



# About this Meeting

Canadian Science Advisory Secretariat (CSAS) introduction.

# CSAS Peer Review Process

- Objective is to provide sound, objective and impartial science advice.
- The issue of resource allocation is strictly a Resource Management consideration, and as such will not be part of the discussions at today's technical briefing.
- Resource allocation considerations will be discussed at the upcoming consultations led by DFO's Resource Managers.

# Outline for today's Technical Briefing

- The Department's lead Stock Assessment Biologist for Atlantic Salmon will present the conclusions from the peer reviewed stock assessment process.
  - Followed by question and answer period.
  - Same presentation will then be given to media outlets.
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- To be added to the speakers list, please message Connie with the CSAS Office via WebEx chat forum or send Erika an e-mail.
  - If you run into any technical difficulties, you can also e-mail Erika or message Connie for assistance.
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# Guidelines for Respectful Meeting

1. Listen to the entire message, without interrupting.
  2. Explain why you agree or disagree.
  3. Maintain a respectful tone and volume when sharing opinions.
  4. Be respectful of time when making comments.
  5. Value the many different sources of knowledge in the room.
  6. Turn off your webcam and mute your phone until ready ask a question during the Q&A period. If you're on a landline, you can mute your telephone by pressing \*6 and unmute by pressing \*7.
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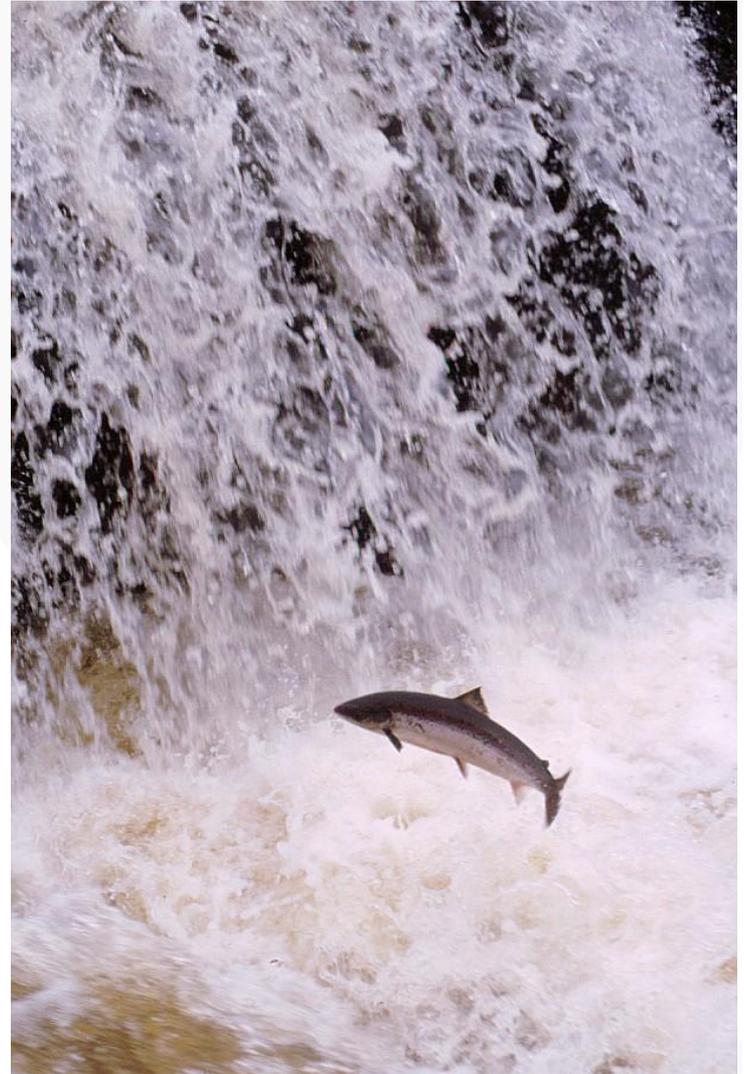
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# Technical Briefing

Atlantic Salmon Stock Assessment  
Newfoundland & Labrador  
March 5 – 7, 2019

Nick Kelly, Stock Assessment Biologist



# Outline

- Purpose of this briefing
- Important terms
- Key points to understand about salmon
- Science advice and the precautionary approach
- How we 'count' Atlantic Salmon
- Atlantic Salmon Fisheries
- Stock assessment
- Main takeaways
- Next steps

# Purpose of this briefing

- March 5 – 7, 2019 DFO held its Canadian Science Advisory Secretariat (CSAS) regional peer review meeting on Atlantic Salmon.
- The advice that DFO Science provides fisheries managers to help inform management decisions on Atlantic Salmon was discussed during this meeting, and will be explained throughout this presentation.

## What is CSAS?

*A national body that oversees the review and provision of science advice to inform DFO management decisions. Specifically, this group helps organize meetings where DFO scientists, biologists and others, which may include provincial government, fish harvesters, Indigenous groups, university researchers, and other technical experts get together to review scientific information and help inform how commercial fish stocks are managed.*

# Important terms

- Salmon fishing areas (SFA)
- Recreational fisheries
- Indigenous/subsistence fisheries (FSC)
- Spawning escapement (eggs)
- Limit reference points
- Marine survival

# Key points to understand about salmon

- Juvenile Atlantic Salmon remain in freshwater habitats for 2-5 years in Newfoundland and 3-7 years in Labrador prior to migrating to sea as smolts.
  - For the majority of rivers in Newfoundland, adult spawning salmon are predominantly grilse that have spent one year at sea before returning to spawn for the first time.
  - For most monitored rivers, small salmon are predominantly female (range of 60-92% across rivers).
  - The adult spawning migration generally begins from late-May to mid-June for most rivers in Newfoundland and late-June to early-July for monitored rivers in Labrador.
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# Science advice & the precautionary approach

- The precautionary approach is a management framework used to:
  - Identify 3 stock status zones (critical, cautious, and healthy),
  - Set removal rates within each stock status zone;
  - Adjust removal rates according to stock status,
- DFO science uses river-specific percent conservation achieved (egg deposition) to provide consistent advice to fisheries managers.



- **Limit Reference Point (100% river-specific conservation):** boundary between the critical and cautious zones. The further below the limit reference point a stock is, and the longer time period at that level, the greater the risk of irreversible damage to the population.
- **Upper Stock Reference Point (150% river-specific conservation):** above this point populations are considered healthy and available for some predetermined exploitation rate.

# Science advice

- In 2018, Atlantic Salmon stocks were in the critical zone on:
  - 50% of assessed rivers in Labrador (2 of 4 rivers)
  - 47% of assessed rivers in Newfoundland (8 of 17 rivers)
- 31% (5 of 16) of rivers showed declines in total returns, and three of these rivers had declines of greater than 30% compared to the previous 5-6 years.
- 75% (12 of 16) of rivers showed declines in large salmon abundance compared to the previous 5-6 years.

*(Note: data from previous 5 years were unavailable for 6 rivers)*

# Science advice

- Slight improvements in the Atlantic Salmon stocks were observed on many assessed rivers in 2018. However there is still concern about salmon stocks given the unprecedented declines in 2016 and 2017. Declines of this magnitude have not been observed since the commercial salmon moratoriums in 1992 (Newfoundland) and 1998 (Labrador).
- Estimated harvest from Labrador Indigenous and subsistence fisheries was 12,900 salmon in 2018, which was 5% less than the previous six-year average (2012-17). Genetic analyses indicated that the majority of these salmon were of Labrador origin (99%).
- Estimated recreational catch for Atlantic Salmon in 2018 was approximately 13,600 retained and 25,000 released.

# Science advice

- Marine survival continues to fluctuate, averaging 5.5% across four monitored rivers in 2018, which was slightly below the previous 5 year average.
- Status of Atlantic Salmon on the south coast of Newfoundland (SFAs 9-11) remains poor. Returns to Conne and Little rivers were the lowest on record over the available time-series (over 30 years). All monitored rivers in SFA 11 remain in the critical zone and marine survival rates remain low (less than 3%).

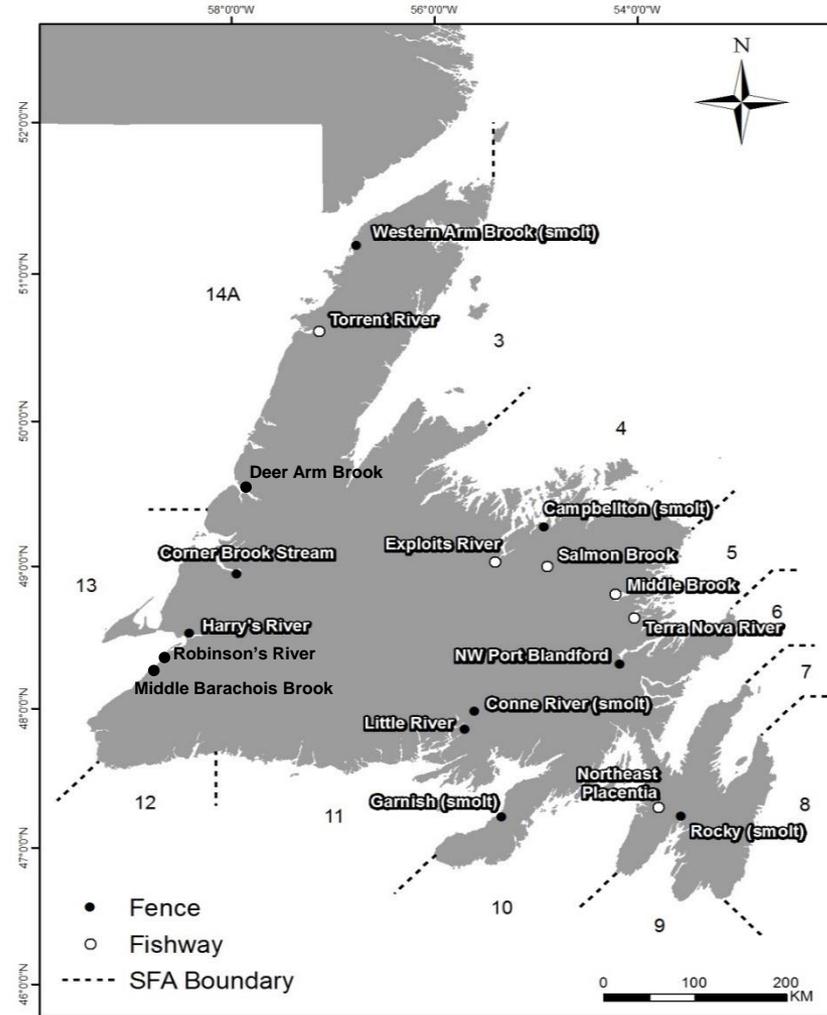
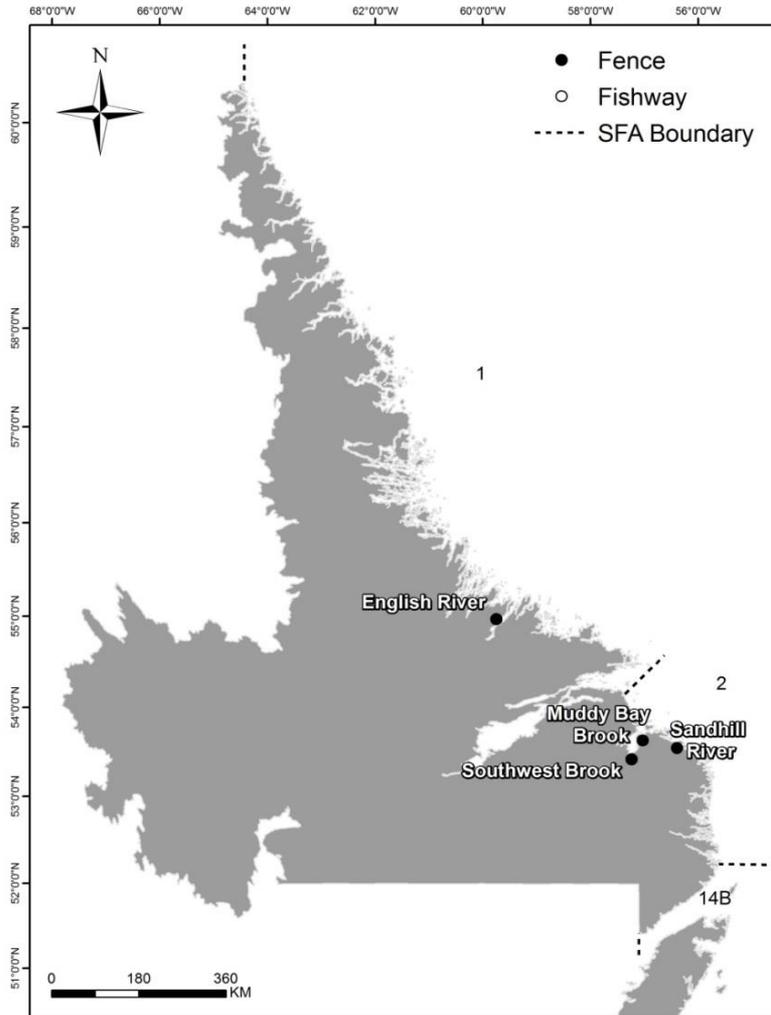


# HOW WE 'COUNT' ATLANTIC SALMON

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*The science behind our advice*

# Atlantic Salmon assessment areas



SFA Boundary  
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# Atlantic Salmon assessment areas

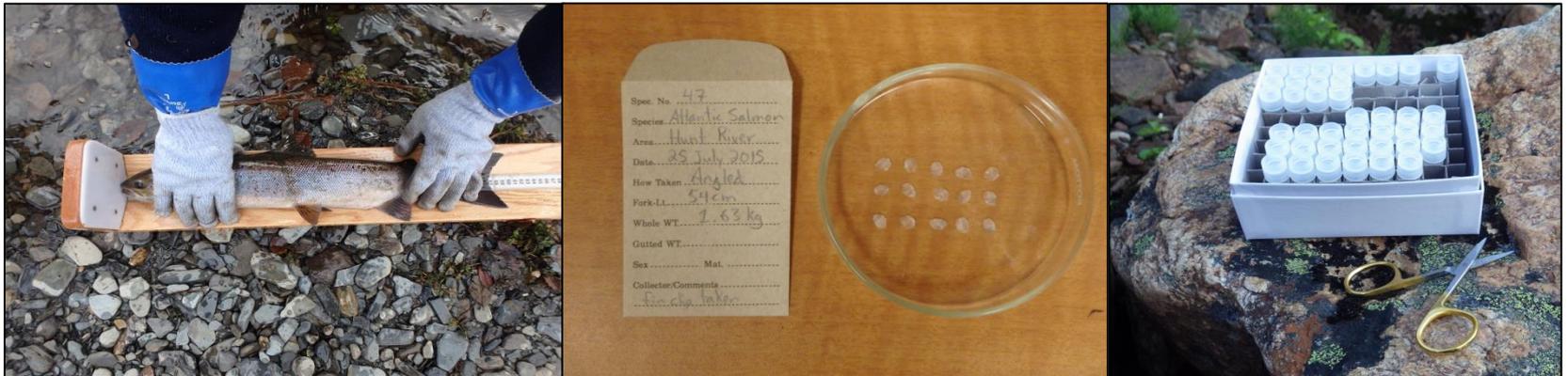
- There are **15** Atlantic Salmon management areas (SFAs 1-14B) in NL.
- In 2018 monitoring occurred on **22** rivers (4 in Labrador, 18 in NL). Northwest River was not included in the assessment due to an incomplete count.

*Note: 3 new rivers were added to the assessment in 2018, 2 in Bay St. George and another in Gros Morne National Park.*

- Atlantic Salmon assessments occur on a two-year cycle.
- Interim assessments are warranted when:
  - Salmon returns decline by more than 30% on over 50% of monitored rivers in any given year or
  - Returns decline by more than 25% on over 50% of monitored rivers in 2 consecutive years (compared to previous 5 or 6 year average).

# Atlantic Salmon monitoring

- Information on Atlantic Salmon is collected through use of monitoring facilities such as fishways and counting fences, and snorkel surveys when available.
- Adult Salmon, and in some cases juveniles (smolt), are counted at each monitoring facility.
- A portion of fish on each river are sampled for biological characteristics (e.g. age, length, weight and genetics).



- Monitoring data is used to inform scientific advice provided to fisheries management on the status of Atlantic Salmon stocks.



# ATLANTIC SALMON FISHERIES

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*The science behind our advice*

# Atlantic Salmon fisheries

- Recreational Fishery
  - Catch and effort data is obtained from the licence stub program, an annual phone survey, and commercial fishing camp log books (Labrador).
  - Total recreational catch in 2018 has been estimated at 38,600 (13,600 retained and 25,000 released).

# Atlantic Salmon fisheries

- Labrador Indigenous/subsistence fisheries.
  - We work closely with groups in Labrador (residents, Nunatsiavut Government, Innu Nation and NunatuKavut Community Council) to collect data from harvested salmon.
- Estimated harvest from Labrador Indigenous and subsistence fisheries was 12,900 salmon in 2018, which was 5 % less than the previous 6 year average.
- Genetic analyses indicated that the majority of these salmon were of Labrador origin (99%).

# STOCK STATUS

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# Atlantic Salmon – stock status

- In 2018 - 31% (5 of 16) of rivers showed declines in total returns, and three of these rivers had declines of greater than 30% compared to the previous 5-6 years.

*Note: data from previous 5 years were unavailable for 6 rivers.*

- 75% (12 of 16) of rivers showed declines in large salmon abundance compared to the previous 5-6 years.
- Total returns in 2018 improved slightly compared to 2016 and 2017, where there were unprecedented declines in total returns of a magnitude not observed in the years since the commercial salmon moratoriums in 1992 (Newfoundland) and 1998 (Labrador).

# Atlantic Salmon – stock status: Labrador

River	SFA	2018 Total Returns	Stock Status (%)		
			2016	2017	2018
English River	1	947	255	249	237
Paradise River	2	260	38	22	77
Muddy Bay Brook	2	319	109	83	132
Sand Hill River	2	4,240	60	52	92

\*Healthy, cautious and critical zones.

# Atlantic Salmon – stock status:

## Newfoundland

\*Healthy, **cautious** and **critical** zones.

River	SFA	2018 Total Returns	Stock Status (%)		
			2016	2017	2018
Exploit's River	4	18,690	37	25	31
Campbellton River	4	4,313	241	166	408
Salmon Brook	4	1,036	117	42	113
Middle Brook	5	3,638	276	266	378
Terra Nova River	5	4,884	86	51	72
Rocky River	9	329	29	37	32
Northeast River (Placentia)	10	876	437	175	467
Little River	11	8	22	4	3
Conne River	11	482	56	32	21
Garnish River	11	339	22	41	32
Harry's River	13	3,054	128	72	101
Corner Brook Stream	13	112	273	145	201
Robinsons River	13	1,300	NA	NA	70
Middle Barachois Brook	13	456	NA	NA	39
Deer Arm Brook	14A	290	NA	NA	>200
Torrent River	14A	4,657	665	534	712
Western Arm Brook	14A	1,432	405	324	499

# Overall Status

## Labrador

- 2 of the 4 assessed rivers are in the critical zone. Of the remaining assessed rivers one was in the cautious zone, and the other was in the healthy zone.

## Newfoundland

- 8 of the 17 assessed rivers are in the critical zone. Of the remaining rivers, 2 are in the cautious zone and 7 are in the healthy zone.

*Note: Stock status could not be determined on one river (Northwest River – Port Blandford) due to an incomplete count of migrating salmon in 2018.*

# Next steps

- The Atlantic Salmon stock assessment results will be available on the CSAS website in the near future. Previous full stock assessments are currently available.
- Fisheries management is holding the Labrador Salmon Advisory Council meeting on March 19 and the Newfoundland Salmon Advisory Council meeting on March 21. DFO science advice is presented and discussed with stakeholders and Indigenous groups at these meetings.
- The stock assessment advice, along with recommendations from DFO Fisheries Management and input from stakeholders and Indigenous groups, will be considered by the Department in developing future management measures for the conservation of this important resource.
- As a general topic of discussion, research about the relationship among water temperatures and Catch and Release angling was discussed at the stock assessment, which indicated that as temperatures rise, mortality increases. DFO Science looks forward to reviewing new research in this area, including the Government of Newfoundland and Labrador's Catch and Release study when the results are ready to be presented.

# Main takeaways

- After observing unprecedented declines in Atlantic Salmon stocks in 2016 and 2017, there were slight improvements on many assessed rivers in 2018.
- We are still concerned about salmon stocks due to low returns on some rivers, particularly on the south coast of Newfoundland where returns are at an historical low.
- Fisheries Management will be holding consultations with stakeholders and Indigenous groups throughout the province in the coming weeks.
- Science will continue to monitor the abundance of Atlantic Salmon stocks and new research in 2019 will include tagging salmon to better understand issues impacting marine survival.



Questions?

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