

Subject: Fish Stocking Policy



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1.0 Policy

1.1 Policy statement

It is the policy of the Department of Natural Resources (DNR) that wild strains of fish native to New Brunswick may be stocked in provincial waters where justified on the basis of ecological, economic and social costs/ benefits, and if consistent with the conditions outlined herein.

1.2 Background

The New Brunswick Department of Natural Resources (DNR) shares responsibility with Fisheries and Oceans, Canada for freshwater fisheries management. As described in the “Canada - New Brunswick Memorandum of Understanding on Recreational Fisheries”, New Brunswick has the primary responsibility for the management of recreational fisheries for 19 freshwater fish species, including landlocked Atlantic salmon and trout species.

DNR’s fisheries program aims to sustain fish populations and biodiversity while providing quality recreational angling opportunities in New Brunswick. In keeping with these goals, DNR’s fish management strategies focus on responsible management of fish habitat and fish populations to promote natural reproduction of wild fish populations. Despite this, stocking fish is sometimes warranted to maintain populations or enhance recreational fisheries.

When applied improperly, stocking can be detrimental to the natural aquatic biota and can result in a loss of resources through competition, predation, and gene pool dilution. New Brunswick waters have varied and complex physical, chemical and biological characteristics which must be carefully considered when determining the best strategies for sustainable fisheries management. Given the cost and risks associated with fish stocking, it is important that the department consider all other management options prior to stocking.

Stocking fish to New Brunswick’s inland waters was initiated by the federal Department of Fisheries and Oceans in the 1870’s. The New Brunswick Department of Natural Resources began rearing and stocking fish in 1976 and continued to raise fish for stocking purposes until 2004, when a decision was made to decommission the provincial fish hatchery. In 2005, a mandatory five dollar “Fish Stocking Conservation Fee” was added to the cost of angling licenses (except Crown Reserve and Day Adventure licenses) to generate revenue for the purchase of fish rearing and stocking services from private facilities. While these services are solicited through a Request for Proposal (RFP) process, the Department of Natural Resources will continue to decide which waters to stock and to determine the species, strains, and quality of fish to be raised for DNR stocking initiatives.

1.3 Policy objectives

The objectives of this policy are to:

- Ensure that DNR's fish stocking program is based on sound scientific principles that minimize negative impacts to natural populations.
 - Optimize public benefits.
 - Ensure that DNR's stocking practices are consistent throughout the province.
 - Provide and implement a decision-making framework for DNR's fish stocking program that ensures objective decisions in determining the waters to be stocked.
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1.4 Definitions

For the purpose of this document these terms are defined as follows:

Brood stock: fish intended for use in reproduction.

Brook trout: *Salvelinus fontinalis*, a species of trout that is native to and common in New Brunswick waters.

Certified disease free: the absence of Schedule II diseases as defined in the Department of Fisheries and Oceans (DFO) Fish Health Protection Regulations (FHPR) (<http://laws.justice.gc.ca/en/F-14/C.R.C.-c.812/>).

Depressed population: a fish population that has dropped below a self-sustaining level.

DNR/ Department: the New Brunswick Department of Natural Resources.

Exceptional waters: Certain lakes and streams throughout New Brunswick will be designated as "Exceptional waters" as a result of their unique features (the presence of a rare species, the presence of a unique fish strain, the pristine or remote nature of the water, etc.), and will not be stocked unless for population rehabilitation purposes.

Genetically appropriate: refers to stocking fish with a genetic makeup (origin, diversity) that, based on existing scientific information and / or the genetic information available on local fish populations, will minimize impacts to the genetic integrity of wild populations.

Lake trout: *Salvelinus namaycush*, a species of trout that is native to New Brunswick waters and is typically only found in deep cold water lakes.

Landlocked Atlantic salmon: *Salmo salar*, a native strain of Atlantic salmon which spends its entire life cycle in fresh water.

Marking: the act of: 1) removing a specific, pre-determined fin (adipose, ventral or a combination); 2) applying a tag / mark to an individual so as to be able to identify and age the stocked fish when/ if it is caught.

Native fish: a fish species that is indigenous to New Brunswick waters.

Production fish: fish reared from brood stock for the purpose of stocking lakes, ponds, and rivers throughout the province.

1.4 Definitions
continued

Region: one of four DNR Administration Regions (see appendix).

Salmonid: a fish from the family of fishes which includes salmon, trout, char and whitefish.

Strain: a group of individuals with common ancestry that exhibits genetic, physiological or morphological differences from other groups of the same species.

Wild fish: Any species of fish occurring, growing, or living in a natural state in provincial waters that has not been artificially reared or domesticated.

Wild strain: a fish having the genetic, physiological and morphological characteristics unique to a self-sustaining, naturally reproducing population of fish. This can include hatchery-reared fish that are no further removed from the wild than f2 generations.

2.0 Scope and Application

2.1 Application This policy applies to the Department of Natural Resources' fish stocking program.

While this policy does not apply to fish stocked by others in New Brunswick, all proponents interested in stocking fish in provincial waters must follow the Introduction and Transfers Committee's '*Procedural Guide: Private Sector Involvement in Enhancement of the Public Fisheries Salmonid Resources*', available from the I&T committee Secretariat at (506) 851-6207.

This policy outlines the requirements, principles and general procedures of DNR's fish stocking program. Detailed fish stocking procedures and information about the process by which DNR will acquire fish for stocking are found in the "New Brunswick Department of Natural Resources Procedural guidelines for fish stocking".

This policy does not apply to stocking efforts for the recovery of species at risk. Such efforts are addressed under the recovery planning process according to the federal *Species At Risk Act*.

2.2 Authority

Provincial Statutes

Fish and Wildlife Act
Clean Environment Act
Endangered Species Act
Canada - New Brunswick Memorandum of Understanding on Recreational Fisheries

Federal Statutes

Fisheries Act
Fish Health Protection Regulations
Fishery (General) Regulations
Species At Risk Act

3.0 Stocking Principles

3.1 Stocking strategies

All stocking will comply with one of the following two stocking strategies:

Fishery Enhancement: Fish stocking is used to provide increased recreational angling opportunities. This strategy applies to waters deemed suitable for stocking, where the stocked fish or enhanced populations will not significantly impact the naturally-occurring aquatic community.

Re-habilitation: Fish stocking is used, in conjunction with any requisite changes to angling regulations and other appropriate management strategies, to help a locally or regionally depressed wild, native fish population return to a self-sustaining state.

Although a small proportion of DNR's fish stocking program, stocking to rehabilitate fish populations will always take precedence over stocking for fishery enhancement.

3.2 General principles

Stocking will occur in a way that minimizes negative impacts to aquatic resources while maximizing public benefits. To that end, DNR fisheries staff will:

- Only stock fish that are:
 - native to New Brunswick,
 - of wild New Brunswick strain,
 - genetically appropriate, and
 - certified disease free.
 - Only stock waters that have:
 - a capability to support the stocked fish.
 - acceptable public access.
 - Identify unique waters that should not be stocked, unless required for population re-habilitation. In such cases, brood stock native to the specific water body will be used, if available.
 - Generally, only stock a body of water with a fish species known to exist or have previously existed in that water.
 - Ensure a broad review of the potential impacts of stocking by involving DNR staff with expertise in other areas (biodiversity, species at risk, etc.) in stocking proposal reviews and other components of the program (eg. designation of exceptional waters).
 - Consult with the NB Wildlife Federation, NB Salmon Council and, when appropriate, watershed management groups involved in fisheries management with DNR.
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3.3 Decisions to not stock

In general there will be no stocking of waters:

- With an acceptable recreational fishery already present, as assessed by DNR.
 - That are producing managed salmonid species (landlocked salmon, brook trout, lake trout) near their carrying capacity.
 - With previous poor stocking results, as determined by DNR.
 - Without prior consultation with appropriate representatives from neighboring jurisdictions when stocked fish could migrate to waters in those jurisdictions, such as on boundary waters.
 - Where stocked fish could harm other species at a population level.
 - Specifically for fishing tournaments or for direct commercial benefit.
 - Where the fish species to be stocked is not native to those waters. In rare circumstances, DNR may consider stocking a fish species that is native to New Brunswick but not native to the target water; however, such a stocking will not occur unless a comprehensive risk assessment shows that it will not be detrimental to existing wild populations. DNR fisheries staff will use the framework of the 'Aquatic Organisms Risk Assessment' from the National Code on Introductions and Transfers of Aquatic Organisms to evaluate risks.
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3.4 Pre-requirements

The following are required prior to initiating fish-stocking projects:

- a clear description of the objectives of the project and quantifiable measures to evaluate its success.
 - a review of the ecological, economic and social impacts of the project.
 - a determination that stocking is the most appropriate management strategy.
 - a determination of the appropriate species, strain, age class and stocking rate.
 - proper permitting from the New Brunswick Introduction and Transfers Committee.
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3.5 Fish standards

DNR's fish stocking procedural guidelines will be used to establish a stocking rate and fish requirements (species, genetics, age, health, marks, etc.) specific to each stocking initiative. While these criteria may vary from water to water, DNR has established the following general principles with respect to fish standards:

Species:

The focus of the Department's fish stocking program will be on brook trout, landlocked salmon and, in future years, may include lake trout.

Strain:

In an effort to maintain the genetic integrity of wild populations, the Department will use only wild New Brunswick fish strains for stocking purposes.

Fish age:

Based on the chosen management strategy, the Department will generally stock fish as either fall fingerlings (age 0+) or spring yearlings (age 1). Other age classes will be considered for stocking on a case by case basis.

Health and condition:

All fish to be stocked in New Brunswick waters must meet Department of Fisheries and Oceans health requirements per the Fish Health Protection Regulations (<http://laws.justice.gc.ca/en/F-14/C.R.C.-c.812/118168.html>) and the Fishery (General) Regulations (<http://laws.justice.gc.ca/en/F-14/SOR-93-53/>). Prior to stocking, the fish must meet quality standards based on an inspection by the Department of Natural Resources fishery enhancement biologist.

Marking / tagging:

To ensure hatchery origin fish can be easily distinguished once released among wild fish, each must be given a mark prior to stocking. The ability to identify stocked fish in the wild is essential when conducting follow-up monitoring to evaluate the success of stocking efforts.

DNR biologists will determine the specific mark(s) or tag required to identify hatchery origin fish distributed to various waters. Generally, stocked fish are marked with a fin-clip that varies based on the year or location of stocking.

4.0 Stocking Assessment Procedures

4.1 General process

DNR's fish stocking program is contingent on:

- the biological suitability and potential of the receiving waters;
- current and anticipated demand/ use by anglers;
- a lack of effective alternative management options.

The following three-step process will be used to decide which waters will be stocked:

- 1) A broad and objective analysis of assessment data to determine if stocking is an appropriate management strategy for each of the waters proposed to receive fish.
 - 2) The development of a prioritized stocking list.
 - 3) A determination of the availability of resources required for specific stocking projects (i.e. fish of the appropriate species, strain and/ or age class).
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4.2 Pre-stocking assessment

DNR will determine which waters require fish stocking based on an analysis of survey information detailing the physical, chemical, and biological characteristics of each water. This information is used to discover the factors limiting the production or growth of a managed fish population and in determining the appropriate management strategy, or strategies, to address these limitations. In many cases fish stocking is not the most appropriate or effective management option, or is only effective when implemented with other strategies such as harvest reductions or habitat enhancement. As a result, stocking will be considered after all other management options are evaluated.

Surveys must be conducted by qualified individuals and should include (but are not limited to) lake or stream assessments of fish habitat and fish populations, as well as an evaluation of angling activity and success. Additional surveys may be necessary if a species of conservation concern is suspected or known to exist in the waters targeted for stocking. The requirement for, and the nature and extent of these additional surveys will be determined on a case by case basis by DNR species at risk specialists.

4.3 Stocking proposals

Generally, proposals for new stocking initiatives will be developed by DNR Regional Fisheries Biologist(s) when routine fish population and habitat monitoring work indicates a need to re-habilitate, or the opportunity to enhance, a fish population.

A group, or individual, interested in having DNR consider stocking a particular body of water, may contact the appropriate Regional Fisheries Biologist(s) (appendix) for initial discussion about their stocking proposal. The Regional Fisheries Biologist(s) may already have detailed information that relates to the stocking request and may be able to comment on the likelihood of fish stocking as an appropriate management strategy for that water.

If additional information is needed to adequately review the stocking request, the proponent can ask that DNR regional fisheries staff complete the required assessments as time permits. Alternately proponents may expedite the assessment process by having qualified individuals conduct the required surveys (see DNR's procedural guidelines for fish stocking) and provide the information needed for the review, provided this option is first discussed with the appropriate Regional Fisheries biologist(s).

4.4 Priority evaluation criteria

Stocking proposals will be evaluated as outlined in section 4.1 with priority given to proposals that:

- Have the greatest likelihood of meeting the stocking objectives.
- Minimize negative impacts to the natural aquatic community.
- Have the greatest potential to benefit anglers.

Additionally, stocking to **re-habilitate** previously self-sustaining populations of brook trout, landlocked Atlantic salmon and lake trout will take priority over stocking to enhance recreational fisheries.

4.5 Priority evaluation system

To ensure that stocking funds and fish are utilized to the greatest benefit, DNR will review the assessment data and prioritize each fish stocking proposal based on the biological and public benefits criteria outlined in section 4.4.

Based on this evaluation an approved fish stocking list, that ranks waters in order of their stocking priority will be generated annually. In the event that resources (fish / funds) are insufficient to meet the total stocking requirements, the higher priority waters will be stocked first. Inclusion on the stocking list does not guarantee that an 'approved water' will be stocked with fish.

If additional production fish remain after all approved waters have been stocked, DNR will adhere to this policy in determining the appropriate location for the surplus fish.

4.6 Minimum timeframes for stocking after approval

In many cases, surplus hatchery fish (appropriate in species, strain, age, numbers, etc.) will not be available to immediately meet the requirements of a stocking proposal. As a result, the following minimum time frames will likely be required to produce fish once a proposal is approved:

- 18 months before stocking of fall fingerlings, and
 - 2 years before stocking of spring yearlings.
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4.7 Stocking rates

When stocking is used to re-habilitate or enhance a fish population it is critical that the number of fish distributed is appropriate for the water being stocked. If waters are under-stocked there may be little benefit realized from stocking efforts (i.e., angler success or population restoration), while over-stocking can increase competition and predation on wild fish populations.

Prior to stocking a water body, an appropriate fish stocking rate will be determined by DNR regional fisheries biologists based on the intended stocking objective and the physical, chemical and biological parameters of the water being stocked. DNR's fish stocking guidelines provide general standards for fish stocking rates based on the species, fish size and parameters of the waters being stocked.

4.8 Evaluation, monitoring and re-assessment

Stocked waters require follow-up monitoring to determine the success of stocking efforts according to the quantitative measures of success established for each stocking initiative. This monitoring will include fish population surveys and angler creel surveys to assess population recovery and/or stocked fish growth and return rates as indicators of stocking success. These surveys must be conducted according to methodologies outlined in the 'New Brunswick Department of Natural Resources Procedural guidelines for fish stocking'.

For new stocking initiatives, follow-up monitoring should be conducted annually to determine if the stocking strategy is appropriate (succeeding) or needs to be modified (stocking rate or timing, fish size, etc.). Once a successful stocking strategy is established, a periodic re-assessment of that water will be undertaken at least once every ten years to determine if stocking is still necessary or appropriate.

5.0 Communication

Annual fish stocking information, including the total number fish distributed by species, will be communicated in the department's annual report. Detailed information, including the number, age, size and species of fish distributed to specific locations can be requested from regional and branch fisheries staff and will be posted at <http://www.gnb.ca/0254/index-e.asp>

6.0 References and supporting documentation

A Wildlife Policy for New Brunswick

Charting our course – Department of Natural Resources strategic plan – July 2005.

National Code on Introductions and Transfers of Aquatic Organisms. Sept. 2003. CCFAM.
http://www.dfo-mpo.gc.ca/science/aquaculture/code/Code2003_e.pdf

New Brunswick Department of Natural Resources Procedural guidelines for fish stocking.

**Procedural Guide: Private Sector Involvement in Enhancement of the Public Fisheries
Salmonid Resources**

7.0 Inquiries

Inquiries concerning this policy may be directed to:

Director, Fish and Wildlife

Or

Manager, Fisheries Program

Department of Natural Resources

Fish and Wildlife Branch

P.O. Box 6000

Fredericton, N.B.

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(506) 453-2440

8.0 Appendix

DNR ADMINISTRATION REGIONS AND CONTACTS MAP

