



Draft Fisheries Management Plan for Fisheries Management Zone 5

October, 2012

**Ontario Ministry of Natural
Resources**

Table of Contents

1.0	Introduction	1
2.0	Strategic Direction and Guiding Principles	3
3.0	Description of Fisheries Management Zone 5.....	5
3.1	Biological Description	6
3.2	Socio-Economic Description	6
3.3	Current Fisheries Management Actions	7
4.0	Broad Fisheries Management Goal for FMZ 5.....	8
5.0	Issues, Challenges and Proposed Management Actions.....	9
5.1	Exploitation of Fisheries Resources	11
5.1.1	Walleye.....	11
5.1.2	Northern Pike	20
5.1.3	Smallmouth and Largemouth Bass	26
5.1.4	Lake Trout	33
5.1.5	Black Crappie	38
5.1.6	Commercial Fisheries Management.....	43
5.1.7	Other Species.....	47
5.2	Fish Habitat and Ecosystem Health	49
5.2.1	Habitat and Development	49
5.2.2	Invasive Species	53
5.3	Education	57
5.4	Exceptions to FMZ 5 wide regulations	57
6.0	Public and Aboriginal Community Involvement.....	60
6.1	Fisheries Management Zone 5 Advisory Council	60
6.2	Aboriginal Community Involvement.....	60
6.3	Public Consultation Program.....	61
6.3.1	Invitation to Participate and Background Information Report	61
6.3.2	Draft Plan Consultation	61
6.3.3	Final Plan Inspection	62
7.0	Ongoing Commitment to Monitoring.....	63
8.0	Review and Amendment of the Fisheries Management Plan.....	63
9.0	Implementation Plan	64
	References.....	66
	Appendices.....	67
	Appendix 1. Lakes with current exceptions related to walleye management and rationale for retaining, editing or removing exceptions.....	67
	Appendix 2. Lakes with current exceptions which are related to lake trout management and rationale for retaining, editing or removing exceptions.	69
	Appendix 3. Other potential management actions considered by the Advisory Council or OMNR but not presented as options in this plan.	71
	Appendix 4. Proposed FMZ 5 Black Crappie Monitoring Program	76

Titles and Approval
(to be completed for the Final Plan)

FISHERIES MANAGEMENT PLAN

For

FISHERIES MANAGEMENT ZONE 5

Encompassing Portions of the Ontario Ministry of Natural Resources Administrative Districts of Fort Frances, Dryden and Kenora.

I certify that this plan has been prepared using the best available science and is consistent with accepted fisheries management principles. I further certify that this plan is consistent with the Ontario Ministry of Natural Resources strategic direction, the Ontario Ministry of Natural Resources Statement of Environmental Values and direction from other sources. Thus, I recommend this fisheries management plan be approved for implementation.

Recommended by:

(Lead District Manager, Fort Frances District) (Date)

Recommended by:

(District Manager, Dryden District) (Date)

Recommended by:

(District Manager – Kenora District) (Date)

Approved by:

(Regional Director, Northwest Region) (Date)

1.0 Introduction

This plan provides direction for the management of fisheries resources within Fisheries Management Zone 5 (FMZ 5). Management objectives and actions are presented to address specific fisheries management issues and challenges identified by the FMZ 5 Fisheries Advisory Council and Ontario Ministry of Natural Resources (OMNR) staff during the preparation of the background information document for FMZ 5 (OMNR 2012). The FMZ 5 Fisheries Advisory Council provided invaluable advice to the OMNR during the development of management options and selection of proposed management actions for the management plan.

This Plan will apply to all waterbodies across FMZ 5, with the exception of six Specially Designated Waterbodies (SDWs) (Figure 1) that are expected to have their own plans with specific objectives and monitoring strategies developed separately from this exercise. These SDW lakes or lake systems include Lake of the Woods-Rainy River, Rainy Lake, Shoal Lake, Eagle Lake, Wabigoon-Dinorwic Lake and the Winnipeg River.

Quetico Provincial Park, a wilderness class park with a total area of 4,750 km², is located entirely within FMZ 5. The daily entry quotas and a motor ban affect the amount and effectiveness of angling effort compared to the remainder of the zone. As a park, Quetico PP must meet requirement of the Provincial Parks and Conservation Reserves Act which includes the principle of Ecological Integrity. Currently, angling regulations in the park are the same as the rest of the zone with two exceptions, that only artificial baits and barbless hooks may be used. A background information document which includes analysis of 2010 Broadscale Monitoring data has been drafted for Quetico PP which has concluded that the principle ecological integrity is being met at the park scale under current zone management regulations. Quetico Park managers have reviewed the proposed management actions and concluded that they will continue to meet or enhance Ecological Integrity. Because of this, general FMZ 5 angling regulations will continue to be applied to the park except for the two previously mentioned exceptions. Fisheries assessment data will be continued to be analyzed separately for the park in the future to determine whether it continues to meet the principles of Ecological Integrity.

FISHERIES MANAGEMENT ZONE 5

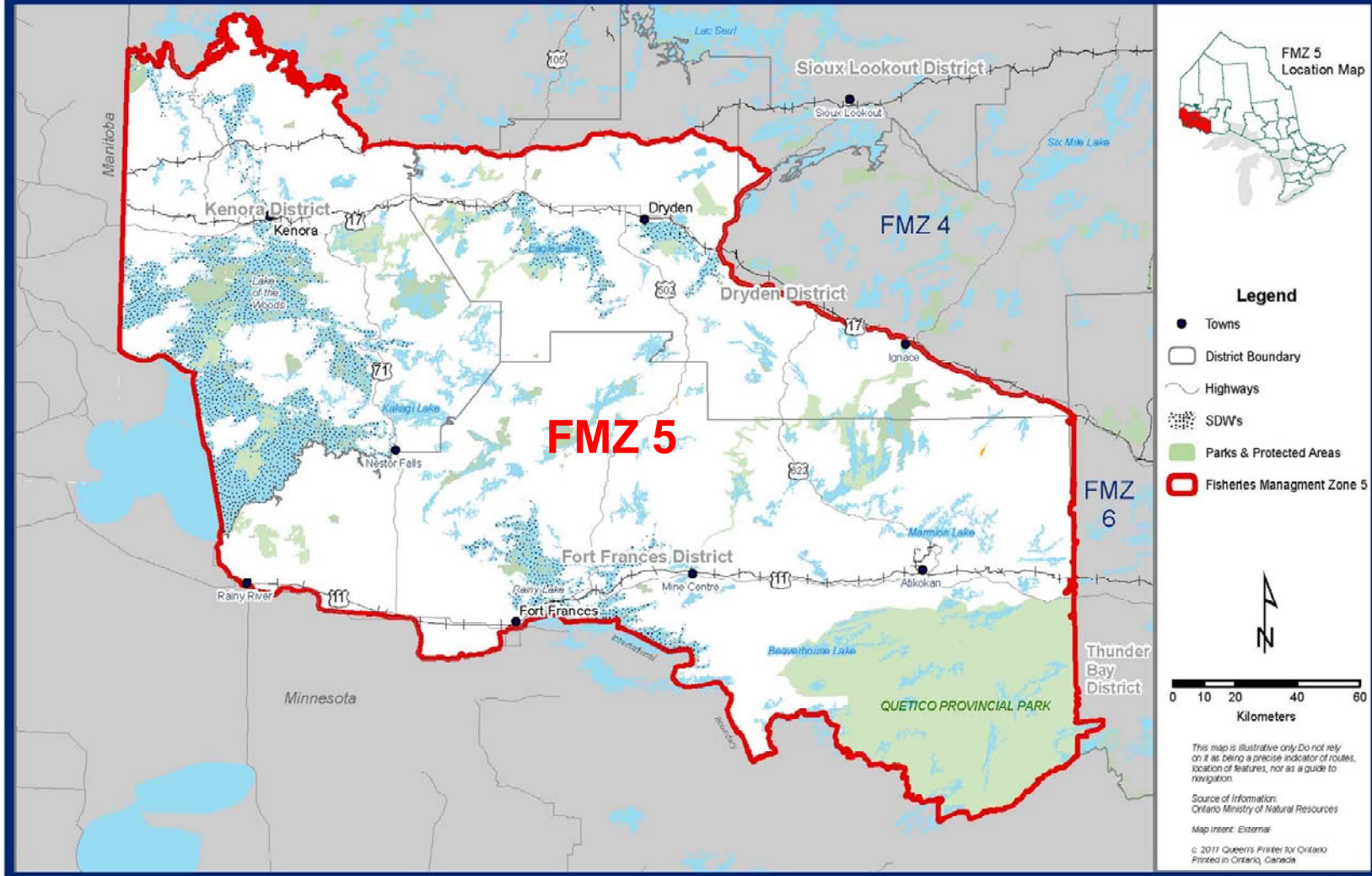


Figure 1. Fisheries Management Zone (FMZ) 5 boundaries with Specially Designated Waterbodies (SDW's) identified.

2.0 Strategic Direction and Guiding Principles

In 2005, *A New Ecological Framework for Recreational Fisheries Management in Ontario* (OMNR, 2005a) was introduced to ensure fisheries resource sustainability through management and monitoring of fisheries resources at a broader scale and enhanced public involvement. The approach described in the “framework” is consistent with the OMNR strategic direction as outlined in *Our Sustainable Future* (OMNR, 2011), *Ontario’s Biodiversity Strategy* (OMNR, 2011), and with the principles stated in *Strategic Plan for Ontario Fisheries* (OMNR, 1992). OMNR is currently working on an updated Provincial Fish Strategy.

The *Ecological Framework for Recreational Fisheries Management in Ontario* focussed on four key areas: 1) planning at the ecological fisheries management zone level; 2) managing and monitoring at the broader landscape level; 3) enhanced public involvement; and 4) regular reporting on the state of fisheries in Ontario.

FMZ 5 was one of 20 zones created as a new unit for fisheries management planning across the province. The new boundaries are based on ecological factors such as climate and watersheds, as well as angler use patterns related to landscape characteristics such as fishing pressure, road patterns and accessibility.

A broad scale monitoring program has been put in place in FMZ 5 with fish resource monitoring in the summer of 2010 and angling effort information collected in the summer of 2011 and winter of 2012. This program is scheduled to be repeated again in five years and will provide an evaluation of the fisheries resource on a landscape level and provide the ability to track trends in fish populations and angling effort.

The third component of the “framework” is enhanced public involvement. The Fisheries Advisory Council for FMZ 5, comprised of representatives from stakeholder groups and input from Aboriginal Community observers, provided advice to OMNR at all stages in the preparation of this management plan (see section 6.1 for more information on the FMZ 5 Advisory Council). Aboriginal Communities and organizations, Sportsmen’s clubs, tourism organizations and local citizens committees were actively engaged throughout the process. Information was made broadly available through public and stakeholder meetings, displays at trade shows and local events, as well as council lead initiatives including a dedicated website (www.fmz5.com) and newspaper articles. A summary of the public consultation program is provided in Section 6.0 and in a companion document to this Fisheries Management Plan.

Consideration of the strategic direction in the above noted policy documents and the *Northwest Region Fisheries Management Action Plan - 2011 to 2016* (OMNR 2011) resulted in the establishment of the following set of 15 guiding principles for fisheries management within Zone 5. These guiding principles were incorporated as part of the terms of reference for the advisory council. During the deliberations by the advisory council, proposed management goals, objectives and actions were compared to the list of guiding principles to ensure that they were consistent. These principles will remain important during plan implementation to guide management decision making in those situations not specifically addressed in the plan

Guiding Principles

Ecological Approach: An ecological approach to fisheries management which considers the entire aquatic environment including the fish community when making decisions will be followed to ensure conservation and sustainable use of the resource.

Landscape Level Management: Generally, fisheries will be managed at a landscape scale, in this case at the level of FMZ 5. In some cases, components of the resource within a zone may need to be managed differently where there is a strong biological rationale (e.g. within a zone lake trout lakes may be classified into large and small bodied populations and managed through different methods), or where there may be major differences in resource management objectives between geographic areas requiring different approaches to management (e.g. parks and protected areas). Individual lake management is discouraged other than in the context of large, specific fisheries known as Specially Designated Waters (SDW's) designated by MNR (e.g. Rainy Lake, Lake of the Woods, Eagle Lake, etc).

Balanced Resource Management: Strategies and actions will consider the ecological, economic, social and cultural benefits and costs to society, both present and future.

Sustainable Development: The finite capacity of the resource is recognized in planning strategies and actions within the FMZ. Only those natural resources over and above those essential for long-term sustainability are available for use, enjoyment and development.

Biodiversity: Fisheries management will ensure the conservation of biodiversity by committing to healthy ecosystems, protecting our native and naturalized species, and sustaining genetic diversity of fisheries in the FMZ. All species in the FMZ including non-sport fish and Species at Risk (SAR) must be considered.

Natural Reproduction: Priority will be placed on native, naturally reproducing fish populations that provide predictable and sustainable benefits with minimal long-term cost to society.

Habitat Protection: The natural productive capacity of habitats for Canada's fisheries resources will be protected and habitat will be enhanced/restored where possible.

Valuing the Resource: Stakeholders and other users will be invited to understand and appreciate the value of fisheries resources and to participate in decisions to be made by MNR that may directly or indirectly affect aquatic ecosystem health.

Responsibility: Local, regional, provincial and federal cooperation and sharing of knowledge, costs and benefits will be sought to manage fisheries at the FMZ level.

Multi-Party Involvement / Aboriginal Interests: A wide range of stakeholders, Aboriginal peoples, and interested parties will provide fisheries management advice to ensure an open and transparent process that acknowledges their valuable role. Ontario is committed to working together more closely with all peoples and in involving them in decision making.

Direct Action: All possible options must be considered and evolve to implementation actions that are feasible.

Knowledge: The best available information will be used for FMZ based objective setting and strategy development and implementation. Historical background information as well as new information from broad scale fisheries monitoring and reporting program will be considered.

Adaptive Management: FMZs will be managed using an adaptive management approach. Objectives will be set, monitoring will occur, results will be compared against objectives and management actions adjusted as necessary and where possible to ensure attainment of objectives.

Precautionary Principle: Where there is uncertainty related to a proposed activity or management action precautionary measures will be taken to ensure the activity errs on the side of conservation until cause-and-effect relationships can be fully established scientifically.

3.0 Description of Fisheries Management Zone 5

Fisheries Management Zone 5 extends over a large and varied geographic range covering an area of approximately 44,360 km² including land and water. Located in the southern portion of the Northwest OMNR Region, FMZ 5 spans three MNR administrative districts including the entire Fort Frances District and southern portions of Kenora and Dryden districts

Like much of the rest of Canada, the current pattern of landform features, surface geology and distribution of lakes and rivers across FMZ 5 was defined by the actions of glaciers which also influenced the fish communities that we see today. Fisheries Management Zone 5 is dominated by bedrock landforms that make up over 70% of the land area. This high proportion of bedrock dominated landscape tends to result in lakes that are clear and less productive compared to other parts of northwest Ontario.

FMZ 5 typifies the abundance and wide range of aquatic habitat types found in northwest Ontario. Over 5,000 lakes larger than 10 ha (1,007,450 ha in total) and thousands of kilometres of rivers and streams cover more than 23% of the total area in permanent water, with an additional 7% in associated wetlands. Of that water, the six Specially Designated Waterbodies (SDWs) account for over 35% of the total water area of the Zone.

In general, based on the physical and chemical characteristics of its lakes, FMZ 5 is the least productive of the zones in northwest Ontario. However, it is also the warmest zone which may offset some of its inherent low productivity. Trends in climate in the Northwest Region have been changing towards a warmer condition with all fisheries zones in northwest Ontario having experienced a warming trend over the past 40 years. FMZ 5 experienced the greatest increase with parts of the zones having had the average annual temperatures increase 1.0°C between the 1971-2000 period and the period from 1980-2010. Climate change models suggest that the Northwest Region will experience some of the largest impacts of climate change in Ontario. These changes can have a major impact on productivity, fish communities and distribution of those communities within FMZ 5 in future years.

Over 90% of the area within FMZ 5 is Crown Land, with approximately 18% of that area located in Provincial Parks and Protected Areas. Quetico Provincial Park, a wilderness class park, is the largest park in FMZ 5, with a total area of 4,750 km².

3.1 Biological Description

Understanding the biological diversity and status of the fisheries resource in FMZ 5 as well as factors that affect that resource are crucial to producing a sound and effective fisheries management plan.

Biodiversity refers to the variety of life as expressed through genes, species and ecosystems, that is shaped by ecological and evolutionary process. Fish biodiversity of FMZ 5 is higher than other zones in northwest Ontario with 67 species identified from its waterbodies. The most common sport fish within FMZ 5 include northern pike, walleye, lake trout, smallmouth bass and yellow perch, all of which are found in more than 35% the lakes and over 60% of the lake area. Other sport fish species with more limited distribution include muskellunge, sauger, largemouth bass, whitefish and black crappie. Fish species classified as Species at Risk and found within FMZ 5 include lake sturgeon and shortjaw cisco.

The productive capacity (or amount of fish that can be produced) of waterbodies is an important biological concept in the management of fish populations. Lakes, rivers and streams have a limited capacity to produce fish that is directly linked to the productivity of that waterbody. Lake shape, size area and depth as well as the chemical and temperature characteristics all affect the amount of fish a waterbody can support. FMZ 5 lakes generally have greater depth, clearer water and lower nutrient levels than other zones in northwest Ontario and, therefore, tend to be less productive

A critical part of fisheries management involves reporting the known status of fish resources including what currently exists and the population health as well any limitations or potentials that may exist based on the capabilities of the FMZ 5 landscape. This data was summarized in the Background Information for the Development of a Fisheries Management Plan in Fisheries Management Zone 5 (OMNR 2012) as well as supplemental summary and analysis of data collected during 2010 Broadscale Monitoring of FMZ 5. This information was used to both identify issues to be addressed in the plan and in the development of appropriate management actions. Because this plan is concerned with the management of fish population from non-SDW lakes, status and information is based mainly on those lakes although in cases where information is lacking, data from SDW lakes was included as well.

3.2 Socio-Economic Description

Situated in the southwest corner of northwest Ontario, FMZ 5 has the highest density of people in the Northwest Region outside of Thunder Bay. Major communities (more than 2,000 residents) within FMZ 5 include Fort Frances, Kenora, Dryden and Atikokan. There are 23 First Nations located totally or partially within FMZ 5. In addition to Ontario residents, FMZ 5 is adjacent to a large population of anglers from neighbouring jurisdictions, including the Upper Midwest states in the U.S. and Manitoba.

Road-based access to the fisheries of Fisheries Management Zone 5 is well distributed throughout the zone with the exception of Quetico Provincial Park. Scattered within road accessed areas are areas primarily accessed by air which are utilized by a well developed fly-in tourism industry. Major highways that provide primary access include highways 11, 17, 502, 71, and 622 among others with almost 13,000 km of gravel roads extending off from these main

corridors. Over 2,400 lakes (46% of lakes larger than 10 ha) in FMZ 5 are currently within 500m of a road, a distance that is considered accessible by anglers or other resource users. Access management within an FMZ is a fine balance between providing angling opportunities and appropriately distributing fishing effort within the overall goal of preventing overexploitation and maintaining sustainability of fisheries resources.

The largest use of fisheries resources in FMZ 5 is by recreational angling. A total of 251,520 anglers were estimated to have fished in FMZ 5 in 2005, providing 9,219,920 hours of fishing effort which represents 46% of the total effort in the Northwest Region (Hogg et al. 2010). Non-SDW waters accounted for approximately 45% of the effort in FMZ 5 with the SDW waterbodies accounting for the remaining 55%. The majority (~72%) of angling effort is from non-residents of Canada with Ontario residents accounting for about 20% of the effort and Canadian residents making up the remaining 8%. The total economic value of the FMZ 5 angling fisheries was estimated to be approximately \$200 million in 2005 (Hogg et al. 2010). Much of this is due to the tourist industry which is very well developed in FMZ 5. There are approximately 328 main base lodges and 156 out post camps (including those on SDW waters).

There is an active commercial food fishing industry in FMZ 5 with 21 commercial licences or allocations on non-SDW waters with an additional 25 licences on SDW waters. The majority of commercial fishing is by First Nation individuals or communities or individuals claiming Métis status. The most important commercial species is whitefish accounting for 88% of total allocated quota of 84,000 kg (185,700 lbs) from non-SDW waters with smaller allocations available for northern pike, walleye and black crappie. Quotas also exist for lake sturgeon although no harvest currently occurs due to self imposed moratoriums by the First Nation communities holding the licences.

An active commercial bait harvest industry also exists in FMZ 5. There are 311 baitfish blocks within FMZ 5 although because one harvester can fish multiple blocks, the number of harvesters is much less. The estimated retail value of baitfish and leeches harvested from FMZ 5 was 5.4 million dollars for 2009.

Fisheries resources in FMZ 5 have a significant cultural and economic importance to First Nation communities. Besides being largest proportion of commercial fishers, employment within the tourist industry is an important source of income for many Aboriginal peoples and more recently, First Nation communities are generating income through sponsorship of competitive fishing events. Besides the recreational component, Aboriginal people can angle or use nets to harvest fish for subsistence or ceremonial purposes under rights guaranteed under Treaties signed with the Crown.

3.3 Current Fisheries Management Actions

As with all Fisheries Management Zones in Ontario, the primary method of managing the angling fisheries of FMZ 5 is through angling regulations as summarized in the annual Recreational Fishing Regulations Summary. Other indirect management methods include access controls through the use road use strategies, restrictions on where non-residents can camp on Crown land and restrictions on the size of outpost camps.

Two fisheries management programs that are more unique to FMZ 5 are the North West Region Boat Cache Program and the Border Waters Area. The Boat Cache Program affects all of FMZ 5 except the Atikokan area and controls the storing of boats on remote lakes for the purpose of angling by tourist industry or resident anglers (other parts of the program also allow storage of boats for trapping or baitfish harvesting and transport to remote private property). To store a boat on any lake with this area, operators/anglers are required to have a permit from OMNR. The program allows fisheries managers to limit the number of boats cached on a lake based on its sustainable harvest. There are currently 1390 boats cached on 745 lakes in FMZ 5 (recreational and commercial tourism boats combined)

The Border Water Area is located in the south portion of FMZ 5 (Fort Frances District and Lake of the Woods). It was designed to reduce the impact of non-resident of Canada day trip anglers on the sustainability of walleye and lake trout fisheries within this area. It was originally implemented in 1994 and revised in 2000 based on a North American Free Trade Agreement (NAFTA) challenge. Within this area, the daily catch limits for non-resident sport fishing licences are reduced to 2 for walleye and 1 for lake trout (sport fishing licence possession limits and daily catch and possession limits for non-resident conservation licences are unchanged).

Commercial food fishing and baitfish harvesting is managed through the licencing and, in the commercial food fishery, the use of quotas.

Currently, the local fisheries management direction is provided in District Fisheries Management Plans (DFMP's) that were prepared in 1988 for Fort France, Kenora, Dryden, Ignace and Atikokan districts. The DFMP's will be replaced by the FMZ 5 Fisheries Management Plan upon its approval.

4.0 Broad Fisheries Management Goal for FMZ 5

Based on provincial and regional fisheries management direction, the broad fisheries management goals for FMZ 5 are:

- a. To protect ecosystem, species and genetic diversity within FMZ 5 into the future.
- b. To optimize social, cultural and economic opportunities and values derived through the biologically sustainable use of aquatic resources for both present and future generations.
- c. To manage aquatic resources in partnership with an involved and informed public.

Goal a) recognizes that there is a hierarchy of biological diversity that needs to be considered and protected. It is this hierarchy which encompasses genetic, species and ecosystem diversity that contribute to the biological well being of the fisheries resources in FMZ 5.

Goal b) of the broad management goal incorporates the concept that there are biological limits to the use of fisheries resources. Unless use of the fisheries resource is biologically

sustainable, people are unable to derive social, cultural or economic benefits and opportunities over the long term.

Goal c) recognizes the value and importance of a knowledgeable informed and involved public in effectively managing fisheries resources.

Specific objectives and management actions for priority issues were developed by the OMNR and FMZ 5 Advisory Council to ensure that this goal would be met in FMZ 5. These objectives are presented in the following section.

5.0 Issues, Challenges and Proposed Management Actions

Management Issues, Challenges and Opportunities

The FMZ 5 Advisory Council and OMNR staff undertook an extensive discussion of the management issues and challenges facing the fisheries resources in FMZ 5. A complete summary of discussions related to management issues and challenges can be found in the Background Information for the Development of a Fisheries Management Plan in Fisheries Management Zone 5 (OMNR, 2012). Analysis of the management issues and challenges in FMZ 5 indicated that they could be grouped into four broad categories of exploitation of fisheries resources, habitat, invasive/introduced species and education. As is the case with many discussions related to any issues and challenges, there were also opportunities to do some new things. In this case there were opportunities identified to move management of the fisheries resources in FMZ 5 in some new directions.

Management Objectives, Indicators, Benchmarks, Actions and Targets

One of the new or enhanced directions with fisheries management in FMZ 5 is that the new plan will be more objective based than in the past. This approach will more clearly identify what fisheries management is trying to achieve and allow both MNR and the public to assess whether management actions are working to achieve the desired results.

The following sections describe the management objectives, indicators, benchmarks, actions and targets that are associated with the various management issues and challenges. Each of these factors needs to be described so that it is understood what they are meant to do and how they fit together.

Management Objectives

Management objectives describe what you want to achieve in the future or the “desired end result”. Objectives need to contribute to the broad fisheries management goal for the zone, be consistent with strategic direction and the guiding principles, and must be measurable. Objectives can reflect biological, economic or social considerations. In most cases, a range of objectives were identified to reflect the range of benefits people would like to see from the fisheries in FMZ 5.

Indicators

Indicators are specific things that resource managers will measure so that they can determine whether or not they are achieving the management objectives. Indicators are directly linked to the management objectives and need to be measurable by monitoring programs. In most cases, if you have a biological objective and two social objectives then there will be indicators for each of those objectives and there must be a monitoring program identified that is capable of measuring whether the objective is being achieved.

Benchmarks

Benchmarks are associated with each of the indicators; they are very specific measures of an indicator that resource managers use to determine progress towards achieving the management targets and ultimately the management objectives. Benchmarks can be used in two ways. They can describe the current state (or where we are starting from), or they can also be used to describe a future state that demonstrates progress towards an objective.

Targets

Targets translate a management objective that is described in words into one that is described in terms of numbers. It is this number that makes the objective measurable. Since they are very specific measures of an indicator, targets help the public and resource managers understand when an objective is achieved.

It is important to remember that there is always some variability around the measurement of indicators. In answering whether targets are being met, the question really becomes “Is this difference between the value of the indicator and the target significant?”. This will need to be taken into account when determining whether objectives are being achieved.

For each of the following issues, the objectives, indicators, benchmarks and targets have been summarized in a table. In some cases, the indicators or targets have not been completely defined as the science is still in development (for example, use of Broadscale Monitoring data to define ecosystem status and health). As they are developed, these tables will be completed and prior to the 5 year plan review, all targets and indicators will be defined.

5.1 Exploitation of Fisheries Resources

5.1.1 Walleye

Through a combination of natural distribution and past introductions, walleye are currently found in over 800 lakes throughout FMZ 5. They are found in a variety of lake types from shallow, stained lakes to deep, clear waterbodies with differences in biological characteristics and densities between lake types. Walleye are the most popular fish for both resident and non-resident anglers in FMZ 5 and account for most of the angling harvest from the zone. FMZ 5 has a well developed tourist industry that has traditionally catered to non-residents fishing for walleye and non-resident anglers account for approximately 75% of the angling effort in the zone.

FMZ 5 walleye data from Fall Walleye Index Netting (FWIN) surveys and creel surveys over the past two decades as well as 2010 BsM assessment suggests that walleye populations are sustainable but some lakes have population characteristics suggestive of high harvest levels. Walleye populations in FMZ 5 tend to be at lower abundance than other zones in northwest region. This can partially be attributed to the deeper, clearer, and consequently less productive lakes in the zone. However, walleye populations in FMZ 5 also typically have fewer older age classes and smaller fish suggesting higher levels of harvest. Although trend data is somewhat more limited, it suggests that walleye populations have been relatively stable over the past two decades. There is also greater spatial variability across the zone than apparent with other species. Walleye populations in the east and north portion of the zone tending to show higher walleye biomass relative to expected values while lakes to the west and especially the southwest tend to have lower biomass.

In the late eighties, size restrictions were placed on walleye angler harvest with a restriction of not more than one over 50 cm in the limit of 6 fish for sport fishing licence anglers (3 fish for conservation licence anglers). In 1999, Northwest Region reduced walleye catch and possession limit to 4 for sport licences and 2 for conservation licences and reduced the size limit to not more than one fish over 46 cm. The regulation that reduced daily catch limits for non-resident sport fishing licences in the Border Waters area was implemented in 2000. The current walleye angling regulation in FMZ 5 is as follows:

- *Season: open Jan 1- April 14, 3rd Saturday in May to Dec. 31*
- *Catch and Possession Limits:*
 - Sport Fishing Licence – 4.*
 - Conservation Licence – 2;*
- *Size Limit - no more than 1 greater than 46 cm*

Within the Border Water Regulation area, non-resident limits are:

- Sport Fishing Licence– Daily – 2/Possession 4;*
- Conservation Licence - Daily – 2/Possession 2;*
- Size Limit - no more than 1 greater than 46 cm*

In addition, there are several non-SDW lakes with exceptions or additional regulations (eg. sanctuaries) to the zone regulations which are identified in Appendix 1.

Draft Fisheries Management Plan for Fisheries Management Zone 5

The issue/challenge that was identified with walleye management was about the level of walleye exploitation mainly from the perspective of maintaining an acceptable level of fishing quality.

Proposed Objectives for Walleye Management in FMZ 5

The OMNR and FMZ 5 Advisory Council propose the following objectives to guide future management of walleye populations in the zone:

- 1) Maintain or improve walleye populations.
- 2) Manage walleye abundance to provide quality walleye angling experience in terms of number of fish caught.
- 3) Provide quality walleye angling experience by allowing opportunities to harvest fish for consumption (33-46 cm (13-18") fish) consistent with sustainability of population.
- 4) Protect spawning stock - large, older fish 46 cm (18") and larger.
- 5) Protect fish during spawning.
- 6) Maximize angling opportunities consistent with sustainability of population.
- 7) Provide quality walleye angling experience by maintaining opportunities to catch trophy (70cm+) fish.

There exists some range of opinion on the management objective for walleye in FMZ5. In areas such as the southwest portion of the zone where populations tend to be most stressed, there is a desire for improvements in walleye populations. In the north and east parts of the zone, there is more satisfaction with satisfied with current walleye population conditions. There is also a feeling that making any more restrictive changes in walleye regulations is going to have fairly large impacts on non-resident or resident anglers or both. The proposed management objectives are primarily focused on maintaining current population status throughout the zone. A number of management options to meet these objectives.

Proposed Management Actions to meet Walleye Management Objectives in FMZ 5

The proposed management actions are presented below along with the level of support by the FMZ 5 Advisory Council (see rationale below for further discussion). OMNR is proposing to implement the management actions below unless public consultation indicates an alternate management action is preferred and that action would allow for the achievement of the above objectives.

Proposed Walleye Management Actions	FMZ 5 Advisory Council advice
<p>Maintain current regulation Season: open Jan 1- April 14, 3rd Sat. in May to Dec. 31 Catch Limits: Sport – 4; Conservation – 2; Size Limits: no more than 1 greater than 46 cm.</p> <p>Within the Border Water Regulation area, non-resident limits are: Sport Fishing Licence– Daily – 2/Possession 4; Conservation Licence - Daily – 2/Possession 2</p>	<p>Preferred Action by FMZ 5 Advisory Council</p>
<p>Investigate options for more conservative management of walleye populations in FMZ 5 (including reduced non-resident daily catch limits) before the next plan review.</p>	<p>Preferred Action by FMZ 5 Advisory Council</p>
<p>Maintain conservation limits for non-residents camping on crown land (current regulation)</p>	<p>Preferred Action by FMZ 5 Advisory Council</p>
<p>Current exceptions to zone regulations are proposed to be maintained except for: 1) adjust all spring sanctuary dates in zone to April 1 to June 14; 2) remove limit exceptions on Turtle Lake, Crowrock Lake, Dashwa Lake, Eye Lake and Dovetail Lake (Atikokan area)</p>	<p>Preferred Action by FMZ 5 Advisory Council</p>
<p>Education about angling ethics and it's potential impacts on walleye populations</p>	<p>Preferred Action by FMZ 5 Advisory Council</p>

Draft Fisheries Management Plan for Fisheries Management Zone 5

The following potential regulations were also considered by the FMZ 5 Advisory Council and the MNR. Public input on these options is also invited.

Alternate Walleye Management Options Considered	Support by FMZ 5 Advisory Council
<p>Alternative Option 1: current regulation with 0 over 46 cm (18”). Season: open Jan 1- April 14, 3rd Saturday in May to Dec. 31 Catch Limits: Sport – 4; Conservation – 2; Size Limits: none greater than 46 cm.</p> <p>Within the Border Water Regulation area, non-resident limits are: Catch Limits: Sport Fishing Licence– Daily – 2/Possession 4; Conservation Licence - Daily – 2/Possession 2 Size Limits: none greater than 46 cm</p>	<p>Supported by FMZ 5 Advisory Council as a option for public review</p>
<p>Alternative Option 2: Current regulation but with non-resident sport fishing daily limits reduced across entire zone Season: open Jan 1- April 14, 3rd Saturday in May to Dec. 31 Catch Limits: Sport – 4; Conservation – 2; Size Limit: no more than 1 greater than 46 cm.</p> <p>Non-resident catch limits in FMZ 5: Catch Limits: Sport Fishing Licence– Daily – 2/Possession 4; Conservation Licence - Daily – 2/Possession 2; Size Limit: no more than 1 greater than 46 cm.</p>	<p>Supported by FMZ 5 Advisory Council as a option for public review</p>
<p>Alternative Option 3: Current regulations but with reduced non-resident limits across entire zone Season: open Jan 1- April 14, 3rd Saturday in May to Dec. 31 Catch Limits: Sport – 4; no more than 1 greater than 46 cm. Conservation – 2; no more than 1 greater than 46 cm. Size Limit: none greater than 46 cm.</p> <p>Non-resident limits in FMZ 5: Catch Limits: Sport Fishing Licence– 2; Conservation Licence - 1; Size Limit: no more than 1 greater than 46 cm.</p>	<p>Not supported by FMZ 5 Advisory Council as an option for public review</p>

Rationale for Selection of Proposed Management Actions

Maintaining Current Regulation

The preferred management action of maintaining the current angling regulations was supported by the Advisory Council as a whole as the option that best meets the objectives at this time and this decision was supported by OMNR. Based on having stable populations (or at least lack of evidence of declining populations) on a zone wide basis, it appears to be meeting the objectives of maintaining current populations although it will likely not result in improvements in population status if other factors such as angling effort or environmental conditions remain the same as today. The current regulation was also felt to be easy to understand and provides opportunities to fish and meets desire to harvest fish for consumption. As well, it provides some protection of mature fish while still permitting harvest of an injured large fish. It also addresses the issues around walleye harvest by Minnesota based day trip anglers which was the original reason for the reduced daily catch limits for non-residents in the south part of the zone. There is strongest support for this action from Advisory Council members that are generally satisfied with current walleye angling quality.

Investigating options for more conservative management of walleye populations

During the review of walleye management options, there was much discussion by both the Advisory Council and OMNR staff about methods to improve walleye populations including the option of expanding the reduced daily catch limits for non-resident anglers to the entire zone. It was felt that the primary benefit of this would be to reduce walleye harvest and improve population status in the north part of the zone as well as simplify the regulations by having only one limit for non-resident anglers across the entire zone. There were concerns from some members of the tourist industry in the north part of the zone that this would be a negative impact on their business and given the decline in the tourist industry in recent years, it would be a very difficult time to put this restriction in place. It was also recognized that this would not result in any improvement in walleye population in the southwest part of the zone where current status is of highest concern. The proposed management action is that prior to the next plan review scheduled in 5 years (2018), OMNR and the FMZ 5 Advisory Council would work at investigating a more conservative approach to managing walleye populations including investigating the expansion of reduced non-resident daily catch limits to the entire zone. One advantage of delaying a decision on this to the plan review is that another assessment of fish population status is scheduled prior to that time which will provide more information and confirmation of walleye population trends to base a decision on.

Current exceptions to zone regulations

There are currently a number of exceptions to the zone wide regulation on non-SDW lakes related to walleye management (Appendix 1). The proposed action is to maintain the current exceptions as required management actions in the zone with two exceptions. The first is related to sanctuaries that have been put in place to protect pre- and post-spawn concentrations of walleye from over harvest. There are currently two sanctuary dates across the zone (April 1 to May 31 and April 1 to June 14). Given the similarity in spawning times across the zone and to simplify the regulations, it is proposed to standardize all sanctuary dates for walleye management to April 1 to June 14.

There are also a number of lakes in the Atikokan area (Dashwa, Crowrock, Turtle, Eye and Dovetail) that have conservation limits for walleye for all anglers. These lakes all have

introduced populations and were closed following the introduction to allow the populations to become established. During the public consultation to reopen the lakes in the mid- and late nineties, the public expressed a strong desire for reduced limits to reduce the impact of the initial harvest pulse when the lakes were opened to angling and to manage the populations to provide higher quality fisheries than other lakes in the area. Since that time, the non-resident daily catch limit has been reduced to conservation limits on all lakes in the area. Removing the exceptions on these lakes would reduce the amount of angling regulation exceptions and move towards a landscape level management approach.

Maintaining conservation limits for non-residents camping on crown land

It is also proposed that the current regulation that requires non-residents camping on Crown land to follow conservation limits regardless of licence be maintained. These anglers provide limited economic benefits to Ontario compared to non-residents staying at resorts and maintaining reduced limits may help to maintain sustainability of populations.

Education about angling ethics

A non-regulatory management action proposed by the council and supported by the OMNR is increased education on the impacts of angling ethics on walleye populations. For example, education could highlight the high mortality associated with catch and release angling from deep water (>10m or 30').

Rationale for Alternative Management Options

Alternative Option 1: current regulation with 0 over 46 cm (18”).

The other regulatory option that was supported by some FMZ 5 Advisory Council members and OMNR staff was to reduce the harvest of walleye over 46 cm (18”) from 1/day to 0/day as a means of improving walleye populations. It was felt that this option would provide better protection to mature fish and address the objective to improve walleye populations. Investigation into predicting the results of this option by modelling its effectiveness compared to the current regulation suggests that it would only provide a modest improvement in overall walleye abundance numbers of large fish. It also suggested it would be most effective on large clear lakes because of faster growth and larger average size of walleye caught from these lakes. There is also a feeling that there is a growing desire in the angling public to eliminate the harvest of mature size fish (female walleye tend to mature at about 46 cm). This was rejected as a preferred action by the council because some members, particularly those in areas with better walleye populations, feel that this will be too restrictive in some lakes where fish of 46 cm and larger are a common part of the catch. There is also some concern about the effectiveness of this proposed regulation and if it will actually increase populations, particularly in lakes which already have high harvest stress and catch of large fish is currently very low.

Alternative Option 2: Daily limits for non-resident sport fishing licence reduced for zone

Discussion about Alternative Option 2 which would expand the area of the reduced daily catch limits for non-residents sport fishing licence (aka the “Border Waters Regulations”) from the south part of the zone where it has been in place for the past decade to the entire zone is provided under the current management action rationale. It is presented as an option in the draft plan as the first step in investigating this option prior to the plan review by getting feedback from the public during the draft plan consultation.

Alternative Option 3: Current regulations but reduced non-resident limits across zone

Alternative Option 3 of reducing non-resident daily and possession limits to S-2/C-1 across the zone is presented as alternative option to reducing the harvest of fish as a method to improve walleye populations across the zone. Given the high proportion of walleye harvest by non-residents, it was felt that this would be effective in reducing harvest on lakes and allow depressed populations to increase. This regulation was not supported by the FMZ 5 Advisory Council as an option to be presented to the public as they felt this would cause too much of a negative impact to tourist industry and felt the current walleye status data did not suggest this degree of action was required. The effectiveness of this option in improving population status compared to the current regulation was explored through modelling and suggests that it would result in a modest increase in walleye abundance and number of large fish. In contrast to the “0>46cm” results, this option was predicted to be more effective on medium size lakes with darker water because of higher abundance and catch of walleye as well as the higher amount of angling effort on these lakes.

OMNR believe that all options being presented will achieve the protection of the biological sustainability of FMZ 5 walleye populations and meet the guiding principles and proposed walleye objective of maintaining populations under conditions although only the Alternative Options with more restrictions on harvest are expected to meet the objectives for an improvement of walleye population status under current effort levels. The different options are expected to favour different objectives and MNR is expecting that the draft plan consultation will provide more direction on what management objectives and actions the public would prefer.

Other options considered but rejected by the Advisory Council and OMNR for further discussion are presented in Appendix 3 along with the rationale for not considering them further at this time.

Proposed Monitoring Strategies for Walleye Management in FMZ 5

The following monitoring activities are proposed to assess whether the management actions are effectively achieving the objectives.

- 1) BROADSCALE MONITORING (BSM) TO ASSESS WALLEYE OBJECTIVE ACHIEVEMENT ON A 5 YEAR CYCLE.
- 2) MONITOR OF WATER TEMPERATURES AND WALLEYE SPAWNING TIMES FROM REPRESENTATIVE LOCATIONS ACROSS THE ZONE

Landscape level monitoring of fish populations has been identified as the most effective and efficient method of assessing fish population status and determining whether fish management objectives are being met (OMNR 2005). See section 7.0 for further discussion on future monitoring using the BROADSCALE MONITORING program.

During discussion about walleye management, concerns were expressed about whether the current closed season from April 15 to the third Saturday in May is effectively protecting walleye from overexploitation while they are spawning given the variation in spring temperatures observed in recent years. Given the uncertainty around spawning times and temperature variation between years, it was proposed that OMNR monitor water temperatures and walleye spawning times from sites across the zone so that more information would be available to evaluate this concern during the next plan review.

Table 5.1.1-1 – Summary of FMZ 5 Walleye Management Objectives and Management Actions

Objectives	<ol style="list-style-type: none"> 1) <i>Maintain or improve walleye populations.</i> 2) <i>Manage walleye abundance to provide quality walleye angling experience in terms of number of fish caught.</i> 3) <i>Provide high quality walleye angling experience by allowing opportunities to harvest fish for consumption (33-46 cm (13-18") fish) consistent with sustainability of population.</i> 4) <i>Protect spawning size fish of 46 cm (18") and larger.</i> 5) <i>Protect fish during spawning.</i> 6) <i>Maximize angling opportunities consistent with sustainability of population.</i> 7) <i>Provide high quality walleye angling experience by maintaining opportunities to catch trophy (70cm+) fish.</i>
Indicator	<ol style="list-style-type: none"> 1) Walleye Status Indicator: Walleye status to be determine by the proportion of walleye populations from fixed BsM lakes where the estimated biomass is greater than the expected biomass for fish over 32 cm (30cm FL) 2) Walleye Abundance Indicator: Area weighted catch per unit of effort (#/large mesh nets) of walleye from fixed BsM lakes containing walleye (all lakes combined except QPP). 3) Harvest Opportunity Indicator: Harvest opportunities determined by the current daily limits for fish between 33 and 46 cm (13-18") 4) Spawning Stock Indicator: <ol style="list-style-type: none"> a) Proportion of walleye larger than 46 cm caught in large mesh nets from fixed BsM lakes containing walleye (all lakes combined except QPP). b) Proportion of lakes with walleye larger than 46 cm from fixed BsM lakes containing walleye (except QPP). 5) Spawning Season Protection Indicator: Number of days that walleye spawning occurs within the closed season (Apr 15. to 3rd Saturday in May). 6) Angling Opportunity Indicator: Angling opportunities determined by the length of open walleye angling season. 7) Trophy Walleye Indicator: Proportion of lakes with walleye larger than 70cm from fixed FMZ 5 BsM lakes containing walleye (except QPP).
Benchmark <i>(i.e. sustainability line, current value, etc)</i>	<ol style="list-style-type: none"> 1) this benchmark will be determined based on 2010 BsM results when methodology is finalized (~Dec 2012) 2) 2010 median catch/net (2 gangs) – 2.8 walleye/net (range from 0.1 – 19.7) 3) current daily harvest limits are 4/2 for S/C licences with only 1 fish over 46cm except for non-residents within the border water regulation area where daily limits are 2 walleye, regardless of licence. 4a) In 2010 BsM, 26% walleye captured were larger than 46cm. 4b) In 2010 BsM , at least 1 walleye larger than 46cm was caught in 92% of lakes 5) Currently this is not monitored on an annual basis so a benchmark is not known 6) currently, the walleye angling season is open from 3rd Sat in May to April 15th the following year. 7) in 2010 BsM , at least 1 walleye larger than 70cm was caught in 32% of lakes.
Target <i>(currently proposed)</i>	<ol style="list-style-type: none"> 1) target to be sets as at or above current level based on 2010 BsM results 2) median catch >= 2.5 walleye/net 3) current daily limits assuming sustainability of population status is achieved. 4a) >=25% of walleye captured to be larger than 46 cm. 4b) >=90% of lakes to have at least 1 walleye captured >46cm.

Draft Fisheries Management Plan for Fisheries Management Zone 5

	<p>5) All walleye spawning to occur entirely within the closed season across the zone for 80% of the years (i.e. 8 out of 10 years).</p> <p>6) Maintain current length of season which varies from 328 – 335 days depending on year assuming sustainability of population status is achieved.</p> <p>7) $\geq 30\%$ of lakes to have at least 1 walleye captured $>70\text{cm}$.</p>
Date	<p>1) 2020</p> <p>2) 2020</p> <p>3) 2015</p> <p>4a), 4b) 2020</p> <p>5) 2015</p> <p>6) 2015</p> <p>7) 2020</p>
Management Actions (proposed)	<p>1) Maintain current regulation</p> <p>2) Maintain current exceptions except where noted in draft plan</p> <p>3) Maintain conservation limits for non-residents camping on crown land</p> <p>4) Investigate options for more conservative management of walleye populations in FMZ 5</p> <p>5) Education about angling ethics and potential impacts on walleye populations</p>
Monitoring strategy	<p>1) BsM monitoring of lakes on 5 year interval</p> <p>2) Monitoring of water temperatures and walleye spawning times from representative locations across the zone.</p>

5.1.2 Northern Pike

Northern pike (*Esox lucius*) are the most widely distributed sport fish species in FMZ 5 being found in almost 1200 lakes and 90% of the lake area. They occur in a wide variety of lake types ranging from very small, shallow lakes to large, unproductive lake trout lakes. The size and depth of lakes has been found to determine a number of northern pike characteristics. Shallower lakes tend to be dominated by larger numbers of smaller sized fish while larger, deeper lakes tend to have fewer but larger sized pike (Pierce and Tomcko 2005). Northern pike are the second most commonly caught and harvested in the zone. The opportunity to catch a large pike is important to non-resident tourist industry guests.

In the late 80's, the first size limit was placed on northern pike angler harvest with a restriction of not more than one over 70 cm in the limit of 6 fish. In 1999, Northwest Region reduced northern pike sport licence daily catch and possession limits from 6 to 4, and instituted a protective slot of none between 70-90 cm and not more than one over 90 cm size limit. The assumed management objective of the protective slot was to increase the number of trophy pike (i.e. larger than 90 cm) by reducing the harvest of large northern pike, and to increase the recruitment of more northern pike into the trophy category. A review of FMZ 5 pike data collected since the mid-80's (mainly from SDW lakes that are biologically capable of producing large pike) indicate that the proportion of large pike in the population and angler harvest increased following the "1 over 70cm" regulation with further increases after the 70-90cm protected slot was implemented. A review of FWIN data from FMZ 5 lakes collected since the mid-90's and Broadscale Monitoring data from 2010 indicated that pike populations are relatively healthy and similar to other populations in northern Ontario. Trend data from the FWIN surveys, although limited, suggests that populations are stable to increasing with average size of fish caught generally increasing.

The current northern pike angling regulation in FMZ 5 is as follows:

- *Season: open all year*
- *Catch and Possession Limits:*
 - Sport Fishing Licence - 4*
 - Conservation Licence - 2*
- *Size Limits - none between 70-90cm, not more than 1 > 90cm*

There are no exceptions specific to northern pike management on non-SDW lakes in FMZ 5.

The issue that was raised about pike management was mainly about dissatisfaction with the current regulation in allowing harvest of pike in the preferred size range.

Proposed Objectives for Northern Pike Management in FMZ 5

The MNR and FMZ 5 Advisory Council developed the following objectives to guide future management of pike populations in the zone:

- 1) Maintain current overall northern pike abundance in FMZ 5.
- 2) Maintain large size (>70cm/27.5") northern pike in population.
- 3) Manage pike size distribution to provide anglers with trophy angling for pike >90cm/35.5" in those lakes that can provide such opportunities.
- 4) Provide anglers the opportunity to consume the preferred size of northern pike (60-80cm).
- 5) Maximize pike angling opportunities.

Draft Fisheries Management Plan for Fisheries Management Zone 5

These management objectives attempt to strike a balance between protecting large fish to provide for trophy angling opportunities in lakes that can produce large fish and allowing anglers to harvest pike for consumption. The Council and MNR proposed a number of management options to meet these objectives.

Proposed Management Actions to meet Northern Pike Management Objectives in FMZ 5

The proposed Management Actions are presented below along with the level of support by the FMZ 5 Advisory Council (see rationale below for further discussion). These management actions are what MNR is proposing for the management of northern pike populations in FMZ 5 unless public consultation indicates an alternate management action is preferred and that action would allow for the achievement of the above objectives.

Proposed Northern Pike Management Actions	FMZ 5 Advisory Council advice
0 over 75cm (29.5") size limit Limits - Sport Fishing – 4, Conservation – 2; Size Limit: None greater than 75 cm. Seasons: Open all year	Preferred Action by FMZ 5 Advisory Council
Maintain conservation limits for non-residents camping on crown land (current regulation)	Preferred Action by FMZ 5 Advisory Council
Education around cleaning pike for consumption.	Preferred Action by FMZ 5 Advisory Council

The following potential regulations were also considered by the FMZ 5 Advisory Council and the MNR. Public input on these options is also invited.

Alternate Northern Pike Management Options Considered	FMZ 5 Advisory Council advice
Alternative Option 1: 1 over 70 cm (27.5") size limit Limits- Sport Fishing – 4, Conservation – 2; Size Limit: Not more than one greater than 70cm for both sport and conservation licences; Seasons: Open all year	Supported by FMZ 5 Advisory Council as a option for public review
Alternative Option 2: current regulation Limits- Sport Fishing – 4, Conservation – 2; Size Limit: None between 70cm to 90 cm, not more than one greater than 90 cm for both sport and conservation licences; Seasons: Open all year	Supported by FMZ 5 Advisory Council as a option for public review
Alternative Option 3: no more than 1 between 70-80cm (27.5-31.5" and 0 over 80 cm (31.5") Limits- Sport Fishing – 4, Conservation – 2; Size Limit: not more than one 70cm to 80 cm, None greater than 80 cm for both sport and conservation licences; Seasons: Open all year	Supported by FMZ 5 Advisory Council as a option for public review

Rationale for Selection of Proposed Management Actions

Although the protective slot appears to have achieved its original management objective of increasing the number of large pike in lakes, it has been unpopular with anglers who wish to harvest pike for consumption. Since its implementation, anglers have identified to MNR that the regulation prevents the harvesting of the most desirable sized northern pike for consumption and that the smaller fish are too difficult to clean because of the number of “Y” bones in pike. Members of the FMZ 5 Advisory Council identified the preferred size for consumption as 60-80 cm. There is also a feeling by some that by restricting the harvest of pike in the preferred size range, harvest of other species such as walleye has been increased. Another concern expressed was that many lakes in the zone were incapable of producing trophy fish because of lake characteristics and anglers were being restricted from harvesting preferred size fish even though the probability of these lakes meeting the objective of producing trophy size fish was very low. Because of these concerns, the current 70-90 cm protected slot regulation was not preferred by the Advisory Council as a management action.

0 over 75cm (29.5”) size limit

The proposed regulation of a size limit of no fish greater than 75 cm (29.5”) was recommended as the preferred regulation by the FMZ 5 Advisory Council and this decision was supported by OMNR. While not the favourite option for many individuals, it was considered the option that best balanced the desire to maintain the number of large pike while allowing increased harvest of pike in the preferred size range (identified as 60cm – 80cm (23.5” – 31.5”). Investigation into predicting the results of the proposed options by modelling their effectiveness compared to the current regulation suggests that although all options would result in some level of decline in large fish numbers, this option would result in the least decline. It also allows harvest of a greater range of fish in the preferred size range. The increase from 70 cm (27.5”) to 75 cm (29.5”) corresponds to an increase from about a 1.9kg to a 2.5kg (4.3lb to a 5.4lb) fish based on FMZ 5 pike. It was also considered simpler to understand than the current regulation. It was felt by council members from the tourist industry that there was little need for harvesting trophy pike because of new reproduction taxidermy methods and that a catch and release fishery was the best use of large pike. Concerns with this regulation include that it did not entirely achieve the objective of allowing harvest from the entire preferred size range and is unlikely to maintain numbers of trophy pike in all lakes. There is also concern that not allowing the harvest of any large fish greater than 75 cm would require anglers to release large fish even if they were severely injured and expected to die and this was expected to be unpopular with some anglers.

Maintaining conservation limits for non-residents camping on crown land

It is also proposed that the current regulation of requiring non-residents camping on Crown land to follow conservation limits regardless of licence be maintained. These anglers provide limited economic benefits to Ontario compared to non-residents staying at resorts and maintaining reduced limits may help to maintain sustainability of populations.

Education around cleaning pike

A non-regulatory management action proposed by the council and supported by the OMNR is increased education on filleting pike and especially methods to efficiently removing the “Y” bones from small pike. It was thought that by increasing awareness of techniques to clean pike that it may increase the use of smaller sized pike for consumption.

Rationale for Alternative Management Options

Alternative Option 1 - 1 over 70 cm (27.5") size limit

Alternative Option 1 which allows an angler to harvest no more than 1 pike larger than 70cm is similar to the angling regulation in effect during the nineties (except that the limit was six then as compared to four under this option). This option tended to be preferred by anglers who wanted the ability to harvest at least one pike of any size. It was felt by these anglers that this regulation provided adequate protection of pike populations and, as supported by data from the eighties and nineties, had improved the number of large pike in the population compared to pre-size limit time. Other council members, particularly those associated with the tourist industry, felt that this did not provide enough protection of large pike. Results of the modelling work predicted that this regulation would result in a greater decline in the number of large pike than the proposed management action (0>75cm). This option addresses some of the concerns about the proposed regulation in that it meets the objective to allow harvest through the entire preferred size range and also allowed the harvest of large injured fish.

Alternative Option 2: current regulation

Alternative Option 2 is the current regulation (no harvest from 70-90cm; no more than 1 over 90cm). As discussed in the previous section, this regulation is very unpopular with many anglers because it does not meet the objective of allowing harvest of fish from the preferred size range. Although this regulation has been effective in increasing the number of large and trophy pike based on data from several SDW lakes within the zone, and has the support of some of the tourist industry, it was not chosen as a preferred management action by the council because of these concerns. Of the options presented, it is the one that is predicted to best meet the objective of maintaining the numbers of large size pike across the zone.

Alternative Option 3: only 1 between 70-80cm (27.5-31.5") and 0 over 80 cm (31.5")

Alternative Option 3 allows the harvest of no more than 1 pike between 70 and 80 cm and no pike greater than 80cm. Originally proposed by the Advisory Council, it was later decided by the council that it did not need to be presented to the public for review in the interest of simplifying the draft plan public review and because it did not appear to offer significant advantages compared to other regulations. However, OMNR wanted to present this option as it is the only option that allows harvest of the entire preferred harvest range while protecting all fish in the trophy size range. Modelling results suggest that this option is more effective in maintaining large pike abundance than Alternative Option 1 but not as effective as the proposed management action of allowing 0>75 cm. While it is more effective at meeting the harvest objective than the proposed management action, it shares the concern of not allowing the harvest of a large pike if it is fatally injured while being caught.

Changes to current limits (S-4/C-2) and seasons (open season year round) were discussed but rejected by the Advisory Council on the basis that the pike population was generally healthy based on data from the past 15 years and that these changes were not required to achieve the objectives. For the same reasons, the Advisory council recommended that pike not be added to the species (currently walleye and lake trout) with reduced limits in the southern part of the zone in what is referred to as the "border waters regulation area"

Another consideration of the council was the northern pike regulations in adjacent FMZ's. In FMZ 6, the current pike regulation is not more than one greater than 70cm for both sport and

Draft Fisheries Management Plan for Fisheries Management Zone 5

conservation licences with the same seasons and limits as FMZ 5. The regulation being proposed for FMZ 4 is not more than one greater than 60cm for both sport and conservation licences with the same seasons and limits as FMZ 5.

MNR Science and Information staff has modeled the potential impact of these options on the range of FMZ 5 northern pike populations. The results were presented to the FMZ Advisory Council and MNR staff prior to selecting a preferred option to recommend to the Steering Committee.

MNR biologists believe that all options being presented will protect the biological sustainability of FMZ 5 northern pike populations and meet the guiding principles and proposed northern pike objectives. The different options are expected to favour different objectives and MNR is expecting that the draft plan consultation will provide more direction on what management objectives and actions the public would prefer.

Other options considered but rejected by the Advisory Council and OMNR for further discussion are presented in Appendix 3 along with the rationale for not considering them at this time.

Proposed Monitoring Strategies for Northern Pike Management in FMZ 5

The following monitoring activities are proposed to assess whether the management actions are effectively achieving the objectives.

- 1) Conduct Broadscale Monitoring (BSM) for pike population status assessment and to assess objective achievement.

Landscape level monitoring of fish populations has been identified as the most effective and efficient method of assessing fish population status and determining whether fish management objectives are being met (OMNR 2005). See section 7.0 for further discussion on future monitoring using the Broadscale Monitoring program.

Table 5.1.2-1: Summary of FMZ5 Northern Pike Management Objectives and Managements Actions

Objectives	<p>Biological</p> <p>1) To maintain current overall northern pike abundance in FMZ 5. 2) To maintain large size northern pike in population.</p> <p>Social</p> <p>3) Manage pike size distribution to provide anglers with trophy angling for pike >90cm/35.5" in those lakes that can provide such opportunities. 4) Provide anglers the opportunity to consume the preferred size of northern pike. 5) Maximize pike angling opportunities.</p>
Indicator	<p>1) Pike Abundance Indicator: a) Area weighted catch per unit of effort (#/large mesh nets) of northern pike from fixed BsM lakes containing northern pike (except QPP).</p> <p>2) Large Pike Indicator: a) Proportion of northern pike larger than 70 cm caught in large mesh nets from fixed BsM lakes containing northern pike (all lakes combined except QPP). b) Proportion of northern pike larger than 90 cm caught in large mesh nets from fixed BsM lakes containing northern pike (all lakes combined except QPP).</p> <p>3) Trophy Pike Opportunities Indicator a) Proportion of lakes with northern pike larger than 90cm from fixed BsM lakes containing northern pike (except QPP). b) Regulation provides protection of trophy size fish and opportunity for trophy sized fish.</p> <p>4) Ability to harvest preferred size pike indicator a) Regulation allows opportunity to harvest pike in preferred range between 60 and 80 cm.</p> <p>5) Pike Angling Opportunity Indicator a) Length of pike fishing season</p>
Benchmark (i.e. sustainability line, current value, etc)	<p>1 a) 2010 median catch/net (2 gangs) – 0.8 pike/net (range from 0.4 – 5.2) 2 a) 2010 - 16% of all pike captured in FMZ 5 larger than 70cm 2 b) 2010 - 3% of all pike captured in FMZ 5 larger than 90cm 3 a) 2010 - 34% of BsM lakes caught at least 1 pike larger than 90cm 3 b) - ability of regulation to protect current and future trophy size pike 4) - ability of regulation to allow harvest of pike between 60 cm and 80 cm 5) Currently can angle for pike 365 days/year</p>
Target (currently proposed)	<p>1a) median catch of pike from FMZ 5 lakes to remain above 0.7 pike/net 2 a) % of pike larger than 70cm to remain above 15% 2 b) % of pike larger than 90cm to remain above 3% 3 a) The proportion of lakes with pike >90 cm to be at or above 30%. 3 b) – meet indicator 4) – meet indicator 5) – pike angling season to remain at 365 days/year</p>
Date	2020 for all targets
Management Actions	<p>1) 0 over 75cm (29.5") size limit, Limits S-4/C-2; Season: open all year 2) Maintain conservation limits for non-residents camping on Crown land 3) Education around cleaning pike for consumption.</p>
Monitoring strategy	Broadscale Monitoring of FMZ 5 to assess northern pike objective achievement at 5 yr cycle (next survey scheduled for 2015).

5.1.3 Smallmouth and Largemouth Bass

Smallmouth bass are not native to FMZ 5 and were first introduced into the zone approximately 100 years ago. They are now known to exist in over 560 lakes throughout the zone with populations being found in new lakes almost yearly. Largemouth bass are also not thought to be a native species in FMZ 5 although they are found in much fewer lakes (~100) located primarily in the south and west part of the zone. Most of the discussion and available data on bass populations in FMZ 5 is focused on smallmouth bass.

FMZ 5 bass populations have supported world class angling fisheries and have traditionally been popular with non-resident anglers and the tourist industry which has likely contributed to their spread throughout the zone. In more recent years, bass fishing has become more popular with resident anglers and several tournaments in towns such as Fort Frances, Kenora and Atikokan have become important events within these communities.

Prior to 1999, the limit for bass was S-6/C-3 with no size limits and no closed seasons. In 1999, Northwest Region reduced limits from S-6/C-3 to S-4/C-2, with a maximum size limit and reduced limits from Dec. 1st to June 30th. The regulation change appeared to be mainly a proactive measure to maintain quality angling opportunities. BsM data from FMZ 5 lakes suggests that bass populations are very healthy with high proportions of old, large fish and consistent recruitment. Trend data from a number of lakes in the eastern portion of FMZ 5 indicate that bass abundance has either remained stable or increased between the late 1990's and 2010 with average size of bass increasing on almost all lakes. Information from FMZ 5 lakes supports research that temperature is an important factor affecting both growth and year class survival of bass and the generally increasing temperatures over the past 25 years have appeared to benefit bass populations.

The current bass angling regulation in FMZ 5 is as follows:

- *Season: open all year*
- *Catch and Possession Limits:*
 - Sport Fishing Licence – 4, 2 from Jan 1 – June 30 and Dec 1 – Dec31*
 - Conservation Licence – 2; 1 from Jan 1 – June 30 and Dec 1 – Dec31*
- *Size Limit - must be less than 35cm from Jan 1 – June 30 and Dec 1 – Dec31*

There is only one exception to FMZ 5 zone regulations on non-SDW lakes in FMZ 5. Kakagi Lake has a catch and release season from June 1-30 in addition to the zone wide regulation (same as Lake of the Woods).

Proposed Objectives for Smallmouth and Largemouth Bass Management in FMZ 5

The FMZ 5 Advisory Council and MNR developed the following objectives to guide future management of bass populations in the zone:

- 1) Maintain angling and harvest opportunities consistent with sustainability of the population.
- 2) Maintain abundance of bass to provide anglers opportunities to catch numbers of fish.

Draft Fisheries Management Plan for Fisheries Management Zone 5

- 3) Maintain numbers of quality (>43cm/17") and trophy (>50cm/19.5") bass to provide anglers opportunities to catch large fish.
- 4) Maintain opportunities for competitive fishing events consistent with sustainability of the population.
- 5) Prevent unauthorized expansion into new waters.

There exists a wide range of opinion on the management objective for bass in FMZ5 within both the FMZ 5 Advisory Council and the general public. Opinions range from people who see bass as invasive and would like to see them eliminated (often supporting very liberal limits, etc) to those who see bass as valuable, high quality fishery which should be protected and who often support very restrictive regulations and reduced harvest. The proposed management objectives attempt to strike a balance between protecting quality angling in established populations while preventing the spread and potential detrimental impacts on native species where bass do not currently exist. The Council and MNR proposed a number of management options to meet these objectives.

Proposed Management Actions to meet Smallmouth and Largemouth Bass Management Objectives in FMZ 5

The proposed management actions are presented below along with the level of support by the FMZ 5 Advisory Council (see rationale below for further discussion). MNR is proposing to implement the managements below unless public consultation indicates an alternate management action is preferred and that action would allow for the achievement of the above objectives.

Proposed Bass Management Actions	FMZ 5 Advisory Council advice
Eliminate reduced limits in winter/spring and simplified size limit season Catch Limit Sport Fishing Licence – 4 Conservation Licence– 2 Size Limit - must be less than 35cm from Jan 1 – June 30 Season - Open all year	Preferred Action by FMZ 5 Advisory Council
Maintain current exception on Kakagi Lake	Preferred Action by FMZ 5 Advisory Council
Maintain conservation limits for non-residents camping on crown land (current regulation)	Preferred Action by FMZ 5 Advisory Council
Education and awareness on effects of bass introductions on other species	Preferred Action by FMZ 5 Advisory Council
Education and awareness on effects of angling on nesting bass	Preferred Action by FMZ 5 Advisory Council
Recommend development of policy/guidelines for tournaments (including permitting)	Preferred Action by FMZ 5 Advisory Council

Draft Fisheries Management Plan for Fisheries Management Zone 5

The following potential regulations were also considered by the FMZ 5 Advisory Council and the MNR. Public input on these options is also invited.

Alternate Bass Management Options	Support by FMZ 5 Advisory Council
<p>Alternative Option 1: current regulation Catch Limits: Sport Fishing Licence – 4, 2 from Jan 1 – June 30 and Dec 1 – Dec31 Conservation Licence – 2; 1 from Jan 1 – June 30 and Dec 1 – Dec31 Size Limit - must be less than 35cm from Jan 1 – June 30 and Dec 1 – Dec31 Season - Open all year</p>	<p>Supported by FMZ 5 Advisory Council as a option for public review</p>
<p>Alternative Option 2: current regulation with simplified reduced catch/size limit season. Catch Limits: Sport Fishing Licence – 4, 2 from Jan 1 – June 30 Conservation Licence – 2; 1 from Jan 1 – June 30 Size Limit - must be less than 35cm from Jan 1 – June 30 Season - Open all year</p>	<p>Supported by FMZ 5 Advisory Council as a option for public review</p>

Rationale for Selection of Proposed Management Actions

Eliminate reduced limits in winter/spring and simplify size limit season

The proposed regulatory management action is the same as the current regulation but eliminates the reduced limits during the winter and spring (i.e limits would remain at S-4/C-2 all year) and simplifies the dates of the size limit season to January 1st to June 30th. This maintains protection of large bass during the spring/winter periods but provides more harvest opportunity of smaller sized fish during that period. One of the concerns expressed about the current regulation is that the combination of the size limit (none larger than 35cm) and reduced limits (S-2/C-1) severely restrict the opportunity for anglers to harvest bass for consumption during the spring and they are forced to harvest more traditional species such as walleye or northern pike. This has been particularly noted for tourist guests with conservation licences who are currently limited to 1 bass less than 35cm. The proposed management action meets the objective of maintaining angling and harvest opportunities while also maintaining current protection of large bass in the winter and spring when they are vulnerable to anglers. By providing the opportunity to harvest more small fish, it may help in balancing harvest across the fish community. The angling and harvest of some bass at all times of the year is considered important to the tourist industry in marketing bass angling opportunities as well as allowing opportunities for bass to be harvested instead of traditional species such as walleye. With no size limits in the summer, this regulation does not restrict bass angling tournaments to weigh limits of large bass and meets the objective of maintaining opportunities for tournaments. It also simplifies the regulation by maintaining the same catch limits throughout the year. One concern of the proposed management action is that it does not provide protection for large bass throughout the remainder of the year.

The option also adjusts the size limit season from the period of Dec. 1 - June 30 to Jan. 1 – June 30 to address what was seen by the Advisory Council as confusion in the angling regulation summary. Because the summary is prepared as an annual summary and season dates cannot cross calendar years, the size limit period must be written as two separate periods (i.e. *Jan 1 – June 30 and Dec 1 – Dec 31*). Members of the council felt the wording of regulation could be simplified by eliminating the December period. It was also felt that angling during the month of December was very limited because of typical ice conditions at that time of year and there would be very little risk to bass populations from this change.

Maintain current exception on Kakagi Lake

Currently there is only one exception to zone regulations specifically for bass management. A catch and release season from June 1-30 is in place on Kakagi Lake which is the same as on the adjacent SDW of Lake of the Woods. It is proposed that this exception remain in place.

Maintaining conservation limits for non-residents camping on crown land

It is also proposed that the current regulation of requiring non-residents camping on Crown land to follow conservation limits regardless of licence be maintained. These anglers provide limited economic benefits to Ontario compared to non-residents staying at resorts and maintaining reduced limits may help to maintain sustainability of populations.

Education and awareness on effects of bass introductions

Several non-regulatory management actions were proposed by the council and supported by the OMNR. The first involves increased education on impacts of introduced bass populations on native fish communities. Bass have had impacts on other species in FMZ 5 and in some instances, such as introduction of bass into small lake trout lakes, can affect the sustainability of native species. Increased education to make the public more aware of the consequences of moving bass into new lakes may help reduce future unauthorized introductions.

Education and awareness on effects of angling on nesting bass

It was also proposed that there be public education to increase the awareness of the impacts of angling mature male bass while they are guarding nests. Better understanding of the potential impacts of their angling activities may help anglers manage their activities to minimize detrimental impacts on established bass populations.

Recommend development of policy/guidelines for tournaments (including permitting)

It was also recommended that policy and/or guidelines (including permitting) be developed for tournaments for all species including bass. Concerns about the timing and number of tournaments and fish handling procedures were raised by council members and policy or guidelines would provide a consistent approach to managing events. A potential advantage of permitting tournaments is that it would allow additional regulation options for zone wide bass management. This would be a provincially led project involving Fisheries Policy section.

Rationale for Alternative Management Options

Alternative Option 1: current regulation

Alternative Option 1 is the current regulation which meets the objectives identified and is providing healthy bass populations and high quality fisheries in most lakes in the zone. The current regulation has many of the same advantages as the proposed action (year round

angling opportunities, protection of large bass in winter and spring when they are vulnerable to anglers, maintains opportunities for tournaments, etc). It also provides some protection of smaller spawning bass in the spring. Concerns with the current regulation include lack of biological rationale for reduced harvest of small bass in the winter and spring, the potential that this may eliminate the ability to reduce harvest of traditional harvest species such as walleye during this period and that the reduced limits during this period add additional complexity to angling regulations. As discussed previously, the dates of the current size limit season add to the complexity of how the regulation appears in the Fishing Regulation Summary.

Alternative Option 2: current regulation with simplified catch/size limit season.

Alternative Option 2 is the same as Alternative Option 1 with the simplified size limit season. As discussed previously, changing the dates of the size limit season to Jan. 1st to June 30th simplifies the regulation while having minimal impact on bass populations.

An additional option of the current limits of 4 for Sport licence anglers and 2 for Conservation licence with 1 fish over 35 cm for the entire year was considered and would have been preferred by OMNR as the simplest regulation that meets all the management objectives with the exception of maintaining angling tournament opportunities. It is felt that the implementation of this regulation would have had negative impacts on bass tournaments by eliminating the ability to weigh the 5 largest bass caught by the team. One potential advantage of tournament permitting is the ability to exempt tournament anglers from regulations such as this proposal providing the tournament meets fish handling and release conditions. Because this option is not currently available, this was not considered as feasible as a management option at this time.

MNR biologists believe that all options being presented will achieve the protection of the biological sustainability of FMZ 5 bass populations and meet the guiding principles and proposed bass objectives. The different options are expected to favour different objectives and MNR is expecting that the draft plan consultation will provide more direction on what management objectives and actions the public would prefer.

Other options considered but rejected by the Advisory Council and OMNR for further discussion are presented in Appendix 3 along with the rationale for not considering them at this time.

Proposed Monitoring Strategies for Bass Management in FMZ 5

The following monitoring activities are proposed to assess whether the management actions are effectively achieving the objectives.

- 1a) Conduct Broadscale Monitoring (BsM) for smallmouth bass population status assessment and to assess objective achievement.
- b) Assist Science and Information staff to develop bass population assessment methodology.
- c) Work with Science and Information staff to determine the need for additional data from methods such as Nearshore Community Index Netting to assess bass population status.

Landscape level monitoring of fish populations has been identified as the most effective and efficient method of assessing fish population status and determining whether fish management objectives are being met (OMNR 2005). See section 7.0 for further discussion on future monitoring using the Broadscale Monitoring program.

Table 5.1.3-1 – Summary of Bass Management Objectives and Management Actions

Objectives	<p>Biological</p> <ol style="list-style-type: none"> 1) <i>Maintain angling and harvest opportunities consistent with sustainability of the population.</i> 2) <i>Maintain abundance of bass to provide anglers opportunities to catch numbers of fish.</i> 3) <i>Maintain numbers of quality (>43cm/17") and trophy (>50cm/19.5") bass to provide anglers opportunities to catch large fish.</i> 4) <i>Prevent unauthorized expansion into new waters.</i> <p>Social</p> <ol style="list-style-type: none"> 5) <i>Maintain opportunities for tournaments consistent with sustainability of the population.</i>
Indicator	<ol style="list-style-type: none"> 1) Opportunities Indicator <ol style="list-style-type: none"> a) Angling opportunities determined by the length of open bass angling season. b) Harvest opportunities determined by the current daily limits 2) Bass Abundance Indicator: Area weighted catch per unit of effort (#/large mesh nets) of smallmouth bass from fixed BsM lakes containing smallmouth bass (all lakes combined except Quetico PP) 3) Large Bass Indicator <ol style="list-style-type: none"> a) Proportion of smallmouth bass larger than 43 cm caught in large mesh nets from fixed BsM lakes containing smallmouth bass (all lakes combined except QPP). b) Proportion of lakes with smallmouth bass larger than 43 cm from fixed BsM lakes containing smallmouth bass (except QPP). c) Proportion of lakes with smallmouth bass larger than 50cm from fixed BsM lakes containing smallmouth bass (except QPP). 4) Number of new lakes with smallmouth bass and largemouth bass populations. 5) Number of bass angling tournaments on non-SDW lakes within FMZ 5.
Benchmark <i>(i.e. sustainability line, current value, etc)</i>	<ol style="list-style-type: none"> 1a) currently, the bass angling season is open 365 days/year 1b) current daily harvest limits are 4/2 for S/C licences except for the period Dec1 to June 30 when limits are 2/1 for S/C licences 2) 2010 median catch/net (2 gangs) – 0.5 smallmouth bass/net (range from 0.1 – 4.4) 3a) in 2010 BsM, 15% bass captured were larger than 43cm 3b) in 2010 BsM , at least 1 bass larger than 43cm was caught in 55% of lakes 3c) in 2010 BsM , at least 1 bass larger than 50cm was caught in 5% of lakes 4) Number of lakes with smallmouth bass and largemouth bass in FMZ 5 outside of SDW's/QPP is currently approximately 420 smallmouth bass lakes and 67 largemouth lakes. In addition, there are a number of lakes where bass are expected to expand to based on downstream movement from existing populations. 5) Currently there are 9 tournaments on non-SDW lakes in the zone
Target <i>(currently proposed)</i>	<ol style="list-style-type: none"> 1a) 365 days 1b) current daily limits 2) median catch \geq 0.5 smallmouth bass/net

Draft Fisheries Management Plan for Fisheries Management Zone 5

	<p>3a) $\geq 15\%$ of bass captured to be larger than 43 cm 3b) $\geq 50\%$ of lakes to have at least 1 bass captured $>43\text{cm}$ 3c) $\geq 5\%$ of lakes to have at least 1 bass captured $>50\text{cm}$ 4) no new unauthorized introductions of smallmouth or largemouth bass 5) ≥ 9 tournaments</p>
Date	<p>1a) & 1b) 2015 2) 2020 3a), 3b), 3c) 2020 4) 2015 5) 2015</p>
Management Actions	<ol style="list-style-type: none"> 1. Current regulations but no reduced limits in winter/spring and simplified size limit season 2. Maintain conservation limits for non-residents camping on crown land Maintain current exception on Kakagi Lake 3. Education and awareness on effects of bass introductions on other species 4. Education and awareness on effects of angling on nesting bass 5. Recommend development of policy/guidelines for tournaments
Monitoring strategy	<ol style="list-style-type: none"> 1) Broadscale Monitoring of FMZ 5 at 5 yr intervals (next survey planned for 2015). 2) Sample bass from angling tournaments on non-SDWs to obtain growth, year class strength, etc data not available from BsM data because of low sample size/lake.

5.1.4 Lake Trout

With over 560 known lake trout lakes, FMZ 5 has the highest number of lake trout lakes in the northwest region and is one of the highest density areas within the province. Review of lake trout populations in both Atikokan and Kenora suggest that about 30% of the lakes contain small bodied trout that rely on invertebrates and small fish while the remaining 70% of the lakes have cisco, whitefish and/or smelt available as prey resulting in larger bodied trout. Lake trout angling in the zone has traditionally been focused on winter ice fishing or early spring after ice out with less interest during the summer months. Currently, there is less interest from anglers (especially non-resident anglers) than other species.

Recent data collected during the 2010 BsM survey suggests that lake trout populations are showing little sign of overharvest stress with average ages ranging from 8 to 17 years with most populations having an average age around 13 years. However, there is recognition that lake trout may be affected by impacts other than angling such as climate change, species introductions, or habitat impacts more than some other sport fish species.

Lake trout angling regulation changes in recent decades include a limit reduction from 3 fish to 2 fish in the late 1980's (early 1990's in the Atikokan area) and the addition of a 1 over 56cm size limit from Sept. 1-30 in 1999. The regulation that reduced daily catch limits for non-resident sport fishing licences in the Border Waters area was implemented in 2000.

The current lake trout angling regulation in FMZ 5 is as follows:

- *Season: open January 1 – September 30*
- *Catch and Possession Limits:*
 - Sport Fishing Licence – 2*
 - Conservation Licence – 1*
- *Size Limit - not more than 1 larger than 56cm from Sept. 1 – Sept 30.*

Within the Border Water Regulation area, non-resident limits are:

- *Catch Limits*
 - Sport Fishing Licence – Daily – 1/Possession - 2;*
 - Conservation Licence - Daily – 1/Possession - 1*
- *Size Limit - not more than 1 larger than 56cm from Sept. 1 – Sept 30.*

In addition, there are several non-SDW lakes with exceptions or additional regulations (eg. sanctuaries) to the zone regulations which are identified in Appendix 2.

Proposed Objectives for Lake Trout Management in FMZ 5

The FMZ 5 Advisory Council propose the following objectives to guide management of lake trout populations in the zone:

- 1) Maintain lake trout abundance
- 2) Maintain angling opportunities for lake trout
- 3) Maintain the proportion of mature fish (>56 cm) currently present in FMZ 5 lakes
- 4) Protect mature fish during the fall spawning season

Draft Fisheries Management Plan for Fisheries Management Zone 5

These management objectives focused on maintaining current populations which were felt by the FMZ 5 Advisory Council to be providing quality angling opportunities and populations that show few signs of harvest stress.

Proposed Management Actions to meet Lake Trout Management Objectives in FMZ 5

The proposed management actions are presented below along with the level of support by the FMZ 5 Advisory Council (see rationale below for further discussion). MNR is proposing to implement the managements below unless public consultation indicates an alternate management action is preferred and that action would allow for the achievement of the above objectives.

Proposed Lake Trout Management Actions	FMZ 5 Advisory Council advice
Current regulation Season: open January 1 – September 30 Catch Limits Sport Fishing Licence – 2 Conservation Licence – 1 Size Limit - not more than 1 larger than 56cm from Sept.1 – Sept 30. Within the Border Water Regulation area, non-resident limits are: Catch Limits Sport Fishing Licence – Daily – 1/Possession - 2 Conservation Licence - Daily – 1/Possession - 1 Size Limit - not more than 1 larger than 56cm from Sept.1 – Sept 30.	Preferred Action by FMZ 5 Advisory Council
Maintain individual lake regulations where rationale exists to maintain populations	Preferred Action by FMZ 5 Advisory Council
Maintain conservation limits for non-residents camping on crown land (current regulation)	Preferred Action by FMZ 5 Advisory Council
Expand reduced daily catch limits for non-resident sport licence anglers to entire zone only if expanded for walleye.	Preferred Action by FMZ 5 Advisory Council
Education to promote catch and release handling techniques.	Preferred Action by FMZ 5 Advisory Council

The following potential regulations were also considered by the FMZ 5 Advisory Council and the MNR. Public input on these options is also invited.

Alternate Lake Trout Management Options Considered	FMZ 5 Advisory Council advice
<p>Alternative Option 1: current regulation with size limit for entire season. Season: open January 1 – September 30 Catch Limits Sport Fishing Licence – 2 Conservation Licence – 1 Size Limit - not more than 1 larger than 56cm.</p> <p> Within the Border Water Regulation area, non-resident limits are: Catch Limits Sport Fishing Licence – Daily – 1/Possession - 2 Conservation Licence - Daily – 1/Possession - 1 Size Limit - not more than 1 larger than 56cm.</p>	<p>Supported by FMZ 5 Advisory Council as a option for public review</p>

Rationale for Selection of Proposed Management Actions

Maintaining current regulation

The current regulation was selected as the preferred management action by the FMZ 5 Advisory Council and supported by the OMNR on the basis that it is currently meeting all of the proposed management objectives. FMZ 5 lake trout data does not suggest that current levels of angling harvest are negatively impacting populations. The current regulation is considered to be relatively simple and easy to follow by anglers as there is no size limit during much of the angling season (particularly during the winter).

Maintaining individual lake regulations

There are a number of exceptions to the zone regulation for lake trout. These generally involve a number of modifications to the angling seasons to reduce angling effort on small lakes with vulnerable populations that usually have increased access to lake (eg.construction of a highway adjacent to lake) or special research lakes (ELA area, CNFER lakes, Grimshaw Lake). These exceptions were considered essential to maintain sustainability of current lake trout populations in these lakes by both the Advisory Council and OMNR (see Appendix 2 for list of lakes and rationale for each lake).

Maintaining conservation limits for non-residents camping on crown land

It is also proposed that the current regulation of requiring non-residents camping on Crown land to follow conservation limits regardless of licence be maintained. These anglers provide limited economic benefits to Ontario compared to non-residents staying at resorts and maintaining reduced limits may help to maintain sustainability of populations.

Expand reduced daily catch limits for non-resident anglers only if expanded for walleye.

The council did not support the expansion of the area of reduced daily catch limits for non-residents sport licence anglers (aka the “border waters regulations” area) based on lake trout management. However, they supported expanding reduced non-resident catch limits for lake trout if the walleye daily catch limits for non-residents are reduced in the zone to support the principle of simplified regulations and movement to a landscape management approach.

Currently, the proposed action for walleye indicates that this option will be part of an investigation into more conservative management of walleye population to be completed prior to the 5 year plan review.

Education to promote catch and release handling techniques

A proposed non-regulatory management action is to promote catch and release handling techniques through education materials. It is hoped by increasing knowledge of effective catch and release handling techniques, mortality of released fish can be reduced.

Rationale for Alternative Management Options

Alternative Option 1: current regulation with size limit for entire season.

The only proposed option for lake trout is to extend the size limit of no more than 1 trout over 56cm from Sept. 1-30 to the entire lake trout season (Jan. 1 to Sept. 30). It was felt that if mature lake trout were being protected, they should be protected during the entire season. It was also felt this may provide some increased protection to lake trout populations from impacts such as climate change. Also, exceptions would likely be removed from two waterbodies in the zone (Dryberry Lake and Whitefish Bay of Lake of the Woods) if this regulation became the zone regulation. The FMZ 5 Advisory Council indicated they did not support this option as a preferred action because of concerns about unnecessarily restricting harvest in some lakes when MNR data suggests populations are healthy. They also have concerns about the additional requirements to measure fish in the remainder of the season and in particular, during cold weather conditions during ice fishing season.

MNR biologists believe that the options being presented will achieve protection of the biological sustainability of FMZ 5 lake trout populations and help meet the guiding principles and proposed lake trout objectives of the draft fisheries management plan. The different options are expected to favour different objectives and MNR is expecting that the draft plan consultation will provide more direction on what management objectives and actions the public would prefer.

Other options considered but rejected by the Advisory Council and OMNR for further discussion are presented in Appendix 3 along with the rationale for not considering them at this time.

Proposed Monitoring Strategies for Lake Trout Management in FMZ 5

The following monitoring activities are proposed to assess whether the management actions are effectively achieving the objectives.

- 1) Conduct Broadscale Monitoring (BsM) to assess lake trout population status and objective achievement.
- 2) Participate in the Northwest Region Lake Temperature Monitoring Program on currently monitored FMZ 5 lakes to monitor affect of changing temperature on lake trout habitat.

Landscape level monitoring of fish populations has been identified as the most effective and efficient method of assessing fish population status and determining whether fish management objectives are being met (OMNR 2005). See section 7.0 for further discussion on future monitoring using the Broadscale Monitoring program.

Table 5.1.4-1 – Summary of Lake Trout Management Objectives and Management Actions

Objectives	<ol style="list-style-type: none"> 1. Maintain lake trout abundance 2. Maintain angling opportunities for lake trout 3. Maintain proportion of mature fish (>56 cm) currently present in FMZ 5 lakes 4. Protect mature fish during the fall spawning season
Indicator	<ol style="list-style-type: none"> 1) Abundance Indicator: <ol style="list-style-type: none"> a) Population status to be determine by the from fixed FMZ5 BsM lakes where the estimated biomass is greater than the expected biomass for fish over ?cm b) Area weighted catch per unit of effort (#/large mesh nets) of from fixed FMZ 5 BsM lakes containing (all lakes combined except QPP). 2) Angling Opportunity Indicator: <p>Angling opportunities determined by the length of open lake trout angling season.</p> 3) Mature Fish Indicator: <ol style="list-style-type: none"> a) Proportion of lake trout larger than 56 cm caught in large mesh nets from fixed FMZ 5 BsM lakes containing lake trout (all lakes combined except QPP). b) Proportion of lakes with lake trout larger than 56 cm from fixed FMZ 5 BsM lakes containing lake trout (except QPP). 4) Spawning Season Protection Indicator: <p>Number of days that lake trout spawning occurs within the protected season (Oct. 1 to Dec. 31).</p>
Benchmark (i.e. sustainability line, current value, etc)	<ol style="list-style-type: none"> 1a) this benchmark will be determined based on 2010 BsM results when methodology is finalized (2013?) 1b) 2010 median catch/net (2 gangs) – 1.1 lake trout/net (range from 0.1 – 4.1) 2) Current angling season is from Jan. 1 to Sept. 30. 3a) >=39% of lake trout captured to be larger than 56 cm. 3b) >=92% of lakes to have at least 1 lake trout captured >56cm. 4) Currently this is not monitored on an annual basis so a benchmark is not known
Target (currently proposed)	<ol style="list-style-type: none"> 1a) target to be sets as at current level based on 2010 BsM results 1b) median catch >= 1.0 lake trout/net 2) Maintain current length of season (273-274 days depending on year) 3a) >=40% of lake trout captured to be larger than 56 cm. 3b) >=90% of lakes to have at least 1 lake trout captured >56cm. 4) All lake trout spawning to occur entirely within the closed season across the zone.
Date	<ol style="list-style-type: none"> 1a) 2020 1b) 2020 2) 2015 3a), 3b) 2020 4) 2015
Management Actions	<ol style="list-style-type: none"> 1) Current regulation 2) Maintain individual lake regulations where rationale exists to maintain populations 3) Maintain conservation limits for non-residents camping on crown land (current regulation) 4) Promote catch and release handling techniques through education materials.
Monitoring strategy	<ol style="list-style-type: none"> 1) BsM monitoring of lakes on 5 year interval 2) Monitoring of water temperatures and lake trout spawning times from representative locations across the zone.

5.1.5 Black Crappie

Black crappie were introduced into FMZ 5 waters approximately 80 years ago and have slowly spread throughout the zone since then with current estimates of about 100 lakes. Up until about 10 years ago, they were confined mainly to the south and west portions of the zone but in the last decade, new populations have become established in the Atikokan and Dryden areas. With the increase in distribution, there has been increasing interest from anglers and, in areas where they are established, they have become important recreational angling species for both resident and non-resident anglers. In some cases, anecdotal reports suggest that high harvest has reduced angling quality through the loss of preferred size (>25cm) fish. This has resulted in the loss of recreational and economic benefits. Data on crappie populations from FMZ 5, while limited, does support the idea that angling quality has declined in areas of high harvest. At the same time, concerns exist about the impacts of new crappie introductions on native fish communities (in particular the impact on potential harvest of walleye populations in smaller, shallower lakes).

Crappie limits were reduced from 30S/15C in 1999 to address public concerns about declining angling quality for crappie at that time (and valuation of crappie resource).

The current crappie angling regulation in FMZ 5 is as follows:

- *Season: open all year*
- *Catch and Possession Limit:*
 - Sport Fishing Licence - 15*
 - Conservation Licence -10*
- *Size Limit: None*

Proposed Objectives for Crappie Management in FMZ 5

The OMNR and FMZ 5 Advisory Council propose the following objectives to guide management of crappie populations in the zone:

- 1) Prevent unauthorized expansion into new waters.
- 2) Manage existing populations to maintain sustainable, high quality (crappie>25 cm) fisheries for consumption.
- 3) Manage existing populations to maintain characteristics of a healthy fish population (# of age classes, maximum age).

The proposed management objectives attempt to strike a balance between protecting quality angling in established populations while preventing the spread and potential detrimental impacts on native species where crappie do not currently exist. The quality angling objective was considered necessary to maintain angler interest in harvesting crappie with a concern that if size of crappie declined, interest in fishing for them and harvesting them would also decline. Fish that anglers considered desirable for consumption were defined as greater than 25 cm by the FMZ 5 Advisory Council.

Proposed Management Actions to meet Black Crappie Management Objectives in FMZ 5

The proposed management actions are presented below along with the level of support by the FMZ 5 Advisory Council (see rationale below for further discussion). MNR is proposing to implement the managements below unless public consultation indicates an alternate management action is preferred and that action would allow for the achievement of the above objectives.

Proposed Black Crappie Management Actions	FMZ 5 Advisory Council advice
Reduced limits. Catch Limits: Sport Fishing Licence - 10 Conservation Licence– 5 Size Limit: None Season: Open all year	Preferred Action by FMZ 5 Advisory Council
Maintain conservation limits for non-residents camping on crown land (current regulation)	Preferred Action by FMZ 5 Advisory Council
Education about impacts of crappie introductions on native fish communities	Preferred Action by FMZ 5 Advisory Council
Education about impacts of angling on crappie (eg. catch and release mortality of small fish caught in deep water)	Preferred Action by FMZ 5 Advisory Council
Collect more information on FMZ 5 black crappie populations from non-SDW lakes.	Preferred Action by FMZ 5 Advisory Council

The following potential regulations were also considered by the FMZ 5 Advisory Council and the MNR. Public input on these options is also invited.

Alternative Crappie Management Options Considered	FMZ 5 Advisory Council advice
Alternative Option 1: current regulation Catch Limits: Sport Fishing Licence - 15 Conservation Licence– 10. Size Limit: None Season: Open all year	Supported by FMZ 5 Advisory Council as a option for public review

Rationale for Selection of Proposed Management Actions

Reducing limits

The preferred regulation for black crappie by the Advisory Council was to reduce limits to 10 for sport fishing anglers and 5 for conservation anglers. This was supported by the OMNR. There was a concern by council members that current harvest is limiting the ability to meet the objectives to provide sustainable, high quality (crappie>25 cm) fisheries for consumption and maintain characteristics of a healthy fish population. There is a feeling that 15 fish/person is more than is required and that a conservation limit of 10 fish is not meeting a conservation ethic.

By reducing the limits to 10 for sport fishing anglers and 5 for conservation anglers, it is felt that this may help prevent reduced angling quality and subsequent loss of economic and recreational angling opportunities. Although there is little data available on FMZ 5 crappie population status, this action is felt to be precautionary with the lack of information and the expectation of increasing angling effort for this species in the future. This proposal would also make limits the same as the state of Minnesota (daily catch/possession limit of 10 crappie) which may help address the concern that day trip anglers from Minnesota are responsible for a large proportion of the crappie harvest from lakes in the south part of FMZ 5.

Concerns with the proposed regulation include a lack of data on FMZ 5 crappie populations to support the need for a limit reduction or evaluate its effectiveness. The proposed limit reduction may not reduce the negative pulse fishing effects on populations and it doesn't address potential impact of harvest of mature fishing during the spring spawning period.

Maintaining conservation limits for non-residents camping on crown land

It is also proposed that the current regulation of requiring non-residents camping on Crown land to follow conservation limits regardless of licence be maintained. These anglers provide limited economic benefits to Ontario compared to non-residents staying at resorts and maintaining reduced limits may help to maintain sustainability of populations.

Education about impacts of crappie introductions

Several non-regulatory management actions were proposed by the council and supported by the OMNR. The first involves increased education on impacts of introduced crappie populations on native fish communities. Studies have shown that black crappie can negatively impact the productivity of native species including walleye. Increased education to make the public more aware of the consequences of moving crappie into new lakes may help reduce future unauthorized introductions.

Education about angling impacts on crappie populations

It was also proposed that there be public education to increase the awareness of the impacts of angling on crappie. In particular, there was a concern about high catch and release mortality of crappie caught and released from deep water (>10m/30') in the winter. Better understand of the potential impacts of their angling activities may help anglers manage their activities to minimize detrimental impacts on established crappie populations.

Collection of more information on FMZ 5 black crappie

There was also concern about the lack of data for FMZ 5 crappie populations to allow monitoring of population status, measure achievement of objectives and make effective management decisions. It was recommended that OMNR collect more crappie data prior to the 5 yr plan review.

Rationale for Alternative Management Options

Alternative Option 1: current regulation

The current regulation is supported by members of the council who feel that it promotes harvest of crappie. In addition, crappie limits in FMZ 5 are currently among the most restrictive in the province and some members feel that they shouldn't be lowered further, especially with the lack of data from FMZ 5 populations to support a decision.

MNR biologists believe that all options being presented will protect the biological sustainability of FMZ 5 black crappie populations and help meet the guiding principles and proposed black crappie objectives. The different options are expected to favour different objectives and MNR is expecting that the draft plan consultation will provide more direction on what management objectives and actions the public would prefer.

Proposed Monitoring Strategies for Black Crappie Management in FMZ 5

The following monitoring activities are proposed to assess whether the management actions are effectively achieving the objectives.

- 1) Develop a monitoring method to effectively assess black crappie population status in FMZ 5
- 2) Track distribution, method and time of introduction for black crappie in FMZ 5 lakes.

One of the issues with black crappie is that the standard Broadscale Monitoring program does not effectively monitor crappie populations in the zone both because of the coverage of lakes with crappie populations (only 17 of 130 lakes have crappie) and ineffectiveness of the gill nets used in BsM at capturing crappie (only 52 crappie caught from 11 lakes). A proposed methodology to better assess black crappie populations is presented in Appendix 3.

Table 5.1.5 – 1 – Summary of Black Crappie Management Objectives and Management Actions

Objectives	<p>Biological</p> <ol style="list-style-type: none"> 1) <i>Prevent unauthorized expansion into new waters.</i> 2) <i>Manage existing populations to maintain characteristics of a healthy fish population (# of age classes, maximum age)</i> <p>Social</p> <ol style="list-style-type: none"> 3) <i>Manage existing populations to maintain sustainable, high quality fisheries for consumption</i>
Indicator	<ol style="list-style-type: none"> 1) Number of new lakes with black crappie populations 2) Age structure of crappie populations (# of age classes, maximum age, etc) 3) Abundance/proportion of crappie >25cm (TBD after identification of a monitoring program)
Benchmark <i>(i.e. sustainability line, current value, etc)</i>	<ol style="list-style-type: none"> 1) Number of lakes with black crappie in FMZ 5 outside of SDW's/QPP is currently 79. In addition, there are a number of lakes where crappie are expected to expand to based on downstream movement from existing populations 2) To Be Determined (TBD) after identification of a monitoring program 3) TBD after identification of a monitoring program
Target (currently proposed)	<ol style="list-style-type: none"> 1) Number of new lakes that result from unauthorized introduction (i.e. not including natural movement from current populations) to be zero. 2) currently unknown (data deficient) 3) currently unknown (data deficient)
Date	<ol style="list-style-type: none"> 1) 2015 2&3) - need data to determine targets
Management Actions	<ol style="list-style-type: none"> 1) Reduce catch limits to Sport Fishing Licence – 10; Conservation Licence– 5 2) Maintain conservation limits for non-residents camping on crown land (current regulation) 3) Education about impacts of crappie introductions on native fish communities 4) Education about impacts of angling on crappie (eg. catch and release mortality of small fish caught in deep water) 5) Collect more information on FMZ 5 black crappie populations from non-SDW lakes.
Monitoring strategy	<ol style="list-style-type: none"> 1) Monitoring program to be developed and implemented by MNR Districts (see appendix 3) 2) Track distribution, method and time of introduction for black crappie in FMZ 5 lakes.

5.1.6 Commercial Fisheries Management

Description

Commercial fishing activity occurs on 21 lakes in FMZ 5 in addition to all eight Specially Designated Waters. Lake whitefish are the most important commercially fished species and make up 89% of the commercial fish quota for non-specially designated lakes followed by lesser amounts of northern pike, walleye and black crappie.

Previously, the direction for the management of commercial fisheries in FMZ 5 (including allowable gear, species and harvest targets) could be found in individual District Fisheries Management Plans (DFMP's). Given that the FMZ 5 Fisheries Management Plan effectively replaces these plans, and that a new strategic policy for Ontario's Commercial Fisheries was completed in 2011, it is important that this new plan contain modernized commercial fisheries management direction that is consistent with new strategic direction across the zone.

Provincial Management Direction

In December 2011, OMNR released the Strategic Policy for Ontario's Commercial Fisheries (OMNR 2011). This policy outlines the goals, principles, objectives and management strategies to be applied to commercial fisheries management at a provincial level as follows:

Goal for Commercial Fisheries in Ontario

To develop and support commercial fishing opportunities in Ontario waters while ensuring the long term sustainability of fish populations, safeguarding ecosystem function and biodiversity, meeting Aboriginal and treaty rights obligations and contribute to the socio-economic needs of all the people of Ontario.

Guiding Principles for Commercial Fisheries in Ontario

The following basic principles or statements help form the foundation for the management of resources utilized by commercial fisheries. Many of these originate in other MNR strategic policies and directives. They apply to all natural resources and are stated here in the context of commercial fisheries.

- Fish resources belong to all the people of Ontario.
- Commercial fishing is economically and culturally important to people of Ontario.
- Fish resources are limited and therefore, there must be a limit to their use.
- MNR has responsibility and authority to manage fisheries and fishing activity in Ontario
- Fish resources have value; the use of which should provide a fair return (ecological, social, or economic) to the people of Ontario.
- Decision making should be adaptive, transparent, and proactive, taking into consideration the best available science and existing knowledge.
- First allocation of the resource will always go to conservation of the resource.
- Ontario is committed to fulfilling its constitutional obligations with respect to Aboriginal and Treaty rights including obligations to consult and where appropriate, accommodate.
- Bi-national commitments have an important role in the decision making process used to manage Ontario's fishery resource for shared waters between Canada and the United States.

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- Partnerships, Fisheries Management Zone Councils, community-based stewardship programs and agreements with Aboriginal communities enhance Ontarian's connection to the fisheries resource.

To meet the goal and follow these guiding principles, the Strategic Policy for Ontario's Commercial Fisheries identified three broad objectives to guide commercial fisheries management throughout the province:

1. Embrace Ecological Sustainability
Maintain and restore ecosystem diversity and fish populations that provide for long term maintenance and restoration of resources for Ontario commercial fisheries.
2. Sustainable Economic Development
Safe and environmentally sound commercial fisheries that provide for sustainable economic opportunities.
3. Societal and Cultural Values
Commercial fisheries contribute to the social and cultural welfare of all the people of Ontario both now and in the future.

Proposed Objectives for Commercial Fisheries Management in FMZ 5

In applying this provincial level direction to FMZ 5 commercial fisheries management, the MNR has proposed the following objectives.

Commercial fisheries management in FMZ5 will support commercial fishing opportunities in a manner that:

- 1) Meets Aboriginal and treaty rights obligations and contributes to the social and cultural welfare of all the people of Ontario both now and in the future.**
- 2) Supports an industry with harvest levels that sustain healthy fish populations over the long term within the zone.**
- 3) Addresses current biological, social, economic and human health concerns when considering new commercial food fishing opportunities.**
- 4) Promotes the development and use of ecologically sustainable and ethical fishing practices and considers Canada Food Inspection Agency standards and regulations.**

Proposed Management Actions for Commercial Fisheries Management in FMZ 5

To meet these management objectives, the MNR is proposing the following management actions:

Proposed Commercial Fisheries Management Actions	FMZ 5 Advisory Council advice
Work together with commercial fish partners to: a) use both science and traditional knowledge as a foundation to assess ecosystem health and population status criteria for commercially harvested species and apply this knowledge to resource management decisions. b) develop and promote Best Management Practices (BMP's) (gear, seasons, etc) that reduce incidental catch of non-target species and promotes the use of ecologically sustainable and socially acceptable fishing practices.	Reviewed by FMZ 5 Advisory Council
Use ecosystem health and population criteria to update and confirm that quotas are consistent with sustainable harvest levels.	Reviewed by FMZ 5 Advisory Council
Monitor emerging recreational interest in lake whitefish to support the commercial fishery in potential over-harvest situations.	Reviewed by FMZ 5 Advisory Council
Continue to work with and support other agencies to ensure healthy, wholesome fish is available to the public.	Reviewed by FMZ 5 Advisory Council

Rationale for Selection of Management Actions

The proposed management actions were selected to achieve consistency in commercial fishery management across FMZ 5 that meets the provincial objectives. They also promote working with partners including First Nation communities and individuals to develop methods and techniques that consider biological, social, economic and cultural concerns.

No alternative options for commercial fisheries management were proposed.

Proposed Monitoring Strategies for Commercial Fisheries Management in FMZ 5

The following monitoring activities are proposed to assess whether the management actions are effectively achieving the objectives.

- 1) Conduct Broadscale Monitoring (BsM) on a 5 year cycle for fish population health assessment.
- 2) Consider commercial catch sampling for species and lakes where current harvest levels are identified as a potential risk to populations.
- 3) Ensure accurate and consistent reporting of amount of commercially harvested fish.

Table 5.1.6-1 FMZ 5 Commercial Fisheries Objective Summary

Objectives	<ol style="list-style-type: none"> 1) Support an industry with harvest levels that sustain fish population status over the long term within the zone. 2) Meet Aboriginal and treaty rights obligations and contribute to the social and cultural welfare of all the people of Ontario both now and in the future. 3) Address biological, social and economic concerns and recognize the commercial economic value of lake whitefish when considering new opportunities. 4) Promote the development and use of ecologically sustainable and socially acceptable fishing practices and consider current food fish contamination standards and regulations.
Indicator	<ol style="list-style-type: none"> 1 a) for species harvested primarily by commercial harvest (i.e. whitefish), harvest levels not to exceed 90% of maximum sustainable yield levels as determined by MEI. b) for species with combined commercial and angling harvest, meet population status objectives identified in species objectives. 2) To be determined 3) To be determined 4a) development of commercial fishing Best Management Practices (BMP's) that reduce incidental catch of non-target species and promotes the use of ecologically sustainable and socially acceptable fishing practices. 4b) Contaminant levels in commercially harvested fish to meet food fish contamination standards and regulations
Benchmark (i.e. sustainability line, current value, etc)	<ol style="list-style-type: none"> 1) 90% of MEI based sustainable yields as per NW Region Fisheries Management Action Plan 2) To be determined 3) To be determined 4a) 4b) current food fish contamination standards and regulations.
Target (currently proposed)	<ol style="list-style-type: none"> 1) 90% of MEI based sustainable yields 2) To be determined 3) To be determined 4a) BMP's prepared by 2018 4b) current food fish contamination standards and regulations.
Date	<ol style="list-style-type: none"> 1) 2018 2) ongoing 3) ongoing 4) 2018
Management Actions	<ol style="list-style-type: none"> 1) Work together with commercial fish partners to: <ul style="list-style-type: none"> - use both science and traditional knowledge as a foundation to assess ecosystem health and population status criteria for commercially harvested species and apply this knowledge resource management decisions. - develop and promote Best Management Practices (BMP's) (gear, seasons, etc) that reduce incidental catch of non-target species and promotes the use of ecologically sustainable and socially acceptable fishing practices. 2) Use ecosystem health and population criteria to update and confirm quotas are consistent with sustainable harvest levels 3) Review recreational whitefish harvest levels/regulations to recognize economic importance of this species to the commercial fishery and manage whitefish to support the commercial fishery in potential over harvest situations 4) Support/conduct contaminant monitoring on species known to be at risk of high contaminant levels (e.g. predator species)
Monitoring strategy	<ol style="list-style-type: none"> 1) BsM sampling on currently selected commercially fished lakes. 2) Consider commercial catch sampling in species and lakes where current harvest levels are identified as a potential risk to populations or where contaminants are a potential concern. 3) Ensure accurate and consistent reporting of amount of commercially harvested fish.

5.1.7 Other Species

There are a number of other sportfish species in FMZ 5 that are covered under the Ontario Fishing Regulations. During the identification process, none of these species were identified as priority issues by the FMZ 5 Advisory Council or OMNR. The council reviewed the regulations for the remaining sportfish species and suggested that the seasons, catch and possession limits, and size limits for these species will remain unchanged.

Muskellunge distribution in FMZ 5 is limited mainly to cool water lakes and rivers in the western and southern portions of the zone. Muskellunge have limited distribution throughout Ontario with FMZ 5 having about 30% of the known populations. Even where they exist, they tend to have low abundance and given the rarity of the muskellunge resources and its social and economic importance, they tend to be managed at a more individual lake basis than other species. Angling harvest is controlled by a combination of seasons, low limits and minimum size limits which can be varied by lake depending upon the growth of fish in an individual population.

The general regulation for the zone is as follows:

Season: Open 3rd Saturday in June to December 15th
Catch Limits: S-1/C-0;
Size Limit: must be greater than 102cm (40 in.)

There are several lakes (16 non-SDW and 17 SDW and associated lakes) in which the minimum size limit is different than the general zone regulation. These size limits were established in 2005 and are based on growth characteristics of fish from these lakes.

Yellow Perch are widespread throughout the zone.

Season: Open all year
Catch limits: S-50/C-25;
Size limits: None

Sunfish (eg. pumpkinseeds, bluegills) have limited distribution in the zone and are rarely harvested from non-SDW lakes.

Season: Open all year
Catch limits: S-50/C-25
Size limits: None

Brook Trout have been introduced to lakes within FMZ 5 through OMNR stocking programs aimed at providing additional angling opportunities.

Season: Open all year
Catch limits: S-5/C-2; (also see aggregate limits below).
Size limits: None

Splake have been introduced to a few lakes within FMZ 5 through OMNR stocking programs aimed at providing additional angling opportunities.

Season: Open all year

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Catch limits: S-5/C-2 (also see aggregate limits below).
Size limits: None

Rainbow Trout have been introduced to one lake within FMZ 5 through the OMNR stocking program aimed at providing additional angling opportunities.

Season: Open all year
Catch limits: S-5/C-2 (also see aggregate limits below).
Size limits: None

Lake Whitefish are widely distributed throughout FMZ 5.

Season: Open all year
Catch Limits: S-12/C-6.
Size limits: None

Lake Sturgeon are designated as a 'threatened' species on the Species at Risk in Ontario list and afforded protection under the Endangered Species Act, 2007.

Season: Closed all year

Aggregate limits for trout and salmon will continue to apply in FMZ 5. A daily catch and possession limit for any combination of trout and salmon is S-5/C-2. Individual species limits apply within the aggregate limit.

It is also proposed that the current regulation of requiring non-residents camping on Crown land to follow conservation limits regardless of licence be maintained. These anglers provide limited economic benefits to Ontario compared to non-residents staying at resorts and maintaining reduced limits may help to sustain populations.

5.2 Fish Habitat and Ecosystem Health

5.2.1 Habitat and Development

Description

Suitable habitat to support healthy fish populations is a necessary requirement to ensure that fish populations can be managed to provide social and economic benefits to the public in a sustainable manner. Development projects such as mining, hydroelectric development, roads and water crossings have the potential to impact habitat and affect the ability to support fish populations at acceptable levels. Other developments such as cottage subdivisions or boat caches around lakes and streams can impact level of harvest from lakes and impact the sustainability of fish populations and the ability to maintain quality angling opportunities into the future.

Protection of fish habitat is a responsibility of the federal government under the Fisheries Act administered by the Department of Fisheries and Oceans (DFO) to protect fish and fish habitat, ensure passage of fish and prevention of pollution that can have detrimental impacts on fish populations. An important concept of DFO's fish habitat policy is the principle of "no net loss" which requires that projects either avoid impacts to fish habitat or provide compensation to maintain the amount of fish habitat.

To meet DFO's fish habitat policy of "no net loss" of fish habitat, any project which has the potential of affecting fish habitat must undergo an assessment to determine whether fish habitat will be altered or destroyed and cause serious impacts to fish habitat. If it is determined this will occur, the proponent must modify their project to either avoid impacts to fish habitat or provide compensation to maintain the amount of fish habitat. Ontario currently works with DFO to help achieve the requirements of the Fisheries Act through the "Fish Habitat Referral Protocol for Ontario" although this agreement is currently being modified given recent changes in the Fisheries Act.

In addition to the federal Fisheries Act, Ontario has a number of acts and regulations that require protection of fish habitat including Fish and Wildlife Conservation Act, Public Lands Act, Lakes and Rivers Improvement Act, Planning Act and Endangered Species Act. MNR has a number of guidelines (e.g. Forest Management Guide for Conserving Biodiversity at the Stand and Site Scales) and tools such as work permits, water management and forest management planning, LRIA approvals, ESA permits and agreements and lakeshore capacity assessment handbook to assist in habitat protection. In addition to managing impacts to fish habitat, these tools also allow MNR to consider the impact of development on the exploitation of fish populations

Current Management Direction

At the provincial level, fish habitat protection is identified as a goal under the Strategic Plan for Ontario's Fisheries SPOF II (OMNR, 1992) which provides strategic level direction for the management of Ontario's fisheries resources. The following goal was established for the management of the fisheries resources in Ontario:

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-To promote healthy aquatic ecosystems that provide sustainable benefits, contributing to society's present and future environment, wholesome food, employment and income, recreational activity, and cultural heritage.

The specific fisheries management objectives are described to meet this goal:

- To protect healthy aquatic ecosystems;*
- To rehabilitate degraded aquatic ecosystems; and*
- To improve cultural, social and economic benefits from Ontario's fisheries resources.*

Specifically for lake sturgeon, which is considered a threatened species in FMZ 5 under Ontario's Endangered Species Act, Ontario's Lake Sturgeon Recovery Strategy (Golder Associates Ltd. 2011) identified an objective *to maintain, enhance and, where feasible, restore habitat in order to support lake sturgeon.*

Previous District Fisheries Management Plans (DFMP's) in FMZ 5 contain the following general fisheries management objective which addresses fish habitat protection:

- to protect, rehabilitate, enhance and maintain fish communities and their environment, to provide an optimum contribution of fish, fish opportunities and associated benefits to society.*

Proposed Objectives for Fish Habitat and Development Management in FMZ 5

In applying this provincial level direction to FMZ 5 fish habitat and development management, the MNR has proposed the following objectives.

Maintain or enhance healthy aquatic ecosystem structure, function and diversity that support a healthy, sustainable, naturally-reproducing native fish community in FMZ 5, thereby providing for optimum contribution of fish, fishing opportunities and associated cultural, social, and economic benefits to society.

Anticipate, prevent or, where feasible, adapt to large scale environmental changes that affect aquatic ecosystems and the fish communities that rely on them.

Minimize cumulative environmental effects that could negatively impact fish communities and their supporting ecosystems.

Maintain, enhance or restore habitat in FMZ 5 in order to support species at risk including lake sturgeon where they currently or formerly existed.

Ensure that developments that have the potential to affect exploitation levels of fisheries consider the impact of increased harvest on ability to meet species objectives and maintain sustainable, healthy fish populations.

Proposed Management Actions to meet Fish Habitat and Development Management Objectives in FMZ 5

To meet these management objectives, the OMNR is proposing the following management actions:

Proposed Habitat and Development Management Actions	FMZ 5 Advisory Council advice
Continue working with DFO to help achieve the requirements of the Fisheries Act through the “Fish Habitat Referral Protocol for Ontario” (or its replacement).	Supported by FMZ 5 Advisory Council
Continue to apply provincial regulations, guidelines and permit conditions to protect fish habitat.	Supported by FMZ 5 Advisory Council
Continue to contribute to the understanding of temperature changes on thermal habitat within lakes through the Northwest Region Lake Temperature Monitoring Program.	Supported by FMZ 5 Advisory Council
Continue to provide habitat protection for species identified as protected under the Endangered Species Act through requirements of the Act.	Supported by FMZ 5 Advisory Council

Proposed Monitoring Strategies for Fish Habitat and Development Management in FMZ 5

The following monitoring activities are proposed to assess whether the management actions are effectively achieving the objectives.

- 1a) Conduct Broadscale Monitoring (BsM) for fish population status and water quality assessment.
- b) Support ongoing development of ecosystem level indicators based on BsM assessment to determine status of ecosystem structure and health.
- 2) Continue habitat inventory programs and habitat assessments related to forestry water crossings as well as inventory of critical fish habitats such as spawning sites.
- 3) Participate in the Northwest Region Lake Temperature Monitoring Program on currently monitored FMZ 5 lakes.
- 4) Continue to develop partnerships and contribute to periodic assessment of lake sturgeon habitat and populations. Support monitoring and science investigations in lake sturgeon populations and development of standard assessment protocols and techniques.

Table 5.2-1 - FMZ 5 Habitat and Development Objective, Management and Monitoring Summary

Objectives	<ol style="list-style-type: none"> 1) Maintain or enhance healthy aquatic ecosystem structure, function and diversity that support a healthy, sustainable, naturally-reproducing native fish community in FMZ 5, thereby providing for optimum contribution of fish, fishing opportunities and associated cultural, social, and economic benefits to society. 2) Anticipate, prevent or, where feasible, adapt to large scale environmental changes that affect aquatic ecosystems and the fish communities that rely on them. 3) Minimize cumulative environmental effects that could impact fish communities and their supporting ecosystems. 4) Maintain, enhance or restore habitat in FMZ 5 in order to support species at risk including lake sturgeon where they currently or formerly existed. 5) Ensure that developments that have the potential to affect exploitation levels of fisheries consider the impact of increased harvest on ability to meet species objectives and maintain sustainable, healthy fish populations.
Indicator	<ol style="list-style-type: none"> 1) BsM based ecosystem status and health indicators to be developed. 2) BsM based ecosystem status and health indicators to be developed. 3) BsM based ecosystem status and health indicators to be developed. 4) Sturgeon age class and abundance indicators 5) BsM fish population status indicators
Benchmark (i.e. sustainability line, current value, etc)	<ol style="list-style-type: none"> 1) To be determined 2) To be determined 3) To be determined 4) these are defined on an individual stock basis. 5) 2010 BsM levels
Target (currently proposed)	<ol style="list-style-type: none"> 1) 2010 BsM levels 2) 2010 BsM levels 3) 2010 BsM levels 4) increase in age class and abundance indicators. 5) 2010 BsM levels
Date	<ol style="list-style-type: none"> 1) 2020 2) 2020 3) 2020 4) 2020 5) 2020
Management Actions	<ol style="list-style-type: none"> 1) Continue working with DFO to help achieve the requirements of the Fisheries Act through the “Fish Habitat Referral Protocol for Ontario” (or its replacement). 2) Continue to apply provincial regulations, guidelines and permit conditions to protect fish habitat. 3) Continue to contribute to the understanding of temperature changes on thermal habitat within lakes through the Northwest Region Lake Temperature Monitoring Program. 4) Continue to provide habitat protection for species identified as protected under the Endangered Species Act through requirements of the Act.
Monitoring strategy	<ol style="list-style-type: none"> 1) Conduct BsM monitoring on 5 year cycle and support development of ecosystem health indicators. 2) Continue habitat inventory programs and habitat assessments related to forestry water crossings as well as inventory of critical fish habitats e.g. spawning sites, 3) Participate in the Northwest Region Lake Temperature Monitoring Program on currently monitored FMZ 5 lakes. 4) Continue to develop partnerships and contribute to periodic assessment of lake sturgeon habitat and populations. Support monitoring and science investigations in lake sturgeon populations and development of standard assessment protocols and techniques.

5.2.2 Invasive Species

Description

The number of invasive species in Ontario has increased dramatically over the past 50 years and further introductions are expected in the future. Invasive aquatic species have been shown to negatively impact native fish and wildlife species. Within Fisheries Management Zone 5, there are currently a number of invasive species and a potential for this number to increase given the proximity to the U.S. waters and other major watersheds. There is also concern about the current lack of public understanding on how invasive species are moved between waterbodies and the impact of these species on native ecosystems. Examples of invasive species concerns include:

- introduction of fish species either accidentally such as by anglers dumping unused bait in lakes, or willfully such as intentional introduction of species into lakes;
- the lack of general knowledge about potential impacts of other species such as rusty crayfish;
- There is a need to understand how invasive species enter FMZ 5 waterbodies, their effect on fish communities and impacts on amount and quality of fish available for harvest.
- the potential for further introductions of invasive species from US by anglers (boats/bait/float planes, etc).
- Concern that MNR could be moving invasive species around as part of our monitoring efforts, enforcement , etc.

There is a feeling that, to date, there has not been enough effective education of the public about invasive species and their impacts on the aquatic environment.

OMNR describes an *alien* species as a plant, animal or micro-organism introduced into an area beyond the species natural past or present range as a result of human actions. Introductions of alien species may be deliberate or accidental, beneficial or harmful, from other continents, neighbouring countries or from other ecosystems within Canada (OMNR 2008a). Alien species are sometimes introduced intentionally to provide benefits to society and to ecosystems (for example, authorized fish stocking and intentional introductions of biological controls (OMNR 2008a)). In these cases, alien species are considered to be *introduced* rather than invasive.

Invasive species are those harmful alien species whose introduction or spread threatens the environment, the economy and/or society, including human health. This definition may include species which are native to Ontario but have been introduced to a new area due to human activity.

Introduced species and invasive species represent two distinctive groups in terms of management intent but may overlap with respect to consequence where an introduced species may become an invasive. For example, the planned introduction of a fish species may be undertaken to enhance fishing opportunities. The same species moved to another waterbody without environmental consideration can have significant negative consequences and become invasive. For both groups the pathway for introduction into an ecosystem can be either

intentional or unintentional. In all cases, the establishment of invasive/introduced species will have impacts to some degree on native aquatic communities.

There is also the issue that from a social or economic viewpoint, opinions can differ between people on whether a species is introduced or invasive. For the purposes of this plan, the primary indicator of whether a species is considered an invasive species or not will be whether it has a negative impact on the diversity and/or function of the aquatic ecosystem.

Current Management Direction

Ontario's Biodiversity Strategy (OMNR, 2011) identified as one of its goals *to protect, restore and recover Ontario's genetic, species and ecosystem diversity and related ecosystem functions and processes*. Invasive alien species are identified as one of the potential threats to ecosystem diversity and ecosystem functions in Ontario.

Recently, the province released the Ontario Invasive Species Strategic Plan (OMNR 2012) with the objectives of:

- 1) reducing impacts of existing invaders;
- 2) prevent new invaders from arriving and surviving and
- 3) halt the spread of existing invaders where possible.

The goals of this plan are to identify actions and activities that would prevent harmful introductions before they occur; detect and identify invasive species before or immediately after they become established; respond rapidly to invasive species before they become established or spread; implement innovative management actions and take practical steps to protect against impacts of invasive species.

Proposed Objectives for Invasive Species Management in FMZ 5

In applying this provincial level direction to FMZ 5 invasive species management, the MNR has proposed the following objectives.

- 1) Prevent expansion of aquatic invasive species into FMZ 5 waters.**
- 2) Manage existing invasive populations to minimize impacts on native species by halting their spread and reducing impacts of existing invaders.**

Proposed Management Actions for Invasive Species Management in FMZ 5

To meet these management objectives, the MNR and is proposing the following management actions:

Proposed Invasive Species Management Actions	FMZ 5 Advisory Council advice
Review/develop MNR policy for movement of boats and gear between waterbodies, particularly those known to contain invasive species.	Supported by FMZ 5 Advisory Council
Review existing information about invasive species and their impact on the environment and promote distribution of material to FMZ 5 anglers	Supported by FMZ 5 Advisory Council
Work with partner groups (e.g. OFAH, Rainy River Stewardship Council, Rainy River First Nations Watershed Program, etc) to identify top 5 invasive species threats to FMZ 5 waterbodies and develop a plan of action to meet objectives for these species (eg. development of educational material if it doesn't exist, methods of distribution of educational material, direct management actions, etc).	Supported by FMZ 5 Advisory Council
Enhance enforcement of live fish transport to discourage or prevent unauthorized species introductions	Supported by FMZ 5 Advisory Council

Rationale for Selection of Management Actions

The proposed management actions were selected to achieve consistency in invasive species management across the zone that meets the provincial objectives. They also promote working with partners to develop methods and techniques that consider local needs and address biological, social, and economic concerns.

No alternative options for commercial fisheries management were proposed.

Proposed Monitoring Strategies for Invasive Species Management in FMZ 5

The following monitoring activities are proposed to assess whether the management actions are effectively achieving the objectives.

- 1) Conduct Broadscale Monitoring (BSM) to monitor spread of invasive fish and zooplankton species.
- 2) Track incidental reports of invasive species using Land Information Ontario (LIO).
- 3) Conduct specific invasive species sampling on high risk waterbodies.
- 4) Enhance enforcement of live fish transport and discourage or prevent unauthorized species introductions

Table 5.2.2 FMZ 5 Invasive Species Objective Summary

Objectives	<ol style="list-style-type: none"> 1) <i>Prevent expansion of aquatic invasive species into FMZ 5 waters.</i> 2) <i>Manage existing invasive populations to minimize impacts on native species by halting their spread and reducing impacts of existing invaders.</i>
Indicator	<ol style="list-style-type: none"> 1) Number of new invasive species 2a) Distribution of invasive species in FMZ 5. 2b) BsM based ecosystem status and health indicators to be developed.
Benchmark (i.e. sustainability line, current value, etc)	<ol style="list-style-type: none"> 1) Current number of invasive species in FMZ 5 (2012) 2a) Current (2012) distribution of invasive species in FMZ 5. 2b) To be determined
Target (currently proposed)	<ol style="list-style-type: none"> 1) No new invasive species 2a) No increase in invasive species distribution beyond natural movement from current waterbodies. 2b) To be determined
Date	<ol style="list-style-type: none"> 1) 2020 2a) 2020 2b) 2020
Management Actions	<ol style="list-style-type: none"> 1) Review/develop MNR policy for movement of boats between waterbodies, particularly those known to contain invasive species. 2) Review existing information about invasive species and their impact on the environment and promote distribution of material to FMZ 5 anglers. 3) Work with partner groups (eg OFAH, Rainy River Stewardship Council, etc) to identify top 5 invasive species threats to FMZ 5 waterbodies and develop a plan of action to meet objectives for these species. 4) Enhance enforcement of live fish transport to discourage or prevent unauthorized species introductions
Monitoring strategy	<ol style="list-style-type: none"> 1) Conduct BsM monitoring for fish and zooplankton on a 5 year cycle. 2) Track incidental reports of invasive species using LIO. 3) Conduct specific invasive species sampling on high risk waterbodies.

5.3 Education

Education of public and anglers was identified as a management action for most issues dealt with in this plan. This section summarizes all the education action items identified by individual issue.

Table 5.3-1 – Summary of Action Items related to Public Education

Issue	Education Objective	Education Action
Walleye Management	Improve understanding of angling ethics impacts on walleye populations	Develop information for distribution to anglers
Northern Pike Management	Increase utilization of small pike for consumption.	Develop brochure outlining pike filleting methods.
Bass Management	Increase awareness of effects of bass introductions on other species	Develop education products for anglers and general public
Bass Management	Awareness on effects of angling on nesting bass	Develop information for distribution to anglers
Lake Trout Sustainability	Reduce catch and release mortality of lake trout.	Develop brochure outlining C&R techniques for lake trout.
Black Crappie Management	Increase awareness of effects of bass introductions on native fish.	Develop education products for anglers and general public
Black Crappie Management	Improve understanding of impacts of angling on crappie populations	Develop information for distribution to anglers
Invasive Species Impacts	Increase understanding of invasive species impacts and introduction pathways.	Develop education products for anglers and general public

5.4 Exceptions to FMZ 5 wide regulations

Although the landscape approach proposed for fisheries management in EFFM suggests that angling regulations should be consistent for all waterbodies across a zone, there are still waterbodies and species that OMNR managers feel need to be managed under an individual lake approach.

Specially Designated Waters (SDW's)

Specially Designated Waters are waters that, for a number of reasons including their size, amount of fishing effort, diversity of fisheries and importance to the local economy were considered important enough that they needed their own fisheries management plan including objectives, management actions and monitoring program. Because of this, it is expected that SDW's can have exceptions to zone regulations for any species if supported by their objectives or monitoring results.

Muskellunge

The muskellunge sport fishery is focussed on catch and release of large trophy sized fish. Regulation of this fishery generally by minimum size limits based on the growth characteristics. The zone regulation is that the minimum size to harvest is 102cm (40 in.) based on growth of a typical muskie from FMZ 5 lakes. However, there are several lakes that have different growth rates including lakes with faster growth and there is a concern that allowing harvest at 102cm may not allow fish from these lakes reach their

true size potential. For these lakes, (16 non-SDW and 17 SDW and associated lakes), the minimum size has been set at a higher length (either 122cm (48") or 137cm (54") based on the growth or maximum size observed in these waterbodies. These size limits were established in 2005 and any future changes to individual lakes will need to be based on information about growth rates or maximum size of muskellunge from these lakes.

Walleye

Exceptions to zone regulations for walleye management generally fall into one of two categories (see Appendix 1 for complete list of walleye management exceptions). The first is sanctuaries that were established to protect pre- or post-spawning concentrations that are vulnerable to over harvest. There are currently two dates for sanctuaries in place across FMZ 5 – April 1 to May 31 and April 1 to June 14. It is recommended that all these sanctuaries remain in place but the sanctuary dates be April 1 to June 14 to simply the regulations.

The second group of exception lakes are a number of lakes in the Atikokan area (Dashwa, Crowrock, Turtle, Eye, Dovetail) that have sport fish licence daily catch limits reduced to 2 fish. These lakes had walleye introduced into them in the late eighties/early nineties and were closed to angling at that time to allow populations to become fully established. This regulation was put in place in 90's with the opening of the walleye angling season to allow the population some protection from the initial pulse of angling activity and to provide for higher quality fisheries. Since that time, non-resident sport fish licence daily catch limits have been reduced in the entire Border Waters Area (including the area surrounding these lakes) and walleye population has become fully established. Because of these changes, MNR recommends removing this exception to as part of the FMZ5 Fisheries Management plan and have the walleye fishery in these lakes be managed under the general zone regulations.

The only other walleye regulation exceptions are on the lake that make up the Lower Seine River below the Sturgeon Falls dam (Partridge Crop, Wild Potato, Shoal, Grassy, Little Grassy and the river connecting them). These lakes are contiguous with Rainy Lake and require the same regulation as used on Rainy Lake for enforcement purposes and to provide the same level of protection to shared fish stocks.

Lake Trout

Exceptions to zone regulations for lake trout management generally fall into one of two categories (see Appendix 2 for complete list of lake trout management exceptions). The first is a number of lakes that use closed lake trout angling seasons or to reduce angling effort on small lakes with vulnerable populations that usually have had increased access to lake (eg. construction of a highway adjacent to lake). Although the sanctuary dates vary between lakes, it is proposed that the current exceptions remain in place at this time to maintain sustainability of populations on these lakes.

The second group of exceptions are special research lakes (ELA area, CNFER lakes, Grimshaw Lake). Because FMZ 5 is one of the relatively few areas with high density of lake trout populations in the province, it is important that some lakes are set aside without harvest impacts to study environmental effects on populations.

Smallmouth Bass/Largemouth Bsss

Only one FMZ 5 lake has an exception for bass management. Kakagi Lake has a catch and release only season from June 1-30th which is the same as adjacent SDW waterbody of Lake of the Woods. The exception is considered necessary to prevent large numbers of anglers from Lake of the Woods from moving to Kakagi Lake to harvest bass during the month of June.

Quetico Provincial Park

There are two exceptions to the general zone regulations that apply to Quetico Provincial Park. The rationale for these exceptions is provided in the Quetico PP Fisheries Stewardship Plan (OMNR 2006) and is summarized briefly here. The first of these is the use of artificial lures only which was put in place mainly to reduce the chance of invasive species including non-native baitfish, crayfish or leeches from being introduced into the park. The second exception is that only barbless hooks can be used in the park. It was put in place to reduce unnecessary or preventable catch and release related mortality.

6.0 Public and Aboriginal Community Involvement

A detailed summary of the Public and Aboriginal Community Involvement program is available in a companion document to this Fisheries Management Plan.

6.1 Fisheries Management Zone 5 Advisory Council

As one of the four components of the *Ecological Framework for Fisheries Management in Ontario*, enhancing public and Aboriginal involvement in the management planning process was integral to the development of the FMZ 5 Fisheries Management Plan. The Fisheries Management Zone 5 Advisory Council is comprised of representatives from a diverse group of local stakeholders and observers representing Aboriginal Communities. Through all stages of the preparation of the management plan, the Advisory Council provided critically important insight and information that shaped the management plan to reflect local interests and concerns. Their active participation in the plan development process was very much appreciated.

Table 6.1-1. Members and affiliations of the FMZ 5 Advisory Council

Members		Affiliation
Lucas	Adams	North Western Ontario Tourism Association (NWOTA)
Tom	Beck	Commercial baitfish industry
Paul	Blanchfield	Science community (Dept. Fisheries and Oceans)
Richard	Boileau	Ontario Federation of Anglers and Hunters (OFAH)
Bob	Burns	Council Co-chair - Atikokan Area non-affiliated outdoor enthusiast
Karla	Clark	Kenora District Camp Owners Association (KDCA)
Paul	Darling	Dryden area non-affiliated outdoor enthusiast with connection to youth
Roy	DeCorte	Ontario Federation of Anglers and Hunters (OFAH)
Jeremy	Dickson	Nature and Outdoor Tourism Ontario (NOTO)
Jeff	Gustafson	Kenora Area non-affiliated outdoor enthusiast – sports writer
Phil	Haggberg	North Western Ontario business
Ralph	Hill	Rainy River District Stewardship Council
Al	Ufland	Kenora area non-affiliated outdoor enthusiast
Observers		
Leslie	Copenace	Naotkamegwaning (Whitefish Bay First Nation) commercial fisherman
Josh	Peacock	Anishinaabeg of Kabapikotawangag Resource Council Inc (AKRC)

6.2 Aboriginal Community Involvement

Aboriginal involvement was strongly encouraged and sought at all stages of development of this Fisheries Management Plan. The aboriginal community had two members involved with the FMZ 5 Advisory Council as observers. Letters were sent to all aboriginal communities to advise them of the initiation of the Advisory Council, at the Invitation to Participate stage, prior to the draft plan to share thinking to date and at draft plan review stage. Meetings were held with the Fort Frances Chief Secretariat and with Grand Council Treaty 3.

6.3 Public Consultation Program

The Advisory Council worked to ensure that information on the Fisheries Management Planning process be presented to the public through methods that were engaging and accessible. The Council established a website (www.fmz5.com) to provide information about the FMZ 5 planning process to the public and as a way to get feedback on the proposed management options prior to selecting a preferred option. They also attended stakeholder meetings

Individuals from the FMZ 5 Advisory Council developed an information display and attended the following events to promote the planning process prior and obtain feedback on proposed options following the Invitation to Participate (First Stage of Public Consultation).

- Fort Frances Home Show
- Dryden Sports and Home Show (April 19-21, 2012)
- Fort Frances Mall Days
- Fort Frances Canadian Bass Championship (July 26-28, 2012)
- Atikokan Bass Classic (August 17-18, 2012)
- Emo Fall Fair

6.3.1 Invitation to Participate and Background Information Report

An Invitation to Participate stage was initiated in February 2012 to present the Background Information Report for Fisheries Management in FMZ 5 and identify issues to be dealt with in the upcoming plan. The purpose of this first Invitation to Participate was to engage interested members of the public in the preparation of the Fisheries Management Plan. At this stage, the Background Report and the Management Issues and Challenges identified by the Council were available for review and input.

The Invitation to Participate was distributed through the following methods:

- Letters to Stakeholders
- Letters to Aboriginal Communities
- Newspapers
- Policy Proposal Notice Published on the Environmental Registry
 - Date: Feb 1st – March 15th, 2012

6.3.2 Draft Plan Consultation

This stage of consultation provides an opportunity for the public to provide input on the proposed objectives and management actions to guide fisheries management in FMZ 5. Draft plan consultation consists of open houses, letters to stakeholders, letters to First Nation communities, posting on the Environmental Registry and meeting with First Nation communities and stakeholder groups at their request.

Draft Plan consultation notification was distributed through the following methods:

- Letters to Stakeholders (October 15th, 2012)
- Letters to Aboriginal Communities (October 15th, 2012)
- Newspapers
- Policy Proposal Notice Published on the Environmental Registry

Draft Fisheries Management Plan for Fisheries Management Zone 5

- Date: October 15th, 2012– November 30th, 2012

The draft plan will be available at OMNR District offices in Fort Frances, Atikokan, Kenora, Red Lake, Dryden and Ignace, on the OMNR website, and on the Environmental Registry for public review and comment. Open houses to allow the public an opportunity to view and comment on the draft plan will be held in the following locations:

Atikokan – Oct. 30th, 2012
Fort Frances – Nov. 1st, 2012
Kenora – Nov. 6th, 2012
Dryden – Nov. 7th, 2012
Ignace – Nov. 8th, 2012

6.3.3 Final Plan Inspection

Final Plan is expected to be available for final review on February 1st, 2013. The final plan will be available at OMNR District offices in Fort Frances, Atikokan, Kenora, Red Lake, Dryden and Ignace, on the OMNR website, and on the Environmental Registry for public inspection.

7.0 Ongoing Commitment to Monitoring

One of the pillars of the Ecological Framework for Fisheries Management (EFFM) is the implementation of a broad-scale monitoring program. The landscape approach to fisheries management necessitates the random sampling of lakes across the landscape in order to determine zone-wide fisheries status. Previous assessment work has tended to target 'issue lakes' or has been conducted in specific areas and did not provide an unbiased sample of lakes across the zone. The intent of the broad-scale monitoring program is to sample each FMZ on a five year rotation. The protocol monitors a number 'fixed' walleye and lake trout lakes based on the proportion of known populations at the district/QPP level in the zone. The fixed lakes were initially selected at random but will be re-sampled every 5 years (i.e. next survey is scheduled for 2015). Assessment of fixed lakes provides a faster indication of trends in fish populations within the zone. The broad-scale program utilizes a new gillnetting protocol which is designed to sample the entire fish community rather than targeting a particular species as many of the previous netting protocols have done. In addition to sampling the fish community, the broad-scale program provides fish for Ministry of Environment contaminant analysis, collects water chemistry, transparency, bathymetry and temperature data to measure habitat parameters and samples zooplankton and benthos. Angling effort is estimated using aerial effort surveys.

This monitoring program will greatly improve fisheries management in two ways. First, trends in the abundance and population structure of currently favoured sport fish species will be assessed on a landscape basis and will provide information upon which to manage exploitation of the key fisheries over the long term. The program will also allow the development of improved yield models which will integrate exploitation, habitat and community factors to predict changes in carrying capacity related to long term environmental change.

Broad-scale monitoring represents a large ongoing commitment of resources. The FMZ 5 Advisory Council considers this program to be an essential component of fisheries management planning and they feel that it is of critical importance for the MNR to retain their commitment to this program for the long term.

8.0 Review and Amendment of the Fisheries Management Plan

Fisheries management zone plans do not have a "sunset" date, rather they are reviewed every 5 years. The review of the FMZ 5 Fisheries Management Plan will occur in 2018 after the next round of broad scale monitoring which is scheduled for 2015. The FMZ 5 Advisory Council will be involved in the review of the management plan in 2018.

The purpose of the review will be to identify sections of the management plan need to be updated and it is only those portions of the plan that will be changed. Depending upon the nature of the changes, public consultation may or may not be required. Significant changes in plan direction will require further consultation with the public, stakeholder groups and Aboriginal communities. The nature and scope of consultation efforts will be determined by the MNR District Manager, Fort Frances District.

Amendment of the plan can occur prior to a review being conducted. It is anticipated that amendments to the plan would only occur if there was a significant management issue that would have an immediate affect on fisheries across the zone.

9.0 Implementation Plan

For the final plan, an implementation plan will be developed that will outline how the selected management actions will be put in place, who will be responsible for them and how they will be delivered. The table currently identifies the preferred regulatory management actions presented in the draft plan.

Regulatory Actions		
Management Action	Responsibility	Due Date
<i>Change pike angling regulation to:</i> Limits- Sport Fishing – 4, Conservation – 2; Size Limit: None greater than 75 cm. Seasons: Open all year	MNR – FMZ 5 Project lead biologist	Regulation in effect Jan. 2014
<i>Change bass angling regulation to:</i> Catch Limit: Sport Fishing Licence – 4 Conservation Licence– 2 Size Limit: must be less than 35cm from Jan 1 – June 30. Season - Open all year	MNR – FMZ 5 Project lead biologist	Regulation in effect Jan. 2014
<i>Change black crappie angling regulation to:</i> Catch Limits: Sport Fishing Licence - 10 Conservation Licence– 5 Season: Open all year	MNR – FMZ 5 Project lead biologist	Regulation in effect Jan. 2014

Education Actions		
Management Action	Responsibility	Due Date
Angling ethics and potential impacts on walleye populations	OMNR FMZ 5 Project Team with assistance from FMZ 5 Advisory Council	prior to 2018
Cleaning pike for consumption.	OMNR FMZ 5 Project Team with assistance from FMZ 5 Advisory Council	prior to 2018
Awareness on effects of bass introductions on other species	OMNR FMZ 5 Project Team with assistance from FMZ 5 Advisory Council	prior to 2018
Awareness on effects of angling on nesting bass	OMNR FMZ 5 Project Team with assistance from FMZ 5 Advisory Council	prior to 2018
Catch and release handling techniques for lake trout.	OMNR FMZ 5 Project Team with assistance from FMZ 5 Advisory Council	prior to 2018
Impacts of crappie introductions on native fish communities	OMNR FMZ 5 Project Team with assistance from FMZ 5 Advisory Council	prior to 2018
Impacts of angling on crappie populations	OMNR FMZ 5 Project Team with assistance from FMZ 5 Advisory Council	prior to 2018
Review existing information about invasive species promote distribution of material to FMZ 5 anglers	OMNR FMZ 5 Project Team with assistance from partner groups	2015

Draft Fisheries Management Plan for Fisheries Management Zone 5

Other Actions		
Management Action	Responsibility	Due Date
Investigate options for more conservative management of walleye populations in FMZ 5 (including reduced non-resident daily catch limits) before the next plan review.	OMNR FMZ 5 Project Team with assistance from FMZ 5 Advisory Council	prior to 2018
Recommend MNR develop policy/guidelines for tournaments (including permitting)	OMNR FMZ 5 Project Team	2013
Work together with commercial fish partners to develop ecosystem health and population status criteria and develop and promote Best Management	OMNR FMZ 5 Project Team and commercial fish partners	prior to 2018
Use ecosystem health and population criteria to update and confirm quotas	OMNR	prior to 2018
Monitor emerging recreational interest in lake whitefish	OMNR	ongoing
Continue to work with and support other agencies in fish contaminant sampling.	OMNR	ongoing
Review/develop MNR policy for movement of boats and gear between waterbodies, particularly those known to contain invasive species.	OMNR FMZ 5 Project Team	2015
Work with partner groups to develop an invasive species plan for FMZ 5	OMNR FMZ 5 Project Team with assistance from partner groups	2015

Monitoring Actions		
Management Action	Responsibility	Due Date
FMZ 5 Broadscale Monitoring	OMNR - NWSI	Assessment planned for 2015
Support development of ecosystem level indicators based on BSM	OMNR Science and Information	Prior to 2018 plan review
Support development bass population assessment methodology	OMNR Science and Information	Prior to 2018 plan review
Continue to develop partnerships and contribute to periodic assessment of lake sturgeon habitat and populations.	OMNR	ongoing
Continue habitat inventory programs and habitat assessments related to forestry water and critical fish habitats.	OMNR	ongoing
Monitor of water temperatures and walleye spawning times in FMZ5	OMNR	ongoing
Participate in the Northwest Region Lake Temperature Monitoring Program on currently monitored FMZ 5 lakes to monitor affect of changing temperature	OMNR	ongoing
Collect more information on FMZ 5 black crappie populations from non-SDW lakes.	OMNR FMZ 5 Project Team	2018
Consider commercial catch sampling for species and lakes where current harvest levels are identified as a potential risk to populations.	OMNR	ongoing

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Appendices

Appendix 1. Lakes with current exceptions related to walleye management and rationale for retaining, editing or removing exceptions.

Lake	Area	Rationale	Exception Regulation
Crowrock Lake (48°58'N., 91°49'W.).	FF- Atik	Regulation was put in place in 90's following introduction of walleye to provide for higher quality fisheries. Since then, non-resident daily limits have been reduced and walleye population has become fully established. MNR intends to recommend removing this exception to the public as part of the draft plan.	Walleye S - 2 and C - 2, not more than 1 greater than 46 cm (18.1 in.).
Crowrock Lake (48°58'N., 91°49'W.).	FF- Atik	Regulation was put in place in 90's following introduction of walleye to provide for higher quality fisheries. Since then, non-resident daily limits have been reduced and walleye population has become fully established. MNR intends to recommend removing this exception to the public as part of the draft plan.	Fish sanctuary Apr. 1 - June 14 - no fishing from upstream from the narrows at 49°00'00"N., 91°43'50"W.
Dashwa Lake (48°56'N., 91°45'W.).	FF- Atik	Regulation was put in place in 90's following introduction of walleye to provide for higher quality fisheries. Since then, non-resident daily limits have been reduced and walleye population has become fully established. MNR intends to recommend removing this exception to the public as part of the draft plan.	Walleye S - 2 and C - 2, not more than 1 greater than 46 cm (18.1 in.).
Dovetail Lake (48°53'N., 92°02'W.).	FF- Atik	Regulation was put in place in 90's following introduction of walleye to provide for higher quality fisheries. Since then, non-resident daily limits have been reduced and walleye population has become fully established. MNR intends to recommend removing this exception to the public as part of the draft plan.	Walleye S - 2 and C - 2, not more than 1 greater than 46 cm (18.1 in.).
Eye Lake (48°52'N., 91°45'W.).	FF- Atik	Regulation was put in place in 90's following introduction of walleye to provide for higher quality fisheries. Since then, non-resident daily limits have been reduced and walleye population has become fully established. MNR intends to recommend removing this exception to the public as part of the draft plan.	Walleye S - 2 and C - 2, not more than 1 greater than 46 cm (18.1 in.).
Seine River System - from Kettle Point of Rainy Lake upstream to Crilly	FF- Atik	Maintain exception - these waterbodies are connected to Rainy Lake and need to have the same regulations as Rainy for enforcement purposes.	Walleye must be between 35-45 cm (13.8-17.7 in.) or greater than 70 cm (27.6 in.) and not more than 1 greater than 70 cm (27.6 in.).

Draft Fisheries Management Plan for Fisheries Management Zone 5

Turtle Lake (48°57'N., 91°57'W.)	FF- Atik	Regulation was put in place in 90's following introduction of walleye to provide for higher quality fisheries. Since then, non-resident daily limits have been reduced and walleye population has become fully established. MNR intends to recommend removing this exception to the public as part of the draft plan.	Walleye S - 2 and C - 2, not more than 1 greater than 46 cm (18.1 in.).
Island Creek (49°49'02"N., 94°19'10"W.) - Haycock Twp. - Kenora	Ken	Maintain sanctuary but adjust date to April 1 – June 14 to be consistent across FMZ 5	Fish sanctuary - no fishing from Apr. 1 - May 31.
Laclu Creek (Belle Creek) (49°48'N., 94°36'W.) Pellatt Twps. Kenora	Ken	Maintain sanctuary but adjust date to April 1 – June 14 to be consistent across FMZ 5	Fish sanctuary - no fishing from Apr. 1 - May 31.
Ladysmith Creek and Unnamed Creek (between Rugby Lake and the confluence of Ladysmith Creek	Dry	Maintain sanctuary but adjust date to April 1 – June 14 to be consistent across FMZ 5	Fish sanctuary - no fishing from Apr. 1 - May 31.
Moose Creek - between Big Moose Lake and Cobble Lake	Dry	Maintain sanctuary but adjust date to April 1 – June 14 to be consistent across FMZ 5	Fish sanctuary - no fishing from Apr. 1 - May 31.
Rugby Lake	Dry	Yes	Fish sanctuary - no fishing from Apr. 1 - June 14.
Trout River (49°01'N., 92°53'W.) -	FF	Yes	Fish sanctuary - no fishing from Apr. 1 - June 14.
White Otter Lake	FF- Atik	Yes	Fish sanctuary - no fishing from Apr. 1 - June 14.

Draft Fisheries Management Plan for Fisheries Management Zone 5

Appendix 2. Lakes with current exceptions which are related to lake trout management and rationale for retaining, editing or removing exceptions.

Lake	Area	Rationale	Exception Regulation
Crook Lake (49°04'N., 92°08'W.).	FF-Atik	Lake is small (150ha) with a population of small bodied trout. Regulation was put in place in early 80's when Hwy 622 was constructed within 50m of the lake. Assessment of lake in 90's indicated population status was at or above other area lakes suggesting regulation is preventing over exploitation	Fish sanctuary - no fishing from Feb. 1 - June 30 & Aug. 1 - Dec. 31.
Dryberry Lake - Northwest Bay, Point Bay and Point Lake - (49°30'N., 93°50'W.)	Ken	Regulation was established in late eighties to protect/promote a trophy lake trout fishery. Would consider removing exception only if zone regulation was changed to option allowing only 1 trout over 56 cm for entire season.	Lake trout S - 1 in one day, possession limit of 2, not more than 1 greater than 65 cm (25.6 in.) and C - 1, any size.
Dryberry Lake - Northwest Bay, Point Bay and Point Lake - (49°30'N., 93°50'W.)	Ken	Regulation was established in late eighties to protect/promote a trophy lake trout fishery. Would consider removing exception only if zone regulation was changed to option allowing only 1 trout over 56 cm for entire season.	Fish or fish parts may not be used as bait from Jan. 1 - Fri. before 3rd Sat. in May. Only barbless hooks may be used from Jan. 1 - Fri. before 3rd Sat. in May.
Grimshaw Lake (48°58'N., 93°04'W.).	FF	This small lake was closed to angling in the 60's to preserve an unexploited population of lake trout to be used for research purposes. Was recently used as part of the lake trout calibration for BsM program.	Fish sanctuary - closed all year.
Lakes #20, 26, 39, 42 - CNFER research lakes	FF-Atik	These four small (<50ha each) lakes were closed to angling as part of a study by Center for Northern Forest Ecosystems Research/Lakehead University study on impact of logging up to shoreline. Although the studies have concluded, discussions continue about the need for future research and continued closure but at this time they remain closed to all angling.	Lake trout closed all year
Lilac Lake (48°17'N., 92°22'W.) -	FF-Atik	Relatively small (300 ha) lake trout lakes that have potential to receive high non-resident day tripping effort because of proximity to US border. Regulation was put in place to prevent over exploitation by non-resident day trip anglers.	Fish sanctuary - no fishing from Jan. 1 - May 31 & Oct. 1 - Dec. 31.
Little Grey Trout Lake	FF-Atik	Lake is small (150ha) with a population of large bodied trout. Regulation was put in place in early 80's when Hwy 622 was constructed close to lake.	Fish sanctuary - no fishing from Feb. 1 - June 30 & Aug. 1 - Dec. 31.

Draft Fisheries Management Plan for Fisheries Management Zone 5

Rutter Lake (49°04'N., 92°12'W.)	FF- Atik	Lake is small with a population of large bodied trout. Regulation was put in place in early 80's when Hwy 622 was constructed within 100m of the lake. Assessment of lake in 90's indicated population status was at or above other area lakes suggesting regulation is preventing over exploitation	Fish sanctuary - no fishing from Feb. 1 - June 30 & Aug. 1 - Dec. 31.
Scattergood Lake	FF- Atik	Lake is has a population of small bodied trout. Regulation was put in place in late 70's when Hwy 502 was constructed within 50m of the lake. Assessment of lake in 80's suggested regulation is preventing over exploitation	Fish sanctuary - no fishing from Jan. 1 - July 31 & Sept. 1 - Dec. 31.
Seahorse Lake.	FF	Lake is very small (<50ha) with a population of large bodied trout. Regulation was put in place in when a logging road created access to the lake and it was determined that given the size of trout and the very small population size, no level of harvest could be considered sustainable.	Lake trout closed all year.
Secret Lake (49°04'N., 92°08'W.)	FF- Atik	Lake is small (150ha) with a population of large bodied trout. Regulation was put in place in early 80's when Hwy 622/primary logging road was constructed within 30m of the lake. Assessment of lake in 90's indicated population status was at or above other area lakes suggesting regulation is preventing over exploitation	Fish sanctuary - no fishing from Feb. 1 - June 30 & Aug. 1 - Dec. 31.
Trout Lake (48°17'N., 92°20'W.)	FF- Atik	Relatively small (300 ha) lake trout lakes that have potential to receive high non-resident day tripping effort because of proximity to US border. Regulation was put in place to prevent over exploitation by non-resident day trip anglers.	Fish sanctuary - no fishing from Jan. 1 - May 31 & Oct. 1 - Dec. 31.

Appendix 3. Other potential management actions considered by the Advisory Council or OMNR but not presented as options in this plan.

		Achievement of objectives						Advisory Council Comments		MNR comments	
Walleye											
Management options	Maintain or improve walleye population	Opportunities to catch numbers of fish	Opportunities to harvest fish from 33-46 cm for consumption	Protect spawning stock/large/old mature fish (46 cm+)	Protect fish during spawning	Maximize angling opportunities	Provide high quality walleye angling experience by providing opportunities to catch trophy fish	Pro	Cons	Council Advice	MNR Comments
Closed Season extension (suggestion of April 1 - May 31)	Questionable - may result in increase in population if increased harvest during years with early spring is limiting population	Reduced opportunities because of reduced angling season (amount depends upon actual dates chosen)	Reduced opportunities because of reduced angling season (amount depends upon actual dates chosen)	May increase protection if these size fish become more vulnerable to harvest in early spring	Yes	No	??	Reduces harvest (shortens fishing season)	Reduction in angling opportunities; lengthening closed season hard to justify under climate change justification; we probably currently lack information to define walleye spawning times related to temperature.	Do not present as an option at this time.	Do not present as an option at this time. Assess appropriateness of walleye closure dates as an action item in the monitoring part of the plan.

Draft Fisheries Management Plan for Fisheries Management Zone 5

Northern Pike											
Management options	<i>Maintain abundance of pike</i>	<i>Maintain abundance of large/trophy pike</i>	<i>Maintain trophy pike angling opportunity</i>	<i>Opportunity to harvest pike in preferred size range (60-80cm)</i>	<i>Maximize angling opportunity</i>			Pros	Cons	Council Advice	MNR Comments
Limit 4/2, 1 over 60cm	Yes	Yes (maybe)	Yes	Yes (allows 1 fish in the entire preferred range of 60-80cm)	Yes			Protects larger percentage of spawners; by protecting 3 more pike 60-70 may compensate for increased harvest of 70-90, same as currently proposed reg in FMZ 4 (considered a balance between providing opportunity to harvest preferred size fish while still protecting large fish by FMZ 4 Advisory Council).	Restriction of number of fish harvested in preferred range.	<i>Originally considered as an option, dropped following FTR comments to reduce number of options being represented in draft plan for public review.</i>	<i>Originally consider as an option by FMZ 5 Planning Team, Fisheries Technical Review (FTR) committee did not recommend presenting more than 3 options to public for review in draft plan.</i>

Draft Fisheries Management Plan for Fisheries Management Zone 5

Limit 4/2, 1 over 70cm, 0 over 90cm (i.e. harvest of only 1 between 70-90cm, 0 over 90cm)	Yes	Yes	Yes (no harvest)	Yes (allows at least 1 fish in the entire preferred range of 60-80cm)	Yes			Complete protection of trophy fish, also harvest of desirable fish; improved perception/marketing of trophy fish management.	Slot size enforcement; doesn't protect entire spawning population. No chance to keep damaged fish over 90cm, no chance to keep trophy fish, need clarification on photographs before release.	<i>Originally considered as an option, it was subsequently dropped because of similarities to other options.</i>	<i>Drop as option</i>
Adding pike to species to border water regs. for non residents in FF district	Yes	Yes	Yes	no change	Yes				If no sustainability issue, why restrict non-residents further	<i>Drop as an option</i>	<i>Drop as an option</i>
Season Closure in Spring	Yes	Yes	Yes	Reduces opportunities in spring	No doesn't maximize angling opportunities			Protects spawning fish when vulnerable to angling.	Low angling effort and harvest of pike at this time; add unnecessary regulation	<i>Drop as option</i>	<i>Drop as option</i>
Bass											
Management options	Maintain angling and harvest opportunities consistent with sustainability of the population	Provide anglers with the opportunities to catch lots of fish (abundance).	Provide anglers with the opportunities to catch quality (>43cm/17") and trophy (>50cm/19.5") bass.	Prevent unauthorized expansion into new waters	Maintain opportunities for tournaments consistent with sustainability of the population.			Pro	Cons	Council Advice	MNR Comments
Catch & release only (June 1-30 – currently on LOW, Crow Lake)	Yes (fishing) No (harvest is restricted)	Yes	Yes (if survival and recruitment are improved)	No	No (although currently no June CFEs)			Intent to protect spawning fish; Crow Lake tourist industry spring catch and release	Limits harvest opportunity for consumption, especially on non-walleye lakes; Direct harvest to other species	<i>Consider as option</i>	<i>Consider as option</i>

Draft Fisheries Management Plan for Fisheries Management Zone 5

								regulation	(walleye, lake trout);		
Limit: S-4 only 1 over 35cm; C-2 only 1 over 35cm; Season: all year	Reduce ability to harvest larger bass in summer/fall	Yes	Yes	No	Affects tournaments because it eliminates the ability to weigh in the 5 largest bass caught by a team.			Simpler regulation, protection of larger bass year round	reduced protection of large bass during spring, impact on tournaments	Do not consider	Do not consider but reference in plan that MNR feels that this regulation achieves the objectives we want in a simpler format but cannot be used because of our current management decisions around tournaments
Current reg (but change size restriction period from Dec 1-June 30 to May 1-June 30)	Yes	Yes	Yes	No	Yes			Potential spring open-water season opportunities Easier to understand (dates) More harvest opportunities	Large bass vulnerable to harvest in winter	Originally considered as an option, it was subsequently dropped because of similarities to other options.	Do not consider - Similar concepts as option to change size limit dates to Jan 1 to June 30; Both provide protection to large bass during the spring spawning period; Jan.1-June30 option provides protection to large bass caught by ice fishermen

Draft Fisheries Management Plan for Fisheries Management Zone 5

Closed season (May 1-June 30)	No (limits fishing opportunities but might enhance sustainability)	No (limits fishing opportunities but might enhance sustainability)	Yes (if survival and recruitment are improved)	No	Yes			Protects spawning fish; same as regulation on Lake of the Woods and Kakagi Lake (exception regulation)	Reduced opportunities Compliance issues Uncertain benefits Economic impacts Shift effort to other species	<i>Do not consider</i>	<i>Do not consider - Concern about loss of angling opportunities and shift in angling effort to other species</i>
Black Crappie											
Management options	<i>Prevent unauthorized expansion into new waters.</i>	<i>Manage existing populations to maintain sustainable, high quality fisheries for consumption</i>	<i>Manage existing populations to maintain characteristics of a healthy fish population</i>					Pros	Cons	Council Advice	MNR Comments
Add crappie to border waters regulations	No	Yes - reduce harvest from non-resident anglers	May help to reduce harvest and increase older fish in population					Reduces harvest from non-resident anglers	Might increase culling to keep fewer, larger fish – high C&R mortality; Change of approach to border waters reg – adding species with a social/angling quality concern versus a biological concern. – potential of increasing controversy of entire border waters reg.	<i>Originally considered as an option, dropped following FTR comments.</i>	<i>Originally considered as an option by FMZ 5 Planning Team, Fisheries Technical Committee review did not recommend this option as there were simpler methods to meet same objectives. (i.e. general limit reductions)</i>

Appendix 4. Proposed FMZ 5 Black Crappie Monitoring Program

Concerns have been expressed about the inability of the current BsM program to provide sufficient data to monitor crappie populations in non-SDW lakes in FMZ 5. This will affect our ability to evaluate the achievement of fisheries management objectives.

The following methods are provided for consideration in the development of potential monitoring strategy for black crappie in FMZ 5:

Methods:

- Use Near Shore Community Index Netting (NSCIN - late summer trap netting) as the provincially standardized assessment methodology best suited to assessing black crappie populations. This technique would provide statistically valid measures of black crappie abundance and selected population attributes (age & length composition, growth, recruitment, mortality)
- Sample intensity of lakes to be same as the BsM program (10% of populations). The sampling cycle is proposed to be 5 years to be consistent with the BsM program but sampling of all lakes need not occur in one year or same year as the BsM assessment.
- In order to be most efficient in terms of staff and costs, lakes may not be selected randomly but chosen to be representative of the range of crappie lakes in the zone but still be readily accessible to assessment crews.
- Currently, for the area of FMZ 5 outside of Quetico PP (and not including SDW's) there are 75 known black crappie lakes in FMZ 5. Based on sampling 10% of the current known population and proportional sampling between offices, this would require assessment of 8 lakes with distribution between the 4 offices as shown in Table 1 (option 1).
- Based on expected change in black crappie distribution from downstream movement from current lakes, we might expect to have about 100 lakes with black crappie in FMZ 5 in the near future. This would require a sampling of 10 lakes with the proportional distribution between offices as shown in Table 1 (option 2)

Table 1. Proposed distribution of crappie monitoring lakes between FMZ 5 offices.

Office	Number of lakes/office (option 1)	Number of lakes/office (option 2)
Atikokan	1	1
Dryden	1	1
Fort Frances	3	4
Kenora	3	4
Total	8	10

The majority of the black crappie lakes in FMZ 5 are less than 500ha (Figure 1). If it is proposed to sample lakes proportional to the current size distribution, the area of lakes would be as shown in Table 2.

Table 2. Proposed distribution of crappie monitoring lakes between lake sizes.

Lake size (ha)	Number of lakes/size (option 1)	Number of lakes/size (option 2)
<500ha	6	7
500-1500ha	1	2
1500-5000ha	1	1
5000ha +	0	0
Total	8	10

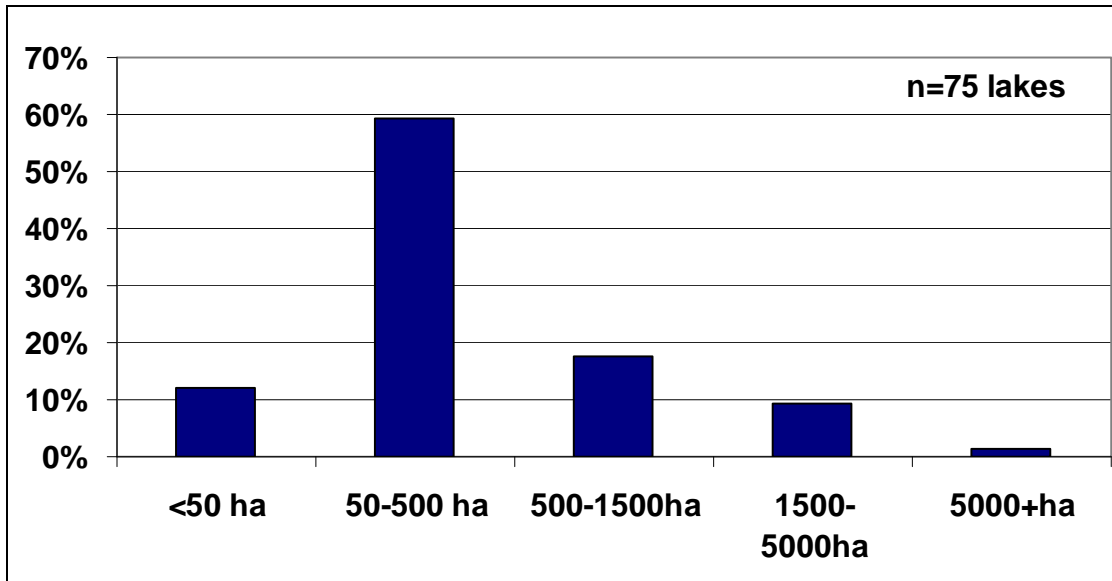


Figure App. 4-1. Size distribution of FMZ 5 lakes inhabited by black crappie (not including Quetico PP or Specially Designated Waters).