Fisheries Management Plan for Fisheries Management Zone 15

Ministry of Natural Resources

2026



Encompassing portions of the Ministry of Natural Resources Administrative Districts of Peterborough Bancroft, Pembroke, and Bracebridge Minden and Parry Sound.

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 Ministry of Natural Resources strategic direction, the Ministry of Natural Resources Statement of Environmental Values and direction from other sources. Thus, I recommend this fisheries management plan be approved for implementation.

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This plan applies to all waterbodies within FMZ 15, except for those within Algonquin Park. Fisheries management within Algonquin Provincial Park is addressed through a separate planning process under the *Fisheries and Aquatic Ecosystem Management Plan for Algonquin Provincial Park.*

Ministry of Natural Resources (MNR)

Cette publication hautement spécialisée – Plan de gestion des pêches pour la zone de gestion des pêches 15 – n'est disponible qu'en anglais (*Fisheries Management Plan for Fisheries Management Zone 15*), conformément au Règlement 671/92, selon lequel il n'est pas obligatoire de la traduire en vertu de la Loi sur les services en français. Pour obtenir des renseignements en français, veuillez communiquer avec le ministère des Richesses Naturelles au 1-888 415-9845.

This highly specialized publication "Fisheries Management Plan Fisheries Management Zone 15" is available in English only in accordance with Regulation 671/92, which exempts it from translation under the French Language Services Act.

To obtain information in French, please contact Ministry of Natural Resources at 1-888-415-9845.

Cover Page Photo Credit: natural Brook Trout lake this past spring on trout opener in FMZ 15, Adam Challice.

Executive Summary

Fisheries Management Zone 15 (FMZ 15) extends from Georgian Bay in the west to the Ottawa River in the east and includes a diverse range of lakes, rivers and fisheries. The Fisheries Management Plan for FMZ 15 provides direction for the long-term, sustainable management of fisheries within the zone, with the exception of waterbodies within Algonquin Provincial Park, which are addressed through a separate planning process.

The plan was developed by the Ministry of Natural Resources (MNR) with advice from the FMZ 15 Advisory Council and input from Indigenous communities and the public. It builds on available fisheries information, monitoring results and consideration of management issues across the zone. Consistent with Ontario's Provincial Fish Strategy: Fish for the Future (OMNRF 2015b), the plan establishes fisheries management objectives and actions to guide future management decisions.

Management direction focuses on key fisheries, including Brook Trout, Lake Trout, Lake Whitefish, Northern Pike, Muskellunge, Walleye, Bass and Panfish. The plan identifies objectives and management actions to support the sustainability of these fisheries and addresses broader management considerations, including aquatic invasive species, fish habitat and changing environmental conditions. It also includes changes to fishing rules for selected species and waterbodies to support fisheries management and objectives in the zone.

Consistent with provincial policy, natural reproduction remains the primary approach to fisheries management in FMZ 15. Fish stocking may be used where appropriate to provide recreational fishing opportunities and support fisheries management objectives.

Monitoring and assessment results will be used to evaluate progress toward management objectives and inform future management decisions. The plan will be reviewed and updated as needed through an adaptive management approach.

Résumé en Français

La zone de gestion des pêches 15 (ZGP 15) s'étend de la baie Georgienne à l'ouest jusqu'à la rivière des Outaouais à l'est et comprend une grande diversité de lacs, de rivières et de pêcheries. Le plan de gestion des pêches de la ZGP 15 définit les orientations pour la gestion durable à long terme des pêcheries de la zone, à l'exception des plans d'eau situés dans le parc provincial Algonquin, qui font l'objet d'un processus de planification distinct.

Ce plan a été élaboré par le ministère des Richesses naturelles (MRN), avec l'avis du Conseil consultatif de la ZGP 15 et la contribution des communautés autochtones. Il s'appuie sur les données halieutiques disponibles, les résultats de la surveillance et tient compte des enjeux de gestion à l'échelle de la zone. Conformément à la Stratégie provinciale de gestion des pêches de l'Ontario : Pêcher pour l'avenir (MRNO 2015b), le plan établit des objectifs et des mesures de gestion des pêches qui orienteront les décisions futures.

Les orientations de gestion portent sur les principales espèces de pêche, notamment l'omble de fontaine, le touladi, le grand corégone, le grand brochet, le maskinongé, le doré jaune, l'achigan et les poissons panés. Le plan définit les objectifs et les mesures de gestion visant à assurer la durabilité de ces pêcheries et aborde des considérations de gestion plus générales, notamment les espèces aquatiques envahissantes, l'habitat du poisson et l'évolution des conditions environnementales. Il prévoit également des modifications aux règles de pêche pour certaines espèces et certains plans d'eau afin d'appuyer la gestion des pêcheries et les objectifs de la zone.\

Conformément à la politique provinciale, la reproduction naturelle demeure la principale approche de gestion des pêcheries dans la ZMP 15. L'empoissonnement peut être utilisé, le cas échéant, pour offrir des possibilités de pêche récréative et appuyer les objectifs de gestion des pêcheries.

Les résultats du suivi et de l'évaluation serviront à évaluer les progrès accomplis vers l'atteinte des objectifs de gestion et à éclairer les décisions de gestion futures. Le plan sera révisé et mis à jour au besoin selon une approche de gestion adaptative.

Table of Contents

Ministry of Natural Resources (MNR) 4

Executive Summary 5

Résumé en Français 5

Land Acknowledgment, Aboriginal and Treaty Rights Statement 12

1. Introduction 13

2. Description of Fisheries Management Zone 15

3. Fisheries Management Zone Goals, Objectives and Actions 17

Management Goals, Objectives and Actions 17

Monitoring and Adaptive Management 17

Other Fish Species 18

3.1 Fish Community Objectives 18

3.1.1 Coldwater Fish Community 19

3.1.2 Coolwater Fish Community 20

3.1.3 Warmwater Fish Community 20

3.2 Recreational Fisheries 21

3.2.1 Brook Trout 21

3.2.2 Lake Trout 26

3.2.3 Lake Whitefish 32

3.2.4 Northern Pike 35

3.2.5 Muskellunge 38

3.2.6 Walleye 41

3.2.7 Smallmouth and Largemouth Bass 45

3.2.8 Panfish 50

3.2.9 Naturalized Rainbow Trout and Kokanee Salmon 53

3.3 Fish Stocking 55

3.3.4 Stocking Strategies and Actions 55

3.3.6 Role of Community Hatcheries 61

3.3.9 Stocking Monitoring and Science Needs 61

3.4 Commercial Fisheries 61

3.5 Species at Risk 61

3.6 Invasive Species 62
3.7 Fish Diseases 64
3.8 Education and Outreach 64
3.9 Climate Change 67
4. Monitoring 69
5. Implementation and Review of Plan 70
6. Reporting, Review, and Amendment Process 71
Reporting 71
Review 71
7. Engagement and Consultation Summary 72
8. References 74
9. Appendix 76

Figures

Figure 2.1 Map of Fisheries Management Zone 15. 15
Figure 3.1 Fish community objectives for FMZ 15..... 19

Tables

Table 3.1 Brook Trout management strategy. 22
Table 3.2 Brook Trout Fishing Rules 24
Table 3.3 Brook Trout management actions 25
Table 3.4 Lake Trout management strategy 27
Table 3.6 Management direction for live baitfish restrictions on natural Lake Trout lakes. 31
Table 3.7 Lake Trout management actions 31
Table 3.8 Lake Whitefish management strategy. 33
Table 3.9 Lake Whitefish Fishing Rules 34
Table 3.10 Lake Whitefish management actions. 35
Table 3.11 Northern Pike management strategy 36
Table 3.12 Northern Pike Fishing Rules 37
Table 3.13 Northern Pike management actions. 37
Table 3.14 Muskellunge management strategy 39
Table 3.15 Muskellunge Fishing Rules 40
Table 3.16 Muskellunge management actions. 40
Table 3.17 Walleye management strategy 42
Table 3.18 Walleye Fishing Rules 44
Table 3.19 Walleye Fishing Rule Exceptions (Lake Clear, Little Lake Clear, Meadow Lake and Mud Lake) 44
Table 3.20 Walleye management actions. 45
Table 3.21 Smallmouth and Largemouth Bass management strategy 47
Table 3.22 Zone-wide Smallmouth and Largemouth Bass Fishing Rules 49
Table 3.23 Smallmouth and Largemouth Bass management actions. 49
Table 3.24 Panfish management strategy. 51
Table 3.25 Zone-wide Panfish fishing rules 52
Table 3.26 Panfish management actions. 53
Table 3.27 Naturalized Rainbow Trout and Kokanee Salmon management strategy. 54
Table 3.28 Naturalized Rainbow Trout and Kokanee Salmon management actions. 54
Table 3.29 Actions supporting implementation of the FMZ 15 stocking strategies. 56

Table 3.30 Brook Trout and Lake Trout stocking strategies and actions linked to FMZ 15 management objectives. 57
Table 3.31 Rainbow Trout, Brown Trout, and Splake stocking strategies and actions linked to FMZ 15 management objectives 58
Table 3.32 Lake Whitefish stocking strategies and actions linked to FMZ 15 management objectives. 59
Table 3.33 Summary of stocking strategies and actions for Walleye and their linkage to zone management objectives in FMZ 15. 60
Table 3.34 Invasive species management strategy 62
Table 3.35 Invasive species management actions. Values in brackets denote which objectives each action addresses. 63
Table 3.36 Management direction to protect waters in Algonquin Provincial Park from introduced species 64
Table 3.37 Education and outreach management strategy for FMZ 15. 65
Table 3.38 Education and outreach management actions. Values in brackets denote which objectives each action addresses. 66
Table 3.39 Climate change management strategy for FMZ 15 68
Table 3.40 Climate change management actions 68

Land Acknowledgment, Aboriginal and Treaty Rights Statement

We respectfully acknowledge that Fisheries Management Zone 15 is within treaty areas and traditional territories of numerous First Nations and Métis people. First Nations and Métis peoples have cared for and stewarded these lands for generations, and we are honoured to work together to ensure the health and integrity of these lands and waters for generations to come. The knowledge and experience shared about fish and their habitat and the relationships that we continue to develop are invaluable.

Fish are of central importance to Indigenous communities in Ontario. The history of Indigenous fisheries pre-dates the existence of the province. Harvest traditionally occurred year-round, including during spawning times. Harvesting tools included weirs, nets, traps, spears and baited hooks.

Although tools have evolved over time, fishing continues to play a significant role in the lives of Indigenous peoples, contributing to the dietary, social, cultural and economic needs of communities in Ontario.

Indigenous communities in Ontario have constitutionally protected rights to fish. MNR recognizes and respects these rights, whether it be for food, social, ceremonial, and sometimes commercial purposes. These rights are fundamentally different than the privileges given to licensed recreational anglers. For example, this may mean Indigenous people fish with different means or at different times than under Ontario's fishing regulations. Just as MNR respects these rights, we ask that licensed recreational anglers do the same.

1. Introduction

Ontario's *Provincial Fish Strategy: Fish for the Future* (OMNRF 2015b) provides strategic direction for the conservation, management and sustainable use of Ontario's fish, fisheries and aquatic ecosystems. The Fisheries Management Plan for Fisheries Management Zone 15 (FMZ 15) has been developed in a manner consistent with this provincial direction and establishes fisheries management objectives, indicators, benchmarks, targets, and management actions intended to support the sustainable management of fish populations, fish habitat, and recreational fisheries opportunities within the zone.

The Provincial Fish Strategy establishes five overarching goals for fisheries management in Ontario:

- Healthy ecosystems that support self-sustaining native fish communities.
- Sustainable fisheries that provide benefits for Ontarians.
- An effective and efficient program for managing fisheries resources.
- Fisheries policy development and management decisions informed by sound science and information.
- Informed and engaged stakeholders, partners, Indigenous communities and the public.

These provincial goals provide the overarching direction for the fisheries management objectives and actions established in this plan.

Responsibility for fisheries management is shared between the federal and provincial governments. Fisheries and Oceans Canada has authority over recreational fishing rules and has delegated authority to Ontario's Minister of Natural Resources to vary certain provisions under the *Ontario Fishery Regulations, 2007*. The Ministry of Natural Resources (MNR) is responsible for fisheries management planning, monitoring and assessment, fish stocking and other provincial fisheries management activities. This plan is a policy document intended to guide fisheries management decisions within FMZ 15 and does not have legal standing. The plan applies to waterbodies within FMZ 15, except those within Algonquin Provincial Park, which are addressed through a separate planning process.

Fisheries management planning involves reviewing available information on fish populations, aquatic ecosystems, recreational fishing activity and management issues to establish objectives and identify appropriate management actions. The FMZ 15 plan was developed by MNR with advice from the FMZ 15 Advisory Council and input from Indigenous communities and the public. The planning process considered available monitoring and assessment results, fisheries management issues and local knowledge to inform management direction.

The plan follows an ecosystem-based and adaptive management approach that considers ecological, social and cultural values, as well as recreational fishing opportunities. It focuses on key recreational fisheries, including Brook Trout, Lake Trout, Lake Whitefish, Northern Pike, Muskellunge, Walleye, Smallmouth Bass, Largemouth Bass and Panfish. The plan also addresses broader fisheries management considerations, including fish stocking, aquatic invasive species, fish health, education and outreach, and climate change.

The plan identifies zone-wide and species-specific management objectives and actions. Monitoring and assessment information, including results from Ontario's Broadscale Monitoring Program (BsM) and recreational fisheries surveys, is used to evaluate fish populations and fisheries and inform management decisions. Supporting information on the provincial legal and policy framework, the characteristics of FMZ 15, and fisheries monitoring and assessment is provided in companion documentation.

2. Description of Fisheries Management Zone

FMZ 15 covers approximately 37,832 km^2 in central Ontario, extending from Georgian Bay in the west to the Ottawa River in the east. Its northern boundary follows the Pickerel River, Highway 522 and the northern edge of Algonquin Provincial Park (Figure 2.1). The zone includes thousands of lakes and rivers supporting a diversity of coldwater, coolwater and warmwater fisheries.

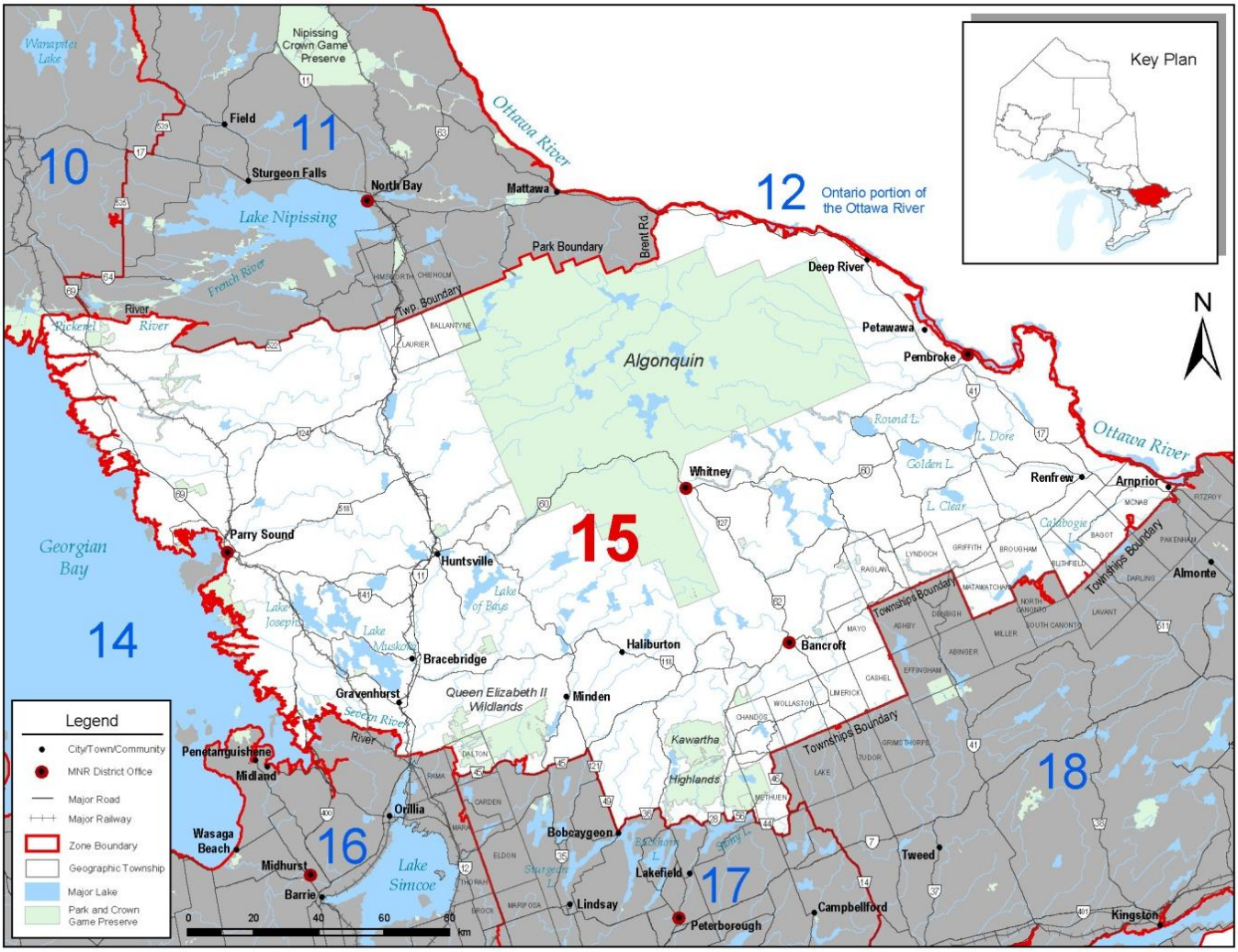

Figure 2.1 Map of Fisheries Management Zone 15.

Historically, many waters within the zone supported fish communities dominated by native coldwater species, particularly Lake Trout and Brook Trout. The distribution of fish communities has changed over time, with Walleye, Northern Pike and Smallmouth and Largemouth Bass now widely distributed throughout much of the zone outside of Algonquin Provincial Park (OMNRF 2019).

The distribution and characteristics of waterbodies vary across FMZ 15, creating distinct fisheries management considerations. Notable features include:

- Concentration of lakes supporting self-sustaining, naturally reproducing Brook Trout populations surrounding Algonquin Provincial Park, particularly to the west;
- Large Lake Trout lakes in the central Muskoka and northern Haliburton area, including Lakes Muskoka, Joseph, Rosseau, Lake of Bays, and Kawagama Lake;
- Numerous small Lake Trout lakes in the south-central portion of the zone; and
- Highly productive waters in the Ottawa Valley in the eastern portion of the zone.

3. Fisheries Management Zone Goals, Objectives and Actions

The plan establishes zone-wide and species-specific goals, objectives and management actions to guide fisheries management within FMZ 15. Zone-wide direction addresses management considerations that apply across multiple species or fisheries, while species-specific objectives identify desired outcomes for individual fisheries.

Management Goals, Objectives and Actions

The plan uses a structured approach to fisheries management that includes goals, objectives, indicators, targets, and management actions.

Goals describe the desired future condition of fish populations, aquatic ecosystems, and recreational fisheries.

Objectives identify specific outcomes that support the achievement of these goals. Objectives are intended to be practical, measurable, and achievable, while reflecting biological, social, and economic considerations.

Management actions are the activities undertaken to achieve the objectives. Together, these actions provide the direction for fisheries management within the zone.

Measuring Success

Progress toward achieving management objectives will be assessed using indicators, benchmarks, targets, and performance measures.

Indicators are measurable characteristics used to evaluate the condition of fish populations, fisheries, or aquatic ecosystems. Examples include fish abundance, age structure, harvest levels, or habitat condition.

Benchmarks represent existing or historical conditions and provide a baseline against which future changes can be measured.

Targets describe the desired future condition of an indicator or the direction of change needed to achieve an objective. Targets help determine whether management actions are producing the intended results and may be refined as new information becomes available.

In some cases, objectives may be difficult to measure directly. For these objectives, **performance measures** will be used to track whether planned management actions have been completed and implemented effectively.

Monitoring and Adaptive Management

Monitoring and assessment information, including results from BsM and recreational fishing surveys, will be used to evaluate progress toward management objectives.

Because fish populations and aquatic ecosystems may respond slowly to management actions, sufficient time is needed to detect and evaluate changes. Evaluation will consider both shorter- and longer-term progress toward management objectives, with timeframes appropriate to the species and objectives being assessed. Meaningful changes in some species, particularly long-lived species such as Lake Trout, may take decades to occur.

Monitoring results and other available information will inform future management decisions and adjustments to management actions through an adaptive management approach.

Other Fish Species

The plan provides detailed management direction for priority species and fisheries where sufficient information is available to establish objectives and targets. Other species, including Common Carp, Brown Bullhead, Rock Bass, Burbot, and Channel Catfish, also contribute to the ecological, recreational, cultural, and economic values within FMZ 15. Although these species are not the focus of species-specific management strategies in this plan, available information on their status may inform future management decisions and plan reviews.

3.1 Fish Community Objectives

Fish community objectives provide broad management direction for coldwater, coolwater, and warmwater species within FMZ 15. They establish management priorities and help guide species-specific objectives, particularly where competing management considerations exist (Figure 3.1).

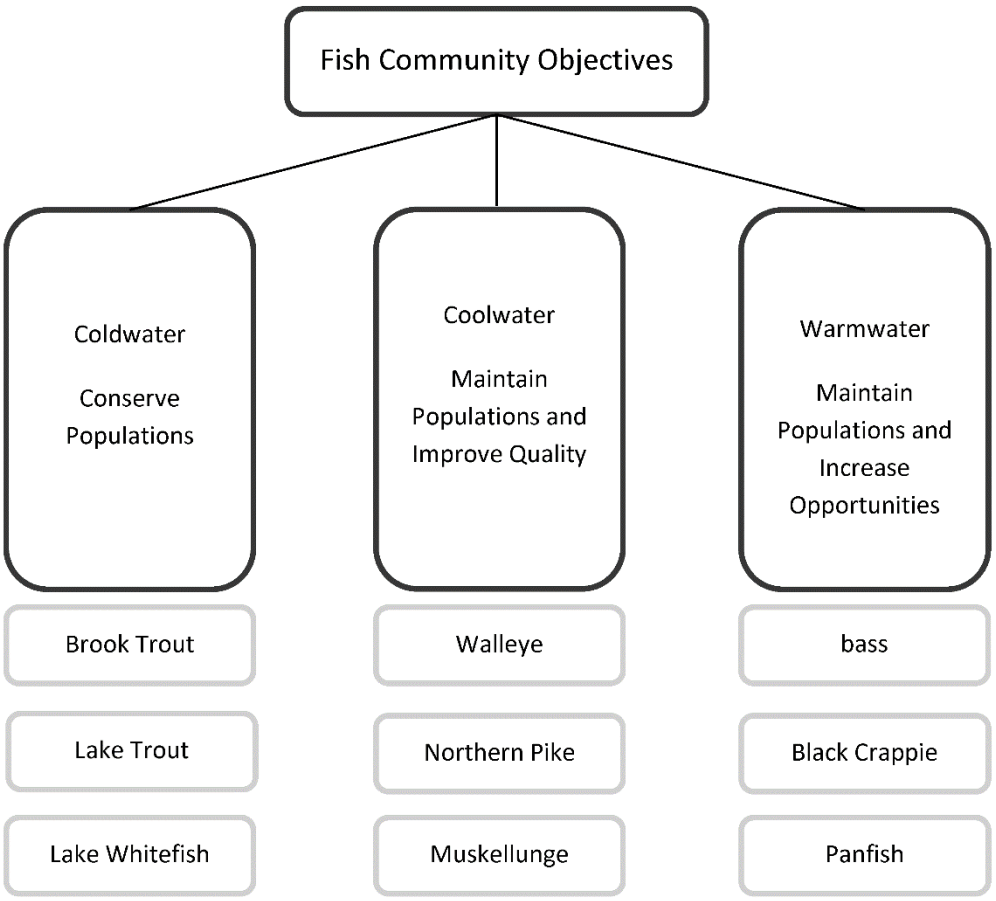

Figure 3.1 Fish community objectives for FMZ 15.

3.1.1 Coldwater Fish Community

Brook Trout, Lake Trout and Lake Whitefish are the primary native coldwater fish species in the zone. These species face several pressures, including introduced species, habitat change and loss, climate change, and fishing.

The distribution of coldwater species is limited by the natural availability of suitable habitat. Compared with many coolwater and warmwater species, coldwater fish have more specific habitat requirements, limiting opportunities to expand their distribution. Many populations have been reduced or eliminated following the introduction of non-native species. Species such as Rainbow Smelt, Smallmouth and Largemouth Bass can affect coldwater species through competition and predation, particularly during early life history stages. The distribution of these competing species continues to expand through unauthorized introductions.

Climate change is expected to reduce suitable coldwater habitat and favour the expansion of some coolwater and warmwater species. Combined with fishing pressure, these factors create additional challenges for maintaining healthy coldwater fish populations.

Given these pressures, management direction will emphasize the conservation and rehabilitation of native coldwater fish populations. A precautionary approach will be applied, with conservation of vulnerable populations taking precedence over the provision of fishing opportunities where these priorities conflict.

Goals

1. Conserve and rehabilitate populations of native coldwater fish populations.
2. Conserve and rehabilitate habitat supporting native coldwater fish populations.

3.1.2 Coolwater Fish Community

Walleye, Northern Pike and Muskellunge are the primary coolwater fish species in the zone. The distribution of these species has expanded beyond their historical ranges through both authorized and unauthorized introductions. Walleye is a highly sought-after recreational fish species, while Muskellunge is valued for trophy fishing opportunities (Hunt et al. 2023). The recreational value of Northern Pike varies across the zone, with the species considered desirable in some fisheries and less desirable in others.

Management direction will emphasize maintaining the current distribution of coolwater species, limiting further expansion, and providing quality recreational fisheries.

Goals

3. Maintain the distribution and abundance of Northern Pike and Muskellunge populations while providing quality recreational fisheries.
4. Increase the Walleye abundance while providing quality recreational fisheries.
5. Balance the conservation of coolwater fish populations with providing quality fishing and harvest opportunities.

3.1.3 Warmwater Fish Community

Smallmouth and Largemouth Bass, Black Crappie and Panfish are the primary warmwater species in FMZ 15. Like coolwater species, the ranges of bass and Black Crappie have expanded considerably through historical stocking, although stocking of these species has since ceased. Climate change is expected to increase suitable habitat for warmwater species, potentially contributing to further increases in their distribution and abundance. Bass and Black Crappie can compete with and prey on coldwater and coolwater species, creating an interest in limiting their abundance. However, they are also highly valued recreational fish species, requiring a balance between managing their impacts on other species and providing fishing opportunities. Despite their popularity, many warmwater species are harvested to a much lesser degree than coolwater and coldwater species.

Management direction will emphasize providing quality fishing opportunities while limiting impacts on other species, recognizing the resilience of warmwater fish populations.

Goals

1. Maintain the current number of lakes supporting warmwater fish populations while limiting the abundance of individual populations.
2. Maintain sustainable warmwater fish populations that provide quality fishing opportunities.

3.2 Recreational Fisheries

The following sections describe the management issues, goals, objectives, indicators, targets, and actions for priority fish species within FMZ 15.

3.2.1 Brook Trout

Brook Trout is a native coldwater species with specific habitat requirements, including cool, well-oxygenated water and suitable groundwater inputs for spawning and egg incubation. Brook Trout populations are particularly vulnerable to introduced species, habitat changes and fishing pressure.

The life history of Brook Trout is extremely variable, ranging from small-bodied, early maturing populations in small streams to very large-bodied populations dwelling in lakes. Brook Trout can be very vulnerable to angling, but its life history characteristics allow for faster recovery times than those of Lake Trout.

FMZ 15 has the second-highest number of Brook Trout lakes in the province, surpassed only by FMZ 10. Suitable habitat is concentrated primarily in the Algonquin and Madawaska Highlands, with limited habitat in lower-elevation areas around the periphery of the zone (OMNRF 2019).

Outside Algonquin Provincial Park, introduced species have affected many natural Brook Trout populations. Some persist only as remnant populations, while populations unaffected by introduced species are increasingly restricted to smaller, less accessible lakes near Algonquin Provincial Park.

Management Issues and Challenges

- Historical and ongoing loss and degradation of natural Brook Trout populations due to introduced species.
- Threats to Brook Trout habitat from shoreline and watershed development.
- Vulnerability of natural Brook Trout populations to angler harvest, particularly in small lakes with limited population sizes and high angling demand.

- Climate change impacts on Brook Trout habitat, including warming water temperatures, changes in water regimes and conditions favouring competing species.
- Challenges associated with monitoring numerous small, isolated natural and stocked Brook Trout populations in lakes and streams.
- Incomplete or outdated information for lake populations.
- Limited information on stream populations, primarily related to species occurrence.
- Limited information on the Brook Trout fisheries, much of which is qualitative.
- Limited information from BsM program on individual population parameters (e.g., mortality).

Management Strategy

The ministry, with the advice of the Advisory Council, developed goals, objectives, strategies and management actions to address the issues and challenges related to Brook Trout (Table 3.1, Table 3.2, Table 3.3).

Table 3.1 Brook Trout management strategy.

Goal *Conserve natural Brook Trout populations*

Objectives	Indicator(s)	Benchmark(s)	Targets
Maintain the number and distribution of natural Brook Trout populations (O1)	**Primary – Short Term**		
	Number of lakes supporting natural populations, classified by population status including lakes designated for enhanced management and lakes where natural populations persist amongst deleterious species	Not possible to define currently due to the large proportion of waters where current information is not available	Not possible to define currently due to the large proportion of waters where current information is not available
Improve the status of natural Brook Trout populations (O2)	**Primary - Short Term**		
	Average CUEW (kg/gang) of recruit-sized fish (>250 mm) captured with large-mesh (NA_1) gill nets	Recruit CUEW for BsM Cycle 2 = 0.45 kg/gang	Recruit CUEW ≥ 0.45 kg/gang
	Average number of Brook Trout cohorts	Number of cohorts for BsM Cycle 2 = 3.0	Number of cohorts to be ≥ 3.0; continue to monitor

Objectives	Indicator(s)	Benchmark(s)	Targets
	Supporting – Short Term		
	Estimated summer and winter angling intensity (hrs/ha per year) for targeted Brook Trout lakes	BsM aerial surveys of angling intensity (hrs/ha per year) on Brook Trout target lakes in Cycle 1: Summer Intensity = 3.52 Winter Intensity = 1.51 Annual intensity = 5.03	Angling intensity (hrs/ha per year) to remain at or below baseline values
	Primary – Long Term		
	Percentage of FMZ 15 Brook Trout lakes where the observed biomass of Brook Trout is 30% above Biomass at maximum sustainable yield (biomass ≥ 1.3 B_{MSY})	Percentage of Brook Trout lakes in FMZ 15 where the observed biomass values for Brook Trout are ≥ than the biomass reference point. Note: baseline values are to be determined in future BsM cycles when adequate Brook Trout sampling has been completed in FMZ 15	Currently, it is not possible to determine target values for biomass due to small numbers of Brook Trout sampled in the first two cycles of BsM
	Percentage of FMZ 15 Brook Trout lakes where fishing mortality is at or below 75% of natural mortality (F ≤ 0.75M)	Percentage of Brook Trout lakes where fishing mortality is ≤ 75% of natural mortality (F ≤ 0.75 M). Note: baseline values to be determined in future BsM cycles when adequate Brook Trout sampling has been completed in FMZ 15	Currently, it is not possible to determine target values for fishing mortality due to small numbers of Brook Trout sampled in the first two cycles of BsM
Enhance angling opportunities for stocked Brook Trout (O3)	**Primary - Short Term**		
	Number of stocked lakes open for angling year round	2016—2020: 195 waterbodies 125 waterbodies/year Yearling: 139,318/year Sub-adult: 5,411/year Adult: 756/year	To increase the number of stocked lakes open for angling year round.

Brook Trout Fishing Rules

A conservative approach to managing natural Brook Trout populations is needed to support their long-term sustainability while maintaining recreational angling opportunities. The management direction includes zone-wide fishing rules, additional restrictions for enhanced management lakes, and rules for stocked lakes (Table 3.2). Together, these measures support Objectives 1, 2, and 3 by protecting natural Brook Trout populations, improving their status and associated fishing opportunities, and providing additional angling opportunities in designated stocked lakes.

Table 3.2 Brook Trout Fishing Rules

Category	Open Season	Catch and Possession Limits
Zone-wide, unless otherwise specified	January 1 to September 30	S-2, C-1
Enhanced management lakes	Fourth Saturday in April to September 30	S-2, C-1; use and possession of live baitfish prohibited
Designated stocked lakes	Open year-round	S-5, C-2

Enhanced Management Lakes

Enhanced management lakes are self-sustaining natural Brook Trout lakes that do not contain competitive spiny-rayed species, such as bass, and have habitat that supports quality fisheries. The introduction of these species could negatively affect Brook Trout populations and associated fishing opportunities. The management direction includes a shorter fishing season and restrictions on the possession and use of live baitfish. These lakes are identified as exceptions to the zone-wide fishing rules. The list may be updated as new information becomes available. Refer to the Ontario Fishing Regulations Summary for current fishing rules.

Stocked Lakes: Additional Opportunities

Stocked lakes where significant natural reproduction is not known to occur provide additional angling opportunities through more liberal fishing seasons and catch and possession limits, including winter fishing, while helping to reduce fishing pressure on natural Brook Trout fisheries. Brook Trout stocking will continue to support these opportunities, consistent with stocking strategies outlined in this plan.

Table 3.3 Brook Trout management actions. Values in brackets denote which objectives each action addresses.

Brook Trout Management Actions
• Promote public awareness, appreciation and protection of natural Brook Trout populations through education and outreach, including information on the impacts of introduced species, the importance of preventing species introductions, and the vulnerability of natural Brook Trout populations. (O1, O2) • Identify, protect and restore Brook Trout habitat, particularly critical habitat associated with groundwater features. (O1, O2) • Continue to participate in established planning and review processes (e.g., forest management planning, municipal planning) to support the protection of Brook Trout populations and their habitat. (O1, O2) • Identify and address barriers to Brook Trout movement and habitat connectivity, where appropriate. (O1, O2) • Investigate the feasibility of eradicating introduced species from suitable Brook Trout waters (O1, O2) • Consider measures to minimize the introduction of new species through fishing rules and education, where appropriate. (O1, O2) • Develop criteria to identify candidate populations and consider lake-specific rehabilitation or reintroduction strategies, where appropriate. (O1, O2)

Monitoring and Assessment

Monitoring Brook Trout populations in FMZ 15 is challenging due to the large numbers of lakes and streams, limited accessibility, and gaps in available information. These information gaps have limited the ability to establish a benchmark and target for the number of natural Brook Trout lakes in the zone. Improving knowledge of the distribution, abundance and status of natural Brook Trout populations will be a priority. BsM and targeted assessments can help address information gaps and support the evaluation of management objectives.

Currently, there is no provincial monitoring program for Brook Trout streams. Information collected through other planning processes, including forest management and municipal planning, may be supplemented by local targeted assessments. These assessments may help determine the presence or absence of Brook Trout in streams and identify important habitat features.

Assessment of stocked Brook Trout fisheries should be guided by the objectives of the stocking program. Where appropriate, assessments may consider fish community composition, habitat suitability, access, angling effort, and angling preferences to evaluate stocking effectiveness.

3.2.2 Lake Trout

Lake Trout are the keystone species of FMZ 15, which is one of three areas in Ontario with a high concentration of lakes supporting native Lake Trout populations. Lake Trout occur throughout the zone, particularly in larger lakes and support a significant recreational fishery (Hunt et al. 2023). BsM results indicate that Lake Trout abundance in FMZ 15 is below the provincial average (OMNRF 2019).

Lake Trout are a coldwater species with relatively low productivity, slow growth and late maturity, making populations particularly vulnerable to overexploitation and environmental change. Natural populations depend on suitable cold, oxygen-rich habitat, and their ability to recover from declines can be limited. Maintaining naturally reproducing, self-sustaining populations is therefore an important priority for Lake Trout management in FMZ 15.

Natural Lake Trout populations face several pressures, including climate change, shoreline development, introduced species and fishing pressure. Climate change and shoreline development can affect the availability and quality of suitable habitat, while introduced species can alter fish communities through competition and changes to predator-prey relationships. These pressures may act together, increasing the vulnerability of natural populations.

Lake Trout populations also vary considerably across the zone in their growth characteristics, size potential and the lakes they inhabit. These differences, combined with the pressures facing natural populations, require a management approach that recognizes variation among lakes while maintaining appropriate protection. Management direction focuses on maintaining the number and distribution of natural Lake Trout populations, improving their status and associated fishing opportunities, and providing additional recreational opportunities through stocking.

Management Issues and Challenges

- Low productivity due to habitat requirements, slow growth and late maturation.
- Variation in Lake Trout population characteristics, including geographic distribution, growth and size potential.
- Climate change impacts on habitat suitability and productivity.
- Unsustainable fishing pressure.
- Impacts from introduced species, including Rainbow Smelt, Smallmouth Bass and Walleye.
- Potentially conflicting management objectives in multi-species fisheries.
- Shoreline development and associated impacts on water quality.

- Unintended fishing mortality associated with temperature sensitivity, deep hooking, artificial bait ingestion and barotrauma.
- Complex and inconsistently applied fishing rules.

Management Strategy

The ministry, with the advice of the Advisory Council, developed goals, objectives, strategies and management actions to address the issues and challenges related to Lake Trout (Table 3.4, Table 3.5, Table 3.6, Table 3.7).

Table 3.4 Lake Trout management strategy.

Goal *Conserve natural Lake Trout populations*

Objectives	Indicator(s)	Benchmark(s)	Targets
Maintain the number and distribution of natural Lake Trout populations (O1)	**Primary – Short Term**		
	Number of designated Natural lakes	176 lakes (OMNRF 2015a)	≥ 176 natural lakes
	Supporting – Short Term		
	Hypolimnetic volume (proportion of BsM lake volume) of BsM trend lakes to determine thermal loss of habitat	Proportion of hypolimnetic volume for BsM Cycle 1 = 0.57	Maintain proportion of hypolimnetic volume (0.57)
	Mean volume-weighted hypolimnetic dissolved oxygen concentration of BsM trend lakes	Mean volume-weighted hypolimnetic dissolved oxygen concentration (mg/l) for BsM Cycle 1 = 9.43 mg/l Note: taken from sampling that occurred after August 1st in each sampling season	Maintain mean volume-weighted hypolimnetic dissolved oxygen concentration (mg/l) (9.43 mg/l)
	Mean volume-weighted hypolimnetic dissolved oxygen concentration of designated FMZ 15 lakes	To be determined; benchmark will be established using Lakeshore Capacity Assessment Program database	Maintain volume-weighted hypolimnetic oxygen concentration relative to baseline value established using Lakeshore Capacity Assessment program database

Improve the status of natural Lake Trout populations (O2)	**Primary - Short Term**		
	Recruit CUEW (recruits > 350 mm) captured with large-mesh (NA1) gill nets	Average (area weighted) recruit (> 350 mm) CUEW from BsM Cycle 1 = 0.41 kg/gang	Average (area weighted) recruit (>350 mm) CUEW ≥ 0.41 kg/gang
	Average AW (area-weighted) number of Lake Trout cohorts	Average AW (area weighted) number of Lake Trout cohorts from BsM Cycle 1 = 6.73	Average (area weighted) number of Lake Trout cohorts ≥ 6.73
	Supporting – Short Term		
	Hypolimnetic volume (proportion of BsM lake volume) of BsM trend lakes to determine thermal loss of habitat	Proportion of hypolimnetic volume for BsM Cycle 1 = 0.57	Maintain proportion of hypolimnetic volume (0.57)
	Mean volume-weighted hypolimnetic dissolved oxygen concentration of BsM trend lakes	Mean volume-weighted hypolimnetic dissolved oxygen concentration (mg/l) for BsM Cycle 1 = 9.43 mg/l Note: taken from sampling that occurred after August 1st in each sampling season	Maintain mean volume-weighted hypolimnetic dissolved oxygen concentration (mg/l) (9.43 mg/l)
	Mean volume-weighted hypolimnetic dissolved oxygen concentration of designated FMZ 15 lakes	To be determined; benchmark will be established using Lakeshore Capacity Assessment Program database	Maintain mean volume-weighted hypolimnetic dissolved oxygen concentration (mg/l) for designated lakes sampled through Lakeshore Capacity Assessment Program
	Estimated summer and winter angling intensity (hrs/ha per year) for targeted Lake Trout lakes	BsM Aerial surveys of angling intensity (hrs/ha per year) on Lake Trout target lakes in Cycle 1: • Summer Intensity = 2.85 • Winter Intensity = 2.52 • Average annual angling intensity = 5.37	Angling intensity (hrs/ha per year) to remain at or below baseline values

	Primary – Long Term		
	Percentage of FMZ 15 Lake Trout lakes where observed biomass of Lake Trout is 30% above biomass at maximum sustainable yield (biomass ≥ 1.3 B_{MSY})	Percentage of Lake Trout lakes in FMZ 15 where the observed biomass values for Lake Trout are ≥ than the biomass reference point. Note: baseline values are to be determined in future BsM cycles when adequate Lake Trout sampling has been completed	Currently, it is not possible to determine target values for biomass due to small numbers of Lake Trout sampled in the first two cycles of BsM. Additional sampling in future BsM cycles will allow for determination of target values
	Percentage of FMZ 15 Lake Trout lakes where fishing mortality of Lake Trout is ≤ 75% of natural mortality (F ≤ 0.75 M)	Percentage of Lake Trout lakes where fishing mortality is ≤ 75% of natural mortality (F ≤ 0.75 M). Note: baseline values to be determined in future BsM cycles when adequate Lake Trout sampling has been completed in FMZ 15	Currently, it is not possible to determine target values for biomass fishing mortality due to small numbers of Lake Trout sampled in the first two cycles of BsM. Additional sampling in future BsM cycles will allow for determination of target values
Enhance angling opportunities for stocked Lake Trout (O3)	**Primary - Short Term**		
	Number of lakes and fish stocked	72 waterbodies (2016—2020): • 38 waterbodies/year • Yearling: 44,831/year • Sub-adult: 8,459/year	≥ 2016—2020 number of waterbodies and fish stocked

Lake Trout Fishing Rules

A conservative approach to managing the recreational Lake Trout fishery is needed to support the long-term sustainability of natural populations while maintaining fishing opportunities.

Lake Trout populations vary considerably across FMZ 15 in terms of lake size, growth characteristics and size potential. As a result, a single set of fishing rules would not adequately reflect the differences among populations. The fishing rules outlined in Table 3.5 support Objectives 1, 2 and 3 by helping maintain natural Lake Trout populations, improving their status and associated fishing opportunities, and providing additional angling opportunities in stocked lakes.

Table 3.5 – Lake Trout Fishing Rules

Lake Type	Small-bodied Populations	Large-bodied Populations
Small Natural Lakes (<500 ha)	Catch-and-Release Season: January 1 to third Sunday in March Catch Limit: S-0, C-0 Regular Open Season: Fourth Saturday in April to Labour Day Catch Limit: S-2, C-1 Size Limit: Minimum 40 cm Gear Restriction: only one line may be used when angling through the ice	Catch-and-Release Season: January 1 to third Sunday in March Catch Limit: S-0, C-0 Regular Open Season: Fourth Saturday in April to Labour Day Catch Limit: S-2, C-1 Size Limit: Minimum 50 cm Gear Restriction: only one line may be used when angling through the ice
Large Natural Lakes (>500 ha)	Open Season: January 1st to third Sunday in March and fourth Saturday in April to Labour Day Catch Limit: S-2, C-1 Size Limit: Minimum 40 cm	Open Season: January 1st to third Sunday in March and fourth Saturday in April to Labour Day Catch Limit: S-2, C-1 Size Limit: Minimum 50 cm
Put-Grow-Take Stocked Lakes	Open Season: Open All Year Catch Limit: S - 2, C-1 Size Limit: None	

Natural Lake Trout Lakes

The four categories of natural Lake Trout lakes are based on lake size and whether populations are small- or large-bodied. Large natural lakes with large-bodied Lake Trout populations are subject to the zone-wide fishing rules, with the other three categories managed through exceptions. Available assessment information, including Lake Trout size, age (where available) and supporting preyfish communities, is used to classify populations. Where sample sizes are very small and fish were near the threshold between small- and large-bodied populations, a minimum size limit of 50 cm is assigned. Growth potential may be reviewed where significant changes occur in a population. Most existing winter fish sanctuaries will be removed, allowing fishing for other species during their open seasons. The existing early winter sanctuary on Lake Joseph and Little Lake Joseph will be retained due to the size and importance of the fishery.

Stocked Lakes: Additional Opportunities

PGT stocked Lake Trout lakes provide additional angling opportunities while helping divert fishing pressure from natural Lake Trout populations. These lakes are managed with more liberal fishing rules, including a year-round open season. Lake Trout stocking will continue to support these opportunities, consistent with the stocking strategies identified in this plan.

Live Baitfish Restrictions

A limited number of natural Lake Trout lakes in FMZ 15 do not currently contain deleterious species. To help prevent the introduction of these species, the management direction is to prohibit the possession and use of live baitfish on these waterbodies, consistent with the approach for Brook Trout enhanced management lakes (Table 3.7).

Table 3.6 Management direction for live baitfish restrictions on natural Lake Trout lakes.

Lake Name	Township	Management Direction
Buck Lake	Proudfoot	Live baitfish may not be used as bait or possessed for use as bait
Burns Lake	Griffith	
North Lake	Proudfoot	

Note: if Graphite Lake is opened to angling in the future, the management direction is to prohibit the use and possession of live baitfish.

Table 3.7 Lake Trout management actions. Values in brackets denote which objectives each action addresses.

Lake Trout Management Actions
• Educate anglers about fishing practices that contribute to unintended Lake Trout mortality and ways to reduce these impacts. (O2) • Educate anglers about impacts of introduced species, including illegal fish stocking. (O1, O2) • Identify or confirm body-size classification of natural Lake Trout populations where uncertainty exists using BsM and local targeted assessments. (O2) • Implement measures to minimize the introduction of new species into natural Lake Trout lakes through fishing rules and education, where appropriate. (O1, O2) • Develop criteria to identify candidate populations for Lake Trout rehabilitation or reintroduction and implement lake-specific strategies, where appropriate. (O1, O2) • Continue applying the dissolved oxygen criterion for determining lakeshore capacity to protect Lake Trout habitat. (O1, O2, O3) • Identify and implement opportunities for Lake Trout spawning habitat restoration and enhancement where habitat is demonstrated to be limiting. (O1) • Continue to participate in established review and planning processes (e.g., forest management, municipal planning, water management) to support protection of Lake Trout populations and their habitat. (O1, O2) • Encourage and promote harvest opportunities for other species, particularly introduced species that may negatively affect Lake Trout populations. (O1, O2)

- Support the maintenance and periodic review of the formal list of Inland Ontario Lakes Designated for Lake Trout Management, including local assessments and criteria for determining natural Lake Trout population status. (O1, O2)
- Support the review of Lake Trout lake at-capacity designations through dissolved oxygen monitoring and other relevant assessment information. (O1, O2)

Monitoring and Assessment

The provincial BsM program will provide the primary source of information for monitoring natural Lake Trout populations in FMZ 15. Long-term monitoring of trend lakes will provide information on changes in population abundance and characteristics and evaluate progress toward management objectives.

Local targeted assessment may supplement BsM information to support lake-specific management needs, including evaluating fishing rules, confirming Lake Trout population classification, and assessing proposed rehabilitation. Additional sampling may also help improve estimates of population characteristics and mortality rates.

The BsM program does not sample stocked lakes, other than lakes randomly chosen as state lakes. The need for post-stocking assessments should be considered in relation to the stocking objectives and strategies outlined in Section 3.3.

3.2.3 Lake Whitefish

Lake Whitefish occur in over 100 lakes in FMZ 15, although recreational fisheries are limited to a relatively small number of lakes. Fishing pressure is generally considered low across much of the zone, while some populations experience poor recruitment associated with introduced species, particularly Rainbow Smelt. BsM results indicate that Lake Whitefish abundance in sampled lakes is below the provincial average (OMNRF 2019).

The management approach focuses on maintaining Lake Whitefish populations and supporting sustainable recreational fisheries, including protecting populations from excessive harvest.

Management Issues and Challenges

- Impacts of introduced species, particularly Rainbow Smelt, on Lake Whitefish abundance and recruitment.
- Potential for excessive harvest in some lakes and the need to ensure fishing rules, including harvest limits and dip netting, support sustainable Lake Whitefish populations.
- Potential long-term impacts of climate change on Lake Whitefish populations.

- Understanding and responding to interest in recreational Lake Whitefish fishing opportunities.

Management Strategy

The ministry, with the advice of the Advisory Council, developed goals, objectives, strategies and management actions to address the issues and challenges related to Lake Whitefish (Table 3.8, Table 3.9, Table 3.10).

Table 3.8 Lake Whitefish management strategy.

Goal *Maintain Lake Whitefish populations*

Objectives	Indicator(s)	Benchmark(s)	Targets
Maintain the number of Lake Whitefish populations (O1)	**Primary – Short Term**		
	Number of lakes with Lake Whitefish populations	114 Lake Whitefish lakes in FMZ 15 from 2003 Atlas within FMZ 15 (OMNR 2003). Note: No populations documented to be lost or discovered since 2003	Number of Lake Whitefish lakes in FMZ 15 ≥ 114
	Supporting – Short Term		
	Average observed hypolimnetic volume in Lake Whitefish lakes (measured as proportion of lake volume below the thermocline)	Average hypolimnetic volume for BsM Cycle 1 = 0.49	Average hypolimnetic volume ≥ 0.49
Maintain the abundance of Lake Whitefish (O2)	**Primary - Short Term**		
	Recruit CUEW (recruits ≥400 mm) captured with large-mesh (NA_1) gill nets per BsM gang	Recruit CUEW (kg/gang) for BsM Cycle 1 = 0.42 kg/gang	Recruit CUEW (kg/gang) ≥ 0.42 kg/gang
	Supporting – Short Term		
	Average observed hypolimnetic volume in Lake Whitefish lakes (measured as proportion of lake volume below the thermocline)	Average hypolimnetic volume for BsM Cycle 1 = 0.49	Average hypolimnetic volume ≥ 0.49

Objectives	Indicator(s)	Benchmark(s)	Targets
	Primary – Long Term		
	Percentage of Zone 15 lakes in which Lake Whitefish occur where observed biomass of Lake Whitefish is 30% above biomass at maximum sustainable yield (biomass ≥ 1.3 B_{MSY})	Percentage of lakes in FMZ 15 in which Lake Whitefish were captured where the observed biomass values for Lake Whitefish are ≥ than the biomass reference point. Note: baseline values are to be determined in future BsM cycles when adequate Lake Whitefish sampling has been completed	Currently, it is not possible to determine target values for biomass due to small numbers of Lake Whitefish sampled in the first two cycles of BsM
	Percentage of FMZ 15 lakes in which Lake Whitefish occurs where fishing mortality is ≤ 75% of natural mortality (F ≤ 0.75 M)	Percentage of lakes in FMZ 15 in which Lake Whitefish were captured where fishing mortality is ≤ 75% of natural mortality (F ≤ 0.75 M). Note: baseline values to be determined in future BsM cycles when adequate Lake Whitefish sampling has been completed in FMZ 15	Currently, it is not possible to determine target values for fishing mortality due to small numbers of Lake Whitefish sampled in the first two cycles of BsM

Lake Whitefish Fishing Rules

A conservative approach to managing the recreational Lake Whitefish fishery is needed to support the long-term sustainability of populations while maintaining angling opportunities. The management direction includes reduced catch limits and the elimination of recreational dip-netting to support Objectives 1 and 2 (Table 3.10)

Table 3.9 Lake Whitefish Fishing Rules

Fishing Rule	Details
Open Season	Open all year
Catch and Possession Limits	S-6, C-3

Dip Netting

Lake Whitefish are particularly vulnerable to harvest during spawning, when fish become concentrated in relatively small areas. The elimination of dip netting provides additional protection during this period and supports the long-term sustainability of Lake Whitefish populations, consistent with the management objectives for this species.

Table 3.10 Lake Whitefish management actions. Values in brackets denote which objectives each action addresses.

Lake Whitefish Management Actions
• Distribute educational materials on the impacts of introduced species and proper fish handling techniques. (O1, O2) • Support the development of provincial Lake Whitefish biological reference points to inform the assessment of population status and trends. (O1, O2) • Investigate the causes of population declines and poor recruitment in Lake Whitefish populations. (O1, O2) • Investigate the effectiveness of Lake Whitefish rehabilitation stocking and identify opportunities for rehabilitation where appropriate. (O1, O2)

Monitoring and Assessment

Lake Whitefish populations are monitored through the provincial BsM program. Although Lake Whitefish is not a primary target species for trend monitoring, BsM provides information to help assess population status and abundance.

Local targeted assessments of important Lake Whitefish fisheries may supplement BsM information where additional information is needed. Angler surveys can also provide information on fishing pressure and harvest. Together, these approaches support the evaluation of management objectives and inform future management decisions.

3.2.4 Northern Pike

Northern Pike are not native to much of FMZ 15, based on historical and contemporary inventory data (OMNR 1990). Their range has expanded through introductions, affecting native fish communities and posing risks to existing recreational fisheries. Where Northern Pike are already established, they support valued recreational fishing and harvest opportunities, with considerable interest among anglers (OMNRF 2015c). BsM results indicate that Northern Pike abundance in FMZ 15 is below the provincial average (OMNRF 2019). Management for Northern Pike will focus on maintaining existing populations and recreational fishing opportunities while limiting further range expansion to protect native fish communities.

Management Issues and Challenges

- Continued expansion of Northern Pike into waters where they are not native and associated impacts on native fish communities.
- Vulnerability of Northern Pike populations to excessive harvest and declines in fishing quality.

- Differing angler perspectives on Northern Pike management, including interest in trophy fishing opportunities and harvest opportunities in waters where the species is not native.

Management Strategy

The ministry, with the advice of the Advisory Council, developed goals, objectives, strategies and management actions to address the issues and challenges related to Northern Pike (Table 3.11, Table 3.12, Table 3.13).

Table 3.11 Northern Pike management strategy.

Goal *Maintain the Northern Pike fishery within FMZ 15*

Objectives	Indicator(s)	Benchmark(s)	Targets
Maintain the abundance of Northern Pike populations (O1)	**Primary – Short Term**		
	Recruit CUEW (recruits>500 mm) captured with large-mesh (NA1) gill nets	Recruit CUEW (kg/gang) for BsM Cycle 1 = 0.37 kg/gang	Maintain recruit CUEW ≥0.37 kg/gang
	Primary – Long Term		
	Percentage of Zone 15 lakes in which Northern Pike occur where the observed biomass of Northern Pike is 30% above biomass at maximum sustainable yield (biomass ≥ 1.3 B_{MSY})	Percentage of lakes in FMZ 15 in which Northern Pike were captured where the observed biomass values for it are ≥ than the biomass reference point. Note: baseline values are to be determined in future BsM cycles when adequate Northern Pike sampling has been completed	Currently, it is not possible to determine target values for biomass due to small numbers of Northern Pike sampled in the first two cycles of BsM
	Percentage of FMZ 15 lakes in which Northern Pike occurs where fishing mortality is ≤ 75% of natural mortality (F ≤ 0.75 M)	Percentage of lakes in FMZ 15 in which Northern Pike were captured where fishing mortality is ≤ 75% of natural mortality (F ≤ 0.75 M). Note: baseline values to be determined in future BsM cycles when adequate Northern Pike sampling has been completed in FMZ 15	Currently, it is not possible to determine target values for fishing mortality due to small numbers of Northern Pike sampled in the first two cycles of BsM
	Average number of cohorts (age classes) captured with large-mesh (NA1) gill nets	Number of cohorts in BsM Cycle 1 = 3.9	Average number of cohorts > 3.9

Objectives	Indicator(s)	Benchmark(s)	Targets
Minimize further unauthorized introductions of Northern Pike into new waterbodies (O2)	**Primary - Short Term**		
	Number of lakes with Northern Pike populations	Number of Northern Pike lakes = 444 (ARA, 2017)	Maintain number of lakes containing Northern Pike at benchmark value = 444 lakes
	Supporting – Short Term		
	Proportion of all lakes sampled that have Northern Pike populations	Proportion of lakes having Northern Pike for BsM Cycle 1 = 0.54	Maintain the proportion of lakes containing Northern Pike at 0.54

Northern Pike Fishing Rules

The management direction for Northern Pike maintains the existing zone-wide fishing season and catch limits, recognizing the recreational fishing opportunities provided by established populations. A separate exception for the Pickerel River aligns fishing rules with connected waters in FMZs 10 and 11. These measures support Objective 1 by maintaining Northern Pike abundance while providing recreational fishing opportunities.

Table 3.12 Northern Pike Fishing Rules

Fishing Rule	Details
Open Season	January 1 to March 31 and third Saturday in May to December 31
Catch and Possession Limits	S-6, C-2

Table 3.13 Northern Pike management actions. Values in brackets denote which objectives each action addresses.

Northern Pike Management Actions
• Educate the public about the impacts of unauthorized Northern Pike introductions and promote recreational harvest opportunities where the species is established. (O1, O2) • Undertake targeted outreach to help prevent unauthorized Northern Pike introductions in lakes and watersheds supporting vulnerable native fish communities. (O2)

Monitoring and Assessment

Northern Pike populations are monitored through the provincial BsM program, which provides information on population abundance, age structure and distribution. These data support the evaluation of objectives and help identify changes in Northern Pike populations across FMZ 15. Information from monitoring and assessment may also help identify changes in Northern Pike distribution, including potential introductions into new waterbodies, and inform future management decisions.

3.2.5 Muskellunge

Muskellunge are highly sought-after trophy fish with a limited native distribution in FMZ 15, occurring naturally in a small number of lakes and rivers. Their range has expanded through unauthorized introductions and movement through connected waters, though the extent of this expansion remains unclear. Information on Muskellunge abundance and distribution is limited, as the species is not effectively sampled through the provincial BsM program. The Muskies Canada Inc. (MCI) Angler Diary Program provides valuable information on catch rates and fish size, although participation is voluntary.

Muskellunge account for a relatively small proportion of recreational fishing effort in FMZ 15, approximately 1%, and targeted fisheries are predominantly catch-and-release (OMNRF 2015c). The management direction for Muskellunge focuses on maintaining existing populations, limiting unauthorized introductions, and improving knowledge of the species in FMZ 15.

Management Issues and Challenges

- Limited information on Muskellunge abundance and population trends, including the lack of standardized assessment data and reliance on voluntary angler diaries.
- Uncertainty about the native distribution and origins of Muskellunge populations, including the extent of unauthorized introductions and their potential impacts on native fish communities.
- Potential impacts of introduced Northern Pike on Muskellunge populations through competition and hybridization.

Management Strategy

The ministry, with the advice of the Advisory Council, developed goals, objectives, strategies and management actions to address the issues and challenges related to Muskellunge (Table 3.14, Table 3.15, Table 3.16).

Table 3.14 Muskellunge management strategy.

Goal *Maintain the Muskellunge fishery within FMZ 15*

Objectives	Indicator(s)	Benchmark(s)	Targets
Maintain the abundance of Muskellunge populations (O1)	**Primary – Short Term**		
	MCI angler diary CUE for FMZ 15	MCI angler diary CUE: 0.057 fish/rod hour in Muskellunge waters within FMZ 15	Maintain MCI angler diary CUE in FMZ 15 at 0.057 fish/rod-hour
Maintain trophy angling opportunities in waterbodies with demonstrated growth potential (O2)	**Primary - Short Term**		
	Proportion of MCI angler diary waterbodies where at least 10% of Muskellunge caught are 114 cm or larger, based on a minimum sample size of 75 fish per waterbody	0.04 (1 waterbody – Pickerel River) based on MCI angler diary data	Maintain a proportion of ≥ 0.04 of MCI angler diary waterbodies meeting the trophy-size criterion.
Minimize further unauthorized introductions of Muskellunge into new waterbodies (O3)	**Primary - Short Term**		
	Total number of waterbodies with confirmed Muskellunge populations	108 waterbodies confirmed to have Muskellunge populations in FMZ 15 (ARA 2021)	Maintain number of waterbodies at 108

Muskellunge Fishing Rules

The management direction for Muskellunge is to maintain the existing zone-wide fishing rules to support population abundance and recreational angling opportunities. A separate exception for the Pickerel River aligns fishing rules with connected waters in FMZs 10 and 11. Together, these measures support Objectives 1 and 2 by maintaining Muskellunge populations and protecting trophy angling opportunities.

The existing Nogies Creek fish sanctuary will be maintained to support long-term monitoring.

Table 3.15 Muskellunge Fishing Rules

Fishing Rule	Details
Open season	First Saturday in June to December 15
Catch and Possession Limits	S-1, C-0
Size Limits	Must be greater than 91 cm

Trophy Muskellunge Fisheries

Trophy Muskellunge fisheries can provide valuable recreational angling opportunities and local economic benefits. Enhanced minimum size limits may be considered for populations with demonstrated growth potential, where consistent with broader fish community objectives. For the purposes of this plan, trophy-sized Muskellunge are defined as fish measuring 114 cm or greater (Kerr et al. 2011). Waterbodies may be considered for enhanced minimum size limits where at least 10% of Muskellunge caught are 114 cm or greater, based on a minimum sample of 75 fish.

The quality and recency of available data should also be considered, recognizing that Muskellunge growth potential may change over time. Enhanced minimum size limits may also be considered for waters directly connected to adjacent fisheries management zones where Muskellunge can move freely between zones, even where the sampling criteria have not been met.

Table 3.16 Muskellunge management actions. Values in brackets denote which objectives each action addresses.

Muskellunge Management Actions
• Identify Muskellunge spawning locations and consider additional fish sanctuaries where appropriate. (O1) • Work with MCI and science experts to better understand the relationship between angler catch rates and Muskellunge abundance. (O1) • Periodically review current MCI Angler Diary data to identify waterbodies with potential to support trophy Muskellunge fisheries. (O2) • Periodically review minimum size limits in adjacent fisheries management zones and consider alignment in connected waters where appropriate. (O1, O2) • Improve the knowledge of Muskellunge distribution and promote awareness of the ecological impacts of unauthorized introductions through partnerships, species identification education and promotion of angling reporting. (O3)

Monitoring and Assessment

Muskellunge populations are not effectively sampled through the provincial BsM program. Monitoring therefore relies primarily on the MCI Angler Diary Program, which provides information on catch rates, fish size and potential trophy fisheries.

Although participation in the program is voluntary, angler diary data provide valuable information to support the assessment of Muskellunge management objectives. Additional information from angler reports, local knowledge and targeted assessments, where available, can help improve understanding of Muskellunge distribution and population status.

3.2.6 Walleye

Historically, Walleye had a limited natural distribution in FMZ 15, with native populations occurring primarily in lower-elevation areas in the western and eastern portions of the zone. Extensive stocking and unauthorized introductions have substantially expanded their distribution. Despite this expansion, Walleye densities in FMZ 15 remain relatively low compared to the province overall, but are similar to those in other fisheries management zones in southern and central Ontario (OMNRF 2019).

Walleye productivity in FMZ 15 is significantly constrained by several factors. Many lakes are relatively deep, clear and nutrient-poor, limiting their capacity to support abundant Walleye populations. Complex fish communities, including competing predators and introduced species such as Rainbow Smelt and Black Crappie, can further affect Walleye populations. Climate change is also expected to reduce habitat suitability and favour competing warmwater species such as bass.

These ecological constraints limit the potential for substantial increases in Walleye abundance across the zone. Management direction therefore focuses on maintaining existing populations and improving abundance where conditions are suitable, while recognizing the ecological limitations affecting Walleye fisheries.

Management Issues and Challenges

- High angler expectation for Walleye fisheries and population recovery, despite ecological constraints that limit productivity.
- Habitat limitations affecting Walleye productivity, including nutrient availability, water clarity, temperature, and the availability of suitable spawning and nursery habitat.
- Diverse fish communities, including competing predators and introduced species that can negatively affect Walleye populations.
- Maintaining healthy Walleye populations in waters supporting native populations, particularly where they are experiencing significant pressures.

- Potential increases in Walleye harvest associated with changing angling pressures and demand.

Management Strategy

The ministry, with the advice of the Advisory Council, developed goals, objectives, strategies and management actions to address the issues and challenges related to Walleye (Table 3.17, Table 3.18, Table 3.19, Table 3.20).

Table 3.17 Walleye management strategy.

Goal *Improve Walleye populations*

Objectives	Indicator(s)	Benchmark(s)	Targets
Maintain the number of Walleye populations (O1)	**Primary – Short Term**		
	Number of Walleye lakes in FMZ 15	Total number of Walleye lakes = 118 (ARA 2016) Note: see Background Information Report (OMNRF 2019)	Maintain number of Walleye lakes at 118
Maintain abundance of Walleye (O2)	**Primary – Short Term**		
	Average recruit CUEW (kg/gang) of Walleye (recruits > 350 mm) (area weighted value) captured with large-mesh ($NA_{1)}$ gill nets	Average recruit CUEW (≥350 mm) from BsM Cycle 1 = 0.58 kg/gang	Average recruit CUEW is ≥ 0.58 kg/gang
	Estimated total mortality rate for fish ≥ minimum age at recruitment (= 2.5 years)	Estimated total mortality rate for fish ≥ minimum age at recruitment for BsM Cycle 1 = 0.39	Estimated total mortality rate of fish ≥ minimum age at recruitment remains ≤ 0.39
	Number of Walleye cohorts (age classes) in BsM Cycle 1	Average number of Walleye cohorts for BsM Cycle 1 = 7.19	Average number of Walleye cohorts (age classes) ≥ 7.19
	Average Reference Biomass (observed biomass) for all Walleye lakes from BsM Cycle 1	Average Reference Biomass value for Walleye lakes for BsM Cycles 1 & 2 = 0.39	Average Reference Biomass value (B_{obs}/B_{MSY}) is > 0.39

Objectives	Indicator(s)	Benchmark(s)	Targets
	Supporting – Short Term		
	Estimated summer and winter angling intensity (hrs/ha per year) for targeted Walleye lakes	BsM Aerial surveys of angling intensity (hrs/ha per year) on Walleye target lakes in Cycle 1: • Summer Intensity = 8.0 • Winter Intensity = 3.1 • Annual angling intensity = 11.1	≤ baseline values - angling intensity (hrs/ha per year)
	Primary – Long Term		
	Percentage of FMZ 15 Walleye lakes where observed biomass of Walleye is 30% above biomass at maximum sustainable yield (biomass ≥ 1.3 B_{MSY})	Baseline BsM Cycle 1 = 0% of FMZ 15 Walleye lakes were at or higher than the biomass reference point	Increase the percentage of Walleye waters in FMZ 15 above the biomass reference point
	Percentage of FMZ 15 Walleye lakes where fishing mortality of Walleye is ≤ 75% of natural mortality (F ≤ 0.75 M)	Baseline BsM Cycle 1 = 50% of FMZ 15 Walleye lakes were at or below the mortality reference point	Increase the percentage of Walleye waters in FMZ 15 below the mortality reference point value
Minimize further unauthorized introductions of Walleye into new waterbodies in the zone (O3)	**Primary - Short Term**		
	Number of Walleye lakes in FMZ 15	Total number of Walleye lakes = 118 (ARA 2016) Note: see Background Information Report	Maintain number of Walleye lakes at 118
	Supporting – Short Term		
	Proportion of all lakes sampled in FMZ 15 that have Walleye populations	Proportion of all lakes sampled having Walleye present for BsM Cycle 1 = 0.54	Proportion of lakes having Walleye ≤ 0.54

Walleye Fishing Rules

The management direction for Walleye maintains the zone-wide fishing seasons and catch limits while introducing a harvestable slot size of 40-50 cm. Analysis indicated that this approach could support Walleye abundance under varying levels of angling effort, while protecting mature fish and maintaining recreational fishing opportunities. This direction supports Objectives 1 and 2 by balancing harvest opportunities with the long-term sustainability of Walleye populations.

Table 3.18 Walleye Fishing Rules

Fishing Rule	Details
Open Season	January 1 to March 15; third Saturday in May to December 31
Catch and Possession Limits	S-4, C-2
Size Limit	Must be between 40 – 50 cm

Exceptions

The exceptions for Lake Clear, Little Lake Clear, Meadow Lake and Mud Lake are maintained, recognizing the distinct characteristics of these fisheries. A separate exception for the Pickerel River aligns fishing rules with connected waters in FMZs 10 and 11.

Table 3.19 Walleye Fishing Rule Exceptions (Lake Clear, Little Lake Clear, Meadow Lake and Mud Lake)

Fishing Rule	Details
Catch and Possession Limits	S-2, C-1
Size Limit	Must be greater than 50 cm

Fish Sanctuaries

Existing Walleye fish sanctuaries will be maintained to protect spawning populations. Seasonal closures extend from March 1 to the Friday before the third Saturday in May. Extended closures to June 15 may be considered where additional protection is needed for late-spawning populations.

Table 3.20 Walleye management actions. Values in brackets denote which objectives each action addresses.

Walleye Management Actions
• Develop and distribute educational materials on Walleye life history, the rationale for fishing rules, and best management practices for harvest and catch-and-release angling. (O1, O2, O3) • Promote angling opportunities for alternative species to help reduce fishing pressure on naturally reproducing Walleye populations. (O1, O2) • Identify and assess Walleye spawning habitats through partnerships and consider additional fish sanctuaries where appropriate. (O1, O2) • Develop criteria to identify candidate Walleye populations and implement lake-specific rehabilitation strategies where appropriate. (O1, O2) • Promote awareness of the ecological impacts of unauthorized Walleye introductions, particularly on coldwater fish communities, through public education and targeted outreach in sensitive watersheds. (O1, O3)

Stocked Lakes

Walleye stocking will be undertaken in accordance with provincial stocking policies and guidelines and the stocking strategies outlined in this plan. PGT stocking of Walleye will be considered where it does not negatively affect natural coldwater fisheries.

Monitoring and Assessment

Walleye abundance and population characteristics will continue to be monitored through the provincial BsM program. This information will be used to assess population trends and progress toward management objectives. Spawning areas, particularly riverine locations, are critical habitat for Walleye but are not monitored through the BsM program. Local initiatives are therefore important for identifying spawning areas and ensuring they are protected and considered in planning processes (e.g., water and forest management). Monitoring of spawning activity may be considered on a case-by-case basis to determine the need for, or measure the effectiveness of, habitat improvement activities.

BsM and local assessment may also be used to identify the need for lake-specific rehabilitation strategies and evaluate their success in supporting Objectives 1 and 2.

3.2.7 Smallmouth and Largemouth Bass

Smallmouth and Largemouth Bass are warmwater species that provide important recreational fishing opportunities in FMZ 15. Both species are native to Ontario but have expanded beyond their historical ranges and are now widely distributed throughout the

zone. Their distribution has expanded through unauthorized introductions and is expected to continue expanding as warming water temperatures increase the availability of suitable habitat (Mandrak and Crossman, 1992).

Smallmouth Bass are widespread and relatively abundant in FMZ 15. BsM results indicate that populations are generally healthy, with abundance above the provincial average (OMNRF 2019). Information on Largemouth Bass is more limited because the species is less effectively sampled by BsM gear. Bass are among the more popular species targeted by recreational anglers in the zone and account for a substantial proportion of recreational fishing activity (Hunt et al. 2023).

Although established bass populations provide valuable angling opportunities, their expansion into new waterbodies can negatively affect native fish communities, particularly coldwater species. Reducing bass abundance across FMZ 15 would be difficult, but localized management approaches may help address impacts on other fish communities. Management direction therefore focuses on maintaining healthy bass populations and recreational fishing opportunities while minimizing further unauthorized introductions.

Management Issues and Challenges

- Continued expansion of bass into new waterbodies through unauthorized introductions and climate change, with potential impacts on native fish communities, particularly coldwater species.
- Limited information on Largemouth Bass abundance and population characteristics due to the effectiveness of BsM sampling methods.
- Balancing angler interest in quality bass fishing opportunities with maintaining healthy, sustainable populations.
- Public concerns about the impacts of competitive fishing on bass populations.

Management Strategy

The ministry, with the advice of the Advisory Council, developed goals, objectives, strategies and management actions to address the issues and challenges related to Smallmouth and Largemouth Bass (Table 3.21, Table 3.22, Table 3.23).

Table 3.21 Smallmouth and Largemouth Bass management strategy.

Goal *Maintain the bass fishery within FMZ 15*

Objectives	Indicator(s)	Benchmark(s)	Targets
Minimize further unauthorized introductions of Smallmouth and Largemouth Bass into new waterbodies (O1)	**Primary – Short Term**		
	Number of lakes with Smallmouth and Largemouth Bass	Number of bass lakes (Aquatic Habitat Inventory) • Smallmouth Bass = 1173 • Largemouth Bass = 852	Number of lakes with bass populations remains stable relative to benchmark values for Smallmouth Bass and Largemouth Bass
	Number of outreach products/efforts produced to inform the public of negative impacts of bass introductions into new waterbodies in the zone	Number of MNR outreach products/efforts distributed to public on ecological and social implications of unauthorized introduction of bass into new waterbodies Currently for zone = 0 products.	Increase the number of MNR information products distributed to the public
	Supporting – Short Term		
	Proportion of lakes sampled in FMZ 15 that have Smallmouth Bass or Largemouth Bass populations	Proportion of lakes sampled in BsM Cycle 1 that were occupied by bass: • Smallmouth Bass = 0.81 • Largemouth Bass = 0.25	Proportion of lakes occupied by bass in FMZ 15 remains stable relative to benchmark value: • Smallmouth Bass = 0.81 • Largemouth Bass = 0.25

Objectives	Indicator(s)	Benchmark(s)	Targets
Maintain current abundance of Smallmouth and Largemouth Bass (O2)	**Primary - Short Term**		
	CUEW (kg/gang) of recruit-sized Smallmouth Bass and Largemouth Bass (recruits > 200 mm) captured with large-mesh (NA_1) gill nets during BsM Cycle 1	Average CUEW (kg/gang) for recruit-sized Smallmouth (≥ 200 mm) and Largemouth Bass (≥ 250 mm) captured with large-mesh (NA1) gill nets during BsM Cycle1: • Smallmouth Bass = 0.48 • Largemouth Bass = 0.22	Recruit CUEW for Smallmouth Bass and Largemouth Bass remains stable relative to benchmark values of 0.48, and 0.22, respectively
	Average number of cohorts (age classes) of Smallmouth Bass from all lakes sampled in BsM	Number of cohorts for BsM Cycle 1 = 6.53	Average number of age classes ≥ 6.53
	Primary – Long Term		
	Percentage of FMZ 15 lakes in which Smallmouth Bass occur where the observed biomass of Smallmouth Bass is 30% above biomass at maximum sustainable yield (biomass ≥ 1.3 B_{MSY})	Percentage of lakes in FMZ 15 in which Smallmouth Bass were captured where the observed biomass values for it are ≥ than the biomass reference point. Note: baseline values to be determined in future BsM cycles when adequate Smallmouth Bass sampling has been completed	Currently, it is not possible to determine target values for biomass due to small numbers of Smallmouth Bass sampled in first two cycles of BsM
	Percentage of FMZ 15 lakes in which Smallmouth Bass occurs where fishing mortality is ≤ 75% of natural mortality (F ≤ 0.75 M)	Percentage of lakes in FMZ 15 in which Smallmouth Bass were captured where fishing mortality is ≤ 75% of natural mortality (F ≤ 0.75 M). Note: baseline values to be determined in future BsM cycles when adequate Smallmouth Bass sampling has been completed in FMZ 15	Currently, it is not possible to determine target values for fishing mortality due to small numbers of Smallmouth Bass sampled in first two cycles of BsM

Objectives	Indicator(s)	Benchmark(s)	Targets
Increase and promote fishing opportunities for Smallmouth and Largemouth Bass (O3)	**Primary - Short Term**		
	Provincial Recreational Fishing Survey rod/hrs	Current recreational fishing effort targeting bass	Increase current recreational fishing effort for bass
	Number of outreach products/efforts produced to inform public of increased bass angling opportunities	Current number of outreach materials informing the public of the future change in the bass angling season: number of materials produced	Increase current number of information products highlighting increased length of bass angling season

Largemouth and Smallmouth Bass Fishing Rules

The management direction for Smallmouth and Largemouth Bass extends the zone-wide fishing season to provide additional recreational angling opportunities while maintaining the existing catch and possession limits. The extended season is expected to pose a low risk to bass sustainability, with minimal impacts during the spawning period. A separate exception for the Pickerel River aligns fishing rules with connected waters in FMZs 10 and 11. This direction supports Objectives 2 and 3 by maintaining healthy bass populations while increasing fishing opportunities.

Table 3.22 Zone-wide Smallmouth and Largemouth Bass Fishing Rules

Fishing Rule	Details
Open Season	Third Saturday in June to December 15
Catch and Possession Limits	S-6, C-2

Table 3.23 Smallmouth and Largemouth Bass management actions. Values in brackets denote which objectives each action addresses.

Smallmouth and Largemouth Bass Management Actions
• Promote awareness of the ecological impacts of unauthorized Smallmouth and Largemouth Bass introductions, particularly in waters supporting native coldwater species. (O1) • Encourage the harvest of bass where appropriate to help address conflicts between bass populations and the management objectives for other fish species. (O2) • Promote best management practices for fish handling and catch-and-release during competitive fishing events to minimize fish stress and displacement. (O2) • Explore the effectiveness of liberal bass fishing rules in stocked trout waters to help mitigate impacts on trout populations while providing additional angling opportunities. (O3)

Monitoring and Assessment

Smallmouth and Largemouth Bass populations will continue to be assessed through the provincial BsM program. This information will be used to evaluate changes in bass distribution, abundance and population characteristics, and assess progress towards management objectives.

BsM provides useful information on Smallmouth Bass populations but is less effective at sampling Largemouth Bass. This limitation will be considered when interpreting results and assessing population trends. Other available information, including recreational fishing survey data, may be used to assess angling activity and fishing opportunities.

3.2.8 Panfish

Panfish is used to describe several smaller-bodied fish species of the sunfish family, including Pumpkinseed and Bluegill. For the purposes of this plan, Panfish includes Pumpkinseed, Bluegill, Black Crappie and Yellow Perch. Pumpkinseed and Yellow Perch are native to FMZ 15, while Black Crappie and Bluegill are not native to the zone but have been widely introduced into its lakes.

Panfish are not specifically targeted by the provincial BsM program but are sampled when captured. As a result, BsM data may not fully represent their distribution and abundance across FMZ 15. Yellow Perch are widespread and relatively abundant, while Pumpkinseed populations appear relatively stable. Black Crappie have increased in distribution and relative abundance, although their occurrence may be underrepresented in BsM results. Information on Bluegill remains limited due to low numbers captured during sampling (OMNRF 2019).

Panfish account for a substantial proportion of recreational catch and harvest in FMZ 15, despite relatively little angling effort being directed specifically at these species (Hunt et al. 2023). Climate change is expected to favour Panfish populations as water temperatures increase. However, further expansion of introduced species, particularly Black Crappie and Bluegill, may negatively affect other fish communities, including Walleye and trout. Panfish management therefore focuses on maintaining existing populations and recreational fishing opportunities while limiting further unauthorized introductions to protect native fish communities.

Management Issues and Challenges

- Continued expansion of Panfish into new waterbodies through unauthorized introductions and climate change.
- Potential impacts of introduced Black Crappie on Walleye and trout populations.

- Limited information on Panfish distribution and abundance because these species are not specifically targeted in the BsM program
- Opportunities to increase recreational fishing and harvest of Panfish, which are relatively underutilized in FMZ 15.

Management Strategy

The ministry, with the advice of the Advisory Council, developed goals, objectives, strategies and management actions to address the issues and challenges related to Panfish (Table 3.24, Table 3.25, Table 3.26).

Table 3.24 Panfish management strategy.

Goal *Maintain the Panfish fishery with FMZ 15*

Objectives	Indicator(s)	Benchmark(s)	Targets
Maintain Panfish populations at current levels (O1)	**Primary – Short Term**		
	CUEW (kg/gang) for large mesh (NA_1) gill nets (O1)	Average CUEW (kg/gang) for large mesh gill nets (NA_1) from BsM Cycle 1 • Yellow Perch = 0.10 • Black Crappie = 0.07 • Bluegill = 0.07 • Pumpkinseed = 0.04	Maintain CUEW (kg/gang) for large mesh (NA_1) nets for Panfish species relative to benchmark value: • Yellow Perch = 0.10 • Black Crappie = 0.07 • Bluegill = 0.07 • Pumpkinseed = 0.04
	CUE (fish/gang) for small mesh (ON_2) gill nets (O1)	Average CUE (fish/gang) for small (ON_2) mesh gill nets from BsM Cycle 1 (O1): • Yellow Perch = 10.72 • Black Crappie = 0.20 • Bluegill = 0.75 • Pumpkinseed = 1.66	Maintain CUE for small (ON_2) mesh gill nets for Panfish species compared to benchmark value: • Yellow Perch = 10.72 • Black Crappie = 0.20 • Bluegill = 0.75 • Pumpkinseed = 1.66

Objectives	Indicator(s)	Benchmark(s)	Targets
Minimize further unauthorized introductions and expansion of Panfish species into new waters in FMZ 15 (O2)	**Primary - Short Term**		
	Number of lakes in FMZ 15 with populations specific Panfish species	Number of lakes with populations of Panfish species (Aquatic Habitat Inventory, 2021): • Black Crappie = 83 • Bluegill = 25	Maintain the number of lakes occupied by specific Panfish species at benchmark values: • Black Crappie = 83 • Bluegill = 25
	Supporting – Short Term		
	Percentage of sampled lakes having Panfish populations	Percentage of all lakes sampled using BsM in Cycle 1 that were occupied by specific Panfish species: • Black Crappie = 7.7% • Bluegill = 3.8%	Maintain percentage of lakes occupied by specific Panfish species at levels near to benchmark values: • Black Crappie = 7.7% • Bluegill = 3.8%
Increase participation in existing Panfish fisheries (O3)	**Primary - Short Term**		
	Percentage of fishing activity targeting bass, sunfish and crappie and Yellow Perch in FMZ 15[1]	2020 Recreational Fishing Survey (FMZ 15 excluding Algonquin Provincial Park): 45.5% for bass, sunfish and crappie; 1.0% for Yellow Perch	Increase the percentage of fishing activity targeting these species groups above the 2020 benchmarks.

[1] Hunt et al. (2023), Table A2.7. Results are for FMZ 15 outside of Algonquin Provincial Park. The survey groups bass, sunfish and crappie together and reports Yellow Perch separately. As a result, the indicator includes bass and is not specific to Panfish.

Panfish Fishing Rules

The existing rules for Panfish will be maintained to support Objective 1 by providing sustainable harvest opportunities while maintaining current population levels.

Table 3.25 Zone-wide Panfish fishing rules

Species	Open Season	Catch and Possession Limits
Sunfish (Pumpkinseed and Bluegill)	Open all year	S-50, C-25
Black Crappie	Open all year	S-30, C-10
Yellow Perch	Open all year	S-50, C-25

Table 3.26 Panfish management actions. Values in brackets denote which objectives each action addresses.

Panfish Management Actions
• Promote education and awareness to discourage unauthorized introductions of Black Crappie and Bluegill into new waterbodies. (O2) • Promote the quality of the existing Panfish fishery and increase recognition of Panfish as a valued recreational fishing species. (O3) • Encourage greater participation in Panfish angling to help divert fishing effort from other depressed species such as Walleye. (O3) • Encourage Panfish harvest where appropriate to help address conflicts between the management objectives for different fish species. (O3)

Monitoring and Assessment

Panfish distribution and abundance will continue to be assessed using available information from the provincial BsM program. Although Panfish are not specifically targeted by BsM, these data can provide information on population trends and help assess progress toward Objectives 1 and 2. Results will be interpreted with consideration of sampling limitations, particularly for Black Crappie and Bluegill.

Recreational fishing survey data may also be used to assess angling effort and harvest of Panfish, where reliable information is available, to help evaluate progress toward Objective 3.

3.2.9 Naturalized Rainbow Trout and Kokanee Salmon

Naturalized, self-sustaining populations of Rainbow Trout and Kokanee Salmon occur in a small number of lakes in the zone. Rainbow Trout populations are found in Bernard and Sand Lake, while Kokanee Salmon, a non-migratory form of Sockeye Salmon, occur in Boulter Lake.

These populations are unusual in Ontario, with few other comparable self-sustaining inland populations known to occur in the province. These populations have received limited management attention since their original introductions, apart from the establishment of fish sanctuaries to protect fish during spawning. Their current population status and associated recreational fisheries have not been assessed.

Management therefore focuses on maintaining these unique, self-sustaining populations, protecting them during vulnerable periods and improving knowledge of their status and habitat requirements where opportunities arise. Stocking will not be undertaken because of potential genetic and other risks to the existing populations.

Management Issues and Challenges

- Limited information available on the status of populations and associated fisheries.
- Limited capacity to undertake lake-specific management actions.

Management Strategy

The ministry, with the advice of the Advisory Council, developed goals, objectives, strategies and management actions to address the issues and challenges related to naturalized Rainbow Trout and Kokanee Salmon (Table 3.27, Table 3.28).

Table 3.27 Naturalized Rainbow Trout and Kokanee Salmon management strategy.

Goal *Maintain the naturalized Rainbow Trout and Kokanee Salmon fishery within FMZ 15*

Objectives	Indicator(s)	Benchmark(s)	Targets
Maintain the current population occurrences (O1)	Number of known populations	Current known populations: Bernard Lake, Sand Lake, Boulter Lake	Maintain number of populations: Bernard Lake, Sand Lake, Boulter Lake

Naturalized Rainbow Trout and Kokanee Salmon Fishing Rules

The existing fishing rules for naturalized Rainbow Trout and Kokanee Salmon will be maintained. The fishing season is open year-round, with waterbody specific fish sanctuaries providing protection during spawning periods. These restrictions support Objective 1 by helping maintain the existing self-sustaining populations.

Table 3.28 Naturalized Rainbow Trout and Kokanee Salmon management actions. Values in brackets denote which objectives each action addresses.

Naturalized Rainbow Trout and Kokanee Salmon Management Actions
• Improve knowledge of naturalized Rainbow Trout and Kokanee Salmon populations, their habitats and associated recreational fisheries to inform future management decisions. (O1)

Monitoring and Assessment

Where opportunities arise, lake-specific assessments may be undertaken to improve understanding of naturalized Rainbow Trout and Kokanee Salmon populations, their habitats and associated fisheries. Results may be used to assess progress toward Objective 1 and inform future management decisions.

3.3 Fish Stocking

Fish stocking is an important fisheries management tool in FMZ 15, supporting a wide range of recreational fishing opportunities. The zone has one of the largest inland fish stocking programs in Ontario, with contributions from the ministry, community hatcheries, and other partners.

Maintaining healthy, naturally reproducing fish populations remains the foundation of fisheries management in FMZ 15. Stocking complements this approach by creating additional recreational angling opportunities, helping divert fishing pressure from natural populations, and supporting fisheries rehabilitation or restoration of populations where appropriate.

The primary focus of stocking in FMZ 15 is to provide PGT fisheries, where stocked fish are allowed to grow before being harvested by anglers. Stocking may also be considered for rehabilitation or reintroduction purposes, subject to appropriate assessment and planning. Supplemental stocking of naturally reproducing populations is generally discouraged because of potential ecological and genetic impacts.

Stocking decisions will continue to be guided by provincial policies and science-based guidelines, including Ontario's *Provincial Fish Strategy: Fish for the Future* (OMNRF 2015b) and the *Guidelines for Stocking Fish in Inland Waters of Ontario* (OMNR 2002). This direction emphasizes that maintaining self-sustaining fish populations is the preferred management approach and recognizes that stocking can sometimes create ecological risks if not carefully planned. The stocking direction outlined in this plan also applies to stocking activities proposed by private individuals and organizations.

The following sections establish strategic direction for stocking in FMZ 15. Lake-specific stocking decisions, including stocking rates, allocations and schedules, will continue to be addressed through operational planning.

3.3.4 Stocking Strategies and Actions

The stocking strategies outlined in this section support the management objectives established in the individual species sections of this plan. Where stocking strategies may conflict within a waterbody, decisions will be guided by the relative priority of the applicable management objectives.

The following actions support implementation of the stocking strategies across FMZ 15 (Table 3.29). Actions specific to individual species are identified in the corresponding species stocking sections (Table 3.30, Table 3.31, Table 3.32, Table 3.33).

Table 3.29 Actions supporting implementation of the FMZ 15 stocking strategies.

Stocking Program Actions
Develop an FMZ 15 stocking communication strategy to increase awareness of stocked fishing opportunities and the purpose of fish stocking.
Engage with the Advisory Council and angling community to explore opportunities to improve and diversify stocked fisheries, including accessibility, stocking approaches, specialty fisheries and species composition.
Subject to available resources, consider developing monitoring and assessment plans for PGT fisheries to evaluate the effectiveness of stocking.
Periodically review and adapt stocking plans based on provincial stocking guidelines, best available science, Indigenous Knowledge and local monitoring results.
Maintain or improve access to existing and potential stocked waters, where appropriate.

Brook Trout and Lake Trout

Stocking of Brook Trout and Lake Trout will continue to support the conservation of naturally reproducing populations while providing additional recreational fishing opportunities in FMZ 15. Supplemental stocking will not be undertaken in waters supporting viable natural Brook Trout or Lake Trout populations because of potential genetic and ecological impacts.

Rehabilitation or reintroduction stocking may be considered where natural populations have been lost or significantly reduced, where stocking is expected to contribute to successful recovery and is supported by a lake-specific rehabilitation strategy and using ecologically appropriate strains. Lake-specific fishing rules may also be applied to minimize the harvest of stocked fish during rehabilitation. Community hatcheries may support these efforts where appropriate.

Brook Trout and Lake Trout stocking will continue to provide PGT fishing opportunities and help divert angling pressure from natural populations. Opportunities to improve the effectiveness and diversity of stocked fisheries will be explored through engagement with the Advisory Council and angling community, including consideration of accessibility and specialty fishing opportunities.

Table 3.30 Brook Trout and Lake Trout stocking strategies and actions linked to FMZ 15 management objectives.

Management Objective	Stocking Strategies
Maintain the number and distribution of natural Brook Trout and Lake Trout populations	S1. Do not undertake supplemental stocking in waters supporting viable natural Brook Trout or Lake Trout populations. S2. Conduct rehabilitation and reintroduction stocking of Brook Trout and Lake Trout populations where appropriate, using ecological suitable strains.
Improve the status of natural Brook Trout and Lake Trout populations	S3. Continue Brook Trout and Lake Trout stocking to help divert angling effort from natural populations.
Enhance angling opportunities for *stocked* Brook Trout and Lake Trout	S4. Continue Brook Trout and Lake Trout stocking to provide additional recreational angling and harvest opportunities and improve the effectiveness of stocked fisheries where possible.
Species-Specific Actions	
• Develop FMZ-specific reference point indicators (i.e., for recruit and pre-recruit sustainable relative abundance) to avoid the deleterious effects of supplemental stocking. (S1) • Identify or confirm the status of natural Brook Trout and Lake Trout populations where uncertainty exists, using BsM and local targeted assessments. (S1, S2) • Develop criteria to identify candidate waterbodies for Brook Trout and Lake Trout rehabilitation, including consideration for stocking and fishing rules to restrict harvest, where appropriate. (S1, S2) • Monitor deep-water habitat conditions in Lake Trout lakes to ensure lakes continue to provide suitable habitat. (S1, S2, S3) • Assess fish communities in Brook Trout lakes to identify potential competition from incompatible species. (S1, S2, S3) • Implement stocking actions identified in lake-specific rehabilitation or reintroduction strategies. (S2) • Align fishing rules with management objectives on waterbodies where stocking occurs. (S1, S2)	

Marking of stocked Lake Trout may be used to assess natural reproduction and inform monitoring and management decisions.

Rainbow Trout, Brown Trout and Splake and Other Salmonids

Stocking of Rainbow Trout, Brown Trout and Splake will continue, where appropriate, to provide PGT recreational fishing opportunities and help divert angling pressure from naturally reproducing Brook Trout and Lake Trout populations.

These species will generally not be stocked in waters supporting natural Brook Trout or Lake Trout populations because of potential ecological impacts. Exceptions may be considered where justified by broader fisheries management objectives, including support for other species and significant social and economic fisheries. Such stocking must be supported by a lake-specific stocking strategy and undertaken with caution.

Tiger Trout, Aurora Trout and Atlantic Salmon will not be stocked in FMZ 15. The stocking program will also seek to reduce the proportion of Brown Trout fisheries. Stocking will be directed toward established fisheries management priorities, including conserving natural fish populations and providing recreational fishing opportunities through the species supported in this plan.

Table 3.31 Rainbow Trout, Brown Trout, and Splake stocking strategies and actions linked to FMZ 15 management objectives.

Management Objectives	Stocking Strategies
Maintain the number and distribution of natural Brook Trout and Lake Trout populations	S1. Do not stock Rainbow Trout, Brown Trout or Splake into waters supporting natural Lake Trout or Brook Trout populations. S2. Consider PGT stocking in specific waterbodies to support fish community objectives and local economies, where natural reproduction is not the management priority. S3. Continue Splake stocking to help divert angling effort from natural Brook and Lake Trout populations.
Maintain or enhance angling opportunities for *stocked* Splake	S4. Continue to stock Splake to create additional angling opportunities. and look to improve effectiveness where possible.

Lake Whitefish

Lake Whitefish are not currently stocked in FMZ 15. Rehabilitation or reintroduction stocking may be considered where natural populations have been lost or significantly reduced, provided it is supported by a lake-specific rehabilitation strategy. Fishing rules may also be applied to minimize harvest of stocked fish during rehabilitation.

Rehabilitation stocking may be considered where overharvest is the primary cause of population decline. However, stocking may also form part of a broader rehabilitation strategy where multiple factors are affecting the population, including aquatic invasive species.

PGT stocking may also be considered to provide additional recreational fishing opportunities and help divert angling pressure from natural coldwater populations. Engagement with the Advisory Council and angling community will help determine whether there is sufficient interest in these opportunities and where they may be appropriate. Marking of stocked Lake Whitefish should also be used to assess natural reproduction and inform monitoring and management decisions.

Table 3.32 Lake Whitefish stocking strategies and actions linked to FMZ 15 management objectives.

Management Objective	Stocking Strategies
Maintain the number of natural Lake Whitefish populations.	S1. Conduct rehabilitation and reintroduction stocking of Lake Whitefish where appropriate and where resources are available.
Maintain the abundance of Lake Whitefish	S2. Consider PGT stocking of Lake Whitefish to provide additional angling opportunities and help reduce fishing pressure on natural populations, where demand is demonstrated and resources are available.
Species-Specific Actions	
• Develop criteria or seek scientific advice, as needed, to identify natural Lake Whitefish populations. (S1, S2) • Implement stocking actions identified in lake-specific rehabilitation, reintroduction, or PGT stocking strategies, where appropriate. (S1, S2)	

If sufficient demand for PGT Lake Whitefish fishing opportunities is demonstrated, candidate waterbodies may be identified through an assessment of ecological suitability, potential impacts on natural fish populations, public access and opportunities to support fisheries management objectives. Stocking will not be considered in waters where it could compromise the management of natural Brook Trout or Lake Whitefish populations or species of conservation concern. Any proposed introductions will be subject to applicable provincial review and approval requirements.

Walleye

Walleye are not native to most lakes in FMZ 15. Natural populations historically occurred primarily in low elevation areas near the Ottawa River and the lower reaches of tributaries flowing into Georgian Bay. Past ministry stocking and unauthorized introductions have substantially expanded their distribution within the zone.

Walleye stocking will focus on supporting existing populations while limiting further range expansion. Introductions into new waters will not be undertaken and not considered. Rehabilitation stocking may be considered where appropriate, using ecologically suitable strains.

PGT stocking of Walleye will continue where it is not expected to negatively impact coldwater fish communities in the stocked waterbody or connected waters. Marking of stocked Walleye may be used to assess natural reproduction, growth and survival and inform future stocking decisions.

Table 3.33 Summary of stocking strategies and actions for Walleye and their linkage to zone management objectives in FMZ 15.

Management Objective	Stocking Strategies
Maintain the number of Walleye populations.	S1. Do not introduce Walleye into new waters in FMZ 15. S2. Do not stock waterbodies supporting viable natural Walleye populations.
Maintain abundance of Walleye	S3. Conduct rehabilitation stocking of Walleye populations, where appropriate, using ecologically suitable strains.
Minimize further unauthorized introductions of Walleye in new waters in the zone	S4. Continue PGT stocking where it will not negatively affect Brook Trout or Lake Trout populations in the stocked waterbody or connected waters.
Species-Specific Actions	
• Develop FMZ-specific reference point indicators (i.e., for recruit and pre-recruit sustainable relative abundance) to avoid the deleterious effects of supplemental stocking. (S1, S2, S3) • Develop criteria to identify candidate waterbodies for Walleye rehabilitation, including consideration of rehabilitative stocking and fishing rules to restrict harvest, where appropriate. (S1, S2, S3) • Implement stocking actions identified in lake-specific rehabilitation strategies. (S3) • Develop educational materials explaining the biological limitations of Walleye stocking in FMZ 15 and alternative approaches to supporting naturally reproducing Walleye populations. (S1, S2, S3, S4)	

Other Coolwater and Warmwater Recreational Species

Supplemental and PGT stocking of Northern Pike, Muskellunge, Smallmouth and Largemouth Bass, and Panfish will not be undertaken in FMZ 15. These fisheries are generally supported through natural reproduction, and stocking is unlikely to address factors limiting their populations, such as habitat conditions and fish community interactions. This direction also supports objectives to limit further range expansion and unauthorized introductions.

3.3.6 Role of Community Hatcheries

Community hatcheries contribute to fisheries management in FMZ 15 through volunteer-based fish culture and stocking activities that support recreational angling opportunities. Stocking activities undertaken through the Community Hatchery Program must align with the management objectives and stocking strategies identified in this plan, as well as applicable provincial policies and guidelines.

3.3.9 Stocking Monitoring and Science Needs

Monitoring and assessment will be used to evaluate the effectiveness of fish stocking in achieving fisheries management objectives and providing recreational fishing opportunities in FMZ 15. Results will inform future stocking decisions, including adjustments to stocking approaches or the discontinuation of stocking where appropriate.

Monitoring priorities will consider the effectiveness of stocked fisheries, their contribution to reducing angling pressure on natural populations, and the suitability of waterbodies for continued stocking. Assessments will be guided by available resources, provincial monitoring programs and identified science needs.

3.4 Commercial Fisheries

Commercial fisheries in FMZ 15 primarily relate to baitfish management, as there are no commercial food fisheries in FMZ 15.

Commercial baitfish harvesting and use are managed in accordance with Ontario's Sustainable Bait Management Strategy (OMNRF 2020). The strategy provides direction for the sustainable harvest and movement of baitfish and leeches while reducing risks to native fish populations and aquatic ecosystems, including the spread of invasive species and disease.

3.5 Species at Risk

Several aquatic species at risk occur in FMZ 15 including American Eel, Engelmann's Quillwort, Grass Pickerel, Hickorynut, Great Lakes-Upper St. Lawrence population of Lake Sturgeon, Northern Brook Lamprey, Ogden's Pondweed, River Redhorse, and Shortjaw Cisco. Responsibility for provincial species at risk policy and administration rests with the Ministry of the Environment, Conservation and Parks (MECP) under the Species Conservation Act, 2025.

3.6 Invasive Species

Invasive species pose a significant threat to aquatic ecosystems and native fish communities in FMZ 15. In addition to species introduced from outside Ontario, fish native to other parts of the province can negatively affect aquatic ecosystems when introduced into waters where they did not historically occur. Unauthorized introductions of species such as Northern Pike, Walleye, bass and Panfish can affect native fish communities, particularly sensitive Brook Trout and Lake Trout populations.

Preventing new introductions and limiting the spread of established invasive species are important management priorities for FMZ 15. Management direction will focus on prevention, early detection, education and outreach, and protecting vulnerable fish communities, including watersheds connected to Algonquin Provincial Park (Table 3.34, Table 3.35, Table 3.36).

Table 3.34 Invasive species management strategy

Goal *Prevent unauthorized introductions and slow the spread of invasive fish and other aquatic species across waterbodies within FMZ 15*

Objectives	Indicator(s)	Benchmark(s)	Targets
Minimize the risk of the introduction and spread of invasive species through each of the identified pathways (O1)	Total number of invasive fish species present in zone and the number of occurrences for spiny water flea and zebra mussels and number of species detected (all sources, EDDmaps, BsM and ROM database)	Current rate of total number of species every 20 years (1976 – 1995 total of 7 invasive species and 1996 – 2015 total of 17 species) which is rate of spread of 2.4 (more than doubled) (see Background Report) FMZ 15 currently has the following occurrences: Spiny Water Flea: • Cycle 1 = 13 • Cycle 2 = 19 Zebra Mussel: • Cycle 1 = 5 • Cycle 2 = 19 18 total known invasive species (5 invasive fish, 6 aquatic invertebrates, 7 aquatic and semi-aquatic plants present in 2017 (see Background Report)	Reduce current rate of total number of species every 20 years (1976 – 1995 total of 7 invasive species and 1996 – 2015 total of 17 species) which is rate of spread of 2.4 (more than doubled) Reduce the current rate of occurrences between Cycle 1 and 2 for both spiny water flea and zebra mussels between BsM cycles (all sources, EDDmaps, BsM and ROM database) Evaluate total species every 20 years and occurrences each BsM cycle

Table 3.35 Invasive species management actions. Values in brackets denote which objectives each action addresses.

Invasive Species Management Actions
• Use the provincial Response Framework for New Invasive Species to guide responses to new introductions. (O1) • Work with partners to support prevention, early detection and appropriate response measures, including containment or control where feasible. (O1) • Implement liberal fishing rules to promote the harvest of introduced fish species, while considering other species objectives. (O1) • Prohibit the use of live baitfish in high-value and high-risk natural trout waters and waters that flow into Algonquin Provincial Park. (O1) • Continue working with commercial bait harvesters and dealers to support the effective implementation of their Hazard Analysis and Critical Control Point (HACCP) plans. (O1) • Monitor aquatic invasive species and pathogens through the BsM program and promote detection and reporting by conservation partners organizations and other partners. (O1) • Promote awareness and encourage the use of available tools to identify and report new occurrences. (O1) • Identify priority locations for signage, education, awareness and boat washing to help prevent the spread of invasive species. (O1) • Work with partners to develop and distribute information on preventing the introduction and spread of invasive species, including control and eradication efforts where appropriate. (O1).

Protection of Waters in Algonquin Provincial Park

Although fisheries within Algonquin Provincial Park are addressed through a separate planning process, activities in surrounding watersheds can affect fish populations within the park. The introduction of non-native species is a particular concern, especially in waters that flow into the park.

An assessment by Ridgway et al. (2018) identified potential pathways for aquatic species introductions into and within the park. Seven lakes outside the park were identified as having a higher risk of new introductions and the potential for species to spread into park waters. The assessment considered factors such as lake accessibility, shoreline development, and existing fish communities.

The management direction to protect fisheries in Algonquin Provincial Park from introduced species is shown in Table 3.36. This direction complements the species-specific management actions identified elsewhere in the plan. The use and possession of live baitfish will be prohibited in the seven identified lakes to reduce the risk of introducing non-native species into park waters. Additional bait restrictions may be considered in consultation with Advisory

Table 3.36 Management direction to protect waters in Algonquin Provincial Park from introduced species

Lake Name	Township	Management Direction
Corkery Lake	Ballantyne	Live baitfish may not be used as bait or possessed for use as bait.
Crown Lake	Livingstone	
Kawawaymog Lake	Ballantyne	
Kuwasda Lake	Ballantyne	
Little Tyne Lake	Ballantyne	
Tyne Lake	Ballantyne	
Waterloo Lake	Clara	

3.7 Fish Diseases

Fish diseases and pathogens can pose a threat to fish populations and fisheries in FMZ 15. Diseases caused by parasites, viruses, and bacteria may be introduced or spread through pathways associated with aquatic invasive species. Preventing their introduction and spread is therefore an important consideration in fisheries management.

The goals, objectives and actions included in Section 3.6 (Invasive Species) also apply to fish diseases and pathogens. These include monitoring for pathogens and responding to large-scale fish die-offs.

3.8 Education and Outreach

Education and outreach are important to achieving the fisheries management goals and objectives for FMZ 15. Providing information about fisheries management, fish populations, fishing rules and the pressures affecting aquatic ecosystems can increase public awareness and understanding, encourage responsible fishing practices and support fisheries conservation.

The ministry works with First Nations and Métis communities, stakeholders, government agencies, conservation organizations, and other partners to support fisheries management and stewardship. These partnerships contribute to public education, fisheries monitoring, habitat protection and restoration, and other activities that help conserve fish populations and aquatic ecosystems.

Management Strategy

The education and outreach goals, objectives, implementation measures and management strategies for FMZ 15 are outlined in Tables 3.37 and 3.38. The following implementation measures will be used to track delivery of outreach, engagement, and partnership activities that support achievement of these objectives. Additional education and outreach management actions are included in the relevant species-specific sections of the plan.

Table 3.37 Education and outreach management strategy for FMZ 15.

Goal *Increase public awareness, understanding and stewardship of fisheries resources in FMZ 15.*

Objectives	Implementation Measures
Increase public awareness and understanding of fisheries management, conservation issues and responsible fishing practices in FMZ 15. (O1)	• Number of education and outreach resources developed and distributed e.g., fact sheets, literature, reports, signage, etc. • Number of people reached, through education and outreach activities. • Number of education and outreach events delivered or attended (lake association meetings, presentations, tradeshows, etc.).
Increase participation by First Nation and Metis communities, stakeholders and partners in fisheries management and conservation activities in FMZ 15. (O2)	

Table 3.38 Education and outreach management actions. Values in brackets denote which objectives each action addresses.

Education and Outreach Management Actions
• Increase public awareness and understanding of the rationale for fishing rule changes and the life history requirements of fish species, with a focus on coldwater species. (O1) • Increase public awareness and understanding of the impact of introduced species (e.g., Largemouth and Smallmouth Bass, Northern Pike, Panfish, Baitfish, etc.) on coldwater fish populations and the importance of preventing their introduction into waters where they are not native. (O1, O2) • Promote fishing opportunities for underutilized coolwater and warmwater species to divert angling pressure from sensitive coldwater species. (O1, O2) • Install educational signs at roads and access points to coldwater lakes, particularly Brook Trout lakes. (O1, O2) • Use online and social media tools to share fisheries management information, increase public awareness and engage stakeholders in FMZ 15. (O1, O2) • Develop and distribute outreach materials to increase public awareness and understanding of the role of fish stocking in FMZ 15, including how stocking can provide alternative fishing opportunities and reduce pressure on vulnerable coldwater fish populations. (O1, O2) • Develop and promote best management practices for fish handing and catch-and-release to reduce fishing-related mortality, with particular emphasis on the impacts of deep-water fishing for Lake Trout. (O1, O2) • Develop and distribute educational materials to increase awareness and understanding of the importance of protecting fish habitat, including spawning, nursery, rearing, and feeding areas, and critical coldwater habitats. (O1, O2) • Work with partners to increase public awareness and participation in shoreline stewardship activities that protect and restore fish habitat and water quality in FMZ 15. (O1, O2) • Work with partners, as funding and staffing resources allow, to undertake and support priority fisheries projects, including spawning surveys, habitat and shoreline restoration, monitoring activities. (O1, O2)

3.9 Climate Change

Climate change is affecting fish populations, aquatic ecosystems and fishing opportunities in FMZ 15. Increasing water temperatures are reducing suitable habitat for coldwater species, such as Brook Trout and Lake Trout, while creating more favourable conditions for some warmwater species. Changes in precipitation, water levels, stream flows, and ice cover are also likely to affect fish reproduction, growth, and survival. These changes, together with the potential spread of invasive species, are expected to place additional pressure on vulnerable fish populations (Dove-Thompson et al. 2011 and Ridgeway et al. 2024).

Fisheries management in FMZ 15 will consider the effects of climate change through an adaptive management approach, consistent with provincial climate adaptation guidance (OMNRF 2024) and emerging science.

Key strategies for FMZ 15 include:

- Protecting coldwater fish populations and important habitats, including thermal refuges, groundwater-fed areas and spawning areas.
- Adjusting fishing rules and management approaches as conditions change to support fish populations and fishing opportunities.
- Reducing other pressures on aquatic ecosystems, including habitat degradation and the introduction or spread of invasive species
- Increasing public awareness and understanding of climate change impacts on fisheries and aquatic ecosystems.
- Working with Indigenous communities, stakeholders, researchers, and other partners to support climate adaptation and water resource management.

Information from BsM and other assessment programs will help identify changes in fish populations and environmental conditions. Relevant indicators may include water temperature, dissolved oxygen, ice cover, stream flows and water levels, fish community composition and species distribution, spawning timing, fish abundance and age structure.

Monitoring results and emerging science will inform an adaptive management approach, allowing fisheries management strategies to be adjusted as new information becomes available. By maintaining resilient fish populations and healthy aquatic ecosystems, FMZ 15 will be better positioned to adapt to the challenges and opportunities associated with a changing climate.

Management Strategy

The climate change goals, performance measures and management actions for FMZ 15 are outlined in Tables 3.39 and 3.40.

Table 3.39 Climate change management strategy for FMZ 15.

Goal *Support the resilience of fish populations and aquatic ecosystems in FMZ 15 through adaptive management*.

Performance Measures
Evidence that climate change considerations are incorporated into fisheries management decisions, including fishing rule changes and stocking strategies, where appropriate.

Table 3.40 Climate change management actions.

Climate Change Management Actions
• Consider climate change projections and the best available science when reviewing fisheries management strategies and proposing fishing rule changes. • Identify opportunities to reduce pressures on vulnerable coldwater fish populations, including through fishing rule changes and stocking strategies.

4. Monitoring

Monitoring provides the information needed to understand the condition of fish populations and aquatic ecosystems, evaluate the effectiveness of management actions, and support informed decision-making. It is a key component of adaptive management, allowing fisheries managers to adjust management approaches as new information becomes available.

Ontario's BsM program is the primary source of fisheries information used in FMZ 15. The program provides consistent, long-term data on fish populations, aquatic habitats, and ecosystem health across the zone (Lester et al. 2020). This information helps identify trends, assess the status of fisheries resources, and measure progress toward management objectives.

While BsM data provides the foundation for fisheries management, it does not address all management needs. In some cases, additional local assessments may be required to evaluate specific issues, such as fish stocking programs, spawning habitat use, or waterbodies managed under unique fishing rules. These targeted studies may be undertaken by the ministry, often in collaboration with Indigenous communities, partners, researchers, and stakeholders.

Monitoring and assessment priorities for FMZ 15 will continue to be developed in collaboration with the FMZ 15 Advisory Council and ministry science staff. Information gathered through monitoring programs will be used to guide implementation of this plan, evaluate management outcomes, and support future fisheries management decisions.

5. Implementation and Review of Plan

The FMZ 15 Advisory Council will continue to provide advice on implementation of the plan, including progress on management actions, monitoring results and emerging fisheries management issues. The Advisory Council will meet at least twice annually, with additional meetings held as needed.

6. Reporting, Review, and Amendment Process

Fisheries management plans do not have a fixed expiry date and are reviewed in response to monitoring and assessment results and emerging fisheries management issues. Implementation of management actions will be prioritized based on management needs, available resources and new information. A separate implementation plan may be developed, as needed, to support the coordination and tracking of management actions.

Reporting

Results from BsM and other relevant fisheries assessments will be used to evaluate progress toward management objectives and inform future management decisions. Monitoring results and updates on fisheries management activities will be shared with the FMZ 15 Advisory Council and made available to the public, as appropriate.

Review

The purpose of review is to assess progress toward achieving management objectives, confirm the continued relevance of goals and objectives included in the plan, and identify sections of the plan requiring updates. Results of the review will be shared with the FMZ 15 Advisory Council.

Amendments to the plan may occur before a comprehensive review is conducted. Depending upon the nature and scope of the proposed changes, consultation may be required. Amendments may be considered in response to emerging fisheries management issues, monitoring and assessment results, or new information.

7. Engagement and Consultation Summary

The development of the Fisheries Management Plan for FMZ 15 was informed by a multi-year engagement and consultation process involving First Nations and Métis communities and organizations, the FMZ 15 Advisory Council, stakeholders, municipalities, tourism interests, environmental organizations, anglers, local businesses, and members of the public.

The planning process was intended to support the development of measurable, achievable objectives and management actions that contribute to the long-term sustainability of fisheries resources and aquatic ecosystems within FMZ 15. This was informed by available science, monitoring information, provincial policies and direction, Indigenous knowledge and perspectives shared during engagement, and input received from stakeholders and the public.

Indigenous Community Engagement

FMZ 15 lies within the treaty areas and traditional territories of numerous First Nations and Métis communities. A total of 29 Indigenous communities and organizations are situated within or adjacent to FMZ 15. The Ministry invited Indigenous communities and organizations with interests in FMZ 15 to participate throughout the planning process. Opportunities for participation included information-sharing meetings, providing input on fisheries management priorities, participation on the FMZ 15 Advisory Council, review of planning materials, and consultation on the proposed Fisheries Management Plan.

Input and perspectives shared by Indigenous communities helped inform the development of the management objectives and actions contained within this plan. The Ministry acknowledges the importance of Indigenous Traditional Knowledge and continues to explore opportunities to increase First Nations and Métis involvement in fisheries management through ongoing collaboration and engagement. The Ministry appreciates the participation and contributions of Indigenous communities and organizations throughout the planning process.

FMZ 15 Advisory Council

The FMZ 15 Advisory Council provided advice and recommendations throughout plan development. The council included representatives from Indigenous communities and organizations, angling and conservation groups, lake associations, environmental organizations, fish culture interests, and other local stakeholders.

The Advisory Council provided valuable local knowledge and advice on fisheries management issues, management objectives, proposed management actions, fish stocking priorities, recreational fisheries rules, and public communications. Advisory Council members also served as an important link between the planning process and the broader communities and organizations they represented.

Public and Stakeholder Consultation

Public and stakeholder input was obtained throughout plan development through Advisory Council discussions, targeted engagement with stakeholders and Indigenous communities, public consultation opportunities.

A Background Information Report describing the status of fisheries resources within FMZ 15 was completed and made available to support engagement and consultation (OMNRF 2019). Following preparation of the plan proposal, the ministry undertook consultation with Indigenous communities, stakeholders, and the public through direct correspondence, meetings where requested, public information sessions, and an Environmental Registry posting.

Input received through these engagement and consultation activities was reviewed and considered in developing and refining the Fisheries Management Plan.

Detailed records of engagement and consultation activities including correspondence, presentations, meetings, comments received, and supporting materials, are maintained as part of the plan proposal and associated supporting documentation.

8. References

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9. Appendix

Abundance – A measure of how many fish are in a population or a fishing ground.

Adaptive management – A systematic process for continually improving management policies and practices by learning from the outcomes of previously employed policies and practices.

Biodiversity – The variation of life forms within an area. In the context of fisheries, the number and variety of organisms found within a fishery.

Biomass – The total weight of a fish species in each area. Can be measured as the total weight in kilograms or tonnes of a stock in a fishery or can be measured by area (e.g., per hectare).

Catch per unit Effort (CUE) – The number or weight of fish caught per unit of fishing effort. CUE is used as an indicator of relative fish abundance and can help identify changes in fish populations over time.

Climate Change – Any change in climate over time due to natural variability or because of human activity.

Cohort – Group of fish born in the same year within a population or stock.

Environmental Registry of Ontario (ERO) – An online registry where the Ontario government posts environmentally significant proposals, policies and decisions, including fisheries management plans and provides opportunities for public comment.

Fish – Any of various cold-blooded, aquatic vertebrates, having gills, commonly fins, and typically an elongated body covered with scales; the term "fish" can refer to more than one fish, particularly when the fish are from the same species; the term "fishes" refers to more than one species of fish.

Fish stocking – The practice of raising fish in a hatchery and releasing them into a waterbody to supplement existing populations, or to create a population where none exists. Stocking may be done for the benefit of fishing and to restore or increase a population of threatened or endangered fish in a body of water.

Fisheries Act (FA) – Fisheries legislation mandated by Fisheries and Oceans Canada.

Fishery – Activities leading to and resulting in the harvesting of fish. It may involve capture of wild fish or raising of fish through aquaculture. A fishery is characterized by the people fishing, the species caught, the fishing gear used, and the area of operation.

Fishery Management Zone (FMZ) – The designated geographic unit for fisheries assessment, monitoring, planning and management in Ontario.

Harvest – The number or weight of fish caught and kept from a given area over a given period.

Introduced species – Species brought into an area where it does not naturally occur but is able to survive and reproduce there.

Mitigation – Actions to reduce or minimize risk; in fisheries management: Application of fishing rules, restoring or enhancing fish habitat, etc.; in climate change: actions to minimize the sources or enhance the sinks of greenhouse gases.

Mortality – Mortality is a death rate from various causes, such as the proportion of a fish stock dying annually.

NA1 (North American standard gill net) – A standardized large-mesh gill net used in Ontario's BsM program to sample larger-bodied fish, generally greater than 20 cm in length.

ON2 (Ontario small-mesh gill net) – A standardized gill net used in Ontario's BsM program to sample smaller-bodied fish. ON2 nets are used to assess fish abundance and community composition.

Population – A specific part of the fish population being studied (e.g., spawning adult part of a Walleye population may be referred to as "spawning stock"): often referred to as a fish stock.

Precautionary principle – A moral and political principle which states that if an action or policy might cause severe or irreversible harm to the public or to the environment, in the absence of a scientific consensus that harm would not ensue, the burden of proof falls on those who would advocate taking the action.

Put-Grow-Take (PGT) – A form of fish stocking where small fish (either fry or yearlings) are stocked into a lake or stream with the intent that they grow to larger size and are caught by anglers. There is no intent to create a self-sustaining population with this approach.

Recruitment – The number of new young fish that enter a population each year. More pragmatically, it can be defined as the number of young fish that reach a size where they can be legally caught or become susceptible to being caught by a given fishing gear.

Recreational fishery – Fishing for sport or competition; fishing that does not constitute the individual's primary resource to meet nutritional needs and is not generally sold or otherwise traded on export or domestic markets.

Relative abundance – An index of fish population abundance used to compare fish populations from year to year. This does not measure the actual numbers of fish but shows changes in the population over time.

Sample – A part of a fish stock which is removed for study, and which ideally is representative of the whole. The greater the number and size of the samples, the greater the confidence that the information obtained accurately reflects the status (such as abundance by number or weight, or age composition) of the stock.

Spawning – The act of reproduction by fish. The deposition and fertilization of eggs in water.

Species – A group of organisms capable of interbreeding and producing fertile offspring.

Stakeholder – Anyone who has a stake or interest in the outcome of the project, as well as anyone who is affected by the project.

Statement of Environmental Values (SEVs) – The ministry's statement of environmental values and guiding principles to be considered as part of the resource management decision making process.

Year Class – A group of fish born in the same year.