Labrador Subsistence Food Fisheries – Mixed-Stock Fisheries Context Paper (Tabled by Canada)

EXECUTIVE SUMMARY

- Atlantic salmon fisheries in Labrador that take place in estuaries and coastal areas using gillnets are considered to be mixed-stock fisheries. The management of these fisheries includes a number of conditions related to gear, seasons, weekly fishery closures, limits on total catch using carcass tags, logbook catch reporting, and prohibition on sales.
- The majority of salmon caught in these fisheries are within estuaries (81.0% in 2024) where the potential for the interception of non-local stocks is reduced.
- The logbook reporting rate (i.e., percentage of total tags reported) for the four user groups was 69% in 2024 (range 60% to 100%).
- The estimated total catch (i.e., adjusted for non-reporting) in 2024 was 34.2 t (12,899 salmon by number, 7,893 small salmon and 5,006 large salmon). Catches from 2010 to 2023 ranged between 32.5 t and 42.4 t.
- Since 2020, sampling effort and genetic analyses were directed toward the northern and southern Labrador coasts where the interception of non-local stocks is most likely to occur. A sampling rate of at least 10% is required to detect the low proportions of non-local stocks in these fisheries (ICES WGNAS 2021). The sampling rate along the Labrador coast was 9.9% in 2024.
- In 2024, 738 tissue samples were analyzed for genetic origin. As in previous years, the majority of samples (95%) assigned to Labrador genetic reporting groups. None of the samples assigned to the USA genetic reporting group.
- A total of 11,546 Labrador salmon fishery samples were analysed for genetic origin from 2006−2024 and 13 (0.1%; 8 small and 5 large) assigned to the USA genetic reporting group.

INTRODUCTION

In support of the North American Commission agenda item to address mixed-stock fisheries in domestic waters of Commission member Parties, this document presents the following information regarding the 2024 Labrador mixed-stock fisheries:

- fisheries management measures
- preliminary catch by salmon size (small < 63 cm fork length and large ≥ 63 cm fork length) and location of catch (in-river, estuarine, and coastal)
- summary of the biological sampling program and genetic origin of samples

There are currently three Atlantic salmon fisheries in Canada: (1) Indigenous food, social and ceremonial (FSC) fishery, (2) Labrador resident trout/charr fishery that permits a salmon bycatch of 3 salmon, and (3) in-river recreational angling fishery. All commercial Atlantic salmon fisheries under Canadian jurisdiction have been closed since 2000 and the sale of Canadian wild Atlantic salmon, regardless of fishery source, is prohibited.

FSC fisheries in Quebec and the Maritime provinces generally occur in close proximity to rivers and within tidal waters. The Labrador FSC and resident fisheries occur in both estuaries and coastal waters adjacent to remote coastal communities. These two Labrador fisheries have been shown to intercept salmon from other regions of eastern North America and are considered mixed-stock fisheries by NASCO.

MANAGEMENT MEASURES

Labrador is divided geographically in three Salmon Fishing Areas (SFAs) for fisheries management purposes: northern coast (SFA 1A), central Lake Melville (SFA 1B) and southern coast (SFA 2) (Figure 1).

In previous years, the fishing season and mesh sizes in the Labrador FSC and resident net fisheries were modified in an effort to reduce the capture of large salmon while maintaining the opportunity to catch small salmon, trout, and charr.

General management measures:

- carcass tags are required to be placed on all Atlantic salmon at time of capture
- catches are limited by the number of tags allocated
- the number of fishers is limited to one designate or licence holder per household
- only nylon twine netting is permitted (monofilament not permitted)
- net must be set in a straight line
- gear must be clearly marked with the full name of the fisher and other group specific information as required
- nets must be removed from the water between 6:00 pm Sunday and 6:00 pm Monday
- nets are not to be left unattended for a period of more than 24 hours
- completed catch logbook must be submitted to Fisheries and Oceans Canada (DFO) at the end of season

- all sales of Atlantic salmon are prohibited

Resident Subsistence Trout Fishery

There is a long-standing tradition of trout net fishing in Labrador targeting Brook trout/Brook charr (*Salvelinus fontinalis*) and Arctic charr (*Salvelinus alpinus*). Following the 1998 closure of the commercial salmon fishery in Labrador, there was an increased dependency on the trout fishery for subsistence purposes. A subsistence trout net licence is required and provided to residents of Labrador to catch trout. There is a recognized bycatch of 3 Atlantic salmon per licence in trout nets and management measures are in place to minimize catch.

- 219 licences were issued in 2024 and the number varied by SFA:
  - 3 in northern coast SFA 1A
  - 138 in central Lake Melville SFA 1B
  - 78 in southern coast SFA 2

Additional management measures:

- seasonal limit of 50 trout/charr
- maximum bycatch of three Atlantic salmon
- fishing must cease when either the three salmon bycatch or 50 trout/charr limits are taken
- licence holders are permitted to use a single net with a maximum length of 15 fathoms
- mesh size permitted is not less than 102 mm (4 inches)
- mesh size greater than 127mm (5 inches) is not permitted in Northern Labrador
- seasons in 2024 varied by SFA:
  - northern coast SFA 1A: 21 June to 21 July
  - central Lake Melville SFA 1B: 20 June to 7 July and 27 July to 25 August (Kenamu River area closes 31 July)
  - southern coast SFA 2: 9 July to 31 July

Indigenous food, social, and ceremonial (FSC) fisheries

In response to the Supreme Court of Canada decision interpreting Section 35 of the Constitution Act of 1982, DFO provided resource access to Indigenous groups of Labrador for FSC purposes. Between 1999 and 2005, a FSC fishery was made available for members of the Labrador Inuit Association (LIA) in northern Labrador (SFA 1A) as well as the Lake Melville area in central Labrador (SFA 1B) (Figure 1). In 2006, with the signing of the LIA Land Claims Agreement, a subsistence fishery with the Nunatsiavut Government (NG) which is the successor organization to the LIA was negotiated within Upper Lake Melville (ULM) and the Labrador Inuit Settlement Area (LISA). The Innu Nation also fishes for salmon in Lake Melville from the community of Sheshatshiu and in Northern Labrador from Natuashish (Figure 1). The NunatuKavut Community Council (NCC) negotiated a subsistence salmon fishery in southern Labrador (SFA 2) in 2004 and ULM (SFA 1B) in 2013 (Figure 1). A total of 17,700 tags were allocated to Labrador FSC fisheries in 2024.

Specific 2024 management measures by FSC group:

Nunatsiavut Government

- Approximately 7000 beneficiaries

- 726 designated fishers
- 8700 tags issued
  - Labrador Inuit Settlement Area (LISA)
    - 4700 tags issued
    - various minimum mesh size requirements from 3 to 5 inches
    - maximum length of net permitted per household is 25 fathoms
    - season extends from 15 June to 31 August
    - fishing permitted in tidal waters in various locations close to communities
  - Upper Lake Melville (ULM):
    - 4000 tags issued
    - mesh size: minimum 3 inch to maximum 4 inch
    - maximum length of net permitted per household is 25 fathoms
    - season extends from 15 June to 8 July and 20 July to 1 September
    - fishing permitted in tidal waters of the ULM area outside LISA

Innu Nation

- Approximately 3200 members
- 92 designated fishers
- 2500 tags issued
  - Sheshatshiu
    - 2000 tags issued
    - mesh size: minimum 3 inch to maximum 4 inch
    - maximum net length based on location: 225 feet or 37.5 fathoms
    - season extends from 15 June to 15 September
    - fishing in tidal waters does not occur outside ULM
  - Natuashish
    - 500 tags issued
    - mesh size: minimum 3.5 inch to maximum 5 inch
    - maximum length of net permitted per household is 25 fathoms
    - season extends from 15 June to 15 September
    - fishing permitted in the tidal waters near the community

NunatuKavut Community Council

- Approximately 6000 members
- 1157 designated fishers
- 6500 tags issued
  - Southern Labrador
    - 5926 tags issued
    - mesh size: minimum 3.5 inch to maximum 4 inch

- maximum length of net permitted per household is 25 fathoms
- season extends from 1 July to 7 August
- fishing is permitted in tidal waters

- Upper Lake Melville
  - 574 tags issued
  - mesh size: minimum 3.5 inch to maximum 4 inch
  - maximum length of net permitted per household is 25 fathoms
  - season extends from 15 June to 8 July, and 20 July to 1 September
  - fishing permitted in tidal waters of the ULM area outside LISA

FISHERIES CATCH

Labrador FSC and resident fishers are required to use logbooks to record catch and effort information, including no effort (i.e., did not fish) or the number of unused tags. Data from returned logbooks are compiled by each user group and submitted to Fisheries and Oceans Canada (DFO) at the end of each season. Total catch for each user group is estimated by raising the reported catches proportionately based on the number of tags issued and reported (used or unused). The 2024 logbook reporting rate (i.e., percentage of total tags reported) for the four user groups was 69% (range 60% to 100%).

The estimated total catch (i.e., adjusted for non-reporting) in 2024 from the Labrador FSC and resident fisheries was 34.2 t (12,899 salmon by number, 7,893 small salmon and 5,006 large salmon). Catches from 2010 to 2023 ranged between 32.5 t and 42.4 t (Figure 2).

The proportion of catch from estuarine and coastal areas is based on fixed estimates for each community (Table 1). These estimates have been used since 2007 and were provided by the local Nunatsiavut Conservation Officers in northern Labrador (SFA 1A), DFO Fishery Officers and NunatuKavut Community Council Guardians in southern Labrador (SFA 2). Catches from the Lake Melville estuary area (SFA 1B) include catches from the community of Rigolet where 15% of the catch was attributed to the coastal area (Figure 1).

The majority of the Labrador FSC and resident fisheries catch, 27.7 t (81.0%), were from estuaries (Tables 2 and 3). From 2000 to 2024, the percentage of salmon taken from coastal areas ranged from 15% to 26%. Details of the 2024 Atlantic salmon catch (by weight and number) within each Salmon Fishing Area (SFA) by salmon size category (small < 63 cm fork length and large ≥ 63 cm fork length) are provided in Table 4. In Labrador, small salmon (< 63 cm fork length) are predominantly maiden one-sea winter (1SW) and large salmon (≥ 63 cm fork length) are maiden two-sea winter (2SW) or repeat spawners (1SW and 2SW). The large salmon comprised 54.8% by weight and 38.8% by number of the 2024 catch.

The Labrador resident fishery catch decreased after 2003 as many individuals fishing under the Labrador resident licence began fishing and reporting under the NCC negotiated subsistence fishery. Since 2004, the catch of Atlantic salmon in the resident fishery has varied between 1.2 t and 3.2 t, with large salmon representing between 23% and 67% of the total catch of salmon by weight and 13% to 51% of the total by number. In 2024, the total catch was 1.3 t (0.53 t small salmon and 0.74 t large salmon) and 465 salmon by number (269 small salmon and 196 large salmon) (Table 5).

In 2024, the Labrador FSC fisheries catch was 32.9 t (14.9 t small salmon and 18.0 t large salmon) and 12,434 salmon by number (7,624 small salmon and 4,810 large salmon) (Table 6). The Labrador FSC catch between 2004 and 2023 ranged from 24.8 t to 40.4 t, with large

salmon representing between 34% and 66% of the total catch of salmon by weight and 21% to 50% of the total by number.

SAMPLING PROGRAM

Salmon caught in the Labrador FSC and resident fisheries were sampled opportunistically for length, weight, sex, scales (for age interpretation), and tissue (for genetic analysis). Fish were also examined for the presence of external tags or marks.

In 2024, a total of 770 salmon were sampled: 105 from the northern coast (SFA 1A), 113 from central Lake Melville (SFA 1B), and 552 from the southern coast (SFA 2). The samples represent 9.9% of the catch by number along the north and south coasts (12.7% of small salmon, 5.2% of large salmon). Sampling was conducted throughout the fishing season. Details of the distribution of the samples and bi-weekly catch can be found in Table 7 and Figure 3. Sample and catch by salmon size category are presented in Table 8.

Not all scales can be interpreted for age. In 2024, the percent sea age composition was 84% 1SW, 12% 2SW and 4% previously spawned salmon. All salmon samples interpreted for river age were two to seven years (modal age four) (Table 9). There were no river age one and few river age two salmon sampled suggesting that very few salmon from southern stocks of North America (USA, Scotia-Fundy).

Most of the tissue samples collected in 2024 (96%, 738 samples) were successfully analysed using the SNP panel with 31 range-wide genetic reporting groups (Table 10; Figures 4 and 5). As in previous years, the estimated origin of the samples was dominated (>95%) by the Labrador genetic reporting groups and suggests largely local catch within salmon fishing areas (Table 11; Figure 6).

None of the samples assigned to the USA genetic reporting group. A total of 11,546 Labrador salmon fishery samples were analysed for genetic origin from 2006−2024 and 13 (0.1%; 8 small and 5 large) assigned to the USA genetic reporting group (Figure 7).

LITERATURE CITED

I R Bradbury, S J Lehnert, A Messmer, S J Duffy, E Verspoor, T Kess, J Gilbey, V Wennevik, M Robertson, G Chaput, T Sheehan, P Bentzen, J B Dempson, D Reddin, Range-wide genetic assignment confirms long-distance oceanic migration in Atlantic salmon over half a century, ICES Journal of Marine Science, Volume 78, Issue 4, August 2021, Pages 1434–1443, https://doi.org/10.1093/icesjms/fsaa152

ICES. 2021. Working Group on North Atlantic Salmon (WGNAS). ICES Scientific Reports. 3: 29. 407 pp. https://doi.org/10.17895/ices.pub.7923

Table 1. The proportion of Atlantic salmon caught from estuarine and coastal areas is based on fixed estimates for each community participating in the Labrador FSC and resident fisheries.

Fishing Area/Community	Proportion catch	
	Estuarine	Coastal
Northern SFA 1A		
Makkovik	0.75	0.25
Postville	0.90	0.10
Hopedale	0.10	0.90
Nain	0.00	1.00
Central Lake Melville SFA 1B		
Lake Melville	1.00	0.00
Rigolet	0.85	0.15
Southern SFA 2		
Sandwich Bay	0.85	0.15
Black Tickle	0.01	0.99
Charlottetown to Lodge Bay	0.70	0.30

Table 2. Labrador FSC and resident fisheries Atlantic salmon catch (t) by location category from 2001 to 2024. Values for 2024 are provisional.

Year	Catch (t)			Catch (%)	
	Estuarine	Coastal	Total	Estuarine	Coastal
2001	13.5	2.8	16.3	82.9	17.1
2002	14.0	3.6	17.6	79.6	20.4
2003	17.5	4.6	22.1	79.1	20.9
2004	24.8	6.8	31.5	78.6	21.4
2005	24.7	7.2	31.9	77.5	22.5
2006	25.0	7.8	32.7	76.3	23.7
2007	20.5	6.0	26.5	77.3	22.7
2008	26.9	9.4	36.3	74.1	25.9
2009	22.6	7.2	29.8	75.9	24.1
2010	29.7	6.8	36.5	81.4	18.6
2011	34.2	7.8	42.0	81.5	18.5
2012	28.9	7.6	36.6	79.1	20.9
2013	31.8	8.1	40.0	79.7	20.3
2014	26.3	6.2	32.5	80.9	19.1
2015	34.2	8.2	42.4	80.6	19.4
2016	32.7	6.9	39.6	82.5	17.5
2017	30.3	9.0	39.4	77.1	22.9
2018	26.1	6.7	32.8	79.5	20.5
2019	31.3	6.5	37.8	82.7	17.3
2020	33.0	7.9	40.9	80.7	19.3
2021	29.3	7.2	36.5	80.3	19.7
2022	31.8	6.9	38.7	82.2	17.8
2023	32.8	7.6	40.4	81.2	18.8
2024	27.7	6.5	34.2	81.0	19.0

Table 3. Percent of the Labrador FSC and resident fisheries Atlantic salmon catch taken in coastal locations by fishing area from 2009 to 2024. Values for 2024 are provisional.

	Percent coastal catch			
Year	Northern SFA 1A	Central Lake Melville SFA 1B	Southern SFA 2	Labrador Total
2009	44.7	5.4	35.6	24.1
2010	40.1	3.4	32.2	18.6
2011	38.5	1.7	33.4	18.5
2012	47.5	5.5	30.1	20.9
2013	45.8	4.8	32.8	20.3
2014	43.7	5.0	32.2	19.1
2015	43.8	4.5	30.4	19.4
2016	45.4	3.5	31.1	17.5
2017	63.4	6.2	30.0	22.9
2018	44.2	5.0	31.9	20.5
2019	39.6	2.4	31.3	17.3
2020	44.1	2.9	30.3	19.3
2021	46.0	3.2	30.4	19.7
2022	44.4	1.8	30.7	17.8
2023	45.2	2.8	31.5	18.8
2024	44.9	2.6	32.7	19.0

Table 4. Preliminary 2024 Labrador FSC and resident fisheries Atlantic salmon catch by weight (kg) and number for each fishing area and salmon size category (small < 63 cm and large ≥ 63 cm). The percent large salmon catch by weight and number are also provided.

Salmon Fishing Area	Weight (kg)			Number of fish			Percent Large	
	Small	Large	Total	Small	Large	Total	By weight	By number
Northern SFA 1A	1,130	3,134	4,264	578	804	1,382	73.5	58.2
Central Lake Melville SFA 1B	7,374	9,924	17,298	3,727	2,562	6,289	57.4	40.7
Southern SFA 2	6,957	5,650	12,607	3,588	1,640	5,228	44.8	31.4
Labrador Total	15,461	18,708	34,169	7,893	5,006	12,899	54.8	38.8

Table 5. Preliminary 2024 Labrador resident fisheries Atlantic salmon catch by weight (kg) and number for each fishing area and salmon size category (small < 63 cm and large ≥ 63 cm). The percent large salmon catch by weight and number are also provided.

Salmon Fishing Area	Weight (kg)			Number of fish			Percent Large	
	Small	Large	Total	Small	Large	Total	By weight	By number
Northern SFA 1A	2	19	21	1	5	6	90.5	83.3
Central Lake Melville SFA 1B	279	541	820	139	137	276	66.0	49.6
Southern SFA 2	248	175	423	129	54	183	41.4	29.5
Labrador Total	529	735	1,264	269	196	465	58.1	42.2

Table 6. Preliminary 2024 Labrador FSC fisheries Atlantic salmon catch by weight (kg) and number for each fishing area and salmon size category (small < 63 cm and large ≥ 63 cm). The percent large salmon catch by weight and number are also provided.

Salmon Fishing Area	Weight (kg)			Number of fish			Percent Large	
	Small	Large	Total	Small	Large	Total	By weight	By number
Northen SFA 1A	1,128	3,115	4,243	577	799	1,376	73.4	58.1
Central Lake Melville SFA 1B	7,095	9,383	16,478	3,588	2,425	6,013	56.9	40.3
Southern SFA 2	6,709	5,475	12,184	3,459	1,586	5,045	44.9	31.4
Labrador Total	14,932	17,973	32,905	7,624	4,810	12,434	54.6	38.7

Table 7. Bi-weekly summary of the Atlantic salmon catch and sampling during the 2024 Labrador FSC and resident fisheries. Note: 5 samples with incomplete data (no size/date) were not included in the table.

Catch	SFA 1A		SFA 1B		SFA 2		Total	
	Number	% of Catch	Number	% of Catch	Number	% of Catch	Number	% of Catch
Jun 15-30	57	4.1	1387	22.1	CLOSED			1444
Jul 1–15	510	36.9	2816	44.8	3903	74.5	7229	56.0
Jul 16–31	516	37.3	1759	28.0	1260	24.1	3535	27.4
Aug 1–15	195	14.1	242	3.9	75	1.4	512	4.0
Aug 16–31	104	7.5	75	1.2	CLOSED			179
Sept 1-15	CLOSED		0	0.0	CLOSED		0	0.0
Total	1,382		6,279		5,238		12,899	

Samples	SFA 1A		SFA 1B		SFA 2		Total	
	Number	% Sampled	Number	% Sampled	Number	% Sampled	Number	% Sampled
Jun 15-30	1	1.0	22	20.2	CLOSED			23
Jul 1–15	66	62.9	42	38.5	431	78.2	539	70.5
Jul 16–31	38	36.2	34	31.2	119	21.6	191	25.0
Aug 1–15	0	0.0	9	8.3	1	0.2	10	1.3
Aug 16–31	0	0.0	2	1.8	CLOSED			2
Sept 1-15	CLOSED		0	0.0	CLOSED		0	0.0
Total	105		109		551		765	

Table 8. Percent of the 2024 Labrador FSC fisheries catch sampled by size category (small < 63 cm and large ≥ 63 cm). Note: 5 samples did not have size/date data.

	Small salmon			Large salmon				Total		
	Sample	Catch	% of Catch	Sample	Catch	% of Catch	Unknown Sample	Sample	Catch	% of Catch
Northern (SFA 1A)	63	578	10.9	42	804	5.2	0	105	1382	7.6
Lake Melville (SFA 1B)	84	3727	2.3	25	2562	1.0	4	113	6289	1.8
Southern (SFA 2)	465	3588	13.0	86	1640	5.2	1	552	5228	10.6
Coastal Labrador	528	4166	12.7	128	2444	5.2	1	657	6610	9.9
Labrador Total	612	7893	7.8	153	5006	3.1	5	770	12899	6.0

Table 9. River age of Atlantic salmon sampled from the 2024 Labrador FSC fisheries sampling program. Note: 50 samples could not be interpreted for river age.

Salmon Fishing Area	Number of scale samples interpreted	River Age (%)						
		1	2	3	4	5	6	7
Northern (SFA 1A)	103	0.00	0.0	8.7	41.7	41.7	7.8	0.0
Lake Melville (SFA 1B)	104	0.00	0.0	14.4	55.8	26.9	2.9	0.0
Southern (SFA 2)	513	0.00	0.6	16.8	49.5	27.7	5.3	0.2
Labrador Total	720	0.00	0.4	15.3	49.3	29.6	5.3	0.1

Table 10. Reporting groups and acronyms defined from the range wide single nucleotide polymorphism (SNP) genetic baseline for Atlantic salmon in the North Atlantic. See Bradbury *et al.* (2021) for baseline details and performance evaluation.

Genetic Reporting group	Group acronym
Ungava	UNG
Labrador Central	LAC
Lake Melville	MEL
Labrador South	LAS
St. Lawrence North Shore Lower	QLS
Anticosti	ANT
Gaspe Peninsula	GAS
Quebec City Region	QUE
Gulf of St. Lawrence	GUL
Inner Bay of Fundy	IBF
Eastern Nova Scotia	ENS
Western Nova Scotia	WNS
Saint John River & Aquaculture	SJR
Northern Newfoundland	NNF
Western Newfoundland	WNF
Newfoundland 1	NF1
Newfoundland 2	NF2
Fortune Bay	FTB
Burin Peninsula	BPN
Avalon Peninsula	AVA
Maine, United States	USA
Spain	SPN
France	FRN
European Broodstock	EUB
United Kingdom and Ireland	BRI
Barents-White Seas	BAR
Baltic Sea	BAL
Southern Norway	SNO
Northern Norway	NNO
Iceland	ICE
Greenland	GL

Table 11. Genetic mixture analysis of Labrador subsistence fisheries for 2024 using the SNP range wide baseline. Mean percent values (and 95% credible interval) by range wide genetic reporting groups (Figures 3 and 4). Small <63 cm, Large >=63 cm. Note that credible intervals with a lower bound including zero indicate little support for the mean assignment value.

Genetic Reporting Group	Total	Small	Large	SFA 1A	SFA 2	SFA 1B
Spain	0	0	0	0	0	0
	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)
France	0	0	0	0	0	0
	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)
European Brood stock	0	0	0	0	0	0
	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)
United Kingdom / Ireland	0	0	0	0	0	0
	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)
Barents-White Seas	0	0	0	0	0	0
	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)
Baltic Sea	0	0	0	0	0	0
	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)
Southern Norway	0	0	0	0	0	0
	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)
Northern Norway	0	0	0	0	0	0
	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)
Iceland	0	0	0	0	0	0
	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)
Greenland	0	0	0	0	0	0
	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)
Maine, United States	0	0	0	0	0	0
	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)
Western Nova Scotia	0	0	0	0	0	0
	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)
Eastern Nova Scotia	0	0	0	0	0	0
	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)
Inner Bay of Fundy	0	0	0	0	0	0
	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)
Gulf of St Lawrence	0.1	0.2	0	0	0.2	0
	(0.0, 0.5)	(0.0, 0.7)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.8)	(0.0, 0.0)
Saint John River Aquaculture	0	0	0	0	0	0
	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)
Québec City Region	0	0	0	0	0	0
	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)
Gaspe Peninsulas	0	0	0	0	0	0
	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)
Anticosti	0	0	0	0	0	0
	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)
St Lawrence North Shore	0	0	0	0	0	0

Lower	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)
Newfoundland 2	0.5	0	2.0	0	0.7	0
	(0.1, 1.2)	(0.0, 0.0)	(0.3, 5.1)	(0.0, 0.0)	(0.1, 1.6)	(0.0, 0.0)
Fortune Bay	0	0	0	0	0	0
	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)
Burin Peninsula	0	0.8	0	0	0	0
	(0.0, 0.0)	(0.0, 1.9)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)
Avalon Peninsula	0	0.2	0	0	0	0
	(0.0, 0.0)	(0.0, 0.7)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)	(0.0, 0.0)
Newfoundland 1	1.3	0.9	2.4	0	2.0	0
	(0.5, 2.4)	(0.2, 2.0)	(0.4, 5.7)	(0.0, 0.0)	(0.8, 3.5)	(0.0, 0.0)
Western Newfoundland	0.4	0.5	0	0	0.6	0
	(0.1, 1.0)	(0.1, 1.2)	(0.0, 0.0)	(0.0, 0.0)	(0.1, 1.4)	(0.0, 0.0)
Northern Newfoundland	0.7	0.7	0	0	0.9	0
	(0.2, 1.4)	(0.2, 1.5)	(0.0, 0.0)	(0.0, 0.0)	(0.3, 1.9)	(0.0, 0.0)
Labrador South	59.1	64.3	37.9	0	79.4	1.7
	(54.9, 63.1)	(59.8, 68.7)	(28.8, 47.3)	(0.0, 0.0)	(75.3, 83.3)	(0.0, 5.3)
Lake Melville	21.7	20.7	23.4	11.3	9.3	95.2
	18.6, 25.1)	(17.2, 24.3)	(16.2, 31.3)	(2.8, 22.1)	(6.9, 12)	(89.9, 98.7)
Labrador Central	13.5	10.7	27.2	87.5	3.8	0
	(10.4, 16.9)	(7.5, 14.2)	(18.6, 36.5)	(76.3, 96.3)	(1.5, 6.5)	(0.0, 0.0)
Ungava	1.9	0.9	6.3	0	2.4	1.1
	(1.0, 3.0)	(0.3, 1.7)	(3.0, 10.8)	(0.0, 0.0)	(1.3, 3.9)	(0.0, 3.9)
Total Samples	738	586	144	104	531	103

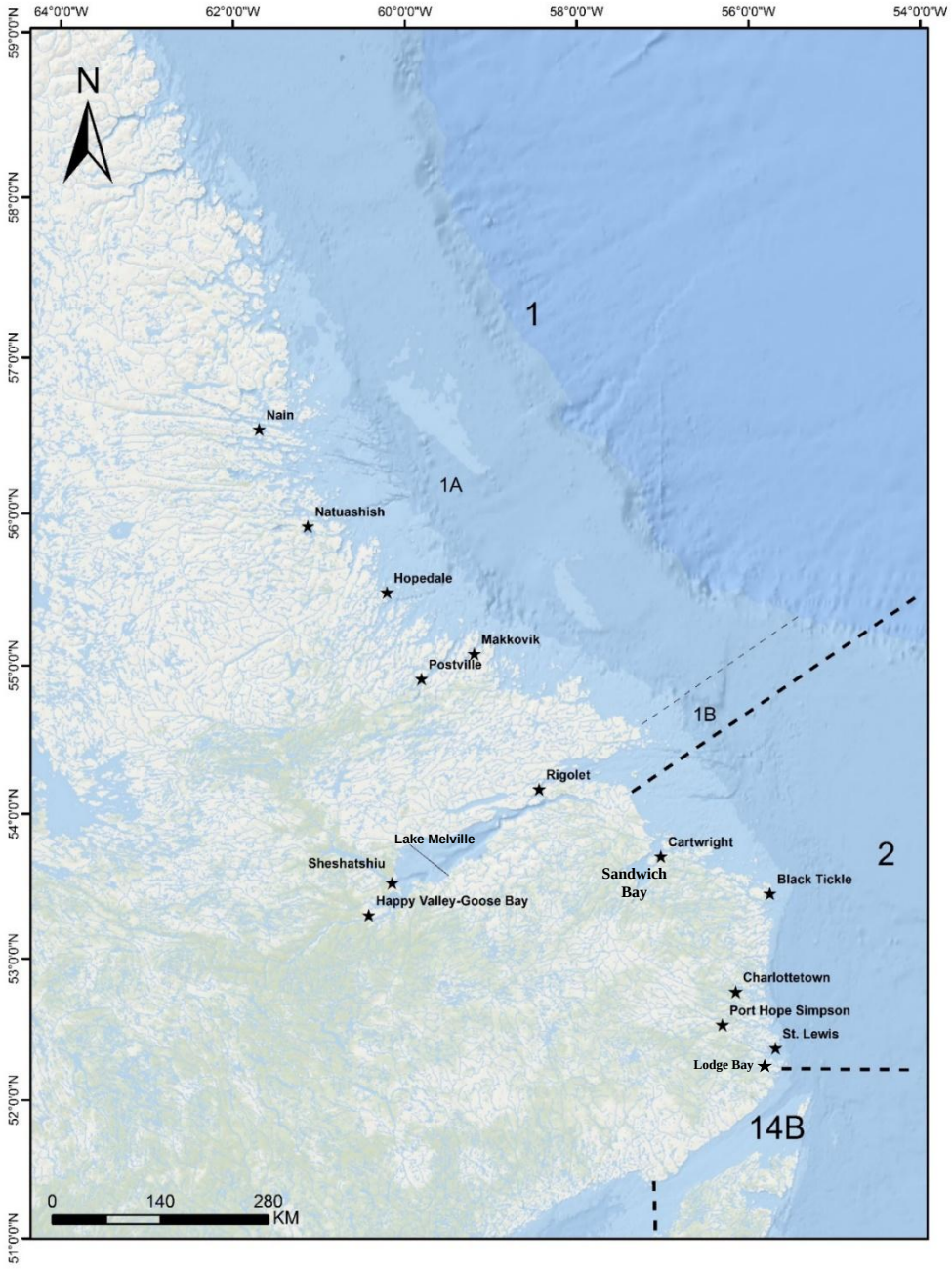

Figure 1. Map of Salmon Fishing Areas (SFAs 1A, 1B, 2 and 14B) and local communities in Labrador. Line across Lake Melville marks the division between Upper Lake Melville and the Labrador Inuit Settlement Area (LISA).

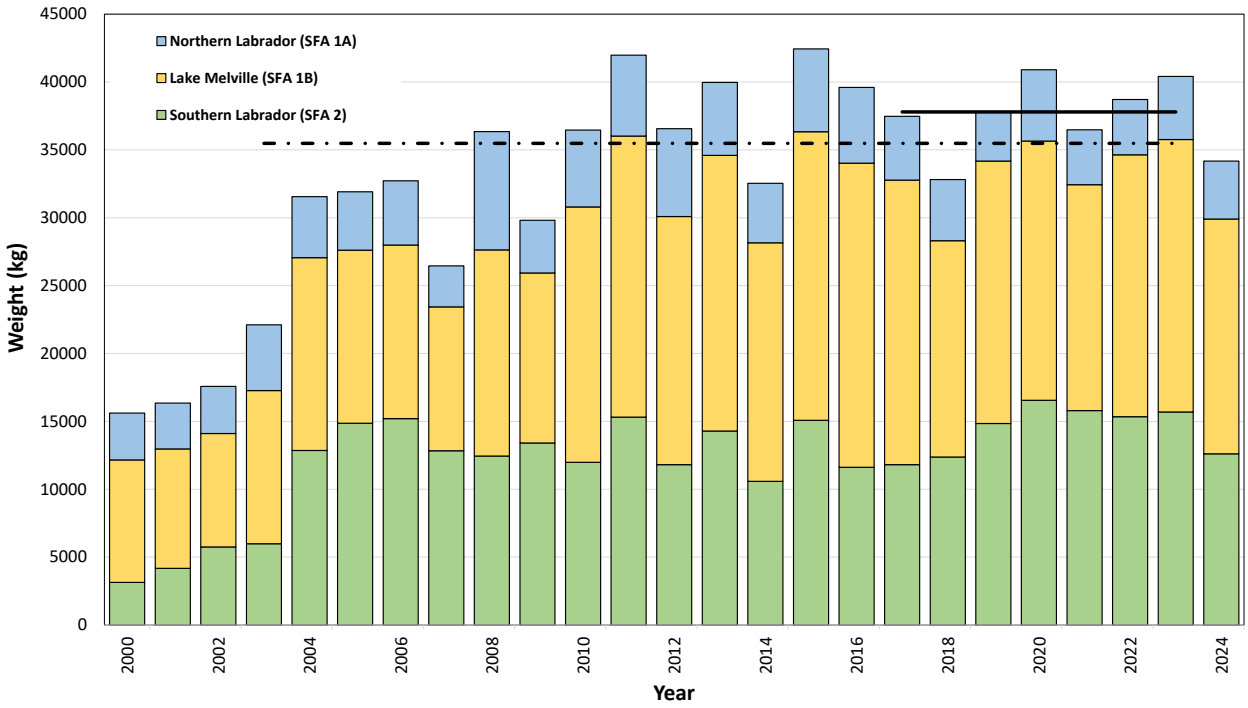

Figure 2. Labrador FSC and resident fisheries Atlantic salmon catch by weight (kg) from 2000 to 2024. The horizontal lines represent the mean from 2017-2023 (solid) and 2003-2023 (dashed). Values for 2024 are provisional.

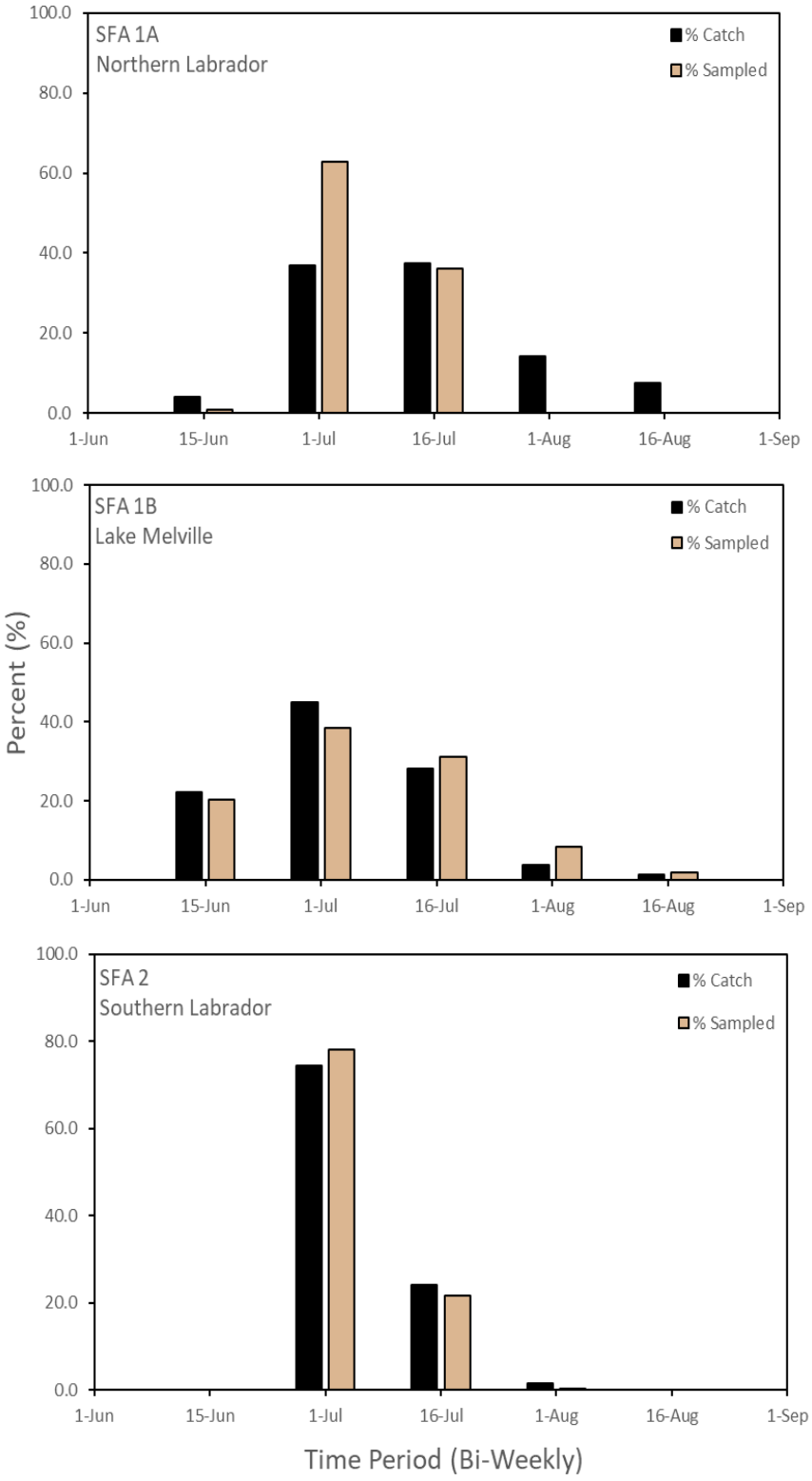

Figure 3. Bi-weekly distribution (%) of the Labrador FSC and resident fisheries Atlantic salmon catch and sampling by fishing area.

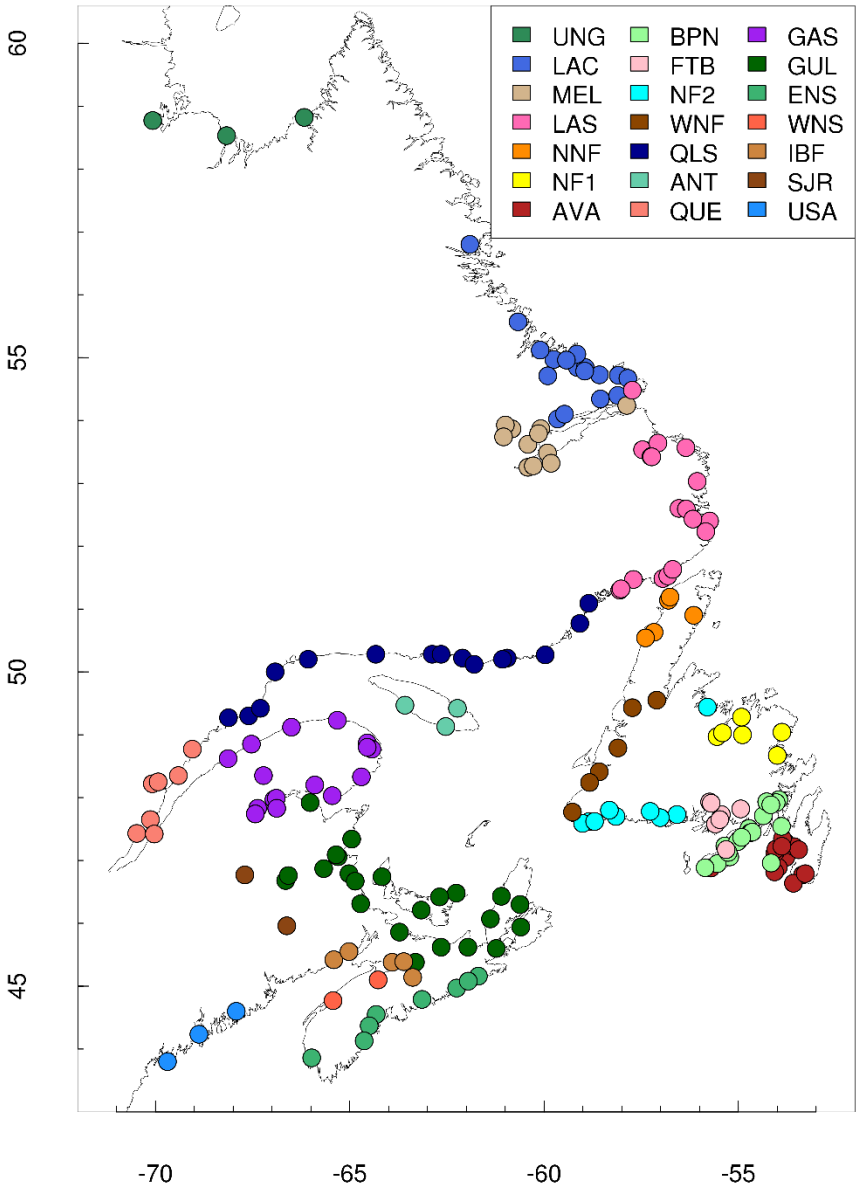

Figure 4. Map of North American sample locations used in the SNP baseline for Atlantic salmon. The 21 North American genetic reporting groups are labelled and identified by colour. See Figure 4 for the remaining 9 North Atlantic baseline sampling locations (note: no location provided for the European Broodstock reporting group). See Bradbury *et al.* (2021) for baseline details and performance evaluation.

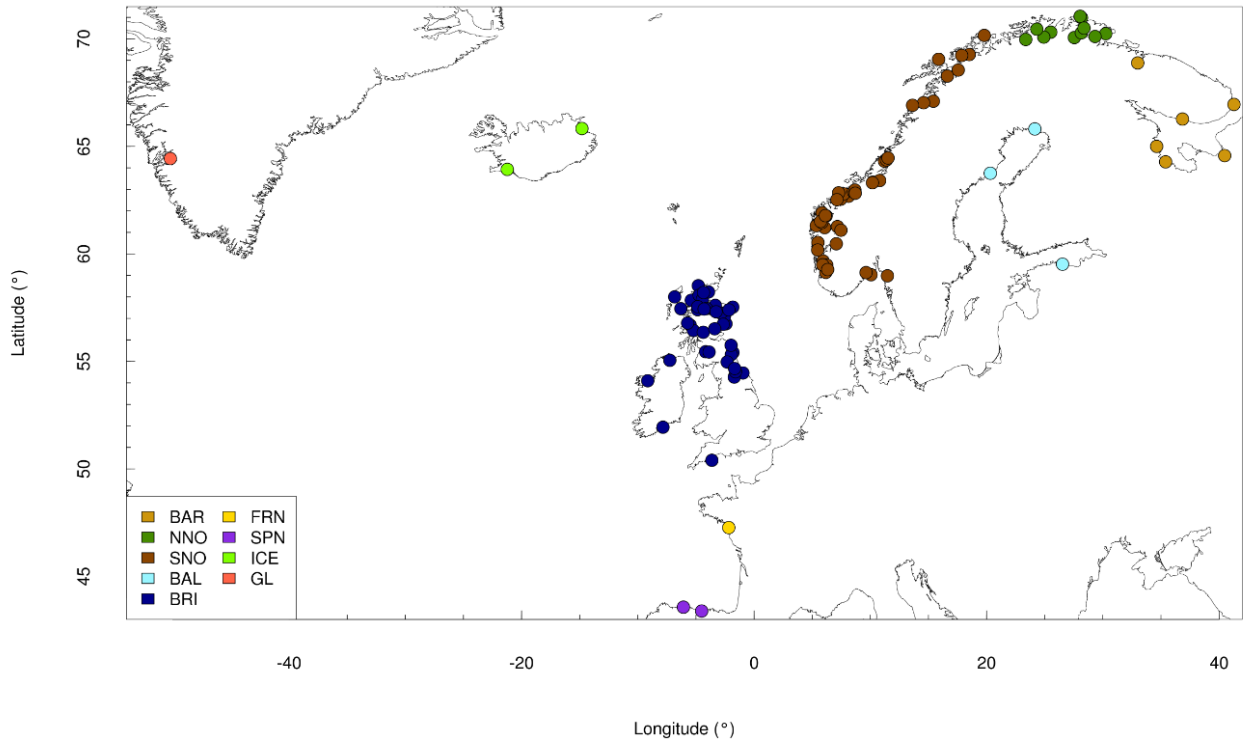

Figure 5. Map of sample locations from Greenland, Iceland and Europe used in the SNP baseline for Atlantic salmon and the 9 defined genetic reporting groups (labelled and identified by colour). See Figure 3 for North American locations (note: no location provided for the European Broodstock reporting group). See Bradbury *et al.* (2021) for baseline details and performance evaluation.

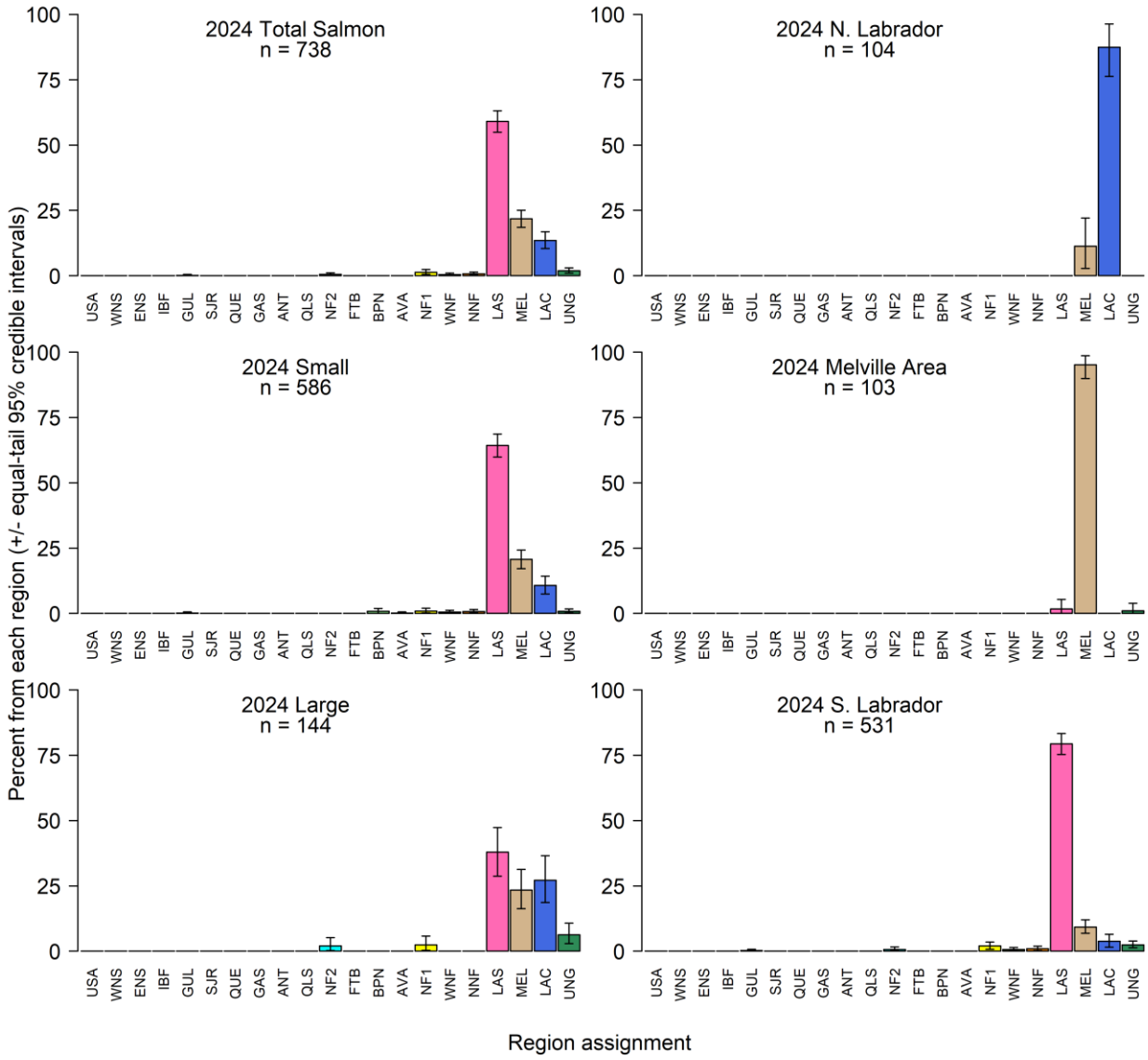

Figure 6. Bayesian estimate of the genetic mixture composition of Atlantic salmon samples from the 2024 Labrador FSC and resident fisheries by size category (small <63 cm and large ≥ 63 cm) and area using the SNP range wide baseline for Atlantic salmon. Baseline locations refer to genetic reporting groups identified in Figures 4 and 5. Genetic reporting group assignment acronyms are explained in Table 10. Notes: 8 samples did not have salmon size data. Credible intervals with a lower bound including zero indicate little support for the mean assignment value.

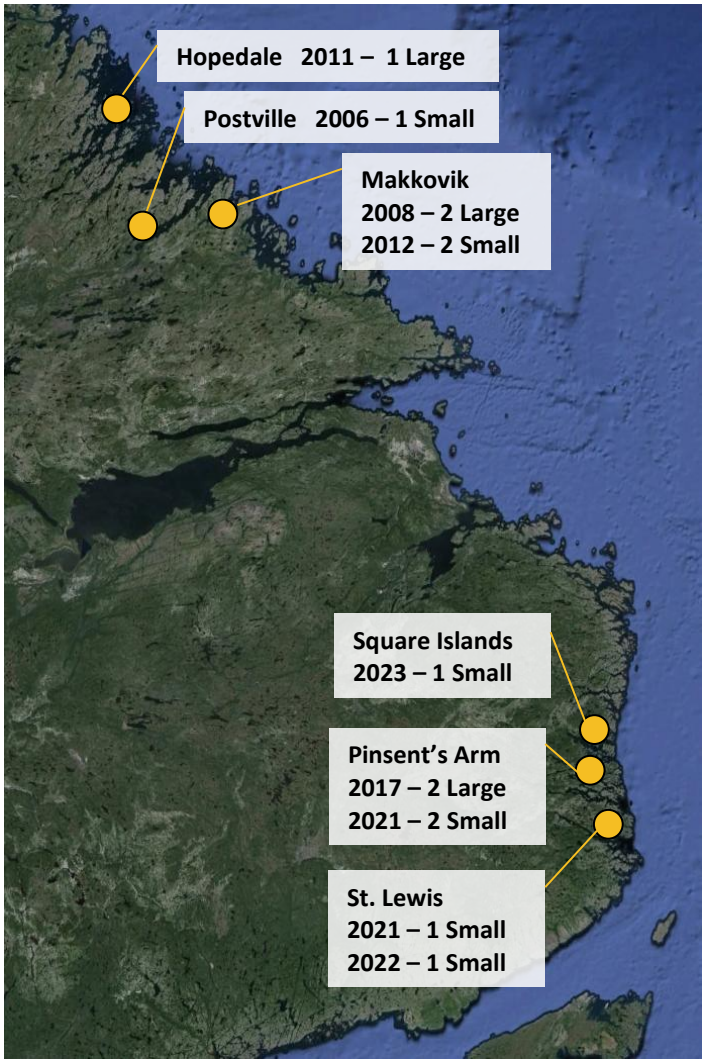

Figure 7. Map of the locations and years where 13 Atlantic salmon from the USA genetic reporting group were sampled in the Labrador FSC and resident fisheries from 2006 to 2024.