



# State of Wild Atlantic Salmon

June 2023

*The 2023 State of Wild Atlantic Salmon report is a summary of North American population and harvest estimates for 2022. Atlantic Salmon Federation (ASF) provides commentary and context. The data come from sources like the International Council for the Exploration of the Sea (ICES), state, provincial, and federal agencies. A full reference list and a glossary of terms are provided at the end of this document. Terms in bold are defined in the glossary.*

## Executive summary and 2023 outlook

The number of **large salmon** returning to North America increased in almost every assessment region in 2022. These are fish that have spent at least two winters at sea, they are predominantly female, and carry proportionally more eggs than **small salmon**.

The harvest of North American Atlantic salmon remains at or near the lowest levels on record, especially in Greenland. Important fishery reforms agreed to by North Atlantic Salmon Conservation Organization members and encouraged by the ASF-North Atlantic Salmon Fund *Greenland Salmon Conservation Agreement* have led to better management and a real reduction in catches.

Reporting of catches in Canadian fisheries remains poor and illegal salmon fishing in Canada remains stubbornly prevalent.

Overall, notwithstanding some regional and river specific problems, 2022 was a positive year for Atlantic salmon in North America and evidence that conservation efforts are working. There are early indications that 2023 could also be a strong year for Atlantic salmon returns in parts of North America.

For example, genetic sampling done in Greenland in the fall of 2022 found that 91 per cent of the fish harvested there were North American origin as opposed to European. It is the second highest proportion of North American salmon in the Greenland fishery since 1982 and could indicate a strong year class of large salmon returning to Canada and the United States in 2023.

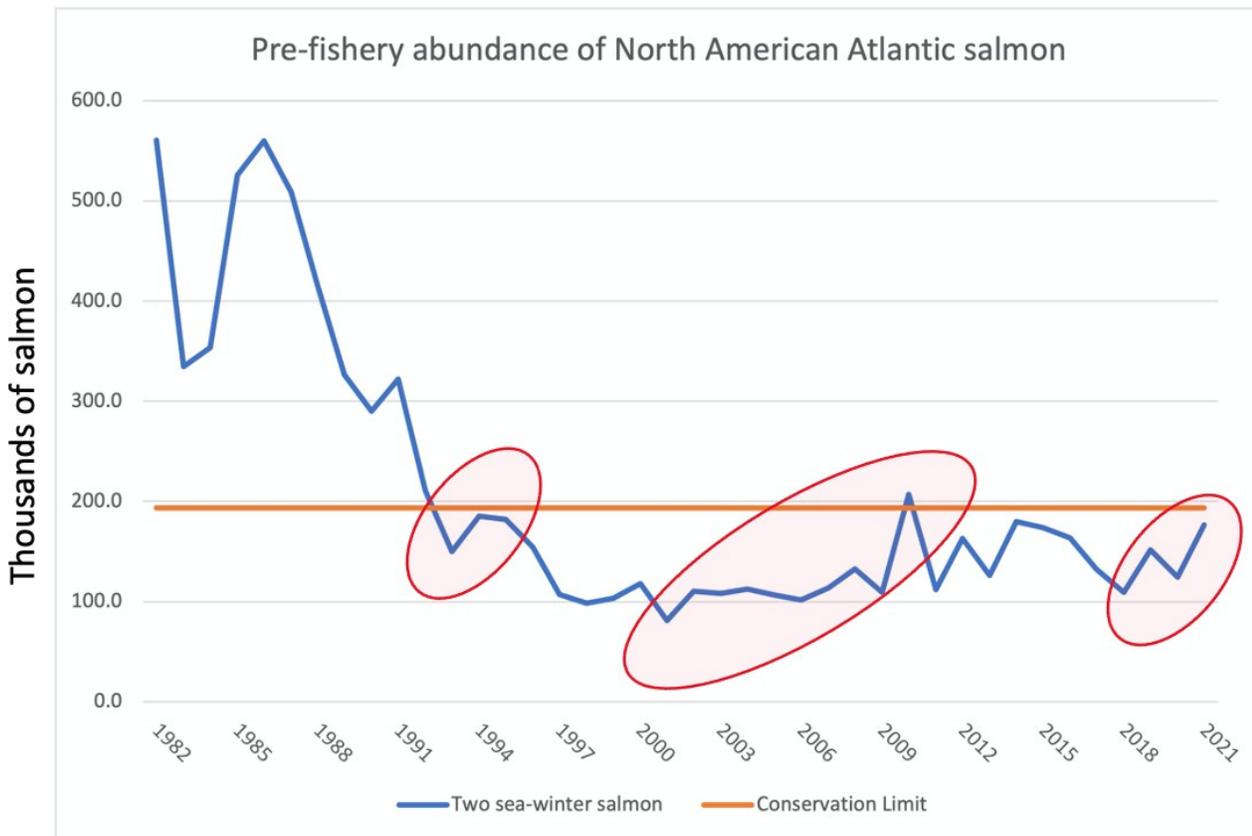
Additionally, the Penobscot River in Maine is seeing relatively large numbers of salmon returning already in 2023. The Penobscot, where ASF led a massive river restoration program from 1999 to 2016 is close to the southern extent of Atlantic salmon's range and is a bellwether for returns further north.

ASF is cautiously optimistic that we may be entering a period of stability or growth for Atlantic salmon in some regions.

## Pre-fishery abundance

Pre-fishery abundance is an estimate of North American origin salmon destined to be **two sea-winter Atlantic salmon**, prior to any removals by fisheries or other mortality. It is a critical indicator of population health.

The 2021 pre-fishery abundance is a snapshot of Atlantic salmon at sea destined to return to North American rivers as two sea-winter salmon in 2022. The horizontal line is the conservation limit, which is the number of two sea-winter salmon required to prevent further decline.



**Note:** The red circles on the graph above represent years the ASF-North Atlantic Salmon Fund *Greenland Salmon Conservation Agreements* have been in effect. The three agreement periods are 1993 and 1994, 2002-2010, and 2018-2030. Each agreement period correlates with an increase in the North American population of wild Atlantic salmon.

## Total adult salmon returns to North America

**Adult Atlantic salmon** returns is an estimate of all fish returning from the sea to Canada and the United States. It includes **salmon spawners** and salmon taken in Canadian fisheries but does not include removals by the Greenland fishery.

**2022 small salmon:** 549,100 compared to the previous five-year average for small salmon returns of 479,200.

**2022 large salmon:** 194,600 compared to the previous five-year average for large salmon returns of 152,300.

## Harvests and releases

North American Atlantic salmon are fished in Greenland, Canada, and the French islands of Saint Pierre and Miquelon. There are no active fisheries in the United States, where Atlantic salmon are listed under the *Endangered Species Act*.

In Greenland, there is a private food fishery and a small professional fishery that allows license holders to sell Atlantic salmon within Greenland. Export is prohibited.

In Canada, three groups harvest Atlantic salmon: Indigenous people, anglers, and non-Indigenous residents of Labrador. There are no commercial fisheries for Atlantic salmon in Canada and the sale of wild caught Atlantic salmon is illegal.

At Saint Pierre and Miquelon there is a private food fishery and a small professional fishery that allows license holders to sell salmon on the islands. Export is prohibited.

Where available, we offer the estimated harvest in metric tons (t), the estimate of individual salmon, and the percent of large salmon.

**2022 Greenland salmon harvest:** 29.8 t or 10,100 salmon.

In the five Greenland salmon fishing seasons since the latest *Greenland Salmon Conservation Agreement* was signed in 2018, the average harvest was 35 t. In the five years prior, 2013-2017, the average reported harvest was 43.4 t.

**Note:** Prior to 2018, private fishermen were not licensed, and reporting was not mandatory for any salmon fishermen. Reforms have been completed and harvest estimates are now more accurate. The result is a significant, real reduction in salmon harvested.

**2022 Canada salmon harvest:** 99.9 t which is slightly above the previous five-year average of 97.8 t, and far below the 1,557 t average prior to the closure of commercial fisheries which was completed in 2000.

**2022 Canada Indigenous harvest:** 58.1 t with 64 per cent of the harvest comprised of large salmon. The previous five-year average was 57.2 t.

**2022 Canada angler harvest:** 40.2 t or 21,370 small salmon and 1,016 large salmon. The previous five-year average was 19,585 small salmon and 1,149 large salmon

**Note:** Atlantic salmon angler fisheries in New Brunswick, Nova Scotia, and P.E.I. are mandatory live release. In Newfoundland and Labrador, anglers may harvest a limited number of small salmon and in Quebec anglers may harvest a limited number of small and large salmon.

**2022 Canada Labrador resident harvest:** 1.4 t with 46% large salmon. The previous five-year average was 1.6 t.

**2022 Saint Pierre and Miquelon harvest:** 1.24 t compared to the previous five-year average of 1.75 t.

**2022 angling releases:** It is estimated that anglers caught and released 29,650 small and 23,352 large salmon. The total, 53,002, is less than the previous five-year average of 59,536.

## Illegal and unreported salmon fisheries in North America

Illegal fishing remains a serious threat to wild Atlantic salmon in Canada. In 2022 the estimate of illegally caught salmon was 18.4 t compared to an average of 22 t in the previous five years. The ICES report notes that estimates of illegal fishing were not provided for all areas of Eastern Canada.

## Regional highlights

**Labrador:** Returns to Labrador rivers were strong in 2022. For small and large salmon, the estimates were the highest and second highest, respectively, since the data series started in 1971.

Strong returns of large salmon exceeded the conservation limit established for Labrador and could contribute to population growth in future years.

Three of the four assessed rivers in Labrador showed healthy increases of returning salmon, including the Sandhill River in Southern Labrador where 4,638 fish were counted compared to the 2015-2021 average of 3,081.

**Newfoundland:** Population assessments were completed for 15 rivers on the island of Newfoundland in 2022. Fisheries and Oceans Canada determined that nine were in the critical

zone, one in the cautious zone, and five in the healthy zone as established by its precautionary approach framework for fisheries management.

The Exploits River had by far the most returning Atlantic salmon of any Newfoundland river in 2022 with 30,196 fish logged at the Bishop's Falls counting facility. This represents a significant increase compared to the 2016-2021 average of 21,228.

Rivers exposed to open net-pen salmon aquaculture along Newfoundland's south coast continue to suffer. The Conne River for example has had fewer than 300 adult salmon return in the past three years, far less than the 2,000 to 6,000 salmon that returned prior to the establishment of open net-pens in the area.

**Quebec:** In 2022, adult salmon counts were carried out on 40 Quebec rivers. Scientists estimate that 29,368 adult salmon returned to these rivers, an increase for both small and large salmon over 2021.

Using data from 31-rivers that have long-term data series, small salmon returns increased eight per cent and large salmon returns increased 20 per cent compared to the previous five years.

Estimates of egg deposition exceeded conservation limits on 32 of 36 rivers where analysis took place.

**Southern Gulf of St. Lawrence:** Following the trend seen in Labrador and Quebec, the number of large salmon returning to rivers in New Brunswick, Nova Scotia, and P.E.I that empty into the Gulf of St. Lawrence increased by 69% to 34,300 in 2022 when compared to 20,300 large salmon in 2021, and slightly over the previous five-year average of 32,640.

Small salmon returns continued to decline with an estimated 18,000 returning to Southern Gulf rivers in 2022, a 38 per cent decrease compared to 2021 and the fourth lowest year in the data series which began in 1971.

Overall, four of seven assessed rivers in the region were in the critical zone, not meeting minimum requirements for egg deposition.

**Scotia-Fundy:** Atlantic salmon populations in rivers emptying into the Bay of Fundy and the Atlantic Ocean off Nova Scotia remain at or near historic lows with many populations at risk of extirpation.

In 2022, it is estimated that 1,500 small salmon and 2,300 large salmon returned to this assessment region.

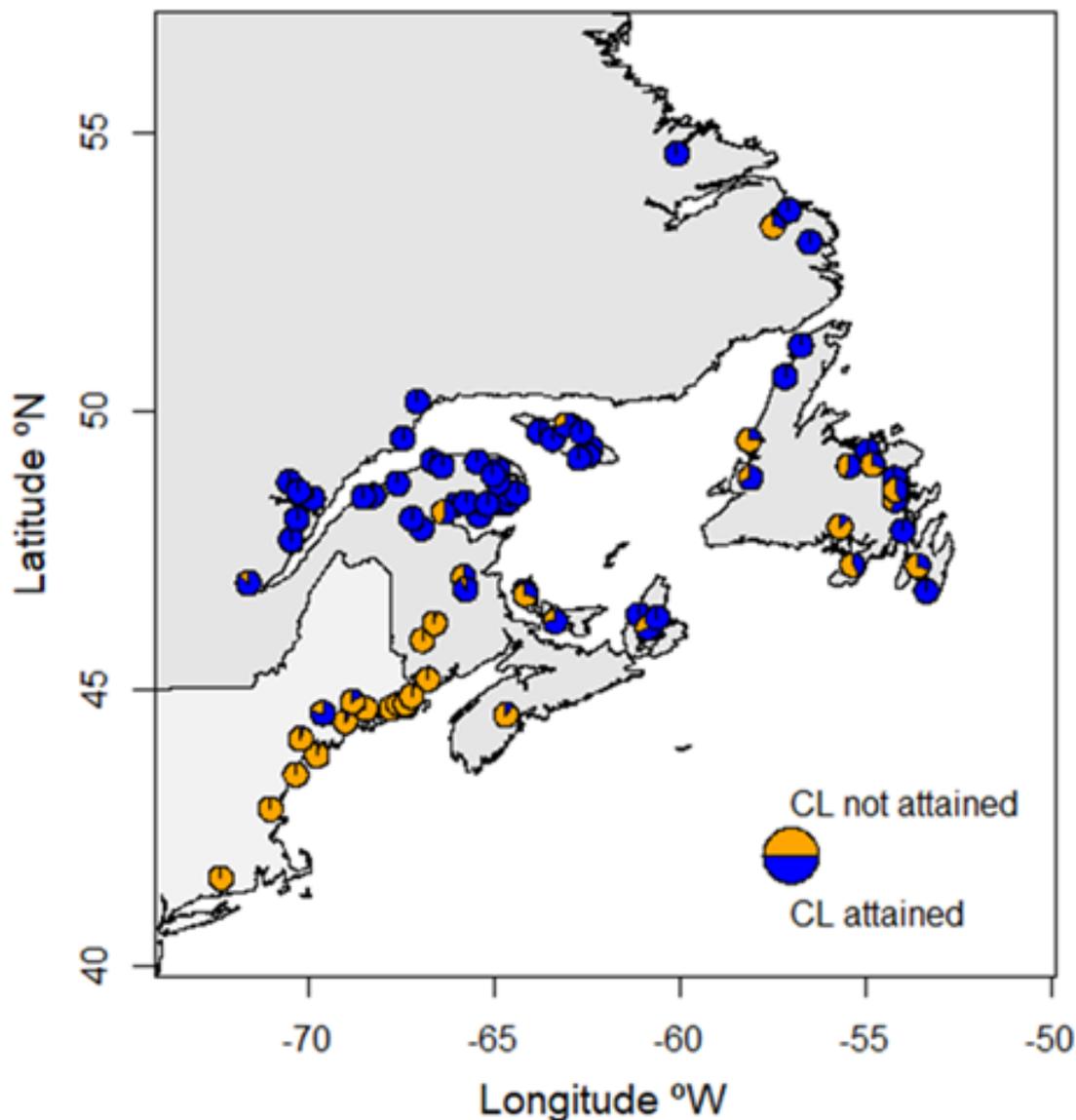
The small salmon estimate is the fourth lowest since record keeping was established in 1971. The large salmon figure represents a 179 per cent increase over 2021 but is far below estimates from the 1980s and 1990s.

**USA:** In 2022, small and large salmon returns increased compared to the previous year, continuing a positive trend. The figures for each were the second highest in the previous ten years, but still far below established conservation limits.

The Penobscot River has the largest returns of Atlantic salmon in the USA. In 2022, 1,324 adult salmon returned to the river, well above the 561 salmon counted in 2021.

## Conservation requirement attained

The following graphic comes from the ICES report and shows the proportion of conservation limit attained on the 80 rivers that were assessed in North America in 2022.



## Glossary of terms

**Large salmon:** Atlantic salmon larger than 63 cm that have spent two or more winters at sea.

**Small salmon:** Atlantic salmon less than 63 cm that spend a single winter at sea before returning to freshwater to spawn

**Two sea-winter salmon:** A subset of large salmon that have spent two winters at sea before returning to freshwater to spawn for the first time.

**Salmon spawners:** A subset of adult Atlantic salmon that successfully spawn.

**Adult Atlantic salmon:** All maturing and mature Atlantic salmon, including large and small salmon.

## References

ICES. 2023. Working Group on North Atlantic Salmon (WGNAS).

ICES Scientific Reports. 5:41. 478 pp. <https://doi.org/10.17895/ices.pub.22743713>

Quebec. 2023. Bilan de L'exploitation du saumon au Quebec en 2022. <https://mffp.gouv.qc.ca/documents/faune/bilan-exploitation-saumon-2022.pdf>

NASCO. 2023. Labrador Subsistence Food Fisheries – Mixed-Stock Fisheries Context Paper. [https://nasco.int/wp-content/uploads/2023/05/NAC2304\\_Labrador-Subsistence-Food-Fisheries-Mixed-Stock-Fisheries-Context-Paper.pdf](https://nasco.int/wp-content/uploads/2023/05/NAC2304_Labrador-Subsistence-Food-Fisheries-Mixed-Stock-Fisheries-Context-Paper.pdf)

NASCO. 2022. Labrador Subsistence Food Fisheries – Mixed-Stock Fisheries Context Paper. [https://nasco.int/wp-content/uploads/2022/05/NAC2203\\_Labrador-Subsistence-Food-Fisheries---Mixed-Stock-Fisheries-Context.pdf](https://nasco.int/wp-content/uploads/2022/05/NAC2203_Labrador-Subsistence-Food-Fisheries---Mixed-Stock-Fisheries-Context.pdf)