Regional Fisheries managers work with staff on provincial policy/program development and interpretation, and issues with provincial implications.

Central Region fisheries staff used to manage Lake Waterhen Commercial Fisheries, together with Lake Winnipeg, Lake Manitoba, Lake St. Martin fisheries (Manitoba Sustainable Development 2018). Since 2016 the administration and implementation of the annual index netting program, as well as, the overall management of the Waterhen Lake fishery has been transferred from the Central Region to the Sustainable Fisheries Planning Program (Sustainable Fisheries Unit) (Galbraith et al. 2017). The management of Waterhen Lake was moved from Central Region to within the Sustainable Fisheries Planning Program to continue the strong relationship that had developed between Geoff Klein, who was the previous Central Region Fisheries Manager, and Waterhen Lake fishers (B. Parker pers. comm.).

Wildlife and Fisheries Branch operates under the authority of The Wildlife Act, The Fisheries Act (Manitoba), The Endangered Species and Ecosystems Act and The Water Protection Act among others (Manitoba Sustainable Development 2018). Staff develop assessment and monitoring programs, policies and legislation for fishing, hunting, trapping, conserving biodiversity, species and ecosystems at risk, fish and wildlife habitat, human-wildlife interaction management, and land and water management on Crown and private land. The Branch prepares and reports on programs, budgets, standards and guidelines in coordination with other areas of the department including regional staff. The Sustainable Fisheries Unit further implemented a strategy to secure certification of Manitoba's commercial fisheries. This included working with commercial fishers to implement activities required to maintain the status of certified commercial fisheries.

Changes to the Manitoba Fishery Regulations (Canada) are proposed by the Minister of Sustainable Development to DFO. DFO reviews the proposed changes and forwards them for approval by the Federal Cabinet (Governor in Council GIC). While the legislative responsibility for management of fish habitat is not legislatively delegated to Manitoba officials, the Department of Sustainable Development manages habitat as an adjunct to other activities (W. Galbraith pers. comm.). Nevertheless, the authority for protection of fish habitat still resides with the Federal Government through DFO under the *Fisheries Act* (Canada).

In addition to federal and provincial legislated regulations, since the start of the 1989-1990 commercial fishing season, the Lake Waterhen Fishermen's Association, now known as the Waterhen Lake Winter Fishers Association, has developed a series of by-laws pertaining to the commercial net harvest within the lake (Constitution of the Lake Waterhen Fishermen's Association). The association has an elected president and a four-member elected executive. Based on the FMPs, the fishery has operated within the bounds these by-laws (e.g., Klein 2018a). Nevertheless, these by-laws although referenced in the FMP, only exist in an oral form. Thus, the complete content is unknown. One of the regulations reported in the FMPs sets a limit on the number of commercial fishers to a maximum of 22 license holders and another is the exclusion lake areas to protect fish spawning.

The "*Canadian Code of Conduct for Responsible Fishing Operations*" (DFO 1998) outlines the general principles and guidelines for all commercial fishing operations that take place in Canadian waters based on the FAO "*Code of Conduct for Responsible Fisheries*". As such, the principles and guidelines form the basis for fishery management planning on a national basis. The most important principles in relation to the Waterhen fishery refer to the:

- i) need for fish harvesters to take appropriate measures to ensure fisheries are harvested and managed responsibly to safeguard sustainable use of Canada's

freshwater and marine resources and their habitats for present and future generations of Canadians

- ii) importance of ecological sustainability and shared responsibility for stewardship
- iii) need to implement and comply with regulations
- iv) promotion of public awareness of the need for responsible fishing, and
- v) use of fishers' knowledge in generating scientific advice and developing fishery management policies and regulations. Attached to these principles are 36 guidelines. For example, guideline 1 states "*Apply sustainable fishing principles and sustainable fisheries development to all aspects of fish harvesting and management of fisheries*" and guideline 5 is "*Establish fisheries policies in full consultation with management and other regulatory agencies to ensure conservation of fish resources and protection of the environment*".

Since 2006, DFO has initiated various activities with the intent to place conservation and sustainable use of the fishery as a top management priority. In 2009, DFO adopted the Sustainable Fisheries Framework (SFF) that provides the basis for ensuring Canadian fisheries are conducted in a manner which support conservation and sustainable use (DFO 2012). The SFF stipulates the foundation of an ecosystem-based and precautionary approach to fisheries management in Canada with tools and policies being developed and progressively implemented.

SARA (2003) provides a framework for actions across Canada to promote survival of wildlife species and protection of the natural heritage. It sets out how to decide which species at risk are a priority for action and what to do to protect a species. It identifies ways governments, organizations and individuals can work together, and it establishes penalties for failures to obey the law. Two federal Ministers are responsible for the administration of SARA. The Minister of Fisheries and Oceans is the competent Minister for aquatic species. The Minister of the Environment is the competent Minister for all other species at risk, and also responsible for the overall administration of SARA. SARA protects plants and animals included on a list in Schedule 1, which is also referred to as the List of Wildlife Species at Risk. Candidate species are proposed for addition to the SARA List as result of work of scientists and conservationists who are members of the Committee on the Status of Endangered Wildlife in Canada and conduct assessments of species status. Community and Aboriginal traditional knowledge are included in species assessments when available. The Government decides which species to add to the SARA List. Canada is also signatory of CITES since 1975.

### **3.5.2 Recognized Groups with Interest in the UoAs**

Waterhen is a multi-use fishery consistent of Aboriginal domestic harvest, commercial gill netting and recreational angling. The main recognized group with interest in the UoAs is the Waterhen Lake Winter Fishers Association, previously known as the Lake Waterhen Fishermen's Association. Waterhen Lake is their primary fishing lake but also includes the shallow lakes complex (Klein 2018a). In order to participate in the commercial fishery individuals are required to be members of the Association. Commercial fishers renew their fishing licenses every year by paying a small renewal fee to the Manitoba Department of Sustainable Development.

Other recognized groups with interest in the UoAs are those conducting fisheries that catch walleye and northern pike stocks in Waterhen Lake and tributaries, and thus impact the same ecosystem as the fishery seeking certification, and those involved in commercial operations that benefit from the fisheries. Among these recognized groups are recreational fishers, recreational angler groups/associations, commercial tourism lodge operators and outfitters recreational fishery operators (Walleye Anglers Association of Manitoba, Manitoba Fly Fishing Association, Manitoba Lodges and Outfitters Association among others),

subsistence fishers, and fishers that participate in the year-round gillnet carp fishery (same fishers involved in the UoAs). However, there currently are no active carp licenses (G. Klein pers. comm.). Researchers at the University of Winnipeg (Department of Biology) constitute another group with interest in the UoAs (W. Galbraith pers. comm.). Some of these researchers were involved in the previous MSC certification process.

### **3.5.3 Consultations for the Formation of the Management Plan**

Starting in 2009, Manitoba Conservation and Water Stewardship (MCWS) worked in cooperation with the Lake Waterhen commercial fishers to establish a fisheries management plan (FMP) that would enable the Walleye gillnet commercial fishery to obtain full eco-certification under the MSC program (Galbraith 2013). The management plan was developed through an extensive consultative process and was completed in March 2013 (Klein and Galbraith 2017). On-going consultations with the Waterhen Lake interest groups are described the Waterhen Lake FMP. The FMP was designed to effectively manage the fisheries resource of Waterhen Lake. The plan sets out an approach to ensure the resource is protected and conserved, provides social/economic benefits to local communities, and ensures the long-term sustainability of the fisheries resource. The FMP indicates to have integrated applicable federal and provincial legislation, policies and regulations, and recognized existing constitutionally protected Aboriginal fishing rights to domestic/subsistence fishing, and by-laws under the Constitution of the Lake Waterhen Fishermen's Association, now known as the Waterhen Lake Winter Fishers Association. Because the by-laws are not available in written form, it is not possible to corroborate that its content is incorporated in the FMP.

### **3.5.4 Arrangements for Ongoing Consultations**

Manitoba Department of Sustainable Development took the role of Conservation and Water Stewardship to consult and liaise with the Lake Waterhen Fishermen's Association, now known as the Waterhen Lake Winter Fishers Association, and other pertinent stakeholders of the Waterhen fishery. Other pertinent stakeholders are included as required or requested. Stakeholders currently include *Harvest Lodge* (located on the Waterhen River) operators and researchers at the University of Winnipeg (Department of Biology) (W. Galbraith pers. comm.). While there is no documentation on a formal annual review, based on guidelines, consultations should continue on a regular basis throughout the life of the Management Plan. This should be both through formal annual review processes as well as on a more informal ad hoc or issue-related basis. *Ad hoc* meetings are convened as issues arise.

While Manitoba Sustainable Development is responsible for fisheries management, the Lake Waterhen fishery is managed with input of the Waterhen Lake Winter Fishers Association, Skownan First Nation, and the town of Mallard (Klein 2018a). Based on description in the FMPs, the Waterhen fishers meet annually with Sustainable Development before the fishing season begins. There are no minutes from these meetings, it is reported that the Association decides on season opening dates at the annual meeting in November before the Waterhen Lake fishery begins. In addition, the index netting of the lake is collaboratively prosecuted and license eligibility is jointly decided with the Province. Skownan and Mallard communities alternately host fisher meetings in an open and transparent manner and the meetings are open to members of either community. Attendance of licensed fishers is considered high compared to most Manitoba fisheries (ten in 2016 and more than 11 in 2017) (Knapman and O'Boyle 2016, Knapman and Casselman 2018).

In terms of on-going consultation with stakeholders of the recreational fisheries sector, in general, Fisheries Branch is an active participant in the tourism License review process and contributes to the Licensing Allocation Committee. The Branch consults with the Manitoba Lodges and Outfitters Association regarding allocation, regulations, resource management, licensing and other fisheries related matters affecting the industry (Manitoba 2018). User



involvement has played a major role in the development of angling regulations and other aspects of recreational fisheries management. Consultation with users has allowed the introduction of new angling regulations in a manner that has caused least disruption to anglers. The Department continues to encourage resource users to participate in the management of recreational fisheries.

### **3.5.5 Non-MSc Fishery Users**

Non-MSc fishery users, which could affect the UoAs, are fishers engaged in Aboriginal domestic subsistence fishing and in recreational fisheries and also commercial fishers engaged in the carp gillnet fishery (though, there are currently no active licenses for the later).

#### **3.5.5.1 Aboriginal Domestic/Subsistence Fishers**

Domestic harvest by Aboriginal communities in the area occurs throughout the year. When a license system was adopted for Manitoba and closed seasons were introduced, under the new regulations, Natives were allowed to fish for their own needs. Canadian courts have established that subsistence fisheries of indigenous people have priority over all other uses of the resource. Fishing occurs through constitutionally protected treaty fishing rights and the fishery does not come under direct government regulation (except if there were species and areas closed for conservation reasons). Most members of a household, men, women and children, participate in subsistence fishing. It typically involves setting gillnets as well as rod-and-reel fishing. There is no legal restriction on the number of nets as long as the catch is for personal and household consumption but all nets need to be tagged to establish the authority under which the net is set.

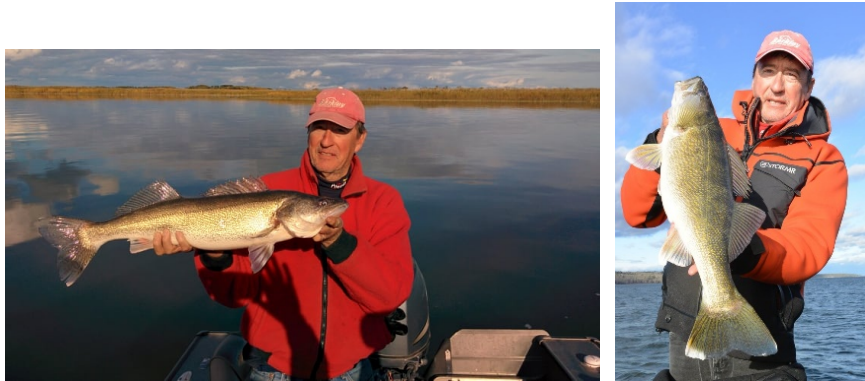
The level of subsistence harvest is unknown. Manitoba Sustainable Development does not formally track the number of domestic fishers, as they do not require permits to conduct this activity (B. Parker pers. comm.). Since there is little infrastructure and boats available to accommodate open water commercial fishing, and since most open water boats are designed for angling purposes, virtually all subsistence fishing is restricted to the south end of Waterhen Lake, which is close to the Skownan community (W. Galbraith pers. comm.). Local community members set some nets immediately in front of the community every winter, and generally do not travel the distances that commercial fishers do to find fish. In addition, people generally angle for Walleye in the tributaries flowing into and out of Waterhen Lake. Subsistence fishers can set nets in a river, but as per the Fisheries Act (Canada), no one can obstruct the passage of fish by impeding more than 2/3 of the width of the river. A survey from 93 communities from 10 regional studies including Manitoba indicates a wide range of subsistence harvest, clustering at about 60 kg of whole fish per capita per year (Berkes 1990). Most commercial fishers are also treaty fishers (i.e., registered indigenous people) and can participate in both kinds of fisheries (Islam and Berkes 2016). While there is no information on Lake Waterhen, in northern Manitoba Norway House Fisherman's Co-op Cree Nation, almost all commercial fishers are also subsistence fishers, which could be the case for Waterhen.

#### **3.5.5.2 Recreational Fishers**

Recreational angling occurs in the lake but takes place mainly in the Little Waterhen, East Waterhen and West Waterhen tributaries (Figure 20). Provincial angling regulations apply. Under the *Fisheries Act (Manitoba)* any person engaging in recreational fishing must have a valid angling license. In general, there are two categories of fishers: about 80% are resident anglers who live in Manitoba or other parts of Canada and the 20% non-residents are mostly from the USA who use commercial facilities such as sportfishing lodges. Under Manitoba Angling Regulations, Waterhen Lake is part of the Southern Division and current General Limits and Division Regulations identified in the Manitoba Angler's Guide apply. Over the years, the regulations placed on sport fisher licenses have reduced daily catches, reduced

maximum retained-fish limits, and introduced retained-fish slot sizes to limit capture of breeding fish. Another important regulation was the banning of barbed fish hooks. This made “catch and release” more feasible. Anglers who catch trophy fish are encouraged to release the fish, after making application to the Master Angler Program, and to purchase a replica mount to take home with them. Relevant regulations in place consist of a bag limit of four walleye for Waterhen Lake and the Waterhen River, a general closure from April 1 to May 10, and release of all pike >75 cm.

([https://www.gov.mb.ca/sd/pubs/fish\\_wildlife/angling\\_guide.pdf](https://www.gov.mb.ca/sd/pubs/fish_wildlife/angling_guide.pdf)).



**Figure 20. Walleye caught at East Waterhen River in 2017 (left) and walleye caught on the Waterhen River in 2016 (right) (submitted by Don Lamont). Source:**

<https://www.cbc.ca/news/canada/manitoba/manitoba-fishing-licence-sales-increase-1.5092100>

The level of recreational harvest is unknown. Estimated walleye production for 1977 (incomplete data) was 42,200 pounds. In Manitoba, recreational fishing license sales rose by 13% between 2008 and 2017, increasing from about 169,000 licenses to 195,000 according to data from Manitoba Sustainable Development. The department expects the final tally on license sales for 2018 will break the 190,000 mark for the fourth year in a row

(<https://www.cbc.ca/news/canada/manitoba/manitoba-fishing-licence-sales-increase-1.5092100>). A catch estimate from a 2010 Survey of Recreational Angling for Waterhen River was 31,460 walleye and for Waterhen Lake was 10,948 walleye (Galbraith et al. 2017).

### **3.5.5.3 Fishing Lodges and Other Tourist Establishments**

An outfitting industry has developed around the recreational fishery, and to manage the industry, the Department of Natural Resources divided Manitoba into three regions. Manitoba established resort operator’s assurance of tenure and protection against encroachment by new resource users through the licensing system, which gives priority first to subsistence fishing, then resident angling, and thirdly commercial users, which include outfitters and lodge operators. Existing commercial users who had prior access to the resource base are recognized as having some form of tenure. Annual licensing of commercial users depends on their meeting prescribed standards and criteria. Under, the Licensing Advisory Committee general guidelines, lodge operators must be financially viable, compatible with, and not excessively intrusive upon, the carrying capacity of the resource base. Priority is given to Native regional Manitobans, Manitobans, other Canadians, and lastly, foreigners. Where conditions permit lodge development, the rule is one lodge per body of water or water system. Only Aboriginals, however, may establish more than one out camp per water system.

There are four commercial tourism lodge/outfitting operations that offer angling opportunities in the area (Klein and Galbraith 2017). The *Harvest Lodge* is located on the Waterhen River, Community of Waterhen (<http://www.waterhen.ca/index.php?section=3>). The *Cat Eye*

*Outfitters* operates in lakes, rivers and reservoirs throughout Southwestern Manitoba. *South Shore Lodge* operates on the Waterhen River system. The *SKO Outfitting* (Skownan First Nation Development Corporation) offers guided angling adventures on the West Waterhen River, East Waterhen River and Waterhen Lake. In return for continued resource allocation, commercial users must meet specific performance standards.

#### **3.5.5.4 Carp Commercial Fishers**

The common carp commercial gillnet fishery is an open-water fishery and takes place year-round from November 1 to October 30; it is only closed on October 31 to meet requirements under the Federal Fishery Act, which dictate that all commercial fisheries operating in Canada must have a closed season. The carp fishery for Waterhen Lake was authorized in 2002 under *Commercial Fishing Season Variance* (CFSV # 2002/4) (Galbraith 2013). Fishers who hold an eligible Manitoba commercial fishing license for Lake Waterhen and who reside in the immediate area are eligible for a carp license. The number of licenses is issued at the discretion of the Regional Fisheries Manager in Consultation with input from the local officer. Only common carp may be harvested and retained under the authority of a commercial carp license, and the license can be terminated to the discretion of the local Natural Resource Officer if more than 10% of the catch is non-carp species (Sustainable Development Manitoba Commercial Carp Fisheries Compulsory Conditions).

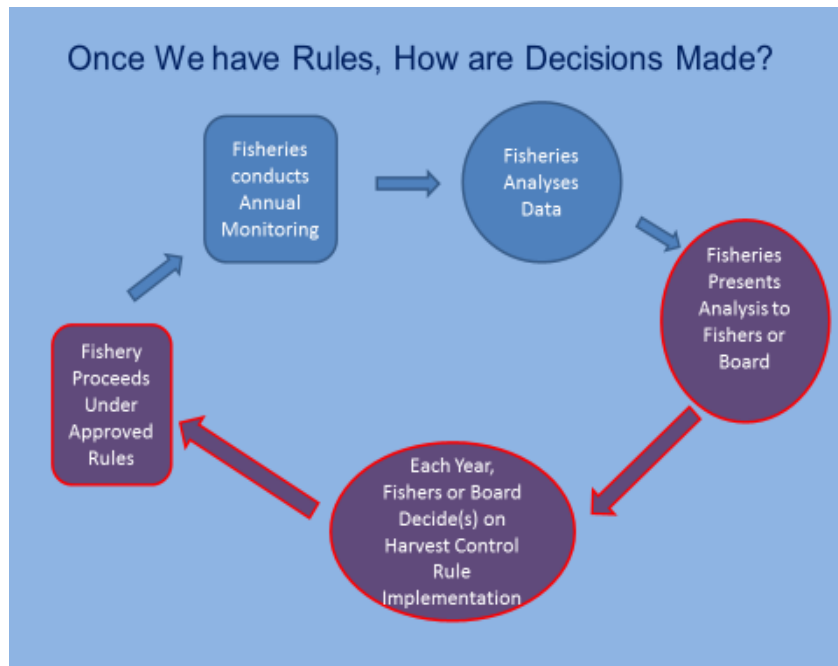
The carp gillnet fishery is subject to gear restrictions different to the walleye and northern pike winter fishery and operates with an unlimited annual quota; the minimum mesh size is 203 mm. However, there are currently no active licenses for the carp fishery on Waterhen Lake so its impact is currently non-existent. Additionally, if the carp fishery were to be reestablished, its walleye and northern pike harvest would likely be minimal since the carp fishers lack the equipment and infrastructure required for an open water gillnet fishery (W. Galbraith pers. comm.).

In terms of arrangements for liaison and co-ordination, as described in the previous section, Sustainable Development will continue to consult and liaise with the fishers' association and other pertinent non-MSC fishery users on a regular basis throughout the life of the FMP (Klein and Galbraith 2017).

#### **3.5.6 Decision-Making Process**

The FMP indicates that the decision-making process includes integrated management with consultation with government agencies, development proponents, fishers and the public that will enhance awareness and understanding and the efficiency of fisheries management. During the decision-making process, government is obligated to give preference to Indigenous rights holders but must take into consideration a measured approach that may require limits on harvesting activities if there is legitimate justification. Manitoba Sustainable Development (Wildlife and Fisheries Branch) retains the right to make decisions in the best interest of conservation and the fishery resource.

Sustainable Development conducts annual pre-season meetings, works the indicators, and conducts formal fishery meeting at the Bands office to work out how the fishing will be conducted (Figure 21). There is co-ordination among the fishers with respect to fishery starting dates (if these are later than provincially regulated start dates). For Waterhen Lake, it will be when fishers agree there is enough ice to safely fish. For the satellite lakes, they usually agree on a later date than for Waterhen.



**Figure 21. Annual consultative process to implement the harvest control rule as described in the Waterhen Lake FMP, Fisheries Sustainable Development Wildlife and Fisheries Branch. Source: Klein and Galbraith 2017.**

Stakeholders during the site visit indicated the desire of better ways of communication. They also indicated the need for issues to be addressed by all parties and in general better communication among people involved.

### 3.5.7 Objectives of the Fishery

Fishery objectives are documented in the FMPs (e.g., Klein and Galbraith 2017, 2019) and cover the Principle 1 and 2 objectives for ecosystem structure, productivity, function and diversity. The mandate of Manitoba Sustainable Development (Wildlife and Fisheries Branch) is to meet its public “trust” obligations by ensuring the rational, orderly use of our fisheries resource within the resource’s capacity to produce harvestable surplus. In achieving this mandate, the goals are to:

- *ensure “No Net Loss” of quality and quantity of fish habitats;*
- *ensure that adequate supply exists to meet Constitutional obligations for Indigenous peoples to fish for food;*
- *have sustainable, community supported fishery management strategies;*
- *provide a diversity of angling opportunities;*
- *provide consistent, professional, high quality service to our clients and recommendations to elected decision makers; and*
- *facilitate public participation in resource management and decision making process. (Klein and Galbraith 2019)*

The following objectives are explicit in the FMP. Manitoba Sustainable Development (Wildlife and Fisheries Branch) will strive to manage the Waterhen Lake commercial gillnet fishery so that:

- *The fishery must be conducted in a manner that does not lead to over-fishing or depletion of the harvested populations and, for those populations that are depleted the fishery must be conducted in a manner that demonstrates activities leading to stock recovery.*

- *Fishing operations (commercial, recreational and domestic/subsistence) should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including 6 habitat and associated dependent and ecologically related species) on which the fishery depends.*
- *The fishery is subject to an effective management system that incorporates applicable federal and provincial legislation, policies and regulations and operational frameworks that require use of the resource to be responsible and sustainable. (Klein and Galbraith 2019)*

### **3.5.8 Fishing Categories in the Fishery**

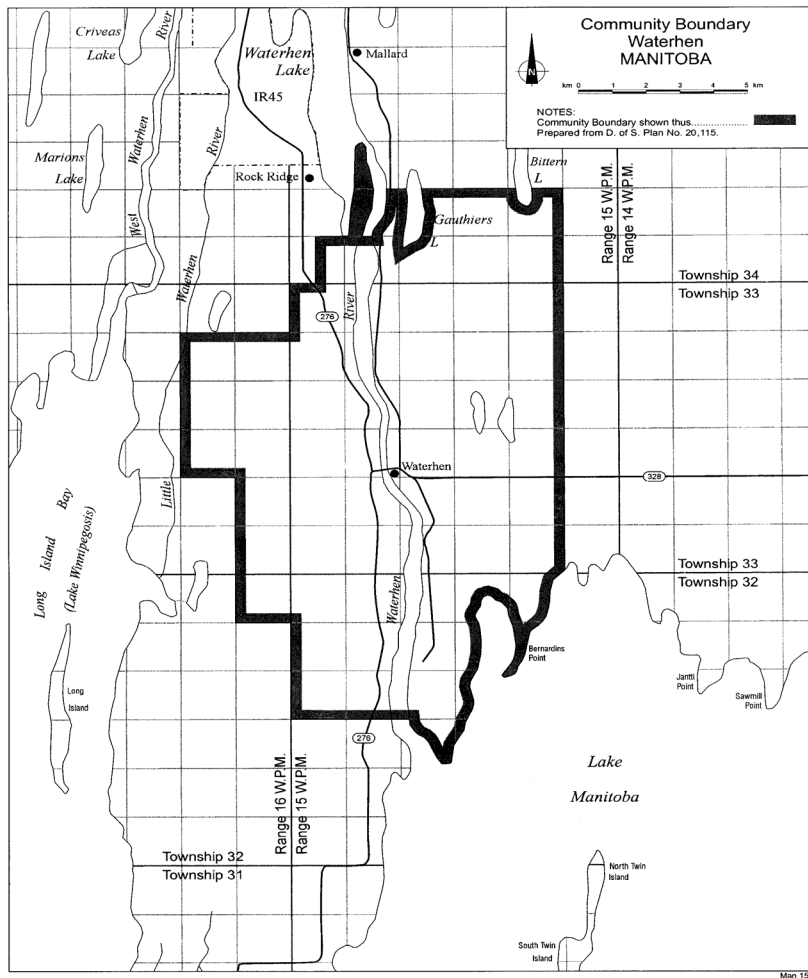
The commercial fishery on Waterhen Lake targeting walleye and northern pike has been predominantly a winter fishery and it is currently exclusively an ice fishery; no boats are involved. Gillnets are the only fishing gear used. During the winter season, gillnets are set under the ice using jiggers (Figures 2 and 4). Nets are set through the ice using a jiggerboard to advance a line under the ice. A jigger is a plank of wood, about six feet long, that comes equipped with a steel-tipped wooded arm hinged to an iron rod. From the end of the iron rod is a long rope. When the jiggerboard has travelled the length of a net (80-100 yards), a second hole is made to retrieve the jigger board and line. The line is then used to draw a net back between the two holes (Figures 2 and 4). Nets can soak for as much as a week before being lifted, picked and reset, and can be left so long because the water is 1-4° C.

The net stakes on the end of a string must be marked with the fisher's identifying number. When a net is lifted, the fisher first must re-open the basin holes at each end of the net taking care not to cut the downlines. If a net is frozen into the ice and so cannot be lifted, the fisher must mark it as frozen to forestall enforcement action.

### **3.5.9 Granted Access Rights within the Fishery**

In order to participate in the commercial winter gillnet fishery, individuals are required to be a member of the Waterhen Lake Winter Fisher's Association, formerly known as the Lake Waterhen Fishermen's Association. The Association operates within the bounds of a series of by-laws, which limit the number of commercial fishers to a maximum of 22 license holders. The by-laws exist only in oral form and all its known from its content is what is reported in the FMP. In recent years, there have been 5 to occasional 6 non-active fishers (B. Parker pers. comm.). An essential component of the overall Waterhen Lake commercial gillnet fishery includes commercial fishing activities on Chitek, Inland, Crab and Archie lakes.

While all persons of Indigenous descent may fish domestically, only provincially licensed fishers have the legal right to commercially fish. To become a fisher at Waterhen Lake when a license becomes available, a "new" fisher must have the acceptance of the Waterhen Association before a license by Manitoba is granted. That entitles being a local resident, which generally is someone who has a permanent residence in the Skownan, Mallard, Waterhen or Rock Ridge communities located on or near Waterhen Lake (example in Figure 22). A local resident is also someone who resides in a rural residence or unorganized community in the vicinity of Waterhen Lake, and who is accepted by local commercial fishers as being a resident of the larger community (B. Parker pers. comm.). Manitoba issues licenses to new fishers on the recommendation of the Association. Of the current 21 fishers with commercial licenses on Waterhen Lake, 17 are members of the Skownan First Nation and Mallard Métis. All but one of the fishers reside in the Skownan First Nation and the Métis settlement of Mallard; the one having moved to the neighboring town of Waterhen.



**Figure 22. Community boundary of Waterhen. Source:**  
<https://www.gov.mb.ca/inr/resources/pubs/community%20profiles.pdf>

There is no formal allocation process among the fishers with respect to fisher shares of open quota (B. Parker pers. comm.). Open quota is available to any licensed fisher until the quota is reached and the fishery is closed when the quota is filled. Consequently, there will be a range of activity levels and incomes in the commercial fishing community. Fishers who choose to fish more days will on average deliver a higher percentage of the lake quota. Because a number of stocked satellite winterkill lakes (Inland, Chitek, Archie, and Crab) are available to Waterhen licensed fishers, individual fishing effort and catch on Waterhen varies from year to year depending on the success of fishing at these alternate lakes. Fishers may employ hired help, but the licensed fisher is required to be present during the fishing. Generally, a fisher will employ one or two helpers.

Characteristics of the communities that can participate in the Waterhen commercial fisheries:

- Skownan First Nation is on the south shore of Waterhen Lake. As of May 2015, the First Nation had 1,464 registered members, of which 750 lived on reserve. The Skownan First Nation is a member of the West Region Tribal Council. ([https://en.wikipedia.org/wiki/Skownan\\_First\\_Nation](https://en.wikipedia.org/wiki/Skownan_First_Nation) last edited on 18 April 2019).
- The community of Waterhen is located approximately 10 km south of the Skownan First Nation. Waterhen is the hub for several other reserve communities in the area including Mallard, Rockridge, and the very small community of Salt Point. The community of Waterhen is located on the east shore of the Waterhen River midway between Waterhen Lake and Lake Manitoba. It has a population of 169 people year-



round (source: Community of Waterhen website: <http://www.waterhen.ca>). The community was recognized in 1970 and is represented by a mayor and council under The Northern Affairs Act. Elected officials are a Mayor (Larry Chartrand) and four councilor members. Most of the fishing is on Lake Manitoba.

- The community of the Métis settlement of Mallard is located on the shores' southeast end of Waterhen Lake. Early Settlers moved to Mallard in 1895 and as of November 2011, has a population is 150 residents (source: Community of Mallard website: <http://mallardmb.ca>). The community was named after a small lake within 2 km of the community known as Ennishop Lake or Mallard Lake. It is represented by a Mayor (Lorne Huhtala) and Council under the Northern Affairs Act, which was recognized by the department in May 1970.
- The community of the Métis settlement of Rock Ridge had a population of 79 in the Canada 2006 Census.

### 3.5.10 Regulation Measures

Allocation of the Waterhen Lake fishery resource is consistent with existing priorities and management practices / approaches (Klein and Galbraith 2017). Access to Waterhen Lake commercial fishing is regulated through measures including:

- Limiting the entry into the fishery through the issuance of a set number of commercial fishing licenses (22) consistent with the by-laws of the Constitution of the Lake Waterhen Fishermen's Association, now known as the Waterhen Lake Winter Fishers Association.
- Implementation of existing legislation, regulations and policies

Commercial fishing licenses are subjected to mesh yardage and gear type (Manitoba 2018/2019 Commercial Fishing Guide). The commercial harvest schedule is regulated by season, mesh size, and quota:

- The winter commercial fishing season is open from '*when ice makes on or after November 1st to, and including, March 31st*'. Fishing in areas of open water is not allowed, even if the winter season has started.
- The walleye lake quota for the winter commercial fishing season is set at 36,300 kg (measured in round weight).
- Commercial harvest during the winter fishing season is limited to the use of gillnets with a mesh size not less than 96 mm. When walleye SSB falls below the Upper Limit Reference of 40 kg – the level expected to maintain a sustainable walleye yield of at least 20,000 kg – minimum mesh size in the fishery will be increased.
- When the walleye performance indicator, H, is above 0.58 no maximum gillnet mesh is implemented. However, when values fall below 0.58 a maximum mesh size regulation of 114 mm is in place. If the lower LPR of 0.31 is reached a maximum gillnet mesh size of 108 mm is imposed. If the HCRs for SSB and SFAD are both in the critical zone the minimum mesh size is 114 mm.
- Commercial harvest during the winter fishing season is limited to the use of gillnets with maximum length of 5,700 m. A drop in CPUE from the upper LPR of the stock monitoring program will result in a decrease in the net yardage allowed to each fisher. If CPUE in the index program continues to decrease, maximum yardage will also decrease until the lower LPR of two walleye per index net is reached. Twenty-one hundred meters of net will be allowed at CPUE values below the LPR to provide some income for the fishers.
- The remaining species harvested have unlimited quota including lake whitefish; northern pike; yellow perch; sauger; white sucker and shorthead redhorse, combined to make up "mullet"; cisco, marketed as "tullibee"; and common carp.
- Fishers may not fish within 1.5 km of the location where a stream or a river enters a lake.

Three specific areas of Waterhen Lake are designated as closed zones to all commercial fishing due to their importance as spawning and rearing habitats. The open water carp fishing season is open year-round except from October 30<sup>th</sup> to, and including, November 1<sup>st</sup>. The minimum allowable mesh size used during the carp open water fishery is 203 mm.

Additionally, there are general restrictions with respect to harvest of a number of species for Manitoba. All caught live sturgeon must be released immediately and all dead Sturgeon must be submitted to the nearest District Office of the Department of Sustainable Development. Channel Catfish may be sold to the end consumer. Fish (except for rough fish) must be handled, transported or disposed of in a way that results in it not being spoiled or wasted, and it is illegal to leave decaying fish in a net.

Fishing gear may not be left in place when not being actively fished. In the event that nets freeze, fishers should contact the local District Office of the Department of Sustainable Development and advise them that the nets are frozen in, and they are responsible for taking steps possible to recover the nets.

### **3.5.11 Monitoring, Control, Surveillance, and Enforcement**

The Province works with the Government of Canada and other partners, agencies, and organizations to conduct research and to collect scientific data and other information to assist in monitoring and development of resource management policies and plan. To comply with the Environmental Review Process as required by the Province's *Environment Act* (1987), Fisheries Branch has the mandate to ensure that development activities that impact provincial aquatic ecosystems meet Manitoba's proprietary interests for both fisheries conservation and sustainable development (Manitoba Fisheries 2009). These mandates, and monitoring, assessment, and education activities required to support them, are key components of Manitoba's stewardship responsibilities for aquatic ecosystems.

#### **3.5.11.1 Monitoring**

Fisheries Branch seeks to rally sufficient resources to monitor and assess fish stock health and undertake scientific research to identify fish stock trends and refine understanding of biological limitations (Manitoba Fisheries 2009). With analysis of the best information available to fisheries managers collected and verified by trained biologists/scientists from academic, private, federal and provincial public sectors, Manitoba takes actions required to ensure long-term stock sustainability. Monitoring of the Waterhen Lake fish populations and fishery through the collection of data is undertaken from a variety of different sources:

##### *Fishery-Independent Annual Index Netting*

Index netting is carried out each year in the month of September when water temperatures fall to between 10 and 15 degrees Celsius (Galbraith and Klein 2017). Thirty index nets are set at the same sites each year.

##### *Monitoring of the Recreational Fishery*

There is no current monitoring of the recreational harvest. Creel surveys in the Waterhen Lake area were conducted in 1977 and 1978 by the then Department of Natural Resources (Valiant and Smith 1979). An intensive angler creel census was carried out in Lake Waterhen and other lakes during summer to determine the quantity of Walleye and other fish species taken by anglers. In 1978, the census was repeated in part of the Waterhen River area to provide information about year-to-year changes in angling pressure and production.

##### *Monitoring of the Gillnet Catch*

Catch Sampling: There is no routine catch sampling program. While the FMP indicates that starting in the winter of 2014, Wildlife and Fisheries Branch implemented a commercial catch



sampling program to better understand the stock structure of northern pike in Waterhen (Galbraith and Klein 2017), there is no ongoing program. It is also reported that data are collected opportunistically during lake patrols from fishers lifting their nets, or from nets seized during enforcement activities.

**Logbooks:** There is no logbook program. A proportion of Waterhen Lake commercial fishers had agreed to complete and return commercial logbooks to departmental officials (Galbraith and Klein 2017). Nevertheless, fishers did not complete the logbooks. Fishers considered the task impractical, as it required them to record data while conducting the fishery operations, and since they have to wear gloves in the cold weather, they could not write notes.


**Sale Slips:** All buyers and any fisher who sells directly to consumers are compelled by regulation to submit to Fishery Branch what was caught and by whom. Manitoba Sustainable Development tracks production in order to ensure the quota is not exceeded; any overage is deducted from the following year's quota. Most Waterhen fish now cross the scale at the Skownan packing shed, Skownan is not an FFMC agent; the buyers are the Waterhen Lake Winter Fishers. Some fish are packed at the St. Martin Fish Agency, and fewer at the Winnipegosis shed; both are agents for the FFMC. As the buyers, both Skownan and FFMC provide daily catch records (DCRs), the fisher name, date of delivery, and delivered weight by size, form, and species on a weekly basis. Those data are converted into round weights for compliance purposes.

**Basin Hole Inspections:** In an effort to assess and monitor the level of bycatch, particularly discarded bycatch, occurring in the Waterhen Lake commercial gillnet fishery, the department has implemented On-site (basin hole) inspections. These inspections began in the 2010/2011 commercial fishing season (Galbraith, Klein and Kirbyson 2017) and as the reviewers for the initial MSC certification were skeptical of claims that bycatch was almost non-existent in the Waterhen fishery (G. Klein pers. comm.). Conservation Officers will undertake on-site inspections as part of their compliance monitoring patrols during the commercial fishing season. Basin Hole inspections are a side line on any on-lake patrol when time allows. Data are collected on fish that are discarded or not sold for commercial purposes kept for personal consumption or for community members (and also from seizure of unattended nets). Under observation, officers record the number of fish and species of fish discarded at each basin hole. Officers will forward copies of these reports to the Sustainable Fisheries Unit (Wildlife and Fisheries Branch) for analysis and compilation. There are no reports available summarizing the information and results are not published for review. They exist as loose-leaf sheets of individual events in a binder at the Sustainable Fisheries Unit (G. Klein, pers. comm.). Some results for 2013 (January 4), 2014 (January 18 and 23, February 7, and March 11) and 2015 (January 14, 17, and 26) are reported in the 2017 Waterhen Lake Fishery Summary Report (Galbraith et al. 2017).

### **3.5.11.2 Control and Surveillance**

Regulatory controls authorized under federal and provincial legislation, policies and regulations are implemented to ensure that the Waterhen Lake fishery resource is utilized in a responsible and sustainable manner (Klein and Galbraith 2017). In addition, voluntary controls are also considered through discussions with local commercial fishers.

The officers complete a Commercial Fishery Patrol Report that documents date, time, weather, officers, locations and observations (Figure 23). Patrol reports are not available to the public, but the information can be obtained through freedom of information requests. When available, fishers' personal information is on the reports.

Commercial Fish Patrol Log														 Manitoba Conservation	
REGION:			Officers:			Area:									
Date:															
Patrol Time						Weather		sky							
start:								wind							
conclude:								temp							
Operator / Fisherman						Fish									
Licence #	Name		Location / GPS		Area	Time	Whitefish	Pike	Pickrel	Sauger	Perch	Tulibee	Myia	Other	
	hire d hand				# nets	comments:									
	helpers														
	hire d hand				# nets	comments:									
	helpers														
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	hire d hand				# nets	comments:									
	helpers														
	hire d hand				# nets	comments:									
	helpers														
	hire d hand				# nets	comments:									
	helpers														

MB. Conservation Commercial Fishing Patrol Log Results - Waterhen Lake										
Patrol Date	Fish Species									
	Lake Whitefish	Northern Pike	Walleye	Sauger	Yellow Perch	Cisco (Tullibee)	Burbot	Mullet	Other	Total
Jan. 4, 2013	2	33	8	0	0	0	0	3	0	46

**Figure 23. Commercial Fishery Patrol Report form and example of results from on-site inspections on Waterhen Lake. Source: Galbraith 2013.**

The FMP indicates that officers conduct compliance monitoring of Waterhen Lake through patrols over the year (Klein and Galbraith 2017). It is reported that over the course of the winter season, there are on average four to five commercial fishery compliance patrols conducted on the lake. However, when notified of potential violations, officers will investigate

and have an increased presence on the lake. Results are not summarized, and the only available documentation from any information related to the patrols is in a table of the 2017 Fishery Summary Report, which includes data from different fisheries and types of monitoring including efforts to quantify bycatch. The FMP states that a season end patrol is made at the beginning of April if conditions permit to ensure no equipment is left on the lakes. Nevertheless, there is no record on those patrols available. Patrols are also made in response to fisher reports of gear they suspect is untended, or fishing they suspect is non-compliant.

In general, during open water season (i.e., not these UoAs), there are weekly patrols, focused on the river systems and populated areas of Waterhen Lake (Mallard Bay). These patrols primarily address recreational angling and subsistence/domestic fishing.

To assess harvest, Wildlife and Fisheries Branch reviews sale slips data weekly when fishing is heavy, or if the catch is approaching quota, and less frequently as fishing slows. Unscheduled compliance visits are made throughout the fishing season to the Skownan shed by Wildlife and Fisheries Branch, as well as district enforcement staff; a half dozen to a dozen times per year.

### **3.5.11.3 Enforcement**

Enforcement on fishery activities in Waterhen Lake, inclusive of the commercial, recreational, and subsistence fisheries, is the responsibility of Manitoba Sustainable Development (Klein and Galbraith 2017). While the Department is responsible for ensuring compliance with fishing activities, DFO is the responsible body with respect to ensuring the sustainability and ongoing productivity of commercial, recreational and aboriginal fisheries. This is done by ensuring no person can carry on any work, undertaking or activity that results in serious harm to fish that are part of a commercial, recreational or Aboriginal fishery, or to fish that support that fishery. DFO has several provisions that allow for enhanced protection of important fisheries including fines and penalties for offences, inspector powers and a “duty to notify” which requires a person whose actions harm fish habitat to report it and take corrective measures.

The Regional Support Services - Central Region delivers programs and services associated with the Parks and Regional Services Division of Manitoba Sustainable Development, including fisheries resource management. These initiatives include the development, delivery, and evaluation of programs and services, inspection, compliance monitoring, and enforcement of natural resource legislation. This is done by multi-disciplined full-time and seasonal staff working from a Regional Office in Gimli and District offices in Ashern, Grand Beach, Gypsumville, Hodgson, Lundar, Manitou, Portage la Prairie, Riverton, Selkirk, Winnipeg Beach, Birds Hill, and Winnipeg. In the case of Waterhen Lake fisheries, services are delivered collaboratively by the Winnipeg office of Sustainable Development and the Gypsumville District office of Sustainable Development.

### **3.5.12 Education and Training for Interested Parties**

The Sustainable Development website contains information on education resources ([https://www.gov.mb.ca/sd/fish\\_and\\_wildlife/fish/fisheries\\_education\\_sustain\\_dev/sustain/intro.html](https://www.gov.mb.ca/sd/fish_and_wildlife/fish/fisheries_education_sustain_dev/sustain/intro.html)). The Fisheries Branch education program strives to enhance the understanding of interrelationships between fish, aquatic ecosystems, environmental and human activities (Manitoba 2009). The objective is to promote and foster public awareness and understanding of fish and fish habitat, effects of human activities and natural processes, and conservation practices, within both government and the public. Fisheries Branch has actively supported the Manitoba Envirothon since 1998, an annual event aiming to increase student awareness of the environment, ecosystems and the natural balance and complexity of these systems. Topic areas include Aquatic Ecology and Wildlife. The Branch has continued to

improve the Manitoba Fisheries Sustainable Development Educational Internet website in order to provide general fisheries information to the public, and assist teachers in integrating the theme of sustainable development into the science curricula.

More specifically, there are programs that focus on training local fishers and/or community members to undertake annual stock monitoring through an established data collection protocol in place of provincial fisheries staff. A Collaborative Stock Monitoring Program began in 2018, funded by Indigenous Services Canada and the Province of Manitoba, to facilitate technical fisheries assessment skill development in Indigenous communities (Galbraith, 2018). The cooperative community stock monitoring program was developed in collaboration with fishers from Skownan First Nation among others. All monitoring results and associated materials, including University of Winnipeg and independent based research, are supposed to be presented, discussed and distributed at the annual commercial fisher meetings. This approach will provide an opportunity to disseminate and share information to stakeholders and interested parties in a timely fashion and ensure that materials are widely and publicly available. Moreover, the Department of Biology at the University of Winnipeg has proposed to develop and implement a Professional Applied and Continuing Education (PACE) Program, designed to train and support Indigenous persons from communities involved in the Collaborative Stock Monitoring Program to become qualified fisheries assessors. The successful development and implementation of these collaborative stock monitoring programs offer the opportunity for Indigenous fishers/community members to acquire technical skills necessary to assess fish stocks and data in relation to performing sustainable fisheries management and planning. Individuals will learn about fish sampling, fish aging and data analysis that Provincial Fisheries staff typically does for index netting projects and fisheries assessments. This will provide the necessary knowledge and skills to pursue a career path in the field of fisheries resource management that will provide long-term employment opportunities in conducting stock monitoring programs for the Province of Manitoba, Manitoba Hydro, academic institutions, etc.

### **3.5.13 Management Plan Review and Audit**

According to the FPM, the plan will be reviewed and evaluated annually (Klein and Galbraith 2017). The review is to be conducted by Manitoba Sustainable Development (Wildlife and Fisheries Branch), Lake Waterhen Fishermen's Association, now known as the Waterhen Lake Winter Fishers Association, and if applicable, the Chief and Council of the Skownan First Nation; and other pertinent resource users/stakeholders, such as recreational angler groups/ associations (Southern Division), commercial tourism lodge operators and outfitters.

An external review process by an independent third party was planned to determine if the management plan meets the goals/objectives. The previous MSC certification assessment indicated that an FMP external audit should be completed in the third year of the MSC certification (Casselman et al. 2014). This was so that the results and the MCWS response would be available to the team engaged in any re-certification: *"The audit team recommends that this external audit be completed in the third year of the MSC certification so that the results and the MCWS response are available to the team engaged in any re-certification."* It was also recommended that the FMP be considered "evergreen" to reduce the need for future staff inputs. While the 2019 FMP was made available to the audit team, there was no FMP annual update in 2018. Also, a date for a review and audit of the management plan has not been established.

### **3.5.14 Management Jurisdictions**

Freshwater fisheries in the Province of Manitoba are subject to mixed federal and provincial Jurisdictions. Protection, ownership, allocation, use and management of fish, and fish habitat in Manitoba are governed by the Canadian constitution, duly signed treaties, and federal and provincial legislation (Klein 2018a). The management of the Waterhen Lake fisheries is

shared by the Province of Manitoba, Indigenous groups, the Waterhen Lake Winter Fishers Association, and Canada.

## 4 Evaluation Procedure

### 4.1 Harmonized Fishery Assessment

There are no overlapping fisheries with this assessment.

### 4.2 Previous assessments

Waterhen Lake walleye and northern pike were originally MSC certified in 2014 (Intertek, 2014). Therefore, this is the first reassessment of this fishery. Table 5 summarizes conditions raised in the previous assessment and gives details of their closure.

**Table 5. Summary of Previous Assessment Conditions**

Condition	PI(s)	Year closed	Justification
1. By the fourth annual audit, the following Scoring Guideline 80 scoring issues must be met: The harvest strategy for Northern Pike is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving management objectives reflected in the target and limit reference points.	1.2.1 (pike)	Year 4	At the 4 <sup>th</sup> surveillance, the client provided information that confirmed that the total annual mortality harvest control rule was successfully implemented and in force for the 2017/18 and 2018/19 commercial northern pike fisheries. Therefore, the client met the requirements set out in the condition, and this condition was rescored and closed.
2. By the fourth annual audit, the following Scoring Guideline 80 scoring issues must be met: For Northern Pike, well defined harvest control rules are in place that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached.	1.2.2 (pike)	Year 4	At the 4 <sup>th</sup> surveillance, the client provided information that the harvest control rule was implemented according to the status of the stock in the context of the harvest strategy for the 2017/18 and 2018/19 commercial northern pike fisheries. The value of total annual mortality for 2018 was 53%, compared to a value of 49% in 2017 and both are well below the TRP (64%). Therefore, the client met the requirements set out in the condition, and this condition was rescored and closed.

3. By the second annual audit, the following Scoring Guideline 80 scoring issues must be met: Research results are disseminated to all interested parties in a timely fashion.	3.2.4 (both)	Year 3	At the 3 <sup>rd</sup> surveillance, the client provided the following web link: <a href="http://www.gov.mb.ca/sd/waterstewardship/fisheries/commercial/commercial.html">http://www.gov.mb.ca/sd/waterstewardship/fisheries/commercial/commercial.html</a> . This provides access to the Manitoba Conservation and Water Stewardship, “Commercial Fishing” webpage, where “Eco-certification” is explained and all research reports/documents conducted on Waterhen Lake by the Water Stewardship Division is now publicly accessible. Therefore, the client met the requirements set out in the condition, and this condition was rescored and closed.
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### 4.3 Assessment Methodologies

The MSC FCR v2.0 and accompanying guidance and corresponding MSC Full Assessment Reporting Template (v2.0) were used to assess this fishery. The Default Assessment Tree was used without modification.

### 4.4 Evaluation Processes and Techniques

#### 4.4.1 Site Visits

Information supplied by the clients and management agencies was reviewed by the assessment team ahead of the meetings, and discussions with the clients and management agencies centered on the content within the provided documentation. In cases where relevant documentation was not provided in advance of the meeting, it was requested by the assessment team and subsequently supplied during or following the meeting. The RBF process was carried out for lake whitefish and white sucker (Principle 2) as part of the audit. However, following the site visit, it was determined that sufficient quantitative information was available for lake whitefish and white sucker so the qualitative information gathered via the RBF was used only to reinforce the scoring of these species. For the sake of completeness, details on the RBF process are still provided below.

As per MSC requirements, stakeholders were informed 30 days prior to the audit of the opportunity to provide information to the team in advance of, or during, the period of the audit. All stakeholders from the previous full assessment were informed. In addition, there was a specific announcement regarding intended use of the RBF for northern pike, lake whitefish, and white sucker (though, as noted above, the RBF was not performed for northern pike). We received no requests from outside stakeholders to take part in meetings or provide information remotely.

For these UoAs, the audit was held in Winnipeg and Waterhen, Manitoba, Canada on March 16. (The other UoAs were discussed on subsequent days.) Table 6 lists the attendees and their affiliations, and Table 7 gives the meeting schedule.

**Table 6. Waterhen Lake surveillance audit and reassessment participants and affiliations**

Name	Affiliation
Jodi Bostrom	MRAG Americas, Assessment team
Tom Jagielo	Assessment team
Sara Adlerstein-Gonzalez	Assessment team
Heiko Seibert	ASI

William Galbraith	Indigenous Services Canada
Kurtis Hayne	MSC
Brian Parker	Manitoba Sustainable Development
Jonathan Stephens	Manitoba Sustainable Development
Geoff Klein	Manitoba Sustainable Development
Lorne Huhtala	Fisherman
Claudette Robinson	WWoF Inc.
Wesley Catcheway	Fisher/hatchery technician
Percy Houle	Fish processor
Russell Dano	Fisher and fish shed worker
Rudy Gabriel	Fisher
Sterling Catcheway	Fisher, Skownan Band Councilor, and Deputy Chief

**Table 7. Waterhen Lake schedule of meetings and attendees**

Time	Topic	Attendees	Lead	Location
7:00 am	Breakfast and opening meeting with ASI	Jodi Bostrom, Tom Jagielo, Sara Adlerstein-Gonzalez, Heiko Seibert	HS	Four Points Sheraton, Winnipeg, Manitoba
7:45 am	Depart for Client Office			
8:00 am	Opening meeting with clients  Discussion of agenda and upcoming stakeholder meetings	Jodi Bostrom, Tom Jagielo, Sara Adlerstein-Gonzalez, Heiko Seibert, Brian Parker, William Galbraith, Kurtis Hayne, Jonathan Stephens, Geoff Klein	JB	Manitoba Sustainable Development Office, 200 Saulteaux Crescent, Winnipeg, Manitoba
8:30 am	Principle 1 with focus on client information clarifications  Review of information needs for Waterhen walleye and northern pike as shown in P1 data needs spreadsheet. (Begin with a focus on PIs 1.2.1, 1.2.3, and 1.2.4.)	Jodi Bostrom, Tom Jagielo, Sara Adlerstein-Gonzalez, Heiko Seibert, Brian Parker, William Galbraith, Kurtis Hayne, Jonathan Stephens, Geoff Klein	TJ	Manitoba Sustainable Development Office, 200 Saulteaux Crescent, Winnipeg, Manitoba
10:15 am	Morning Break			
10:30 am	Principle 2 with focus on client information clarifications  Discussion of P2 catch data	Jodi Bostrom, Tom Jagielo, Sara Adlerstein-Gonzalez, Heiko Seibert, Brian Parker, William Galbraith, Kurtis Hayne, Jonathan Stephens, Geoff Klein	JB	Manitoba Sustainable Development Office, 200 Saulteaux Crescent, Winnipeg, Manitoba
11:00 am	Principle 3 with focus on client information clarifications	Jodi Bostrom, Tom Jagielo, Sara Adlerstein-Gonzalez, Heiko Seibert, Brian Parker, William Galbraith, Kurtis Hayne,	SAG	Manitoba Sustainable Development Office, 200 Saulteaux Crescent, Winnipeg,

		Jonathan Stephens, Geoff Klein		Manitoba
11:30 am	Lunch and Depart for Waterhen			
5:00 pm	Observation of fishing activity on Waterhen Lake (TBC)	Jodi Bostrom, Tom Jagielo, Sara Adlerstein-Gonzalez, Heiko Seibert, William Galbraith, Kurtis Hayne, Jonathan Stephens, Geoff Klein, Lorne Huhtala, Rudy Gabriel	GK/WG	Waterhen Lake
7:00 pm	Travel to Waterhen			
7:30 pm	Opening meeting with Waterhen Lake Fishers and other stakeholders  Brief introduction of attendees  Brief introduction of MSC process and RBF process	Jodi Bostrom, Tom Jagielo, Sara Adlerstein-Gonzalez, Heiko Seibert, William Galbraith, Kurtis Hayne, Jonathan Stephens, Geoff Klein, Lorne Huhtala, Claudette Robinson, Wesley Catcheway, Percy Houle, Russell Dano, Rudy Gabriel, Stalin Cilckie	JB	Skownan Hall, Waterhen, Manitoba
8:00 pm	Principle 1 (target stocks) RBF workshop:  Consequence Analysis questions for participants	Jodi Bostrom, Tom Jagielo, Sara Adlerstein-Gonzalez, Heiko Seibert, William Galbraith, Kurtis Hayne, Jonathan Stephens, Geoff Klein, Lorne Huhtala, Claudette Robinson, Wesley Catcheway, Percy Houle, Russell Dano, Rudy Gabriel, Stalin Cilckie	TJ	Skownan Hall, Waterhen, Manitoba
9:00 pm	Principle 2 (non-target species) RBF workshop:  Productivity Susceptibility Analysis questions for participants	Jodi Bostrom, Tom Jagielo, Sara Adlerstein-Gonzalez, Heiko Seibert, William Galbraith, Kurtis Hayne, Jonathan Stephens, Geoff Klein, Lorne Huhtala, Claudette Robinson, Wesley Catcheway, Percy Houle, Russell Dano, Rudy Gabriel, Stalin Cilckie	JB	Skownan Hall, Waterhen, Manitoba
10:00 pm	Principle 3 (fishery governance and management):  Waterhen Fishers/Skownan Nation management and	Jodi Bostrom, Tom Jagielo, Sara Adlerstein-Gonzalez, Heiko Seibert, William Galbraith, Kurtis Hayne, Jonathan Stephens, Geoff Klein, Lorne Huhtala, Claudette	SAG	Skownan Hall, Waterhen, Manitoba



	regulatory structures	Robinson, Wesley Catcheway, Percy Houle, Russell Dano, Rudy Gabriel, Stalin Cilckie		
11:00 pm	End of Waterhen Lake meeting			

#### 4.4.2 Consultations

See Tables 6 and 7 above for details of the individuals interviewed during the site visit and the summary of topics discussed. For the RBF workshop portions of the meeting, the team did utilize relevant components of the MSC's stakeholder toolbox, such as stakeholder involvement and information-gathering techniques. However, as noted above, we determined that sufficient quantitative information was available so the qualitative information gathered via the RBF for lake whitefish and white sucker was used only to reinforce the scoring of the relevant species. See more in the RBF process section below.

#### 4.4.3 Evaluation Techniques

MSC posted the announcement on its track-a-fishery page, as well as sent it by email in their Fishery Announcements newsletter to all registered recipients. At this time, MRAG Americas also announced the assessment site visit dates and location, as well as the assessment team, emailing all stakeholders on our stakeholder list for this fishery. This was done according to the process requirements as laid out in MSC's FCR v2.0. (The fourth surveillance audit was done remotely via phone on December 17, 2018.) In an attempt to reach as many stakeholders as possible, the site visit was also announced to Waterhen Lake fishers and the wider community a posted flyer (Appendix 3).

In the FCR v2.0 default assessment tree used for this assessment, the MSC has 28 "performance indicators", six in Principle 1, 15 in Principle 2, and seven in Principle 3. The performance indicators are grouped in each principle by 'component.' Principle 1 has two components, Principle 2 has five, and Principle 3 has two. Each performance indicator consists of one or more "scoring issues"; a scoring issue is a specific topic for evaluation. "Scoring Guideposts" (SG) define the requirements for meeting each scoring issue at the 60 (conditional pass), 80 (full pass), and 100 (state of the art) levels.

Note that some scoring issues may not have an SG at each of the 60, 80, and 100 levels. The scoring issues and SGs are cumulative; this means that a performance indicator is scored first at the SG60 levels. If not all of the SG scoring issues meet the SG60 requirements, the fishery fails, and no further scoring occurs. If all of the SG60 scoring issues are met, the fishery meets the 60 level, and the scoring moves to the SG80 scoring issues. If no scoring issues meet the requirements at the SG80 level, the fishery receives a score of 60. As the fishery meets increasing numbers of SG80 scoring issues, the score increases above 60 in proportion to the number of scoring issues met; performance indicator scoring occurs at 5-point intervals. If the fishery meets half the scoring issues at the 80 level, the performance indicator would score 70; if it meets a quarter, then it would score 65; and it would score 75 by meeting three-quarters of the scoring issues. If the fishery meets all of the SG80 scoring issues, the scoring moves to the SG100 level. Scoring at the SG100 level follows the same described scoring pattern.

Principle scores result from averaging the scores within each component and then from averaging the component scores within each Principle. If a Principle averages less than 80, the fishery fails.

Scoring for this fishery followed a consensus process in which the assessment team discussed the information available for evaluating performance indicators to develop a broad

opinion of performance of the fishery against each performance indicator. Review of sections 3.2-3.5 by all team members assured that the assessment team was aware of the issues for each performance indicator. Subsequently, the assessment team member responsible for each principle filled in the scoring table and provided a provisional score. The assessment team members reviewed the rationales and scores and recommended modifications, as necessary, including possible changes in scores.

Performance indicator scores were entered into MSC's Fishery Assessment Scoring Worksheet (see Table 12) to arrive at Principle-level scores. Each Principle 1 stock (i.e., walleye and northern pike) is its own UoA (rather than scoring element). Scoring elements for Principle 2 species are given in Table 8.

**Table 8. Scoring elements**

Component	Scoring elements	Main/Not main	Data-deficient or not
Secondary	Lake whitefish	Main	No
Secondary	White sucker	Main	No
Secondary	Shorthead redhorse	Minor	NA
Secondary	Yellow perch	Minor	NA
Secondary	Common carp	Minor	NA
Habitat	Fine sand with cobble and boulders (commonly encountered)	Main	No
Habitat	Mud (commonly encountered)	Main	No
Ecosystem	Trophic structure and function	Main	No
Ecosystem	Community structure	Main	No

#### 4.4.4 RBF Process

Prior to the site visit, the assessment team announced that the RBF would be used to assess northern pike (target species) and lake whitefish and white sucker (secondary species). However, shortly before the site visit, we determined that sufficient quantitative information was available for northern pike so the RBF was not performed for that species. Additionally, following the site visit, it was determined that sufficient quantitative information was available for lake whitefish and white sucker so the qualitative information gathered via the RBF was used only to reinforce the scoring of these species. For the sake of completeness, details on the RBF process are still provided below.

Stakeholders were identified from those previously engaged at any point in the first certification, with additional input from the client. The intent to reassess the fishery dated February 7, 2019 was posted on the MSC fisheries website, as was the intention to use the RBF to assess northern pike, lake whitefish, and white sucker. All identified stakeholders were invited, with appropriate notice, to attend the RBF workshop.

The primary RBF workshop was undertaken during the site visit (March 16, 2019) at the Skownan Hall in Waterhen, Manitoba and was attended by fishery stakeholders, including fishers, fishery managers, client representatives, as well as MSC and ASI observers (Table 9). No environmental NGOs chose to attend the workshop.

**Table 9. RBF workshop attendees**

<b>Name</b>	<b>Affiliation</b>	<b>Workshop Status</b>
Jodi Bostrom	MRAG Americas	Assessment Team
Tom Jagielo	Independent consultant contracted by MRAG Americas	Assessment Team
Sara Adlerstein-Gonzalez	Independent consultant contracted by MRAG Americas	Assessment Team
William Galbraith	Indigenous Services Canada	Stakeholder
Jonathan Stephens	Manitoba Sustainable Development	Stakeholder
Geoff Klein	Manitoba Sustainable Development	Stakeholder
Lorne Huhtala	Fisherman	Stakeholder
Claudette Robinson	WWoF Inc.	Stakeholder
Wesley Catcheway	Fisher/hatchery technician	Stakeholder
Percy Houle	Fish processor	Stakeholder
Russell Dano	Fisher and fish shed worker	Stakeholder
Rudy Gabriel	Fisher	Stakeholder
Sterling Catcheway	Skownan	Stakeholder
Heiko Seibert	ASI	Observer
Kurtis Hayne	MSC	Observer

The assessment team considered that the range of stakeholders was sufficient to provide the necessary information on the stock and catch composition as it included all stakeholders that had expressed an interest in attending the site visit and included science, management, and fisher stakeholders.

A specifically tailored set of questions was developed to assist in collecting the relevant information from the workshop participants. The purpose of the workshop was carefully explained to the participants. The assessment team answered questions about the questions being asked and the information requested as needed. As noted above, the team did utilize relevant components of the MSC's stakeholder toolbox, such as stakeholder involvement and information-gathering techniques. However, there was a concern that not all participants would be comfortable in English so the entire workshop was conducted orally, meaning that the toolbox's written participatory methods were not appropriate in this case.

A summary of the information obtained from the workshop, including the range of opinions, is as follows.

The fishers reached consensus on all of the topics discussed, which included:

- Areal overlap: The fishers said that lake whitefish and white sucker and that they are always present in the lake. (score 3)
- Encounterability: The fishers stated that while the target species are benthic, the mesh and floatline are usually off the bottom, unless they get pulled down by the weight of fish in the net, so there is low to medium overlap between the species and the gear within the water column. (score 1-2)
- Selectivity of gear: The fishers stated that they catch lake whitefish and white sucker somewhere between "rarely" and "regularly". (score 1-2)
- Post-capture mortality: The fishers said that they keep all fish they catch. (score 3)
- The fishers estimated that shorthead redhorse made up 5-10% of their "mullet" catch.

## **5 Traceability**

### **5.1 Eligibility Date**

At the present time, product from this fishery is not eligible to enter certified chains of custody, as traceability within the fishery (see section 5.2) cannot be confirmed.

## 5.2 Traceability within the Fishery

Gillnet is the only gear used by licensed fishers in the Waterhen Lake winter walleye and northern pike fishery (Table 10). All landings that cross the scale at the Skownan packing shed on Waterhen Lake are recorded on sales slips (DCRs), and the species composition and weight are verified. It is required that fish caught using separate gears be recorded along with the lake in which they were caught. This information, along with the pertinent fishery certification information of certified stocks, will allow certified chain of custody (CoC) businesses to separate certified and non-certified product upon receipt. Each DCR also records the date of the delivery, the name of the licensed fisher, and his Manitoba Government issued fisher identification number. However, as highlighted by peer reviewer and stakeholder comments, there are some traceability points that need further clarification (e.g., potential for mixing of certified and non-certified fish, when change of ownership occurs, what mitigation measures or traceability systems are in place). **Until this occurs, the traceability within the fishery cannot be confirmed.**

**Table 10. Traceability factors within the fishery**

<b>Traceability Factor</b>	<b>Description of risk factor if present. Where applicable, a description of relevant mitigation measures or traceability systems (this can include the role of existing regulatory or fishery management controls)</b>
Potential for non-certified gear/s to be used within the fishery	<b>Negligible risk.</b> Only gillnets are used in the fishery. Any other fishing engine except hook and line would be extremely difficult through the ice, and hook and line would be prohibitively unproductive relative to gillnets.
Potential for vessels from the UoC to fish outside the UoC or in different geographical areas (on the same trips or different trips)	<b>Medium risk.</b> Waterhen Lake fishers can also fish commercially in Chitek, Inland, Crab, and Archie Lakes for walleye and northern pike. Waterhen Lake fishers could look to market fish caught in these lakes as product from Waterhen Lake. However, in practice, there is no evidence of this occurring as the presence, sizes, and ratio of species in the UoC and outside the UoC differ and can be detected in the DCR.
Potential for vessels outside of the UoC or client group fishing the same stock	<b>Negligible risk.</b> Only licensed fishers participating in the UoC are eligible to fish commercially in Waterhen Lake.
Risks of mixing between certified and non-certified catch during storage, transport, or handling activities (including transport at sea and on land, points of landing, and sales at auction)	<b>Medium risk.</b> Certified and non-certified fish are added to separate totes that are labelled as such in the Skownan packing shed. However, there is a possibility of some mixing. There is a commercial gill net fishery targeting common carp operated by the same fishers participating in these UoCs. Since there have been no application for licenses in the last decade, fishers lack equipment and infrastructure required for an open-water gillnet fishery, and no more than 10% of the catch is allowed for non-carp species, it is thought that the catch of walleye and northern pike is insignificant. Additionally, most fish including those caught from fishing activities on Chitek, Inland, Crab, and Archie Lakes cross the scale at the Skownan packing shed. Skownan is not a Freshwater Fish Marketing

	Corporation (FFMC) agent; the buyers are the Waterhen Lake Winter Fishers Association. Some fish are also packed at the St. Martin Fish Agency and the Winnipegosis shed, which are agents for the FFMC. As sales of certified fish are made through agents different from the FFMC, there may be more issues related to traceability than under the FFMC monopoly. Nevertheless, it should be noted that mixing of non-certified fish caused the previously certified Waterhen Lake fishery to lose its CoC certificate; however, it is unclear why FFMC was not able to keep fish separate and how the situation would be different in the Skownan packing shed. See Section 5.3 for more details.
Risks of mixing between certified and non-certified catch during processing activities (at-sea and/or before subsequent CoC)	<b>Low risk.</b> There would be no risk when fish are dressed on the ice where they are caught. However, sometimes the fish are brought back to a camp on the shore and are dressed there. Conceivably, there could be fish from outside the UoC at the same time, and this would create a slight risk.
Risks of mixing between certified and non-certified catch during transshipment	<b>Negligible risk.</b> There is no transshipment processing.
Any other risks of substitution between fish from the UoC (certified catch) and fish from outside this unit (non-certified catch) before subsequent CoC is required	None.

### 5.3 Eligibility to Enter Further CoCs

In this winter fishery, walleye and northern pike are caught in Waterhen Lake by gillnets that are a minimum size of 96 mm. They are “landed” on the ice. Fishing is restricted to the 22 license holders as approved by the Lake Waterhen Winter Fishers Association and Manitoba Sustainable Development.

In 1969, the Freshwater Fish Marketing Corporation (FFMC) was established under the Freshwater Fish Marketing Act as a federal Crown corporation with exclusive rights to inter-provincial and export trade of freshwater fish products from Manitoba, Saskatchewan, Alberta, the Northwest Territories and North western Ontario. FFMC was required to buy all legally harvested fish offered by Manitoba fishers. New legislation in 2017 gave Manitoba fishers independence from the FFMC monopoly so now they can explore markets. Thus, fishers are able to sell their catch within the province and interprovincial and international markets through a provincially issued fish dealer’s licence. All buyers and any fisher who sells directly to consumers are compelled by regulation to submit to Fishery Branch what was caught and by whom. Manitoba Sustainable Development tracks production.

Most Waterhen Lake fish now cross the scale at the Skownan packing shed, which is not an FFMC agent, and the buyers are the Waterhen Lake Winter Fishers Association. Some fish are packed at the St. Martin Fish Agency and fewer at the Winnipegosis shed; both are agents for the FFMC. As the buyers, both Waterhen Lake Winter Fishers Association and FFMC provide DCRs; the fisher name; date of delivery; and delivered weight by size, form, and species on a weekly basis (G. Klein pers. comm.). Since sales of certified fish would

now be made through agents different from the FPMC, there may be more issues related to traceability than under the FPMC monopoly (see Table 10).

However, as noted above, assessment team has determined that some uncertainties with traceability exist. Therefore, until sufficient information is provided by the client, the fishery will not be able to sell the fish as certified. The UoAs will be certified, but product from this fishery as described in the UoAs will not be eligible to enter further certified CoCs and cannot be sold as MSC certified or carry the MSC ecolabel until these uncertainties are addressed.

#### 5.4 Eligibility of Inseparable or Practicably Inseparable (IPI) stock(s) to Enter Further Chains of Custody

There are no IPI stocks in this assessment.

## 6 Evaluation Results

Table 11. Final Principle Scores

Overall weighted Principle-level scores	Walleye	Northern Pike
Principle 1 - Target species	85.0	80.8
Principle 2 - Ecosystem	84.0	84.0
Principle 3 - Management	81.3	81.3

### 6.1 Summary of PI Level Scores

Table 12. PI Level Scores

Principle	Component	Weight	Performance Indicator (PI)		Weight	Walleye	Northern Pike
One	Outcome	0.333	1.1.1	Stock status	1.000	90	80
	Management	0.667	1.2.1	Harvest strategy	0.250	95	95
			1.2.2	Harvest control rules & tools	0.250	85	80
			1.2.3	Information & monitoring	0.250	75	75
			1.2.4	Assessment of stock status	0.250	75	75
Two	Primary species	0.200	2.1.1	Outcome	0.333	100	100
			2.1.2	Management strategy	0.333	95	95
			2.1.3	Information/Monitoring	0.333	100	100
	Secondary species	0.200	2.2.1	Outcome	0.333	80	80
			2.2.2	Management strategy	0.333	80	80
			2.2.3	Information/Monitoring	0.333	80	80
	ETP species	0.200	2.3.1	Outcome	0.333	80	80

			2.3.2	Management strategy	0.333	85	85
			2.3.3	Information strategy	0.333	80	80
			Habitats	0.200	2.4.1	Outcome	0.333
	2.4.2	Management strategy			0.333	80	80
	2.4.3	Information			0.333	80	80
	Ecosystem	0.200	2.5.1	Outcome	0.333	80	80
			2.5.2	Management	0.333	80	80
			2.5.3	Information	0.333	80	80
	Three	Governance and policy	0.500	3.1.1	Legal &/or customary framework	0.333	100
3.1.2				Consultation, roles & responsibilities	0.333	75	75
3.1.3				Long term objectives	0.333	80	80
Fishery specific management system		0.500	3.2.1	Fishery specific objectives	0.250	80	80
			3.2.2	Decision making processes	0.250	90	90
			3.2.3	Compliance & enforcement	0.250	70	70
			3.2.4	Monitoring & management performance evaluation	0.250	70	70

## 6.2 Summary of Conditions

Table 13. Summary of Conditions

Condition number	Condition	Performance Indicator	Related to previously raised condition? (Y/N/NA)
1	Relevant information is collected to support the harvest strategy.	1.2.3	N
2	There is an adequate assessment of the stock status.	1.2.4	N
3	The management system has effective consultation processes that are open to interested and affected parties. The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties.	3.1.2	N
4	Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with.	3.2.3	N
5	There is a system of monitoring and evaluating the performance of the fishery-specific management system against its objectives. There is effective and timely review of the fishery-specific management system.	3.2.4	N

### **6.3 Determination, Formal Conclusion, and Agreement**

The assessment team has determined that the Waterhen Lake walleye and northern pike gillnet fisheries meet the MSC Standard for Sustainability. However, as noted above, there are some uncertainties within traceability. Therefore, based on this determination and peer and public review, **MRAG Americas has decided to recertify this fishery as sustainable according to the MSC Fisheries Standard, however, until sufficient information is provided, the fishery will not be able to sell product as certified.**

### **6.4 Changes in the Fishery Prior to and Since Pre-Assessment**

Not applicable. There has been no recent pre-assessment.



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# Appendices

## Appendix 1 Scoring and Rationales

### Appendix 1.1 Performance Indicator Scores and Rationale

#### Evaluation Table for PI 1.1.1 – Stock status

PI 1.1.1		The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing		
Scoring Issue		SG 60	SG 80	SG 100
a	Stock status relative to recruitment impairment			
	Guide post	It is <b>likely</b> that the stock is above the point where recruitment would be impaired (PRI).	It is <b>highly likely</b> that the stock is above the PRI.	There is a <b>high degree of certainty</b> that the stock is above the PRI.
	Met?	Walleye – Y Northern pike – Y	Walleye – Y Northern pike – Y	Walleye – Y Northern pike – N
	Justification	<p>Walleye:</p> <p>The MSC Standard allows for the use of surrogate, or proxy reference points to evaluate stock status with respect to PRI and Bmsy (GSA2.2.3). For Waterhen Lake, information is not available to evaluate stock status with respect to the MSC-allowed default proxies for PRI or Bmsy (GSA2.2.3.1); however, surrogate proxies for stock status reference points are available in the form of the Waterhen Lake HCR, LRPs, upper reference points (URPs), and TRPs, that have been employed for the management of the Waterhen Lake walleye stock.</p> <p>Results from the annual index gillnetting survey, which began in 2010 with the Waterhen Lake FMP, provide evidence that the walleye stock has been maintained well above the HCR LRP (Table 3; Figures 6-9). Three of the four stock status reference indicators (CPUE, SSB, and SFAD) have been in place since 2010, and the fourth (Total Mortality) has been in place since 2014.</p> <p>MSC guidance suggests that a score at the SG 100 level may be justified “if no decline has been observed in three proxies of biomass for one generation time and at least two proxies indicate that the stock is at a highly productive level” (GSA2.2.3.1). Published values of the generation time for walleye in Waterhen Lake are not available; however, a value of 5.63 years was reported for Lake Erie. Thus, the number of stock status indicators in place, and the length of the monitoring time series, qualitatively indicate a high degree of certainty that the stock is above the PRI. Scoring requirements are met at the SG 100 level.</p> <p>Northern pike:</p> <p>Information is not available to evaluate stock status with respect to the MSC-allowed default proxies for PRI or Bmsy; however, two indicators of stock status are available from the annual index gillnetting survey: 1) CPUE, and 2) Total Mortality. The survey CPUE has been stable/increasing over the past five years and Total Mortality has remained below the TRP in the two years of HCR implementation. The value of Total Mortality for 2018 was 53%, compared to a value of 49% in 2017, and both are well below the TRP (64%). The team concludes that qualitative evidence shows that the stock is highly likely to be above the PRI, and scoring requirements are met at the SG 80 level. It is not possible to conclude that there is a high degree of certainty that the stock is above the PRI due to 1) the short time</p>		

PI 1.1.1		The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing		
Scoring Issue		SG 60	SG 80	SG 100
		series of the HCR stock status indicator in place (Total Mortality), and 2) the availability of only two proxy indicators of stock status (GSA2.2.3.1); thus, scoring requirements are not met at the SG 100 level.		
b	Stock status in relation to achievement of MSY			
	Guide post		The stock is at or fluctuating around a level consistent with MSY.	There is a <b>high degree of certainty</b> that the stock has been fluctuating around a level consistent with MSY or has been above this level over recent years.
	Met?		Walleye – Y Northern pike – Y	Walleye – N Northern pike – N
	Justification	<p>Walleye:</p> <p>As noted under Sla (above), surrogate proxies for stock status reference points are available in the form of the Waterhen Lake HCR LRPs, URPs, and TRPs, that have been employed for the management of the Waterhen Lake walleye stock (Table 3; Figures 6-9). Since 2010, the CPUE indicator has been below the TRP for 7 of 9 years. During the same time period, SSB has been below the TRP 2 of 9 years and SFAD for 3 of 9 years. Total mortality has been monitored since 2014, and the index value has been well below the TRP value (0.53) since that time, averaging 0.36 from 2014-2018 (Table 3). Figures 6-9 show the distribution of the stock status indicators with respect to the URP and TRP values since 2014. The results indicate that, for at least two of the four indicators (SSB and Total Mortality), the stock has been fluctuating at or around a level consistent with MSY in recent years, and the requirements for scoring at the SG80 level are met.</p> <p>Though SSB and Total Mortality have been consistently above and below the TRP, respectively, since 2014, CPUE has been below the TRP for most of the same period. SFAD has been above the TRP since 2016, at the URP in 2015, and below the URP but well above the LRP in 2014. Collectively, these results do not provide evidence for a high degree of certainty that the stock has been fluctuating above or around a level consistent with MSY in recent years. Evidence to support scoring at the SG100 level could include: 1) no decline in three proxies of biomass for one generation time, and 2) at least two proxies that indicate the stock is at a highly productive level (GSA2.2.3.1). Scoring requirements at the SG100 level are not met.</p> <p>Northern pike:</p> <p>The northern pike HCR stock status indicator (total mortality) has been in place since 2017, and the index values have been well below the reference value (64%) that would trigger management action. (Total mortality was 49% in 2017 and 53% in 2018.) This surrogate proxy for stock status, together with a stable/increasing trend in CPUE in recent years, suggests that fishing has been in line with a level consistent with MSY in recent years, and scoring is supported at the SG80 level. The team has not found evidence to conclude with a high degree of certainty that the stock has been fluctuating around or above a level consistent with MSY due to: 1) the short time series of the HCR stock status indicator in place (total mortality), and 2) the availability of only two proxy indicators of stock status (GSA2.2.3.1); thus, scoring requirements are not met at the SG 100 level.</p>		
References		Adlerstein et. al. 2015; Galbraith et al. 2017; Klein 2018b, 2019; Klein and Galbraith 2016, 2017, 2019		

<b>PI 1.1.1</b>	<b>The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing</b>		
<b>Scoring Issue</b>	SG 60	SG 80	SG 100
<b>Stock Status relative to Reference Points</b>			
	<b>Type of reference point</b>	<b>Value of reference point</b>	<b>Current stock status relative to reference point</b>
<b>Reference point used in scoring stock relative to PRI (Sla)</b>	Walleye (LRP)		
	CPUE	2.0 (Fish/Net Night)	4.52 (Fish/Net Night)
	SSB	20 (Kg Mat. Females)	67 (Kg Mat. Females)
	SFAD	0.31 (SDI - H)	0.72 (SDI - H)
	Total Mortality	0.70 (A)	0.37 (A)
	Northern pike		
	Total Mortality (TRP)	0.63 (A)	0.54 (A)
<b>Reference point used in scoring stock relative to MSY (Sib)</b>	Walleye (TRP)		
	CPUE	6.3 (Fish/Net Night)	4.52 (Fish/Net Night)
	SSB	50 (Kg Mat. Females)	67 (Kg Mat. Females)
	SFAD	0.60 (SDI - H)	0.72 (SDI - H)
	Total Mortality	0.53 (A)	0.37 (A)
	Northern pike (TRP)		
	Total Mortality	0.63 (A)	0.54 (A)
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>			Walleye – 90 Northern pike – 80
<b>CONDITION NUMBER (if relevant):</b>			



**Evaluation Table for PI 1.1.2 – Stock rebuilding**

PI 1.1.2		Where the stock is reduced, there is evidence of stock rebuilding within a specified timeframe		
Scoring Issue		SG 60	SG 80	SG 100
a	Rebuilding timeframes			
	Guide post	A rebuilding timeframe is specified for the stock that is <b>the shorter of 20 years or 2 times its generation time</b> . For cases where 2 generations is less than 5 years, the rebuilding timeframe is up to 5 years.		The shortest practicable rebuilding timeframe is specified which does not exceed <b>one generation time</b> for the stock.
	Met?	NA		NA
	Justification	NA – The stocks are not rebuilding.		
b	Rebuilding evaluation			
	Guide post	Monitoring is in place to determine whether the rebuilding strategies are effective in rebuilding the stock within the specified timeframe.	There is evidence that the rebuilding strategies are rebuilding stocks, <b>or it is likely</b> based on simulation modelling, exploitation rates or previous performance that they will be able to rebuild the stock within the specified timeframe.	There is <b>strong</b> evidence that the rebuilding strategies are rebuilding stocks, <b>or it is highly likely</b> based on simulation modelling, exploitation rates or previous performance that they will be able to rebuild the stock within the specified timeframe.
	Met?	NA	NA	NA
	Justification	NA – The stocks are not rebuilding.		
References				
OVERALL PERFORMANCE INDICATOR SCORE:				NA
CONDITION NUMBER (if relevant):				

## Evaluation Table for PI 1.2.1 – Harvest strategy

PI 1.2.1		There is a robust and precautionary harvest strategy in place		
Scoring Issue		SG 60	SG 80	SG 100
a	Harvest strategy design			
	Guide post	The harvest strategy is <b>expected</b> to achieve stock management objectives reflected in PI 1.1.1 SG80.	The harvest strategy is responsive to the state of the stock and the elements of the harvest strategy <b>work together</b> towards achieving stock management objectives reflected in PI 1.1.1 SG80.	The harvest strategy is responsive to the state of the stock and is <b>designed</b> to achieve stock management objectives reflected in PI 1.1.1 SG80.
	Met?	Walleye – Y Northern pike – Y	Walleye – Y Northern pike – Y	Walleye – Y Northern pike – Y
	Justification	Walleye:  The harvest strategy employs 4 stock status indicators with HCRs that operate with LRPs, URPs, and TRPs. The HCRs are structured to be responsive to the state of the stock; annual (pre-season) monitoring of the 4 stock status indicators via an index gillnetting survey results in management action to reduce effort when HCR reference points are triggered. The CPUE HCR calls for a linear reduction in the fishers' net yardage as the index value declines from the URP to the LRP (Figure 6). The SSB HCR calls for a 3-step reduction in fishers minimum net mesh size as the index value declines from the URP to the LRP (Figure 7). The SFAD HCR calls for a 2-step reduction in fishers maximum net mesh size as the index value declines from the URP to the LRP (Figure 8). Finally, the Total Mortality HCR calls for a linear reduction in the lake walleye quota as the index value increases from the URP to the LRP (Figure 9). Thus, the harvest strategy incorporates timely monitoring and management responsive to the state of the stock, with the objective of keeping the stock above the PRI and at or above the MSY surrogate proxy values.  Northern pike:  The harvest strategy employs one stock status indicator with an HCR based on managing Total Mortality. The HCR is structured to be responsive to the state of the stock; annual (pre-season) monitoring of Total Mortality via an index gillnetting survey results in management action to reduce effort when the HCR reference point is triggered. If total mortality (A) should happen to exceed 64% (the estimated $A_{MSY}$ ), a quota of 40,000 kg is triggered, and the quota is reduced by 10% every year the total annual mortality rate remains above 64%. Subsequently, should total annual mortality decline and the value fall below the 64% threshold, the quota is then increased by 10% per year for as long as the quota is caught and total annual mortality remains below 64% (Klein, 2018). Thus, the harvest strategy incorporates timely monitoring and management responsive to the state of the stock, with the objective of keeping the stock at a level consistent with the surrogate proxy MSY value.		
b	Harvest strategy evaluation			
	Guide post	The harvest strategy is <b>likely</b> to work based on prior experience or plausible argument.	The harvest strategy may not have been fully <b>tested</b> but evidence exists that it is achieving its objectives.	The performance of the harvest strategy has been <b>fully evaluated</b> and evidence exists to show that it is achieving its objectives including being clearly able to maintain

PI 1.2.1		There is a robust and precautionary harvest strategy in place		
				stocks at target levels.
	Met?	Walleye – Y Northern pike – Y	Walleye – Y Northern pike – Y	Walleye – N Northern pike – N
	Justification	Walleye: The track record of management since 2010, when the harvest strategy was put in place, provides evidence that, while not fully tested, the strategy is achieving its objectives. The specific performance of the index gillnetting survey, HCRs, and management responsiveness since 2010 is discussed in 1.2.2 Slc, below. The SG 80 level is achieved. The harvest strategy has not been fully evaluated, so the SG 100 level is not achieved.  Northern pike: The track record of management since 2017, when the harvest strategy was put in place, provides evidence that, while not fully tested, the strategy is achieving its objectives. The specific performance of the index gillnetting survey, HCR, and management responsiveness since 2017 is discussed in 1.2.2 Slc, below. The SG 80 level is achieved. The harvest strategy has not been fully evaluated, so the SG 100 level is not achieved.		
c	Harvest strategy monitoring			
	Guide post	Monitoring is in place that is expected to determine whether the harvest strategy is working.		
	Met?	Walleye – Y Northern pike – Y		
	Justification	Walleye: Pre-season monitoring of stock status takes place annually in the form of an index gillnetting survey. Results from the survey since 2010 provide evidence that the harvest strategy is working. The specific performance of the index gillnetting survey, HCRs, and management responsiveness since 2010 is discussed in 1.2.2 Slc, below. The requirements of SG 60 are met.  Northern pike: Pre-season monitoring/index gillnetting of Northern pike began in 2017, and only two years are on record to demonstrate whether the harvest strategy is working; however, indications are favorable. The specific performance of the index gillnetting survey, Northern pike HCR, and management responsiveness since 2017 is discussed in 1.2.2 Slc, below. The requirements of SG 60 are met.		
d	Harvest strategy review			
	Guide post			The harvest strategy is periodically reviewed and improved as necessary.
	Met?			Walleye – Y Northern pike – Y
	Justification	Both Species: Managers conduct an annual process that includes: 1) a pre-season survey to determine stock status, 2) an examination of the newly updated stock status and fishery indicators with respect to historical performance, and 3) a pre-season stakeholder meeting, This process provides a feedback and learning mechanism to inform the harvest strategy in an ongoing basis Thus, the harvest strategy is subject to routine review and improvement as necessary. The requirements of SG 100 are met.		

PI 1.2.1		There is a robust and precautionary harvest strategy in place		
e	Shark finning			
	Guide post	It is <b>likely</b> that shark finning is not taking place.	It is <b>highly likely</b> that shark finning is not taking place.	There is a <b>high degree of certainty</b> that shark finning is not taking place.
	Met?	Not relevant	Not relevant	Not relevant
	Justification	Sharks are not the target species.		
f	Review of alternative measures			
	Guide post	There has been a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock.	There is a <b>regular</b> review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock and they are implemented as appropriate.	There is a <b>biennial</b> review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock, and they are implemented, as appropriate.
	Met?	Not relevant	Not relevant	Not relevant
	Justification	Provincial managers have reported to the team that there is no unwanted catch of the target stocks.		
References		Galbraith et al. 2017; Klein 2018b, 2019; Klein and Galbraith 2016, 2017, 2019		
OVERALL PERFORMANCE INDICATOR SCORE:				Walleye – 95 Northern pike – 95
CONDITION NUMBER (if relevant):				

## Evaluation Table for PI 1.2.2 – Harvest control rules and tools

PI 1.2.2		There are well defined and effective harvest control rules (HCRs) in place		
Scoring Issue		SG 60	SG 80	SG 100
a	HCRs design and application			
	Guide post	Generally understood HCRs are in place <b>or available</b> that are <b>expected</b> to reduce the exploitation rate as the point of recruitment impairment (PRI) is approached.	Well defined HCRs are <b>in place</b> that <b>ensure</b> that the exploitation rate is reduced as the PRI is approached, are expected to keep the stock <b>fluctuating around</b> a target level consistent with (or above) MSY, or for key LTL species a level consistent with ecosystem needs.	The HCRs are expected to keep the stock <b>fluctuating at or above</b> a target level consistent with MSY, or another more appropriate level taking into account the ecological role of the stock, <b>most</b> of the time.
	Met?	Walleye – Y Northern pike – Y	Walleye – Y Northern pike – Y	Walleye – N Northern pike – N
	Justification	<p>Walleye:</p> <p>Four HCRs are in place for walleye in Waterhen Lake; each applies to a different and biologically meaningful stock status indicator of walleye population health. As discussed in section 1.2.1 Sla, above, the HCRs are each designed to 1) reduce exploitation as the proxy reference point for PRI is approached, and 2) keep the stock fluctuating around the target proxy reference point for MSY.</p> <p>CPUE: This proxy for total abundance uses a TRP set at 6.3 fish/net night, a URP set at 5 fish/net night, and an LRP set arbitrarily at 40% of the URP (2 fish/net night) (Klein and Galbraith 2017). The TRP and URP values are considered by Klein and Galbraith (2017) to be conservative proxies when compared to fall index netting standards used in Ontario (Morgan et al. 2003).</p> <p>SSB: Direct estimates of female SSB are not available for Waterhen Lake; however, the total mass of gravid female walleye caught by index gillnetting is used as a proxy for the SSB of mature females. The TRP is set at 50 kg, the URP is set at 40 kg, and the LRP is arbitrarily set at 20 kg (50% of the URP). The URP is expected to maintain harvests on the order of 20,000 kg.; a level empirically seen as good fishing since 2009 (Klein and Galbraith 2017).</p> <p>SFAD: SFAD is associated with healthy population recruitment by allowing older spawning females to remain in fished populations. Managers structured this HCR to use the Shannon Diversity Index (SDI) as an index of walleye SFAD in Waterhen Lake (Klein and Galbraith 2017). The TRP, URP, and LRP are set at SDI values of 0.60, 0.58, and 0.31, respectively; these values were derived from the results of a study of 10 large lakes in Minnesota (Gangl and Pereira 2003).</p> <p>Total Mortality: This index is derived by aging walleye captured in the index gillnetting survey and tracking year classes to compute an average value of total mortality; a method considered to be more robust and precautionary than determining total mortality by catch curve analysis (Klein and Galbraith 2017). Values of the TRP, URP, and LRP for Total Annual Mortality (A) are 0.53, 0.60, and 0.70, respectively. The TRP was derived from the Ontario guidance for safe walleye fishing (Lester et al. 2000) based on the value of 1575 Growing Degree Days (GDD) for Waterhen Lake. The URP was derived from the <math>Z_{ext}</math> calculated by the Percid Community Synthesis Population and Yield Characteristics Working Group</p>		

PI 1.2.2		There are well defined and effective harvest control rules (HCRs) in place	
		<p>in Lester et al. (2000). The LRP was estimated from a yield per recruit analysis of walleye weights sampled from Waterhen lake (Klein and Galbraith 2017).</p> <p>In summary, four walleye HCRs are employed with biologically meaningful proxies for reference points, structured to maintain the stock at a level consistent with MSY and to reduce exploitation as the PRI is approached. Evidence meets the requirements for scoring at SG 80. A higher degree of certainty that the HCRs provide for the stock to fluctuate at or above the MSY proxy most of the time would be required for scoring at the SG 100 level.</p> <p>Northern pike:</p> <p>A single HCR is in place for Northern pike in Waterhen Lake, using a proxy stock status indicator for Total Mortality (A). The HCR is designed to reduce the exploitation rate as the PRI is approached, and to keep the stock fluctuating around a proxy level consistent with MSY.</p> <p>The HCR is well defined, by having a clear reference point in place to trigger effort reduction as the index of total mortality for Northern pike in Waterhen Lake increases beyond a level considered to be consistent with MSY (<math>A_{MSY}</math>). Specifically, if the Total Mortality Index (A) should happen to exceed 64% (the estimated <math>A_{MSY}</math>), a quota of 40,000 kg is triggered, and the quota is reduced by 10% every year the total annual mortality rate remains above 64% (40,000 kg is the nominal catch associated with <math>F=0.32</math>). Subsequently, should total annual mortality decline and the value fall below the 64% threshold, the quota is then increased by 10% per year for as long as the quota is caught and total annual mortality remains below 64% (Klein, 2018).</p> <p>The trigger index value of <math>A_{MSY}=64\%</math> corresponds to a value of total mortality consistent with MSY, under the assumption that <math>A_{MSY}</math> is equal to 2M (twice the value of natural mortality). Klein (2018b) provided evidence for the value of <math>M = 0.32</math>, using the maximum age approach of Hoenig (1983), and citing the results of Northern pike studies in Ontario.</p> <p>In summary, the Northern pike HCR is well defined, with a biologically meaningful reference point, and is structured to maintain the stock at a level consistent with MSY and to reduce exploitation as the PRI is approached. Evidence meets the requirements for scoring at SG 80. A higher degree of certainty that the HCR provides for the stock to fluctuate at or above the MSY proxy most of the time (e.g., a longer time period of implementation), and additional corroborating stock status indicators with associated HCRs would be required for scoring at the SG 100 level.</p>	
b	HCRs robustness to uncertainty		
	Guide post		<div><div>The HCRs are likely to be robust to the main uncertainties.</div><div>The HCRs take account of a <b>wide</b> range of uncertainties including the ecological role of the stock, and there is <b>evidence</b> that the HCRs are robust to the main uncertainties.</div></div>
	Met?		<div><div>Walleye – Y Northern pike – Y</div><div>Walleye – N Northern pike – N</div></div>
	Justification	Walleye: The evidence indicates that the four HCRs were crafted with consideration for the main uncertainties. These likely include factors such as observation error (eq.	

PI 1.2.2		There are well defined and effective harvest control rules (HCRs) in place		
		<p>related to lake sampling), and process error (eg. related to fishing mortality). Empirical evidence that the HCRs are actually applied in practice is evident from the reductions in fishing effort that followed when called for by the HCRs (see SIc, below). Scoring is supported at the SG 80 level.</p> <p>Uncertainties not taken into account by the HCRs include 1) unquantified mortality from subsistence and recreational fisheries, 2) the lack of information on net movement rates between the rivers and the lake, and 3) the practice of using surrogate proxy indicators of stock status, and uncertainty in the associated HCR reference points. Scoring is precluded at the SG 100 level.</p> <p>Northern pike:</p> <p>The single HCR for Northern pike incorporates a step down/step up approach in the quota that is responsive to the proxy index of total mortality, and is likely to be robust to the main uncertainties. Scoring is supported at the SG 80 level. The uncertainties noted above for walleye also apply to Northern pike. Scoring is precluded at the SG 100 level.</p>		
c	HCRs evaluation			
	Guide post	There is <b>some evidence</b> that tools used <b>or available</b> to implement HCRs are appropriate and effective in controlling exploitation.	<b>Available evidence indicates</b> that the tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs.	<b>Evidence clearly shows</b> that the tools in use are effective in achieving the exploitation levels required under the HCRs.
	Met?	Walleye – Y Northern pike – Y	Walleye – Y Northern pike – Y	Walleye – Y Northern pike – N
	Justification	<p>Walleye:</p> <p>Evidence clearly shows that walleye HCRs have been applied effectively in Waterhen Lake. For instance, during the 2012/2013 commercial fishing season, the Total Mortality HCR triggered a reduction in the quota to 34,600 kg from 36,300 kg. and the fishing season was closed on Sunday, January 13, 2013, when the reduced lake quota was reached. Also, the CPUE HCR triggered reductions in the total net yardage allowed four times since 2014 (in 2014, 2016, 2017, and 2018), and the maximum net mesh size was reduced as per the SFAD HCR in 2014. Thus, scoring requirements are met at the SG 100 level.</p> <p>Northern pike:</p> <p>The HCR for Northern pike has not been triggered since its fairly recent implementation in 2017. Based on manager’s performance with walleye management in the same fishery, it is expected that this HCR will be applied effectively as well. Additionally, the limited vulnerability of Northern pike to the 96 mm mesh sized net provides evidence that the tools in use are effective in achieving the exploitation levels required under the harvest control rule. Thus, available evidence meets the scoring requirements of the SG 80 level. A longer time series of evidence is needed in order to reach the requirements of the SG 100 level.</p>		
References		Gangl and Pereira 2003; Hoenig 1983; Klein 2018b; Klein and Galbraith 2017, 2019; Lester et al. 2000; Morgan et al. 2003		
OVERALL PERFORMANCE INDICATOR SCORE:				Walleye – 85 Northern pike – 80
CONDITION NUMBER (if relevant):				

### Evaluation Table for PI 1.2.3 – Information and monitoring

PI 1.2.3		Relevant information is collected to support the harvest strategy		
Scoring Issue		SG 60	SG 80	SG 100
a	Range of information			
	Guide post	Some relevant information related to stock structure, stock productivity and fleet composition is available to support the harvest strategy.	Sufficient relevant information related to stock structure, stock productivity, fleet composition and other data is available to support the harvest strategy.	A comprehensive range of information (on stock structure, stock productivity, fleet composition, stock abundance, UoA removals and other information such as environmental information), including some that may not be directly related to the current harvest strategy, is available.
	Met?	Walleye – Y Northern pike – Y	Walleye – Y Northern pike – Y	Walleye – N Northern pike – N
	Justification	Walleye: The bulk of information for walleye in Waterhen Lake has been obtained from the annual index gillnetting survey. This information has been sufficient to support the harvest strategy via the four indices of stock status and the associated HCRs in place. While deemed sufficient for the harvest strategy, the level of information available is not considered comprehensive. Data gaps for Waterhen Lake walleye include estimation of natural mortality, updated estimates of fecundity, net movement rates between the lake and rivers, and current estimates of recreational and subsistence fishery removals. Scoring requirements are met at the SG 80 level, but not the SG 100 level.  Northern pike: As for walleye, the primary data source for northern pike is the annual index gillnetting survey. The level of information available is deemed sufficient for the harvest strategy, but is not considered comprehensive. Data gaps for northern pike include direct estimates of natural mortality and fecundity for Waterhen Lake, net movement rates between the lake and rivers, and reliable estimates of total removals. Scoring requirements are met at the SG 80 level but not the SG 100 level.		
b	Monitoring			
	Guide post	Stock abundance and UoA removals are monitored and at least one indicator is available and monitored with sufficient frequency to support the harvest control rule.	Stock abundance and UoA removals are regularly monitored at a level of accuracy and coverage consistent with the harvest control rule, and one or more indicators are available and monitored with sufficient frequency to support the harvest control rule.	All information required by the harvest control rule is monitored with high frequency and a high degree of certainty, and there is a good understanding of inherent uncertainties in the information [data] and the robustness of assessment and management to this uncertainty.
	Met?	Walleye – Y Northern pike – Y	Walleye – Y Northern pike – Y	Walleye – N Northern pike – N



PI 1.2.3		Relevant information is collected to support the harvest strategy		
	Justification	<p>Walleye and northern pike: Stock abundance is monitored by four indicators (walleye) and two indicators (northern pike) derived from annual index gillnetting data. UoAs' removals from the commercial fishery are monitored by collection of sales receipts (Klein and Galbraith 2017). Since dissolution of the FFMC monopoly, most Waterhen fish now cross the scale at the Skownan packing shed. Skownan is not an FFMC agent; the buyers are the Waterhen Lake Winter Fishers. Some fish are packed at the St. Martin Fish Agency, and fewer at the Winnipegosis shed; both are agents for the FFMC. As the buyers, both Skownan and FFMC provide DCRs, the fisher name, date of delivery, and delivered weight by size, form, and species on a weekly basis. The team concludes that stock abundance indicators and UoAs' removals are monitored with a frequency and level of accuracy sufficient to support the harvest control rules for both species, and scoring requirements are met at the SG60 and SG80 levels.</p> <p>The team has not found evidence that all information required by the HCR is monitored with high frequency and a high degree of certainty. In particular, the basin hole surveys have not resulted in complete and timely reports of target stock discarding in the UoAs. Though discarding of the target stocks is thought by managers to be minimal, this lack of reporting has resulted in a measure of uncertainty in the total removal estimates. Thus, scoring requirements are not met at the SG100 level.</p>		
c	Comprehensiveness of information			
	Guide post		There is good information on all other fishery removals from the stock.	
	Met?		Walleye – N Northern pike – N	
	Justification	Walleye and Northern pike: There are no estimates of target stock removals from the recreational or subsistence fisheries. Thus, scoring requirements are not met at the SG80 level.		
References		Galbraith 2019; Klein and Galbraith 2017, 2019		
OVERALL PERFORMANCE INDICATOR SCORE:				Walleye – 75 Northern pike – 75
CONDITION NUMBER (if relevant):				1

## Evaluation Table for PI 1.2.4 – Assessment of stock status

PI 1.2.4		There is an adequate assessment of the stock status		
Scoring Issue		SG 60	SG 80	SG 100
a	Appropriateness of assessment to stock under consideration			
	Guide post		The assessment is appropriate for the stock and for the harvest control rule.	The assessment takes into account the major features relevant to the biology of the species and the nature of the UoA.
	Met?		Walleye – Y Northern pike – Y	Walleye – N Northern pike – N
	Justification	Walleye: The assessment is not model based, but rather takes the form of four empirical stock status indices derived from the annual index gillnetting survey. These surrogate proxy indices have been developed elsewhere, and respond to best practice. The indices monitored are appropriate for the stock and the HCRs, given the limited scale and intensity of the fishery Scoring requirements are met at the SG 80 level. . . As noted in the information PI (1.2.3) key information is missing to fully assess the stock and thus not all of the major features relevant to the biology of the species and the nature of the UoA have been accounted for. Chief among these information gaps are 1) current estimates of recreational and subsistence fishery removals, and 2) estimates of net movement between the rivers and the lake. Scoring requirements are not met at the SG 100 level.  Northern pike: The above justification for walleye applies to Northern pike, except that the assessment consists of two indicators (one with a reference point), not four, as is the case for walleye. Scoring requirements are met at the SG 80 but not at the SG 100 level.		
b	Assessment approach			
	Guide post	The assessment estimates stock status relative to generic reference points appropriate to the species category.	The assessment estimates stock status relative to reference points that are appropriate to the stock and can be estimated.	
	Met?	Walleye – Y Northern pike – Y	Walleye – Y Northern pike – Y	
	Justification	Walleye: The four proxy indices used to estimate stock status incorporate reference points that are appropriate to the stock and can be estimated (PI 1.2.2 Sla). Scoring requirements are met at the SG 80 and SG 100 levels.  Northern pike: The above applies to walleye except that the assessment evaluates stock status relative to one indicator with a reference point (total mortality), not four, as is the case for walleye. Scoring requirements are met at the SG 80 and SG 100 levels.		
c	Uncertainty in the assessment			
	Guide post	The assessment identifies major sources of uncertainty.	The assessment takes uncertainty into account.	The assessment takes into account uncertainty and is evaluating stock status relative to reference points in a

PI 1.2.4		There is an adequate assessment of the stock status		
				<b>probabilistic way.</b>
	<b>Met?</b>	Walleye – Y Northern pike – Y	Walleye – Y Northern pike – Y	Walleye – N Northern pike – N
	<b>Justification</b>	Walleye: The assessment takes uncertainty into account, but not in a probabilistic way. Having four proxy indicators of stock status reduces the uncertainty of relying on just one indicator of stock health. Scoring requirements are met at the SG 80 level.  Northern pike: While the practice of relying on only two indicators of stock status for assessment has the effect of increasing uncertainty, the Northern pike stock is effectively protected (and uncertainty of assessment mitigated) by an additional measure (the use of 96 mm mesh size nets) which have the effect of allowing pike to spawn multiple times before capture in the fishery. Scoring requirements are met at the SG 80 level.		
<b>d</b>	Evaluation of assessment			
	<b>Guide post</b>			The assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been rigorously explored.
	<b>Met?</b>			Walleye – N Northern pike – N
	<b>Justification</b>	Walleye and northern pike: The assessments have not been tested.		
<b>e</b>	Peer review of assessment			
	<b>Guide post</b>		The assessment of stock status is subject to peer review.	The assessment has been <b>internally and externally</b> peer reviewed.
	<b>Met?</b>		Walleye – N Northern pike – N	Walleye – N Northern pike – N
	<b>Justification</b>	Walleye and northern pike: Evidence of peer review (internal or external) has not been found by the assessment team. Scoring requirements are not met at the SG 80 or SG 100 levels.		
<b>References</b>		Klein and Galbraith 2017; Casselman et al. 2014		
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>				<b>Walleye – 75 Northern pike – 75</b>
<b>CONDITION NUMBER (if relevant):</b>				<b>2</b>

## Evaluation Table for PI 2.1.1 – Primary species outcome

PI 2.1.1		The UoA aims to maintain primary species above the PRI and does not hinder recovery of primary species if they are below the PRI.		
Scoring Issue		SG 60	SG 80	SG 100
a	Main primary species stock status			
	Guide post	Main primary species are <b>likely</b> to be above the PRI  OR  If the species is below the PRI, the UoA has measures in place that are <b>expected</b> to ensure that the UoA does not hinder recovery and rebuilding.	Main primary species are <b>highly likely</b> to be above the PRI  OR  If the species is below the PRI, there is either <b>evidence of recovery</b> or a demonstrably effective strategy in place <b>between all MSC UoAs which categorise this species as main</b> , to ensure that they collectively do not hinder recovery and rebuilding.	There is a <b>high degree of certainty</b> that main primary species are above the PRI <b>and are</b> fluctuating around a level consistent with MSY.
	Met?	All – Y	All – Y	All – Y
	Justification	Based on the catch data (which are inferred by sales receipts), the extrapolation from the index netting data, and the Waterhen Lake FMP, there are no primary species. Therefore, SG60, SG80, and SG100 are met.		
	Minor primary species stock status			
b	Guide post			Minor primary species are highly likely to be above the PRI  OR  If below the PRI, there is evidence that the UoA does not hinder the recovery and rebuilding of minor primary species
	Met?			Y
	Justification	There are no primary species; therefore, the SG100 is met.		
References		Klein and Galbraith 2019		
OVERALL PERFORMANCE INDICATOR SCORE:				All – 100
CONDITION NUMBER (if relevant):				

Evaluation Table for PI 2.1.2 – Primary species management strategy

PI 2.1.2		There is a strategy in place that is designed to maintain or to not hinder rebuilding of primary species, and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch.		
Scoring Issue		SG 60	SG 80	SG 100
a	Management strategy in place			
	Guide post	There are <b>measures</b> in place for the UoA, if necessary, that are expected to maintain or to not hinder rebuilding of the main primary species at/to levels which are likely to above the point where recruitment would be impaired.	There is a <b>partial strategy</b> in place for the UoA, if necessary, that is expected to maintain or to not hinder rebuilding of the main primary species at/to levels which are highly likely to be above the point where recruitment would be impaired.	There is a <b>strategy</b> in place for the UoA for managing main and minor primary species.
	Met?	All – Y	All – Y	All – N
	Justifi cation	There are no primary species encountered by these UoAs; therefore, SG60 and SG80 are met. SG100 is not met since the MSC requirements state that a strategy should be in place even in the absence of main or minor primary species to meet the SG100 level.		
b	Management strategy evaluation			
	Guide post	The measures are considered <b>likely</b> to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/species).	There is some <b>objective basis for confidence</b> that the measures/partial strategy will work, based on some information directly about the fishery and/or species involved.	<b>Testing</b> supports <b>high confidence</b> that the partial strategy/strategy will work, based on information directly about the fishery and/or species involved.
	Met?	All – Y	All – Y	All – Y
	Justifi cation	There are no primary species encountered by these UoAs; therefore, SG60, SG80, and SG100 are met.		
c	Management strategy implementation			
	Guide post		There is <b>some evidence</b> that the measures/partial strategy is being <b>implemented successfully</b> .	There is clear evidence that the partial strategy/strategy is being implemented successfully and is achieving its overall objective as set out in scoring issue (a).
	Met?		All – Y	All – Y
	Justifi cation	There are no primary species encountered by these UoAs; therefore, SG80 and SG100 are met.		
d	Shark finning			
	Guide post	It is <b>likely</b> that shark finning is not taking place.	It is <b>highly likely</b> that shark finning is not taking place.	There is a <b>high degree of certainty</b> that shark finning is not taking place.
	Met?	Not relevant	Not relevant	Not relevant
	Justifi cation	No primary species are sharks.		

PI 2.1.2		There is a strategy in place that is designed to maintain or to not hinder rebuilding of primary species, and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch.		
e	Review of alternative measures			
	Guide post	There is a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of main primary species.	There is a <b>regular</b> review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of main primary species and they are implemented as appropriate.	There is a <b>biennial</b> review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of all primary species, and they are implemented, as appropriate.
	Met?	Not relevant	Not relevant	Not relevant
	Justification	There are no primary species so this scoring issue is not relevant.		
References		Klein and Galbraith 2019		
OVERALL PERFORMANCE INDICATOR SCORE:				All – 95
CONDITION NUMBER (if relevant):				

Evaluation Table for PI 2.1.3 – Primary species information

PI 2.1.3		Information on the nature and extent of primary species is adequate to determine the risk posed by the UoA and the effectiveness of the strategy to manage primary species		
Scoring Issue		SG 60	SG 80	SG 100
a	Information adequacy for assessment of impact on main primary species			
	Guide post	Qualitative information is <b>adequate to estimate</b> the impact of the UoA on the main primary species with respect to status.  OR  If RBF is used to score PI 2.1.1 for the UoA: Qualitative information is adequate to estimate productivity and susceptibility attributes for main primary species.	Some quantitative information is available and is <b>adequate to assess</b> the impact of the UoA on the main primary species with respect to status.  OR  If RBF is used to score PI 2.1.1 for the UoA: Some quantitative information is adequate to assess productivity and susceptibility attributes for main primary species.	Quantitative information is available and is <b>adequate to assess with a high degree of certainty</b> the impact of the UoA on main primary species with respect to status.
	Met?	All – Y	All – Y	All – Y
	Justification	There is sufficient qualitative and quantitative information to support the statement that there are no primary species in the UoAs. Therefore, SG60, SG80, and SG100 are met.		
b	Information adequacy for assessment of impact on minor primary species			
	Guide post			Some quantitative information is adequate to estimate the impact of the UoA on minor primary species with respect to status.
	Met?			All – Y
	Justification	There are no primary species; therefore, SG100 is met.		
c	Information adequacy for management strategy			
	Guide post	Information is adequate to support <b>measures</b> to manage <b>main</b> primary species.	Information is adequate to support a <b>partial strategy</b> to manage <b>main</b> Primary species.	Information is adequate to support a <b>strategy</b> to manage <b>all</b> primary species, and evaluate with a <b>high degree of certainty</b> whether the strategy is achieving its objective.
	Met?	All – Y	All – Y	All – Y
	Justification	There are no primary species; therefore, SG60, SG80, and SG100 are met.		
References		Klein and Galbraith 2019		
OVERALL PERFORMANCE INDICATOR SCORE:				All –

PI 2.1.3	Information on the nature and extent of primary species is adequate to determine the risk posed by the UoA and the effectiveness of the strategy to manage primary species
	100
CONDITION NUMBER (if relevant):	



Evaluation Table for PI 2.2.1 – Secondary species outcome

PI 2.2.1		The UoA aims to maintain secondary species above a biologically based limit and does not hinder recovery of secondary species if they are below a biological based limit.		
Scoring Issue		SG 60	SG 80	SG 100
a	Main secondary species stock status			
	Guide post	<p>Main Secondary species are <b>likely</b> to be within biologically based limits.</p> <p>OR</p> <p>If below biologically based limits, there are measures in place expected to ensure that the UoA does not hinder recovery and rebuilding.</p>	<p>Main secondary species are <b>highly likely</b> to be above biologically based limits</p> <p>OR</p> <p>If below biologically based limits, there is either <b>evidence of recovery</b> or a <b>demonstrably effective partial strategy</b> in place such that the UoA does not hinder recovery and rebuilding.</p> <p>AND</p> <p>Where catches of a main secondary species outside of biological limits are considerable, there is either evidence of recovery or a, demonstrably effective strategy in place between those MSC UoAs that also have considerable catches of the species, to ensure that they collectively do not hinder recovery and rebuilding.</p>	<p>There is a <b>high degree of certainty</b> that main secondary species are within biologically based limits.</p>
	Met?	<p>Lake whitefish – Y</p> <p>White sucker – Y</p>	<p>Lake whitefish – Y</p> <p>White sucker – Y</p>	<p>Lake whitefish – N</p> <p>White sucker – N</p>
	Justification	<p>Based on the catch data (inferred by sales receipts), the extrapolation from the index netting data, and the Waterhen Lake FMP, there are two main secondary species: lake whitefish and white sucker.</p> <p>Lake whitefish:</p> <p>In recent years, there have been extended periods of high water in Waterhen Lake, causing an increase in the commercial harvest of lake whitefish. The index netting program does not catch many lake whitefish, averaging less than nine per year. However, with the population increase the last few years, the program data are likely not wholly representative of the current lake whitefish population. The index netting program is targeted toward walleye, which has a higher temperature preference than lake whitefish. Since that index netting occurs in September, it is hypothesized that this is before large numbers of lake whitefish have moved into Waterhen Lake from adjacent Lakes Manitoba and Winnipegosis, which offer better summer habitat.</p> <p>Female whitefish exhibit knife-edge maturity at 370 mm. With 96 mm mesh gear,</p>		

PI 2.2.1		The UoA aims to maintain secondary species above a biologically based limit and does not hinder recovery of secondary species if they are below a biological based limit.	
		<p>the mesh-size vulnerability of lake whitefish was 423 mm in length, and even the smallest fish caught in 96 mm mesh would be mature. Lake whitefish spawn between the September index netting program and the late November start of the fishing season.</p> <p>The index netting data show that one immature female was caught in the 114 mm mesh, and there were 12 mature females caught in the meshes legal for use by the UoAs. This means that 92% spawned by first vulnerability. The measured mortality is low with a total annual mortality of 33-35%. During the RBF workshop, fishers stated that they catch lake whitefish somewhere between “rarely” and “regularly” since whitefish are benthic, and the target species are not. This was interpreted to mean that there is low to medium encounterability with lake whitefish, which echoes the estimated total annual mortality rate.</p> <p>Using 35%, the actual number of spawnings is 2.6 per fish on average. Therefore, it is highly likely that lake whitefish is above biologically based limits. This statement is also supported by information gathered at the RBF workshop where fishers said that lake whitefish are always present in the lake. SG60 and SG80 are met. SG100 is not met since this cannot be said with a high degree of certainty.</p> <p>White sucker:</p> <p>White sucker are more often the target of removal efforts rather than conservation because they have been shown to be prolific. Female white sucker reach maturity at a length of 410 mm, which is a size that they are susceptible to a 96 mm mesh. The index netting data show that 92% of vulnerable females are mature, and in the minimum allowable mesh, 77% are mature. After full recruitment to the index netting gear, white sucker experience a total annual mortality of 31%. During the RBF workshop, fishers stated that they catch white sucker somewhere between “rarely” and “regularly” since white sucker are benthic (meaning low to medium encounterability), echoing the estimated total annual mortality rate. Additionally, each fish (on average) spawns 2.6 times.</p> <p>Therefore, the index netting program shows the population to be stable. White sucker exhibit the lowest coefficient of variation among all the species caught in the index program. The annual mortality rate for white sucker is 31%, and the minimum allowable mesh size is used to be precautionary. Overall, the population is stable. This statement is supported by information gathered at the RBF workshop where fishers said that white suckers are always present in the lake. Therefore, it is highly likely that white sucker is above biologically based limits so SG60 and SG80 are met. SG100 is not met since this cannot be said with a high degree of certainty.</p>	
b		Minor secondary species stock status	
	Guide post		Minor secondary species are highly likely to be above biologically based limits.  OR  If below biologically based limits', there is evidence that the UoA does not hinder the recovery and rebuilding of secondary species
	Met?		All – N
	Justifi	The status of the minor secondary species (i.e., shorthead redhorse, yellow perch,	

PI 2.2.1	The UoA aims to maintain secondary species above a biologically based limit and does not hinder recovery of secondary species if they are below a biological based limit.	
	cation	and common carp) is not known; therefore, the SG100 is not met.
References	Brodeur et al. 2001, Colby et al. 1987, G. Klein pers. comm., Klein and Galbraith 2019	
OVERALL PERFORMANCE INDICATOR SCORE:		All – 80
CONDITION NUMBER (if relevant):		

Evaluation Table for PI 2.2.2 – Secondary species management strategy

PI 2.2.2		There is a strategy in place for managing secondary species that is designed to maintain or to not hinder rebuilding of secondary species and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch.		
Scoring Issue		SG 60	SG 80	SG 100
a	Management strategy in place			
	Guide post	There are <b>measures</b> in place, if necessary, which are expected to maintain or not hinder rebuilding of main secondary species at/to levels which are highly likely to be within biologically based limits or to ensure that the UoA does not hinder their recovery.	There is a <b>partial strategy</b> in place, if necessary, for the UoA that is expected to maintain or not hinder rebuilding of main secondary species at/to levels which are highly likely to be within biologically based limits or to ensure that the UoA does not hinder their recovery.	There is a <b>strategy</b> in place for the UoA for managing main and minor secondary species.
	Met?	Lake whitefish – Y White sucker – Y	Lake whitefish – Y White sucker – Y	Lake whitefish – N White sucker – N
	Justification	Both: There is a mandatory, precautionary minimum mesh size in place (96 mm), resulting in low mortality of lake whitefish and white sucker relative to the overall catch. Additionally, lake whitefish and white sucker are allowed to spawn at least once before their potential capture, with both spawning (on average) 2.6 times before being caught. The mesh size is set with the target species in mind; however, it can be considered a partial strategy since both species' populations are considered stable. Therefore, SG60 and SG80 are met for both species since the in-place partial strategy is expected to maintain the secondary species at levels that are highly likely to be within biologically based limits. SG100 is not met since there is not a strategy in place.		
b	Management strategy evaluation			
	Guide post	The measures are considered <b>likely</b> to work, based on plausible argument (e.g. general experience, theory or comparison with similar UoAs/species).	There is <b>some objective basis for confidence</b> that the measures/partial strategy will work, based on some information directly about the UoA and/or species involved.	<b>Testing</b> supports <b>high confidence</b> that the partial strategy/strategy will work, based on information directly about the UoA and/or species involved.
	Met?	Lake whitefish – Y White sucker – Y	Lake whitefish – Y White sucker – Y	Lake whitefish – N White sucker – N
	Justification	Both: Since both populations are considered stable over the last decade (at least), the partial strategy is considered likely to work so SG60 is met. The sustained catch history and the steady index netting CPUE of both species along with the fact that the fishery operates under limited entry and a minimum mesh size constitute some objective basis of confidence that the partial strategy will work so SG80 is met. SG100 is not met since there is no testing to support high confidence.		
c	Management strategy implementation			
	Guide post		There is <b>some evidence</b> that the measures/partial strategy is being	There is clear evidence that the partial strategy/strategy is being

PI 2.2.2		There is a strategy in place for managing secondary species that is designed to maintain or to not hinder rebuilding of secondary species and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch.			
			implemented successfully.	implemented successfully and is achieving its objective as set out in scoring issue (a).	
	Met?		Lake whitefish – Y White sucker – Y	Lake whitefish – N White sucker – N	
	Justification	Both: Given that both populations are considered stable over the last decade (at least), there is some evidence that the partial strategy is being implemented successfully. SG60 and SG80 are met. The SG100 is not met since there is not clear evidence of successful implementation.			
d	Shark finning				
	Guide post	It is <b>likely</b> that shark finning is not taking place.	It is <b>highly likely</b> that shark finning is not taking place.	There is a <b>high degree of certainty</b> that shark finning is not taking place.	
	Met?	Not relevant	Not relevant	Not relevant	
	Justification	No secondary species are sharks.			
e	Review of alternative measures to minimise mortality of unwanted catch				
	Justification	There is a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of <b>unwanted</b> catch of main secondary species.	There is a <b>regular</b> review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of <b>unwanted</b> catch of main secondary species and they are implemented as appropriate.	There is a <b>biennial</b> review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of <b>unwanted</b> catch of all secondary species, and they are implemented, as appropriate.	
	Met?	Not relevant	Not relevant	Not relevant	
	Guide post	There is no unwanted catch of secondary species. Based on basin hole inspections and personal communications, all caught species are landed and used in some way (e.g., personal consumption). This statement is supported by what fishers said during the RBF workshop – they keep all fish they catch. Additionally, while gear loss can occur, ghost fishing gear has only been found by managers (and removed) three times in the last decade. The indirect effects of gear loss/ghost fishing are, therefore, likely negligible.			
References		W. Galbraith pers. comm., G. Klein pers. comm., Klein and Galbraith 2019			
OVERALL PERFORMANCE INDICATOR SCORE:					All – 80
CONDITION NUMBER (if relevant):					

Evaluation Table for PI 2.2.3 – Secondary species information

PI 2.2.3		Information on the nature and amount of secondary species taken is adequate to determine the risk posed by the UoA and the effectiveness of the strategy to manage secondary species.		
Scoring Issue		SG 60	SG 80	SG 100
a	Information adequacy for assessment of impacts on main secondary species			
	Guide post	Qualitative information is <b>adequate to estimate</b> the impact of the UoA on the main secondary species with respect to status.  OR  <b>If RBF is used to score PI 2.2.1 for the UoA:</b>  Qualitative information is adequate to estimate productivity and susceptibility attributes for main secondary species.	Some quantitative information is available and <b>adequate to assess</b> the impact of the UoA on main secondary species with respect to status.  OR  <b>If RBF is used to score PI 2.2.1 for the UoA:</b>  Some quantitative information is adequate to assess productivity and susceptibility attributes for main secondary species.	Quantitative information is available and <b>adequate to assess with a high degree of certainty</b> the impact of the UoA on main secondary species with respect to status.
	Met?	Lake whitefish – Y White sucker – Y	Lake whitefish – Y White sucker – Y	Lake whitefish – N White sucker – N
	Justification	Based on the catch data (inferred from sales receipts) and the extrapolation from the index netting data, there are two main secondary species: lake whitefish and white sucker.  Lake whitefish: Catch data are available for more than two decades. The total annual mortality is 33-35%. The index netting program does not catch many lake whitefish, averaging less than nine per year. Additionally, given the minimum mesh size, size at maturity, and spawning period, female whitefish are allowed to spawn at least once before their potential capture. SG60 and SG80 are met since there is some quantitative information available to assess the UoAs' impacts on lake whitefish adequately. SG100 is not met since the impacts cannot be assessed with a high degree of certainty.  White sucker: White sucker are more often the target of removal efforts rather than conservation since they have been shown to be prolific. Catch data are available for more than two decades. The index netting program showed the population to be stable, female white sucker are allowed to spawn at least once before their potential capture, and the minimum allowable mesh size is used to be precautionary. SG60 and SG80 are met since there is some quantitative information available to assess the UoAs' impacts on the white sucker adequately. SG100 is not met since the impacts cannot be assessed with a high degree of certainty.		
	Information adequacy for assessment of impacts on minor secondary species			
b	Guide post			Some quantitative information is adequate to estimate the impact of the UoA on minor secondary species with respect to status.
	Met?			All – N
	Justifi	While catch data are collected for the minor secondary species, the UoAs' catch		

PI 2.2.3		Information on the nature and amount of secondary species taken is adequate to determine the risk posed by the UoA and the effectiveness of the strategy to manage secondary species.		
	cation	with respect to the species' status is not considered. Therefore, SG100 is not met.		
c	Information adequacy for management strategy			
	Guide post	Information is adequate to support <b>measures</b> to manage <b>main</b> secondary species.	Information is adequate to support a <b>partial strategy</b> to manage <b>main</b> secondary species.	Information is adequate to support a <b>strategy</b> to manage <b>all</b> secondary species, and <b>evaluate</b> with a <b>high degree of certainty</b> whether the strategy is <b>achieving its objective</b> .
	Met?	Lake whitefish – Y White sucker – Y	Lake whitefish – Y White sucker – Y	All – N
	Justification	Both: The catch data and index netting data show that both populations have been stable over the last decade (at least). These data are used to determine and implement the management measures. SG60 and SG80 are met since the information is adequate to support the partial strategy. SG100 is not met since information is not adequate to support a strategy.		
References		Klein and Galbraith 2019		
OVERALL PERFORMANCE INDICATOR SCORE:				All – 80
CONDITION NUMBER (if relevant):				

Evaluation Table for PI 2.3.1 – ETP species outcome

PI 2.3.1		The UoA meets national and international requirements for the protection of ETP species		
		The UoA does not hinder recovery of ETP species		
Scoring Issue		SG 60	SG 80	SG 100
a	Effects of the UoA on population/stock within national or international limits, where applicable			
	Guide post	Where national and/or international requirements set limits for ETP species, the effects of the UoA on the population/stock are known and <b>likely</b> to be within these limits.	Where national and/or international requirements set limits for ETP species, the <b>combined effects of the MSC UoAs</b> on the population/stock are known and <b>highly likely</b> to be within these limits.	Where national and/or international requirements set limits for ETP species, there is a <b>high degree of certainty</b> that the <b>combined effects of the MSC UoAs</b> are within these limits.
	Met?	Not relevant	Not relevant	Not relevant
	Justification	There are no ETP species encountered by these UoAs; therefore, this scoring issue is not relevant.		
b	Direct effects			
	Guide post	Known direct effects of the UoA are likely to not <b>hinder recovery</b> of ETP species.	Known direct effects of the UoA are <b>highly likely</b> to not <b>hinder recovery</b> of ETP species.	There is a high degree of confidence that there are no significant detrimental direct effects of the UoA on ETP species.
	Met?	All – Y	All – Y	All – N
	Justification	There are no ETP species encountered by these UoAs. There is a small possibility of lost nets being present in the lake during ice-free periods when ETP bird species could be present. Some SARA-listed species (e.g., shortjaw cisco, bigmouth buffalo) are present within neighboring lakes and river . However, in review of the SARA list for possible ETP species, the team determined that none overlap with the fishery and none are present during the non-fishing season. Known direct effects of the UoAs are highly likely to not hinder recovery of ETP species; therefore, SG60 and SG80 are met. SG100 is not met since it cannot be said with a high degree of confidence that the UoAs have no significant detrimental direct effects.		
c	Indirect effects			
	Guide post		Indirect effects have been considered and are thought to be <b>highly likely</b> to not create unacceptable impacts.	There is a high degree of confidence that there are no significant detrimental indirect effects of the fishery on ETP species.
	Met?		All – Y	All – N
	Justification	There are no ETP species encountered by these UoAs; therefore, SG80 is met. Indirect effects of the fishery are possible (e.g., on the feeding efficiency of predatory bird species). Since not enough is known about the potential indirect effects, a high degree of confidence does not exist so SG100 is not met.		
References		Klein and Galbraith 2019, <a href="https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry.html">https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry.html</a>		
OVERALL PERFORMANCE INDICATOR SCORE:				All – 80
CONDITION NUMBER (if relevant):				



Evaluation Table for PI 2.3.2 – ETP species management strategy

PI 2.3.2		The UoA has in place precautionary management strategies designed to: <ul style="list-style-type: none"><li>• meet national and international requirements;</li><li>• ensure the UoA does not hinder recovery of ETP species.</li></ul> Also, the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of ETP species.		
Scoring Issue		SG 60	SG 80	SG 100
a	Management strategy in place (national and international requirements)			
	Guide post	There are <b>measures</b> in place that minimise the UoA-related mortality of ETP species, and are expected to be <b>highly likely to achieve</b> national and international requirements for the protection of ETP species.	There is a <b>strategy</b> in place for managing the UoA's impact on ETP species, including measures to minimise mortality, which is designed to be <b>highly likely to achieve</b> national and international requirements for the protection of ETP species.	There is a <b>comprehensive strategy</b> in place for managing the UoA's impact on ETP species, including measures to minimise mortality, which is designed to <b>achieve above</b> national and international requirements for the protection of ETP species.
	Met?	Not relevant	Not relevant	Not relevant
	Justification	There are no ETP species encountered by these UoAs; therefore, this scoring issue is not relevant.		
b	Management strategy in place (alternative)			
	Guide post	There are <b>measures</b> in place that are expected to ensure the UoA does not hinder the recovery of ETP species.	There is a <b>strategy</b> in place that is expected to ensure the UoA does not hinder the recovery of ETP species.	There is a <b>comprehensive strategy</b> in place for managing ETP species, to ensure the UoA does not hinder the recovery of ETP species
	Met?	All – Y	All – Y	All – N
	Justification	There are no ETP species encountered by these UoAs; however, the FMP states that “the management of the Waterhen Lake fishery will continue to be guided by regulations set forth in the federally administered <i>Species at Risk Act</i> enacted in 2003. Canada's <i>Species at Risk Act</i> provides the legal framework for the protection and recovery of species that are designated as endangered or threatened.” The FMP also states that a recovery plan would be created and followed if a SARA species were to be found in the future within Waterhen Lake. This can be considered a strategy so SG60 and SG80 are met. SG100 is not met since this is not considered a comprehensive strategy.		
c	Management strategy evaluation			
	Guide post	The measures are <b>considered likely</b> to work, based on <b>plausible argument</b> (e.g. general experience, theory or comparison with similar fisheries/species).	There is an <b>objective basis for confidence</b> that the measures/strategy will work, based on <b>information</b> directly about the fishery and/or the species involved.	The strategy/comprehensive strategy is mainly based on information directly about the fishery and/or species involved, and a <b>quantitative analysis</b> supports <b>high confidence</b> that the strategy will work.

PI 2.3.2		The UoA has in place precautionary management strategies designed to: <ul style="list-style-type: none"><li>• meet national and international requirements;</li><li>• ensure the UoA does not hinder recovery of ETP species.</li></ul> Also, the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of ETP species.		
	Met?	All – Y	All – Y	All – N
	Justification	There are no ETP species encountered by these UoAs; however, the FMP states that “the management of the Waterhen Lake fishery will continue to be guided by regulations set forth in the federally administered <i>Species at Risk Act</i> enacted in 2003. Canada’s <i>Species at Risk Act</i> provides the legal framework for the protection and recovery of species that are designated as endangered or threatened.” The FMP also states that a recovery plan would be created and followed if a SARA species were to be found in the future within Waterhen Lake. Based on information directly about the fishery and species involved, there is an objective basis for confidence that the strategy will work; therefore, SG60 and SG80 are met. SG100 is not met since there is no quantitative analysis to support high confidence.		
d	Management strategy implementation			
	Guide post		There is some <b>evidence</b> that the measures/strategy is being implemented successfully.	There is <b>clear evidence</b> that the strategy/comprehensive strategy is being implemented successfully and is achieving its objective as set out in scoring issue (a) or (b).
	Met?		All – Y	All – N
	Justification	There are no ETP species encountered by these UoAs; however, the FMP states that “the management of the Waterhen Lake fishery will continue to be guided by regulations set forth in the federally administered <i>Species at Risk Act</i> enacted in 2003. Canada’s <i>Species at Risk Act</i> provides the legal framework for the protection and recovery of species that are designated as endangered or threatened.” Therefore, there is some evidence that the strategy is being implemented successfully, and SG80 is met. SG100 is not met since there is not clear evidence.		
e	Review of alternative measures to minimize mortality of ETP species			
	Guide post	There is a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of ETP species.	There is a <b>regular</b> review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of ETP species and they are implemented as appropriate.	There is a <b>biennial</b> review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality ETP species, and they are implemented, as appropriate.
	Met?	All – Y	All – Y	All – Y
	Justification	While there are no ETP species encountered by these UoAs, they continue to be considered within the FMP, which is updated annually or biennially. The FMP states that “the management of the Waterhen Lake fishery will continue to be guided by regulations set forth in the federally administered <i>Species at Risk Act</i> enacted in 2003. Canada’s <i>Species at Risk Act</i> provides the legal framework for the protection and recovery of species that are designated as endangered or threatened.” The FMP also states that a recovery plan would be created and followed if a SARA species were to be found in the future within Waterhen Lake. Therefore, SG60, SG80, and SG100 are met.		
References		Klein and Galbraith 2019		

PI 2.3.2	<p>The UoA has in place precautionary management strategies designed to:</p> <ul style="list-style-type: none"><li>• meet national and international requirements;</li><li>• ensure the UoA does not hinder recovery of ETP species.</li></ul> <p>Also, the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of ETP species.</p>	
OVERALL PERFORMANCE INDICATOR SCORE:		All – 85
CONDITION NUMBER (if relevant):		

Evaluation Table for PI 2.3.3 – ETP species information

PI 2.3.3		Relevant information is collected to support the management of UoA impacts on ETP species, including: <ul style="list-style-type: none"><li>• Information for the development of the management strategy;</li><li>• Information to assess the effectiveness of the management strategy; and</li><li>• Information to determine the outcome status of ETP species.</li></ul>		
Scoring Issue		SG 60	SG 80	SG 100
a	Information adequacy for assessment of impacts			
	Guide post	Qualitative information is <b>adequate to estimate</b> the UoA related mortality on ETP species.  OR  If RBF is used to score PI 2.3.1 for the UoA:  Qualitative information is <b>adequate to estimate productivity and susceptibility</b> attributes for ETP species.	Some quantitative information is <b>adequate to assess</b> the UoA related mortality and impact and to determine whether the UoA may be a threat to protection and recovery of the ETP species.  OR  If RBF is used to score PI 2.3.1 for the UoA: Some quantitative information is adequate to assess productivity and susceptibility attributes for ETP species.	Quantitative information is available to assess with a high degree of certainty the <b>magnitude of UoA-related impacts, mortalities and injuries and the consequences for the status of ETP species.</b>
	Met?	All – Y	All – Y	All – N
	Justification	There are no ETP species encountered by these UoAs. Additionally, in review of the SARA list for possible ETP species, the team determined that none overlap with the fishery and none are present during the non-fishing season. Since catch data and information from the SARA registry confirm that there are no ETP species, some quantitative information is available to adequately assess the UoAs so SG60 and SG80 are met. SG100 is not met since the quantitative information is not sufficient to support a high degree of certainty.		
b	Information adequacy for management strategy			
	Guide post	Information is adequate to support <b>measures</b> to manage the impacts on ETP species.	Information is adequate to measure trends and support a <b>strategy</b> to manage impacts on ETP species.	Information is adequate to support a <b>comprehensive strategy</b> to manage impacts, minimize mortality and injury of ETP species, and evaluate with a <b>high degree of certainty</b> whether a strategy is achieving its objectives.
	Met?	All – Y	All – Y	All – N
	Justification	The information is adequate to confirm that there are no ETP species encountered by these UoAs. Catch data are collected annually, the FMP is reviewed annually or biennially, and the SARA list is reviewed annually so there is adequate information to measure trends and support a strategy. SG60 and SG80 are met. SG100 is not met since there is not the necessary level of information to support a comprehensive strategy.		

<b>PI 2.3.3</b>	<b>Relevant information is collected to support the management of UoA impacts on ETP species, including:</b> <ul style="list-style-type: none"> <li>• Information for the development of the management strategy;</li> <li>• Information to assess the effectiveness of the management strategy; and</li> <li>• Information to determine the outcome status of ETP species.</li> </ul>	
<b>References</b>	Klein and Galbraith 2019, <a href="https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry.html">https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry.html</a>	
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>		<b>All – 80</b>
<b>CONDITION NUMBER (if relevant):</b>		

## Evaluation Table for PI 2.4.1 – Habitats outcome

PI 2.4.1		The UoA does not cause serious or irreversible harm to habitat structure and function, considered on the basis of the area covered by the governance body(s) responsible for fisheries management in the area(s) where the UoA operates.		
Scoring Issue		SG 60	SG 80	SG 100
a	Commonly encountered habitat status			
	Guide post	The UoA is <b>unlikely</b> to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm.	The UoA is <b>highly unlikely</b> to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm.	There is <b>evidence</b> that the UoA is highly unlikely to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm.
	Met?	Both – Y	Both – Y	Both – N
	Justification	The commonly encountered habitats within Waterhen Lake are fine sand with cobble and boulders and mud. Bottom-set gillnets have minor impacts on the physical habitat and structure, particularly in these shallow, relatively barren boreal lakes. When a winter gillnet is lifted, it is dragged along the same track between the two ice holes through which it was set originally. The leadline will mix the sediments to a depth of a few inches in that track. The net is anchored on either side with stone the size of a fist. While these stones may move, it is minimal, and the subsequent impact is likely minimal.  Waterhen Lake is approximately 272 km <sup>2</sup> though the entire lake is not fished. The maximum water depth of 4.4 m, and most fishing occurs where the depth is 1.5 m or more. The maximum number of fishers operating in a particular year appears to be 16, and most of the effort is concentrated in the southern half of the lake. Additionally, fishers stated during the RBF workshop that while the target species are benthic, the mesh and floatline are usually off the bottom, unless they get pulled down by the weight of fish in the net. Therefore, it is highly unlikely that the UoAs are reducing structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm. SG60 and SG80 are met, but the SG100 is not met since there is not enough available evidence.		
b	VME habitat status			
	Guide post	The UoA is <b>unlikely</b> to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm.	The UoA is <b>highly unlikely</b> to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm.	There is <b>evidence</b> that the UoA is highly unlikely to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm.
	Met?	Both – Not relevant	Both – Not relevant	Both – Not relevant
	Justification	Waterhen Lake has some areas that are important for the spawning and rearing of the target and non-target species present in the lake. However, since they are voluntary closures and have not been given formal protective designation by a management authority/governance body, this SI is not scored and is deemed not relevant.		
c	Minor habitat status			
	Guide post			There is <b>evidence</b> that the UoA is highly unlikely to reduce structure and function of the minor habitats to a point where

<b>PI 2.4.1</b>		<b>The UoA does not cause serious or irreversible harm to habitat structure and function, considered on the basis of the area covered by the governance body(s) responsible for fisheries management in the area(s) where the UoA operates.</b>		
				there would be serious or irreversible harm.
	<b>Met?</b>			Both – N
	<b>Justification</b>	Any potential impact on minor habitats is not monitored; therefore, SG100 is not met.		
<b>References</b>		G. Klein pers. comm., ICES 1995, Kaiser et al. 1996, Klein and Galbraith 2019, Morgan and Chuenpagdee 2003		
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>				<b>All – 80</b>
<b>CONDITION NUMBER (if relevant):</b>				

## Evaluation Table for PI 2.4.2 – Habitats management strategy

PI 2.4.2		There is a strategy in place that is designed to ensure the UoA does not pose a risk of serious or irreversible harm to the habitats.		
Scoring Issue		SG 60	SG 80	SG 100
a	Management strategy in place			
	Guide post	There are <b>measures</b> in place, if necessary, that are expected to achieve the Habitat Outcome 80 level of performance.	There is a <b>partial strategy</b> in place, if necessary, that is expected to achieve the Habitat Outcome 80 level of performance or above.	There is a <b>strategy</b> in place for managing the impact of all MSC UoAs/non-MSC fisheries on habitats.
	Met?	Both – Y	Both – Y	Both – N
	Justification	As outlined in the FMP, there is a strategy that, among other things, works to ensure the quality and quantity of fish habitats; ensure that fishing allow for the maintenance of the structure, productivity, and function of the habitat; and ensure the inclusion of applicable federal and provincial legislation, policies, and regulations that require responsible and sustainable use of the resource. Additionally, the FMP outlines what is to occur when gear is lost, and penalties are in place to disincentivize gear lost further. Therefore, SG60 and SG80 are met because these measures constitute a strategy. There are no other MSC UoAs, but there are some non-MSC fisheries impacting Waterhen Lake in the form of a commercial carp gillnet fishery (though there are currently no active licenses for this fishery), recreational fishing, and domestic/subsistence harvest. The levels of the latter two are unknown so the strategy does not meet SG100.		
b	Management strategy evaluation			
	Guide post	The measures are <b>considered likely</b> to work, based on plausible argument (e.g. general experience, theory or comparison with similar UoAs/habitats).	There is some <b>objective basis for confidence</b> that the measures/partial strategy will work, based on <b>information directly about the UoA and/or habitats</b> involved.	<b>Testing</b> supports <b>high confidence</b> that the partial strategy/strategy will work, based on <b>information directly about the UoA and/or habitats</b> involved.
	Met?	Both – Y	Both – Y	Both – N
	Justification	Based on plausible argument, there is some objective basis for confidence that the strategy will work. The size of Waterhen Lake, the scale and intensity of the UoAs' fishing, the use of static gillnet gear, and an understanding of the vulnerability of the habitat types allow the team to conclude that SG60 and SG80 are met. SG100 is not met since there is not a high confidence based on testing.		
c	Management strategy implementation			
	Guide post		There is <b>some quantitative evidence</b> that the measures/partial strategy is being implemented successfully.	There is <b>clear quantitative evidence</b> that the partial strategy/strategy is being implemented successfully and is achieving its objective, as outlined in scoring issue (a).
	Met?		Both – Y	Both – N
	Justification	The FMP has been reviewed and updated regularly since 2014. Given what is known about the size of Waterhen Lake, the scale and intensity of the UoAs' fishing, the use of static gillnet gear, the vulnerability of the habitat types, the minimal incidences of ghost fishing, and the ongoing stability of the target stocks' populations, the team can conclude that the strategy is being implemented successfully, meeting SG80. However, there is not clear evidence so SG100 is not		



PI 2.4.2		There is a strategy in place that is designed to ensure the UoA does not pose a risk of serious or irreversible harm to the habitats.		
		met.		
d	Compliance with management requirements and other MSC UoAs'/non-MSC fisheries' measures to protect VMEs			
	Guide post	There is <b>qualitative evidence</b> that the UoA complies with its management requirements to protect VMEs.	There is <b>some quantitative evidence</b> that the UoA complies with both its management requirements and with protection measures afforded to VMEs by other MSC UoAs/non-MSC fisheries, where relevant.	There is <b>clear quantitative evidence</b> that the UoA complies with both its management requirements and with protection measures afforded to VMEs by other MSC UoAs/non-MSC fisheries, where relevant.
	Met?	Both – Not relevant	Both – Not relevant	Both – Not relevant
	Justification	There are three areas within Waterhen Lake that are closed voluntarily to commercial fishing. However, as stated in PI 2.4.1, they have not been given formal protective designation by a management authority/governance body so do not constitute VMEs. Therefore, this SI is not scored and is deemed not relevant.		
References		G. Klein pers. comm., Klein and Galbraith 2019		
OVERALL PERFORMANCE INDICATOR SCORE:				All – 80
CONDITION NUMBER (if relevant):				

### Evaluation Table for PI 2.4.3 – Habitats information

PI 2.4.3		Information is adequate to determine the risk posed to the habitat by the UoA and the effectiveness of the strategy to manage impacts on the habitat.		
Scoring Issue		SG 60	SG 80	SG 100
a	Information quality			
	Guide post	<p>The types and distribution of the main habitats are <b>broadly understood</b>.</p> <p>OR</p> <p>If CSA is used to score PI 2.4.1 for the UoA:</p> <p>Qualitative information is adequate to estimate the types and distribution of the main habitats.</p>	<p>The nature, distribution and <b>vulnerability</b> of the main habitats in the UoA area are known at a level of detail relevant to the scale and intensity of the UoA.</p> <p>OR</p> <p>If CSA is used to score PI 2.4.1 for the UoA:</p> <p>Some quantitative information is available and is adequate to estimate the types and distribution of the main habitats.</p>	<p>The distribution of all habitats is known over their range, with particular attention to the occurrence of vulnerable habitats.</p>
	Met?	Both – Y	Both – Y	Both – N
	Justifi cation	<p>The main habitats are mud, fine sand with cobble and boulders. Waterhen Lake is mostly soft-bottom sediment, including fine sand with cobble and boulders and mud, covered with organic substrate (e.g., dead algae, zooplankton). While the lake has not been mapped, the distribution of the main habitats is known from traditional knowledge (i.e., what the fisher sees on the anchors when they have been lifted), which is at a level of detail relevant to the scale and intensity of the UoAs. The spawning/rearing areas are known to be ecologically important hence their closure to fishing. Therefore, SG60 and SG80 are met. SG100 is not met since the distribution of all habitats throughout the lake are not known.</p>		
b	Information adequacy for assessment of impacts			
	Guide post	<p>Information is adequate to broadly understand the nature of the main impacts of gear use on the main habitats, including spatial overlap of habitat with fishing gear.</p> <p>OR</p> <p><b>If CSA is used to score PI 2.4.1 for the UoA:</b></p> <p>Qualitative information is adequate to estimate the consequence and spatial attributes of the main habitats.</p>	<p>Information is adequate to allow for identification of the main impacts of the UoA on the main habitats, and there is reliable information on the spatial extent of interaction and on the timing and location of use of the fishing gear.</p> <p>OR</p> <p><b>If CSA is used to score PI 2.4.1 for the UoA:</b></p> <p>Some quantitative information is available and is adequate to estimate the consequence and spatial</p>	<p>The physical impacts of the gear on all habitats have been quantified fully.</p>

PI 2.4.3		Information is adequate to determine the risk posed to the habitat by the UoA and the effectiveness of the strategy to manage impacts on the habitat.		
			attributes of the main habitats.	
	Met?	Both – Y	Both – Y	Both – N
	Justification	The UoAs have a limited impact on the main habitats since this gillnet gear has a small bottom footprint. The UoAs’ short season also provides an opportunity for soft-bottom communities to recover between seasons. Waterhen Lake is approximately 272 km <sup>2</sup> though the entire lake is not fished. The maximum water depth of 4.4 m, and most fishing occurs where the depth is 1.5 m or more so there are portions of the lake that are not impacted at all by fishing. There is not a record of where fishers set within the lake (unless there is some enforcement action), but the maximum number of fishers operating in a particular year appears to be 16, and most of the effort is concentrated in the southern half of the lake. Additionally, fishers stated during the RBF workshop that while the target species are benthic, the mesh and floatline are usually off the bottom, unless they get pulled down by the weight of fish in the net. The team concludes that SG60 and SG80 are met. SG100 is not met since the physical impacts of the gear on all habitats have not been quantified fully.		
c	Monitoring			
	Guide post		Adequate information continues to be collected to detect any increase in risk to the main habitats.	Changes in habitat distributions over time are measured.
	Met?		Both – Y	Both – N
	Justification	While information is not regularly collected on the UoAs’ impacts on mud and fine sand, these impacts are considered minimal due to small gear footprint, limited fishing season, and the overall characteristics of mud and sand. The team concludes that SG80 is met, particularly when considering the scale and intensity of the UoAs and the characteristics of the lake ecosystem (versus an ocean ecosystem, which is the focus of the MSC requirements). SG100 is not met since changes in habitat distributions are not measured over time.		
References		G. Klein pers. comm., Klein and Galbraith 2019		
OVERALL PERFORMANCE INDICATOR SCORE:				All – 80
CONDITION NUMBER (if relevant):				

## Evaluation Table for PI 2.5.1 – Ecosystem outcome

PI 2.5.1		The UoA does not cause serious or irreversible harm to the key elements of ecosystem structure and function.		
Scoring Issue		SG 60	SG 80	SG 100
a	Ecosystem status			
	Guide post	The UoA is <b>unlikely</b> to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.	The UoA is <b>highly unlikely</b> to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.	There is <b>evidence</b> that the UoA is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.
	Met?	Both – Y	Both – Y	Both – N
	Justification	<p>The key ecosystem elements (i.e., scoring elements) within Waterhen Lake are trophic structure and function and community structure.</p> <p>There are other consumers of fish in the ecosystem that could be impacted by the UoAs: fish-eating water birds, such as the double-crested cormorant; river otters; and mink. There are no known breeding colonies of double-crested cormorant on Waterhen Lake; however, cormorants visit to feed from colonies on nearby lakes. On Waterhen Lake, investigations of cormorant regurgitation suggest yellow perch constitutes more than 90% of the cormorant diet with northern pike being second. “Many waterbird species, including those that breed in Manitoba, suffered severe declines at various periods from the late 19<sup>th</sup> century to about the mid-20<sup>th</sup> century related to overhunting, direct persecution, habitat loss or disturbance, and DDT pollution” (Wilson et al. 2014). Colonial-nesting bird numbers have declined from estimated peaks in the late 1980s, and while they are still many times greater than historic numbers, these low numbers are from a very low period. Having said that, the long-term population stability of fish-eating birds in the area suggests there is no negative impact to these birds from the UoAs. The offal produced from fishing provides a winter supplement to ravens with bald eagles a very distant second consumer. Wolf tracks have been seen after visiting fish offal left on the ice.</p> <p>The size of Waterhen Lake relative to the scale and intensity of fishing by the UoAs appears to be relatively low. The lake is approximately 272 km<sup>2</sup> though the entire lake is not fished. The maximum water depth of 4.4 m, and most fishing occurs where the depth is 1.5 m or more. (A minimum depth of 0.6 m is needed to operate the fishing gear.) The maximum number of fishers operating in a particular year appears to be 16, and most of the effort is concentrated in the southern half of the lake. Additionally, fishers stated during the RBF workshop that while the target species are benthic, the mesh and floatline are usually off the bottom, unless they get pulled down by the weight of fish in the net.</p> <p>In wetter years, the white sucker population could increase since white suckers would benefit from higher water because they have great success spawning in small streams, and they can ascend these streams to a greater extent in wetter years. Additionally, fry survival is higher with protracted runoff. White sucker biomass is antagonistic to walleye biomass since white sucker outgrow their vulnerability to walleye after a year and a half. These changes could (at least temporarily) alter the food web. However, there are also drier years when this connectivity does not exist, swinging the food web back to prior levels. The index netting data show a stable system, and Waterhen Lake appears to adapt to these changes, maintaining a functioning ecosystem. Walleye relative weights have remained stable over the past decade; therefore, the food web appears to be intact with naturally occurring species interacting as they would in a “normal” ecosystem.</p>		

PI 2.5.1		The UoA does not cause serious or irreversible harm to the key elements of ecosystem structure and function.
		Additionally, the indirect effects of ghost fishing could potentially impact the wider ecosystem structure and function. However, gillnets from these UoAs are rarely lost. In the last decade, there have been three lost nets found by managers in Waterhen Lake there were later retrieved. The lost nets had stopped fishing due to colonization by algae and tangling. The Lost Gear Retrieval Program is in place for commercial fishers to remove any abandoned gill nets found during the winter fishing season. If fishers are unable to remove a gill net due to being frozen in the ice, they will return and retrieve it once the lake becomes open in the spring. As part of this program, there is no record of a fisher contacting the District Office to report a lost net in recent years. Therefore, it is highly unlikely that the UoAs are disrupting the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm so SG60 and SG80 are met. SG100 is not met since more specific research about the ecosystem's key elements and UoA would be needed to constitute "evidence".
References		G. Klein pers. comm., Wilson et al. 2014
OVERALL PERFORMANCE INDICATOR SCORE:		All – 80
CONDITION NUMBER (if relevant):		

Evaluation Table for PI 2.5.2 – Ecosystem management strategy

PI 2.5.2		There are measures in place to ensure the UoA does not pose a risk of serious or irreversible harm to ecosystem structure and function.		
Scoring Issue		SG 60	SG 80	SG 100
a	Management strategy in place			
	Guide post	There are <b>measures</b> in place, if necessary which take into account the <b>potential impacts</b> of the fishery on key elements of the ecosystem.	There is a <b>partial strategy</b> in place, if necessary, which takes into account <b>available information and is expected to restrain impacts</b> of the UoA on the ecosystem so as to achieve the Ecosystem Outcome 80 level of performance.	There is a <b>strategy</b> that consists of a <b>plan</b> , in place which contains measures to <b>address all main impacts of the UoA</b> on the ecosystem, and at least some of these measures are in place.
	Met?	Both – Y	Both – Y	Both – N
	Justification	<p>The UoAs’ management is based on, in part, allowing for the maintenance of the ecosystem’s structure, productivity, function, and diversity. This goal works to ensure that the overall ecosystem will remain a healthy, sustainable one for the entire food web. The walleye (target species) mesh size has been reviewed and changed several times in the past, but the size has been the same since 1995. Management decisions, such as mesh size, licenses, and limited fishing season are made to achieve and maintain a healthy ecosystem. The voluntarily area closures are an example of a management decision to protect the overall sustainability of the Waterhen Lake ecosystem. Additionally, the lost gear retrieval program is another measure that minimizes ecosystem impact. It is in place for commercial fishers to remove any abandoned gill nets found during the winter fishing season, and if fishers are unable to remove a gill net due to being frozen in the ice, they will return and retrieve it once the lake becomes open in the spring. These measures constitute a partial strategy, which is in place and is expected to restrain the UoAs’ impacts on the ecosystem. SG60 and SG80 are met.</p> <p>The <i>Fish and Fish Habitat Protection Policy Statement</i> (2019) requires no net loss of habitat, meaning that an equivalent amount of habitat is replaced by any proponent who diminishes the productive capacity of an ecosystem. Overall, there is a strategy in place, but there is no plan to address all main impacts of the UoAs on the ecosystem. Therefore, SG100 is not met.</p>		
b	Management strategy evaluation			
	Guide post	The <b>measures</b> are considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/ ecosystems).	There is <b>some objective basis for confidence</b> that the measures/partial strategy will work, based on some information directly about the UoA and/or the ecosystem involved	<b>Testing</b> supports <b>high confidence</b> that the partial strategy/strategy will work, based on information directly about the UoA and/or ecosystem involved
	Met?	Both – Y	Both – Y	Both – N
	Justification	Based on plausible argument, there is some objective basis for confidence that the strategy will work. Regulations measures, such as mesh size and licenses, as well as the limited fishing season and lost gear retrieval program reduce the UoAs’ impact on the ecosystem. As part of this program, there is no record of a fisher contacting the District Office to report a lost net in recent years. Therefore, the team concludes that SG60 and SG80 are met. SG100 is not met since there is not a high confidence based on testing.		

PI 2.5.2		There are measures in place to ensure the UoA does not pose a risk of serious or irreversible harm to ecosystem structure and function.		
c	Management strategy implementation			
	Guide post		There is <b>some evidence</b> that the measures/partial strategy is being <b>implemented successfully</b> .	There is clear evidence that the partial strategy/strategy is being implemented successfully and is achieving its objective as set out in scoring issue (a).
	Met?		Both – Y	Both – N
	Justification	The FMP has been reviewed and updated regularly since 2014. Given what is known about the size of Waterhen Lake, the scale and intensity of the UoAs' fishing, the measures and regulations that are in place, and the ongoing stability of the overall ecosystem, the team can conclude that the strategy is being implemented successfully, meeting SG60 and SG80. However, there is not clear evidence that the strategy is achieving its objectives with regard to the UoAs' impacts so SG100 is not met.		
References		Klein and Galbraith 2019, <a href="https://www.dfo-mpo.gc.ca/pnw-ppe/policy-politique-eng.pdf">https://www.dfo-mpo.gc.ca/pnw-ppe/policy-politique-eng.pdf</a>		
OVERALL PERFORMANCE INDICATOR SCORE:				All – 80
CONDITION NUMBER (if relevant):				

## Evaluation Table for PI 2.5.3 – Ecosystem information

PI 2.5.3		There is adequate knowledge of the impacts of the UoA on the ecosystem.		
Scoring Issue		SG 60	SG 80	SG 100
a	Information quality			
	Guide post	Information is adequate to <b>identify</b> the key elements of the ecosystem.	Information is adequate to <b>broadly understand</b> the key elements of the ecosystem.	
	Met?	Both – Y	Both – Y	
	Justification	The UoAs' main impacts on key ecosystem elements are (1) on trophic relationships from target and non-target species removal and (2) on community structure by fishing gear from non-catch mortality and ghost fishing. The impact on trophic relationships can be inferred since it is known that removal of large amounts of walleye and northern pike from Waterhen Lake would have overall ecosystem impacts. However, the current harvest amounts do not appear to have any significant effects on the ecosystem. Food web structure is known from studies on similar lakes in nearby Minnesota so can be extrapolated for this ecosystem. Sensitive areas in Waterhen Lake were identified and closed to fishing. General information (not specific to Waterhen Lake) is available on predator-prey relationships. Gear loss is rare so the indirect effects are negligible. Overall, information is adequate to broadly understand the key elements of the ecosystem so SG60 and SG80 are met.		
b	Investigation of UoA impacts			
	Guide post	Main impacts of the UoA on these key ecosystem elements can be inferred from existing information, but <b>have not been investigated</b> in detail.	Main impacts of the UoA on these key ecosystem elements can be inferred from existing information, and <b>some have been investigated in detail</b> .	Main interactions between the UoA and these ecosystem elements can be inferred from existing information, and <b>have been investigated in detail</b> .
	Met?	Both – Y	Both – Y	Both – N
	Justification	Any impacts to Waterhen Lake's food web structure would be a result of the gear. Gillnets do contact the bottom, but this contact is minimal and therefore unlikely to cause damage or alter the ecosystem. As stated above, the main impacts on key ecosystem elements can be inferred from existing information from other lakes (e.g., Lake Minnetonka). Some of these impacts have been investigated in detail in Waterhen Lake, such as target and non-target species relationships and productivity (e.g., cormorant diet analysis) and community structure (e.g., how an increase in a non-target species would impact target species numbers) have been investigated in detail. It is concluded that SG60 and SG80 are met. SG100 is not met since the main interactions have not been investigated in detail.  <b>While SG80 is met, the team concludes that a recommendation is needed, suggesting that additional investigations be done within Waterhen Lake.</b>		
c	Understanding of component functions			
	Guide post		The main functions of the components (i.e., P1 target species, primary, secondary and ETP species and Habitats) in the ecosystem are <b>known</b> .	The impacts of the UoA on P1 target species, primary, secondary and ETP species and Habitats are identified and the main functions of these components in the ecosystem are <b>understood</b> .



PI 2.5.3		There is adequate knowledge of the impacts of the UoA on the ecosystem.		
	Met?		Both – Y	Both – N
	Justification	Walleye and northern pike are top predators in the ecosystem, and the two main primary species are both lower on the trophic scale. The UoAs' have no known impact on ETP species, and there is minimal interaction between the UoAs and the main habitats. The food web functions of the components can be inferred for Waterhen Lake based on other. Therefore, SG80 is met. SG100 is not met since the functions are not understood.		
d	Information relevance			
	Guide post		Adequate information is available on the impacts of the UoA on these components to allow some of the main consequences for the ecosystem to be inferred.	Adequate information is available on the impacts of the UoA on the components <b>and elements</b> to allow the main consequences for the ecosystem to be inferred.
	Met?		Both – Y	Both – N
	Justification	As noted above, there is available information on lake ecosystems and the impact of gillnets on the ecosystem components. This information is adequate for the main consequences for the ecosystem to be inferred. Therefore, SG80 is met. SG100 is not met since there is not adequate information on the impacts on components and elements.		
e	Monitoring			
	Guide post		Adequate data continue to be collected to detect any increase in risk level.	Information is adequate to support the development of strategies to manage ecosystem impacts.
	Met?		Both – Y	Both – N
	Justification	Target and non-target catch data continue to be collected in the form of sales receipts, and the identification of relevant ETP species is monitored via SARA. This information is adequate to detect any increase in risk level so SG80 is met. SG100 is not met since the information is not adequate to support the development of ecosystem management strategies.		
References		Klein and Galbraith 2019, Zhang et al. 2008, <a href="https://www.dnr.state.mn.us/eco/sli/reports.html">https://www.dnr.state.mn.us/eco/sli/reports.html</a> , <a href="https://seafood.ocean.org/wp-content/uploads/2017/01/Walleye-Minnesota-Red-Lakes.pdf">https://seafood.ocean.org/wp-content/uploads/2017/01/Walleye-Minnesota-Red-Lakes.pdf</a> , <a href="https://www.dnr.state.mn.us/fisheries/slice/index.html">https://www.dnr.state.mn.us/fisheries/slice/index.html</a>		
OVERALL PERFORMANCE INDICATOR SCORE:				All – 80
CONDITION NUMBER (if relevant):				Recommendation 1

Evaluation Table for PI 3.1.1 – Legal and/or customary framework

PI 3.1.1		The management system exists within an appropriate legal and/or customary framework which ensures that it: <ul style="list-style-type: none"><li>• Is capable of delivering sustainability in the UoA(s); and</li><li>• Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and</li><li>• Incorporates an appropriate dispute resolution framework.</li></ul>		
Scoring Issue		SG 60	SG 80	SG 100
a	Compatibility of laws or standards with effective management			
	Guide post	There is an effective national legal system and a framework for cooperation with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2	There is an effective national legal system and organised and effective cooperation with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2.	There is an effective national legal system and binding procedures governing cooperation with other parties which delivers management outcomes consistent with MSC Principles 1 and 2.
	Met?	Y	Y	Y
	Justification	<u>Walleye and Northern Pike</u> Fisheries management in Manitoba's lakes is subject to a mixed federal and provincial jurisdiction as the Natural Resources Transfer Agreements NRTA gave administrative control to provincial governments. While the Government of Canada, under the authority of the <i>Fisheries Act</i> , retains ultimate legal authority and responsibility for fish and fish habitat conservation matters, daily management and administration of federal fisheries regulations are delegated to Manitoba officials. As such, Manitoban Fisheries policy is based on the Federal legal framework as supported by Provincial laws and regulations. The Canadian fisheries management system conforms to the main principles of the 1995 United Nations Code of Conduct for Responsible Fishing through: Canadian fishery legislation; limited entry licensing; and the Fisheries Management Plans FMPs that include fishery management and ecosystem objectives. FMPs must respond to the Canadian Code of Conduct for Responsible Fishing Operations that outlines general principles and guidelines for all commercial fishing operations that take place in Canadian waters and are based on the FAO Code of Conduct for Responsible Fisheries. The Sustainable Fisheries Framework SFF adopted by DFO introduces conservation and sustainable use policies that guide the approach to the principles of ecosystem-based fisheries management. SARA provides a framework for actions across Canada to promote the survival of wildlife species and the protection of the natural heritage. The fishery meets SG60. Together, these federal and provincial systems explicitly aim at achieving sustainable fisheries in accordance with MSC Principles 1 and 2. The fishery meets SG80. The defined approaches are binding on management agencies. The fishery meets SG100.		
b	Resolution of disputes			
	Guide post	The management system incorporates or is subject by law to a <b>mechanism</b> for the resolution of legal disputes arising within the system.	The management system incorporates or is subject by law to a <b>transparent mechanism</b> for the resolution of legal disputes which is <b>considered to be effective</b> in dealing with most issues and that is appropriate to the context of the UoA.	The management system incorporates or is subject by law to a <b>transparent mechanism</b> for the resolution of legal disputes that is appropriate to the context of the fishery and has been <b>tested and proven to be effective</b> .
	Met?	Y	Y	Y

PI 3.1.1	<p>The management system exists within an appropriate legal and/or customary framework which ensures that it:</p> <ul style="list-style-type: none"> <li>• Is capable of delivering sustainability in the UoA(s); and</li> <li>• Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and</li> <li>• Incorporates an appropriate dispute resolution framework.</li> </ul>			
	Justification	<p><u>Walleye and Northern Pike</u></p> <p>The management system at a Federal and Provincial is well defined by the legislation and FMPs. Disputes can be proactively resolved through stakeholder consultation. The Minister of Manitoba Department of Sustainable Development and Minister of Fisheries of the Department of Fisheries and Oceans DFO are the final authorities under Canadian legislation. At the national and provincial level all laws are open to appeal, initially to the relevant Ministry / Department and up to the Ministerial level and on to the Federal system. The fishery meets SG60.</p> <p>There are mechanisms for resolving legal disputes within the management system. Where parties are not satisfied with the decision of the Minister, they have the right to redress through the respective Court and Appeal system. There are examples of legal disputes in the Canadian systems. covering a range of issues. The auditors are not aware of any legal disputes specific to Waterhen Lake. Relevant is a case history linked to the confirmation of First Nation fishing rights. In aboriginal issues, the Crown has the duty to consult with First nations. Constitutional duties to First Nations have to be fulfilled (see Ross River Dena Council v Government of Yukon). As shown by the Marshall and Sparrow decisions, cases may go as far as the Federal Supreme Court for resolution. The mechanisms are considered to be transparent and effective in dealing with most issues. The fishery meets SG80.</p> <p>While the Ministers hold discretionary power, the management and comprehensive stakeholder consultation process is proactive in aiming to avoid legal disputes. It is understood that issues in the past in terms of Manitoban fisheries have largely related to the issue of licenses. Case law shows that these mechanisms have been effective. The history of limited number of court cases indicates that the dispute resolution procedure, including being proactive to avoid legal issues, has been tested and proven to be effective. The fishery meets SG100.</p>		
c		Respect for rights		
	Guide post	The management system has a mechanism to <b>generally respect</b> the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.	The management system has a mechanism to <b>observe</b> the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.	The management system has a mechanism to <b>formally commit</b> to the legal rights created explicitly or established by custom of people dependent on fishing for food and livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.
	Met?	Y	Y	Y
	Justification	<p><u>Walleye and Northern Pike</u></p> <p>Waterhen is a multi-use fishery consistent of Aboriginal domestic harvest, commercial gill netting and recreational angling. Treaty and Aboriginal rights relating to hunting, fishing and gathering are recognized and affirmed as part of the Constitution of Canada by Section 35 of the Constitution Act, 1982. In Manitoba, under the treaties there is no commercial rights to fish granted to First Nations; rights under the Treaties is a guaranteed right to fish for food (subsistence) and ceremonial purposes. Canadian courts have established that subsistence fisheries of indigenous people have priority over all other uses of the resource. Fishing occurs through constitutionally protected treaty fishing rights and the fishery does not come under direct government regulation (except if there were species and areas closed for conservation reasons). DFO is committed to providing Aboriginal</p>		

PI 3.1.1		<p>The management system exists within an appropriate legal and/or customary framework which ensures that it:</p> <ul style="list-style-type: none"><li>• Is capable of delivering sustainability in the UoA(s); and</li><li>• Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and</li><li>• Incorporates an appropriate dispute resolution framework.</li></ul>
		<p>people with reasonable opportunities to fish for food, social and ceremonial fishing purposes and to providing such fishing with priority over commercial and recreational fishing. The fishery meets SG60.</p> <p>The legal rights are implemented through allocation of fishing rights associated with policy initiatives such as the Aboriginal Fisheries Strategy AFS, the Marshall Response Initiative and the Integrated Aboriginal Policy Framework. The Natural Resources Transfer Agreements NRTA, which forms part of the Constitution Act, 1930, provides that Indian people <i>"have the right, which the Province hereby assures to them, of hunting, trapping and fishing game and fish for food at all seasons of the year on all unoccupied Crown lands and on any other lands to which (they) may have a right of access."</i> In common with the Manitoban approach that explicitly protects First Nation rights, the Waterhen Lake FMP recognizes existing constitutionally protected Aboriginal fishing rights to domestic / subsistence fishing. The First Nations have food and ceremonial fishing rights on Waterhen Lake. The fishery meets SG80.</p> <p>The Indigenous Relations (IR) Branch of Manitoba Department of Sustainable Development (internally called Aboriginal Relations Branch AR), was established to build relationships between the department and Indigenous people of Manitoba. A separate Indigenous Relationships Branch that is not part of the Department has government wide scope and is tasked with ensuring a provincially consistent approach to dealing with Indigenous issues and tracking/monitoring indigenous engagement. The IR Branch is staffed with members of the Indigenous community, it provides an opening into Indigenous communities and facilitates resource management discussions specific to issues handled by the department. Sustainable Development personnel interact regularly with this group as it is closest to their level of engagement and is best placed to provide ongoing, close, often day-to-day support. The IR Branch participates in strategic planning processes, such as development of policies, legislation, and programs to ensure that Indigenous rights are recognized and respected. It is also engaged in development of integrated resource policies, legislation relating to land use, co-management, resource allocation, environmental impacts, and sustainable development initiatives. It continues to play an instrumental role in the Crown's Indigenous Consultation processes. One of the foremost objectives of consultation is to reconcile the relationship between the Crown and Indigenous people through engagement. Local fishers are protected from competition from non-local fishers as fishing entitles being a resident, which generally is someone who has a permanent residence in the Skownan, Mallard, Waterhen or Rock Ridge communities located on or near Waterhen Lake. The fishery meets SG100.</p>
References		<p><a href="https://www.gov.mb.ca/sd/pubs/fish_wildlife/fish/leg.pdf">https://www.gov.mb.ca/sd/pubs/fish_wildlife/fish/leg.pdf</a>, <a href="http://manitobawildlands.org/lands_aborig_court.htm">http://manitobawildlands.org/lands_aborig_court.htm</a>, Klein and Galbraith 2017, Klein 2018a, Nicholson 2007, Manitoba Sustainable Development 2018, <a href="http://www.freshwaterfish.com/content/pages/introduction-info-source">http://www.freshwaterfish.com/content/pages/introduction-info-source</a> , <a href="https://www.gov.mb.ca/waterstewardship/fisheries/regulations/pdf/mbfish_2009.pdf">https://www.gov.mb.ca/waterstewardship/fisheries/regulations/pdf/mbfish_2009.pdf</a>, Species at Risk Act (SARA) 2003; Sustainable Fisheries Framework 2009, DFO 1998, <a href="https://www.ictinc.ca/blog/section-35-of-the-constitution-act-1982">https://www.ictinc.ca/blog/section-35-of-the-constitution-act-1982</a>, <a href="https://www.dfo-mpo.gc.ca/fm-gp/aboriginal-autochtones/afs-srapa-eng.htm">https://www.dfo-mpo.gc.ca/fm-gp/aboriginal-autochtones/afs-srapa-eng.htm</a>, Lawset 2007, Dr. Brian Parker Manitoba Government, Personal Communication</p>
OVERALL PERFORMANCE INDICATOR SCORE:		Walleye and Northern Pike – 100
CONDITION NUMBER (if relevant):		

Evaluation Table for PI 3.1.2 – Consultation, roles and responsibilities

PI 3.1.2		The management system has effective consultation processes that are open to interested and affected parties.		
		The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties		
Scoring Issue		SG 60	SG 80	SG 100
a	Roles and responsibilities			
	Guide post	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are <b>generally understood</b> .	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are <b>explicitly defined and well understood for key areas</b> of responsibility and interaction.	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are <b>explicitly defined and well understood for all areas</b> of responsibility and interaction.
	Met?	Y	Y	N
	Justification	<u>Walleye and Northern Pike</u> A wide range of organizations and individuals are engaged in the fishery management process in Canada, ranging from the DFO, to the scientific community to the fishery stakeholders. At the Provincial level the main role lies with Manitoba Sustainable Development; marketing (including an element of production recording), while now not mandatory is responsibility of the FPMC. At the local level there are fisher representative of committees and associations. The fishery meets SG60.  The functions of these organizations are explicitly defined in the corresponding websites and documents and are well understood. This includes an established process for reporting and consultation. While the Government of Canada retains legal authority and responsibility for fish and fish habitat conservation matters, some of the daily management and administration of federal fisheries regulations are delegated to Manitoba officials, currently the Minister of Manitoba Department of Sustainable Development and the Director of the Wildlife and Fisheries Branch. Under the <i>Manitoba Fishery Regulations</i> , these officials have been given the authority to vary close times, species, quotas and gear types established under those regulations. The fishery meets SG80.  While there is explicit definition of the functions, roles and responsibilities of organizations and individuals in the management process, this does not cover all areas as there is not full co-management of the resources. Hence despite explicit requests by Fisheries Branch officers, Waterhen Lake fishers do not complete log books; the need for stakeholder input into compliance is informal. (It should be noted that the issue of fishers not completing the logbook addressed in PI 3.2.3.) The fishery does not meet SG100.		
b	Consultation processes			
	Guide post	The management system includes consultation processes that <b>obtain relevant information</b> from the main affected parties, including local knowledge, to inform the management system.	The management system includes consultation processes that <b>regularly seek and accept</b> relevant information, including local knowledge. The management system demonstrates consideration of the	The management system includes consultation processes that <b>regularly seek and accept</b> relevant information, including local knowledge. The management system demonstrates consideration of the

PI 3.1.2		The management system has effective consultation processes that are open to interested and affected parties.		
		The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties		
			information obtained.	information and <b>explains how it is used or not used.</b>
	Met?	Y	N	N
	Justification	<u>Walleye and Northern Pike</u> In Manitoba, <i>ad hoc</i> meetings with stakeholders provide the forum for the main affected parties to inform the management system. The fishery meets SG60.  Local fishery management planning involves consultation with user groups including commercial and recreational fishers and other commercial users of the fishery resources. As indicated in the FMPs, local knowledge is considered in designing and implementing management measures, such as closed areas proposed by fishers to protect critical spawning and rearing habitat in Waterhen Lake. Nevertheless, there is a lack of transparency and documentation to support that the consultation process is open to stakeholders and that any information that is viewed. One issue is that the by-laws, where some of the information is detailed, are not written down but constitute an oral tradition operating in the community. Also, the auditors did not find any notes about scheduling meetings, inviting stakeholders and of formal attendance to the meetings. Further, there is no paper trail on how information is used or not used other than what is reported within the FMP. The fishery does not meet SG80.		
c	Participation			
	Guide post		The consultation process <b>provides opportunity</b> for all interested and affected parties to be involved.	The consultation process provides <b>opportunity and encouragement</b> for all interested and affected parties to be involved, and <b>facilitates</b> their effective engagement.
	Met?		Y	N
	Justification	<u>Walleye and Northern Pike</u> Any interested stakeholder has the opportunity to attend meetings and/or have direct meetings with the fishery managers. Regular consultation by the Manitoba Sustainable Development, Fisheries Branch officers is considered to provide opportunity and encouragement for all interested and affected parties to be involved in the process. Sustainable Development conducts annual pre-season meetings, works fishery indicators, to work out how the fishing will be conducted. The fishery meets SG80.  Annual meetings are held in fishing communities at the Bands office, thus facilitating the effective engagement of stakeholders, but there is no evidence of encouragement for parties to be involved and on how the meetings are announced. The fishery does not meet SG100.		
References		DFO 2012, Klein and Galbraith 2017, Klein and Galbraith 2019,		
OVERALL PERFORMANCE INDICATOR SCORE:				Walleye and Northern Pike – 75
CONDITION NUMBER (if relevant):				3

### Evaluation Table for PI 3.1.3 – Long term objectives

<b>PI 3.1.3</b>		<b>The management policy has clear long-term objectives to guide decision-making that are consistent with MSC fisheries standard, and incorporates the precautionary approach.</b>		
<b>Scoring Issue</b>		SG 60	SG 80	SG 100
<b>a</b>	<b>Objectives</b>			
	<b>Guide post</b>	Long-term objectives to guide decision-making, consistent with the MSC fisheries standard and the precautionary approach, are <b>implicit</b> within management policy.	Clear long-term objectives that guide decision-making, consistent with MSC fisheries standard and the precautionary approach are <b>explicit</b> within management policy.	Clear long-term objectives that guide decision-making, consistent with MSC fisheries standard and the precautionary approach, are <b>explicit</b> within <b>and required by</b> management policy.
	<b>Met?</b>	Y	Y	N
	<b>Justification</b>	<p><u>Walleye and Northern Pike</u></p> <p>A substantial body of laws and related policy stipulate long-term objectives that are implicit in terms of the approaches consistent to the precautionary approach in relation to criteria linked to both Principle 1 and Principle 2. The Sustainable Fisheries Framework SFF “<i>provides the basis for ensuring Canadian fisheries are conducted in a manner which support conservation and sustainable use</i>” and “<i>the foundation of an ecosystem based and precautionary approach to fisheries management in Canada with new tools and policies being developed and implemented progressively over time.</i>” DFO’s freshwater activities adhere to the department’s sustainable development principles as stated in <i>Sustainable Development – A Framework for Action</i>: shared stewardship, integrated management, an ecosystems approach, continuous improvement, the precautionary approach, and pollution prevention. The fishery meets SG60.</p> <p>Freshwater fisheries management activities include some or all of: fisheries policy, planning and legislation, integrated FMPs, fiduciary responsibilities, allocation, licensing; harvest monitoring, compliance monitoring and enforcement, fishing industry analysis, and fisheries management administration. Thus, the long-term objectives that are consistent with MSC Principles 1 and 2 are explicit within management policy. The fishery meets SG80. While long-term objectives are explicit, the auditors did not find evidence that they are required by management policy. The fishery does not meet SG100.</p>		
<b>References</b>		Klein and Galbraith 2017, Klein and Galbraith 2019, DFO 2012		
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>				<b>Walleye and Northern Pike – 80</b>
<b>CONDITION NUMBER (if relevant):</b>				

### Evaluation Table for PI 3.2.1 Fishery-specific objectives

PI 3.2.1		The fishery-specific management system has clear, specific objectives designed to achieve the outcomes expressed by MSC's Principles 1 and 2.		
Scoring Issue		SG 60	SG 80	SG 100
a	Objectives			
	Guide post	<b>Objectives</b> , which are broadly consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are <b>implicit</b> within the fishery-specific management system.	<b>Short and long-term objectives</b> , which are consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are <b>explicit</b> within the fishery-specific management system.	<b>Well defined and measurable short and long-term objectives</b> , which are demonstrably consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are explicit within the fishery-specific management system.
	Met?	Y	Y	N
	Justification	<p><u>Walleye and Northern Pike</u></p> <p>The objectives for management of the fishery are explicit in the FMP. The first objective (fishery must be conducted in a manner that does not lead to over-fishing or depletion of the harvested populations and, for those that are depleted it must be conducted in a manner that demonstrates activities leading to stock recovery) covers P1 objectives. The second objective (the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) covers P2 aspects. The fishery meets SG60.</p> <p>The FMP provides the basis of management measures and objectives are explicit. Given the small scale and intensity of the Waterhen Lake fishery it may be concluded that the defined objectives are relevant to the short and the long term. The fishery meets SG80.</p> <p>While there are harvest control rules and the annual index netting survey can be considered a source of stock indicators, the FMP has limited measurability with no definition of targets, catch sampling in place and sources of verification. The fishery does not meet SG100.</p>		
References		Klein and Galbraith 2017, Klein and Galbraith 2019		
OVERALL PERFORMANCE INDICATOR SCORE:				Walleye and Northern Pike – 80
CONDITION NUMBER (if relevant):				



## Evaluation Table for PI 3.2.2 – Decision-making processes

PI 3.2.2		The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery.		
Scoring Issue		SG 60	SG 80	SG 100
a	Decision-making processes			
	Guide post	There are some decision-making processes in place that result in measures and strategies to achieve the fishery-specific objectives.	There are <b>established</b> decision-making processes that result in measures and strategies to achieve the fishery-specific objectives.	
	Met?	Y	Y	
	Justification	<u>Walleye and Northern Pike</u> There is a decision-making process for the Waterhen Lake fishery defined in the FMP. The FMP indicates that the decision-making process includes Integrated Management –with consultation with government agencies, development proponents, fishers and the public. The FMP details how the process has resulted in measures and strategies to achieve the fishery objectives. The fishery meets SG60.  The decision-making process is clearly established and formalized in the FMP that has been up-dated annually. The starting point is the resource assessment work that identifies the issues that may need to be taken into consideration in the upcoming season. Sustainable Development conducts annual pre-season meetings, works the indicators, and conducts formal fishery meeting at the Bands office to work out how the fishing will be conducted. The results of the previous season and the outcome of the research are reported to stakeholders in the meeting to define the harvest strategy and related harvest control rules for the season. There is co-ordination among the fishers with respect to fishery starting dates. Recognition of the need to provide alternative fishing opportunities led to the incorporation of Chitek and Inland lakes in the harvest strategy for Waterhen Lake. The fishery meets SG80.		
b	Responsiveness of decision-making processes			
	Guide post	Decision-making processes respond to <b>serious issues</b> identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take some account of the wider implications of decisions.	Decision-making processes respond to <b>serious and other important issues</b> identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions.	Decision-making processes respond to <b>all issues</b> identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions.
	Met?	Y	Y	N
	Justification	<u>Walleye and Northern Pike</u> Decisions taken over the years and related changes to management approach in consultation with fishers reflect that the processes respond to serious issues and these are adaptive. The decision-making process is mostly walleye centric. This has led to a limit on mesh-size dependent fishery seasons and lake closure areas, net yardage, changes in the mesh size and regulations, quotas, a maximum 10% of non-carp catches in the year-round open water and unlimited quota carp fishery (if it were to be active), and a 10% tolerance limit on the number of walleye harvested when the 76 mm Yellow Perch mesh net was authorized under a <i>Commercial</i>		

PI 3.2.2		The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery.		
		<p><i>Fishing Season Variance.</i> The fishery meets SG60.</p> <p>The fishery specific objectives defined in the FMP are wide bearing in nature and illustrate that the decision-making process take into account serious and other important issues whenever these may arise. The fishery meets SG80.</p> <p>Based on the description of the FMPs, the Waterhen fishers meet annually with Sustainable Development before the fishing season begins. Nevertheless, there are no minutes from these meetings. Thus, it cannot be said that that system is transparent and that the decision making responds to all issues and the wider implication of decisions for socioeconomic and long-term conservation consequences are taken into account.. The fishery does not meet SG100.</p>		
c	Use of precautionary approach			
	Guide post		Decision-making processes use the precautionary approach and are based on best available information.	
	Met?		Y	
	Justification	<u>Walleye and Northern Pike</u> Precaution is required by the FMP which states that management decisions and actions, whose impacts are not entirely certain but which, on reasonable and well informed grounds appear to pose serious threats to either the economy, the environment, human health or social well-being, will be anticipated, mitigated and prevented as avoidance of serious threats to the fishery is less costly than rehabilitating a collapsed fish stock. There are examples in the FMP where Manitoba Sustainable Development has employed a precautionary approach, although these do not apply to Waterhen Lake. The annual research plan is designed to provide data (annual index netting) and information relevant to four performance indicators used in the decision-making process for the harvest control rules of the up-coming season. That provides the best available information to be used. The fishery meets SG80.		
d	Accountability and transparency of management system and decision-making process			
	Guide post	Some information on the fishery's performance and management action is generally available on request to stakeholders.	Information on the fishery's performance and management action is available on request, and explanations are provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.	Formal reporting to all interested stakeholders provides comprehensive information on the fishery's performance and management actions and describes how the management system responded to findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.
	Met?	Y	Y	Y
	Justification	<u>Walleye and Northern Pike</u> Information on fishery performance and management action is reported in the FMP to be made available at the pre-season regular meetings held in the Waterhen area, also information is provided in the FMP documents and annual summary reports. The fishery meets SG60.		

PI 3.2.2		The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery.		
		<p>Based on the FMP, at the pre-season meetings, the available information is presented. While there are no minutes to document the process, the FMP indicates that the related decision-making process is discussed. The fishery meets SG80.</p> <p>Information on fishery performance and management action is available in the FMP documents and while these documents are not fully updated and are not posted in timely manner, they provide comprehensive information on the performance of the fishery. Also, summary reports posted in the Sustainable Development website, which are sporadic, describe how the management system responded to emerging research. The fishery meets SG100.</p>		
e	Approach to disputes			
	Guide post	Although the management authority or fishery may be subject to continuing court challenges, it is not indicating a disrespect or defiance of the law by repeatedly violating the same law or regulation necessary for the sustainability for the fishery.	The management system or fishery is attempting to comply in a timely fashion with judicial decisions arising from any legal challenges.	The management system or fishery acts proactively to avoid legal disputes or rapidly implements judicial decisions arising from legal challenges.
	Met?	Y	Y	Y
	Justification	<u>Walleye and Northern Pike</u> The auditors are not aware of any court challenges in the Waterhen Lake Fishery. This is taken as an indication that there is respect for the law necessary for the sustainability for the fishery. The fishery meets SG60. While the auditors are not aware of any court challenges in the Waterhen Lake Fishery, based on how the Manitoba management system and the Waterhen Lake operate they would certainly attempt to comply. The fishery meets SG80e. Sustainable Development managers adopt a proactive approach in avoiding legal disputes by working closely with the stakeholders. The fishery meets SG100.		
References		Galbraith et al. 2017, Klein and Galbraith 2019, Manitoba 2018 Fish Dealer/Fish Processor License Suspension, <a href="https://www.gov.mb.ca/sd/fish_and_wildlife/fish/commercial_fishing/index.html">https://www.gov.mb.ca/sd/fish_and_wildlife/fish/commercial_fishing/index.html</a>		
OVERALL PERFORMANCE INDICATOR SCORE:				Walleye and Northern Pike – 90
CONDITION NUMBER (if relevant):				

### Evaluation Table for PI 3.2.3 – Compliance and enforcement

PI 3.2.3		Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with.		
Scoring Issue		SG 60	SG 80	SG 100
a	MCS implementation			
	Guide post	Monitoring, control and surveillance <b>mechanisms</b> exist, and are implemented in the fishery and there is a reasonable expectation that they are effective.	A monitoring, control and surveillance <b>system</b> has been implemented in the fishery and has demonstrated an ability to enforce relevant management measures, strategies and/or rules.	A <b>comprehensive</b> monitoring, control and surveillance system has been implemented in the fishery and has demonstrated a consistent ability to enforce relevant management measures, strategies and/or rules.
	Met?	Y	N	N
	Justification	<p><u>Walleye and Northern Pike</u>            Enforcement on Waterhen Lake management measures with respect to fishery activities, inclusive of the commercial, recreational, and subsistence fisheries, is the responsibility of Manitoba Sustainable Development. Monitoring, control and surveillance mechanisms are in place in the fishery. These fit with the small scale of the fishery. The Manitoba Commercial Fishing Guide contains general regulations (season, gear, restricted areas, restricted species, decayed fish, removal of gear, licenses, sales, etc.). Special conditions for Lake Waterhen are in the fishing license. Enforcement mechanisms implemented by Officers in the Waterhen Lake fishery include patrols over the course of the year, on-site (Basin Hole) inspections, review of sale slips from the Freshwater Fishery Marketing Corporation FFMC or licensed fish dealers, and close contact with the fishing community. Over the course of the winter season it is estimated that there are on average four to five commercial fishery compliance patrols conducted on the lake. However, when notified of potential violations, Officers will investigate and have an increased presence on the lake. Officers also review commercial fish production records on a weekly basis to determine potential issues / violations. The FMP indicates that the number of infringements detected during the patrols is low and relate to “minor” transgressions (non-presence license holder in fishing operations; improper marking of the nets). These can be regarded as being within acceptable limits with expectation that the mechanism is effective. The fishery meets SG60.</p> <p>While on-site inspections are implemented, they are a limited effort to monitor the fishery and enforcement reports are not available; also catch monitoring and control through sale slips is now questionable as sale through the FFMC is no longer mandatory. Officers as part of their compliance monitoring patrols during the fishing season complete a Commercial Fishery Patrol Report including records of on-site inspections and report to the Sustainable Fisheries Unit for analysis and compilation. Nevertheless, information from patrol reports, which exists in a binder at the Unit as loose-leaf sheets of individual events, is not summarized and reports are not available to the public other than through freedom of information requests. While all buyers and any fisher who sells directly to consumers are compelled by regulation to submit information on to what was caught and by whom, an important part of the reliability on system for the harvest recording and level of traceability was the monopoly of the FFMC. Now fishers, independent from the FFMC, are choosing to sell their catch through a provincially issued fish dealer's license. Some fishers who opted to sell to these dealers were not paid. It cannot be said that the system is demonstrating an ability to enforce relevant management measures,</p>		

PI 3.2.3		Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with.		
		strategies and rules. The fishery does not meet SG80.		
b	Sanctions			
	Guide post	Sanctions to deal with non-compliance exist and there is some evidence that they are applied.	Sanctions to deal with non-compliance exist, <b>are consistently applied</b> and thought to provide effective deterrence.	Sanctions to deal with non-compliance exist, are consistently applied and <b>demonstrably</b> provide effective deterrence.
	Met?	Y	Y	Y
	Justification	<u>Walleye and Northern Pike</u> While based on the FMP there are limited examples of non-compliance. Thus, the majority of fishers and other agents working within the fishery comply with the laws and regulations. The fishery meets SG60.  Manitoba Sustainable Development tracks production in order to ensure quotas are not exceeded. In the event of quota being exceeded, any overage is deducted from the following year's quota. If the overage is large (several hundred kilograms) where individual quotas exist, there is also a monetary fine. The fishery meets SG80. Discussions with Sustainable Development and fishers provide confidence that the fishers comply with the management system. The fishery meets SG100.		
c	Compliance			
	Guide post	Fishers are <b>generally thought</b> to comply with the management system for the fishery under assessment, including, when required, providing information of importance to the effective management of the fishery.	<b>Some evidence exists</b> to demonstrate fishers comply with the management system under assessment, including, when required, providing information of importance to the effective management of the fishery.	There is a <b>high degree of confidence</b> that fishers comply with the management system under assessment, including, providing information of importance to the effective management of the fishery.
	Met?	Y	N	N
	Justification	<u>Walleye and Northern Pike</u> There are limited examples of non-compliance which demonstrates that the majority of fishers and other agents working within the fishery comply with the laws and regulations. Through engagement with the Manitoba Sustainable Development Department team and recommendation for management measures (spawning area closure), fishers collaborate with the Department to provide information of importance to the management of the fishery. Fishers participate in the Association and attend the meetings with Department officers. The fishery meets SG60.  Discussions with Sustainable Development and the fishers provide confidence that fishers comply with the management system. Nevertheless, while required by Department officers, completing log books is not being successfully implemented. While a proportion of Waterhen Lake fishers agreed to complete and return commercial log books to departmental officials for analysis, they later argued that it is impractical to complete them under the harsh conditions the fishery takes place. The logbook data are important to monitoring overall catch, particularly with regard to bycatch, and the assessment process as they are to record retained catch not sold through licensed buyers or catch that is discarded bycatch or culled catch. While some information is available through basin hole inspection, logbooks are		

PI 3.2.3		Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with.		
		necessary to quantify bycatch and refusal to complete the logbook requirement does not demonstrate that fishers comply with the management system. The fishery does not meet SG80.		
d	Systematic non-compliance			
	Guide post		There is no evidence of systematic non-compliance.	
	Met?		Y	
	Justification	Walleye and Northern Pike There are occasional transgressions, for example the license holder is not being present on a fishing trip or a net has not been retrieved. Nevertheless, the auditors have not been presented with any evidence of systematic noncompliance. While absence of a record of sanctions and penalties for violations does not necessarily indicate that compliance and enforcement are effective, conversations with Manitoba Sustainable Development provide confidence that there is no systematic non-compliance. The fishery meets SG80.		
References		Klein and Galbraith 2019, Galbraith et al. 2017, Manitoba 2019/2020 Commercial Fishing Guide, Klein personal communication, Galbraith personal communication		
OVERALL PERFORMANCE INDICATOR SCORE:				Walleye and Northern Pike – 70
CONDITION NUMBER (if relevant):				4

Evaluation Table for PI 3.2.4 – Monitoring and management performance evaluation

PI 3.2.4		There is a system of monitoring and evaluating the performance of the fishery-specific management system against its objectives.		
		There is effective and timely review of the fishery-specific management system.		
Scoring Issue		SG 60	SG 80	SG 100
a	Evaluation coverage			
	Guide post	There are mechanisms in place to evaluate <b>some</b> parts of the fishery-specific management system.	There are mechanisms in place to evaluate <b>key</b> parts of the fishery-specific management system	There are mechanisms in place to evaluate <b>all</b> parts of the fishery-specific management system.
	Met?	Y	Y	Y
	Justification	<u>Walleye and Northern Pike</u> There are mechanisms in place to evaluate parts of the fishery specific management system that have resulted in changes introduced due to the results of research undertaken and at the request of the fishers. The fishery meets SG60.		
		Even prior to the development of the formal FMP published in 2013 there were mechanisms to evaluate key parts the management system and these led to a number of adjustments in the regulations. The FMP records changes back to 1972. These related to limiting access, season dates for the winter fishery as well as for other commercial fisheries, mesh sizes and quotas. In addition, there is permanent revision of the catches to ensure compliance with quotas. This is supported by compliance activities to reduce the risk of fishers failing to respect regulations. The fishery meets SG80.		
		MSC Guidance GSA4.10 that concerns assessing informal and traditional approaches i.e. "Assessments against this PI may consider whether there are opportunities and/or forums for decision-makers to receive feedback on the management system. It should also consider other practices such as exchange of information between the community and the management institution. Regularity of such opportunities should be considered in scoring fisheries against this PI". Informal approaches are facilitated by the small size of the fishery and the number of fishers and the continuity of their communications with the Sustainable Development Department officer. The FMP in place is a mechanism that will evaluate all parts of the management system. The fishery meets SG100.		
b	Internal and/or external review			
	Guide post	The fishery-specific management system is subject to <b>occasional internal</b> review.	The fishery-specific management system is subject to <b>regular internal</b> and <b>occasional external</b> review.	The fishery-specific management system is subject to <b>regular internal</b> and <b>external</b> review.
	Met?	Y	N	N
	Justification	<u>Walleye and Northern Pike</u> The fishery is small scale with a limited catch and a small number of fishers. The fishery-specific management system has been subjected to internal reviews over the years with input from fishers which have resulted in improvements. The fishery meets SG60.		
		On that basis, it may be considered that the degree of attention given to the fishery by Sustainable Development and previous Departments responsible for management of the Waterhen Lake fishery outweighs its commercial value, and there has been a regular rather than occasional internal review. Nevertheless, there have not been external reviews. While the 2012- 2019 FMPs have defined the		

PI 3.2.4		<p>There is a system of monitoring and evaluating the performance of the fishery-specific management system against its objectives.</p> <p>There is effective and timely review of the fishery-specific management system.</p>
		<p>process for external review for a number of years, the auditors have not seen a completed review and results of actions listed such as assessment of data quality. It is noted that the FMPs define the actions but the period in which this will be achieved. The audit team in the 2014 MSC report recommended that this external audit be completed in the third year of the MSC certification so that the results and the Department response would be available to the team engaged in any re-certification. This recommendation was not fulfilled. Further, despite statements in Manitoba Sustainable Development and other Departments (as well as arguments in the previous certification assessment) that assessments related with MSC certification constitute external reviews, the auditors do not support that argument. The fishery does not meet SG80.</p>
References		Casselman et al. 2014; Klein and Galbraith 2017, 2019
OVERALL PERFORMANCE INDICATOR SCORE:		Walleye and Northern Pike – 70
CONDITION NUMBER (if relevant):		5



## Appendix 1.2 Conditions

Table 14. Condition 1

<b>Performance Indicator</b>	<b>PI 1.2.3: Stock abundance and UoA removals are regularly monitored at a level of accuracy and coverage consistent with the harvest control rule, and one or more indicators are available and monitored with sufficient frequency to support the harvest control rule.</b>
<b>Score</b>	70
<b>Rationale</b>	<u>Slc walleye and northern pike:</u> There are no estimates of target stock removals from the recreational or subsistence fisheries. Thus, scoring requirements are not met at the SG80 level.
<b>Condition</b>	By the Spring 2024 surveillance audit, there will be good information on all other fishery removals from the stocks.
<b>Milestones</b>	<p>By the Spring 2021 surveillance, the client will have a plan in place to gather good information on removals of walleye and northern pike in the recreational and subsistence fisheries at a level of accuracy and coverage consistent with the harvest control rule. This includes good information of removals by recreational and subsistence fisheries operating in the rivers communicating with the lake.</p> <p>Resulting score: No change in score anticipated at this stage.</p> <p>By the Spring 2022 surveillance, the client will demonstrate that the plan is being implemented for gathering information on removals of walleye and northern pike in the recreational and subsistence fisheries.</p> <p>Resulting score: No change in score anticipated at this stage.</p> <p>By the Spring 2023 surveillance, the client will demonstrate that initial data are available to review on removals of walleye and northern pike in the recreational and subsistence fisheries.</p> <p>Resulting score: No change in score anticipated at this stage.</p> <p>By the Spring 2024 surveillance, the client will provide evidence that there is good information on all other fishery removals from the stocks.</p> <p>Resulting score: At least 80.</p>
<b>Client action plan</b>	<p>Spring 2021: Client will research and provide estimates of (1) recreational harvest on Waterhen Lake and (2) indigenous harvests on similar lakes.</p> <p>Spring 2022: Client will provide annual updates to the CAB, and new information will be appended to the annual report.</p> <p>Spring 2023: Client will provide annual updates to the CAB, and new information will be appended to the annual report.</p> <p>Spring 2024: Client will provide annual updates to the CAB, and new information will be appended to the annual report.</p>
<b>Consultation on condition</b>	n/a

Table 15. Condition 2

<b>Performance Indicator</b>	<b>PI 1.2.4: There is an adequate assessment of the stock status.</b>
<b>Score</b>	75
<b>Rationale</b>	<u>Sle walleye and northern pike:</u> Evidence of peer review (internal or external) has not been found by the assessment team. Scoring requirements are not met at the SG80 or SG100

	levels.
<b>Condition</b>	By the Spring 2023 surveillance audit, the assessments of stock status will be subject to peer review.
<b>Milestones</b>	<p>By the Spring 2021 surveillance, the client will have a plan in place to conduct peer reviews of the walleye and northern pike stock assessments.</p> <p>Resulting score: No change in score anticipated at this stage.</p> <p>By the Spring 2022 surveillance, the client will demonstrate that the plan is being implemented for the peer reviews of the walleye and northern pike stock assessments.</p> <p>Resulting score: No change in score anticipated at this stage.</p> <p>By the Spring 2023 surveillance, the client will provide evidence of peer reviews of the walleye and northern pike stock assessments.</p> <p>Resulting score: At least 80.</p>
<b>Client action plan</b>	<p>Spring 2021: Client will contact potential peer reviewers and distribute completed annual stock assessment to two internal and two external reviewers. Client will summarize reviews for inclusion in annual fishery update.</p> <p>Spring 2022: Client will contact potential peer reviewers and distribute completed annual stock assessment to two internal and two external reviewers. Client will summarize reviews for inclusion in annual fishery update.</p> <p>Spring 2023: Client will contact potential peer reviewers and distribute completed annual stock assessment to two internal and two external reviewers. Client will summarize reviews for inclusion in annual fishery update.</p>
<b>Consultation on condition</b>	n/a

**Table 16. Condition 3**

<b>Performance Indicator</b>	<p><b>PI 3.1.2: The management system has effective consultation processes that are open to interested and affected parties.</b></p> <p><b>The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties.</b></p>
<b>Score</b>	75
<b>Rationale</b>	<p><u>Slb walleye and northern pike:</u> In Manitoba, <i>ad hoc</i> meetings with stakeholders provide the forum for the main affected parties to inform the management system. The fishery meets SG60.</p> <p>Local fishery management planning involves consultation with user groups including commercial and recreational fishers and other commercial users of the fishery resources. As indicated in the FMPs, local knowledge is considered in designing and implementing management measures such as closed areas proposed by fishers to protect critical spawning and rearing habitat in Waterhen Lake. Nevertheless, there is a lack of transparency and documentation to support that the consultation process is open to stakeholders and that any information that is viewed. One issue is that the by-laws, where some of the information is detailed, are not written down but constitute an oral tradition operating in the community. Also, the auditors did not find any notes about scheduling meetings, inviting stakeholders and of formal attendance to the meetings. Further, there is no paper trail on how information is used or not used other than what is reported within the FMP. The fishery does not meet SG80.</p>
<b>Condition</b>	By the Spring 2024 surveillance audit, there will be demonstrated a management system that includes consultation processes that regularly seek

	and accept relevant information, including local knowledge, and the management system demonstrates consideration of the information obtained.
<b>Milestones</b>	<p>By the Spring 2021 surveillance, the client will have a plan in place for consultation processes that regularly seek and accept relevant information, including local knowledge, and that demonstrate consideration of the information obtained.</p> <p>Resulting score: No change in score anticipated at this stage.</p> <p>By the Spring 2022 surveillance, the client will demonstrate that a plan is drafted for consultation processes that regularly seek and accept relevant information, including local knowledge, and that demonstrate consideration of the information obtained.</p> <p>Resulting score: No change in score anticipated at this stage.</p> <p>By the Spring 2023 surveillance, the client will demonstrate that a plan is being implemented for consultation processes that regularly seek and accept relevant information, including local knowledge, and that demonstrate consideration of the information obtained.</p> <p>Resulting score: No change in score anticipated at this stage.</p> <p>By the Spring 2024 surveillance, the client will provide evidence that the management system includes consultation processes that regularly seek and accept relevant information, including local knowledge, and the management system demonstrates consideration of the information obtained.</p> <p>Resulting score: At least 80.</p>
<b>Client action plan</b>	<p>By Spring 2021: Client will keep a written record of dates and events in the Waterhen fishery concerning overtures for consultation by all sectors, information received, and how any information was considered. The records will form an evergreen file available for inspection by CABs at annual audits. Client will provide annual updates to the CAB, and new information will be appended to the annual report.</p> <p>Spring 2022: Client will provide annual updates to the CAB, and new information will be appended to the annual report.</p> <p>Spring 2023: Client will provide annual updates to the CAB, and new information will be appended to the annual report.</p> <p>Spring 2024: Client will provide annual updates to the CAB, and new information will be appended to the annual report.</p>
<b>Consultation on condition</b>	n/a

**Table 17. Condition 4**

<b>Performance Indicator</b>	<b>PI 3.2.3: Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with.</b>
<b>Score</b>	70
<b>Rationale</b>	<p><u>Slä walleye and northern pike:</u></p> <p>Enforcement on Waterhen Lake management measures with respect to fishery activities, inclusive of the commercial, recreational, and subsistence fisheries, is the responsibility of Manitoba Sustainable Development. Monitoring, control and surveillance mechanisms are in place in the fishery. These fit with the small scale of the fishery. The Manitoba Commercial Fishing Guide contains general regulations (season, gear, restricted areas, restricted species, decayed fish, removal of gear, licenses, sales, etc.). Special conditions for Lake Waterhen are in the fishing license. Enforcement mechanisms implemented by Officers in the</p>

	<p>Waterhen Lake fishery include patrols over the course of the year, on-site (Basin Hole) inspections, review of sale slips from the Freshwater Fishery Marketing Corporation FFMC or licensed fish dealers, and close contact with the fishing community. Over the course of the winter season it is estimated that there are on average four to five commercial fishery compliance patrols conducted on the lake. However, when notified of potential violations, Officers will investigate and have an increased presence on the lake. Officers also review commercial fish production records on a weekly basis to determine potential issues / violations. The FMP indicates that the number of infringements detected during the patrols is low and relate to “minor” transgressions (non-presence license holder in fishing operations; improper marking of the nets). These can be regarded as being within acceptable limits with expectation that the mechanism is effective. The fishery meets SG60.</p> <p>While on-site inspections are implemented, they are a limited effort to monitor the fishery and enforcement reports are not available; also catch monitoring and control through sale slips is now questionable as sales through the FFMC is no longer mandatory. Officers as part of their compliance monitoring patrols during the fishing season complete a Commercial Fishery Patrol Report including records of on-site inspections and report to the Sustainable Fisheries Unit for analysis and compilation. Nevertheless, information from patrol reports, which exists in a binder at the Unit as loose-leaf sheets of individual events, is not summarized and reports are not available to the public other than through freedom of information requests. While all buyers and any fisher who sells directly to consumers are compelled by regulation to submit information on to what was caught and by whom, an important part of the reliability on system for the harvest recording and level of traceability was the monopoly of the FFMC. Now fishers, independent from the FFMC, are choosing to sell their catch through a provincially issued fish dealer’s license. It cannot be said that the system is demonstrating an ability to enforce relevant management measures, strategies and rules. The fishery does not meet SG80.</p> <p><u>Slc walleye and northern pike:</u> There are limited examples of non-compliance which demonstrates that the majority of fishers and other agents working within the fishery comply with the laws and regulations. Through engagement with the Manitoba Sustainable Development Department team and recommendation for management measures (spawning area closure), fishers collaborate with the Department to provide information of importance to the management of the fishery. Fishers participate in the Association and attend the meetings with Department officers. The fishery meets SG60.</p> <p>Discussions with Sustainable Development and the fishers provide confidence that fishers comply with the management system. Nevertheless, while required by Department officers, completing log books is not being successfully implemented. While a proportion of Waterhen Lake fishers agreed to complete and return commercial log books to departmental officials for analysis, they later argued that it is impractical to complete them under the harsh conditions the fishery takes place. The logbook data are important to monitoring overall catch, particularly with regard to by-catch, and the assessment process as they are to record retained catch not sold through licensed buyers or catch that is discarded by-catch or culled catch While some information is available through basin hole inspection, logbooks are necessary to quantify bycatch, and refusal to complete the logbook requirement does not demonstrate that fishers comply with the management system. The fishery does not meet SG80.</p>
<b>Condition</b>	<p>By the Spring 2024 surveillance audit, a monitoring, control, and surveillance system will be implemented in the fishery and will have demonstrated an ability to enforce relevant management measures, strategies and/or rules; and there will be some evidence to demonstrate fishers comply with the management system under assessment, including when required, providing information of</p>

	importance to the effective management of the fishery.
<b>Milestones</b>	<p>By the Spring 2021 surveillance, the client will have a plan in place for implementing a monitoring, control, and surveillance system in the fishery; for demonstrating an ability to enforce relevant management measures, strategies, and/or rules; and for providing evidence to demonstrate fishers comply with the management system under assessment, including when required, providing information of importance to the effective management of the fishery.</p> <p>Resulting score: No change in score anticipated at this stage.</p> <p>By the Spring 2022 surveillance, the client will demonstrate that the plan is drafted for a monitoring, control, and surveillance system in the fishery; for demonstrating an ability to enforce relevant management measures, strategies, and/or rules; and for providing evidence to demonstrate fishers comply with the management system under assessment, including when required, providing information of importance to the effective management of the fishery.</p> <p>Resulting score: No change in score anticipated at this stage</p> <p>By the Spring 2023 surveillance, the client will demonstrate that the plan is being implemented for a monitoring, control, and surveillance system in the fishery; for demonstrating an ability to enforce relevant management measures, strategies, and/or rules; and for providing evidence to demonstrate fishers comply with the management system under assessment, including when required, providing information of importance to the effective management of the fishery.</p> <p>Resulting score: No change in score anticipated at this stage.</p> <p>By the Spring 2024 surveillance, the client will provide evidence that a monitoring, control, and surveillance system has been implemented in the fishery and has demonstrated an ability to enforce relevant management measures, strategies and/or rules; and some evidence will exist to demonstrate fishers comply with the management system under assessment, including when required, providing information of importance to the effective management of the fishery.</p> <p>Resulting score: At least 80.</p>
<b>Client action plan</b>	<p>By Spring 2021: Client will record events in the monitoring, control, and surveillance system in an evergreen document that will be an appendix to the annual report on the fishery. Client will provide a record of monitoring, control, and surveillance operating in the fishery that will be appended to the annual report.</p> <p>Spring 2022: Client will provide a record of monitoring, control, and surveillance operating in the fishery that will be appended to the annual report.</p> <p>Spring 2023: Client will provide a record of monitoring, control, and surveillance operating in the fishery that will be appended to the annual report.</p> <p>Spring 2024: Client will provide a record of monitoring, control, and surveillance operating in the fishery that will be appended to the annual report.</p>
<b>Consultation on condition</b>	n/a

**Table 18. Condition 5**

<b>Performance Indicator</b>	<p><b>PI 3.2.4: There is a system of monitoring and evaluating the performance of the fishery-specific management system against its objectives.</b></p> <p><b>There is effective and timely review of the fishery-specific management</b></p>
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	<b>system.</b>
<b>Score</b>	70
<b>Rationale</b>	<p><u>Slb walleye and northern pike:</u>  The fishery is small scale with a limited catch and a small number of fishers. The fishery-specific management system has been subjected to internal reviews over the years with input from fishers which have resulted in improvements. The fishery meets SG60.</p> <p>On that basis, it may be considered that the degree of attention given to the fishery by Sustainable Development and previous Departments responsible for management of the Waterhen Lake fishery outweighs its commercial value, and there has been a regular rather than occasional internal review. Nevertheless, there have not been external reviews. While the 2012- 2019 FMPs have defined the process for external review for a number of years, the auditors have not seen a completed review and results of actions listed such as assessment of data quality. It is noted that the FMPs define the actions but the period in which this will be achieved. The audit team in the 2014 MSC report recommended that this external audit be completed in the third year of the MSC certification so that the results and the Department response would be available to the team engaged in any re-certification. This recommendation was not fulfilled. Further, despite statements in Manitoba Sustainable Development and other Departments (as well as arguments in the previous certification assessment) that assessments related with MSC certification constitute external reviews, the auditors do not support that argument. The fishery does not meet SG80.</p>
<b>Condition</b>	By the Spring 2024 surveillance audit, the fishery-specific management system will be subject to regular internal and occasional external review.
<b>Milestones</b>	<p>By the Spring 2021 surveillance, the client will have a plan in place for subjecting the fishery-specific management system to regular internal and occasional external review.</p> <p>Resulting score: No change in score anticipated at this stage.</p> <p>By the Spring 2022 surveillance, the client will demonstrate that a plan is drafted for subjecting the fishery-specific management system to regular internal and occasional external review.</p> <p>Resulting score: No change in score anticipated at this stage</p> <p>By the Spring 2023 surveillance, the client will demonstrate that a plan is being implemented for subjecting the fishery-specific management system to regular internal and occasional external review.</p> <p>Resulting score: No change in score anticipated at this stage.</p> <p>By the Spring 2024 surveillance, the client will provide evidence that the fishery-specific management system is subject to regular internal and occasional external review.</p> <p>Resulting score: At least 80.</p>
<b>Client action plan</b>	<p>By Spring 2021: Client will complete plan for subjecting the fishery-specific management system to regular internal and occasional external review.</p> <p>Spring 2022: Client will have implemented plan.</p> <p>Spring 2023: Client will record evidence that management has been reviewed internally and externally.</p> <p>Spring 2024: Client will record evidence that management has been reviewed internally and externally.</p>
<b>Consultation on</b>	n/a

condition	
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## Appendix 1.3 Recommendation

**Table 19. Recommendation 1**

<b>Performance Indicator</b>	<b>PI 2.5.3: There is adequate knowledge of the impacts of the UoA on the ecosystem.</b>
<b>Rationale</b>	<p><u>Slb walleye and northern pike:</u> Any impacts to Waterhen Lake's food web structure would be a result of the gear. Gillnets do contact the bottom, but this contact is minimal and therefore unlikely to cause damage or alter the ecosystem. As stated above, the main impacts on key ecosystem elements can be inferred from existing information from other lakes (e.g., Lake Minnetonka). Some of these impacts have been investigated in detail in Waterhen Lake, such as target and non-target species relationships and productivity (e.g., cormorant diet analysis) and community structure (e.g., how an increase in a non-target species would impact target species numbers) have been investigated in detail. It is concluded that SG60 and SG80 are met. SG100 is not met since the main interactions have not been investigated in detail.</p>
<b>Recommendation</b>	<p>Additional investigations, such as the pending research project on whether gillnetting through the ice impact benthic invertebrate biomass and diversity, would be useful to further the level of detail with regard to main impacts of the UoAs on the key ecosystem elements within Waterhen Lake. Ecosystem dynamics in a lake are relatively easier to monitor and completing this study as planned would be a good contribution to that knowledge.</p> <p>Although it was concluded that the SG80 has been met at this time, the team will monitor the progress of this recommendation since the PI narrowly met the requirement. Continued monitoring is needed to improve confidence that the PI continues to be met and to prevent the score from decreasing over time.</p>

## Appendix 2 Peer Review Reports

### Peer Reviewer A

#### General Comments

Fishery	Assessment Start Year	Peer Reviewer (A/B/C)	Question	Yes/No	Peer Reviewer Justification (as given at initial Peer Review stage). Peer Reviewers should provide brief explanations for their 'Yes' or 'No' answers in this table, summarising the detailed comments made in the PI and RBF tables.	CAB Response to Peer Reviewer's comments (as included in the Public Comment Draft Report - PCDR)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	PR A	Is the scoring of the fishery consistent with the MSC standard, and clearly based on the evidence presented in the assessment report?	No	The scoring was typically consistent with the MSC standard, and clearly justified based on the evidence presented. I noted a few instances where I disagreed with the scoring as noted in the PI tables.	Thank you for the comment. Additional response will be provided within the relevant specific comment field.
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	PR A	Are the condition(s) raised appropriately written to achieve the SG80 outcome within the specified timeframe? [Reference: FCP v2.1, 7.18.1 and sub-clauses]	Yes	Conditions are appropriate to achieve the SG80 outcome within the certification period	Thank you for the comment.



Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	PR A	Is the client action plan clear and sufficient to close the conditions raised? [Reference FCR v2.0, 7.11.2-7.11.3 and sub-clauses]	Yes	The CAP is clear and sufficient to close conditions.	Thank you for the comment.
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	PR A	Enhanced fisheries only: Does the report clearly evaluate any additional impacts that might arise from enhancement activities?		NA	NA
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	PR A	Optional: General Comments on the Peer Review Draft Report (including comments on the adequacy of the background information if necessary)	N/A	I found the report well written and the information presented well. I was impressed with the management approach taken for this small fishery. This should be a model for small inland fisheries. I noted one typo on page 13 (Section 3.3.1.1) "in that fishery" is repeated 2x.	The noted typo has been corrected.

### Specific Comments

Fishery	Year	UoA stock	UoA gear	PR (A/B/C)	PI	PI Information	PI Scoring	PI Condition	Peer Reviewer Justification (as given at initial Peer Review stage)	CAB Response to Peer Reviewer's comments (as included in the Public Comment Draft Report - PCDR)	CAB Response Code
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Fishery	Assessment Start Year	Insert extra rows for P1 PIs if separate scores given for different UoA stocks	Insert extra rows for P2 PIs if separate scores given for different UoA gear types	Peer Reviewer (A/B/C)	Performance Indicator (PI)	Has all available relevant information been used to score this PI?	Does the information and/or rationale used to score this PI support the given score?	Will the condition(s) raised improve the fishery's performance to the SG80 level?	PRs should provide support for their answers in the left three columns by referring to specific scoring issues and/or scoring elements, and any relevant documentation as appropriate. Additional rows should be inserted for any PIs where two or more discrete comments are raised e.g. for different scoring issues, allowing CABs to give a different answer in each case. Paragraph breaks may also be made within cells using the Alt-return key combination.  Detailed justifications are only required where answers given are one of the 'No' options. In other (Yes) cases, either confirm 'scoring agreed' or identify any places where weak rationales could be strengthened (without any implications for the scores).	CABs should summarise their response to the Peer Reviewer comments in the CAB Response Code column and provide justification for their response in this column.  Where multiple comments are raised by Peer Reviewers with more than one row for a single PI, the CAB response should relate to each of the specific issues raised in each row.  CAB responses should include details of where different changes have been made in the report (which section #, table etc).	See codes page for response options
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike	2019	Walleye	Gill net	PR A	1.1.1	Yes	Yes	NA	scoring agreed	Thank you for the comment.	Accepted (no score change)

UoAs)											
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Northern Pike	Gill net	PR A	1.1.1	Yes	Yes	NA	scoring agreed	Thank you for the comment.	Accepted (no score change)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye	Gill net	PR A	1.1.2	Yes	Yes	NA	scoring agreed	Thank you for the comment.	Accepted (no score change)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Northern Pike	Gill net	PR A	1.1.2	Yes	Yes	NA	scoring agreed	Thank you for the comment.	Accepted (no score change)

Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye	Gill net	PR A	1.2.1	Yes	Yes	NA	scoring agreed	Thank you for the comment.	Accepted (no score change)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Northern Pike	Gill net	PR A	1.2.1	Yes	Yes	NA	scoring agreed	Thank you for the comment.	Accepted (no score change)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye	Gill net	PR A	1.2.2	Yes	Yes	NA	scoring agreed	Thank you for the comment.	Accepted (no score change)

Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Northern Pike	Gill net	PR A	1.2.2	Yes	No (material score reduction expected to <80)	NA	I question whether SI(c) meets the SG80. A quota of 40,000 kg is triggered only when the Total Mortality Index exceeds 64%. This quota is well above current harvest levels and Figure 10 suggests the harvest has only reached this level 7 times since 1931. I don't see the available evidence that exploitation rates can be effectively controlled under the HCR.	Thank you for the comment. The Team agrees with the reviewer that the 40,000 kg quota is well above current harvest levels, but does not agree that exploitation rates can be effectively controlled under the HCR. As noted in the justification for SIc, the HCR is relatively new, and thus there is not yet a good track record of the HCRs performance. For this reason, the Team scored SIc at the SG 80 (not 100) level. The Team found no evidence to support that exploitation rates would not be effectively controlled under the HCR, given: 1) the same fishery has demonstrated responsiveness when called for using the walleye HCRs (a more prized species), and 2) Northern pike have an additional level of protection, due to their limited vulnerability to the 96 mm mesh sized net used by the walleye/Northern pike fishery. No score change was made.	Not accepted (no score change)
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Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye	Gill net	PR A	1.2.3	Yes	No (no score change expected)	Yes	Justification for SI(b) talks about the lack of "target stock bycatch" reporting in the basin hole surveys. It is not clear what is meant here. Are you referring to target stock discards (i.e. unwanted catch)? It has been previously stated there is no unwanted catch. If referring to secondary species this should be discussed under 2.2.3. Condition appropriate.	Thank you for the comment. The Team agrees that the text in the justification for SIb was unclear regarding target stock bycatch. The text has been edited to clarify that the reason for not scoring this SI at the SG 100 level was due to uncertainty in the amount of target stock discards due to the lack of published basin hole survey reports. Managers have reported that they believe there is no unwanted catch; however, the Team was not provided with evidence to support this, which should be evident if the results of basin hole surveys were reported. No change in score was made.	Accepted (no score change)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Northern Pike	Gill net	PR A	1.2.3	Yes	No (no score change expected)	Yes	Justification for SI(b) talks about the lack of "target stock bycatch" reporting in the basin hole surveys. It is not clear what is meant here. Are you referring to target stock discards (i.e. unwanted catch)? It has been previously stated there is no unwanted catch. If referring to secondary species this should be discussed under 2.2.3. Condition appropriate.	Thank you for the comment. The Team agrees that the text in the justification for SIb was unclear regarding target stock bycatch. The text has been edited to clarify that the reason for not scoring this SI at the SG 100 level was due to uncertainty in the amount of target stock discards due to the lack of published basin hole survey reports. Managers have reported that they believe there is no unwanted catch; however,	Accepted (no score change)

										the Team was not provided with evidence to support this, which should be evident if the results of basin hole surveys were reported. No change in score was made.	
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye	Gill net	PR A	1.2.4	Yes	Yes	Yes	scoring agreed. Condition appropriate.	Thank you for the comment.	Accepted (no score change)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Northern Pike	Gill net	PR A	1.2.4	Yes	No (non-material score reduction expected)	Yes	I question whether SI(a) meets the SG100. The assessment includes two indices, CPUE and a Total Mortality Index. I don't see how this "takes into account the major features relevant to the biology of the species". Condition appropriate.	Thank you for the comment. The Team has reviewed the basis for scoring SIa and agrees with the reviewer that scoring at the SG80 (not SG100) level is appropriate here (in fact for both species). Due to the limited scale and intensity of the fishery, the practice of assessing stock status relative to empirical reference points is appropriate; however, scoring for this PI requires that scoring is "...relative to the robustness..." of the indicators "... which may also have contributed to the score for the information PI..." (cf GSA2.7). Thus, the Team has determined that it	Accepted (non-material score reduction)

										would be inconsistent to score this SI at SG100, given that a score of SG100 was not obtained for any of the SIs under the information PI 1.2.3. The score for Sla was changed to SG80.	
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern Pike	Gill net	PR A	2.1.1	No (scoring implications unknown)	No (scoring implications unknown)	NA	The report states that current total annual mortality of lake whitefish is below "Fmsy" (Klein and Galbraith 2019) (see pages 23 & 24 in the Peer Review Draft). It is unclear whether lake whitefish are managed for Fmsy and should therefore be classified as primary species. If not, additional clarification is needed in the report.	After further review, the team has concluded that FMSY for lake whitefish is not known so mention of it has been removed from the report. This subsequently means that there are no management measures in place, meaning that lake whitefish will remain a secondary species.	Not accepted (no score change)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern Pike	Gill net	PR A	2.1.2	No (scoring implications unknown)	No (scoring implications unknown)	NA	The report states that current total annual mortality of lake whitefish is below "Fmsy" (Klein and Galbraith 2019) (see pages 23 & 24 in the Peer Review Draft). It is unclear whether lake whitefish are managed for Fmsy and should therefore be classified as primary species. If not, additional clarification is needed in the report.	After further review, the team has concluded that FMSY for lake whitefish is not known so mention of it has been removed from the report. This subsequently means that there are no management measures in place, meaning that lake whitefish will remain a secondary species.	Not accepted (no score change)



Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern Pike	Gill net	PR A	2.1.3	No (scoring implications unknown)	No (scoring implications unknown)	NA	The report states that current total annual mortality of lake whitefish is below "Fmsy" (Klein and Galbraith 2019) (see pages 23 & 24 in the Peer Review Draft). It is unclear whether lake whitefish are managed for Fmsy and should therefore be classified as primary species. If not, additional clarification is needed in the report.	After further review, the team has concluded that FMSY for lake whitefish is not known so mention of it has been removed from the report. This subsequently means that there are no management measures in place, meaning that lake whitefish will remain a secondary species.	Not accepted (no score change)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern Pike	Gill net	PR A	2.2.1	Yes	Yes	NA	Justification for SI(a) for lake whitefish again states that current annual mortality is well below Fmsy suggesting they should be considered primary species. Otherwise, I agree with scoring.	The rationale has been revised, deleting mention of FMSY. Additionally, refer to the responses for Pls 2.1.1-2.1.3.	Accepted (no score change)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern Pike	Gill net	PR A	2.2.2	Yes	Yes	NA	scoring agreed	Thank you for the comment.	Accepted (no score change)

Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern Pike	Gill net	PR A	2.2.3	Yes	No (no score change expected)	NA	SI(b) refers to "minor" secondary species but the scoring indicator suggests that it is not met for the two "main" species. Agree with scoring.	Evaluation table altered to improve clarity.	Accepted (no score change)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern Pike	Gill net	PR A	2.3.1	Yes	Yes	NA	scoring agreed	Thank you for the comment.	Accepted (no score change)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern Pike	Gill net	PR A	2.3.2	Yes	Yes	NA	scoring agreed	Thank you for the comment.	Accepted (no score change)

Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern Pike	Gill net	PR A	2.3.3	Yes	Yes	NA	scoring agreed	Thank you for the comment.	Accepted (no score change)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern Pike	Gill net	PR A	2.4.1	Yes	Yes	NA	scoring agreed	Thank you for the comment.	Accepted (no score change)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern Pike	Gill net	PR A	2.4.2	Yes	Yes	NA	scoring agreed	Thank you for the comment.	Accepted (no score change)

Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern Pike	Gill net	PR A	2.4.3	Yes	Yes	NA	scoring agreed	Thank you for the comment.	Accepted (no score change)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern Pike	Gill net	PR A	2.5.1	Yes	Yes	NA	scoring agreed	Thank you for the comment.	Accepted (no score change)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern Pike	Gill net	PR A	2.5.2	Yes	Yes	NA	scoring agreed	Thank you for the comment.	Accepted (no score change)

Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern Pike	Gill net	PR A	2.5.3	Yes	Yes	NA	scoring agreed	Thank you for the comment.	Accepted (no score change)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern Pike	Gill net	PR A	3.1.1	Yes	Yes	NA	scoring agreed	Thank you for the comment.	Accepted (no score change)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern Pike	Gill net	PR A	3.1.2	Yes	Yes	Yes	scoring agreed. Condition appropriate.	Thank you for the comment.	Accepted (no score change)

Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern Pike	Gill net	PR A	3.1.3	Yes	Yes	NA	scoring agreed	Thank you for the comment.	Accepted (no score change)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern Pike	Gill net	PR A	3.2.1	Yes	Yes	NA	scoring agreed	Thank you for the comment.	Accepted (no score change)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern Pike	Gill net	PR A	3.2.2	Yes	Yes	NA	scoring agreed	Thank you for the comment.	Accepted (no score change)

Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern Pike	Gill net	PR A	3.2.3	Yes	Yes	Yes	scoring agreed. Condition appropriate.	Thank you for the comment.	Accepted (no score change)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern Pike	Gill net	PR A	3.2.4	Yes	Yes	Yes	scoring agreed. Condition appropriate.	Thank you for the comment.	Accepted (no score change)

## Peer Reviewer B

### General Comments

Fishery	Assessment Start Year	Peer Reviewer (A/B/C)	Question	Yes/No	Peer Reviewer Justification (as given at initial Peer Review stage). Peer Reviewers should provide brief explanations for their 'Yes' or 'No' answers in this table, summarising the detailed comments made in the PI and RBF tables.	CAB Response to Peer Reviewer's comments (as included in the Public Comment Draft Report - PCDR)
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Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	PR B	Is the scoring of the fishery consistent with the MSC standard, and clearly based on the evidence presented in the assessment report?	Yes	Generally, yes - I have low concerns overall, and issues identified in scoring should be addressable by the Team.	Thank you for the comment.
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	PR B	Are the condition(s) raised appropriately written to achieve the SG80 outcome within the specified timeframe? [Reference: FCP v2.1, 7.18.1 and sub-clauses]	Yes	Again, generally, yes - there are a couple of issues but nothing that cannot be addressed by the team.	Thank you for the comment.
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	PR B	Is the client action plan clear and sufficient to close the conditions raised? [Reference FCR v2.0, 7.11.2-7.11.3 and sub-clauses]	No	I am generally OK with the limited detail provided, but the CAP for Condition 2 is a concern - please see comment against PI 1.2.4. A slight change will also be needed to two conditions to address missing milestones.	As noted in the response for 1.2.3, a milestone has been added to the condition. The condition for 1.2.4 remains unchanged. (Refer to that response for more details.) Additionally, the CAPs have been updated to address missing milestones/years.



Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	PR B	Enhanced fisheries only: Does the report clearly evaluate any additional impacts that might arise from enhancement activities?	No	Section 3.1.4 states this is not an enhanced fishery. However, I see in Section 6.7 of the FMP that there has been stocking of Waterhen Lake with walleye fry - most recently in 2011 (which means these fish may still be contributing to the fishery - with a maximum age of at least 9 years for males and 10 years for females - P. 14 of the report). Although relatively low level enhancement, this should nevertheless be addressed in the report explicitly.	Section 3.1.4 has been revised to explicitly address the reviewer's concern.
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	PR B	Optional: General Comments on the Peer Review Draft Report (including comments on the adequacy of the background information if necessary)	N/A	I have some concerns about the traceability section. The fifth row of Table 10 identifies the risk factor of mixing certified and non-certified catch during storage, transport, etc., and states: "As sales of certified fish are made through agents different from the FFMC, there may be more issues related to traceability than under the FFMC monopoly. Nevertheless, it should be noted that mixing of non-certified fish caused the previously certified Waterhen Lake fishery to lose its CoC certificate; however, it is unclear why FFMC was not able to keep fish separate and how the situation would be different in the Skownan packing shed.". That certainly doesn't provide assurance that	The team expressed concern and requested information to the client. In response, the client indicated that it was FFMC that lost the CoC and not the Skownan shed and that the shed was fully capable to separate the certified and non-certified fish. The team found no record on the process of losing the CoC and was not able to obtain documentation on the issues surrounding the loss of CoC. However, the team has revised the report to now require the sheds to get CoC if they want to sell certified catches (i.e., the fishery certificate will now end when the fish are delivered to the shed).

					<p>mitigation is in place. Instead, paraphrasing, it says - there may be issues, and they were significant enough previously that CoC was lost, but we don't know why and we don't know how they have been dealt with. Also, in the next row (risk of mixing during processing activities) it states: "However, sometimes the fish are brought back to a camp on the shore and are dressed there. Conceivably, there could be fish from outside the UoC at the same time, and this would create a slight risk." Given that fishermen are able to fish in other lakes nearby for walleye and pike (e.g., p.20 of Galbraith et al. 2017, regarding the activity in the 2013-14 and 2014-15 seasons in Chitek and Inland lakes), it seems this might be more than just a low risk. In any case, there is no information presented on mitigation. A clarification or further info is needed in both cases.</p>	
			Introduction - note 1		<p>Section 5.3. States: "Since sales of certified fish would now be made through agents different from the FFMC, there may be more issues related to traceability than under the FFMC monopoly (see Table 10)." This is ambiguous - please clarify.</p>	<p>Given this concern, the team has revised the report to now require the sheds to get CoC if they want to sell certified catches (i.e., the fishery certificate will now end when the fish are delivered to the shed).</p>

			Introduction - note 2		Related to traceability, I note P.41 states: "While there is no information on Lake Waterhen, in northern Manitoba Norway House Fisherman's Co-op Cree Nation, almost all commercial fishers are also subsistence fishers, which could be the case for Waterhen." How is this risk to traceability (i.e., non-UoA catches getting in to the COC) addressed?	Fish harvested for subsistence are not processed in a shed and are not commercialized. Thus, while the subsistence fishery constitutes an issue for estimating total removals, it does not represent a risk to traceability. No change was made.
			Introduction - note 3		Figure 17 says 'Waterhen Lake circled in yellow', but no circle is shown.	The caption has been revised to address the reviewer's comment.
			Introduction - note 4		P. 42 - there is information presented here on recreational catch that would be useful to present in the P1 text (also, or instead of that which has been presented?). Basically. the text here giving estimates of the 2017 recreational catch of walleye slightly contrasts with the statement in the P1 text that "There are no estimates of removals of walleye or Northern pike in the recreational or subsistence fisheries."	Instead of reiterating what is stated later in the report, a cross reference has been added to the P1 text.

## Specific Comments

Fishery	Year	UoA stock	UoA gear	PR (A/B/C)	PI	PI Information	PI Scoring	PI Condition	Peer Reviewer Justification (as given at initial Peer Review stage)	CAB Response to Peer Reviewer's comments (as included in the Public Comment Draft Report - PCDR)	CAB Response Code
Fishery	Assessment Start Year	Insert extra rows for P1 PIs if separate scores given for different UoA stocks	Insert extra rows for P2 PIs if separate scores given for different UoA gear types	Peer Reviewer (A/B/C)	Performance Indicator (PI)	Has all available relevant information been used to score this PI?	Does the information and/or rationale used to score this PI support the given score?	Will the condition(s) raised improve the fishery's performance to the SG80 level?	<p>PRs should provide support for their answers in the left three columns by referring to specific scoring issues and/or scoring elements, and any relevant documentation as appropriate. Additional rows should be inserted for any PIs where two or more discrete comments are raised e.g. for different scoring issues, allowing CABs to give a different answer in each case. Paragraph breaks may also be made within cells using the Alt-return key combination.</p> <p>Detailed justifications are only required where answers given are one of the 'No' options. In other (Yes) cases, either confirm 'scoring agreed' or identify any places where weak rationales could be strengthened (without any implications for the scores).</p>	<p>CABs should summarise their response to the Peer Reviewer comments in the CAB Response Code column and provide justification for their response in this column.</p> <p>Where multiple comments are raised by Peer Reviewers with more than one row for a single PI, the CAB response should relate to each of the specific issues raised in each row.</p> <p>CAB responses should include details of where different changes have been made in the report (which section #, table etc).</p>	See codes page for response options

Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern pike	Gillnet	PR B	1.1.1	Yes	Yes	NA	Just a comment for walleye. Based on Figure 9, I think the sentence in Slb that "Though SSB and Total Mortality have been consistently above the TRP since 2014..." should instead be something like "Though SSB and Total Mortality have been consistently above and below the TRPs, respectively ...."	Thank you for the comment. The sentence in Slb was changed in the report, as suggested.	Accepted (no score change)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern pike	Gillnet	PR B	1.1.2	Yes	Yes	NA	Not scored - agreed.	Thank you for the comment.	Accepted (no score change)

Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern pike	Gillnet	PR B	1.2.1	No (scoring implications unknown)	No (scoring implications unknown)	NA	<p>Sla: Both species: Although scale and intensity is a consideration in scoring fisheries against the MSC Standard, I find it hard to see that a score of 100 can be justified for the harvest strategy when there is apparently no form of commercial catch monitoring other than landings tickets, no monitoring of other removals from the system (i.e., subsistence and recreational catches), and it isn't clear what the net movement of fish between the lake and rivers is (this seems to me to be a potentially really big issue?). The MSC itself (<a href="https://www.msc.org/for-business/fisheries/fishery-certification-guide">https://www.msc.org/for-business/fisheries/fishery-certification-guide</a>) categorises scoring levels thus: "60 is the minimum acceptable performance, 80 is global best practice and 100 is near perfect performance.". The Harvest Strategy PI takes a holistic look at management and monitoring, and while I wouldn't argue over a score of 80, it seems clear that monitoring is not 'near perfect'.</p>	<p>Thank you for the comment. The Team acknowledges the weaknesses pointed out by the reviewer (see below); however, our scoring for PI 1.2.1 focused on how well this fishery of limited scale and intensity operates regarding: 1) the control rules and tools in place, and 2) the information base and monitoring stock status and the responsiveness of the management system to stock status (cf GSA2.4). The Team found evidence that the chief elements of the harvest strategy (the annual gillnet survey to determine stock status, landings tickets to determine commercial catch, and HCRs to control landings/effort with respect to stock status) were designed to achieve the stock management objectives, as noted in the justification for scoring at SG100. Specifically, a track record is evident showing that management has measured (and responded in the case of walleye) to changes in stock status, with the objective of keeping the</p>	Not accepted (no score change)
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										<p>stock above PRI, and fluctuating around a level consistent with MSY. As noted above, the Team agrees that weaknesses in the overall Waterhen lake management system include: 1) commercial catch monitoring by landing tickets only, 2) no monitoring of subsistence and recreational catches, and 3) no information on net movement of fish between the lake and rivers. These concerns are addressed in the Assessment under PI 1.2.3 (SIs a, b, and c). No change in score was made.</p>	
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Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern pike	Gillnet	PR B	1.2.1	No (scoring implications unknown)	No (scoring implications unknown)	NA	Sld: Both species: The fishery is scored 100 here, on the basis that "The annual process of pre-season monitoring and application of the HCRs provides direct feedback/review and informs managers directly if improvement is necessary. The requirements of SG 100 are met." But applying the HCRs is not what is being scored, here - instead, it is whether the entire approach (e.g. the use of those specific HCRs, the design of the monitoring strategy, the input variables (e.g, estimates of M, F, Z), etc.) is subject to review and improvement as necessary. This needs to be reconsidered.	Thank you for the comment. The Team agrees that the text in the justification was unclear, and implied that HCR performance was the means by which the harvest strategy is subject to review and improvement as necessary. The justification text was revised accordingly to describe the annual process of stock status and fishery information review and stakeholder consultation that result in a feedback and learning mechanism to inform the harvest strategy in an ongoing basis. No change in score was made.	Accepted (no score change)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern pike	Gillnet	PR B	1.2.2	No (scoring implications unknown)	No (scoring implications unknown)	NA	Slb: Both species: It isn't stated what the main uncertainties are. But, if it isn't clear what they are, how do we know the HCRs are likely to be robust to them? Currently, scoring is missing this important information. I would suggest that the lack of information on net movement rates between the rivers and lake might be a key uncertainty, but there may be others.	Thank you for the comment. The team agrees that the text in the justification was unclear as to what the main uncertainties are. The justification text was revised to discuss the main uncertainties, and also to flag the lack of information on net movement rates between the rivers and lake, and other factors, as uncertainties. No change in score was made.	Accepted (no score change)



Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern pike	Gilnet	PR B	1.2.3	Yes	Yes	No	Scoring and the condition seem appropriate. The only issues are that there is no Year 3 milestone - milestones are needed for each year (CRv.2.0 - 7.11.1.4.a), and the score is correctly shown as 75 in the scoring text, but is shown as 70 in the condition text.	Thank you for the comment. The Team has corrected this oversight, by adding a milestone for year three of the Condition.	Accepted (no score change)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern pike	Gilnet	PR B	1.2.4	No (scoring implications unknown)	No (scoring implications unknown)	NA	Sla: Both species: I'm generally OK with a score of 80 here, but 100 is too much. Although again I accept there needs to be consideration of scale and intensity, it is accepted that there is no knowledge of net migration in or out of the system for either species, or of M, so it is not justified to say this is a 'near perfect' (SG100) situation. Even if the team was desperate to maintain the score for walleye, the approach (aim to set biologically meaningful indicators and adjust harvest around trigger points) appears more robust and detailed for walleye (4 indicators) than for pike (two indicators, one ref point). In fact, does pike even meet 80 here - I'm not so sure as it is very new and quite untested?	Thank you for the comment. The Team has reviewed the basis for scoring Sla, and agrees with the reviewer that scoring at the SG 80 (not SG 100) level is appropriate here for both species. Due to the limited scale and intensity of the fishery, the practice of assessing stock status relative to empirical reference points is appropriate; however, scoring for this PI requires that scoring is "...relative to the robustness..." of the indicators "... which may also have contributed to the score for the information PI..." (cf GSA2.7). Thus, the Team has determined that it would be inconsistent to score this SI at SG100, given that a score of SG 100 was not	Accepted (non-material score reduction)

										obtained for any of the SIs under the information PI 1.2.3. The Score for Sla was changed to SG 80.	
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern pike	Gilnet	PR B	1.2.4	Yes	Yes	No	Sle: Condition seems generally appropriate. My only concern would be if the review shows a fundamental issue with the approach being taken - what happens then? I.e., how and when does the team expect any findings to be incorporated? Also, the CAP seems a little unfocused. What is needed is a review of the assessment approach, not an annual check of the results, and it is not clear that this is understood - a more detailed CAP is needed.	Thank you for the comment. The Team recognizes that any review could result in unforeseen findings and recommendations; however, it is beyond the scope of Condition setting to anticipate problems of this sort in advance. If such problems were to occur, they should become evident during the annual surveillance audit process, and new Conditions could be added at that time. The Team stands by the Condition as written. The CAP has been revised.	Not accepted (no score change)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern pike	Gilnet	PR B	2.1.1	Yes	Yes	NA	Nothing further.	Thank you for the comment.	Accepted (no score change)

Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern pike	Gilnet	PR B	2.1.2	No (non-material score reduction expected)	No (non-material score reduction expected)	NA	Even in the absence of primary species, a management strategy would still be needed to score 100. See SA3.5.1 / GSA3.5.1. NB- typo: Slc - "SG1000 are met".	The team agrees with the reviewer's comment and has rescored SIa as not meeting SG100. Also, the typo in Slc has been corrected.	Accepted (non-material score reduction)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern pike	Gilnet	PR B	2.1.3	No (non-material score reduction expected)	No (non-material score reduction expected)	NA	In the absence of anything other than landings ticket data, it is not possible to say that "Quantitative information is available and is adequate to assess with a high degree of certainty the impact of the UoA on main primary species with respect to status." I'd accept an SG80 score here, as the fishery probably shouldn't be penalised, but the fishery also shouldn't be awarded a 'near perfect' score. It is unreasonable when compared against fisheries with much, much better data that are still not able to demonstrate this high level of performance.	The team acknowledges the lack of quantitative catch information. However, according to the MSC definition, there are no primary species. Increased information will not change the fact that the UoAs have no non-target managed (i.e., primary) species since the two target species are the only managed species in the lake. The rationale has been revised accordingly, but no score change was made.	Not accepted (no score change)

Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern pike	Gillnet	PR B	2.2.1	No (scoring implications unknown)	No (scoring implications unknown)	NA	Sla - Lake whitefish: There are contradictory statements: One paragraph says: "During the RBF workshop, fishers stated that they catch lake whitefish somewhere between "rarely" and "regularly", which echoes this estimated total annual mortality rate.", then the next paragraph states: "This statement is also supported by information gathered at the RBF workshop where fishers said that they always catch lake whitefish and that they are always present in the lake. SG60 and SG80 are met." Also, it is not clear where the estimate of Fmsy for lake whitefish was derived - this is important information and should be referenced.	The team acknowledges the confusion. The text in the background section and the scoring table has been edited to be corrected and clear. Details on FMSY were obtained from the 2019 FMP as cited in the text.	Accepted (no score change)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern pike	Gillnet	PR B	2.2.1	No (scoring implications unknown)	No (scoring implications unknown)	NA	Sla - White sucker: Similar contradictory statements regarding the RBF workshop results are presented. Also, the report states: "Since walleye are apex predators that will limit white sucker density, a reduced white sucker population would mean there is a high walleye population in Waterhen Lake and an overall healthy ecosystem functioning within the lake." Predation may well be a potential factor linking these species, but there are numerous other reasons that could be essentially independent - high F on one species, for example! I think this statement needs justifying if there is supporting evidence, or deleting; currently	The team acknowledges the confusion regarding the RBF statements. The text in the background section and the scoring table has been edited to be corrected and clear. The other statement has been deleted since the team agrees that there is not enough supporting evidence.	Accepted (no score change)

									there is insufficient evidence presented that the population status of white sucker and walleye are so clearly linked.		
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern pike	Gilnet	PR B	2.2.2	Yes	Yes	NA	Nothing further.	Thank you for the comment.	Accepted (no score change)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern pike	Gilnet	PR B	2.2.3	Yes	Yes	NA	Note that the mortality of lake whitefish in PI 2.2.1 is listed as 33-35%. Here it is listed as 33%. No further comments.	The typo has been corrected.	Accepted (no score change)

Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern pike	Gillnet	PR B	2.3.1	No (scoring implications unknown)	No (scoring implications unknown)	NA	Here I disagree with scoring at SG100. The introduction notes: "Therefore, based on UoAs' catch data and the Species at Risk Act (SARA) registry ( <a href="https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry.html">https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry.html</a> ), there are no ETP species that interact with these UoAs." Given the fishery occurs under ice I agree that it is unlikely that the fishery would interact with ETP species during the fishing season. However, three points: 1) There is the possibility of lost nets being present in the lake during ice-free periods, when ETP bird species could be present. 2) Indirect effects of the fishery are possible (e.g., on the feeding efficiency of predatory bird species). 3) Most significantly, and a general point for all species components - the report states that catch data for the fishery are "inferred from sales receipts" (P.22). Sale receipts are completely irrelevant as a source of data to determine if the fishery interacts with ETP species (noting also that on P.6 the report states: "Further, fishers do not complete logbooks while required by department officers."). In this regard, I note shortjaw cisco is present in Manitoba ("reported in numerous lakes in Manitoba and Saskatchewan (Lake Athabasca, Reindeer Lake, Lake Athapapuskow, Clearwater	The team agrees with the reviewer's comment and has rescored SIb and SIc as not meeting SG100.	Accepted (non-material score reduction)
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									<p>Lake, Lake Winnipeg - DFO species profile) and is SARA 'Threatened'. Bigmouth buffalo is also listed as SARA Special Concern, and appears to be present locally (i.e., it is listed as being present in Lake Winnipeg, at least, which Wikipedia suggests is connected to Waterhen Lake).</p>		
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Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern pike	Gillnet	PR B	2.3.2	No (non-material score reduction expected)	No (non-material score reduction expected)	NA	Same comment as for 2.1.2. Even in the absence of primary species, a management strategy would still be needed to score 100. See SA3.5.1 / GSA3.5.1. NB- typo: Slc - "SG1000 are met".	The team agrees with the reviewer's comment and has rescored Slb as not meeting SG100.	Accepted (non-material score reduction)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern pike	Gillnet	PR B	2.3.3	No (non-material score reduction expected)	No (non-material score reduction expected)	NA	Similar comment as for 2.1.3. In the absence of anything other than landings ticket data, it is inappropriate to say that "Quantitative information is available to assess with a high degree of certainty the magnitude of UoA-related impacts, mortalities and injuries and the consequences for the status of ETP species." It's not so clear that an SG80 score is Ok, here, but I'd probably accept it for common sense, but the fishery definitely shouldn't be awarded a 'near perfect' score.	The team acknowledges the lack of quantitative information so the rationale and score have been changed accordingly.	Accepted (non-material score reduction)



Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern pike	Gilnet	PR B	2.4.1	No (scoring implications unknown)	No (scoring implications unknown)	NA	An important point about VMEs is that they should have been identified by "a local, regional, national or international management authority/governance body". The interpretation <a href="https://mscportal.force.com/interpret/s/article/Potential-VME-1527586956601">https://mscportal.force.com/interpret/s/article/Potential-VME-1527586956601</a> is useful in that in response to the question "What is a potential VME?" it states: "When a benthic habitat is encountered by the UoA which has been given formal protective designation elsewhere within the "Managed Area". I.e., it is not just the presence of a functionally significant habitat that is important (and, honestly, what habitat isn't 'functionally significant' for something??). In this case, while it might be tempting to be point to the voluntary closed areas, I presume these don't have any formal protective designation elsewhere in the managed area, and as such I think it is overly precautionary and unnecessary to call them VMEs. This would impact scoring through the loss of the SG100 score for SIb, but would nevertheless be appropriate.	Based on the reviewer's comment, the team has revised the rationale to state that no VMEs are present. However, given the MSC requirements, the score remains unchanged (i.e., SIb meets SG100) since it can be concluded that there is evidence that the UoAs are highly unlikely to reduce structure and function of the VMEs because no VMEs exist.	Not accepted (no score change)
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Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern pike	Gilnet	PR B	2.4.2	Yes	Yes	NA	Nothing further.	Thank you for the comment. Based on the reviewer's comment for PI 2.4.1, the team has also revised the rationale and scoring for this PI. Sld addresses the management of VMEs. Since there are no formally protected habitats (i.e., no VMEs), the UoAs meet SG100 since there is clear quantitative evidence that the UoAs comply with management requirements for VMEs because no VMEs are present.	Accepted (score increased)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern pike	Gilnet	PR B	2.4.3	Yes	Yes	NA	Nothing further.	Thank you for the comment. Based on the reviewer's comment for PI 2.4.1, the team has removed mention of VMEs within the rationales. Additionally, based on the reviewer's comment for PI 2.5.3, the team has removed mention of a pending project within the rationale.	Accepted (no score change)

Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern pike	Gillnet	PR B	2.5.1	Yes	Yes	NA	Waterhen Lake' has been identified as the scoring element in Table 8, but it is not clear in the scoring text what the 'key ecosystem elements' are (it can't be Waterhen Lake - see GSA3.18.1). As such, it is difficult to tell if scoring has considered the right issues or been fair. Please define the key ecosystem element/s and then score the fishery's impact on it/them. I note I can make inference from the text in PI 2.5.3 Sla, but it needs to be here to be clear.	As per the reviewer's comment, the team has clarified the scoring elements within the rationale and in Table 8.	Accepted (no score change)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern pike	Gillnet	PR B	2.5.1	Yes	Yes	NA	Just a comment really - the statement "Colonial-nesting bird numbers have declined from estimated peaks in the late 1980s but are still many times greater than historic numbers" presents an overly positive take on the situation. I note the relevant passage from Wilson et al. 2014 (the source reference) states: "Many waterbird species, including those that breed in Manitoba, suffered severe declines at various periods from the late 19th century to about the mid-20th century related to overhunting, direct persecution, habitat loss or disturbance, and DDT pollution". As such, it is not that the colonial waterbird populations are higher than a period of relative abundance - they are simply higher than a really, really low period. In fact, the Wilson et al. survey characterises itself as presenting 'a new baseline for	Thank you for the comment. The team has revised the background section and rationale accordingly.	Accepted (no score change)

									abundance and distribution', which is to reflect that the area has not been surveyed since 1979. Saying that, I don't think there is anything to concern the fishery, but it is really important to present data in context.		
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Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern pike	Gillnet	PR B	2.5.1	No (scoring implications unknown)	No (scoring implications unknown)	NA	There is somewhat contradictory information presented in the report regarding lost gillnets. P.31 (twice) states: "In the last decade, there have been an estimated three lost nets in Waterhen Lake there were later retrieved (G. Klein pers. comm.).". The emphasis changes somewhat in scoring, though, where it is stated: "However, gillnets from these UoAs are rarely lost. In the last decade, there have been three lost nets <b>found by managers</b> [my emphasis] in Waterhen Lake there were later retrieved". I will note that the fact that managers have not found many lost nets should not be a surprise given the size of the lake. However, when looking at P. 25-26, the report states: "In accordance with the fishing license requirements, in the event that nets freeze, fishers are supposed to contact the local District Office of the Department of Sustainable Development and advise them that the nets are frozen in. The Waterhen Lake Winter Fishers Association organizes efforts to remove nets after the spring melt <b>if there are thought to be many lost nets in a lake</b> [my emphasis]. The fishing license and the FMP require the fisher to return and retrieve the net once the lake becomes open in the spring. Commercial fishers will also retrieve any gill nets	The background section's mention of lost nets has been revised to be in line with the scoring rationale. Additionally, text has been added to note that there is no record of reports to the District Office. Given the clarifications and the additional text, the team does not feel that a condition or recommendation is needed.	Accepted (no score change)
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									<p>lost during the open-water season when notified or if found." So, this section suggests that there is at least the possibility that <b>many nets</b> may be lost - a considerable difference from three nets in ten years. But, if fishers are supposed to notify the managers of iced nets to avoid penalty, then a check of records (presumably, also of retrieval success) should give an answer. If there are no data, this might be something to raise as a condition or at the very least a formal recommendation - MSC fisheries are required to show 'best practice'!</p>		
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Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern pike	Gilnet	PR B	2.5.2	No (scoring implications unknown)	Yes	NA	Just a note but I would have thought the seasonal, under-ice nature of the fishery would comprise the biggest element of the fishery's partial strategy to constrain impacts on the Waterhen Lake ecosystem - it is mentioned in SIb but not in SIa.	The team agrees with the comment so the text has been revised accordingly.	Accepted (no score change)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern pike	Gilnet	PR B	2.5.2	No (scoring implications unknown)	Yes	NA	I note that the FMP (available online states: "Continuation of the lost gear clean-up program by the Lake Waterhen Fishermen's Association is an important management measure that minimizes ecosystem impact through the prevention of harm to fish species as a result of 'ghost fishing'". What is this, and how many lost nets have been recovered annually? In any case, I would have thought this comprises part of the approach to ecosystem management?	The team agrees with the comment so the text has been revised accordingly.	Accepted (no score change)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern	2019	Walleye & Northern pike	Gilnet	PR B	2.5.3	No (material score reduction expected to <80)	No (material score reduction expected to <80)	NA	Main impact (1) on trophic relationships from target and non-target species removals has not been investigated in detail but can be inferred from existing information. Main impact (2) of non-catch mortality and ghost fishing has also not been investigated in detail. As such, SG80 cannot be met, which requires that "Main impacts of the UoA on these key ecosystem elements can be	The team agrees that additional details were needed in the rationale to support SIb meeting SG80. Therefore, the rationale was revised to include details on ecosystem elements' investigations and to remove mention of a pending project. Given these additions, the team concludes that SG80 is	Not accepted (no score change)

pike UoAs)									inferred from existing information, and <b>some have been investigated in detail.</b> [NOT my emphasis!]" A condition is required.	met so no condition is required. However, a recommendation has been added to increase the level of investigation within the system. Additionally, based on the reviewer's comment for PI 2.4.1, the team has removed mention of VMEs within the rationale.	
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern pike	Gilnet	PR B	3.1.1	Yes	Yes	NA	Nothing further.	Thank you for the comment.	Accepted (no score change)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern pike	Gilnet	PR B	3.1.2	Yes	Yes	NA	I note that the issue of fishers not completing the logbook is mentioned in Sla. It might be appropriate to highlight, here, that this issue is picked up in PI 3.2.3.	A cross reference to PI 3.2.3 has been added as suggested.	Accepted (no score change)



Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern pike	Gilnet	PR B	3.1.2	Yes	Yes	No	Similar to PI 1.2.3, scoring and the condition seem appropriate. The only issue is that there is no Year 3 milestone - milestones are needed for each year (CRv.2.0 - 7.11.1.4.a).	The missing annual milestones were added for PIs 3.1.2, 3.2.3, and 3.2.4.	Accepted (no score change)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern pike	Gilnet	PR B	3.1.3	Yes	Yes	NA	Nothing further.	Thank you for the comment.	Accepted (no score change)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern pike	Gilnet	PR B	3.2.1	Yes	Yes	NA	Nothing further.	Thank you for the comment.	Accepted (no score change)

Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern pike	Gilnet	PR B	3.2.2	No (scoring implications unknown)	No (scoring implications unknown)	NA	3.2.2 scores 100, but I note on P.40 the report states: "Based on description in the FMPs, the Waterhen fishers meet annually with Sustainable Development before the fishing season begins. There are no minutes from these meetings.". This doesn't seem like a very transparent system (certainly not one operating at a 'near perfect SG100 level). An SI, somewhere, needs to be scored down - I would suggest SIb.	Thank you for the comment. The SIb score has been modified to 80 to reflect the lack of minutes from annual meetings between Sustainable Development and the Waterhen fishers.	Accepted (non-material score reduction)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern pike	Gilnet	PR B	3.2.3	Yes	Yes	Yes	Nothing further.	Thank you for the comment.	Accepted (no score change)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Walleye & Northern pike	Gilnet	PR B	3.2.4	Yes	Yes	Yes	Nothing further.	Thank you for the comment.	Accepted (no score change)

## Peer Reviewer B – Follow-Up Comments

### General Comments

Fishery	Assess- ment Start Year	Peer Reviewer (A/B/C)	Question	Peer Reviewer comments at Public Comment Draft Report stage Insert additional rows for each clearly distinct issue raised.	CAB response to Peer Reviewer's Public Comment Draft Report stage comments (as included in Final Draft Report)
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Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	PR B	Issue not adequately addressed.	<p>In the original Peer Review, I said "Section 3.1.4 states this is not an enhanced fishery. However, I see in Section 6.7 of the FMP that there has been stocking of Waterhen Lake with walleye fry - most recently in 2011 (which means these fish may still be contributing to the fishery - with a maximum age of at least 9 years for males and 10 years for females - P. 14 of the report). Although relatively low level enhancement, this should nevertheless be addressed in the report explicitly." In response, Section 3.1.4 now states simply "This is not an enhanced fishery. A minor level of walleye stocking occurred in 2011 when 1.2M fry (intended for Chitek Lake) were released in Waterhen Lake. Given the maximum age expected for walleye (9 years for males; 10 years for females), a de minimis number of these fish are expected to contribute to the fishery in 2020-2021". However, there are very particular requirements associated with assessing enhanced fisheries under the MSC Standard, and it seems that no effort has been made to address these, so this feels like a particularly dismissive and inappropriate approach to the issue. As well as enhancement in 2011, even a cursory glance at the FMP shows there was a larger (deliberate) walleye enhancement event in 2003, and that there is a National Code on the Introductions and Transfers of Aquatic Organisms (2003). The existence of a National Code seems hopeful, but was this followed if stocking in 2011 was not actually planned? Further, how significant were the transfers in reality - while stocked fish as adults may make little contribution to the catch in 2019, their progeny may be contributing considerably, while the genetic origin of these stocked fish may be non-local. Despite these issues, no effort has apparently been made to determine how significant the original enhancements might be, nor whether the stocked fish were of local origin. At the very least, these simple steps need to be undertaken before it can be determined that enhancement PIs do not need to be scored because of a perceived 'de minimis' allowance (which I have searched for but does not appear to exist in the Standard, nor in an interpretation). It may in the end be the case that the enhancement is highly unlikely to impact genetic structure of wild populations (PI 1.1.3), there is no need for management measures (I 1.2.5, and information is available on genetic structure and is sufficient to determine the impacts of enhancement (PI 1.2.6), but it is not accurate to state simply: "This is not an enhanced fishery" (e.g., Section 3.1.1, Section 3.1.4). In summary, something further is needed.</p>	<p>The team disagrees with the reviewer's concerns and reiterates that this is not an enhanced fishery. The team did in fact develop an enhanced fishery assessment tree for some of the other UoAs (i.e., walleye in Chitek, Inland, Archie, Crab, and Swan Lakes) where the team did conclude that enhancement needed to be addressed. As part of this development, all lakes/species, including Waterhen Lake's UoAs, were reviewed. Again, it was determined that these UoAs are not enhanced. Additional text to this effect has been added to Section 3.1.4, but no other changes were made.</p>
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Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	PR B	Issue not adequately addressed.	In the original peer review, I noted several concerns about the traceability section, noting that the text does not provide assurance that mitigation is in place in those areas where there are risks. The comment in the PCDR that the shed is able to separate fish and that separate CoC will be required to be in place for the shed is helpful, but doesn't entirely clarify the situation prior to the fish being received at the shed, and the concern for fish caught in other lakes or in the subsistence fishery to be mixed (noting the report states 1) "almost all commercial fishers are also subsistence fishers", 2) "Waterhen Lake fishers can also fish commercially in Chitek, Inland, Crab, and Archie Lakes for walleye and northern pike", and 3) "However, sometimes the fish are brought back to a camp on the shore and are dressed there. Conceivably, there could be fish from outside the UoC at the same time, and this would create a slight risk."). I'll note also that the subsistence fishery is not mentioned in the traceability section, while mixing (at camp) seems like it could be more than just a slight risk, particularly if (as I identified previously), fishing in other lakes is productive relative to Waterhen (see p.20 of Galbraith et al. 2017, regarding the activity in the 2013-14 and 2014-15 seasons in Chitek and Inland lakes). The assessment report template requires that "1. The report shall include a description of factors that may lead to risks of non-certified fish being mixed with certified fish prior to entering Chain of Custody, using Table 4 below. For each risk factor, <b>there shall be</b> a description of whether the risk factor is relevant for the fishery, and if so, <b>a description of the relevant mitigation measures or traceability systems in place.</b> " Given these are 'shall' statements, what is the mitigation for this risk?	The team recognizes the continued uncertainty with traceability. Therefore, until sufficient information is provided by the client, the fishery will not be able to sell the fish as certified. A note to this effect has been added to the report.
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### Specific Comments

Fishery	Year	UoA stock	UoA gear	PR (A/B/C)	PI	PR Comment Code	Peer Reviewer Justification (as given at Public Comment Draft Report (PCDR) stage)	CAB response to Peer Reviewer's comments (as included in the Final Draft Report)	CAB Response Code
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Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Both	Gillnet	PR B	1.1.1	Yes	Nothing further	Thank you for the comment.	Accepted (no score change)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Both	Gillnet	PR B	1.1.2	Yes	Nothing further	Thank you for the comment.	Accepted (no score change)

Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Both	Gillnet	PR B	1.2.1	No (non-material score reduction expected)	The report notes: "The Team acknowledges the weaknesses pointed out by the reviewer (see below); however, our scoring for PI 1.2.1 focused on how well this fishery of limited scale and intensity operates regarding: 1) the control rules and tools in place, and 2) the information base and monitoring stock status and the responsiveness of the management system to stock status (cf GSA2.4). The Team found evidence that the chief elements of the harvest strategy (the annual gillnet survey to determine stock status, landings tickets to determine commercial <u>catch</u> [my emphasis], and HCRs to control landings/effort with respect to stock status) were designed to achieve the stock management objectives, as noted in the justification for scoring at SG100." Nevertheless, I continue to contend that this cannot be considered 'near perfect'. Stock status is based on an index survey covering a total of 30 sites, each fished for about 16 hours, with an average total annual catch apparently of 160 fish (walleye) and 67 fish (pike) (Table 2). I note that the lake is 34 km long and up to 8 km wide [i.e. large relative to the sampling effort], where the report admits there is "lack of information on net movement rates between the rivers and the lake". Also, as raised previously, the landings tickets show commercial landings only, <u>not</u> commercial catch, while subsistence and recreational catches are also not considered. However, in P1 the harvest strategy PI is scoring the strategy for the stock as a whole and all fisheries impacting that stock, not just the commercial fishery. Clearly, this is not the case here - SG100 is not justified, whether or not information is also addressed in PI1.2.3.	Aside from being a subjective standard, the team notes that the reference to "near perfect" is only on the MSC website and not within the FCR or guidance. The team does not agree that "near perfect" is an appropriate standard at SG100 for this fishery given the MSC allowances for fisheries of limited scale and intensity. The SI states that "The harvest strategy is responsive to the state of the stock and is designed to achieve stock management objectives reflected in PI 1.1.1 SG80." The team concludes that this SI is met for both UoAs since the harvest strategies employ one or more stock indicators and incorporate timely monitoring and management responsive to the state of the stock. No changes were made.	Not accepted (no score change)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco	2019	Both	Gillnet	PR B	1.2.2	Yes	Nothing further	Thank you for the comment.	Accepted (no score change)

commercial gillnet (Waterhen Lake walleye and northern pike UoAs)									
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Both	Gillnet	PR B	1.2.3	Yes	Nothing further	Thank you for the comment.	Accepted (no score change)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Both	Gillnet	PR B	1.2.4	Yes	Nothing further	Thank you for the comment.	Accepted (no score change)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Both	Gillnet	PR B	2.1.1	Yes	Nothing further	Thank you for the comment.	Accepted (no score change)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Both	Gillnet	PR B	2.1.2	Yes	Nothing further	Thank you for the comment.	Accepted (no score change)



Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Both	Gillnet	PR B	2.1.3	Yes	Nothing further	Thank you for the comment.	Accepted (no score change)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Both	Gillnet	PR B	2.2.1	Yes	Nothing further	Thank you for the comment.	Accepted (no score change)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Both	Gillnet	PR B	2.2.2	Yes	Nothing further	Thank you for the comment.	Accepted (no score change)

Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Both	Gillnet	PR B	2.2.3	No (no score change expected)	I note in the reponse to a comment by PR A the team has responded "After further review, the team has concluded that FMSY for lake whitefish is not known so mention of it has been removed from the report." However, the report now states in scoring "Catch data are available for more than two decades. The total annual mortality is 33-35%, which is well below MSY." Removing the 'F' from this sentence does not change the meaning. In any case, this contrasts with the response to my comment, which stated: "Details on FMSY were obtained from the 2019 FMP as cited in the text." In some frustration, I will note this is not correct - the Klein & Galbraith reference was provided at the end of the PI Scoring table, but was not cited in the text; it is still not provided in the text, so is still not helpful for readers. Please clarify and sort the text for consistency between reviewers.	The background section and PI 2.2.3 rationale for lake whitefish were updated. As noted by the reviewer, reference to MSY was mistakenly left in the last version of the report. The team notes that these parameters (despite a reference to an Fmsy in the FMP) are not supported with evidence.	Accepted (no score change)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Both	Gillnet	PR B	2.3.1	No (scoring implications unknown)	In my original review, in contrast to the information presented in the assessment report originally, I noted that there were several ETP species which may be taken in the lake (in the fishery or in lost nets subsequently) or which may be impacted indirectly and which would not be recorded in the commercial landings data. I note that the text has been adjusted somewhat to account for that by not scoring at SG100. However, the justification that "There are no ETP species encountered by these UoAs; therefore, SG60 and SG80 are met." still does not adequately describe the situation. Simply, and this follows on from similar points on P1, there are no independent data, and no information apparently available on any gillnet recovery programme (and the survey is very short duration and out of season so not representative), so it is not known if the fishery encounters ETP species or not. Please edit the report as needed.	The team appreciates the reviewer's comment, but the team disagrees. In review of the SARA list for possible ETP species, the team determined that none overlap with the fishery and none are present during the non-fishing season. This statement has been added to the report for additional support of the scoring rationale.	Not accepted (no score change)

Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Both	Gillnet	PR B	2.3.2	No (material score reduction expected to <80)	Slb. As for 2.3.1 - it is not the case that the assessment team knows "There are no ETP species encountered by these UoAs; therefore, SG60 and SG80 are met." I also note that SG80 for ETP species management requires there to be a 'strategy' in place (i.e., it has to be 'designed to manage impact on that component [ETP species] specifically', not just a partial strategy that can be designed for other issues or components - Table SA8). In this case, there is a risk, and there cannot be a specific strategy because no data are collected; SG80 is not met.	Additional information from the FMP has allowed the team to revised the rationales and rescore the PI. This information has shown there is a strategy in place that is "appropriate to the scale, intensity, and cultural context of the fishery..." (MSC Table SA8). Slb has been revised and rescored accordingly. While the overall PI score has changed, it was not a material change.	Accepted (non-material score reduction)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Both	Gillnet	PR B	2.3.2	No (non-material score reduction expected)	Similar to 2.3.2Slb, Slc and Sld at SG100 require there to be at least a strategy in place - this is not the case so SG100 cannot be met.	As with the above comment, additional information from the FMP has allowed the team to revised the rationales and rescore Slc-Sld. While the overall PI score has changed, it was not a material change.	Accepted (non-material score reduction)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Both	Gillnet	PR B	2.3.2	No (material score reduction expected to <80)	Sle. Based on the current information presented, it is simply not the case that the assessment team can state "There are no ETP species encountered by these UoAs; therefore, SG60, SG80, and SG100 are met." Presumably, someone, somewhere, will have done some work to review the potential effectiveness of alternative measures, although I would be extremely surprised if it was a 'regular review' given the apparent absence of data. Please review and revise as necessary.	As with the above comment, additional information from the FMP has allowed the team to revised the rationale and rescore Sle. While the overall PI score has changed, it was not a material change.	Accepted (non-material score reduction)

Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Both	Gillnet	PR B	2.3.3	No (material score reduction expected to <80)	The response to my original review comment states: "The team acknowledges the lack of quantitative information so the rationale and score have been changed accordingly.", but the report still states: "Catch data and information from the SARA registry confirm that there are no ETP species." Assessors should not be remotely surprised that commercial landings data show an absence of ETP species. That the SARA registry shows that is also the case should also not surprise - what data would the Registry hold on the fishery? Commercial catch data cannot be considered quantitative data in the context of ETP species. However, I actually agree with the team's response - there is a lack of quantitative information. Nevertheless, SG80 requires that at least 'some' quantitative information are available, and, as such, SG80 cannot be met.	The team appreciates the reviewer's comment, but the team disagrees. In review of the SARA list for possible ETP species, the team determined that none overlap with the fishery and none are present during the non-fishing season. This statement has been added to the report for additional support of the scoring rationale.	Not accepted (no score change)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Both	Gillnet	PR B	2.3.3	No (material score reduction expected to <80)	The response agrees there is a lack of quantitative information, and that the score has been changed. However, SG100 is still showing as met. This is clearly wrong - given that ETP species may be encountered by the fishery, the available data are in no way adequate to support a comprehensive strategy (SG100), but critically I also struggle to see how they are adequate to support a strategy (i.e., because the SG80 for a strategy requires that it is specific to the component).	As noted by the reviewer, SG100 is not appropriate for SIb. The team has concluded though that SG80 is met and has revised the rationale and rescored as appropriate. While the overall PI score has changed, it was not a material change.	Accepted (non-material score reduction)

Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Both	Gillnet	PR B	2.4.1	No (non-material score reduction expected)	In my review I noted that "I think it is overly precautionary and unnecessary to call them VMEs. This would impact scoring through the loss of the SG100 score for SIb." I'm really pleased to see the assessment team agrees the voluntary areas are not VMEs, but note that the response stated "However, given the MSC requirements, the score remains unchanged (i.e., SIb meets SG100) since it can be concluded that there is evidence that the UoAs are highly unlikely to reduce structure and function of the VMEs because no VMEs exist." I will reiterate that this is not correct, because SIb in the CR is shown in brackets (i.e., it is only scored if appropriate - i.e., if VMEs are present). In this case, in the absence of VMEs, it is not appropriate to score SIb..	As noted by the reviewer, SIb should actually not be scored. The rationale and score have been changed accordingly.	Accepted (non-material score reduction)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Both	Gillnet	PR B	2.4.2	No (no score change expected)	Please see comment on PI 2.4.1	As noted by the reviewer, SId should actually not be scored. The rationale and score have been changed accordingly.	Accepted (non-material score reduction)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Both	Gillnet	PR B	2.4.3	No (no score change expected)	Please see comment on PI 2.4.1	The team believes that this comment was an error since PI 2.4.3 does not specifically mention VMEs and none of the rationales do either. Therefore, this PI's rationales and score remains unchanged.	Not accepted (no score change)

Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Both	Gillnet	PR B	2.5.1	No (material score reduction expected to <80)	I find it very hard to reconcile that the team comments "Given the clarifications and the additional text, the team does not feel that a condition or recommendation is needed" with the text stating there is no record of reports of lost nets. This is despite the licence requirements to report and then retrieve them when clear in the spring, and despite the finds by fishery managers. It is apparent that the fishery is not demonstrating 'best practice' here, irrespective of any consideration of scale and intensity. Please review and revise as necessary.	The scoring rationale has been revised to discuss the lost net program further. However, as noted in the rationale, gillnets are rarely lost - three in the last decade. Further, unlike in other fisheries, there is no emergency cutting/dumping of gear since boats and open ocean are not involved. Nets are only "lost" if they are frozen in and are then retrieved once the ice melts. Based on what the SI says and having seen the lake and net in action and given the scale and intensity of the fishery, this rate of loss seems acceptable and is a rate of loss that is highly unlikely to disrupt the key elements of the ecosystem's structure and function. The score remains unchanged.	Not accepted (no score change)
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Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Both	Gillnet	PR B	2.5.2	No (scoring implications unknown)	My original comment to PI 2.5.2 stated: "I note that the FMP (available online states: "Continuation of the lost gear clean-up program by the Lake Waterhen Fishermen's Association is an important management measure that minimizes ecosystem impact through the prevention of harm to fish species as a result of 'ghost fishing'" What is this, and how many lost nets have been recovered annually?" I note that there is now mention of a lost gear clean-up programme in the text for PI 2.5.2 SI, but what this comprises or how many nets have been recovered is not mentioned. This is important, noting that the fishery and team cannot have it both ways - there cannot be both a (useful) programme in place to recover the potentially 'many' lost nets (PI 2.5.2) and (effectively, as currently scored) no need to report and recover lost nets (PI 2.5.1). This inconsistency needs to be reviewed and the report revised.	The team recognizes that mention of the program was not included in PI 2.5.1 and was unclear in PI 2.5.2. Therefore, the text has been revised in both cases. The team concludes that no other changes are needed and that the score is appropriate.	Accepted (no score change)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Both	Gillnet	PR B	2.5.3	Yes	Nothing further	Thank you for the comment.	Accepted (no score change)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Both	Gillnet	PR B	3.1.1	Yes	Nothing further	Thank you for the comment.	Accepted (no score change)

Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Both	Gillnet	PR B	3.1.2	Yes	Nothing further	Thank you for the comment.	Accepted (no score change)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Both	Gillnet	PR B	3.1.3	Yes	Nothing further	Thank you for the comment.	Accepted (no score change)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Both	Gillnet	PR B	3.2.1	Yes	Nothing further	Thank you for the comment.	Accepted (no score change)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Both	Gillnet	PR B	3.2.2	Yes	Nothing further	Thank you for the comment.	Accepted (no score change)



Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Both	Gillnet	PR B	3.2.3	Yes	Nothing further	Thank you for the comment.	Accepted (no score change)
Manitoba boreal forest lakes walleye, northern pike, yellow perch, lake whitefish, and lake cisco commercial gillnet (Waterhen Lake walleye and northern pike UoAs)	2019	Both	Gillnet	PR B	3.2.4	Yes	Nothing further	Thank you for the comment.	Accepted (no score change)

## **Appendix 3    Site Visit Announcement Flyer**

# **Commercial Fishing Meeting**



**Assessment Team for the  
Marine Stewardship Council  
Will be at the new hall at Skownan on  
March 16th, 2019 at 7:30 p.m.  
to learn about the fisheries surrounding  
Waterhen Lake.  
(Chitek, Inland and others)**

**All are welcome to come and share their thoughts  
and experience**



## Appendix 4 Stakeholder Submissions

### Marine Stewardship Council Submission

SubID	Page Reference	Grade	Requirement Version	Oversight Description	PI	CAB Comment
29583	9	Minor	FCR_7.4.8.3 v2.0	Section 3.1.1 and Section 5.3, P.62 - Lack of clarity on the relationship of Freshwater Fish Marketing Corporation (FFMC) and the Waterhen Lake Winter Fishers Association? The UOA table in 3.1.1 doesn't explain who forms the Waterhen Lake Winter Fishers Association. 5.3 references that fishing is restricted to the 22 license holders as approved by the Lake Waterhen Winter Fishers Association and Manitoba Sustainable Development. But there doesn't seem to be a list of who these members are anywhere in the PCDR, could this or a link be included?		The team recognizes the uncertainty with traceability. Therefore, until sufficient information is provided by the client, the fishery will not be able to sell the fish as certified. A note to this effect has been added to the report.
29584		Minor	FCR-7.12.1.4 v2.0	<p>Section 5.2, P.61/62, Table 10, Row 4 &amp; 5 - Following risks seem to have a lack of clarity about how they are mitigated:</p> <ul style="list-style-type: none"> <li>- Talks about the differences between members of FFMC and the members Waterhen Lake Winter Fishers Association and there may be traceability issues but doesn't explain anything about how this might be mitigated or what systems are in place. A reference is included that CoC will be needed after the fisher/from packing shed (Section 5.3, P.63) but unclear if this is sufficient to mitigate this particular risk.</li> <li>- Assessment mentions that there is a risk of processing that products can be dressed on shore and that there could be fish from outside the UoC there but doesn't explain how this risk is mitigated.</li> <li>- What is the measure taken to prevent similar fish being mixed? For example: What measures are taken to prevent common carp (which use the same fishing gear) to be segregated from the target species?</li> <li>- Please clarify if it is possible that the Skownan packing shed and other two agents/shed also receive other non-certified fish harvested? If so, which party is verifying the volumes received from the fishery? Which party is verifying the DCRs to verify the harvest volume? And also, it says "there is no evidence of this occurring as the presence, sizes, and ratio of species in the UoC and outside the UoC differ and can be detected in the DCR". What measures are taken to detect in the DCR?</li> </ul>		The team recognizes the uncertainty with traceability. Therefore, until sufficient information is provided by the client, the fishery will not be able to sell the fish as certified. A note to this effect has been added to the report.

29585	60	Minor	FCR-7.6.1 v2.0	Section 5.1 - Previous certificate expired on 23 June 2019 and the new eligibility date is the PCDR publication date (December 2019). References that the fishing season starts in November so how will the fishery segregate or manage fish caught between November and PCDR date to ensure ineligible product is not sold as eligible.		The team recognizes the uncertainty with traceability. Therefore, until sufficient information is provided by the client, the fishery will not be able to sell the fish as certified. A note to this effect has been added to the report.
29586	63	Minor	FCR-7.12.1.5 v2.0	We cannot see a clear reference of when change of ownership occurs in the PCDR. There is a reference on Section 5.3, P.63 that 'this certificate will extend to the fisher only (i.e., the original owner). Thereafter, a CoC certification will be needed (i.e., from the Skownan packing shed onward).' Could it be made clearer if ownership changes after this point?		The team recognizes the uncertainty with traceability. Therefore, until sufficient information is provided by the client, the fishery will not be able to sell the fish as certified. A note to this effect has been added to the report.
29587	62	Minor	FCR-7.19.4.2 v2.0	Section 5.3 - 1) 'Landing' are on stated as being on the icecould this be elaborated on 2) Please further describe the supply chain after packing shed? 3) Please describe how the fish was transported to Skownan packing shed and other two sheds? Is there any risk for mixing?		The team recognizes the uncertainty with traceability. Therefore, until sufficient information is provided by the client, the fishery will not be able to sell the fish as certified. A note to this effect has been added to the report.

## Appendix 5 Surveillance Frequency

**Table 21. Surveillance level rationale**

Year	Surveillance activity	Number of auditors	Rationale
1	Off-site audit	Two off-site	Condition updates can be done via remote meetings with Manitoba Sustainable Development staff.
2	On-site audit	Two on-site	Condition updates will benefit from meetings with Manitoba Sustainable Development staff.
3	Off-site audit	Two off-site	Condition updates can be done via remote meetings with Manitoba Sustainable Development staff.
4	On-site audit and reassessment site visit	All on-site	Condition updates and reassessment site visit.

**Table 22. Timing of surveillance audit**

Year	Anniversary date of certificate	Proposed date of surveillance audit	Rationale
1	January 2021	January-April 2021	In the period of January-April each year, pending availability, in order to be near the anniversary date for the certificate.
2	January 2022	January-April 2022	In the period of January-April each year, pending availability, in order to be near the anniversary date for the certificate.
3	January 2023	January-April 2023	In the period of January-April each year, pending availability, in order to be near the anniversary date for the certificate.
4	January 2024	January-April 2024	In the period of January-April each year, pending availability, in order to be near the anniversary date for the certificate.

**Table 23. Fishery Surveillance Program**

Surveillance Level	Year 1	Year 2	Year 3	Year 4
Level 4	Off-site surveillance audit	On-site surveillance audit	Off-site surveillance audit	On-site surveillance audit and reassessment site visit

## **Appendix 6    Objections Process**

No objection was received.