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Proposal for Managing the Recreational  
Fishery for Atlantic Salmon in Ontario

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This report describes the regulatory options for the management of Atlantic salmon (*Salmo salar*) in Ontario. The options are based on current scientific knowledge on the effectiveness of various regulations for managing Atlantic salmon. They are a combination of management strategies designed to provide angling opportunities (where they exist) while providing sufficient protection to allow for the successful re-establishment of Atlantic salmon where appropriate.

The goal of this approach is to ensure that regulations can be rationalized on a sound biological basis to achieve resource sustainability according to the Strategic Plan for Ontario Fisheries (SPOF II; OMNR, 1992).

In order to provide consistency to the management of Atlantic salmon in Ontario, the regulatory options contained herein are the recommended options to be used in the development of any new regulations for Atlantic salmon.

## Introduction

Atlantic salmon are a widely distributed fish species for which there are an abundance of historical reports regarding its importance, survival and distribution around the world. However in recent years, reports suggest that the species is in a state of decline in much of its historical range. In Ontario, the Atlantic salmon is only native to the waters of Lake Ontario, the St. Lawrence River and the tributaries that flow into these systems (Scott and Crossman, 1973). After severe habitat degradation and intense exploitation, the Atlantic salmon was extirpated from Lake Ontario by the late 1800s. Today, Lake Ontario's Atlantic salmon population is based on a stocking program which has been focused on assessing the feasibility of restoring this native species according to the Atlantic Salmon Restoration Plan for Lake Ontario (OMNR, 1995) and Lake Ontario's Fish Community Objectives (Stewart *et al.*, 1999). This small-scale stocking program was not intended to create a significant fishery for Atlantic salmon over the short term; however, some of these fish are encountered periodically in the Lake Ontario boat fishery (OMNR, 2003).

Presently the only known self-sustaining population in Ontario occurs in Trout Lake (near North Bay). This population was established from stocking events as early as 1935 (Scott and Crossman, 1973) and again in 1989 after a chemical spill in 1967 wiped out the original established population (Maraldo *et al.*, 1997). Atlantic salmon also occur in Lake Huron as a result of plantings of fish into the St. Mary's River by the Michigan State Department of Natural Resources. The OMNR does not actively manage this fishery but presently allows for minimal harvest of these fish by anglers. These fish have also been encountered in very rare instances in Lakes Superior and Erie (Behmer *et al.*, 1993).

In the Great Lakes, Atlantic salmon are known to migrate upstream into their spawning tributaries from May to October and proceed to spawn in the fall (October to November). Atlantic salmon, unlike their Pacific counterparts do not necessarily die after spawning and may spawn several times. Once they have spawned, the salmon head downstream to overwinter in the lake environment.

## Open/Closed Seasons

There are currently eight division-wide open seasons for Atlantic salmon in the Province of Ontario (Table 1) and several exceptions by waterbody (Table 2). Most Divisions are open from January 1-September 30. In many Divisions, the seasons are set with regard for the management of other species and not Atlantic salmon (e.g., Divisions, 13, 6 and 27) since they do not occur in most parts of the province.

Table 1. Current (2004) open seasons for Atlantic salmon in Ontario (based on the 2004 Recreational Fishing Regulations Summary).

Open season	Current Fishing Division(s)
January 1-September 30	1,2,3,4,5,7,9,10,11,12A, 14,15,16,17, 18,19,20,21,22/22A,23,24,25,26,28,29, 30,31,32,33,34,35
April 27 (last Saturday)-September 30	13
Closed all year	6
Open all year	8
April 26 (last Friday)-September 30	12
January 1-March 7 & May 20-September 30	27

Table 2. Examples of season exceptions for Atlantic salmon in Ontario (based on the 2004 Recreational Fishing Regulations Summary).

Season	Waterbody (Division)
Closed all year	All tributaries of Lake Ontario lying upstream of the QEW or Gardiner Expressway in the regional municipalities of Niagara, Hamilton-Wentworth, Halton, Peel, York, Wellington County and the City of Toronto excluding Highland Creek and the Rouge River (3, 4)  Highland Creek and Rouge River upstream of the south side of the C.N.R. bridge (4)
Year-round Open Season	All waters lying downstream of the Queen Elizabeth Way or the Gardiner Expressway in

	<p>the regional municipalities of Niagara, Hamilton-Wentworth, Halton, Peel and the City of Toronto (3, 4)</p> <p>Highland Creek and Rouge River downstream of the south side of the C.N.R. bridge to Lake Ontario (4)</p> <p>Cobourg Brook, Gages Creek, Ganaraksa River and waters of the Regional Municipality of Durham lying between the southerly limit of the C.N.R. right-of-way and Lake Ontario (6)</p>
3 <sup>rd</sup> Sat. in June – Fri. before 4 <sup>th</sup> Sat. in June	(18) Trout Lake, City of North Bay

The proposed recreational fishing seasons are illustrated below. These proposed seasons and all other recommended options contained in this toolkit are consistent with the regulatory principles developed for streamlining Ontario’s fishing regulations.

Proposed recreational fishing seasons for Atlantic Salmon in Ontario based on the new Fisheries Management Zones scheduled for 2007 (Appendix I).

**Recommended Season Dates:**

- **The Atlantic salmon fishing season for Lakes Superior and Huron (FMZ’s 9, 13 & 14) should be open all year.**
- **Trout Lake should continue to be managed by exception to provide limited fishing opportunities while protecting Ontario’s only self-sustaining population of Atlantic salmon.**
- **The Atlantic salmon season for Lake Ontario should be open all year. The Atlantic salmon season for Lake Ontario tributaries should be closed all year, to protect juveniles and spawners during this phase of recovery. The Lake Ontario Atlantic Salmon Recovery Team will set benchmarks for establishing stream fisheries and make recommendations about how harvest should be managed. This will be done as part of the recovery planning process.**
- **The Atlantic salmon season in all other waters should be closed all year.**

**Catch and Possession Limits**

Catch limit is defined as the number of fish an angler is allowed to catch and keep in one day. Fish that are caught and eaten that day are counted as part of the daily catch limit.

The possession limit is the number of fish that an angler is allowed to legally possess any time whether on-hand, in cold storage or in transit. In most cases, possession limits are the same as one day's catch limit. The concept behind catch and possession limits is to limit the harvest, to equitably distribute the resource among users, and to convey a realistic expectation regarding capacity of the fishery resource.

Salmon and trout are considered under an aggregate catch limit, where catch and possession limits for any one species represent the total allowable combined catch of salmon and trout. In some cases the proportion of the aggregate catch that one species may represent is restricted (e.g., in some divisions with an aggregate catch of five fish, only one can be a lake trout).

All divisions in the province have an Atlantic salmon catch and possession limit of 1 fish for holders of a sport fishing licence and 0 fish for holders of a conservation licence. The only exception is Trout Lake (City of North Bay), Division 18, where the catch and possession limit for both the sport and conservation licence is 1 Atlantic salmon **or** 1 lake trout within the provincial salmonid aggregate limit of 5. There should be one standard catch and possession limit for Atlantic salmon in the province (see below).

Proper identification of juvenile and adult Atlantic salmon has been a major enforcement and management issue for both Trout Lake and Lake Ontario. Generally, Atlantics are misidentified as lake trout (Trout Lake) or brown trout (Lake Ontario). Educating anglers to properly identify their catch will be key to the success of any management program.

### **Recommended Catch and Possession Limits:**

- **The provincial standard for Atlantic salmon should be 1 fish (holders of a sport fishing licence) and 0 fish (holders of a conservation licence) for all waterbodies.**
- **Atlantic salmon should still be considered as part of an aggregate limit with other trout and salmon.**

### **Size Limits**

Ideally, size-based regulations should reduce the biological impacts of angling but not restrict angling opportunities. Size limit regulations are usually intended to increase the size of fish caught, maximize yield, and protect brood stock, while maintaining angling quality, often at increased levels of effort. There are three basic types of size limits: (1) minimum size limit where by all fish below a certain size must be released; (2) slot size limit under which all fish within a designated range must either be released (protected slot) or retained (harvested slot); and (3) maximum size limit where all fish above a designated size must be released. Size-based regulations require a thorough knowledge of growth rates, maturation schedules and recruitment for an individual fish population.

The following guidelines are provided for evaluating the potential of a size limit regulation for Atlantic salmon:

- Select the most appropriate type of size limit based on characteristics of the Atlantic salmon population and the objectives of the regulation. Generally, protected slot size limits should be utilized in cases where there is good natural reproduction, slow growth of younger fish and high angling effort. Maximum size limits should only be used in instances where there is low density of brood stock and where natural recruitment is low. Minimum size limits should be used when natural reproduction is poor, growth rates are high in younger fish and fishing pressure is also high (Noble and Jones, 1999; Brousseau and Armstrong, 1987)
- Ensure that biological information is collected and utilized to rationalize the use of size limit regulations.
- Only one type of size limit regulation should be utilized on an individual waterbody.
- Do not vary size limits over the course of the angling season.
- Evaluate the success/failure of size limit regulations based on the original management goals and objectives and revise or revoke size limit regulations, accordingly.

There is currently one division-wide size limit in existence for Atlantic salmon which is a minimum of 63 cm in Division 8 (Lake Ontario). This same minimum is also applied to all tributaries flowing into Lake Ontario (Table 3). A second size limit exists in Trout Lake with a maximum of 55 cm (Table 3). The Lake Ontario minimum size limit was adopted from the New York State Department of Environmental Conservation’s regulation for Atlantic salmon designed to protect the majority of the population (both mature and immature) in order to restore this native species (Dan Bishop, pers. comm). The maximum size limit on Trout Lake, on the other hand, was implemented to harmonize the size limit and season with lake trout which was endorsed by the public to protect the few remaining brood stock in the lake and eliminate problems of misidentification (Dave Fluri, pers. comm).

Table 3. Current (2004) size limit exceptions by waterbody for Atlantic salmon in Ontario (based on the 2004 Recreational Fishing Regulations Summary).

<b>Size limit</b>	<b>(Division) Waterbody</b>
Minimum 63 cm	Lake Ontario (Div. 8) and all tributaries of Lake Ontario in Divisions 3,4,6,7,9
Maximum 55 cm	(18) Trout Lake (City of North Bay)

**Size Limit Recommendations:**

- **The size limit on Trout Lake should remain in place, however, the limit should be assessed to determine its effectiveness in managing Atlantic salmon.**
- **The minimum size limit on Lake Ontario should remain in place.**
- **No other size limits are recommended for those areas with open seasons.**

- **The use of future size limit regulations must be thoroughly rationalized and fully evaluated.**

## **Fish Sanctuaries**

Fish sanctuaries are designated areas where all fishing is prohibited. Sanctuaries can be seasonal in nature or extend for the entire year. Presently there is only one sanctuary (a tributary of Trout Lake in FMZ 11) specific to Atlantic salmon, however, the need for more sanctuaries may become necessary as populations are re-established.

### **Sanctuary Recommendations**

- **Sanctuaries may be needed in the future if natural reproduction occurs in order to protect fish in prime spawning habitat, staging areas, or during vulnerable spawning periods.**

## **Special Regulations**

Special regulations are those that differ considerably from province-wide regulations and are designed to recycle all or a portion of the angler's creel (Imhof 1989). They may include restrictions on gear (e.g., artificial flies only, barbless hooks only), bait (e.g., artificial vs. live bait), as well as harvest (e.g., catch-and-release only). Special regulations must be established based on valid biological criteria and with well-established objectives.

Special regulations are usually implemented in heavily fished waters to prevent overexploitation or in waters where anglers have expectations of increased catch rates or the opportunity to catch a large fish. These types of regulations are based on the assumption that trout and salmon can be angled and then released with no significant mortality.

Presently there are no special regulations directed at Atlantic salmon fisheries in Ontario. If future special regulations were considered for implementation, several biological concerns would need to be addressed. Although the results of some studies endorse a catch-and-release fishery for Atlantic salmon (i.e. Tufts *et al.*, 1991), other studies suggest that there can be significant mortality of released fish, depending on fishing technique (Warner and Johnson, 1978).

### **Special Regulations Recommendations**

- **Special regulations may be needed in the future if it is determined that certain populations may sustain limited fishing pressure (i.e. catch and release) especially in their spawning tributaries when they are especially vulnerable to angling.**

- **Catch and release and/or artificial lures only regulations may be appropriate options to consider in the future.**

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*Appendix I: Fisheries Management Zones for 2007*

