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Species Profile

Atlantic Salmon Inner Bay of Fundy population

Scientific Name: *Salmo salar*
Other/Previous Names: Atlantic Salmon (Inner Bay of Fundy populations)
Taxonomy Group: Fishes
Range: New Brunswick, Nova Scotia, Atlantic Ocean
Last COSEWIC Assessment: November 2010
Last COSEWIC Designation: Endangered
SARA Status: Schedule 1, Endangered

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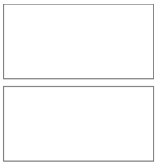
Image of Atlantic Salmon



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Description

The Atlantic Salmon has a pointed head, well-developed teeth on both jaws, and a slightly forked caudal fin. It has a laterally compressed body, which averages 60cm in length and 3 kg in weight. When at sea, its sides and belly are silvery, while the back varies through shades of brown, green and blue. It has black pectoral and caudal fins. There are numerous black spots scattered along the body. When spawning, both males and females become bronze-purple in colour, with reddish spots on the head and body.

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Distribution and Population

This population of the Atlantic Salmon spawns in those rivers of Nova Scotia and New Brunswick that drain into the Minas Basin and Chignecto Bay, as far south as the Black River in New Brunswick. After these salmon go to sea, they remain in the Bay of Fundy, at least until late autumn, but it is not known where they spend the winter. These populations have declined by 90% or more in abundance: they were estimated at 40,000 adults in some years, but have declined to less than 500 in 1998 and less than 250 in 1999.

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Habitat

In freshwater habitat, the species requires clean, cool, flowing water free from chemical or organic pollution. It prefers natural stream channels with rapids and pools, a gravelly bottom, and water temperatures between

15 and 25oC in summer. The marine habitat in the Bay of Fundy has provided the essential needs of this population of Atlantic Salmon. Temperatures remain in the appropriate range of 1 to 13oC during every month of the year.

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Biology

The parr (young salmon actively feeding in freshwater) become smolts (young salmon at the stage of development when they assume the silvery colour of the adult and are ready to migrate to the sea) after two years in freshwater. Seaward migration may begin in autumn, but actual movement into salt water normally occurs in late May or June. The majority of individuals mature after one winter at sea. Although post-smolts (immature salmon at sea) occur in areas rich in amphipods (small crustaceans) and juvenile herring, there is no published data on the diet or foraging behaviour for these populations.

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Threats

Population growth appears to be limited by marine survival rather than freshwater production capacity. The cause of the collapse of marine survival is unknown, but may be due to ecological changes in the Bay of Fundy, such as those brought about by tidal barriers placed at the mouths of several rivers and streams. Commercial salmon farms may also be a factor in the decline, since they may attract predators, alter habitat, obstruct migration or harbor disease.

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Protection

Federal Protection

The Atlantic Salmon, Inner Bay of Fundy population, is protected under the federal *Species at Risk Act* (SARA). More information about SARA, including how it protects individual species, is available in the *Species at Risk Act*: A Guide.

Altlantic Salmon is protected by the Canada National Parks Act where it occurs in Fundy National Park. The federal Fisheries Act prohibits destruction of fish habitat.

Provincial and Territorial Protection

To know if this species is protected by provincial or territorial laws, consult the provinces' and territories' websites.

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Recovery Initiatives

Status of Recovery Planning

Recovery Strategies :

Name Recovery Strategy for the Atlantic Salmon (Salmo salar), Inner Bay of Fundy Populations

Status Final posting on SAR registry

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Recovery Team

Inner Bay of Fundy Atlantic Salmon Conservation & Recovery Team

- **Claytor Ross - Chair/Contact - Fisheries and Oceans Canada**
  Phone: 902-426-4721 Fax: 902-- Send Email
- **Harvey Millar - Chair/Contact - Fisheries and Oceans Canada**
  Phone: 506-755-5060 Fax: 506-755-5065 Send Email

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Recovery Progress and Activities

Summary of Progress to Date The long term goal of the Inner Bay of Fundy Atlantic Salmon Recovery Team is to re-establish all Atlantic Salmon populations in the inner Bay of Fundy. In the shorter term, the Team has focused on conserving the genetic diversity of the few remaining populations through a “live gene banking” program. Researchers are also trying to determine why these salmon populations have declined so precipitously in order to determine if the trend is reversible. Atlantic Salmon abundance in the inner Bay of Fundy rivers has declined dramatically over the last decade. In the near absence of adult spawners, wild juvenile salmon have virtually disappeared in all but three rivers, the populations of which are also harbored in live gene banks. Various stages of live gene banked juveniles survive well when released to their rivers of origin and successfully migrate to the sea as smolts. Discovering the cause(s) of low survival at sea remains an urgent priority. Summary of Research/Monitoring Activities Monitoring of low marine survival is ongoing in a few rivers in Nova Scotia and New Brunswick. There, both wild juveniles and living gene bank juveniles are monitored through to the smolt stage and enumerated as they descend to the sea. Monitoring of their return as adults provides insight to the status of marine survival. Researchers are optimistic about their ability to further investigate hypotheses on the demise of these adults at sea. Unlike all other salmon in North America, evidence suggests that inner Bay of Fundy Atlantic Salmon have very limited migration, staying within the Bay of Fundy and the Gulf of Main for extended periods. This limited or delayed migration may be related to their decline. Scientists have been tagging smolts and recovering tags from post smolts and adults since 1967. Salmon smolts have been tracked with acoustic tags during their first 3 months at sea since 1999 to monitor their distribution. Post smolts have also been live-captured in special trawls during their second month at sea to establish their health, condition, feeding habits and association with prey and predator fish species. None of these variables have yet suggested apparent reasons for any unusual rates of mortality. Until the problems with marine survival are discovered and rectified or abate naturally, inner Bay of Fundy Atlantic salmon populations will continue to decline and genetic diversity will be lost. In a changing environment, higher genetic diversity in a population is associated with a higher probability of survival. Geneticists working with the Recovery Team conducted a genetic analysis of inner Bay of Fundy Atlantic Salmon and results indicated that the level of genetic diversity among the salmon was limited and declining. Summary of Recovery Activities Preservation of the genetic diversity of Inner Bay of Fundy Atlantic Salmon is taking place through “live gene banking”, a program initiated in 1998. Over generations, salmon raised in captivity lose the ability to survive in the wild. Therefore, two complementary approaches are taken in the live gene banking program. First, representatives from each remaining genetic family are kept in captivity. These captive salmon are mated according to prescribed breeding plans in order to produce genetically diverse offspring while maintaining the family groups. Progeny are used for restocking the rivers of origin. This augments the wild populations genetically and numerically. The second approach of the live gene banking program uses healthy river environments instead of rearing in captivity. Several rivers have been populated by salmon from the captive populations. In the spring, as salmon smolts in these rivers attempt to

migrate, or in the fall previous to spawning, some fish are captured and held at a Biodiversity Facility until they mature and can be used in the breeding program. Another approach being researched is stocking of mature adults derived from the living gene bank. In this approach, captive or recaptured salmon are raised to maturity in captivity. These mature salmon are then released or re-released into the rivers in the fall, when salmon spawn. This process bypasses the mortality bottleneck of the marine stage in their life cycle. Both the captive populations and the managed river populations serve as safety nets for Inner Bay of Fundy Atlantic Salmon genetic diversity. If a genetic family becomes extirpated from the managed river, the genes are still protected in the captive population, and vice versa. When threats to the salmon's survival have been identified and rectified, the few captive and managed river populations will be used to restore genetically diverse, self-sustaining populations to extirpated Bay of Fundy rivers. Although the primary focus of the salmon recovery program is on identifying the source(s) of the unusually high marine mortality and protecting the salmon's genetic diversity, Atlantic salmon have faced significative historic reductions in habitat. Threats in the rivers are better known, and several groups are working to mitigate them. Habitat restoration, reduction of siltation and removal of dams and other man-made barriers are all priorities for river ecosystems. Most of the land around the rivers is privately owned, so outreach to landowners as well as people who use the rivers is being conducted to increase knowledge about how their activities can threaten or benefit the salmon.

Documents

PLEASE NOTE: Not all COSEWIC reports are currently available on the SARA Public Registry. Most of the reports not yet available are status reports for species assessed by COSEWIC prior to May 2002. Other COSEWIC reports not yet available may include those species assessed as Extinct, Data Deficient or Not at Risk. In the meantime, they are available on request from the COSEWIC Secretariat.

85 record(s) found.

- COSEWIC Status Reports (2 record(s) found.)
- COSEWIC Assessments (1 record(s) found.)
- Response Statements (2 record(s) found.)
- Recovery Strategies (1 record(s) found.)
- Orders (1 record(s) found.)
- COSEWIC Annual Reports (2 record(s) found.)
- Permits and Related Agreements (75 record(s) found.)
- Critical Habitat Descriptions in the Canada Gazette (1 record(s) found.)

COSEWIC Status Reports

- COSEWIC assessment and status report on the Atlantic Salmon *Salmo salar* (Inner Bay of Fundy populations) in Canada (2006)

  The anadromous form of the Atlantic salmon (Salmo salar) grows to maturity in the ocean but returns to fresh water to reproduce. The species is naturally structured into genetically differentiated populations due to homing to natal rivers, juvenile rearing within the rivers, and the spatial isolation of river systems. This differentiation is generally hierarchical, with regional groups of populations having more genetic similarity than that found across groups. Groups also tend to share adaptations that allow individuals to be successful in their specific local environment. Six regional groups of Atlantic salmon have been proposed for Canada, and one of these consists of the populations that are contained within the inner Bay of Fundy (iBoF).
- COSEWIC Assessment and Status Report on the Atlantic Salmon *Salmo salar* in Canada (2011)

  The Atlantic Salmon (Salmo salar) is a member of the family Salmonidae. This species has a fusiform

body shape and matures at sizes ranging from 10 to 100+ cm. Atlantic Salmon exhibit plastic life histories and may have multiple reproductive and migratory phenotypes within a population, including freshwater resident and oceanic migrant forms. All phenotypes reproduce in fresh water. The oceanic migrant (anadromous) form is the best known phenotype, and with the exception of the extinct Lake Ontario population, is the only form considered in this report. Juveniles spend 1-8 years in fresh water, then migrate to the North Atlantic for 1-4 years, and then return to fresh water to reproduce. Demographically functional units tend to be at the watershed scale, but population subdivision may occur within watersheds. The Canadian range of this species was subdivided into 16 designatable units (DUs) based on genetic data and broad patterns in life history variation, environmental variables, and geographic separation.

COSEWIC Assessments

- COSEWIC Assessment - Atlantic salmon - Inner Bay of Fundy populations (2006)

  Designated Endangered in May 2001 and in April 2006. Last assessment based on an update status report.

Response Statements

- Response Statement - Atlantic Salmon, Inner Bay of Fundy population (2011)

  This species requires rivers or streams that are generally clear, cool and well-oxygenated for reproduction and the first few years of rearing, but undertakes feeding migrations in the North Atlantic Ocean as older juveniles and adults. This population once bred in 32 rivers tributary to the inner Bay of Fundy, from just east of the Saint John River, to the Gaspereau River in Nova Scotia; however, spawning no longer occurs in most rivers. The population, which is thought to have consisted of about 40,000 individuals earlier in the 20th century, is believed to have been fewer than 200 individuals in 2008. Survival through the marine phase of the species' life history is currently extremely poor, and the continued existence of this population depends on a captive rearing program. There is no likelihood of rescue, as neighbouring regions harbour severely depleted, genetically dissimilar populations.The population has historically suffered from dams that have impeded spawning migrations and flooded spawning and rearing habitats, and other human influences, such as pollution and logging, that have reduced or degraded freshwater habitats. Current threats include extremely poor marine survival related to substantial but incompletely understood changes in marine ecosystems, and negative effects of interbreeding or ecological interactions with escaped domestic salmon from fish farms. The rivers used by this population are close to the largest concentration of salmon farms in Atlantic Canada.
- Response Statements - Atlantic Salmon (2006)

  These salmon represent a unique Canadian endemic; their entire biological distribution exists within Canada. Adult numbers are estimated to have declined by more than 95% in 30 years, and most rivers no longer have either adults or juveniles. In 2003, fewer than 100 adults are estimated to have returned to the 32 rivers known to have historically contained the species. There is no likelihood of rescue, as neighbouring regions harbour severely depressed, genetically dissimilar populations. The reasons for the collapse in adult abundances are not well understood. Reduced survival from smolt to adulthood in marine waters is thought to be a key factor. There are many possible causes of this increased mortality, including ecological community shifts; ecological / genetic interactions with farmed and hatchery Atlantic salmon; environmental shifts; and fisheries (illegal or incidental catch). Threats to the species in the freshwater environment are thought to be historical and contemporary in nature. Historical threats include loss and degradation of habitat (attributable to the construction of barriers to migration and logging); contemporary threats may include interbreeding with escaped farmed fish and environmental change (warmer temperatures, contaminants).

Recovery Strategies

- Recovery Strategy for the Atlantic Salmon (*Salmo salar*), Inner Bay of Fundy Populations (2010)

  Atlantic salmon (Salmo salar) is an anadromous fish endemic to the northern temperate hemisphere. The “Atlantic salmon, inner Bay of Fundy (iBoF) populations” are considered a ‘Designatable Unit’ (DU) by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC 2006). The entire iBoF DU exists within Eastern Canada. It includes all rivers draining into the inner Bay of Fundy, starting with the Mispec River (northeast of the Saint John River in New Brunswick) to the Pereaux River (northeast of the Annapolis River in Nova Scotia). Adult Atlantic salmon are reported to have inhabited from 32 to 42 rivers in that area. IBoF Atlantic salmon possess distinct genetic traits and unique life history characteristics compared to the remainder of the anadromous Atlantic salmon species. They are presently at critically low levels, listed and protected under Schedule 1, Part 2 of the federal Species at Risk Act. An amendment of the Recovery Strategy for the Atlantic Salmon (Salmo salar), Inner Bay of Fundy Populations was made to incorporate changes to the critical habitat maps in Appendix IV. These changes are restricted to the incorporation of geo-referenced coordinates for drawn polygons that circumscribe the tributaries containing the critical habitat. These revisions do not change the definition, location or total area of the critical habitat and are therefore considered minor amendments to the Recovery Strategy as per SARA 45 (4). The revised maps can be found in Appendix IVb (pages 68-76) and the associated coordinates in Appendix IVa (pages 77-84).

Orders

- Order Amending Schedule 1 to the Species at Risk Act (2012)

  The purpose of the Order Amending Schedule 1 to the Species at Risk Act is to add 18 species to Schedule 1, the List of Wildlife Species at Risk (the List), and to reclassify 7 listed species, pursuant to subsection 27(1) of SARA. This amendment is made on the recommendation of the Minister of the Environment based on scientific assessments by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) and on consultations with governments, Aboriginal peoples, stakeholders and the Canadian public.

COSEWIC Annual Reports

- COSEWIC Annual Report - 2006 (2006)

  2006 Annual Report to the The Minister of the Environment and the Canadian Endangered Species Conservation Council (CESCC) from the Committee on the Status of Endangered Wildlife in Canada.
- COSEWIC Annual Report - 2010 - 2011 (2011)

  Under Canada’s Species at Risk Act (SARA), the foremost function of COSEWIC is to “assess the status of each wildlife species considered by COSEWIC to be at risk and, as part of the assessment, identify existing and potential threats to the species”. COSEWIC held two Wildlife Species Assessment Meetings during the past year assessing the status or reviewing the classification of a total of 92 wildlife species.

Permits and Related Agreements

- Explanation for issuing permit(#2005-ATL-Fundy-001), persuant to the provisions of section 74 of SARA (2005)

  This project will monitor populations of Inner Bay of Fundy Atlantic Salmon in Fundy National Park of Canada and will involve the capture of wild smolt from park rivers for captive rearing at a facility

administered by the Department of Fisheries and Oceans. Monitoring and capture of wild smolt will occur during the spring-fall of each year. The captive rearing aspect of the project aims at protecting genetic stock of the park's salmon in the event that the population becomes extirpated within Fundy National Park. The project is part of a multi agency effort that aims at identifying the causes of the species' decline and developing and implementing recovery actions. It will assist the park in achieving river-specific recovery targets for the park's rivers.

- Explanation for issuing permit(#DFO-MAR-2009-001), persuant to the provisions of section 73 of SARA (2009)

  The work subject to this permit is part of a larger project to assess the relative risks and benefits of inbreeding and outbreeding to individual fitness in endangered Atlantic salmon (Salmo salar) populations extirpated from the wild. In the laboratory (eggs to unfed fry life stages), digital images will be used to determine egg size, egg number, and developmental time to hatching. In the field (unfed fry and older life stages), the researchers will release unfed fry in the Stewiacke, Great Village, and Economy rivers in May. They will measure length and mass of those fry before releasing them into the wild. They will conduct electrofishing in the fall and spring one year later, measuring length and mass, and taking tissue samples (fin clip) from captures. Fish will be released back into the river. Mortality is expected to be low.
- Explanation for issuing permit(#DFO-MAR-2009-002), persuant to the provisions of section 73 of SARA (2009)

  The work subject to this permit is part of a larger project to assess the relative risks and benefits to individual fitness of inbreeding and outbreeding in endangered Atlantic salmon (Salmo salar) populations extirpated from the wild. The objectives of the project are: 1. To test for inbreeding depression, both in captivity and in the wild, in inbred wild crosses of small declining Inner Bay of Fundy (iBoF) salmon populations. 2. To test for heterosis and outbreeding depression, both in captivity and in the wild, in first-generation hybrids (F1), second-generation hybrids (F2), and backcross hybrids (F1 x pure wild) of small declining iBoF populations. 3. To test for the presence of local adaptation in small declining iBoF populations by comparing metrics of fitness (e.g. growth and survival) of pure wild, F1, F2, backcrosses, and inbred wild crosses in native and reciprocal environments.
- Explanation for issuing permit(#DFO-MAR-2009-003), persuant to the provisions of section 73 of SARA (2009)

  The work subject to this permit is part of a larger project to assess the relative risks and benefits of inbreeding and outbreeding to individual fitness in endangered Atlantic salmon (Salmo salar) populations extirpated from the wild. The objectives of the project are: 1. To test for inbreeding depression, both in captivity and in the wild, in inbred wild crosses of small declining Inner Bay of Fundy (iBoF) populations. 2. To test for heterosis and outbreeding depression, both in captivity and in the wild, in first-generation hybrids (F1), second-generation hybrids (F2), and backcross hybrids (F1 x pure wild) of small declining iBoF populations. 3. To test for the presence of local adaptation in small declining iBoF populations by comparing metrics of fitness (e.g. growth and survival) of pure wild, F1, F2, backcrosses, and inbred wild crosses in native and reciprocal environments.
- Explanation for issuing permit(#DFO-MAR-2009-004), persuant to the provisions of section 73 of SARA (2009)

  Conduct a study to understand the environmental physiology of smolting of iBoF salmon, in an effort to explain poor returns from the marine phase of the life cycle. In addition, understanding the effect of freshwater rearing temperature on smolt development can lead to better management of the DFO iBoF smolt release program. Although only a small proportion of hatchery reared fish are released at the smolt stage, the program has a significant financial cost. 600 fish from each of two hatchery stocks will be divided between 3 rearing tanks supplied with freshwater at a variety of temperatures

representing different seasons in wild habitat, to study the impacts of temperature on smolting. Hypoosmoregulatory ability of salmon will be assessed by salinity challenge tests. At the end of each test, fish are euthanized to obtain blood sample for determination of plasma osmolality. 96 wild fish will be captured using smolt wheel traps and a downstream bypass in two different rivers. The hypoosmoregulatory ability of the smolts from each river will be quantified and compared with the hatchery-reared fish.

- Explanation for issuing permit(#DFO-MAR-2009-007), persuant to the provisions of section 73 of SARA (2009)

  Field collections will be conducted by electrofishing, the use of smolt wheels, fyke nets, traps, or capture of fish in bypass traps (at Gaspereau); seine net survey work in the Big Salmon River and possibly in the Stewiacke River; adult salmon capture trap on the Gaspereau River. Angling may be used to capture some smolt and adults depending on the location and program activity. Likelihood of harm to salmon is low. We anticipate releasing over 100,000 Atlantic salmon from the DFO Biodiversity Facilities (live gene bank) into Inner Bay of Fundy rivers. Normal care for those fish in the facilities results in some mortality. Mortalities of fish sampled in the rivers is expected to be minimal and is most likely to occur in fish previously released by DFO. The bioassay to examine smolt osmoregulation will require the sacrifice of approximately 600 fish (smolt) for autopsy after the experiment is complete.
- Explanation for issuing permit(#DFO-MAR-2009-009), persuant to the provisions of section 73 of SARA (2009)

  This is a project to study American eel, and the smolt wheel trap and electrofishing techniques may also result in the capture of iBoF salmon. Salmon will be monitored and handled by experienced crews, in conjunction with DFO Science staff.
- Explanation for issuing permit(#DFO-MAR-2009-010), persuant to the provisions of section 73 of SARA (2009)

  Yellow eel will be primarily captured in the Upper Salmon River using fyke nets. Fyke nets will contain guards to inhibit the capture of large salmon, however, there is the potential for juvenile (smolt) bycatch. Fyke nets will be used in mark-recapture estimates to determine the total number of yellow eel in the estuary, and the number of eel that are seasonally migrating from the estuary to freshwater overwintering habitat.
- Explanation for issuing permit(#DFO-MAR-2009-012), persuant to the provisions of section 73 of SARA (2009)

  Fish will be caught using baited minnow traps and nets, has previously proven to be an effective, although labour intensive, means of sampling mummichog in the Jonathan Creek area of the Peticodiac River. In addition, during previous sampling events also using minnow traps, mummichog and a few smelt were the only species captured. The salmon population is considered to be extirpated in the Petitcodiac River Estuary and is listed as Endangered on Schedule 1 of the federal Species at Risk Act. As a result, the potential of encountering IBoF salmon during work outlined in this application is low.
- Explanation for issuing permit(#DFO-MAR-2009-012), persuant to the provisions of section 73 of SARA (2009)

  Fish will be caught using baited minnow traps and nets, has previously proven to be an effective, although labour intensive, means of sampling mummichog in the Jonathan Creek area of the Peticodiac River. In addition, during previous sampling events also using minnow traps, mummichog and a few smelt were the only species captured. The salmon population is considered to be extirpated in the Petitcodiac River Estuary and is listed as Endangered on Schedule 1 of the federal Species at Risk Act. As a result, the potential of encountering IBoF salmon during work outlined in this

application is low.

- Explanation for issuing permit(#DFO-MAR-2009-013), persuant to the provisions of section 73 of SARA (2009)

  Field techniques will follow the format below. Site reconnaissance: Use of D-Ring Dip net to sample for fishes within shore-edge habitats. Use of small (20') smelt seine to sample shallow (< 1 m habitat), if deemed necessary, avoiding areas of presence of salmon parr. Setting of baited (soda biscuit) tubular minnow traps for a period not to exceed 12 hours. In each case, any fish collected will be placed in a white polyethylene bucket, or 30 lb clear (polyethylene) bag for field identification (immediately upon capture). All SARA species will be immediately release at point of capture.
- Explanation for issuing permit(#DFO-MAR-2009-015-016), persuant to the provisions of section 73 of SARA (2009)

  Minnow traps are baited and set in small watercourses in the vicinity of the study sites. The summer flow is typically low to negligible. The traps are baited and placed in the water course, typically only partly submerged, and left for approximately 18 hours. Fish are removed from the trap, identified in the field, total length is measured, and then the fish are released. The habitat in most locations is marginal, anticipated to have low oxygen and low flows, and capture of juvenile Atlantic salmon is not expected. The species has not been found in previous monitoring. If any salmon are captured they will be identified and released
- Explanation for issuing permit(#DFO-MAR-2009-017), persuant to the provisions of section 73 of SARA (2009)

  Fish will be collected using the Smith-Root LR-24 backpack electrofisher. Fish species to be tagged are brook trout, white sucker and American eel. If salmon are encountered they will be immediately put into live wells out of the electrofisher's range and returned to the stream as soon as possible.
- Explanation for issuing permit(#DFO-MAR-2009-018), persuant to the provisions of section 73 of SARA (2009)

  Fish are removed from a construction site by the most safe and effective means possible. Fish may be captured by means of electrofishing, seining, netting or herding. Fish will be moved to locations upstream or downstream of the construction site.
- Explanation for issuing permit(#DFO-MAR-2009-019), persuant to the provisions of section 73 of SARA (2009)

  Minnow traps will be used to sample fish in the stream. Electroseining may be used in some sections of the brook. All fish captured by both methods will be identified and measured, and released in the stream. All fish are to be handled carefully and returned to the stream immediately after recovery.
- Explanation for issuing permit(#DFO-MAR-2009-023), persuant to the provisions of section 73 of SARA (2009)

  The fish habitat surveys will be carried out in accordance with the New Brunswick Department of Natural Resources and Fisheries and Oceans Canada stream survey and habitat assessment methodology (Hooper, 1995) and will provide the baseline data. Fish presence/absence will be determined using live release electrofishing technique by experienced electrofishing personnel. This will involve the use of one Smith-Root LR 24 model backpack electrofisher, dip nets, a bucket of cool water, a minimum of 2 field personnel and associated field equipment.
- Explanation for issuing permit(#DFO-MAR-2009-026), persuant to the provisions of section 73 of SARA (2009)

  The work is a reconnaissance electrofishing program to document the locations of wild juvenile Atlantic salmon in the streams draining to Shepody Bay. This work would be conducted in support of

a proposed program to establish a live gene bank for re-introduction of the species to the Petitcodiac River. There is a need to determine where and in what numbers the species exists in streams within the general area of the Petitcodiac watershed. Researchers will also take a caudal fin clip sample from each salmon captured, for genetic testing. After the fin clip, lengths, weights and photos are obtained, and all fish captured are released alive at the point where they are captured.

- >> See more Permits and Related Agreements documents

Critical Habitat Descriptions in the Canada Gazette

- Description of critical habitat of the inner Bay of Fundy Atlantic salmon in Fundy National Park of Canada (2010)

  The inner Bay of Fundy Atlantic salmon (Salmo salar) is a species listed on Schedule 1 of the Species at Risk Act as endangered. Critical habitat for the inner Bay of Fundy (iBoF) Atlantic salmon is identified within the Recovery Strategy for the Atlantic salmon (Salmo salar), inner Bay of Fundy populations.

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