A Backgrounder from
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State of North American Atlantic Salmon Populations, May 2017
A compilation from the report by the International Council for the Exploration of the Sea, based on 2016 Atlantic salmon data.

Scientific Advice
The International Council for the Exploration of the Sea (ICES) advice continues unchanged in 2017:
• There is no surplus of multi-sea-winter salmon stocks and no fisheries should operate on mixed stocks. Additionally, in-river fisheries should occur only on those stocks exceeding conservation limits.
• Based on ICES advice, the fisheries guidelines agreed by the North Atlantic Salmon Conservation Organization (NASCO) indicate that mixed-stock fisheries should only operate when the number of salmon contributed by individual salmon stocks can be determined and each of these stocks can withstand the exploitation to remain above conservation limits.

Countries That Contravene Scientific Advice by Harvesting Mixed-Populations of North American Salmon
• Greenland, France at St-Pierre et Miquelon, and Canada at Labrador.

Concerns for the 2017 Returns Based on 2016 Grilse Numbers
• In 2016 grilse returns were down in all Canadian jurisdictions, potentially indicating problems with survival at sea the previous winter.
• Total estimate of grilse returns to North America in 2016 (430,900) was 31% lower than the estimated returns in 2015 (624,700).
• A lower proportion of North American origin salmon harvested in Greenland in 2016, and lower harvests in northerly regions of Greenland may be signals that the poor grilse survival in 2016 will also show up as lower numbers of North American large salmon returning in 2017.

Overall State of North American Salmon Populations
• Total estimate of two-sea-winter (2SW) spawners in North America for 2016 (102,600) decreased 7% from 2015 (110,600) and did not meet the total 2SW Conservation Limit (CL) for North America (152,548).
• Five of the six North American salmon regions did not reach Minimum Conservation Limits (MCL) for 2SW salmon. Returns remained near record lows for Quebec, Gulf of St. Lawrence, Scotia-Fundy and the U.S.A. Only Labrador reached the MCL.
• Grilse returns for Labrador (206,300) and Newfoundland (164,200) combined represent 86% of the total grilse returns to North America in 2016.
• Grilse returns in Scotia-Fundy (2,451) and southern Gulf of St. Lawrence (25,750) were among the lowest on record.
• Egg CL was met in 66% of the 62 Canadian assessed rivers, and 21% (13 rivers) had less than 50% of egg CL. In the U.S.A. all eight assessed rivers were below 7% of their CL.
• The exception was Labrador that had an estimated 46,375 2SW spawners, second highest on record. However, the 2017 ICES report notes that Labrador assessment is too limited, stating:

“The Working Group recommends that additional monitoring be considered in Labrador to estimate stock status for the region. Additionally, efforts should be undertaken to evaluate the utility of other available data sources (e.g. Aboriginal and recreational catches and effort) to describe stock status in Labrador.”
GREENLAND MIXED–POPULATION HARVEST OF NORTH AMERICAN SALMON

- In 2016 the reported harvest was 64% of North American origin, somewhat lower than in most recent years.
- Greenland’s 2016 reported harvest was 27.1 tonnes (approx. 8,130 salmon, of which about 5,100 were from North America). This is significantly down from 56.8 tonnes in 2015.
- Additionally, phone surveys of fishers noted an additional 4.2 tonnes, plus an unreported catch of 10 tonnes is estimated, bringing the full Greenland harvest total to 41.3 tonnes (approximately 12,390 salmon, of which about 8,227 were from North America).
- The fishery was very low in the more northerly areas where there is usually higher percentage of North American origin salmon.
- Genetic research in recent years shows that Atlantic salmon from Quebec, Gulf of St. Lawrence and Labrador make up the largest component of Greenland’s North American harvest (more than 20% each), Newfoundland at about 5%, Scotia-Fundy and USA each around 1%.

HARVEST OF MIXED-POPULATION NORTH AMERICAN SALMON AT ST-PIERRE ET MIQUELON (A SELF-GOVERNING TERRITORY OF FRANCE)

- Harvest of 4.7 tonnes was reported in 2016, an increase of 34% from the 2015 reported harvest of 3.5 tonnes.
- Genetic analysis of scales in 2016 showed that 43% had origin in Newfoundland, 23% were from southern Gulf of St. Lawrence, 21% from Gaspe.

CANADIAN HARVEST OVERALL (MIXED-POPULATION AND IN-RIVER)

- Total harvest in Canada was 135t (58,016 salmon) in 2016, about 4% less than the 2015 harvest of 140t (60,311 salmon). In 2016 it was comprised of 46,307 grilse and 11,709 large salmon, 5% fewer grilse and 2% more large salmon compared to 2015.
- Of the 2016 harvest, by numbers of Atlantic salmon, the First Nations took 33.2%, Labrador Resident Fishery 1.0%, and the Recreational Fishery 65.8%.
- The Recreational Fishery in 2016 was 69t (38,178), a decrease of 3.6% from 2015. It was composed of 36,355 grilse, down 3.4% from 2015, and 1,823 large salmon, 7.5% lower than 2015. The large salmon were taken exclusively in Quebec.
- In 2016, 69,590 salmon (38,322 grilse and 31,268 large salmon) were live released, representing 65% of total numbers caught, and highest live release rate since data series began in 1997. For large salmon, 95% were released.
- The First Nations harvest in 2016 was 64t (19,246 fish), the same as the 63t (19,934 salmon) in 2015. Of these salmon 50% were large salmon, up from 46% in 2015, and is the second highest value since 1998.
- The Labrador Resident Food Fishery harvest was 1.6t, down 0.4t from 2015, and representing 592 fish, and 39% were large salmon (230). The fishery was very low in the more northerly areas where there is usually higher percentage of North American origin salmon.
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CANADIAN REGIONAL BREAKDOWN IN 2016

- LABRADOR: Attained 133% of CL for 25W spawners. The English River achieved 255% of its egg CL, but in southern Labrador, the Sand Hill, Muddy Bay Brook and Southwest Brook achieved only approximately 60%, 38% and 93% of the egg CL. (Egg CL numbers provisional).
- NEWFOUNDLAND: Attained 84% of CL for 25W spawners. Total return estimate of 164,200 grilse is a 42% decline from the 2015 return of 283,500 grilse. The Conne, representing the threatened south coast rivers, met 56% of its egg CL. The Harry's River in western NL met 125% of the egg CL, while the Exploits reached 36%. Rivers on the Northern Peninsula did better with Western Arm Brook at 502% of egg CL, and the Torrent 658%. (Egg CL numbers provisional).
• **QUEBEC**: Attained 84% of CL for 2SW spawners. Quebec's new 10-year salmon management plan that went into force in 2016 focuses more directly on river productivity by requiring most rivers to begin the season with live release of large salmon, and only harvests after numbers are assessed at mid-season. In addition, egg CLs were re-evaluated and most increased.

A total of 35 Quebec rivers were assessed. The **Bonaventure River** attained only 96% of its egg CL while the **Cascapedia** reached 256%. The **Matapedia** reached 99% of egg CL. Of rivers north of the Gulf of St. Lawrence, the **de la Trinité** attained 109% of its egg CL, and the **Vieux Fort** had the highest at 1139%. On Anticosti, the **Jupiter** attained 226% of egg CL.

• **SOUTHERN GULF OF ST. LAWRENCE**: Attained 84% of 2SW spawners. However, this was a modest improvement over the 78% for 2015. Grilse returns were down significantly to 25,750 from 43,600 in 2015, a decline of 41%, a considerable decline. Large salmon returns were up slightly in 2016, to 35,600 from 33,595.

The **Miramichi** had estimated returns of 18,200 large salmon and 15,200 grilse, and in 2016, live release was mandatory. DFO notes that 107% of the CL was reached for the **Southwest Miramichi**, and 72% of the CL for the **Northwest Miramichi**.

In the **Restigouche** watershed, large spawner counts were all below the conservation requirements for the **Kedgwick** (77%), **Little Main Restigouche** (63%) the **Upsalquitch** (89%) and the **Patapedia** (34%). However the **mainstem Restigouche River** exceeded at 129%.

In **Prince Edward Island** there are 26 known salmon rivers. Seven of 13 surveyed rivers reached the minimum conservation level. Rivers exceeding conservation requirements are concentrated in the northeast extremity of the island.

The **Margaree** had an estimated return in 2016 of 2,500 large salmon, and 241% of the conservation requirement of 1,036. The 2016 estimate of 350 grilse is far below the long term average of 900.

• **OUTER NOVA SCOTIA COAST AND BAY OF FUNDY**: Attained 6% of 25W spawners.

In eastern Cape Breton, the **Middle, Baddeck** and **North Rivers** reached 34%, 30% and 79% of their egg CL respectively. In southern Nova Scotia the LaHave reached 4% of its egg CL, an improvement due to the increase in large salmon returns from 19 to 39 in 2016.

For the **St. John River** at Mactaquac, the return estimated in 2016 included 197 large salmon and 509 grilse, and the river attained 4% of its egg CL based on natural production, but 21% when captive-reared salmon are included.

The **Nashwaak** in 2016 estimated returns were 75 large salmon and 398 grilse, attaining 7% of the egg CL.

• **UNITED STATES**: Atlantic salmon return to rivers between Connecticut and Maine, but are at critically low population levels. There is no harvest of Atlantic salmon in the U.S. The Species at Risk Act protects both the species and critical habitat.

Attained only 3% of CL for 25W spawners in 2016. There were a total of 626 salmon returning to the U.S.A. in 2016, a 32% decrease from 921 in 2015. Returns for Gulf of Maine rivers were down 30%; in Central New England rivers down 61%; and Long Island Sound rivers down 77%.

The **Penobscot River** had a return of 507 salmon - 286 large salmon and 218 grilse. Returns to the Penobscot were 81% of Atlantic salmon returning to all U.S. rivers.

The **Kennebec River** had 39 Atlantic salmon return, the **Androscoggin** 6, **Connecticut** 5, **Merrimack** 5, **Narraguagus** 3 and **Saco** 2.

The effect of the West Greenland harvest on individual U.S. populations varies annually.
BACKGROUND

The ICES Report Process:

Government and other scientists on both sides of the North Atlantic basin gather data, then during the following winter compile and compute results. Through the Working Group on North Atlantic Salmon (WGNAS) as part of the International Council for Exploration of the Sea (ICES) based in Copenhagen, Denmark, they bring together the best scientific information on populations of Atlantic salmon and produce a document that is made public in early May. The ICES report provides the basis for advice given to the North Atlantic Salmon Conservation Organization (NASCO) and its members in preparation for its deliberations on harvests of Atlantic salmon in early June. NASCO is composed of official delegates from most of the countries with Atlantic salmon runs on both sides of the North Atlantic Ocean, along with areas where harvests take place including Greenland and the Faroes.

GLOSSARY OF TERMS

Grilse
Atlantic salmon that spend one winter at sea, and then return to their home river to spawn. Some rivers, and groups of rivers, are mostly grilse, while other rivers have mostly salmon that spend more than a single winter at sea.

Two-Sea-Winter (2SW) Salmon
Atlantic salmon spending two winters at sea before returning. They are the most common fish harvested in Greenland waters.

Pre-fishery Abundance (PFA) graph for North American 2SW salmon showing the total number needed to meet the entire Minimum Conservation Limit in North American rivers in green (corrected for 11 months of natural mortality). The PFA numbers are those 11 months before they return to their home rivers in North America. The PFA Minimum Conservation Limit/Spawner Escapement Reserve is 205,918 for all North American rivers. (Graph based on ICES numbers)

ICES' Report of the Working Group on North Atlantic Salmon:
Multi-Sea-Winter (MSW) Salmon
Atlantic salmon that spend more than a single winter at sea. Some may spend three or more winters, and may return to spawn several times.

Mixed Population/Stock Fishery
At sea and in coastal areas and some estuaries there may be Atlantic salmon from several different rivers. Some of these may have critically low populations, and this type of fishery cannot discriminate between salmon from healthy and endangered stocks. Examples are Greenland, coastal Labrador and St-Pierre et Miquelon.

Minimum Conservation Limit:
A minimum conservation limit is a threshold below which biologists warn that salmon runs should not fall and is estimated after harvests by anglers and First Nations and other removals such as poaching have taken place. In order to achieve a sustainable salmon run, the number of spawning salmon must consistently stay above this minimum conservation limit.

Egg Conservation Limit (Egg CL)
The minimum deposition of Atlantic salmon eggs in a river or entire region to allow for a future sustainable population.

CL for 2SW Spawners
Minimum number of Atlantic salmon of this age successfully completing their return and spawning in their home rivers that will allow a future sustainable population.