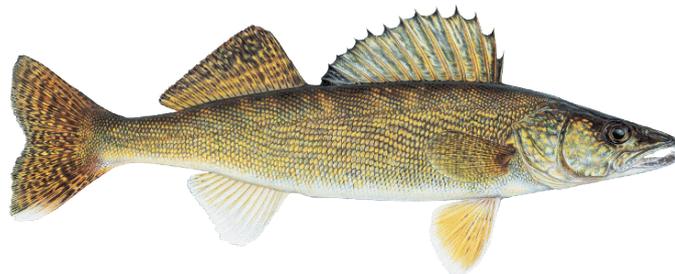


MSC SUSTAINABLE FISHERIES CERTIFICATION

On-Site Surveillance Visit - Report for Waterhen Lake Walleye and Northern Pike Commercial Gillnet Fishery



2nd Surveillance stage

November 2016

Certificate Code F-ACO-0053
Prepared For: **Manitoba Conservation and Water Stewardship Fisheries Branch**
Prepared By: **Acoura Marine**
Authors: Paul Knapman, Robert O'Boyle



Assessment Data Sheet

Fishery name	Waterhen Lake Walleye and Northern Pike Commercial Gillnet Fishery		
Species and Stock	Waterhen Lake Walleye (<i>Sander vitreus</i>) and Northern Pike (<i>Esox lucius</i>)		
Date certified	24 th June 2014	Date of expiry	23 rd June 2019
Surveillance level and type	Normal Surveillance - Onsite		
Date of surveillance audit	2 nd and 3 rd November 2016		
Surveillance stage (tick one)	2 nd Surveillance		✓
Surveillance team	Lead Auditor: Paul Knapman Auditor: Robert O'Boyle		
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1. Introduction

1.1 Scope of Surveillance

This report outlines the findings of the 2nd Annual Surveillance of the Waterhen Lake Walleye and Northern Pike Commercial Gillnet Fishery. The scope of the certified fishery and therefore of this surveillance is specified in the Units of Certification (Uoc) set out below:

UoC 1

Species:	Walleye (<i>Sander vitreum</i>)
Geographical area:	Waterhen Lake, Manitoba, Canada
Method of capture:	Gillnet winter fishery
Stock:	Waterhen Lake Walleye
Management System:	Manitoba Conservation and Water Stewardship (MCWS) Department of Fisheries and Oceans, Canada (DFO)
Client Group:	Manitoba Conservation and Water Stewardship, Wildlife and Fisheries Branch

UoC 2

Species:	Northern Pike (<i>Esox lucius</i>)
Geographical area:	Waterhen Lake, Manitoba, Canada
Method of capture:	Gillnet winter fishery
Stock:	Waterhen Lake Northern Pike
Management System:	Manitoba Conservation and Water Stewardship (MCWS) Department of Fisheries and Oceans, Canada (DFO)
Client Group:	Manitoba Conservation and Water Stewardship, Wildlife and Fisheries Branch.

1.2 Aims of the Surveillance

The purpose of the annual Surveillance Report is fourfold:

1. to establish and report on whether or not there have been any material changes to the circumstances and practices affecting the original complying assessment of the fishery;
2. to monitor the progress made to improve those practices that have been scored as below “good practice” (a score of 80 or above) but above “minimum acceptable practice” (a score of 60 or above) – as captured in any “conditions” raised and described in the Public Report and in the corresponding Action Plan drawn up by the client;
3. to monitor any actions taken in response to any (non-binding) “recommendations” made in the Public Report;
4. to re-score any Performance Indicators (PIs) where practice or circumstances have materially changed during the intervening year, focusing on those PIs that form the basis of any “conditions” raised.

Please note: The primary focus of this surveillance audit is to assess changes made in the previous year. For a complete picture, this report should be read in conjunction with the Public Certification Report (PCR) for this fishery assessment which can be found here:

<https://fisheries.msc.org/en/fisheries/waterhen-lake-walleye-and-northern-pike-gillnet-commercial-fishery/@assessments>

1.3 Certificate Holder Details

Manitoba Conservation and Water Stewardship, Fisheries Branch

<http://www.gov.mb.ca/conservation/waterstewardship/fish/index.html> is part of the Manitoba Provincial Sustainability Department, <http://www.gov.mb.ca/conservation/>.

The following is taken from the Waterhen Lake Integrated Fisheries Management Plan (Klein & Galbraith 2016). The Government of Canada, under the authority of the Fisheries Act (Canada), retains ultimate legal authority and responsibility for fish and fish habitat conservation matters within Canada. However the daily management and administration of federal fisheries regulations has effectively been delegated to Manitoba officials: The Minister of Conservation and Water Stewardship, the Director of Fisheries, and fishery officers employed by Manitoba.

Under the Manitoba Fishery Regulations (Canada), the Minister of Conservation and Water Stewardship and Director of Fisheries have been given the authority to vary close times, species, quotas and gear types established under those regulations.

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 includes the right to determine who can fish on provincial Crown land (licensing), what conditions may be included in a licence, and what fee would be paid for the licence. This authority is exercised under The Fisheries Act of Manitoba and regulations to that Act.

Manitoba fisheries management activities are undertaken consistent with departmental policies, strategies, and directives in accordance with specific issues, opportunities and/or priorities.

In Manitoba, under the Freshwater Fish Marketing Act (Canada), the Freshwater Fish Marketing Corporation has exclusive jurisdiction over the export and interprovincial sales of commercially harvested fish.

1.4 Findings of the Original Assessment

As a result of the assessment, 3 conditions of certification were raised by the assessment team, and maintenance of the MSC certificate is contingent on the Waterhen Lake Walleye and Northern Pike Commercial Gillnet Fishery moving to comply with these conditions within the time-scales set at the time the certificate was issued. In addition, 13 recommendations were made which, whilst not obligatory, the client is encouraged to act upon within the spirit of the certification.

1.5 Surveillance Activity

1.5.1 Surveillance team details

Robert (Bob) O'Boyle (P1 & P2) - Robert O'Boyle received his B.Sc. and M.Sc. from McGill and Guelph Universities in 1972 and 1975 respectively. He was with Canada's Department of Fisheries and Oceans (DFO) at the Bedford Institute of Oceanography (BIO) in Dartmouth, Nova Scotia during 1977 - 2007. During this time, he conducted assessments of the region's fish resources (e.g. herring, capelin, cod, haddock, pollock, flatfishes, sharks). He headed the Marine Fish Division, with responsibility for the research programs and assessment-related activities of over 80 scientific and support staff. He subsequently coordinated the regional science advisory process for fisheries resources and ocean uses and as Associate Director of Science, managed science programs at the regional and national level. He has been involved in a number of national and international reviews, ranging from resource assessment and management to science programs. He is currently president of Beta Scientific Consulting Inc. (betasci.ca) which provides technical review, analyses and assessment of ocean resources and their management. Projects have included analyses and assessments of forage species (e.g. Atlantic Herring, Gulf and Atlantic Menhaden), deepwater species (e.g. Scotian Shelf Cusk) and endangered species (e.g. Atlantic Leatherback Turtles). He has been and is currently the principle one or two expert for a number of MSC certifications (e.g. BC Dogfish, Nova Scotia, US and Australian

Swordfish, Barents Sea Cod, Haddock, and Saithe, North Sea and Baltic Sea Haddock and Danish Plaice, Deepwater Black Scabbardfish, Blue Ling, Lake Erie Walleye and Yellow Perch, Roundnose Grenadier, Russian Pollack and US West Coast groundfish) and is a member of the MSC’s Peer Review College. He has been the chair and / or reviewer of numerous stock assessments and has prepared special reports on ocean management issues for government, industry and NGO groups. He was a member of the Scientific and Statistical Committee of the New England Fisheries Management Council during 2008-2016. He pursues research related to resource and ocean management and assessment and has published over 100 primary papers, special publications and technical reports. Recent projects include the impact of climate change on New England groundfish assessments, the trophic dynamics of the Eastern Scotian Shelf ecosystem, the impact of fish migrations on assessed fishery selectivity patterns, risk analysis in data poor assessments and the interaction of cod and grey seals in the Northwest Atlantic.

Bob was not on the original assessment or audit teams. However, he was on the original team for the Lake Erie Walleye and Yellow Perch fishery and therefore has experience and knowledge of MSC assessment and audit of a freshwater fishery.

Paul Knapman (Team leader & P3) - Paul is a fishery consultant based in Halifax, Nova Scotia, Canada. Prior to returning to consultancy, he was the General Manager of Intertek Fisheries Certification a Conformity Assessment Body (CAB) that focused their work on Marine Stewardship Council (MSC) fisheries and Chain of Custody assessment / certification. He has extensive experience of MSC related work having been the Lead Assessor / Auditor and/or technical reviewer for 50+ client fisheries throughout the world.

He was previously Head of an inshore fisheries management organization in the UK, a senior policy advisor to the UK government on fisheries and environmental issues, a British Fisheries Officer and a fisheries consultant to clients in Europe and Canada.

Paul provided technical overview of the original assessment of the fishery. He meets the MSC qualification requirements as a Principle 3 expert and is a qualified Lead Assessor under MSC’s Fisheries Certification Requirements versions 1.3 and 2.0.

1.5.2 Date & location of surveillance audit

This on-site surveillance visit was carried out between 2nd and 3rd of November 2016 in Winnipeg, Manitoba. The on-site surveillance visit was carried out by Paul Knapman. Bob O’Boyle participated in the audit remotely.

1.5.3 Stakeholder consultation and meeting

A total of 5 stakeholder organisations and individuals having relevant interest in the assessment were identified and consulted during this surveillance audit. The interest of others not appearing on this list was solicited through the postings on the MSC website.

The following meetings took place during the site visit:

Manitoba Conservation and Water Stewardship, Fisheries Branch, 200 Salteaux Crescent, Winnipeg, Manitoba, Canada. 2nd November 2016		
Name	Organisation	Role
Paul Knapman	Representing Acoura Marine	Audit Team Member
Bob O’Boyle*	Representing Acoura Marine	Audit Team Member
Bill Gailbraith	Manitoba Sustainable Development	Fishery Manager
Brian Parker	Manitoba Sustainable Development	Senior Fishery Manager
Geoff Klein	Manitoba Sustainable Development	Fishery Manager
Gord Kirbyson*	Manitoba Sustainable Development	Conservation Officer

*Participated by phone

1.5.4 What was inspected

The following was inspected during the audit:

- The scientific base of information and stock assessment;
- Changes to the fishery and its management, e.g. legislation and regulations, personnel changes within the science and management structure and within the industry;
- Any changes that might affect traceability within the fishery and conformity with regulations;
- Progress against the conditions of certification; and,
- A review of follow up action by the client on recommendations from the original assessment.

1.6 Surveillance Standards

1.6.1 MSC Standards, Requirements and Guidance used

This surveillance audit was carried out according to the MSC Fisheries Certification Requirements FAM v1.3 and using the surveillance process as detailed in v2.0.

1.6.2 Confirmation that destructive fishing practices or controversial unilateral exemptions have not been introduced

No indication was given or suggested during the surveillance audit that either destructive fishing practices or controversial unilateral exemptions have been introduced in this fishery.

2 Updated Fishery Background

Waterhen Lake is located between Lake Winnipegosis and Lake Manitoba in the province of Manitoba (Figure 1). It is approximately 34 km long and at its widest 8 km. In general, it is shallow, with a maximum water depth of 5 m. Lake Winnipegosis empties into Waterhen Lake through both the Little Waterhen and West Waterhen rivers. Waterhen Lake then drains southward through the East Waterhen River into Lake Manitoba.



Figure 1. The location of Waterhen Lake in relation to the Province of Manitoba.

Manitoba Conservation and Water Stewardship (MCWS), Fisheries Branch, classify Waterhen Lake as a multi-use fishery consisting of Aboriginal domestic harvest, commercial gill netting and recreational angling.

Two commercial fisheries operate on Waterhen Lake:

1. A limited entry winter commercial fishery (maximum 22 licenced fishers) using gillnets subject to harvest control rules (HCR) such as quotas, seasons and gear restrictions; and
2. A year-round carp/sucker gillnet fishery subject to gear restrictions.

The winter commercial fishery targets Walleye (*Sander vitreus*), which is the only species subject to an annual lake quota. Northern Pike (*Esox lucius*) is a bycatch fishery. A number of other non-quota species are harvested: Lake Whitefish (*Coregonus clupeaformis*); Yellow Perch (*Perca flavescens*); Sauger (*Sander canadensis*); White Sucker (*Catostomus commersoni*); Shorthead Redhorse (*Moxostoma macrolepidotum*) (marketed as mullet); Cisco (*Coregonus artedii*) (marketed as tullibee); and Common Carp (*Cyprinus carpio*).

The recreational fishery targets walleye and is confined mainly to the tributaries of the Waterhen Lake (Little Waterhen, East Waterhen and West Waterhen rivers). Provincial angling regulations apply to recreational fishers.

2.1 Changes in the Management System

The harvest strategy (HS) governing the fishery was designed to sustain Walleye that is the most sensitive stock to fishing owing to its late maturation. The Northern Pike fishery is considered sustainable under the Walleye HS as female Northern Pike will have spawned two or three times before they are susceptible to the minimum mesh size allowed in the Waterhen fishery.

The Waterhen Lake Fisheries Management Plan (FMP) for 2016 (Klein & Galbraith 2016) is a minor update of the first defined plan which was released in 2015. 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. It will be reviewed and evaluated annually by MCWS, Lake Waterhen Fishermen's Association (LWFA) and the Skownan First Nation and other resource users and stakeholders such as recreational angler groups / associations, commercial tourism lodge operators and outfitters. The FMP integrates applicable federal and provincial legislation, policies and regulations, and recognizes existing constitutionally protected Aboriginal fishing rights to domestic / subsistence fishing, and by-laws under the Constitution of the LWFA. Only members of LWFA are eligible for commercial fishery licenses. LWFA has a number of by-laws, one of which is a limit of 22 licenses.

There have been no changes to the four Harvest Control Rules associated with catch per unit effort (CPUE), spawning stock biomass (SSB), spawning female diversity (SFD) and total mortality (TM) which guide harvest decisions in the fishery.

2.2 Changes in Relevant Regulations

Walleye

In response to the changes in the performance indicators as applied to the four HCRs, during the 2014 / 2015 fishing season, the total allowable yardage per fisherman was allowed to increase from 4,500 m to the maximum allowed yardage of 5,700 m (CPUE HCR). As well, a maximum mesh size (Diversity HCR) was not invoked. There was no change in the minimum mesh size (SSB HCR) and overall quota (Total Mortality HCR).

Northern Pike

There have been no changes in the regulations of this fishery.

2.3 Changes to Personnel Involved in Science, Management or Industry

A new Conservation Officer has been hired and will support the existing Conservation Officer in compliance monitoring of the fishery.

2.4 Changes to Scientific Base of Information Including Stock Assessments

Principle 1

Walleye

Four indicators are used to guide the commercial Walleye harvest on Waterhen Lake:

- catch-per-unit-effort (CPUE)
- spawning stock biomass (SSB)
- spawning female age diversity (SFD)
- total mortality (TM)

Lower and upper stock reference points are defined for each performance indicator based on criteria described in IFC (2014) and allow the assessment of level of risk to the resource – “Low Risk” (highlighted as green), “Medium Risk” (highlighted as yellow) or “High Risk” (highlighted as red). Harvest control measures are implemented in response to changes in the performance indicators estimated from annual stock monitoring. Three of the harvest control measures are input controls (mesh size and total allowable yardage), and the fourth is an output control (quota reduction).

CPUE (fish per net night) modestly increased in 2015, which allowed for an increase in the net yardage (m) from 4,500 m in 2014 to the maximum allowable yardage for the fishery of 5,700 m in 2015 (Figure 2). This HCR is regulated through the number of nets allowed per fisherman as per the condition of license. During the site visit, it was reported that 80 – 100 yards are fished per net; in 2014 - 2015, 50 nets per fisherman was stipulated as a condition of license. It was also noted that typically, license holders do not fish their maximum allowed number of nets.

Catch per Unit Effort

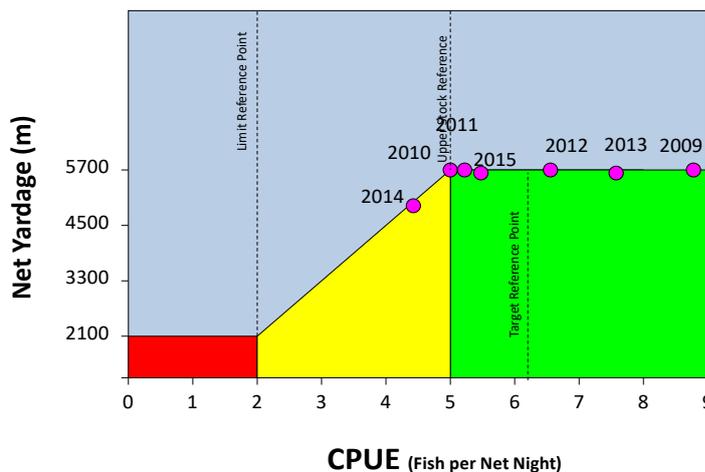


Figure 2: Harvest control rule governing allowable yardage for the Waterhen Lake commercial Walleye fishery; Pink circles mark catch-per-unit effort (CPUE) from past five years of index netting; if CPUE fell into the medium risk zone, allowable yardage in the commercial fishery would diminish; from MCWS (2016)

SSB increased in 2015, from 92 kg in 2014 to 111 kg in 2015. As per the HCR, the minimum mesh size was not increased (Figure 3). The intent of the HCR is that when SSB declines, an increase in the minimum mesh size would allow more females to escape.

Spawning Stock Biomass

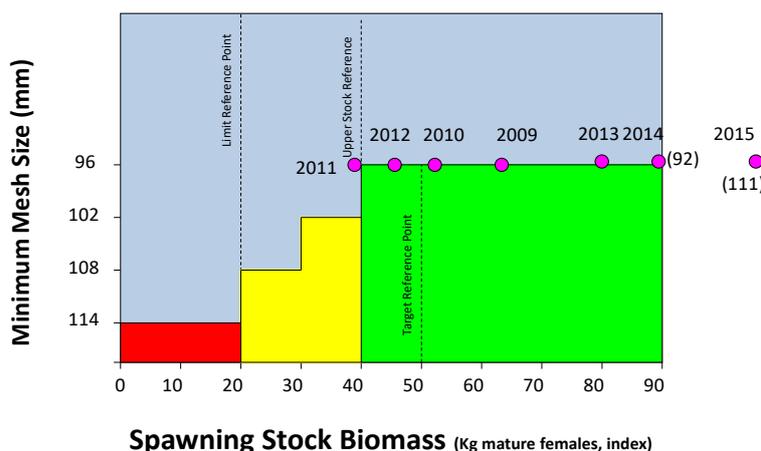


Figure 3. Harvest control rule to avoid recruitment overfishing in the Waterhen Lake commercial Walleye fishery; pink circles mark spawning stock biomass which is reflected as the total kilograms of gravid female Walleye caught in all 30 nets of the annual index program over past five years; as spawning stock biomass decreases, minimum mesh size allowed in commercial fishery increases so more females recruit to spawning size; from MCWS (2016).

Spawning diversity (H) increased from about 0.45 in 2014 to 0.58 in 2015, and thus a maximum mesh size was not invoked in the fishery (Figure 4). The intent of this HCR is to ensure that there is a dominance of larger, older females in the SSB as these represent relatively higher fecundity individuals.

Spawning Female Age Diversity

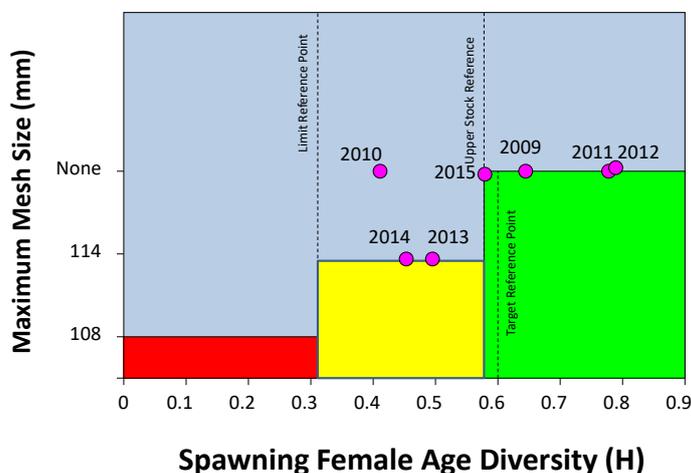


Figure 4. Harvest control rule for Shannon’s Diversity Index for spawning female Walleye ages; when the performance indicator, H, is above 0.58, there is no maximum gillnet mesh, but values in cautionary zone will result in maximum mesh size of 114 mm or 108 mm to conserve and enhance age diversity among spawning females; from MCWS (2016)

Total mortality (fishing plus natural mortality) decreased from 0.38 in 2014 to 0.35 in 2015 and, as per the HCR, the overall fishery’s quota remained at 36,300 kg (Figure 5).

Mortality

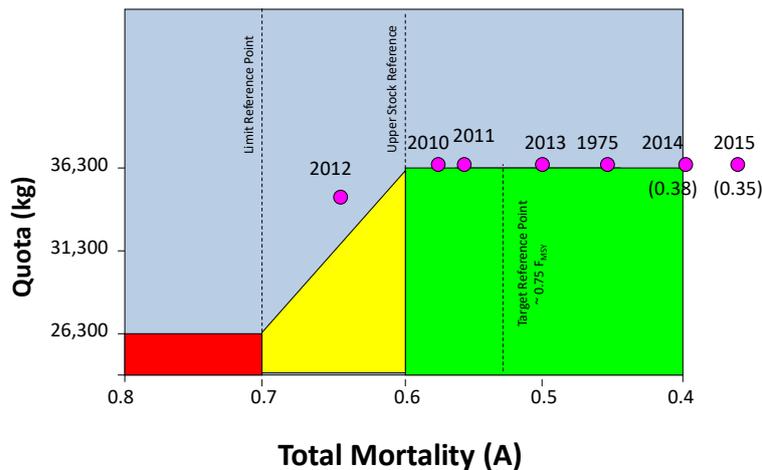


Figure 5. Harvest control rule for total mortality; when total mortality climbs above 0.6, Walleye quota for the Waterhen Lake fishery will be decreased to allow the stock to rebuild; from MCWS (2016)

Overall, since the first surveillance audit (IFC, 2015), there has been a modest improvement in Walleye stock status, although this provoked only a modest change to the regulations as stipulated by the four HCRs. During the site visit, it was noted that while status has improved, there has been a reduction in recruitment, which MCWS attribute to large-scale effects of environment. It has been observed that recruitment patterns tend to be synchronous amongst the lakes, suggestive of broader environmental influences (Geoff Klein, Fishery Manager, MCWS, pers. comm.).

Northern Pike

The client provided a progress report against the two conditions related to Northern Pike (Appendix 3), in which there is an analysis of the data they have collected to date (Appendix 3). Between 2010 and 2016, the index netting has annually produced between 46 and 76 Northern Pike with a total of 152 being caught between 2013 and 2016 (MCWS pers. Comm. November 2016). The client report indicates that Northern Pike Catch-Per-Unit-Effort (CPUE) has been the most stable of any species in the Waterhen Lake index program (Table 1).

Table 1. Index net counts of the ten species caught by year in the Waterhen Lake Gill Net Fishery (Appendix 3)

SPECIES	2000	2011	2012	2013	2014	2015	2016	MEAN CPUE	S.D.	C.V.
Northern Pike	72	55	76	53	48	50	76	62.57	12.77	0.20
Walleye	155	174	195	228	125	162	124	166.14	37.26	0.22
White Sucker	42	39	26	43	43	38	54	43.57	10.72	0.25
Yellow Perch	33	135	148	123	58	88	108	96.43	43.74	0.45
Lake Whitefish	13	18	10	7	6	6	5	9.29	4.75	0.51
Smallmouth Bass	4	1	6	8	3	5	2	4.64	2.41	0.50
Brook Silverside	0	2	41	77	34	52	144	50.00	49.51	0.99
Common Carp	1	26	37	25	1	1	0	13.00	15.76	1.21
Freshwater Drum	0	4	0	5	3	0	0	1.71	2.21	1.29
Lake Scoophead	130	42	20	7	19	8	12	34.00	43.95	1.29

The report also provides an analysis that indicates that there is a high standing stock of Northern Pike in Waterhen Lake relative to the food availability. The analysis is based on work conducted by Anderson and Neumann (1996) on Northern Pike populations in North America where they deduced an equation to indicate the likely weight (and therefore condition) of Northern Pike of a particular length. A high relative weight would indicate no food limitation and a low relative weight would indicate food limitation. The relative weight of the Waterhen Lake Northern Pike stock is currently considered to be low. Given the stability of the CPUE, it is concluded this is a result of a high density of Northern Pike relative to the carrying capacity of the lake.

The client’s submission also provides an estimate of the total annual mortality of the Waterhen Lake Northern Pike stock. The oldest Northern Pike that has been aged from Waterhen Lake is 11 years old. Using Hoenig’s (1983) estimator of natural mortality, the Northern Pike in Waterhen Lake have a natural mortality rate of 32%. By combining 152 Northern Pike caught in the index netting between 2013 and 2016, and using age 3 to 8 fish, a total annual mortality of 41% was calculated.

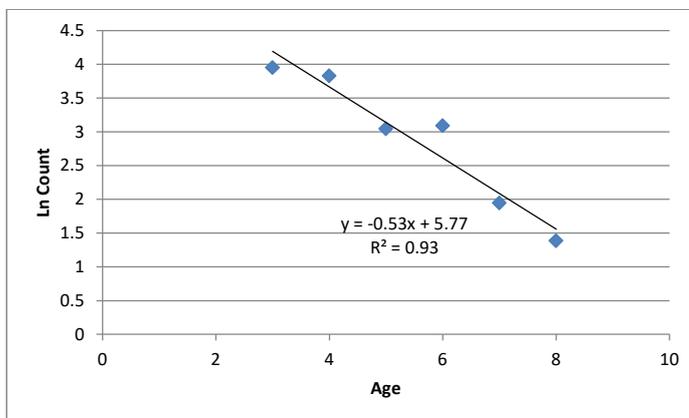


Figure 6. Total mortality rate (z=053) for Waterhen Lake Northern Pike using data from 2013-2016 (n=153) (Klein, 2016)

The report describes preliminary discussion on a harvest strategy for Northern Pike as well as initial consideration of harvest control rules similar to those in place for Walleye.

Principle 2

Retained Species

All marketable sized fish are required to be retained in this fishery. Mullet are the only main retained species, i.e. ≥ 5% of the total catch, in the commercial gill net fishery. In Waterhen Lake, mullet refers to White Sucker (*Catostomus commersoni*) and Shorthead Redhorse (*Moxostoma macrolepidotum*) (“red fin mullet”).

Minor retained species include Yellow Perch (*Perca flavescens*), Lake Whitefish (*Coregonus clupeaformis*) and Sauger (*Sander canadensis*).

Since the last surveillance audit, there has been a change in the status of the voluntary commercial logbooks. Specifically, completion and return rates were very poor and thus, they have been discontinued as a means to record catch and bycatch data. During the site visit, it was stated that the Fish Purchase System (FPS) managed by the Freshwater Fish Marketing Corporation (FFMC) now provides the main source of catch data. MCWS have direct access to the system and so obtain reported landing figures. Compliance with the reporting of catch to this system is monitored through bore-hole inspections, i.e. Conservation officers monitor the hauling of nets and cross check the landings with data from the FPS system. Table 6 of MCWS (2016) provides a summary of recent inspections which indicates high compliance in the catch recording system.

The audit team notes that the FMP should reflect the changes with respect to the logbook, particularly as the plan refers to the “importance” they have in monitoring overall catch, including bycatch.

Bycatch Species

IFC (2014) indicates that there are no main bycatch species, i.e. $\geq 5\%$ of the total catch, in the fishery. Brown Bullhead (*Ameiurus nebulosus*) and Burbot (*Lota lota*) are minor bycatch species. MCWS staff confirmed this remains the case. During the site visit, it was noted that the incidence of Brown Bullhead is on the increase, being an invasive species from adjoining lakes. While the species is native to Manitoba, there are no historical records of its catch in Waterhen Lake. The species is dormant in the winter and as a consequence, it is expected that it would never exceed 5% of the fishery’s catch.

ETP Species

IFC (2014) indicates that no ETP species are found in and around Waterhen Lake. MCWS staff confirmed this remains the case. During the site visit, there was no indication that this situation has changed.

Ecosystem

IFC (2014) recommended that an explicit habitat strategy be defined in the FMP (recommendation 13). An update on progress on this recommendation is provided in Table 5.

2.5 Any developments or changes within the fishery which impact traceability or the ability to segregate between fish from the Unit of Certification (UoC) and fish from outside the UoC (non-certified fish)

It was noted that FFMC now have a facility adjacent to Waterhen Lake where fish landings can be stored. This has helped the harvesters and assisted monitoring of the landings for MCWS staff. It was confirmed with the CAB responsible for the FFMC’s chain of custody (CoC) certification that this facility had been inspected.

2.6 Compliance

As indicated above, a new Conservation Officer has been appointed and this will enhance monitoring and enforcement.

The MCWS Conservation Officer confirmed there have been few enforcement issues within the audit reporting period. There were some concerns raised by fishers that non-commercial fishermen had tried to market fish through Waterhen Lake, but this was resolved before it actually happened (Gord Kirbyson, MWCS, pers. comm.).

3 TAC and catch data

Table 2 TAC and Catch Data

Walleye

TAC	Year	2015/16	Amount	36,300 Kgs
UoA share of TAC	Year	2015/16	Amount	36,300 Kgs
UoC share of TAC	Year	2015/16	Amount	36,300 Kgs
Total green weight catch	Year (most recent)	2015/16	Amount	12,650 Kgs
	Year (second most recent)	2014/15	Amount	23,655 Kgs

Table 3 TAC and Catch Data

Northern Pike

TAC	Year	2015/16	Amount	Fishery open to all commercial license holders with TAC on walleye acting as a “choke” species.
UoA share of TAC	Year	2015/16	Amount	
UoC share of TAC	Year	2015/16	Amount	
Total green weight catch	Year (most recent)	2015/16	Amount	17,928 Kgs
	Year (second most recent)	2014/15	Amount	17,423 Kgs

4. Summary of Assessment Conditions

Table 4 Summary of Assessment Conditions

Condition number	Performance indicator (PI)	Status	PI original score	PI revised score
1	1.2.1 (Northern Pike)	Behind Target	70	N/A
2	1.2.2 (Northern Pike)	On Target	70	N/A
3	3.2.4 (Northern Pike & Walleye)	Behind Target	70	N/A

5. Results

a. Condition 1

Performance Indicator (PI) & Score	PI number	Scoring Issue (SI) & Scoring Guidepost (SG) text	Score
	1.2.1 Northern Pike	SG 80 SIa The harvest strategy 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.	70
Scoring Rationale	Assessment of data-deficient fisheries against this indicator consider how elements of the harvest strategy combine to manage impact, such that susceptibility is maintained at or below acceptable levels given the productivity of the species. The harvest strategy is based on Walleye as the targeted species with Northern Pike taken as a retained by-catch. While the approach has differed over the years, the choice of the 96 mm gill net mesh size protects smaller Northern Pike and it is too small to catch larger Northern Pike. Thus it may be considered that the fishery meets SG60. As the harvest strategy has been designed to respond to Walleye management it cannot be said that it is responsive to the state of the Northern Pike stock. The fishery does not meet SG80.		
Condition	By the fourth annual audit, the following SG 80 scoring issue 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.		
Milestones	<p>At the first annual audit the client will present the Certification Assessment Body with evidence that there has been formal consideration of a harvest strategy for Northern Pike. Interim Scoring: no change 70</p> <p>At the second annual audit the client will present the Certification Assessment Body with evidence that the defined harvest strategy has been formally accepted by Manitoba Conservation and Water Stewardship and data and analysis are underway to provide the basis for development of biological reference points to support the strategy Interim Scoring: no change 70</p> <p>At the third annual audit the client will present the Certification Assessment Body with the analytically determined biological reference points Interim Scoring: no change 70</p> <p>At the fourth annual audit the harvest strategy for Northern Pike will reflect findings on the stock status in relation to the defined reference points. Scoring Outcome: 80</p>		
Client Action Plan	<p>In the first year of certification, Manitoba Conservation and Water Stewardship (Fisheries Branch) will undertake the following activities:</p> <ul style="list-style-type: none"> • Expand the effort to increase the sample size of Northern Pike as part of the Branch's on-going annual indexing program. • Start an annual commercial catch sampling program for Northern Pike as part of the Branch's data collection activities in support of effective monitoring and analysis that is part of a formal harvest strategy for sustainable management of the Northern Pike fishery. • Discuss with the Waterhen Lake commercial fishers a precautionary approach to fishery management of Northern Pike. 		

	<p>In the second year of certification, Manitoba Conservation and Water Stewardship (Fisheries Branch) will draft a harvest strategy in full consultation with the Waterhen Lake Fishermen’s Association including related associated specific harvest control rules & other management actions for Northern Pike. Manitoba Conservation and Water Stewardship (Fisheries Branch) will analyze data and information from Waterhen Lake and other sources to identify potential limit and upper stock reference points for Northern Pike together with related stock performance indicators.</p> <p>In the third year of certification, Manitoba Conservation and Water Stewardship (Fisheries Branch) will provide the Certification Assessment Body with the outcome and results of discussions with Waterhen Lake commercial fishers and other stakeholders on potential harvest control rules, biological reference points and performance indicators.</p> <p>In the fourth year of certification, Manitoba Conservation and Water Stewardship (Fisheries Branch) will provide the Certification Assessment Body with evidence of the use of biological reference points to inform the management decision-making process as part of a formal harvest strategy, together with evidence of the defined harvest control rules.</p>
<p>Progress On Condition [Year 1]</p>	<p>The FMP (Klein & Galbraith) represents a formal approach to the management of the fishery that (Page 4) 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. This includes Northern Pike.</p> <p>The harvest strategy governing the fishery was designed to sustain Walleye that is the species most prone to stock collapse owing to its late maturation. The Northern Pike stock is considered sustainable under the Walleye harvest strategy, because female Northern Pike will have spawned two or three times before they are susceptible to the minimum mesh size allowed in the Waterhen fishery. The first part of developing a specific Northern Pike harvest strategy was to improve the information base. (i) Index netting is carried out each year in the month of September when water temperatures fall to between 10 and 15 degrees Celsius. Weight and length are recorded for all fish caught. The sample size for Northern Pike has been expanded to a target of 200 specimens as part of the Fisheries Branch’s on-going annual indexing programme. To date it has proved difficult to obtain a larger sample size and further consideration is being given to approaches to improving sampling. (ii) Starting in the winter of 2014, a commercial catch sampling programme was established to better understand the stock age structure of Northern Pike, with the collection of cleithra taken from samples caught in commercial gillnets, from lake patrols when fishers are lifting their nets and from nets seized during enforcement activities. For the commercial fishery samples sex, age and length are recorded as well as the mesh size of the commercial gillnet. (iii) On-site (basin hole) inspections to estimate the number of discards.</p>
<p>Progress On Condition [Year 2]</p>	<p>The milestone states that at the second annual audit, the client will present the Certification Assessment Body with evidence that the defined harvest strategy (HS) has been formally accepted by Manitoba Conservation and Water Stewardship and data and analysis are underway to provide the basis for development of biological reference points to support the strategy.</p> <p>During the site visit, it was reported that data collection and analysis in support of the condition is well underway. Evidence of this was provided after the site visit in the form of a client report (Appendix 3).</p> <p>Discussions on the Harvest Strategy (HS), however, have not progressed as planned. The intent had been to discuss the development of a HS and associated Harvest Control Rules (HCRs) similar to those used in the walleye fishery with fishers at a meeting on 26th October 2016. However, discussions on the price</p>

	<p>premium for MSC certified walleye between the fishers and the Freshwater Fish Marketing Corporation precluded discussion on Northern Pike HS and HCR options (Appendix 3). MCWS staff did, however, discuss the HS and HCR approach in a more limited meeting with senior fishers within the Association. Regarding a CPUE HCR, an index performance indicator is available which has been very stable over time. Regarding mesh size based HCRs (SSB and Diversity), there was a sense that the large mesh sizes in place for the Walleye fishery would not create negative impacts on Northern Pike. The minimum mesh size limits and HCRs in place to govern Walleye fishing in Waterhen Lake also afford sustainable fishing for Northern Pike due to the early maturation schedule of female Northern Pike relative to Walleye. Further, all commercial fishing ceases on the lake when the Walleye quota is met, and the historical record shows that when fishing large mesh, the Walleye quota restricts Northern Pike harvest to levels well below the harvest required to collapse the fishery. Regarding the Total Mortality HCR, there was little interest in the adoption of a quota for Northern Pike. Rather, the fishers indicated that a HS, which used zoning to manage the Northern Pike fishery, would be a more favourable option. They suggested that an area around “Grassy Point”, which represents the best pike habitat in Waterhen Lake, should be excluded from fishing if the number of Northern Pike caught in the index netting program dropped to 20 or lower. Overall, there was a sentiment that limits on Northern Pike fishing should not hinder the Walleye fishery.</p>
<p>Audit Team Observations / Comments</p>	<p>The audit team notes that a key reason for the current successful management of the fishery is the stakeholder engagement and participation. The audit team also recognises that engagement on the HS and associated HCRs for Northern Pike was largely precluded by discussions on the price of fish being offered. Thus, resulting in incomplete fulfilment of the 2nd annual milestone.</p> <p>To achieve the requirements of the 2nd and 3rd milestones, the client will need to further engage with stakeholders to complete the discussion on the HS and associated HCRs, including the development of indicators and reference points and pre-agreed actions in response to changes in the stock conditions, in a similar way that has been successfully achieved for Walleye.</p> <p>It should be noted that MSC Certification Requirements (CR) version 2.0, section 7.23.13.1 (b) (i), states that, “If progress toward meeting a condition is judged to be ‘behind target’ the, Conformity Assessment Body (CAB) shall specify remedial action and any revised milestone that are required to bring the process back on track within 12 months to achieve the original condition by the original timeline.”</p> <p>Furthermore, MSC CR v2.0 section 7.23.13.2, states that, “In the event that the CAB determines that progress against a condition is not back ‘on target’ within 12 months of falling ‘behind target’, the CAB shall, consider progress as inadequate and apply commence certificate suspension or withdrawal.”</p>
<p>Status of Condition</p>	<p>Progress against the condition is behind target.</p> <p>To achieve the requirements of the 2nd and 3rd milestones by the 3rd surveillance audit, the client will need to further engage with stakeholders to complete the discussion on the HS and associated HCRs, including the development of indicators and reference points and pre-agreed actions in response to changes in the stock conditions, in a similar manner that has been successfully achieved for Walleye.</p>

b. Condition 2

	PI number	Scoring Issue (SI) &	Score
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Performance Indicator (PI) & Score		Scoring Guidepost (SG) text	
	1.2.2 Northern Pike	SG80 Sia. 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.	70
Scoring Rationale	As Northern Pike is not directly managed there is a need to assess the extent to which there are management tools and measures in place that are consistent with ensuring that susceptibility of the target species to removal is no higher than that which would cause the risk to the target species to be above an acceptable risk range. Given the distribution of the species in Waterhen Lake, mesh size, limited season, limit on gill net length and closed areas, it may be concluded that the harvest control rules achieve the aim of limiting the risk, but as they are not well defined for Northern Pike they do not ensure that exploitation rates for Northern Pike may be adjusted if required.		
Condition	By the fourth annual audit, the following SG 80 scoring issue 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.		
Milestones	At the first annual audit the client will present the Certification Assessment Body with evidence that there has been consideration of the appropriateness of existing Harvest Control Rules for Northern Pike and, that options have been identified. Interim Scoring: no change 70 At the second annual audit the client will present the Certification Assessment Body with evidence that the identified options have been discussed with stakeholders and may be implemented according to the status of the stock in the context of the harvest strategy. Interim Scoring: no change 70 No 3 rd surveillance milestone. Interim Scoring: no change 70 At the fourth annual audit there will be evidence that the harvest control rules required by the strategy have been implemented as required and in accordance with the stock status. Scoring outcome: 80		
Client Action Plan	In the first year of certification, Manitoba Conservation and Water Stewardship (Fisheries Branch) will undertake the following activities: <ul style="list-style-type: none"> • Expand the effort to increase the sample size of Northern Pike as part of the Branch’s on-going annual indexing program. • Start an annual commercial catch sampling program for Northern Pike as part of the Branch’s data collection activities in support of effective monitoring and analysis that is part of a formal harvest strategy for sustainable management of the Northern Pike fishery. • Discuss with the Waterhen Lake commercial fishers a precautionary approach to fishery management of Northern Pike. In the second year of certification, Manitoba Conservation and Water Stewardship (Fisheries Branch) will draft a harvest strategy in full consultation with the Waterhen Lake Fishermen’s Association including related associated specific harvest control rules & other management options/actions for Northern Pike. Manitoba Conservation and Water Stewardship (Fisheries Branch) will also analyze data and information from Waterhen Lake and other sources to identify		

	<p>potential limit and upper stock reference points for Northern Pike together with related stock performance indicators.</p> <p>In the fourth year of certification, Manitoba Conservation and Water Stewardship (Fisheries Branch) will provide the Certification Assessment Body with evidence of the use of biological reference points to inform the management decision making process as part of a formal harvest strategy, together with evidence of the defined harvest control rules.</p>
<p>Progress on Condition [Year 1]</p>	<p>As covered in the FMP (Klein & Galbraith 2015):</p> <p>The 105 mt catch spike in the 1940s following use of 83 mm mesh with the subsequent return to 102 mm mesh did not appear to collapse the Northern Pike stock. In contrast, the 148 mt removal (5.5 kg/ha) in 1991 and sustained 76 mm use did. The use of small mesh catches all sizes of pike, many before they are able to spawn for the first time.</p> <p>A study of Northern Pike in Waterhen found female Northern pike to be sexually mature at two years of age (2-year olds were 100% mature, n=5; 3 year olds were 93 % mature, n=14). The 96 mm minimum mesh in Waterhen catches fish 5 years and older, thus female Northern Pike are afforded two or three spawning seasons before harvest and this is sustainable.</p> <p>On that basis it is considered that the minimum mesh size limits and harvest control rules in place to govern Walleye fishing also afford sustainable fishing for Northern Pike due to the early maturation schedule of female Northern Pike relative to Walleye. All commercial fishing ceases on the lake when the Walleye quota is met, and the historical record shows that when fishing large mesh the walleye quota restricts Northern Pike harvest to levels well below the harvest required to collapse the fishery.</p> <p>The FMP also restates other tools – closed areas and limitation on net length – that could be considered to reduce effort in the Northern Pike fishery. In relation to recommendation 11, the client is considering the need for regulation of the roe fishery.</p>
<p>Progress on Condition [Year 2]</p>	<p>The milestone states that at the second annual audit, the client will present the Certification Assessment Body with evidence that the identified options have been discussed with stakeholders and may be implemented according to the status of the stock in the context of the harvest strategy.</p> <p>As indicated in progress on condition 1, full consultation with the Waterhen Lake Fishermen’s Association was not possible owing to a Walleye pricing issue which had recently emerged. However, discussion with some of the senior fishers has taken place and their preferred option for management action when catches of Northern Pike reach a pre-determined level (≤ 20) in the index netting is to close an area known as “Grassy Point” to commercial fishing.</p>
<p>Audit Team Observations / Comments</p>	<p>The audit team notes that a key reason for the current successful management of the fishery is the stakeholder engagement and participation. The audit team also recognises that engagement on the HS and associated HCR for Northern Pike was largely precluded by discussions on the price of fish being offered and further discussion will be necessary.</p> <p>That said, the client has met the specifics of the second annual milestone by discussing HCR options with stakeholders. However, the audit team notes that further discussion with the Waterhen Lake Fishermen’s Association about Northern Pike HCR options will be necessary.</p> <p>The audit team notes that a third annual milestone was not set for this condition. This is thought to have been an oversight during the initial assessment. The audit team has therefore set a third year milestone as follows:</p>

	<p>At the third annual audit, the client will present the Certification Assessment Body with evidence that HCR options have been discussed with stakeholders and confirm that these will be implemented according to the status of the stock in the context of the harvest strategy by the 4th surveillance audit.</p> <p>In setting this milestone the client has been asked to provide the audit team with an updated action plan to reflect this new milestone.</p>
Status of condition	Progress against the condition is on target.

c. Condition 3

	PI number	Scoring Issue (SI) & Scoring Guidepost (SG) text	Score
Performance Indicator (PI) & Score	3.2.4 Northern Pike & Walleye	SG80 Sib. Research results are disseminated to all interested parties in a timely fashion.	70
Scoring Rationale	The research results are available to fishery managers and through them the results are made known to stakeholders. Similarly, researchers have access to the database and the information. The auditors have not seen any evidence to indicate that the results of the research are disseminated or that they are available to <u>all</u> interested parties. There is no evidence to show how the research results are disseminated and it appears clear that they are not widely and publically available. The fishery meets the issue at SG60 but not SG80 and SG100.		
Condition	By the second annual audit, the following SG 80 scoring issues must be met: Research results are disseminated to all interested parties in a timely fashion.		
Milestones	<p>At the first annual audit the client will present the Certification Assessment Body with evidence that there has been consideration of how to disseminate research results in a formal established approach. Interim Scoring: no change 70</p> <p>At the second annual audit the client will present the Certification Assessment Body with evidence that research results are being disseminated in a formal established way. Interim Scoring: no change 70</p> <p>By the third audit the required minimum score for PI 3.2.4 is 80.</p>		
Client Action Plan	<p>Monitoring and research results will be disseminated to the general public through the Manitoba Conservation and Water Stewardship, Fisheries Branch website, which, within one year of Waterhen Lake becoming certified, will include a section dedicated to Waterhen Lake eco-certification. This website will include, in addition, materials related to certification efforts on Waterhen Lake including the management plan, the action plan, the certification assessment report and annual audit reports.</p> <p>Where University research is involved, theses and peer-reviewed publications will be prepared by the home organization and be available through normal University channels. In addition, these documents, links to these documents or citations for these documents (depending on copyright restrictions) will be made available to the public on the Conservation and Water Stewardship, Fisheries Branch website.</p> <p>For directly involved stakeholders and interested parties, all monitoring and research results and associated materials, including University based research projects, will be presented, discussed and distributed at the annual Waterhen Lake commercial fisher association meeting, which will be followed by a general public meeting to be held in the Waterhen Lake area.</p>		

	<p>These materials will also be made available upon request to the Department of Manitoba Conservation and Water Stewardship, Fisheries Branch or to interested parties that attend the Fisheries Branch head office in person.</p> <p>The approach stated above will provide the venue to disseminate and share information to all involved stakeholders and interested parties in a timely fashion and ensure the materials are widely and publicly available.</p>
<p>Progress on Condition [Year 1]</p>	<p>The web site approach is being developed. An annual report on the fishery was produced in 2015 (Galbraith 2015). The FMP was updated in early 2015 and will be up-dated on an annual basis and this will include details on the research plan and the results obtained. The annual pre-season meeting with stakeholders presents the up-dates on relevant research.</p> <p>The Annual Report and FMP were presented to the President of the LWFA.</p>
<p>Progress on Condition [Year 2]</p>	<p>The FMP (section 9.2) states that, “Monitoring and research results will be disseminated to the general public through the Manitoba Conservation and Water Stewardship, Fisheries Branch website, which, within one year of Waterhen Lake becoming certified, will include a section dedicated to Waterhen Lake eco-certification...”</p> <p>On review of the MCWS website, a link has been included on “Eco Certification”, (http://www.gov.mb.ca/conservation/waterstewardship/fish/index.html)</p> <p>The link takes the viewer to a page that describes commercial fishing in Manitoba and a description of eco certification.</p> <p>The webpage then displays the following links:</p> <ul style="list-style-type: none"> ◦ Public Certification Report ◦ MSC Fishery Certificate ◦ Summary report ◦ MSC Certification Media Release ◦ Management Plan ◦ Eco-Certification Action Plan & Matrix ◦ 1st Annual Waterhen Eco Certification Audit Report 2015 <p>None of the links relate specifically to research on the Waterhen lake fishery, which is the key issue with respect to this condition, i.e. the dissemination of research results.</p> <p>In discussion with the client, it was noted that the FMP does have a section on research and provides references to “Past Research” and “Pending Research”. The past research references date between 1978 and 2012.</p> <p>None of the pending research has yet to be conducted owing to budgetary constraints.</p>
<p>Audit Team Observations / Comments</p>	<p>While it is clear that research information has been cited, it cannot be said it has been disseminated, although the client representatives confirmed that information would be made freely available upon request (Bill Galbraith, pers. Comm. November 2016).</p> <p>In order for the audit team to close this condition, evidence needs to be provided that research is disseminated to all interested parties. The audit team recommends that research papers or documents, and/or links to these included on the webpage, and as required the webpage expressly state that research information and results are available upon request from the MCWS.</p> <p>It should be noted that MSC Certification Requirements (CR) version 2.0, section 7.23.13.1 (b) (i), states that, “If progress toward meeting a condition is judged to be ‘behind target’ the, Conformity Assessment Body (CAB) shall specify remedial action and any revised milestone that are required to bring the process back on track within 12 months to achieve the original condition by the original timeline.”</p>

	<p>Furthermore, MSC CR v2.0 section 7.23.13.2, states that, “In the event that the CAB determines that progress against a condition is not back ‘on target’ within 12 months of falling ‘behind target’, the CAB shall, consider progress as inadequate and apply commence certificate suspension or withdrawal.”</p>
<p>Status of Condition</p>	<p>Progress against the condition is behind target.</p> <p>By the 3rd surveillance audit, the client needs to demonstrate that research results are disseminated to all interested parties in a timely fashion.</p>

Recommendations

Table 5

Recommendation Matrix – MSC Certification of Waterhen Lake Walleye & Northern Pike Commercial Gillnet fishery				
Recommendation	Adoption	Rationale	Implementation Plan/Strategy	Update
1 (a) To better understand the stock structure of Northern Pike in Waterhen Lake, commercial-catch sampling should be conducted.	Yes		The Department will work with commercial fishers and the Freshwater Fish Marketing Corporation to acquire the necessary commercial catch samples on an annual basis.	FFMC allow access to the shed and also their database.
1 (b) The index sampling effort should be increased to catch at least 200 Northern Pike as part of the indexing program.	Partial	The Department will continue current annual index netting program.	The Department is searching for areas with high Northern Pike density and low Walleye by-catch that will augment the sample size of Northern Pike. However it is premature to commit to 200 samples of Northern Pike.	Despite best efforts increasing the sample size to 200 appears to be too optimistic and not a feasible target.
2. Water temperature and water quality, particularly winter oxygen levels, be measured routinely in Waterhen Lake. This data should be collected to see whether they have any aspects of winterkill or local oxygen depletion, which would concentrate Northern Pike, while supporting a better understanding of the Walleye resource.	Yes		There will be monthly monitoring during the winter commercial fishing season for the first two years to determine if oxygen depletion occurs.	There have been equipment failures and there is no longer a functioning O ₂ meter. MCWS still interested in doing this but resources are limited.

Recommendation Matrix – MSC Certification of Waterhen Lake Walleye & Northern Pike Commercial Gillnet fishery				
Recommendation	Adoption	Rationale	Implementation Plan/Strategy	Update
3. Validated procedures of accurately interpreting age and growth of Northern Pike be used in the future, probably using the cleithral method, in routine indexing and commercial catch sampling and that size-at-age be compared with a growth standard and used to develop age-related performance indicators.	Yes		Validated aging procedures will be used for Northern Pike.	Aging of Northern Pike is now part of the routine sampling program
4. Various types of reproductive information be acquired and used to develop and monitor an indicator of the spawning stock of Northern Pike in Waterhen Lake. Indeed, as in Walleye, a Northern Pike index of spawning stock biomass could provide a target reference point.	Yes		The Department is currently collecting maturity schedules for both sexes in the hope of eventually developing a harvest control rule.	Done, every female is mature
5. Appropriate techniques are developed to annually determine mortality rate of the Northern Pike population of Waterhen Lake and that it be used as a reference-point performance indicator to assess Northern Pike exploitation on an ongoing basis, preferably refined for thermal conditions (GDD).	Partial	Currently the Department is limited to gillnet surveys which are recognized as inappropriate due to biased harvest to gravid females. Mortality rates will be calculated from the current index program to at least provide a trend in	The Department will explore opportunities to enhance its monitoring using different gear types and/or techniques. Ontario FWIN summary will be consulted to determine if any relation to thermal conditions can be detected.	No progress on this but MCWS staff intend to look at the Ontario program

Recommendation Matrix – MSC Certification of Waterhen Lake Walleye & Northern Pike Commercial Gillnet fishery				
Recommendation	Adoption	Rationale	Implementation Plan/Strategy	Update
		ersatz mortality rates.		
6. A carefully monitored spring live-capture trap-net commercial fishery be considered and, if necessary, used to reduce disproportionately abundant prey fish, including small Northern Pike, to maintain a sustainable, high-quality commercial Walleye and Northern Pike harvest.	Yes	This will serve as a valuable management tool to adjust fish community if needed.	Regulations and areas where a fishery would occur will be determined in advance of a spring live-capture trap-net commercial fishery.	Not yet done
7 (a) Log books are made compulsory as a condition of license.	No	A subgroup of sentinel fishers should be sufficient. This approach is consistent with recommendations made during the pre-assessment survey of fishery.	This would be implemented in conjunction with the on-site basin hole inspection program.	The voluntary logbooks scheme was not successful and has been dropped for now. On-site basin hole inspections take place and will likely increase with appointment of additional conservation staff.
7 (b) Part of the log book is used to record discards in order to ensure the completeness of information.	Yes		Already being conducted. Log book records two types of data: (1) retained (non FFMC) by-catch as well as (2) discarded by-catch.	The voluntary logbooks scheme was not successful and has been dropped for now.
8. The external audit of the Fisheries Management Plan is completed in the third year of the MSC certification so that the results and the MCWS response are	Yes		The external review of the management plan will be completed in the third year of the MSC certification.	Three external reviewers have been approached.

Recommendation Matrix – MSC Certification of Waterhen Lake Walleye & Northern Pike Commercial Gillnet fishery				
Recommendation	Adoption	Rationale	Implementation Plan/Strategy	Update
available to the team engaged in any re-certification.				
9. The Fisheries Management Plan is considered “evergreen” to reduce the need for future staff inputs.	Yes			This is now routine.
10 (a) The auditors are concerned that there may be too broad a range and subsequent overlap of size and age of fishes caught by either mesh size due to snagging, entangling, and age variation etc. to provide the protection desired, and more drastic means may be required. It is recommended that there is some evidence to support the effectiveness of mesh size selectivity to obtain the desired results.	Yes	Mesh sizes are broadly selective for age and size, particularly smaller meshes.	The Department will provide distributions of fish size by mesh so reviewers can assess selectivity. The Department understands that deduction of small or large Walleye will not be total, but the Harvest Control Rules will provide the greatest protection possible for age classes.	Size selectivity information is now available for pike and walleye.
10 (b) It is recommended that assessment be conducted using specific nets to determine gill-net selectivity for Northern Pike and that selectivity curves be prepared and considered when designing performance indicators. Likewise, selectivity and catchability of Northern Pike should be taken into consideration in the FWIN index gill nets. Indeed, retention of various types of gill nets has been studied	No	The Department considers a consistent index netting program sufficient to track the Northern Pike population.	This recommendation would provide very interesting information to managers and will be forwarded as an undergraduate or Masters research project. There are simply too many gauges of twine, materials, colours and hanging ratios for the Department to undertake this recommendation.	While recognizing the merits in this it the Department will never have resources to undertake this.

Recommendation Matrix – MSC Certification of Waterhen Lake Walleye & Northern Pike Commercial Gillnet fishery				
Recommendation	Adoption	Rationale	Implementation Plan/Strategy	Update
recently not only for Northern Pike but for other species, providing valuable correction factors (Walker et al. 2012).				
11. Currently the Waterhen gill net ice fishery targets Walleye. The retained by-catch of Northern Pike has also been certified. While it is understood that the roe of captured eggs of female Northern Pike may be extracted to provide the specific product of Northern Pike caviar, the auditors are concerned that any increase in the market value of the roe may lead to the inception of a dedicated roe fishery which may, in turn, be detrimental to stock status and may have implications for other populations in the Lake including walleye. On that basis it is strongly recommended that fishery managers regulate against a specific roe fishery until such time there may be science based Northern Pike TACs and quota that could take account of the potential catch in such a fishery.	Partial	The Department agrees with the precautionary approach; however, to determine the exact scope will research Northern Pike roe deliveries from Waterhen Lake to determine whether concerns of a dedicated roe fishery are warranted.	Data will be compiled in time for the 2 nd annual surveillance audit.	The Department's Data manager is tracking Northern Pike roe production. It is thought likely this will be completed once conditions 1 and 2 met
12. Given the vintage of the data we recommend that the client reviews other sources to ensure that the Lake Winnipeg findings used to estimate the Limit	Yes		The Department will conduct reviews of relevant literature.	When resources and competing priorities allow this may be undertaken.

Recommendation Matrix – MSC Certification of Waterhen Lake Walleye & Northern Pike Commercial Gillnet fishery				
Recommendation	Adoption	Rationale	Implementation Plan/Strategy	Update
Reference Point for walleye continue to be relevant or are the most appropriate.				
13. The auditors recommend an explicit definition of a habitat strategy in the Fishery Management Plan.	Yes	The Department agrees that habitat is a component of any fishery. The Department is collaborating with the University of Manitoba in monitoring edaphia characteristics of Waterhen Lake.	Habitat strategy will be developed which incorporates protection as outlined in the Federal Fisheries Act and Departmental policies.	The Department is communicating with DFO on this.

Conclusion

Summary of findings

One condition of certification is on-target and two conditions are behind target.

The two conditions that are behind target are required to be on target by the next surveillance audit.

The fishery continues to be certified.

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Appendix 1 – Re-scoring evaluation tables

Not applicable

Appendix 2 - Stakeholder submissions

No stakeholder submissions were received.

Appendix 3 - Surveillance audit information

The following information was provided by the client:

**Northern Pike (*Esox lucius*) investigations on Waterhen Lake:
Progress toward harvest control rules.**

(Klein 2016NOV04)

Waterhen Lake achieved Marine Stewardship sustainable fishing certification in 2014 for its Walleye (*Sander vitreus*) and Northern Pike (*Esox lucius*) fisheries. The Northern Pike fishery passed with two conditions and some recommendations by the reviewers. The Certification Assessment Body felt that while the Northern Pike stock was protected by the Harvest Control Rules governing Walleye fishing under the current pricing regime, the danger exists of increased fishing directed at Northern Pike if MSC certification resulted in higher value of pike and pike byproducts. This document summarises the work to date addressing the concerns of the reviewers.

Performance Indicator 1.2.1**Scoring Guidepost Text (to achieve 80):**

The harvest strategy 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.

Condition 1:

By the fourth annual audit, the following SG 80 scoring issue 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.

Milestones:

At the first annual audit the client will present the Certification Assessment Body with evidence that there has been formal consideration of a harvest strategy for Northern Pike.

At the second annual audit the client will present the Certification Assessment Body with evidence that the defined harvest strategy has been formally accepted by Manitoba Conservation and Water Stewardship and data and analysis are underway to provide the basis for development of biological reference points to support the strategy.

Harvest Strategy:

By the second annual audit, Manitoba Conservation and Water Stewardship – now Manitoba Sustainable Development (SD) – has discussed index netting results related to Northern Pike with the fishers, and the fishers have proposed the following rule: If twenty or fewer Northern Pike are caught in the index netting program, the Grassy Point area will be closed to commercial netting.

The Waterhen Lake fishers feel the area around Grassy Point is the best pike habitat in Waterhen Lake and should be excluded from netting if the index program shows Northern Pike numbers to be low. This will allow fishing to continue for Walleye in areas where there is a

higher ratio of Walleye to pike

Data and Analysis:

Northern Pike catch-per-unit-effort (CUE) has been the most stable of any species in the Waterhen Lake index program (Table 1). Notwithstanding its low coefficient of variation, the power to detect a 20% decrease in CUE ($\alpha = 0.1$) is slightly lower for the 30 index net sets than for Walleye; 74% compared to 80%. This counterintuitive result is due to the lower among-year correlation of individual net sites' CUE for pike relative to Walleye. There is 100% power to detect any decrease greater than 44% of the mean annual pike CUE of 62.5 fish per year; a CUE less than 37 fish.

Table 1. Index net program counts of the ten species caught by year. Species are ordered by coefficients of variation. Index nets are the North American standard nets: stretched mesh sizes of 38, 51, 64, 76, 89, 102, 114, and 127 mm; each panel is 3 m long and 1.8 m deep. The index netting program uses 30 sets annually.

	CV	SD	MEAN CUE	2005	2005	2005	2005	2005	2005	2005	2005	2005	2005	2005	2005	2005	2005	2005	2005	2005	
Northern Pike	0.19	11.77	62.57	76	58	48	53	76	55	72											
Walleye	0.22	37.26	166.14	124	162	125	228	155	174	155											
White Sucker	0.25	10.72	43.57	54	38	43	43	26	59	42											
Yellow Perch	0.45	43.74	96.49	108	68	58	123	109	136	33											
Lake Whitefish	0.51	4.75	9.29	5	6	6	7	10	18	13											
Spottail Shiner	0.59	2.41	4.14	2	5	3	8	6	1	4											
Brown Bullhead	0.99	49.51	50.00	144	52	34	77	41	2	0											
Common Carp	1.21	15.76	13.00	0	1	1	25	37	26	1											
Freshwater Drum	1.29	22.11	17.1	0	0	3	5	0	4	0											
Lake Chub	1.29	43.55	34.00	12	8	19	7	20	42	130											

Waterhen Lake Northern Pike are crowded relative to the carrying capacity of the lake at current densities. Relative weight is a tool used in freshwater fisheries management to assess the condition of fish. It is a great advantage in freshwater fisheries management that for many species there are data available for many stocks to which a stock in question can be compared. For Northern Pike, Anderson and Neumann (1996) developed a reference standard weight equation describing fish in “good” condition; the weight at length for approximately the 75th percentile of Northern Pike populations measured at that time. Fish falling on the standard weight line have a relative weight of 100. Fish weighing more at a given length will have relative weights over 100, and leaner fish less than 100. A high relative weight indicates no limitation of food and is associated with good growth. Low relative weights signal food limitation. Gabelhouse (1984) broke pike lengths into categories to assist among-lake comparisons: Stock, 35 – 53 cm; Quality, 53 – 71 cm; Preferred, 71 – 86 cm; Memorable, 86 – 112 cm; and fish greater than 112 cm classed Trophy. Stock-sized Northern Pike in Waterhen Lake are thin in comparison to other area lakes (Table 2). Quality-sized Waterhen pike are thinner than the 25th percentile for North American lakes, and preferred-sized Waterhen pike are thinner than the 5th percentile of North American populations and the thinnest of any area lakes (Table 2). Only a few Memorable-sized fish have been caught in the index netting program, and no Trophy fish. The low relative weights of Northern Pike in Waterhen Lake are due to a high standing stock relative to their food. The high pike density supports the fishers' recommendation to take no action until the annual index catch falls to 20

fish. In the history of the fishery, the stock only appears to have been fished down following the use of small 3" mesh in 1991 when 147 tonnes of Northern Pike were harvested followed by the use of 3" mesh until 2001 (Figure 2). Even the use of 3 1/4" from 1946 to 1948 does not appear to have diminished the harvest in subsequent years. Deliveries of Northern Pike indicate the stock had rebounded from the 1991 overfishing by 2006, five years after small mesh fishing ended.

Table 2. Average relative weights for three size classes of Northern Pike. The first three rows are reference values from pike populations in North America. The lower rows show Waterhen Lake pike (in bold) along with four area lakes for comparison. All local area lakes demonstrate poorer condition with increased length compared to North American averages.

	STOCK 35 – 53 cm	QUALITY 53 – 71 cm	PREFERRED 71 – 86 cm
NORTH AMERICA, 50TH PERCENTILE	101	95	100
NORTH AMERICA, 25TH PERCENTILE	85	87	90
NORTH AMERICA, 5TH PERCENTILE	79	79	83
LAKE WINNIPEG	98	88	84
LAKE ST. MARTIN	91	86	85
LAKE ST. ANDREW	90	82	79
WATERHEN LAKE	88	84	77
LAKE ST. GEORGE	85	83	79

The total annual mortality rate for Waterhen Lake Northern Pike is consistent with the low physical condition of the fish. The oldest fish that has been aged from Waterhen Lake was 11 years old. Using Hoenig's (1983) estimator of natural mortality, Waterhen Lake Northern Pike have a natural mortality rate of 32%. The total annual mortality for Waterhen Lake pike is only 41%. This estimate of total annual mortality was calculated by combining 152 pike caught in the index netting program from 2013 to 2016, and uses age 3 to 8 fish (Figure 3). A low rate of total mortality – just 9% above the estimated natural mortality rate – would help explain the low relative weights exhibited by Waterhen Lake Northern Pike, because they crowd their habitat as they approach carrying capacity.

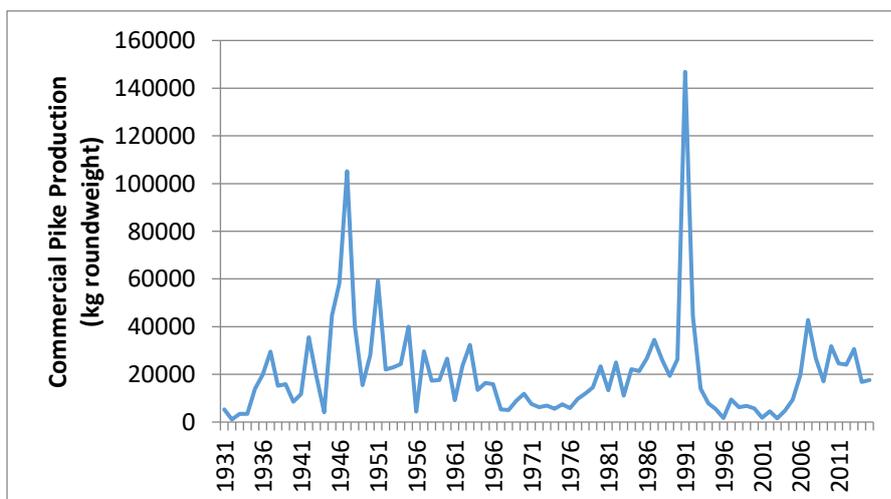


Figure 2. Commercial production of Waterhen Lake Northern Pike in kilograms roundweight. Peaks in 1947 and 1991 correspond to the use of 3 1/4" and 3" mesh in the fishery. Northern

Pike were removed from the lake quota in 1979. Deliveries after 1979 are believed to represent the true availability of Northern Pike. Deliveries in the 1960s and 70s may be low due to discarding of Northern Pike in favour of Walleye, which are higher in value, but count equally against the lake quota.

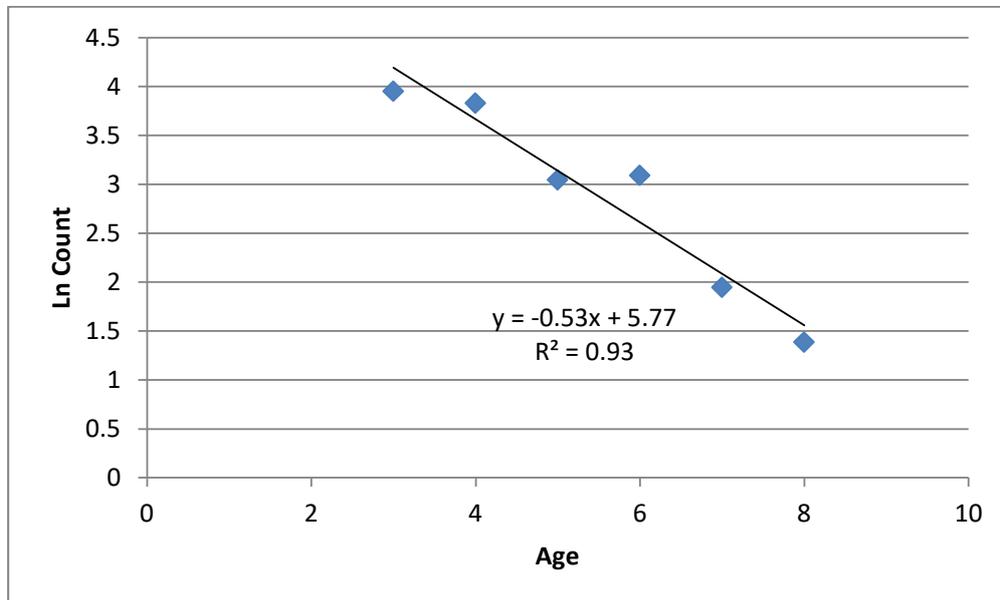


Figure 3. Total mortality rate (Z = 0.53) for Waterhen Lake Northern Pike. Data from 2013 to 2016 index netting surveys were combined (n = 152).

Performance Indicator 1.2.2

Scoring Guidepost Text (to achieve 80):

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.

Condition 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.

Milestones:

At the first annual audit the client will present the Certification Assessment Body with evidence that there has been consideration of the appropriateness of existing Harvest Control Rules for Northern Pike and, that options have been identified.

At the second annual audit the client will present the Certification Assessment Body with evidence that the identified options have been discussed with stakeholders and may be implemented according to the status of the stock in the context of the harvest strategy.

Stakeholder Discussions:

The Waterhen fishers meet annually before the fishing season begins. The season start date is November 1st, after ice makes. In 2016 ten of the twenty-one licensed fishers attended the annual meeting. This is a high percentage compared to most Manitoba fisheries. It was not possible to address the issue of Northern Pike harvest control rules during the 2016 meeting

due to challenging discussions between the fishers and the Freshwater Fish Marketing Corporation regarding the proportion of the price premium on MSC certified Walleye that is getting passed on to the fishers. The pike harvest control measures were instead discussed after the meeting with the three most senior fishers among the Waterhen fishers: Lorne Huhtala, the fishers' association President; George Dano, from the Métis community of Mallard, and the fisher with the longest career of all; and Wesley Catcheway, the most senior fisher from the Skownan First Nation.

Both Wesley Catcheway and Lorne Huhtala favoured the area closure rule put forward above. George Dano expressed no preference for a harvest control rule governing pike fishing.

There was little interest in restricting Northern Pike harvest with a quota. Instead, zonation of the lake to close fishing in an area of high pike abundance relative to Walleye according to local traditional knowledge was preferred. This avoidance of having pike cause a cessation of all fishing may be rooted in the history of the fishery where before 1979 the lake quota included Walleye, Northern Pike and Sauger (*Sander canadensis*). Sauger never made up a large proportion of the catch on Waterhen Lake and has always had a value of around three quarters that of Walleye. Northern Pike on the other hand has always had a much lower value than Walleye; for example,

this coming winter the price for Northern pike will be about one sixth that of Walleye per kilogram. When Northern Pike was included in the same quota with Walleye, fishers would discard Northern Pike in order to leave room for the more valuable Walleye, which resulted in the low pike deliveries of the 1960s and 70s (Figure 2).

References:

Anderson, R.O. and R.M. Neumann. 1996. Length, weight, and associated structural indices. Pages 447- 482 in B.R. Murphy and D.W. Willis, eds. Fisheries Techniques, 2nd Edition. American Fisheries Society, Bethesda, Maryland.

Gabelhouse, D.W. 1984. A length-categorization system to assess fish stocks. North American Journal of Fisheries Management 4: 273-285.

Hoening, J.M. 1983. Empirical use of longevity data to estimate mortality rates. Fisheries Bulletin 82: 898- 903.

Appendix 4 - Additional detail on conditions/ actions/ results

Not applicable

Appendix 5 - Revised Surveillance Program

Table 5.1 : Surveillance level rationale

Year	Surveillance activity	Number of auditors	Rationale
3	On-site audit	1 auditor on-site with remote support from 1 auditor	The approach appeared to work well this year. It had been originally hoped that the second annual audit would include a visit and meetings with the fishers. This was not possible and so it is recommended this takes place at the third annual audit.

Table 5.2: Timing of surveillance audit

Year	Anniversary date of certificate	Proposed date of surveillance audit	Rationale
3	23 June 2017	November 2017	This is seen as being a convenient time to visit the fishery (to be confirmed with the clients)

Table 5.3: Fishery Surveillance Program Revised

Surveillance Level	Year 1	Year 2	Year 3	Year 4
Level 5	On-site surveillance audit	On-site surveillance audit	On-site surveillance audit	On-site surveillance audit & re-certification site visit.