	North American Commission <i>North American Commission Annual Report (Tabled by Canada)</i>	NAC(24)04rev2¹ Agenda item: 7
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Submitted by: Fisheries and Oceans Canada

Date: Data cover calendar year 2023

1. Summary of salmonid controlled disease incidents

The Canadian Food Inspection Agency (CFIA) is responsible for Canada’s National Aquatic Animal Health Program and is the Competent Authority for aquatic animal health which includes meeting Canada’s international reporting obligations to the World Organization of Animal Health (OIE) under the World Trade Organization (WTO) Sanitary and Phytosanitary (SPS) Agreement.

The CFIA updates the health status of Canada’s aquatic animals monthly as mandatory notifications of reportable aquatic animal diseases are confirmed (See Annex).

For more information, please consult the CFIA website or contact:

- Disease Status in Canada: Dr. Martin Appelt, Senior Director, Animal Health Directorate, Animal Health Programs Division, Programs and Policy Branch, CFIA. Martin.Appelt@inspection.gc.ca
- International Trade: Dr. Suminder Sawhney, Director, Animal Import/Export Division, International Affairs Branch, CFIA. suminder.sawhney@inspection.gc.ca

2023 summary of federally reportable diseases of salmonids

<https://www.inspection.gc.ca/animal-health/aquatic-animals/diseases/reportable-diseases/federally-reportable-aquatic-animal-diseases/eng/1339174937153>

Current as of: 2023-12-31

Disease	Total Region)	(Quebec/Atlantic Region)
<u>Ceratomyxosis (<i>Ceratomyxa shasta</i>)</u>	0	
<u>Infectious haematopoietic necrosis</u>	0	
<u>Infectious pancreatic necrosis</u>	6	
<u>Infectious salmon anaemia</u>	7	
<u>Viral haemorrhagic septicaemia</u>	0	
<u>Whirling disease (<i>Myxobolus cerebralis</i>)</u>	0	

Confirmed cases of federally reportable diseases in 2023 that affected salmonids² in the Atlantic Region are summarized in the tables below.

¹ In one entry in Table 2, the ‘Purpose’ was changed from ‘Aquaculture’ to ‘Stocking’

² Reporting does not distinguish whether the salmonids were cultured or wild

Locations infected with infectious pancreatic necrosis³:

Date confirmed	Location	Animal type infected	Scientific Name
December 20	Quebec	Brook trout	<i>Salvelinus fontinalis</i>
November 14	Quebec	Brook trout	<i>Salvelinus fontinalis</i>
November 8	Quebec	Brook trout	<i>Salvelinus fontinalis</i>
October 13	Quebec	Brook trout	<i>Salvelinus fontinalis</i>
September 26	Quebec	Brook trout	<i>Salvelinus fontinalis</i>
June 9	Quebec	Brook trout	<i>Salvelinus fontinalis</i>

Locations infected with infectious salmon anaemia⁴:

Date confirmed	Location	Animal type infected	Scientific Name
December 22 Table note*	Newfoundland	Atlantic salmon	<i>Salmo salar</i>
October 4	Newfoundland	Atlantic salmon	<i>Salmo salar</i>
August 17	Newfoundland	Atlantic salmon	<i>Salmo salar</i>
July 5 Table note*	Newfoundland	Atlantic salmon	<i>Salmo salar</i>
June 6 Table note*	Newfoundland	Atlantic salmon	<i>Salmo salar</i>
June 6	New Brunswick	Atlantic salmon	<i>Salmo salar</i>
February 7 Table note*	New Brunswick	Atlantic salmon	<i>Salmo salar</i>

Table Note * This virus strain is not known to cause disease.

Summary of breaches of containment of salmonids from net cages

There are no marine net-pens in Quebec or Prince Edward Island.

There were no reported or confirmed escape events in Newfoundland and Labrador⁵ in 2023.

In Nova Scotia⁶, there were two confirmed escape events in 2023 which occurred during harvesting activities. The first event resulted in the release of seven deceased Atlantic salmon,

³ <https://inspection.canada.ca/animal-health/aquatic-animals/diseases/reportable-diseases/infectious-pancreatic-necrosis/locations-infected/eng/1549521244435/1549521244700>

⁴ <https://inspection.canada.ca/animal-health/aquatic-animals/diseases/reportable-diseases/isa/locations-infected/eng/1549521878704/1549521878969>

⁵ In Newfoundland and Labrador, escape reporting in managed by the [Code of Containment for the Culture of Salmonids](#), which is a condition of all salmonid aquaculture site licences in the Province, but is co-administered by the Province and DFO. The code requires licensees to immediately report escape incidents to both DFO and the provincial [Department of Fisheries, Forestry and Aquaculture](#) (FFA). The Province also requires public reporting as per AP 17 of the FFA [Aquaculture Policy and Procedures Manual](#) (via the [NAIA website](#) or company website) within 24 hours of escapes, incident events and disease events.

⁶ In Nova Scotia, per Section 33(2) of the Aquaculture Management Regulations (AMRs), a licence holder or any personnel of their aquacultural operation who know or suspect a breach must immediately notify the Department of Fisheries and Aquaculture. As outlined in Section 15 of the AMRs, a licence holder must have information and procedures in their Farm Management Plan (FMP) that outlines how they limit the risk of a breach, and their response to a known or suspected breach. The minimum compliance requirements for a licence

and the second event resulted in the release of one live Atlantic salmon. Nova Scotia Department of Fisheries and Aquaculture (DFA) will complete an inventory reconciliation for 2023. Should there be inventory variances that cannot be explained, DFA will report, as required. All inventory variances from the 2022 inventory reconciliation were explained.

In New Brunswick⁷ there was one known escape of approximately 100 fish from the Aquaculture Bay Management Areas (ABMA) 3b in 2023. This event was the result of a valve failure during smolt transport and was quickly addressed by the operator. In addition to this, there were six reported suspected escape events in 2023. Suspected events are those where it is uncertain if any fish have escaped but circumstances, such as a hole in a containment net, indicate that it is possible that a fish may have escaped. In these instances, an initial notification report is submitted with follow-up estimated escape inventory. There was one event in ABMA 1 with a suspected release of 50 Atlantic salmon, four events in ABMA 3b with the suspected total loss of 210 Atlantic salmon and one event in ABMA 3a with the suspected loss of 300 Atlantic salmon.

2. Summary of Salmonid introductions from outside the Commission Area

Species (strain, if applicable)	Number	Life Stage	Origin ¹	Destination ²	Purpose ³	Land-Based or Marine
Atlantic salmon (<i>Salmo salar</i>), Saga Strain European-All-female-Triploid	3,500,000	Eggs	Iceland	Charlotte County, New Brunswick	Aquaculture	Land-Based
Rainbow trout (<i>Oncorhynchus mykiss</i>)	20,000	Eggs	Washington State, USA	Carleton County, New Brunswick	Aquaculture	Land-Based
Atlantic salmon (<i>Salmo salar</i>) Stofniskur strain	115,000	Fertilized Eggs	Iceland	Victoria, Prince Edward Island	Research	Land-Based
Atlantic salmon (<i>Salmo salar</i>) Stofniskur strain	25,000	Fertilized Eggs	Iceland	Souris, Prince Edward Island	Research	Land-Based
Rainbow trout (<i>Oncorhynchus mykiss</i>)	2,000	Fertilized Eggs	Washington State, USA	Victoria, Prince Edward Island	Research	Land-Based

holders FMP can be found here: <https://novascotia.ca/fish/documents/compliance-documents/Minimum-compliance-requirements-Marine-Finfish.pdf>

⁷ As per the New Brunswick Aquaculture Act, 2019, 56(3) a licence holder shall report to the Chief Veterinary Officer any failure of the site's containment structures in accordance with the regulations, which adopt the Code of Containment for Finfish Aquaculture in New Brunswick, published by Atlantic Canada Fish Farmers Association. Finfish escapes or failure of containment structures where losses are equal to or greater than 50 fish are posted on the public facing registry, as per the General Regulation, 2022-28, section 7(b)(iv). A link to the public registry can be found at: <https://dnr-mrn.gnb.ca/AquacultureRegistry/AquacultureRegistry.aspx>

Rainbow trout (<i>Onchorynchus mykiss</i>)	2,000	Eggs	Washington State, USA	Victoria, Prince Edward Island	Research	Land-Based
Rainbow trout (<i>Onchorynchus mykiss</i>)	5,500,000	Fertilized Eggs	Washington State, USA	Brookvale, Prince Edward Island	Aquaculture	Land-Based
Atlantic Salmon (<i>Salmo salar</i>), European- All-Female-Triploid	10,200,000	Eggs	Iceland	Daniel's Harbour / Marystown, Newfoundland and Labrador	Aquaculture	Land-Based
Rainbow Trout (<i>Oncorhynchus mykiss</i>), Steelhead Strain	650,000	Eggs	Washington State, USA	Wolfville, Nova Scotia	Aquaculture	Land-Based
Atlantic Salmon (<i>Salmo salar</i>), European-All-female-Diploid-Saga Strain	390,000	Eggs	Hafnarfjordur , Iceland	Centre Burlington, Nova Scotia	Aquaculture	Land-Based
Atlantic Salmon (<i>Salmo salar</i>), European-All-female-Triploid-StofnFiskur Strain	175,000	Eggs	Hafnarfjordur , Iceland	Wentworth Valley, Nova Scotia	Aquaculture	Land-Based
Rainbow Trout (<i>Oncorhynchus mykiss</i>)	20,000	Fingerlings	New Dundee, ON	Waverley, Nova Scotia	Research	Land-Based
Rainbow Trout (<i>Oncorhynchus mykiss</i>)	1,000,000	Eggs	Washington State, USA	Merigomish, Nova Scotia	Aquaculture	Land-Based
Rainbow Trout (<i>Oncorhynchus mykiss</i>), Steelhead Strain	74,000	Eggs	Washington State, USA	Centrelea, Nova Scotia	Aquaculture	Land-Based
Rainbow Trout (<i>Oncorhynchus mykiss</i>), Donaldson Strain	50,000	Eggs	Washington State, USA	Sunnybrook, Nova Scotia	Aquaculture	Land-Based
Rainbow Trout (<i>Oncorhynchus mykiss</i>), Donaldson Strain	85,000	Eggs	Washington State, USA	St. Andrews, Nova Scotia	Stocking	Land-Based
Arctic char (<i>Salvelinus alpinus</i>)	60,000	Eggs	Yukon	Montreal, Québec	Aquaculture	Land-Based

Rainbow Trout (<i>Oncorhynchus mykiss</i>)	12,000	Eggs	Washington	Montreal, Québec	Aquaculture	Land-Based
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Notes:

1. This would be the province or state for introductions from the west coast; or country for international introductions. It was decided that introductions between Canada and the US that are within the NASCO Commission Area (between Maine and New Brunswick, for example) would not be included here as those introductions would be captured in other avenues (ICES WGITMO, for example) and because these are not as relevant.
2. The more specific the information the better. However, Bay level is considered sufficient.
3. This refers to the intention for the introduction – aquaculture, research, stock enhancement, etc.

3. Summary of Transgenic activities within the Country [Annex 1 of NAC (10)6]

In 2023, there were no known violations of the *Canadian Environmental Protection Act* in respect of transgenic (genetically modified) Atlantic salmon. While the commercial production of growth enhanced transgenic Atlantic salmon continues in Prince Edward Island under strict conditions of physical and biological containment, there was no production of transgenic fish in Nova Scotia, New Brunswick or Newfoundland and Labrador.

Members of the Canadian Aquaculture Industry Alliance (CAIA), which represents the majority of farmed salmon facilities in Canada, do not farm or sell transgenic salmon, and are not growing or researching transgenic salmon. Outside of CAIA’s membership, there are two commercial facilities owned by an American firm in Canada that produce transgenic salmon: one in Fortune and the second in Rollo Bay, Prince Edward Island. Both are land-based facilities.

In keeping with Annex 5, paragraph d) of the Williamsburg Resolution, DFO has established and continues to operate the Centre for Aquatic Biotechnology Regulatory Research (CABRR), in British Columbia, where contained, land-based research is undertaken to provide scientific knowledge that informs risk assessment, risk management and regulatory approaches for transgenic salmonids. To facilitate decision-making in the absence of full scientific certainty, where there is a risk of serious or irreversible harm, the Government of Canada has developed a [Framework for the Application of Precaution in Science-Based Decision Making about Risk](#). This approach is aligned with Article 7 of the Williamsburg Resolution.

Although the following project is unrelated to transgenic activity, Canada has agreed to provide introductions and transfers information regarding Newfoundland and Labrador’s Grieg Project in future North American Commission reports, as available.

Grieg has been licensed to operate 13 marine-based farms in Placentia Bay, Newfoundland. Each marine-based farm consists of multiple cages with nets extending down to 43 meters. The project proposal was received in February 2016 and has undergone a series of provincial and federal reviews and assessments. More information on the timeline and other relevant documents is publicly available from the Province of Newfoundland and Labrador at <https://www.gov.nl.ca/mae/projects/project-1834/>. Additionally, DFO has published two reviews of Grieg’s proposed sites, and can be found at the following links: https://www.dfo-mpo.gc.ca/csas-sccs/Publications/ScR-RS/2019/2019_029-eng.html and https://www.dfo-mpo.gc.ca/csas-sccs/Publications/ScR-RS/2022/2022_044-eng.html. Grieg introduced their first batches of triploid (all female) European salmon eggs at their land-based hatchery in

Marystown in 2020. After a suspected detection of Infectious Salmon Anaemia (ISA) virus in 2021, they culled the hatchery population. In 2022, they stocked two marine sites in Placentia Bay, Newfoundland, which have now been fully harvested. There are currently three sites stocked since 2023. Prior to DFO's approval to transfer smolt to marine cages, the company is required to sample fish (via blood) to verify triploidy beyond the two-step validation done at the source in Iceland. The development of a triploid verification methodology was a condition 6 of release from their provincial environmental assessment, and was approved by both the provincial and federal governments

Annex

Additional Information

- Information on all confirmed findings of regulated diseases is publicly available on the CFIA's website (see <http://www.inspection.gc.ca/animals/aquatic-animals/diseases/reportable/2017/eng/1339174937153/1339175227861>).
- The CFIA also maintains information on the status of controlled diseases in Canada (see <http://www.inspection.gc.ca/animals/aquatic-animals/eng/1299155892122/1320536294234>

Addendum

Compilation of confirmed Atlantic salmon escapees caught at monitoring facilities in Eastern Canada

- At the 2022 NASCO Annual Meeting, a request was made for Canada to provide information on confirmed salmon escapees captured at monitoring facilities in Eastern Canada. Canada committed to providing available information to the NASCO Annual meetings.
- Data on confirmed salmon escapees by river, province and year, was sought from the Department of Fisheries and Oceans Canada's (DFO) salmon monitoring programs in Eastern Canada. Biologists at the Atlantic Salmon Federation, Ministère des Forêts, de la Faune et des Parcs du Québec (MFFP; Quebec) and DFO (Newfoundland and Labrador, Gulf and Maritimes Regions) were contacted. Contacted individuals were asked to forward the data request to individuals who may be able to contribute data, in order to broaden the data base.
- A response was received by all individuals contacted.
- Monitoring facilities do not capture all salmon (wild or escapee) migrating upriver. Escapees may be migrating upriver undetected, resulting in reporting of no escapees.
- Figure 1 shows the location of 28 rivers for which information on presence/absence of salmon escapees was available for 2023. Escapees were confirmed by body surface examination or scale analysis.ⁱ

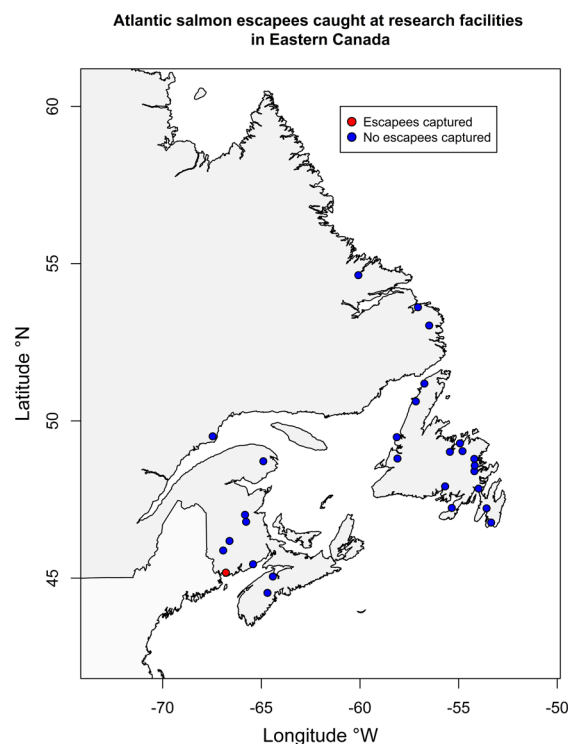


Figure 1. Presence/absence of salmon escapees caught at monitoring facilities in Eastern Canada during 2023. Note: no captures at facilities does not indicate no upstream migration of salmon escapees but only that none were caught at facilities.

- Table 1 provides a breakdown of confirmed salmon escapees caught by year for rivers where captures occurred from 2015 to 2023.

- Five rivers in the DFO Maritimes and Newfoundland/Labrador Regions caught salmon escapees at least once from 2015 to 2023 with the Magaguadavic River having the most captures.
- There were no reports of salmon escapees in the province of Quebec and none were caught at research facilities in DFO Gulf Region from 2015 to 2023.
- In 2023, the Magaguadavic River was the only river with confirmed salmon escapees (65 escapees caught).
- Salmon escapees were not caught at other monitoring facilities in 2023.

Table 1. Confirmed salmon escapees caught at monitoring facilities in rivers of DFO Maritimes and Newfoundland/Labrador Regions from 2015 to 2023. Escapees were confirmed by body surface examination or scale analysis¹. No salmon escapees were caught in the province of Quebec and DFO Gulf Region.

Year	Maritimes Region				Newfoundland Region	
	Big Salmon River	Gaspereau River (White Rock)	Magaguadavic River	Saint John River (Mactaquac Dam)	Garnish River	Total
2015	0	0	0	0	8	8
2016	0	0	0	0	3	3
2017	0	1	0	0	7	8
2018	0	1	0	1	5	7
2019	3	0	78	3	0	84
2020	0	0	0	0	1	1
2021	0	2	3	0	1	6
2022	0	0	59	4	0	63
2023	0	0	65	0	0	65
Total	3	4	205	8	25	245

¹ Note: The methods for identification of origin are limited without genetic testing.