ASSOCIATION
PERKINS-SUR-LE-LAC
FISH STOCKING REPORT
APRIL 2004

HOW TO MANAGE A STOCKING PROGRAM[1]

A well-managed stocking program requires a good control of fishing activities. The number of fish stocked and the number caught should be recorded in order to determine fishing activity. However, that is easier said than done when it comes to lakes in cottage country.

Mobilization on the part of the anglers is required because the controls must be done voluntarily (over and above the fishing regulations). In cottage country, there are no control points where the anglers must register their catch the way it is done with Outfitters and in Parks and Reserves. The cottagers have to rely on the goodwill of anglers, on public awareness, as well as other strategies.

To ensure the success of a stocking program, the anglers must be disciplined, should contribute to the stocking fund and must faithfully record their catches. Fishery management is everyone's business. An efficient way has yet to be found to voluntarily include the non-residents and to ensure that all the anglers contribute to the stocking fund. It is also understandable that the cottagers do not like to see non-residents fishing on their lake without having contributed to the fund and without registering their catches.

Identification Stickers to Facilitate Control

The first step is to identify all boats belonging to the cottagers using stickers that have the same colour as those of the Association. The second step is to identify those who have contributed to the stocking fund using a second sticker in the shape of a fish and applied on top of the first one. The second sticker indicates that the angler has contributed to the fund and should be a different color from year-to-year. It is then easy to identify those who did not contribute to the fund and those who are non-residents. In both situations, the approach is the same: a member of the Association responsible for the program approaches the people without the identification.

The member explains to them that the reason trout is present in the lake is thanks to a stocking program which has cost thousands of dollars over the years (approximately $30,000 to date) and that proper management of it requires that all catches be registered. This is a control system that is responsible, voluntary, friendly, and relies on the good will of the anglers. In the majority of cases, the anglers easily understand the situation, are happy to contribute to the fund and accept to register their catches. This is an excellent way to reach all the anglers, residents or not, and to inform them about the fish management program on our lakes.

For a successful management, anglers must register their catches. Some associations have distribution boxes at strategic points on the shore of the lake, while others prefer to distribute the forms door-to-door or by mail. A sample form is attached as part of this report.

TYPES OF FISH TO STOCK

This is an overview of several freshwater fish species that are common to Canada and Quebec. It should be noted that some of the species mentioned are not indigenous but have adapted well, e.g. rainbow trout.

Speckled Trout

The spawning season of the *Speckled Trout* is the fall. It usually takes place in shallow water on a gravel bottom at the head of a stream. The *Speckled Trout* can also spawn on a gravel bottom in lake shallows, where a spring surges and the current is moderate. The *Speckled Trout* has a relatively short life span; in the wild, it rarely lives more than five years. It is sexually mature by the age of three, though individual specimens can reproduce by the age of two.

It is found in cool, clear and well oxygenated lakes. When the lake warms up, the *Speckled Trout* seeks areas where the temperature is below 20ºC.[2] It eats anything that will fit in its mouth: worms, blood suckers, crustaceans, insects and numerous species of fish. In a week, it can eat a quantity of minnows equal to 50% of its weight.

The *Speckled Trout* prefers to remain in deep water where the temperature varies between 11ºC and 13ºC, and is rarely found where the temperature is above 18ºC. It can survive in water containing 5 ppm (parts per million) of dissolved oxygen. Its oxygen requirements are lower when the water is cooler.[3]

The Rainbow Trout

The *Rainbow Trout* spawns in the spring in streams flowing into or out of lakes and usually prefers a fine gravel bottom. Its life span is three to four years in most lakes but it can be six to eight years in the Great Lakes. It reaches sexual maturity at one-and-a-half to two years of age.

Rainbow Trout thrives where the water temperature is 21ºC or lower. If the temperature is higher, it can survive as long as it can find areas where the water is cooler and well oxygenated. It does, however, prefer temperatures between 13ºC and 16ºC. It can survive in water containing 5.0 ppm of dissolved oxygen. Its oxygen requirements decrease as the water gets cooler.[4]

It is quite voracious and will eat plankton, insects, crustaceans and other fish. Fish must be its main source of food if it is going to become a large fish. It is normally a bottom feeder but it is well known for catching insects approaching the surface, or, settling to lay their eggs.[5]

Lake Trout (Gray Trout)

The *Lake Trout* spawns in the fall on a rocky or pebbly bottom and is found only in relatively deep lakes. The *Lake Trout* prefers cool water between 9ºC and 11ºC. It will die if the temperature is higher than 18ºC. During the summer, it will go as far down as 200 feet looking for cool water. Many lakes have the required temperature for *Lake Trout* but they may not have the required oxygen levels. Lake Trout grows very slowly and, consequently, can easily be over fished.[6]

Lake Trout is a predator and will eat crustaceans, insects and a variety of fish, such as lake whitefish, smelt, yellow perch and long nose sucker.[7]

The Brown Trout

The spawning season of the *Brown Trout* is late fall and early winter. The conditions are essentially the same as for the Speckled Trout, i.e. shallow water with a gravel bottom. It can also spawn on a rocky reef along the shore. A few 13-year old catches have been recorded.
The *Brown Trout* can tolerate water temperatures slightly higher than the Speckled Trout. The optimum temperature is between 18ºC and 24ºC. Its diet is varied and includes land and aquatic insects, crustaceans, mollusks, frogs and a wide variety of fish. Fish and crayfish are the main staples of its diet.[8]

The Splake

The *Splake* is a hybrid between a male Speckled Trout and a female Lake Trout. It has inherited a mix of its parents' characteristics. The *Splake* is raised in fish farms as they are presumed to be sterile in the wild, although they will still make spawning runs in the fall.[9] They are usually stocked in cool water lakes where either Lake or Speckled Trout have not been able to survive.

Its growth is slower than that of the Speckled Trout and faster than that of the Lake Trout. Like the Speckled Trout, it requires a good level of oxygen and a comfort zone of at least two metres of water at a temperature of 18ºC or lower. *Splake* are carnivorous predators feeding on other fish including smelt, white perch and sculpin, as well as insects and crayfish.

The Ouananiche

The *Ouananiche* is a land locked Atlantic Salmon which has adapted to freshwater or lake environments. Like all salmonidiae, it has very specific temperature and oxygen requirements and prefers temperatures between 9ºC to 11ºC. However, it does not tolerate temperatures above 16ºC. It is known to spawn in late fall. The adult eats mainly small fish. It is said to prefer American Chubb. Although the Lac Saint-Jean region is the home of the Ouananiche, it can also be found in many other lakes. It can also be raised on fish farms.[10]

Overview of Different Species of Fish

Fish Species	Water Temp Range	Max Temp	Oxygen Levels	Life Span	Sexual Maturity	Spawning
Speckled Trout	11ºC to 15ºC	18ºC	5.0 ppm	5 years	3 years	Fall
Rainbow Trout	13ºC to 16ºC	21ºC	5.0 ppm	3 to 8 years	2 years	Spring
Lake Trout (Gray Trout)	9ºC to 11ºC	18ºC	8.3 ppm	20 to 25 years	4 years	Fall
Brown Trout	18ºC to 24ºC	24ºC	7.8 ppm	3 to 10 years	4 years	Fall
Splake	9ºC to 11ºC	18ºC	±6.1 ppm	5 years	Sterile	Fall
Ouananiche	9ºC to 11ºC	16ºC		4 to 8 years	4 years	Fall

CONCLUSION

Stocking Program Management

The efficient management of a stocking program depends on the ability to measure its success. In order to do this, a registration system should be implemented to keep track of the number of trout that are stocked and the number that are caught. The breakeven point is approximately 55%[11] (to encourage private funding for the program). In other words, if 1,000 trout are introduced into the lake in the fall, at least 550 fish must be caught during the next season.

The number of catches depends on the number of anglers and the effort they put into fishing. Consequently, this factor should also be taken into consideration when determining the number of trout to be stocked.

If the Association does decide to implement a fish management program, it should be noted that the additional costs will affect the fish stocking budget and that anglers should be encouraged to contribute additional money to the fund each year.

Fish Stocking

It should be noted that *Speckled Trout* and "*Quebec Red*" are definitely indigenous to our lakes, and that over the years the Association has stocked the lakes with the following types of trout: Speckled ("Omble de chevalier"), Rainbow (non-indigenous) and Lake/Gray (only twice), with Rainbow being the trout of choice over the past ten years. In so doing, the Association over the last decade has indeed changed the ecological environment within our lakes. However, it should be noted that within a century, Rainbow Trout is now considered a "native" species due to its ability to adapt in various habitats and environments within North America.

Being an indigenous species, Speckled Trout are well suited for our lakes. However, they are more fragile than Rainbows as they more easily succumb to sickness when injured. They are also less predatory than the Rainbow Trout in their eating habits. Speckled Trout also prefer higher levels of oxygen and are more susceptible to warmer temperatures than the Rainbow Trout. Although a treat to catch, Speckled Trout are much more difficult to fish as they like cold, deep water during the summer months. Their elusiveness could affect financial support to the stocking program.

When the first Rainbow Trout were stocked within our lakes, the Ministry of Environment of Quebec was reticent to issue a permit for the Association to stock the lakes with Rainbow Trout. The argument at the time was to try and rid/control the Rock Bass population which is not indigenous to our lakes. It should also be noted that two years ago, an angler reported that he had caught a large Rainbow Trout with 14 rock bass in its stomach.

Our supplier, Épiculture Guy Therrien (Ripon, Quebec), has confirmed that all the fish that they have stocked over the years (approximately 28,000) were not sterile and that they should be able to spawn in within our lakes.

As the research reveals, the good intentions of the Association in stocking the lakes has led to a predominance of Rainbow Trout. In this point in time, it is urged to continue stocking with *Rainbow Trout* as it can readily adapt to the deteriorating water quality and oxygen levels within our lakes.

Respectfully submitted,

France Joncas
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SAMPLE REGISTRATION FORM FOR ANGLERS

REGISTRATION FORM
(One per Angler)

To ensure the success of fishing on your lake, please participate in the Association's fish management program. Register all your catches on a daily basis. Indicate each day that you went fishing even if you did not catch anything.

Instructions for Completing the Registration Form

- Five (5) minutes of fishing in a day is considered a day of fishing and the date must be entered.
- Fishing three (3) times a day is considered as one day of fishing. The date and the total number of hours must be entered.
- All types of fish caught must be entered, even those that are not considered a sport-fish; for example sun fish.

Angler's Name:

The lake on which your cottage/property is situated:

Date	Lake	Type of Fish	Number of Fish		Hours of Fishing
			Caught	Released	

ENDNOTES

[1] Le Sauteur, Tony. "How to manage a stocking program". FAPEL (Fédération des associations pour la protection de l'environnement des lacs).

[2] Scott, W.B. and E.J. Crossman. *Freshwater Fish of Canada*. Univeristy Press of Toronto, 1967.

[3] Sternberg, Dick. *The Compleat Freshwater Fisherman*. Galahad Books. January 1992.

[4] Sternberg, Dick.

[5] Scott, W.B. and E.J. Crossman.

[6] Sternberg, Dick.

[7] Scott. W.B. and E.J. Crossman.

[8] Scott, W.B. and E.J. Crossman.

[9] Johnson, Merle. W. *The Management of Lakes for Stream Trout and Salmon*. Minnesota Department of Natural Resources, Division of Fish and Wildlife, Section of Ecological Services, February 1998.

[10] Scott, W.B. and E.J. Crossman

[11] Le Sauteur, Tony. "The first year of stocking". FAPEL.