

North American Commission

NAC(08)4

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Protocols on Introductions and Transfers of Salmonids*

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Background

The North American Commission (NAC) of the North Atlantic Salmon Conservation Organization (NASCO) recognized that the introduction and transfer of non-indigenous species, stocks and strains of salmonids have the potential for serious adverse fish health, genetic, and ecological effects on Atlantic salmon stocks. Thus, in 1987, the NAC established a Scientific Working Group to advise on the potential for adverse effects from salmonid introductions and transfers and, in 1992, adopted protocols for the introduction and transfer of salmonids for use in the NAC Area (NAC(92)24). Amendments were approved by the NAC in 1994 (NAC(94)14). Because of the manner in which the documents were published by NASCO, both the NAC (92)24 and NAC (94)14 documents must be read together in order to understand the protocols fully.

Further amendments were drafted in 1998, incorporating new information, addressing new issues, and recognizing progress made since 1992 by government agencies and private industry in protecting wild stocks from potential impacts of introductions and transfers of salmonids. Consideration was given to expert advice provided by the Fish Health and Genetic sub-groups of the NAC Scientific Working Group. Consideration was also given to the scientific information presented at the ICES/NASCO Symposium on Interactions between Salmon Culture and Wild Stocks of Atlantic Salmon, held in Bath, England, in 1997. The Protocols were intended to present a minimal level of protection.

In 2004, NASCO adopted a Resolution to Minimize Impacts from Aquaculture, Introductions and Transfers, and Transgenics on Wild Salmon Stocks, The Williamsburg Resolution. The NAC Protocols are appended to the Williamsburg Resolution. Specific provisions of the Protocols of particular relevance are as follows:

Section 4.2(5): Each government agency is to annually submit to the NAC Scientific Working Group the results of the permit submission/review process, and a list of introductions and/or international transfers proposed for their jurisdiction...

Responsibilities of the NAC Scientific Working Group on Salmonid Introductions and Transfers are identified in Section 4.3 of Appendix I of the Williamsburg Resolution. They are as follows:

- (1) Maintain an inventory of all introductions of salmonids, transfers of salmonids from IHN-infected areas, and importation of salmonids across national boundaries into the Commission Area.*
- (2) Review and evaluate all introductions and transfers in relation to the NAC protocols and report the results to the NAC.*

The Objectives of the Protocols

The fundamental objectives of the protocols, including the 1998 revisions, are to minimize the risks associated with:

- 1) introduction and spread of infectious disease agents (disease);

- 2) reduction in genetic diversity and prevention of the introduction of non-adaptive genes to wild Atlantic salmon populations (genetics); and
- 3) intra- and inter-specific ecological interactions of introductions and transfers of Atlantic salmon stocks (ecology).

The Scientific Working Group and Inventory Database

The Scientific Working Group (SWG) for the NAC, as described above, is responsible for maintaining an inventory of all introductions and transfers and to review these introductions and transfers for consistency with the NAC Protocols. The SWG created multiple databases which included an annual inventory of salmonid introductions and transfers and occurrences of diseases of concern. The group reviewed this inventory and reported on inconsistencies to the NAC annually until approximately 2004. Information was submitted from each country to be entered into the databases in subsequent years, but submissions have not been as comprehensive as in previous years and more recently the SWG has not met to review the inventory.

Information on the inventory of introductions and transfers into the Commission area began in 1986. Currently, there are three databases developed to track the following:

- 1) intentional introductions of live salmonids and gametes;
- 2) fish disease occurrences within the NAC area; and
- 3) known occurrences of Atlantic salmon aquaculture escapees in salmon rivers within the NAC area.

These three databases reside at the Department of Fisheries and Oceans office in Dartmouth, Nova Scotia.

The Current Situation

As stated above, the NAC databases have not been fully populated for the years 2004 to the present time and the SWG has not met to review inventories and transfers for consistency with the NAC Protocols. During the past few years, the U.S. and Canada have been undergoing significant domestic changes in the management of introduction and transfers. In light of these changes, it is timely and appropriate to revisit the status of the NAC Protocols, the SWG, and the inventory databases.

Management of Introductions and Transfers within Canada

Canada adopted a National Code on Introductions and Transfers of Aquatic Organisms in January 2002. The Code applies to all aquatic organisms in freshwater and marine habitats. The purpose of the Code is to establish an objective decision-making framework regarding intentional introductions and transfers that is designed to protect aquatic ecosystems while encouraging responsible use of the aquatic resources for the benefit of Canadians. The National Code was developed to minimize the negative impacts of introductions and transfers and, at the same time, permit environmentally sound fisheries resource enhancement and development of aquaculture. The Code ensures that a consistent single standard set of risk assessment and approval procedures is applied across the country. The risk analysis process results in an evaluation of the level of risk of adverse ecological, genetic and fish health effects from a proposed introduction and transfer. The Precautionary Approach has been adopted in the Code. The Code states that consultations should take place between neighboring jurisdictions if a proposed introduction, transfer or range extension might impact stocks within a watershed but outside the receiving province.

In 2005, the Canadian Food Inspection Agency (CFIA) was identified as the lead federal agency for implementing the National Aquatic Animal Health Program (NAAHP), and is currently working on amendments to regulations under the *Health of Animals Act* and ministerial regulations to manage aquatic animal health in Canada. When CFIA begins implementing these amended regulations, they will be responsible for assessing all proposed introductions and transfers of aquatic animals for impacts of diseases of concern. The proposed amendments will align Canada's national aquatic animal health management more closely with international standards for animal health attestation.

Management of Introductions and Transfers within the United States

In 1989, the U.S. Fish and Wildlife (USFWS) established regulations to minimize the introductions of fish disease associated with salmonid fish transfers. Accordingly, transfers of live salmonids, gametes and fish products into and out of the United States are controlled by USFWS Title 50 authority. Movements within the United States are controlled by permits issued at the State level. Transfers of fish from freshwater hatcheries to marine cages in Maine are regulated through transfer permits issued by the Maine Department of Marine Resources (MDRM). Each permit identifies the genetic strain, fish health status, numbers and age. MDRM maintains an inventory of salmonid transfers.

MOU between Canada and the US (NAC (05)7)

In 2005, an MOU between Canada and the US on Introductions and Transfers was signed (NAC (05)7). This MOU recognizes that in Canada the National Code is the mechanism for approval of introductions and transfers. In this MOU, the Parties agree to report to the NAC annually on any decision that has an impact on the other jurisdiction, in particular any decisions made that are not consistent with the NAC Protocols are to be identified. The Parties also agree to consult with each other if a proposal is received for an introduction or transfer that may have an impact on the other, including any proposal that would be inconsistent with the NAC Protocols. The Parties agree to convene the NAC Scientific Working Group, from time to time, to review the provisions of the Williamsburg Resolution with respect to developments that may have an application on introductions and transfers in the NAC area and provide recommendations to the Parties for their consideration and action, if required.

ICES Working Group on Introductions and Transfers of Marine Organisms

Canada and the US are both members of the ICES Working Group on Introductions and Transfers of Marine Organisms. This group meets annually to review activities of member countries, with a focus on tracking aquatic invasive species. Each member is required to submit an annual report to ICES which describes:

1. Any new laws, policies or regulations in that country which relate to introductions and transfers
2. Deliberate releases or planned introductions
3. Live Imports
4. Unintentional releases
5. Meetings, conferences, symposia or workshop on Introductions and Transfers
6. Bibliography

Of particular relevance is section 3 which will capture all cross border movements of salmonids between Canada and the US.

Next Steps

In light of the significant changes that have occurred both within Canada and within the United States on management of aquaculture, introductions and transfers, it is appropriate to re-examine the Databases on Introductions and Transfers and Scientific Working Group. In order to make an informed decision about the relevance of these documents, databases and working groups, it is proposed that the U.S. and Canada form a working group to explore, in before the 2009 NASCO meeting, the questions and issues identified below.

NAC Protocols

As stated above, the objective of the NAC Protocols on Introductions and Transfers are intended to minimize the risks associated with disease, genetics and ecology. The potential risks associated with introductions and transfers of salmonids remain as relevant today as they were when the Protocols were first adopted in 1992. There does not appear to be a need or reason to revisit the content of the Protocols.

Databases

As stated above, three databases have been created to track introductions and transfers of salmonids, fish diseases within the NAC area, and occurrences of aquaculture escapees in salmon rivers within the NAC area. The U.S.-Canada Working Group is asked to address the following:

- (1) Is there a value to tracking introductions and transfers of salmonids?
 - a. If yes, is this information currently recorded in other databases?
 - i. If no, does the current NAC database contain the most important and relevant data?
 - ii. If yes, what are these databases, who maintains them, how and when are they populated?
 - b. If no, in the absence of such a database, how will compliance with the NAC Protocols be evaluated?
- (2) Is there a value to tracking fish diseases within the NAC area?
 - a. If yes, is this information currently recorded in other databases?
 - i. If no, does the current NAC database contain the most important and relevant data?
 - ii. If yes, what are these databases, who maintains them, how and when are they populated?
 - b. If no, in the absence of such a database, how will compliance with the NAC Protocols be evaluated?
- (3) Is there a value to tracking occurrences of aquaculture escapees in salmon rivers within the NAC area?
 - a. If yes, is this information currently recorded in other databases?
 - i. If no, does the current NAC database contain the most important and relevant data?
 - ii. If yes, what are these databases, who maintains them, how and when are they populated?
 - b. If no, in the absence of such a database, how will compliance with the NAC Protocols be evaluated?
- (4) If the WG recommends maintenance of the NAC Database, they are requested to address the following:
 - a. Review the fields currently in the database and recommend any changes;

- b. Develop operating procedures to identify what data is to be submitted (i.e. introductions into the country, between States/Provinces, within States/Provinces, etc.);
 - c. Develop procedures for when data is to be submitted, how it is to be submitted, what the database output will be and how it will be used.
- (5) If the WG recommends that the NAC Database is not needed as other databases contain the necessary information, they are requested to:
- a. Identify the databases that contain the needed information;
 - b. For each database, describe the data it contains and the timeframe for populating those databases and procedures for gaining access or outputs;
 - c. Identify how the outputs from the various databases will be integrated to provide a complete view to allow consistency with NAC Protocols to be evaluated.

NAC Scientific Working Group on Salmonid Introductions and Transfers

As noted previously, the NAC Protocols and Williamsburg Resolution identify a number of roles for the NAC SWG including maintaining an inventory of introductions and transfers, inventory of diseases, and determining and reporting on compliance with the NAC Protocols.

In light of the conclusions reached above, the Working Group is asked to develop and describe the role of the NAC SWG including specifying:

- (1) The database(s) that the NAC SWG is responsible for maintaining;
- (2) The process and protocol for populating the database(s), including details of what information is to be provided, when and to whom;
- (3) How the NAC SWG will review the output of the database(s) to determine compliance with the NAC Protocols, when and how it will conduct its work, and when and how it will report the results to the NAC.

Members of the Working Group are to be identified immediately following the 2008 Annual Meeting of NASCO and no later than June 15, 2008. The Working Group will compile information and meet by phone and in-person, as needed, in order to prepare a report which addresses the above questions and issues. This report is to be provided to the NAC Commissioners no later than two months before the 2009 NASCO annual meeting.