



Regulatory Guidelines for Managing the Muskellunge Sport Fishery in Ontario

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NOTE: Since the approval of this document in 2003, MNR has launched the New Ecological Framework for Recreational Fisheries Management. A key component of this new framework is the establishment of Fisheries Management Zones (FMZs) which will replace fishing divisions as the unit for managing recreational fisheries (Appendix I). The recommendations for the application of the regulatory options given herein have been updated to be consistent with the new FMZs.

These guidelines describe the preferred regulatory options for the management of the muskellunge sport fishery in Ontario. The options are based on current scientific knowledge on the effectiveness of various regulations for managing muskellunge. They are a combination of management strategies designed to maximize angling opportunities while protecting muskellunge populations from over-exploitation.

In order to provide consistency to the management of muskellunge in Ontario, the regulatory guidelines contained herein are the only options to be used in the development of any new regulations for muskellunge. Where the existing regulations do not conform to the approach in this report, they should be analyzed using the criteria set out in the provincial Approvals in Principle process.

Introduction

Muskellunge (*Esox masquinongy*) are native only to North America and are distributed across the northeastern portion of the continent. In Ontario, there are at least 302 lakes and 105 streams and rivers, which support populations of muskellunge (OMNR 1987, Kerr 2001). Their distribution occurs in the southcentral and northwestern parts of the province. All of Ontario's muskellunge fisheries are based on naturally reproducing stocks. The only muskellunge stocking program currently underway involves small plantings of fish in the Spanish River area of the North Channel, Lake Huron, which are intended to restore a degraded population. There is also interest in the rehabilitation of Lake Simcoe's muskellunge population.

Muskellunge are a highly valued fish species. Ontario provides a wide diversity of angling opportunities ranging from those who merely wish to catch a fish to other anglers who may desire the opportunity to catch a trophy or even a world record.

A unique aspect of muskellunge fisheries is that most anglers practice a catch-and-release ethic with very little post-release mortality. It is estimated that less than 10% of the muskellunge angled from Ontario waters are actually harvested. This fact must be considered when regulatory options are being reviewed.

In Ontario, muskellunge have traditionally been managed on a regulatory basis by the use of closed seasons, catch and possession limits, size limit regulations and fish sanctuaries (see review by Kerr 1998). There have been two provincial reviews (1985 and 1999) of muskellunge regulations in the past. Over the past decade there has been a tendency for regulations to become increasingly complex and poorly rationalized. These guidelines have been prepared to

identify the most effective regulatory options to ensure sustainability and provide trophy fishing opportunities, based on existing science and current knowledge, and to simplify regulations, which are ultimately selected.

Open/Closed Seasons

Closed seasons have traditionally been used to protect muskellunge during their vulnerable reproductive period as they move to spawning sites, spawn, and disperse to summer feeding areas. Muskellunge are spring spawners at water temperatures between 9.4 and 15.0°C (Kerr and Grant 2000). Muskellunge generally spawn later in the spring than northern pike (*Esox lucius*).

There were ten different muskellunge seasons in Ontario in 2001 (Table 1). Traditionally, season opening dates occurred sometime in June and closing dates have ranged from October 15 to December 15.

Table 1. Open seasons for muskellunge in Ontario (2001) (Recreational Fishing Regulations Summary, 2001).

Open Season	Division(s)
June 2 (1 st Saturday) - November 15	6
June 2 (1 st Saturday) - November 30	13, 15, Bayfield and Maitland Rivers (Division 4)
June 2 (1 st Saturday) - December 15	1, 3, 4, 5, 7
June 3 - November 30	Lake Nosbonsing (Division 15)
June 15 (Friday before 3 rd Saturday) - November 30	12
June 16 (3 rd Saturday) - October 15	27
June 16 (3 rd Saturday) - November 30	2, 8, 9, 10, 11, 12A, 16, 17, 18, 20, 21, 22, 22A, 23, 26, 28, 29, 30, 31, 32, Pickerel River (Division 15)
June 16 (3 rd Saturday) - November 30 (during daylight hours only)	Eagle Lake (Division 22)
June 16 (3 rd Saturday) - December 31	French River (Division 15)
Open all year (closed on December 24)	14, 19, 24, 25, 33, 34

While season opening dates may reflect differences in climate to some degree, season closing dates are poorly rationalized. Angling opportunities can be increased by extending the open season without compromising resource sustainability. Anglers fishing late in the season are normally dedicated musky anglers that practice a catch-and-release ethic. Due to concerns

regarding mortality of released fish caught while ice fishing, a mid-December closing is believed to be appropriate across the province.

Recommended Season Dates:

- It is recommended that muskellunge seasons open on either the 1st Saturday in June or the 3rd Saturday in June, depending on latitude and local spawning conditions.
- Colder waters of the Great Lakes and some connecting waters (St. Marys River, Niagara River, Ottawa River and St. Lawrence River) should not open until the 3rd Saturday in June.
- The Lake Simcoe muskellunge fishery is currently closed all year for stock rehabilitation efforts and should remain closed pending further review.
- All muskellunge seasons should remain open until December 15.
- In FMZs where muskellunge are not present there should be no open season.

The following muskellunge seasons are recommended based on the Fisheries Management Zones (FMZs):

Table: 2. Recommended muskellunge seasons for Ontario

Season	FMZ
1 st Saturday in June - December 15	15,16,17,18,19
3 rd Saturday in June - December 15	2,4,5,7,9,10,11,12,13,14,20
No Open Season	1,3,6,8

Catch and Possession Limits

Historically, the daily catch limit for muskellunge was two fish. The catch limit was reduced to one (1) fish with a maximum of two (2) fish in possession based on recommendations from the 1985 regulatory review. There is currently a catch and possession limit of zero (0) for anglers holding a conservation licence, although they are legally allowed to angle for muskellunge, but they must immediately release any fish that they catch. Most species of fish in Ontario have the same catch and possession limits. This regulation has caused considerable confusion for anglers fishing for other species.

There were three different catch and possession limit regulations in Ontario in 2001 (Table 3).

Table 3. Catch and possession limits for muskellunge in Ontario (2001).

Division(s)	Catch Limit by Licence Type		Possession Limit by Licence Type	
	Sport	Conservation	Sport	Conservation
1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 22A, 23, 24, 25, 26, 27, 28, 29, 31, 32, 33, 34	1	0	2	0
12, 12A	1	0	1	0
30	0	0	0	0

In some instances, including rehabilitation of degraded stocks and introductions, catch-and-release only regulations are recognized as being appropriate. For example, Lac Seul (Division 30) is presently identified as a catch-and-release fishery only with a catch and possession limit of zero (0) for muskellunge, regardless of licence type.

The only other difference exists on the Ottawa River (Division 12) and Lake St. Francis (Division 12A). In order to be harmonized with fisheries regulations for the Province of Quebec, these two border waters have a catch and possession limit of only one (1) fish.

Recommended Catch and Possession Limits:

- **It is recommended that catch and possession limits for muskellunge be standardized at one (1) fish for holders of a sportfishing licence and zero (0) fish for holders of a conservation licence.**
- **Additional catch-and-release-only areas will be allowed by exception, similar to Lac Seul (in FMZ 4).**

Size Limit Regulations

Minimum size limits have traditionally been used to manage Ontario muskellunge. A minimum size limit is the length, which a fish must attain before it can legally be caught and retained. Muskellunge populations have been noted to respond favourably to an increase in minimum size limits in Lake St. Clair, Ontario (MacLennan 1996), Lake of the Woods, Ontario (Mosindy 1996) and Bone Lake, Wisconsin (Cornelius and Margenau 1999).

From 1949 to the 1980s, the minimum size limit for muskellunge ranged from 28-30 inches (71.1-76.2 cm). A provincial review of size limits was conducted in 1985 (OMNR 1985) and three new size limits were implemented in 1988. Since 1990 several additional minimum size limit regulations have come into effect. The proliferation of different minimum size limit regulations (see Table 4) led to a provincial review in 1999 (OMNR et al. 1999). This review was designed to provide a diversity of angling opportunities for muskellunge in the province, to

ensure that muskellunge regulations could be rationalized and meet sustainability objectives, and to establish benchmark values to simplify the regulations.

Table 4. Minimum size limit regulations for muskellunge in Ontario (2001).

Size Limit Regulation	Division(s)
34" (86 cm) total length	3, 4, 5, 6, 7, 9, 20, 21, 23, 24, 27, 28, 31, 32, 33, 34
36" (91 cm) total length	10,13,14,15, 18, 19, 25,26,29
40" (102 cm) total length	7 (6 waters), 8, 16, 17, 22
41" (104 cm) fork length	Ottawa River (Division 12)
42" (106.7 cm) total length	1 (Lake St. Clair)
44" (111.8 cm) total length	2, St. Lawrence River (Division 11), Lake St. Francis (Division 12A)
48" (122 cm) total length	11, French River (Division 15)
52" (132 cm) total length	Division 22 (10 lakes)
Total catch-and-release	Lac Seul (Division 30)

To ensure resource sustainability, all muskellunge should be protected until they have had the opportunity to spawn at least twice (i.e., have reached 7 years of age). This corresponds to a minimum size limit of 36" (91.4 cm). Based on the ultimate growth potential of muskellunge in a particular waterbody (see Casselman et al. 1999), minimum size limits can be used to provide various qualities of fisheries. Benchmark values for these types of fisheries were established at 36" (91.4 cm) 40" (101.6 cm), 44" (111.8 cm), 48" (121.9 cm) and 54" (137.2 cm). The most appropriate size limit must be based on the growth potential of fish from that waterbody. The first of these new regulations came into effect in 2001 and outstanding revisions, to ensure consistency with this strategy, are expected in the future.

Recommended Size Limits:

- **Minimum size limits will continue to be used to manage muskellunge populations in Ontario.**
- **A minimum size limit of 36 inches will be implemented as the provincial standard.**
- **Size limit regulations larger than the provincial standard will be considered for specific water bodies but must conform to one of the five benchmark values (40, 44, 48, and 54 inches) and be supported by the appropriate biological information.**
- **Water bodies that do not conform to the above should be changed to match one of the five benchmark values following the Casselman et al. (1999) criteria.**

- **All muskellunge size limits are to be measured in total length.**

Sanctuaries

Fish sanctuaries are designated areas where all fishing is prohibited. Sanctuaries can be seasonal in duration or extend for the entire year. Fish sanctuaries have not been used extensively for muskellunge in Ontario. Two examples of muskellunge sanctuaries are Nogies Creek (all year sanctuary, primarily for research purposes) and the area south of the Lake Scugog causeway (April - mid May). These sanctuaries are designed to protect sensitive muskellunge spawning and nursery areas. Stronks (1996) concluded that the seasonal sanctuary and closed season were effective in protecting muskellunge during their spawning period in Osler Marsh, Lake Scugog, Ontario.

Recommended Use of Sanctuaries:

- **Fish sanctuaries are a legitimate management option for muskellunge but should be used only in cases where it is necessary to take action to ensure the sustainability of the local muskellunge resource.**
- **Since fish sanctuaries prohibit all fishing activity, the designation of sanctuary status and exclusion of fishing opportunities must be well rationalized and based on concerns regarding resource sustainability.**
- **Sanctuaries can be year-round to protect vulnerable populations or a specific area, or could be used to extend the existing closed season to protect pre and post-spawning populations.**
- **All requests for sanctuaries should be reviewed with the Approvals in Principle committee.**
- **All fish sanctuaries should be reviewed on an ongoing basis to ensure that they are meeting fisheries objectives and are still required.**

Special Regulations

A number of special regulations have been used in other jurisdictions with varying degrees of success. These include bait and gear restrictions, tags, daylight-only angling, etc. There has been little evaluation of the effectiveness of these regulations.

Recommendation for Special Regulations:

- **The use of special regulations will be discouraged except where they are implemented on an experimental basis with plans for a thorough assessment of their relative effectiveness and a reasonable expectation for ensuring compliance so that the integrity of the experimental project is maintained.**

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Appendix I New Fisheries Management Zones for Ontario's Sport Fisheries