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ABSTRACT

An Atlantic salmon (*Salmo salar*) mixed-stock fishery operating from August through October exists off the western coast of Greenland and primarily harvests 1 sea-winter (1SW) North American and European origin salmon destined to return to natal waters as 2 sea-winter (2SW) spawning adults. To collect data on the biological characteristics and origin of the harvest necessary for international stock assessment efforts, parties to the North Atlantic Salmon Conservation Organization's (NASCO) West Greenland Commission agreed to participate in an international sampling program for the 2017 fishery. The sampling program was coordinated by the USA (NOAA Fisheries Service) and involved 7 samplers from 5 countries, deployed among 4 communities (Sisimiut, Maniitsoq, Paamiut, and Qaqortoq) located on the west coast of Greenland. Reported landings in 2017 were 28.0 metric tons (t). Data on length, weight, freshwater and marine age from scale samples, and continent and region of origin from genetic analysis of tissue samples were collected. Since 2002 (with the exception of 2006, 2011, and 2015) unreported landings were identified by comparing the reported landings to the weight of the sampled harvest for each community. Unreported landings were detected in 2017 although the discrepancy was small (277 kg). In total, 1,596 salmon were observed by the sampling teams (approximately 20% by weight of the reported landings), and 1,370 of these were sampled for biological characteristics. No samples were collected from factory landed fish because factory landings were not allowed in 2017. As seen since the mid-1990s, a high proportion of the harvested stock was of North American origin (74%) with the balance European origin (26%). Primary contributors to the sampled fish were the Labrador, Gulf of St. Lawrence, and Gaspé Peninsula reporting groups (~67%) for North American origin individuals and the United Kingdom/Ireland reporting group (~23%) for European origin individuals. No individuals were identified as having originated from the Kapisillit reporting group, which represents Greenland's only self-sustaining Atlantic salmon population. North American origin fish were primarily freshwater age 2 or 3 years (31% and 69% respectively). European origin fish were primarily freshwater age 2 (73%). Overall, 93% of the sampled fish were 1SW salmon. The mean length of North American 1SW salmon was 66.6 cm, and the mean whole weight was 3.42 kg; the mean length of European 1SW salmon was 64.8 cm, and the mean whole weight was 3.31 kg. Approximately 6,100 North American (20.9 t) and 2,200 European salmon (7.2 t) were harvested, not taking into account any unreported catch. The sampling program was successful in adequately sampling the Greenland catch, both temporally and spatially, and provided essential input data to international stock assessment efforts that provide stock status and catch options for subsequent fishery management.

INTRODUCTION

An important mixed-stock Atlantic salmon (*Salmo salar*) fishery exists off the western coast of Greenland. This fishery takes primarily 1 sea-winter (1SW, fish that have spent 1 winter at sea) North American and European origin salmon that would potentially return to natal waters as mature 2 sea-winter (2SW) spawning adults or older. Effective management of the resource on both continents requires annual collection of accurate landings data, continent and region of origin assignments, and biological characteristics data to assess the impact of the fishery on the contributing stock complexes. Data collected from the fishery are also required for use in assessment models which predict pre-fishery abundance of North American and European stocks to provide fishery managers with catch options required for setting harvest regulations.

Atlantic salmon were first documented off the coast of Greenland in 1780 and were targeted by a small local inshore gillnet fishery (Jensen 1990). During the early 1960s, the fishery developed an international presence; in 1965, vessels from Norway, Denmark, Sweden, and the Faroe Islands arrived and introduced an offshore drift-gillnet fishery (ibid.). Reported catches increased to a high of 2,689 t in 1971 (Figure 1). Mark-recapture studies conducted during this period indicated that the Atlantic salmon caught in this fishery were of North American and European origin and were not uniformly distributed along the coast (Reddin et al. 2012). Because of the concerns that this fishery would have deleterious impacts on the contributing stock complexes, a quota system was agreed upon and implemented in 1976 (Colligan et al. 2008), and since 1984, catch regulations have been established by NASCO.

Since 1969, a coordinated international sampling program has been conducted to obtain biological samples from the Greenland salmon fishery. From 1969-1981, research vessels were used to obtain samples. Since 1982, international teams of samplers have been deployed throughout West Greenland to obtain samples from fish processing plants (when a commercial fishery is allowed), local markets, and other vendors from individual communities landing salmon. The focus of this sampling program is to collect biological data and samples. Historically, length, weight, and scale samples were collected, and individual salmon were scanned for fin clips or external/internal tags. Beginning in 2002, tissue samples have been collected from fish for genetic stock identification.

The purpose of this paper is to:

- Describe the international sampling program;
- Present the results from the continent and region of origin analysis; and
- Summarize the biological characteristics of the catch from 2017 West Greenland fishery.

International Sampling Program

The West Greenland Commission (WGC) of NASCO has agreed to regulatory measures for the West Greenland fishery for all years from 1984 onward (except 1985, 1991, 1992, and 1996). Since 2006, these regulations have been applied as multiyear measures. The latest measure was established for the period 2015 to 2017 (NASCO 2015; see WGC(15)21), and these regulations would also apply in 2016 and 2017 if the Framework of Indicators (FWI) developed and updated by the International Council for the Exploration of the Sea (ICES 2007, 2015) indicate no significant change, implying that a reassessment of the catch advice would not be required.

From 2002 to 2011 the quota for commercial landings of Atlantic salmon for export was set to 0 tons by the Government of Greenland, but the internal-use-only fishery for personal and local consumption was unaffected. Selling of salmon to hotels, institutions, and local markets by licensed fishermen and an unlicensed fishery for private consumption were allowed. The internal-use-only fishery was without a quota limit but previously had been estimated at 20 t annually. The fishery generally operates during the months of August, September, and October, and from 2005-2014 the fishery has opened on 1 August and closed on 31 October. Starting in 2015, the Government of Greenland delayed the opening of the fishery until 15 August with a closing date of 31 October. The fishery is regulated according to the Government of Greenland Executive Order No. 12 of 1 August 2012, an update to the previous order (Government of Greenland Executive Order No. 21 of 10 August 2002).

From 2012-2014, the Government of Greenland set the national quota for commercial landings of Atlantic salmon for export to 0 tons. No export of salmon from Greenland was allowed.

However, in 2012 the Government of Greenland set a 35 t national quota for landing at fish processing factories to provide a year-round supply of locally harvested Atlantic salmon within Greenland. The internal-use-only fishery for personal and local consumption remained unaffected and unrestricted by the quota for factory landings. A factory landings-only quota was again set to 35 t in 2013 but was then reduced to 30 t in 2014. In 2015 the Government of Greenland unilaterally set a quota of 45 t for all components of its fishery, as a quota could not be agreed to by all parties of the WGC of NASCO (NASCO 2015; see WGC(15)21). The regulatory measure stated that any harvest exceeding the quota within a year would be subtracted from the quota in the following year. Given the lack of overage for the 2016 harvest, the 2017 quota was set to 45 t by the Government of Greenland.

Under NASCO's West Greenland Sampling Agreement (NASCO 2017; see WGC(17)9), parties to NASCO's WGC agreed to provide staff to sample Atlantic salmon catches from the West Greenland internal-use-only fishery during the 2017 season.

The objectives of the sampling program were to:

- Continue the time series of data (1969-2016) on continent of origin and biological characteristics of the Atlantic salmon in the West Greenland fishery;
- Provide data on mean weight, length, age, and continent of origin for use in the North American and European Atlantic salmon run-reconstruction models; and
- Collect information on the recovery of internal and external tags.

As outlined in the sampling agreement, the European Union agreed to provide staff to sample the fishery for a minimum of 8 person-weeks (which would amount to 8 weeks of sampling); the United States agreed for a minimum of 2 person-weeks; and Canada for a minimum of 2 person-weeks. Samplers from various countries involved in the program are outlined in Table 1.

The coordination of this effort was handled by the USA (NOAA Fisheries Service) with assistance from the Greenland Institute of Natural Resources (GINR). Individual samplers were deployed during the course of the fishing season to provide the best possible spatial and temporal coverage of the fishery. A total of 7 samplers were stationed in 4 communities located within 4 Northwest Atlantic Fisheries Organization (NAFO) divisions (Figure 2): Sisimiut (1B), Maniitsoq (1C), Paamiut (1E) and Qaqortoq (1F). Samplers were not deployed to Nuuk (1D) because of the continued uncertainty of access to landed Atlantic salmon in this community (ICES 2012). Factory landings were not allowed by the Government of Greenland in 2017, and therefore no factory landings samples were collected.

Reported landings in 2017 were 28.0 t (27.8 t for West Greenland and 0.3 t for East Greenland ICES Statistical Area XIV). In the past, nonreporting of harvest was identified by comparing the reported landings to the sample data. From 2002-2015 (with the exception of 2006, 2011, and 2015), the sampling team documented more fish than reported in at least 1 division (ICES 2017). A documented salmon could be one that was either sampled, checked for an adipose clip only, or not sampled but seen. When this type of discrepancy occurs, the reported landings are adjusted to include the total weight of the fish documented as being landed during the sampling period, and the adjusted landings are included in all subsequent assessments. Considering that samplers are not stationed within a community throughout the entire fishing season and that there are numerous communities without samplers present, these adjusted landings should be considered minimum estimates.

In 2017 a discrepancy was detected in a single community (Table 2). The reported landings for Sisimiut (1B) were 1,562 kg, and the total weight of fish identified by the sampling teams was 1,839 kg. As such, the landings for Sisimiut were adjusted for this discrepancy (277 kg) and the adjusted landings were set to 1,839 kg. The time series of reported landings and adjusted landings for 2002-2017 are presented in Table 3. To provide the most reliable estimate of catch, which is necessary for estimating the potential fishery impacts on contributing stocks, it is important to continually improve the catch reporting procedures and the quality of the catch statistics. Factory landings, when allowed, are not considered within this process since these landings are strictly regulated by the Government of Greenland (e.g., only licensed commercial fishers can land at designated factories) and are accounted for and reported by the factory managers to the Greenland Fisheries License Control Authority on a daily to weekly basis.

Landed fish were sampled at random, and when possible, the total catch was sampled. Individual fish were measured (fork length, mm) and weighed (gutted weight or whole weight, 0.01 kg). Scales were taken for age determination, and adipose fins were taken for DNA analysis for stock identification. Fish were also examined for fin clips, external marks, external tags, and internal tags. Adipose-clipped fish were sampled for microtags (coded wire tags).

Sampling teams observed 1,596 salmon. Of this total, 1,371 were sampled for biological characteristics representing 20% of the reported landings. Factory landings were not allowed by the Government of Greenland, and therefore no samples were obtained from factory landed fish. A total of 145 fish were only checked for an adipose clip, and 80 were documented as being landed but were not sampled or examined further. Biological characteristics data were collected as follows:

- 1,370 fork lengths;
- 1,023 gutted weights;
- 391 whole weights;
- 1,367 scale samples; and
- 1,367 genetic samples.

In total, 23 adipose-clipped fish were documented. Of all the fish examined by the samplers, 2 internal tags (coded wire tags) were detected, and 4 other tags were recorded. In addition, 3 Carlin tags were provided directly by a fisher or consumer to a sampler or the GINR; many of the tags were from historic releases across the North Atlantic. The tag breakdown was as follows (Table 4):

- 2 coded wire tags
- 4 Carlin tags
- 2 Visible Implant Elastomer (VIE) tags
- 1 spaghetti tag

Nonfactory sampling often occurs at a local market which is a centralized location where harvested salmon are present and available. Prior to any sampling, the sampler always obtains permission from the market manager or fisher. This arrangement has generally been successful for all samplers, although there have been issues in some years in Nuuk (Sheehan et al. 2013). Similar issues were also noted in 2014 when samplers were denied access to fish in Maniitsoq and Qaqortoq. No issues have been encountered since 2015.

Because of concerns that proper arrangements had not been made to allow sampling of fish in Nuuk in 2017, no coordinated sampling occurred in that community. It is noted that since 2015

it has been a condition of the commercial fishing license to allow sampler's access to landed salmon. However, given the newness of the condition, the risk of deploying a sampler to Nuuk and being denied access to landed salmon, and the commitment made by the Government of Greenland, in cooperation with the Greenland Institute of Natural Resources, to sample Atlantic salmon from the city of Nuuk on a weekly basis during the 2017 fishing season (NASCO 2017; see WGC(17)9) a sampler was not sent to Nuuk in 2017.

The limitation of the fishery to internal-use-only caused some practical problems for the sampling teams; however, the sampling program provided adequate representation of the Greenland catch, both temporally and spatially. There continued to be no sampling in Nuuk, which results in a potential for bias when describing the biological characteristics of the harvest, stock assessment results, and catch advice. However, this potential bias is expected to be minimized given that sampling occurred both to the north and south of Nuuk.

CONTINENT AND REGION OF ORIGIN

Fin tissue samples were collected and preserved in RNAlater™, an aqueous, nontoxic tissue and cell storage reagent that stabilizes and protects cellular RNA. A total of 1,367 usable samples were collected in 2017 from 4 communities in 4 NAFO divisions: Sisimiut in 1B (n = 474), Maniitsoq in 1C (n = 478), Paamiut in 1E (n = 22), and Qaqortoq in 1F (n = 393). Because of funding limitations, a subset of the tissue samples collected in 2017 was genetically analyzed (Figure 3). In total, 986 samples were processed from the 4 communities: Sisimiut (n = 345), Maniitsoq (n = 341), Paamiut (n = 15), and Qaqortoq in 1F (n = 285).

From 1969-2001, scale pattern analysis was used to make continent of origin determination and estimate the proportion of the harvest originating from North American and European rivers (Reddin and Friedland 1999). From 2002-2016, continent of origin determinations were made via DNA isolation and subsequent microsatellite analyses (King et al. 2001; Sheehan et al. 2010). Starting in 2017, continent of origin was determined from regional analysis described below by using a single nucleotide polymophism (SNP) panel and baseline (Jeffery et al. 2018).

To determine region of origin, 2 approaches were used. First, a microsatellite baseline (Bradbury et al. 2015) provided 12 North American reporting groups, and a SNP baseline (Jeffery et al. 2018) provided 20 North American and 8 European reporting groups. An additional reporting group, the Kapisillit River, Greenland's only self-sustaining Atlantic salmon population was added for this analysis, which brought the total number of SNP-based reporting groups to 29. The reporting groups for the microsatellite data were previously identified (Bradbury et al. 2014a; Moore et al. 2014) and largely approximate regional clusters identified in landscape analyses of population structure (Bradbury et al. 2014b; Dionne et al. 2008). The reporting groups for the SNP baseline follow those from Jeffery et al. (2018). The microsatellite baseline includes 15 loci and encompassed 12,409 individuals spanning 194 individual river samples ranging from Ungava Bay in the north to Maine to the south (Figure 4 and Table 5). The SNP baseline contains a combination of published data and additional genotyping to assemble a dataset of 96 SNPs for 286 range-wide Atlantic salmon populations (Figure 5 and Table 6). Microsatellite-based region of origin assignments are available for 2015-2017, and SNP-based region of origin assignments are available for 2017 only.

DNA extraction and genotyping of all fishery samples were carried out at the Aquatic Biotechnology Laboratory (Fisheries and Oceans Canada, Maritimes Region), and DNA was extracted with a Qiagen DNeasy 96 Blood and Tissue extraction kit (Qiagen; www.qiagen.com) following the guidelines of the manufacturer. DNA was quantified by using Quant-iT PicoGreen

(Life Technologies; www.thermofisher.com/us/en/home/brands/life-technologies.html) and diluted to a final concentration of 10 ng/µL in 10mM Tris (Qiagen Buffer EB). Genotyping of fishery samples follows the methods outlined in Bradbury et al. (2014a, 2014b). SNP genotyping of the 96 SNP loci was performed by using SNPtype assays (Fluidigm; www.fluidigm.com) per the manufacturer's protocols and as described in Jeffery et al. (2018). A Bayesian approach was used to estimate mixture composition or assign individuals as implemented in the R package rubias (Anderson et al. 2008).

In total, 74.4% of the salmon sampled in 2017 were of North American origin and 25.6% were of European origin (Figure 6). The NAFO division-specific continent of origin assignments are presented in Table 7. These findings show that high proportions of fish from the North American stock complex continue to contribute to the fishery. The variability in the recent stock complex contributions between divisions and the deviation from past trends (Figure 7) underscore the need to annually sample multiple NAFO Divisions to achieve accurate estimates of continental contributions to the harvest.

Variations in the estimated weighted proportions and number of North American and European salmon harvested in the fishery during 1987-2016 are shown in Table 8 and Figures 6 and 8. The 2017 North American weighted contribution (74%) is above the long-term mean (1982-2016, 69%) and lower than the recent 10-year mean (2007-2016, 80%). It is the second lowest value within the last decade when the North American weighted contribution peaked at 93% in 2011. The European weighted contribution (26%) to the 2017 fishery was below the long-term mean (1982-2015, 31%) but above the 10-year mean (2007-2016, 20%). In terms of numbers of fish, the 2017 fishery caught approximately 6,100 North American salmon (~20.9 t) and 2,200 European fish (~7.2 t). The 2017 total number of fish harvested (8,300) is approximately equal to the 2016 estimate (8,400). It is only 2.5% of the maximum estimate of 336,000 fish harvested in 1982.

For region of origin, as in previous years (Bradbury et al. 2016; ICES 2017), North American contributions were largely from Labrador, the Gulf of St. Lawrence, and the Gaspé Peninsula (Table 9 and Figures 9-11), a consistent and stable pattern over the 3 years. NAFO division-specific region of origin assignments for 2015-2017 are also presented in Table 10 and highlight the variation of region-specific contributions across years and NAFO Divisions. SNP based analysis for 2017 sampled individuals identified North American region of origin was again dominated by Labrador, Gulf of St. Lawrence, and the Gaspé Peninsula (Table 11 and Figure 12). Northeast Atlantic contributions were entirely from the United Kingdom/Ireland (BRI) reporting group, which supports the previous conclusion reported by ICES (2017); stocks from the Northern Northeast Atlantic Commission area do not contribute a significant amount to the harvest at West Greenland. The breakdown of the stock composition by NAFO division shows variation in reporting group proportions. No individuals were identified as having originated from the Kapisillit reporting group, which represents Greenland's only self-sustaining Atlantic salmon population.

BIOLOGICAL CHARACTERISTICS OF THE CATCHES

Biological characteristics (length, weight, and age) were recorded for all sampled fish. Overall across all sea ages, the mean sampled fork length was 66.9 cm, and the mean gutted weight was 3.46 kg.

An overall decrease in mean whole weight of both European and North American 1SW salmon occurred between 1969 and 1995 (Table 12 and Figure 13). This trend was reversed in 1996 when mean weights began to increase, although evidence suggests that these trends may be partially explained by annual variation in the timing of the sampling program (ICES 2011, 2015). In 2017, the mean length of North American 1SW salmon was 66.6 cm, and the mean whole weight was 3.42 kg; the mean length of European 1SW salmon was 64.8 cm, and the mean whole weight was 3.31 kg. The North American 1SW fork length estimate was a slight increase over the 2016 value (65.2 cm) and a slight decrease from the previous 10-year average (65.4 cm, 2007-2016). The European 1SW mean fork length increased from the 2016 value (62.6 cm) and was slightly greater than the previous 10-year average (64.3 cm, 2007-2016). The North American 1SW whole weight was greater than the 2016 value (3.18 kg) and previous 10-year average (3.24 kg, 2007-2016). The European 1SW whole weight was greater than both the 2016 value (2.79 kg) and previous 10-year average (3.12 kg, 2007-2016). A summary of the mean fork lengths and whole weights in the 2017 fishery by sea age, continent of origin, and NAFO division is presented in Table 13. Note that the weight data have not been adjusted for date of capture, and hence may not represent an actual change in mean weight over the time series because fish sampled later in the fishing season have had additional time to grow compared to fish sampled early in the season (ICES 2011, 2015).

The smolt age distribution of the sampled catch by continent of origin and NAFO division is presented in Table 14. The smolt age distributions by origin for all North American and European origin salmon caught (1968-2017) are provided in Table 15.

The mean smolt age of the 2017 North American origin samples was 3.0 years. Although age-1 smolts historically represent a small proportion of the catch (previous 10-year mean of 0.7%, 2007-2016), the 2017 value (0.3%) remains among the lowest in the time series. There has been a consistent trend over the past 2 decades of decreasing contributions of age-1 smolts. This trend is indicative of the relatively minor contributions of the more southerly North American populations as age-1 smolt natural and hatchery production is restricted to the southern end of the range (ICES 2004). The percentage of smolt age 2 salmon of North American origin in the 2017 fishery (31.0%) increased over the 2016 value (21.3%) and is slightly above the previous 10-year mean (28.6%, 2007-2016). Age 3 and older smolts accounted for 68.7% of the 2017 harvest of North American fish, which is approximately equal to the previous 10-year mean (70.7%, 2007-2016) and the overall mean for the 42-year time series (66.4%, 1968-2016 excluding data gaps in 1977 and 1993-1994).

The mean smolt age of the European salmon in 2016 was 2.1 years. The percentage of smolt age 1 (10.0%) increased over the 2016 value (2.5%) and is slightly above the previous 10-year mean of 9.2% (2007-2016). The percentage of smolt age 2 (73.0%) in the 2017 fishery is higher than in 2016 (63.3%) and the previous 10-year mean (60.0%, 2007-2016). The contribution of age 3 and older European origin smolts (17.0%) is much lower than the previous 10-year mean (31.1%, 2007-2016).

The sea age distribution of the sampled catch by continent of origin and NAFO division is presented in Table 16. As expected, the 1SW age group was dominant (92.6%) in the 2017 fishery. This value is lower than the 2015 value (94.2%), but still within the range of historical values (Table 17). Concerns have been raised over recent difficulty with discerning winter annuli from apparent “checks” in the marine zone of Atlantic salmon multi-sea winter scales. Care should be taken to properly discern true marine annuli from growth checks, and we note that further study of this phenomenon is warranted.

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Table 1. Samplers participating in the 2017 sampling program by country, home institution, sampling period, and community/Northwest Atlantic Fisheries Organization (NAFO) division sampled.

Sampler	Country	Home Institution	Sampling Period	Community (NAFO Division)
Graham Goulette	USA	NOAA Fisheries Service	21 Aug - 07 Sep	Qaqortoq (1F)
Audrey Dean	Canada	University of Waterloo	31 Aug - 08 Sep	Qaqortoq (1F)
Jill Barber	UK (Scotland)	Scottish Government	20 Sep – 06 Oct	Paamiut (1E)
Paddy Gargan	Ireland	Inland Fisheries Ireland	12 Sep – 26 Sep	Sisimiut (1B)
Denise Deschamps	Canada	Ministère des Forêts, de la Faune et des Parcs du Québec	12 Sep – 03 Oct	Maniitsoq (1C)
Hugo Maxwell	Ireland	Marine Institute	19 Sep – 04 Oct	Qaqortoq (1F)
Ida Tavner	UK (England & Wales)	Natural Resources Wales	26 Sep – 13 Oct	Sisimiut (1B)

Table 2. Evaluation of underreporting in sampled communities during the 2017 Greenland Atlantic salmon (*Salmo salar*) fishery by community/Northwest Atlantic Fisheries Organization (NAFO) division. The total number of salmon documented by the sampling teams (salmon that have been sampled, seen but not sampled, and seen and checked for an adipose fin clip only) is converted to a total whole weight (WW) based on a conversion factor of 1.11 and compared to the reported landings for each community. Gutted weight is denoted as GW.

Community (NAFO Division)	# sampled	Additional # seen	Ave. sampled GW (kg)	Ave. converted WW (kg)
Sisimiut (1B)	475	23	3.33	**3.69**
Maniitsoq (1C)	478	67	2.98	**3.31**
Nuuk (1D)	1	0	1.61	**1.78**
Paamiut (1E)	22	3	2.78	**3.08**
Qaqortoq (1F)	395	132	3.13	**3.47**
Total	**1,371**	**225**	**3.17**	**3.52**

Community	Est. WW sampled/seen (kg)	Reported landings (kg)	Adjusted landings (kg)	Difference (kg)	Difference as % of reported landings
Sisimiut (1B)	**1,839**	1,562	**1,839**	**277**	**18%**
Maniitsoq (1C)	**1,805**	4,792	**4,792**	**0**	**0%**
Nuuk (1D)	**2**	6,587	**6,587**	**0**	**0%**
Paamiut (1E)	**77**	2,102	**2,102**	**0**	**0%**
Qaqortoq (1F)	**1,828**	3,457	**3,457**	**0**	**0%**
Total	**5,551**	**18,500**	**18,777**	**277**	**1%**

Table 3. Reported landings (kg) for the Greenland Atlantic salmon (*Salmo salar*) fishery (2002–2017) by Northwest Atlantic Fisheries Organization (NAFO) division as reported by the home rule government and the division-specific adjusted landings where the sampling teams observed more fish landed than were reported. Landings from International Council for the Exploration of the Seas Statistical Area XIV (East Greenland) are not included in the assessment but amounted to 0.3 t in 2017. Shaded cells indicate that sampling took place in that year and division.

		NAFO Division						
Year		**1A**	**1B**	**1C**	**1D**	**1E**	**1F**	**Total**
2002	Reported	14	78	2,100	3,752	1,417	1,661	9,022
	Adjusted						2,408	9,769
2003	Reported	619	17	1,621	648	1,274	4,516	8,694
	Adjusted			1,782	2,709		5,912	12,312
2004	Reported	3,476	611	3,516	2,433	2,609	2,068	14,712
	Adjusted				4,929			17,209
2005	Reported	1,294	3,120	2,240	756	2,937	4,956	15,303
	Adjusted				2,730			17,276
2006	Reported	5,427	2,611	3,424	4,731	2,636	4,192	23,021
	Adjusted							
2007	Reported	2,019	5,089	6,148	4,470	4,828	2,093	24,647
	Adjusted						2,252	24,806
2008	Reported	4,882	2,210	10,024	1,595	2,457	4,979	26,147
	Adjusted				3,577		5,478	28,627
2009	Reported	195	6,151	7,090	2,988	4,296	4,777	25,496
	Adjusted				5,466			27,975
2010	Reported	17,263	4,558	2,363	2,747	6,766	4,252	37,949
	Adjusted		4,824		6,566		5,274	43,056
2011	Reported	1,858	3,662	5,274	7,977	4,021	4,613	27,407
	Adjusted							
2012	Reported	5,353	784	14,991	4,564	3,993	2,951	32,636
	Adjusted		2,001				3,694	34,596

Table 3, continued. Reported landings (kg) for the Greenland Atlantic salmon (*Salmo salar*) fishery (2002–2017) by Northwest Atlantic Fisheries Organization (NAFO) division as reported by the home rule government and the division-specific adjusted landings where the sampling teams observed more fish landed than were reported. Landings from International Council for the Exploration of the Seas Statistical Area XIV (East Greenland) are not included in the assessment but amounted to 0.3 t in 2017. Shaded cells indicate that sampling took place in that year and division.

		NAFO Division						
Year		**1A**	**1B**	**1C**	**1D**	**1E**	**1F**	**Total**
2013	Reported	3,052	2,359	17,950	13,356	6,442	3,774	46,933
	Adjusted		2,461				4,408	47,669
2014	Reported	3,626	2,756	13,762	19,123	14,979	3,416	57,662
	Adjusted						4,036	58,282
2015	Reported	751	8,801	10,055	17,966	4,170	14,134	55,877
	Adjusted							
2016	Reported	763	1,234	7,271	4,630	4,492	7,265	25,655
	Adjusted		1,499					25,920
2017	Reported	1,114	1,665	9,335	6,858	3,219	5,563	27,754
	Adjusted		1,942					28,031

Table 4. Reported tag recaptures (n = 9) from the 2017 Greenland Atlantic salmon (*Salmo salar*) fishery. NAFO Division/ICES Area refers to Northwest Atlantic Fisheries Organization (NAFO) or International Council for the Exploration of the Sea (ICES) statistical areas. Six tags were recovered from sampled fish by the sampling team, and the remaining 3 tags were provided directly by a fisher or consumer to a sampler or to the Greenland Institute of Natural Resources. Many of the tags provided directly by a fisher or consumer are from historical recoveries. Empty cells identify incomplete recapture or released information.

Tag type	Tag code (Seq. code)	Release country	River released	Place released	Release year	Recapture Community (NAFO Division)	NAFO Division/ICES Area	Recapture year
spaghetti	green (AR3284)	Canada				Qaqortoq (1F)	1F	2017
Visible Implant Elastomer	right eye green	USA	Penobscot		2016	Qaqortoq (1F)	1F	2017
Visible Implant Elastomer	left eye red	USA	Penobscot		2016	Qaqortoq (1F)	1F	2017
Carlin	blue (YY41, 797)	Canada	SW Miramichi	Millerton	2016	Sisimiut (1B)	1B	2017
Coded wire tags	470763	Ireland	Burrishoole	Lough Furnace	2016	Sisimiut (1B)	1B	2017
Coded wire tags	470766	Ireland	Bundorragha	Delphi	2016	Maniitsoq (1C)	1C	2017
Carlin	YY42964	Canada	NW Miramichi	Cassilis	2016	Qaqortoq (1F)	1F	
Carlin	blue (RDH W95477)	Canada				Arsuk (1E)	1E	circa 2010
Carlin	light blue (YY42,764)	Canada	NW Miramichi	Cassilis	2016	Sisimiut (1B)	1B	2017

Table 5. Reporting groups identified within the North American Atlantic salmon (*Salmo salar*) microsatellite genetic baseline. See Figure 4 for Reporting Group locations and Bradbury et al. 2015 for further details. NA means not applicable.

Reporting Group	Code	Individual Samples	Rivers
1. Ungava Bay and Northern Labrador	UNG	191	4
2. Central Labrador	LAB	1501	25
3. Quebec Lower North Shore and Southern Labrador	QLS	579	10
4. Newfoundland	NFL	3531	48
5. Avalon Peninsula, NL	AVA	1302	14
6. Quebec Higher North Shore and Quebec City	QUE	710	15
7. Gaspé Peninsula	GAS	1055	21
8. Anticosti Island	ANT	140	3
9. Southern Gulf of St. Lawrence	GUL	1580	30
10. Nova Scotia	NOS	734	13
11. Inner Bay of Fundy	FUN	406	8
12. United States of America	USA	338	3
13. Europe	EUR	342	NA
	Totals	12409	194

Table 6. Reporting groups identified within the North Atlantic-wide Atlantic salmon (*Salmo salar*) Single Nucleotide Polymorphism genetic baseline. See Figure 5 for Reporting Group locations and Jeffrey et al. 2018 for further details.

Region	Reporting Group	Code
North America	Anticosti	ANT
North America	Avalon Peninsula	AVA
North America	Eastern Nova Scotia	ENS
North America	Gaspé Peninsula	GAS
North America	Gulf of St. Lawrence	GUL
North America	Inner Bay of Fundy	IBF
North America	Labrador	LAB
North America	Lake Melville	MEL
North America	Newfoundland 1	NF1
North America	Newfoundland 2	NF2
North America	St. Lawrence North Shore – Upper	NLS
North America	St. Lawrence North Shore – Lower	QLS
North America	Northwest Newfoundland	NWN
North America	Northern Newfoundland	NNF
North America	Quebec City Region	QUE
North America	Saint John River & Aquaculture	SJR
North America	Ungava Bay	UNG
North America	Maine, United States	USA
North America	Western Newfoundland	WNF
North America	Western Nova Scotia	WNS
Europe	Baltic Sea	BAL
Europe	Barents-White Seas	BAR
Europe	United Kingdom/Ireland	BRI
Europe	France	FRN
Europe	Iceland	ICE

Table 6, continued. Reporting groups identified within the North Atlantic-wide Atlantic salmon (*Salmo salar*) Single Nucleotide Polymorphism genetic baseline. See Figure 5 for Reporting Group locations and Jeffrey et al. 2018 for further details.

Region	Reporting Group	Code
Europe	Northern Norway	NNO
Europe	Southern Norway	SNO
Europe	Spain	SPN
Greenland	Kapisillit River	KAP

Table 7. The continental proportions of North American (NA) and European (E) Atlantic salmon (*Salmo salar*) caught in West Greenland 2017 by Northwest Atlantic Fisheries Organization (NAFO) Division.

NAFO Division	Fishing dates	Number NA	Number E	Totals	Percentages NA	Percentages E
1B	Sep 13 - Oct 11	277	68	345	80.3	19.7
1C	Sep 13 – Oct 02	252	89	341	73.9	26.1
1E	Sep 28 – Oct 03	11	4	15	73.3	26.7
1F	Aug 23 – Oct 04	194	91	285	68.1	31.9
TOTAL		734	252	986	74.4	25.6

Table 8. The catch weighted numbers of North American (NA) and European (E) Atlantic salmon (*Salmo salar*) caught at West Greenland from 1982-2017 and the proportion of the catch by weight. Numbers are rounded to the nearest hundred fish. Continent of origin assignments were based on scale characteristics until 1995, scale characteristics and DNA based assignments until 2001, and DNA based assignments only from 2002 onwards. No samples were collected in 1993 and 1994.

	Proportion weighted by catch		Numbers of salmon caught	
	NA	E	NA	E
1982	57	43	192,200	143,800
1983	40	60	39,500	60,500
1984	54	46	48,800	41,200
1985	47	53	143,500	161,500
1986	59	41	188,300	131,900
1987	59	41	171,900	126,400
1988	43	57	125,500	168,800
1989	55	45	65,000	52,700
1990	74	26	62,400	21,700
1991	63	37	111,700	65,400
1992	45	55	46,900	38,500
1993	-	-	-	-
1994	-	-	-	-
1995	67	33	21,400	10,700
1996	70	30	22,400	9,700
1997	85	15	18,000	3,300
1998	79	21	3,100	900
1999	91	9	5,700	600
2000	65	35	5,100	2,700
2001	67	33	9,400	4,700
2002	69	31	2,300	1,000

Table 8, continued. The catch weighted numbers of North American (NA) and European (E) Atlantic salmon (*Salmo salar*) caught at West Greenland from 1982-2017 and the proportion of the catch by weight. Numbers are rounded to the nearest hundred fish. Continent of origin assignments were based on scale characteristics until 1995, scale characteristics and DNA based assignments until 2001, and DNA based assignments only from 2002 onwards.

	Proportion weighted by catch		Numbers of salmon caught	
	NA	E	NA	E
2003	64	36	2,600	1,400
2004	72	28	3,900	1,500
2005	74	26	3,500	1,200
2006	69	31	4,000	1,800
2007	76	24	6,100	1,900
2008	86	14	8,000	1,300
2009	89	11	7,000	800
2010	80	20	10,000	2,600
2011	93	7	7,500	600
2012	79	21	7,800	2,100
2013	82	18	11,500	2,700
2014	72	28	12,800	5,400
2015	79	21	13,500	3,900
2016	64	36	5,100	3,300
2017	74	26	6,100	2,200

Table 9. Proportional mean region of origin genetic mixture analysis estimates for North American origin individuals sampled during the 2015-2017 West Greenland Atlantic salmon (*Salmo salar*) fishery. The 95% confidence intervals are provided parenthetically. The 3 bolded locations account for >70% of the harvest on average. Regions correspond to reporting groups identified in Table 5 and Figure 4. Mean estimates provided with 95% credible interval in parentheses. Credible intervals with a lower bound of zero indicate little support for the mean assignment value.

Region	Overall	2015	2016	2017
GUL	**0.263 (0.161, 0.361)**	**0.225 (0.152, 0.296)**	**0.243 (0.165, 0.322)**	**0.306 (0.165, 0.439)**
FUN	0.001 (0, 0.019)	0.002 (0, 0.013)	0 (0, 0.012)	0 (0, 0.028)
QUE	0.083 (0.036, 0.155)	0.119 (0.062, 0.181)	0.076 (0.026, 0.136)	0.060 (0.024, 0.149)
GAS	**0.275 (0.166, 0.367)**	**0.290 (0.2, 0.356)**	**0.218 (0.138, 0.295)**	**0.305 (0.16, 0.429)**
ANT	0.016 (0.003, 0.042)	0.028 (0.006, 0.054)	0.016 (0.003, 0.037)	0.007 (0.001, 0.037)
QLS	0.041 (0.008, 0.102)	0.022 (0.003, 0.061)	0.050 (0.014, 0.099)	0.050 (0.008, 0.135)
AVA	0 (0, 0.013)	0 (0, 0.007)	0 (0, 0.007)	0 (0, 0.023)
NFL	0.042 (0.018, 0.126)	0.064 (0.031, 0.149)	0.049 (0.024, 0.124)	0.019 (0.004, 0.111)
LAB	**0.189 (0.132, 0.285)**	**0.212 (0.154, 0.29)**	**0.229 (0.165, 0.315)**	**0.141 (0.091, 0.259)**
UNG	0.068 (0.023, 0.123)	0.032 (0.009, 0.061)	0.075 (0.034, 0.114)	0.090 (0.026, 0.175)
NOS	0.006 (0, 0.035)	0 (0, 0.008)	0.010 (0.001, 0.04)	0.007 (0, 0.052)
USA	0.018 (0.005, 0.045)	0.007 (0.003, 0.018)	0.034 (0.011, 0.066)	0.014 (0.002, 0.051)
Samples	1806	749	508	549

Table 10. Bayesian proportional mean mixture composition estimates for North American origin individuals sampled during the 2015-2017 West Greenland Atlantic salmon (*Salmo salar*) fishery by year and community sampled (Northwest Atlantic Fisheries Organization division). Regions correspond to Reporting Groups identified in Table 5 and Figure 4. Mean estimates provided with 95% credible interval in parentheses. Credible intervals with a lower bound of zero indicate little support for the mean assignment value.

	2015				2016				2017				
Region	**Overall**	**Sisimiut (1B)**	**Maniitsoq (1C)**	**Qaqortoq (1F)**	**Overall**	**Sisimiut (1B)**	**Maniitsoq (1C)**	**Qaqortoq (1F)**	**Overall**	**Sisimiut (1B)**	**Maniitsoq (1C)**	**Paamiut (1E)**	**Qaqortoq (1F)**
GUL	0.225 (0.152, 0.296)	0.309 (0.245, 0.367)	0.181 (0.13, 0.238)	0.183 (0.081, 0.282)	0.243 (0.165, 0.322)	0.252 (0.175, 0.32)	0.252 (0.177, 0.338)	0.225 (0.143, 0.308)	0.306 (0.165, 0.439)	0.296 (0.211, 0.365)	0.255 (0.179, 0.332)	0.402 (0.085, 0.701)	0.271 (0.186, 0.358)
FUN	0.002 (0, 0.013)	0 (0, 0.007)	0.005 (0, 0.021)	0 (0, 0.01)	0 (0, 0.012)	0 (0, 0.011)	0 (0, 0.009)	0 (0, 0.014)	0 (0, 0.028)	0 (0, 0.007)	0 (0, 0.008)	0.001 (0, 0.091)	0 (0, 0.006)
QUE	0.119 (0.062, 0.181)	0.09 (0.054, 0.137)	0.098 (0.061, 0.146)	0.168 (0.071, 0.261)	0.076 (0.026, 0.136)	0.052 (0.015, 0.106)	0.129 (0.064, 0.201)	0.048 (0, 0.101)	0.06 (0.024, 0.149)	0.087 (0.04, 0.151)	0.11 (0.05, 0.172)	0 (0, 0.173)	0.045 (0.007, 0.1)
GAS	0.29 (0.2, 0.356)	0.349 (0.264, 0.394)	0.329 (0.245, 0.371)	0.192 (0.092, 0.304)	0.218 (0.138, 0.295)	0.226 (0.153, 0.298)	0.281 (0.188, 0.36)	0.148 (0.074, 0.228)	0.305 (0.16, 0.429)	0.26 (0.176, 0.33)	0.301 (0.205, 0.378)	0.344 (0.047, 0.613)	0.317 (0.212, 0.396)
ANT	0.028 (0.006, 0.054)	0.013 (0.003, 0.028)	0.019 (0.005, 0.037)	0.051 (0.01, 0.096)	0.016 (0.003, 0.037)	0 (0, 0.006)	0.011 (0, 0.035)	0.035 (0.008, 0.071)	0.007 (0.001, 0.037)	0.005 (0, 0.019)	0.023 (0.004, 0.048)	0 (0, 0.073)	0 (0, 0.009)
QLS	0.022 (0.003, 0.061)	0.025 (0, 0.057)	0.039 (0.01, 0.071)	0.001 (0, 0.054)	0.05 (0.014, 0.099)	0.104 (0.041, 0.154)	0.026 (0, 0.077)	0.018 (0, 0.067)	0.05 (0.008, 0.135)	0.062 (0.016, 0.111)	0.032 (0, 0.082)	0.034 (0, 0.231)	0.071 (0.016, 0.116)
AVA	0 (0, 0.007)	0 (0, 0.004)	0 (0, 0.005)	0 (0, 0.013)	0 (0, 0.007)	0 (0, 0.007)	0 (0, 0.007)	0 (0, 0.007)	0 (0, 0.023)	0 (0, 0.005)	0 (0, 0.005)	0 (0, 0.075)	0 (0, 0.008)
NFL	0.064 (0.031, 0.149)	0.034 (0.02, 0.102)	0.064 (0.045, 0.129)	0.095 (0.029, 0.216)	0.049 (0.024, 0.124)	0.084 (0.048, 0.165)	0 (0, 0.051)	0.062 (0.026, 0.156)	0.019 (0.004, 0.111)	0.018 (0.007, 0.088)	0.011 (0, 0.102)	0 (0, 0.12)	0.049 (0.008, 0.136)
LAB	0.212 (0.154, 0.29)	0.155 (0.118, 0.207)	0.216 (0.173, 0.277)	0.264 (0.17, 0.386)	0.229 (0.165, 0.315)	0.167 (0.115, 0.244)	0.213 (0.149, 0.29)	0.308 (0.23, 0.411)	0.141 (0.091, 0.259)	0.231 (0.171, 0.31)	0.141 (0.092, 0.219)	0.04 (0, 0.267)	0.152 (0.103, 0.241)
UNG	0.032 (0.009, 0.061)	0.024 (0.008, 0.039)	0.026 (0.008, 0.045)	0.046 (0.009, 0.099)	0.075 (0.034, 0.114)	0.046 (0.017, 0.074)	0.066 (0.03, 0.104)	0.114 (0.055, 0.163)	0.09 (0.026, 0.175)	0.016 (0, 0.042)	0.114 (0.062, 0.151)	0.177 (0.025, 0.424)	0.052 (0.018, 0.085)
NOS	0 (0, 0.008)	0 (0, 0.008)	0 (0, 0.004)	0 (0, 0.013)	0.01 (0.001, 0.04)	0.02 (0.003, 0.048)	0.009 (0, 0.049)	0.002 (0, 0.023)	0.007 (0, 0.052)	0.011 (0, 0.035)	0.001 (0, 0.017)	0 (0, 0.096)	0.016 (0, 0.059)
USA	0.007 (0.003, 0.018)	0 (0, 0.004)	0.021 (0.008, 0.04)	0 (0, 0.01)	0.034 (0.011, 0.066)	0.049 (0.021, 0.082)	0.013 (0.002, 0.041)	0.039 (0.011, 0.075)	0.014 (0.002, 0.051)	0.012 (0, 0.035)	0.013 (0, 0.035)	0.003 (0, 0.071)	0.029 (0.008, 0.061)
Samples	749	330	330	89	508	202	164	142	549	11	188	11	161

Table 11. Bayesian proportional mean mixture composition estimates for the 2017 West Greenland Atlantic salmon (*Salmo salar)* fishery by community sampled (Northwest Atlantic Fisheries Organization division) using the range-wide Single Nucleotide Polymorphism baseline. Regions correspond to Reporting Groups identified in Table 6 and Figure 5. Mean estimates provided with 95% credible interval in parentheses. Credible intervals with a lower bound of zero indicate little support for the mean assignment value. Bolded entries are primary contributors and are displayed in Figure 12.

Region	Overall	Sisimiut (1B)	Maniitsoq (1C)	Paamiut (1E)	Qaqortoq (1F)
KAP	0 (0, 0)	0 (0, 0)	0 (0, 0)	0 (0, 0)	0 (0, 0)
SPN	0.01 (0.003, 0.022)	0.024 (0.01, 0.043)	0.007 (0.001, 0.019)	0.001 (0, 0.003)	0.011 (0.002, 0.025)
FRN	0.006 (0.001, 0.016)	0.011 (0.003, 0.025)	0.003 (0, 0.011)	0 (0, 0)	0.011 (0.002, 0.027)
BRI	**0.234 (0.157, 0.33)**	**0.151 (0.114, 0.191)**	**0.247 (0.202, 0.294)**	**0.259 (0.084, 0.499)**	**0.28 (0.229, 0.335)**
BAL	0 (0, 0.001)	0 (0, 0)	0 (0, 0)	0.001 (0, 0.004)	0 (0, 0)
SNO	0.007 (0, 0.032)	0.006 (0, 0.017)	0.001 (0, 0.009)	0.009 (0, 0.078)	0.01 (0.001, 0.025)
NNO	0.001 (0, 0.008)	0 (0, 0.001)	0 (0, 0.002)	0.002 (0, 0.028)	0 (0, 0.002)
ICE	0.004 (0, 0.012)	0.006 (0.001, 0.016)	0.003 (0, 0.011)	0.001 (0, 0.001)	0.007 (0.001, 0.019)
BAR	0 (0, 0.004)	0 (0, 0.001)	0 (0, 0.001)	0.001 (0, 0.015)	0 (0, 0.001)
USA	**0.013 (0.004, 0.027)**	**0.026 (0.011, 0.047)**	**0.012 (0.003, 0.026)**	**0.001 (0, 0.003)**	**0.014 (0.003, 0.032)**
WNS	0 (0, 0.002)	0.001 (0, 0.007)	0 (0, 0)	0 (0, 0.001)	0 (0, 0)
ENS	**0.007 (0.001, 0.022)**	**0.004 (0, 0.017)**	**0.013 (0.003, 0.028)**	**0.002 (0, 0.017)**	**0.009 (0, 0.026)**
IBF	0 (0, 0.003)	0 (0, 0.001)	0 (0, 0.001)	0.001 (0, 0.01)	0 (0, 0.001)
GUL	**0.228 (0.148, 0.328)**	**0.277 (0.227, 0.33)**	**0.192 (0.148, 0.241)**	**0.218 (0.043, 0.462)**	**0.223 (0.172, 0.28)**
SJR	0 (0, 0.004)	0 (0, 0.002)	0 (0, 0.002)	0.001 (0, 0.01)	0 (0, 0.001)
QUE	0.006 (0, 0.028)	0.007 (0, 0.032)	0.013 (0, 0.04)	0.001 (0, 0.009)	0.005 (0, 0.031)
GAS	**0.211 (0.131, 0.311)**	**0.207 (0.158, 0.256)**	**0.236 (0.187, 0.289)**	**0.229 (0.054, 0.474)**	**0.173 (0.124, 0.225)**
ANT	**0.006 (0.001, 0.013)**	**0.006 (0.001, 0.016)**	**0.017 (0.005, 0.033)**	**0.001 (0, 0.003)**	**0 (0, 0)**
NLS	**0.002 (0, 0.007)**	**0 (0, 0)**	**0.006 (0, 0.025)**	**0 (0, 0.001)**	**0 (0, 0.001)**
QLS	**0.053 (0.021, 0.113)**	**0.054 (0.031, 0.082)**	**0.03 (0.014, 0.051)**	**0.066 (0.002, 0.222)**	**0.064 (0.037, 0.097)**
AVA	0 (0, 0.004)	0 (0, 0.001)	0 (0, 0.001)	0.001 (0, 0.015)	0 (0, 0.001)
NF1	0.003 (0, 0.019)	0.001 (0, 0.009)	0.006 (0, 0.016)	0.003 (0, 0.037)	0.003 (0, 0.012)
NF2	0.002 (0, 0.013)	0 (0, 0.003)	0.001 (0, 0.008)	0.002 (0, 0.02)	0.007 (0, 0.02)
WNF	0.003 (0, 0.009)	0.002 (0, 0.01)	0 (0, 0)	0.001 (0, 0.003)	0.008 (0, 0.022)
NNF	0.003 (0, 0.009)	0.004 (0, 0.014)	0 (0, 0)	0.001 (0, 0.001)	0.007 (0.001, 0.022)
NWN	**0.009 (0.003, 0.02)**	**0.022 (0.008, 0.04)**	**0.011 (0.002, 0.026)**	**0.001 (0, 0.013)**	**0 (0, 0.001)**
MEL	**0.016 (0.003, 0.053)**	**0.013 (0.001, 0.034)**	**0.013 (0, 0.033)**	**0.008 (0, 0.091)**	**0.029 (0.012, 0.052)**
LAB	**0.107 (0.065, 0.177)**	**0.148 (0.112, 0.189)**	**0.122 (0.087, 0.161)**	**0.064 (0, 0.225)**	**0.095 (0.063, 0.134)**
UNG	**0.067 (0.024, 0.135)**	**0.03 (0.014, 0.05)**	**0.068 (0.044, 0.097)**	**0.126 (0.017, 0.324)**	**0.043 (0.023, 0.07)**
Samples	986	345	341	15	285

Table 12. Annual mean fork lengths and whole weights by continent of origin (NA = North American and E = European) and sea age (1SW = 1 sea-winter, 2SW = 2 sea-winter and PS = previous spawner) of Atlantic salmon (*Salmo salar*) caught at West Greenland, 1969-2017. No samples were collected in 1993 and 1994. The 2017 European previous spawner value is based on 2 fish. Note that the mean fork lengths and weights have not been corrected to adjust for the annual variation in the timing of the sampling program.

	Whole weight (kg) Sea age & origin									Fork length (cm) Sea age & origin					
	1SW		2SW		PS		All sea ages		TOTAL	1SW		2SW		PS	
	NA	E	NA	E	NA	E	NA	E		NA	E	NA	E	NA	E
1969	3.12	3.76	5.48	5.80	-	5.13	3.25	3.86	3.58	65.0	68.7	77.0	80.3	-	75.3
1970	2.85	3.46	5.65	5.50	4.85	3.80	3.06	3.53	3.28	64.7	68.6	81.5	82.0	78.0	75.0
1971	2.65	3.38	4.30	-	-	-	2.68	3.38	3.14	62.8	67.7	72.0	-	-	-
1972	2.96	3.46	5.85	6.13	2.65	4.00	3.25	3.55	3.44	64.2	67.9	80.7	82.4	61.5	69.0
1973	3.28	4.54	9.47	10.00	-	-	3.83	4.66	4.18	64.5	70.4	88.0	96.0	61.5	-
1974	3.12	3.81	7.06	8.06	3.42	-	3.22	3.86	3.58	64.1	68.1	82.8	87.4	66.0	-
1975	2.58	3.42	6.12	6.23	2.60	4.80	2.65	3.48	3.12	61.7	67.5	80.6	82.2	66.0	75.0
1976	2.55	3.21	6.16	7.20	3.55	3.57	2.75	3.24	3.04	61.3	65.9	80.7	87.5	72.0	70.7
1977	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1978	2.96	3.50	7.00	7.90	2.45	6.60	3.04	3.53	3.35	63.7	67.3	83.6	-	60.8	85.0
1979	2.98	3.50	7.06	7.60	3.92	6.33	3.12	3.56	3.34	63.4	66.7	81.6	85.3	61.9	82.0
1980	2.98	3.33	6.82	6.73	3.55	3.90	3.07	3.38	3.22	64.0	66.3	82.9	83.0	67.0	70.9
1981	2.77	3.48	6.93	7.42	4.12	3.65	2.89	3.58	3.17	62.3	66.7	82.8	84.5	72.5	-
1982	2.79	3.21	5.59	5.59	3.96	5.66	2.92	3.43	3.11	62.7	66.2	78.4	77.8	71.4	80.9
1983	2.54	3.01	5.79	5.86	3.37	3.55	3.02	3.14	3.10	61.5	65.4	81.1	81.5	68.2	70.5
1984	2.64	2.84	5.84	5.77	3.62	5.78	3.20	3.03	3.11	62.3	63.9	80.7	80.0	69.8	79.5
1985	2.50	2.89	5.42	5.45	5.20	4.97	2.72	3.01	2.87	61.2	64.3	78.9	78.6	79.1	77.0
1986	2.75	3.13	6.44	6.08	3.32	4.37	2.89	3.19	3.03	62.8	65.1	80.7	79.8	66.5	73.4
1987	3.00	3.20	6.36	5.96	4.69	4.70	3.10	3.26	3.16	64.2	65.6	81.2	79.6	74.8	74.8
1988	2.83	3.36	6.77	6.78	4.75	4.64	2.93	3.41	3.18	63.0	66.6	82.1	82.4	74.7	73.8
1989	2.56	2.86	5.87	5.77	4.23	5.83	2.77	2.99	2.87	62.3	64.5	80.8	81.0	73.8	82.2
1990	2.53	2.61	6.47	5.78	3.90	5.09	2.67	2.72	2.69	62.3	62.7	83.4	81.1	72.6	78.6
1991	2.42	2.54	5.82	6.23	5.15	5.09	2.57	2.79	2.65	61.6	62.7	80.6	82.2	81.7	80.0
1992	2.54	2.66	6.49	6.01	4.09	5.28	2.86	2.74	2.81	62.3	63.2	83.4	81.1	77.4	82.7
1995	2.37	2.67	6.09	5.88	3.71	4.98	2.45	2.75	2.56	61.0	63.2	81.3	81.0	70.9	81.3
1996	2.63	2.86	6.50	6.30	4.98	5.44	2.83	2.90	2.88	62.8	64.0	81.4	81.1	77.1	79.4
1997	2.57	2.82	7.95	6.11	4.82	6.9	2.63	2.84	2.71	62.3	63.6	85.7	84.0	79.4	87.0
1998	2.72	2.83	6.44	-	3.28	4.77	2.76	2.84	2.78	62.0	62.7	84.0	-	66.3	76.0
1999	3.02	3.03	7.59	-	4.20	-	3.09	3.03	3.08	63.8	63.5	86.6	-	70.9	-
2000	2.47	2.81	-	-	2.58	-	2.47	2.81	2.57	60.7	63.2	-	-	64.7	-
2001	2.89	3.03	6.76	5.96	4.41	4.06	2.95	3.09	3.00	63.1	63.7	81.7	79.1	75.3	72.1
2002	2.84	2.92	7.12	-	5.00	-	2.89	2.92	2.90	62.6	62.1	83.0	-	75.8	-
2003	2.94	3.08	8.82	5.58	4.04	-	3.02	3.10	3.04	63	64.4	86.1	78.3	71.4	-
2004	3.11	2.95	7.33	5.22	4.71	6.48	3.17	3.22	3.18	64.7	65.0	86.2	76.4	77.6	88.0
2005	3.19	3.33	7.05	4.19	4.31	2.89	3.31	3.33	3.31	65.9	66.4	83.3	75.5	73.7	62.3
2006	3.10	3.25	9.72		5.05	3.67	3.25	3.26	3.24	65.3	65.3	90.0		76.8	69.5
2007	2.89	2.87	6.19	6.47	4.94	3.57	2.98	2.99	2.98	63.5	63.3	80.9	80.6	76.7	71.3
2008	3.04	3.03	6.35	7.47	3.82	3.39	3.08	3.07	3.08	64.6	63.9	80.1	85.5	71.1	73.0
2009	3.28	3.40	7.59	6.54	5.25	4.28	3.48	3.67	3.50	64.9	65.5	84.6	81.7	75.9	73.5
2010	3.44	3.24	6.40	5.45	4.17	3.92	3.47	3.28	3.42	66.7	65.2	80.0	75.0	72.4	70.0
2011	3.30	3.18	5.69	4.94	4.46	5.11	3.39	3.49	3.40	65.8	64.7	78.6	75.0	73.7	76.3
2012	3.34	3.38	6.00	4.51	4.65	3.65	3.44	3.40	3.44	65.4	64.9	75.9	70.4	72.8	68.9
2013	3.33	3.16	6.43	4.51	3.64	5.38	3.39	3.20	3.35	66.2	64.6	81.0	72.8	69.9	73.6
2014	3.25	3.02	7.60	6.00	4.47	5.42	3.39	3.13	3.32	65.6	63.6	86.0	78.7	73.6	83.5
2015	3.36	3.13	7.52	7.10	4.53	3.81	3.42	3.18	3.37	65.6	64.4	84.1	82.5	74.2	67.2
2016	3.18	2.79	7.77	5.18	4.03	4.12	3.32	2.89	3.18	65.2	62.6	85.1	76.0	72.2	70.9
2017	3.42	3.31	6.50	3.69	4.94	8.00	3.50	3.36	3.46	66.6	64.8	85.1	72.4	76.7	81.8

Table 13. Mean fork lengths (cm) and whole weight (kg) by sea age (1SW = 1 sea-winter and 2SW = 2 sea-winter), continent of origin, and Northwest Atlantic Fisheries Organization (NAFO) division for Atlantic salmon (*Salmo salar*) caught at West Greenland in 2017 with corresponding standard deviation (S.D.). Table does not include salmon of unknown age, origin, fork length, or weight.

	1 SW		2 SW		Previous spawners		All sea ages			
NAFO Div.	Fork length (cm) (S.D.)	Whole weight (kg) (S.D.)	Fork length (cm) (S.D.)	Whole weight (kg) (S.D.)	Fork length (cm) (S.D.)	Whole weight (kg) (S.D.)	Fork length (cm) (S.D.)	No.	Whole weight (kg) (S.D.)	No.
	North American and European									
1B	66.8 (3.7)	3.48 (0.83)	86.8 (3.0)	6.50 -	77.1 (8.7)	5.04 (3.30)	67.6 (5.2)	341	3.53 (1.04)	327
1C	65.6 (3.4)	3.27 (0.63)	68.0 (7.8)	3.21 (0.16)	78.4 (8.2)	5.55 (1.85)	66.1 (4.5)	338	3.35 (0.81)	335
1E	64.4 (3.6)	3.01 (0.50)	- -	- -	- -	- -	64.4 (3.6)	15	3.01 (0.50)	15
1F	66.2 (4.2)	3.45 (0.89)	75.6 (10.8)	3.98 (1.47)	76.0 (9.3)	4.82 (2.38)	67.2 (5.7)	271	3.53 (1.07)	260
All Areas	66.2 (3.76)	3.39 (0.79)	77.5 (10.7)	4.00 (1.45)	77.0 (8.7)	5.12 (2.48)	66.9 (5.2)	965	3.46 (0.97)	937
	North American									
1B	66.9 (3.8)	3.47 (0.83)	86.8 (3.7)	6.50 -	76.7 (8.8)	5.04 (3.29)	67.7 (5.3)	273	3.54 (1.08)	263
1C	66.1 (3.2)	3.31 (0.64)	79.7 -	- -	78.4 (8.6)	5.27 (1.66)	66.7 (4.5)	250	3.39 (0.80)	247
1E	65.2 (3.6)	3.03 (0.54)	- -	- -	- -	- -	65.2 (3.6)	11	3.03 (0.54)	11
1F	67.0 (3.9)	3.52 (0.91)	84.8 (6.3)	- -	75.5 (9.4)	4.59 (2.33)	68.0 (5.6)	185	3.59 (1.09)	176
All Areas	66.6 (3.61)	3.42 (0.79)	85.1 (4.8)	6.50 -	76.7 (8.8)	4.94 (2.44)	67.4 (5.1)	719	3.5 (0.99)	697
	European									
1B	66.3 (3.3)	3.50 (0.86)	87.0 (1.4)	- -	83.0 -	- -	67.2 (5.2)	68	3.50 (0.86)	64
1C	64.1 (3.7)	3.17 (0.59)	64.1 (0.5)	3.21 (0.16)	78.2 -	8.44 -	64.3 (3.9)	88	3.23 (0.81)	88
1E	62.1 (2.7)	2.98 (0.46)	- -	- -	- -	- -	62.1 (2.7)	4	2.98 (0.46)	4
1F	64.6 (4.2)	3.31 (0.87)	71.7 (10.2)	3.98 (1.47)	84.1 -	7.55 -	65.4 (5.6)	86	3.40 (1.02)	84
All Areas	64.8 (3.88)	3.31 (0.78)	72.4 (10.7)	3.69 (1.18)	81.8 (3.1)	8.00 (0.63)	65.4 (5.0)	246	3.36 (0.90)	240

Table 14. The river age (smolt age) composition (%) of Atlantic salmon (*Salmo salar*) by continent of origin (NA = North American and E = European) and Northwest Atlantic Fisheries Organization (NAFO) division caught in 2017 at West Greenland.

		River age (%)						
NAFO Division	Origin	1	2	3	4	5	6	Total No.
1B	NA	0.4	29.4	44.1	19.1	7.0	0.0	272
	E	10.6	69.7	16.7	3.0	0.0	0.0	66
		2.4	37.3	38.8	16.0	5.6	0.0	338
1C	NA	0.4	35.2	37.2	20.4	6.4	0.4	250
	E	14.8	76.1	9.1	0.0	0.0	0.0	88
		4.1	45.9	29.9	15.1	4.7	0.3	338
1E	NA	0.0	18.2	54.5	18.2	9.1	0.0	11
	E	0.0	75.0	25.0	0.0	0.0	0.0	4
		0.0	33.3	46.7	13.3	6.7	0.0	15
1F	NA	0.0	28.4	43.2	19.3	8.5	0.6	176
	E	4.8	72.3	20.5	2.4	0.0	0.0	83
		1.5	42.5	35.9	13.9	5.8	0.4	259
All Areas	NA	0.3	31.0	41.6	19.6	7.2	0.3	709
	E	10.0	73.0	15.4	1.7	0.0	0.0	241
		2.7	41.7	34.9	15.1	5.4	0.2	950

Table 15. River age distribution (%) for North American and European origin Atlantic salmon (*Salmo salar*) caught at West Greenland, 1968-2017. Table does not include salmon of unknown age or origin. Because of rounding, not all rows add to 1.0. No samples were collected in 1993 and 1994.

YEAR	1	2	3	4	5	6	7	8
					North American			
1968	0.3	19.6	40.4	21.3	16.2	2.2	0	0
1969	0	27.1	45.8	19.6	6.5	0.9	0	0
1970	0	58.1	25.6	11.6	2.3	2.3	0	0
1971	1.2	32.9	36.5	16.5	9.4	3.5	0	0
1972	0.8	31.9	51.4	10.6	3.9	1.2	0.4	0
1973	2	40.8	34.7	18.4	2	2	0	0
1974	0.9	36	36.6	12	11.7	2.6	0.3	0
1975	0.4	17.3	47.6	24.4	6.2	4	0	0
1976	0.7	42.6	30.6	14.6	10.9	0.4	0.4	0
1978	2.7	31.9	43	13.6	6	2	0.9	0
1979	4.2	39.9	40.6	11.3	2.8	1.1	0.1	0
1980	5.9	36.3	32.9	16.3	7.9	0.7	0.1	0
1981	3.5	31.6	37.5	19	6.6	1.6	0.2	0
1982	1.4	37.7	38.3	15.9	5.8	0.7	0	0.2
1983	3.1	47	32.6	12.7	3.7	0.8	0.1	0
1984	4.8	51.7	28.9	9	4.6	0.9	0.2	0
1985	5.1	41	35.7	12.1	4.9	1.1	0.1	0
1986	2	39.9	33.4	20	4	0.7	0	0
1987	3.9	41.4	31.8	16.7	5.8	0.4	0	0
1988	5.2	31.3	30.8	20.9	10.7	1	0.1	0
1989	7.9	39	30.1	15.9	5.9	1.3	0	0
1990	8.8	45.3	30.7	12.1	2.4	0.5	0.1	0
1991	5.2	33.6	43.5	12.8	3.9	0.8	0.3	0
1992	6.7	36.7	34.1	19.1	3.2	0.3	0	0
1995	2.4	19	45.4	22.6	8.8	1.8	0.1	0
1996	1.7	18.7	46	23.8	8.8	0.8	0.1	0
1997	1.3	16.4	48.4	17.6	15.1	1.3	0	0
1998	4	35.1	37	16.5	6.1	1.1	0.1	0
1999	2.7	23.5	50.6	20.3	2.9	0.0	0.0	0
2000	3.2	26.6	38.6	23.4	7.6	0.6	0	0
2001	1.9	15.2	39.4	32	10.8	0.7	0	0
2002	1.5	27.4	46.5	14.2	9.5	0.9	0	0
2003	2.6	28.8	38.9	21	7.6	1.1	0	0
2004	1.9	19.1	51.9	22.9	3.7	0.5	0	0
2005	2.7	21.4	36.3	30.5	8.5	0.5	0	0
2006	0.6	13.9	44.6	27.6	12.3	1	0	0
2007	1.6	27.7	34.5	26.2	9.2	0.9	0	0
2008	0.9	25.1	51.9	16.8	4.7	0.6	0	0
2009	2.6	30.7	47.3	15.4	3.7	0.4	0	0
2010	1.6	21.7	47.9	21.7	6.3	0.8	0	0
2011	1.0	35.9	45.9	14.4	2.8	0.0	0	0
2012	0.3	29.8	39.4	23.3	6.5	0.7	0	0
2013	0.1	32.6	37.3	20.8	8.6	0.6	0	0
2014	0.4	26.0	44.5	21.9	6.9	0.4	0	0
2015	0.1	31.6	40.6	21.6	6.0	0.2	0	0
2016	0.1	21.3	43.3	26.8	7.3	1.1	0	0
2017	0.3	31.0	41.6	19.6	7.2	0.3	0	0
10 yr mean (2008-2017)	0.7	28.6	44.0	20.2	6.0	0.5	0.0	0.0
Overall Mean	2.4	31.3	39.8	18.7	6.8	1.0	0.1	0.0

Table 15, continued. River age distribution (%) for North American and European origin Atlantic salmon (*Salmo salar*) caught at West Greenland, 1968-2017. Table does not include salmon of unknown age or origin. Because of rounding, not all rows add to 1.0. No samples were collected in 1993 and 1994.

YEAR	1	2	3	4	5	6	7	8
					European			
1968	21.6	60.3	15.2	2.7	0.3	0	0	0
1969	0	83.8	16.2	0	0	0	0	0
1970	0	90.4	9.6	0	0	0	0	0
1971	9.3	66.5	19.9	3.1	1.2	0	0	0
1972	11	71.2	16.7	1	0.1	0	0	0
1973	26	58	14	2	0	0	0	0
1974	22.9	68.2	8.5	0.4	0	0	0	0
1975	26	53.4	18.2	2.5	0	0	0	0
1976	23.5	67.2	8.4	0.6	0.3	0	0	0
1978	26.2	65.4	8.2	0.2	0	0	0	0
1979	23.6	64.8	11	0.6	0	0	0	0
1980	25.8	56.9	14.7	2.5	0.2	0	0	0
1981	15.4	67.3	15.7	1.6	0	0	0	0
1982	15.6	56.1	23.5	4.2	0.7	0	0	0
1983	34.7	50.2	12.3	2.4	0.3	0.1	0.1	0
1984	22.7	56.9	15.2	4.2	0.9	0.2	0	0
1985	20.2	61.6	14.9	2.7	0.6	0	0	0
1986	19.5	62.5	15.1	2.7	0.2	0	0	0
1987	19.2	62.5	14.8	3.3	0.3	0	0	0
1988	18.4	61.6	17.3	2.3	0.5	0	0	0
1989	18.0	61.7	17.4	2.7	0.3	0	0	0
1990	15.9	56.3	23	4.4	0.2	0.2	0	0
1991	20.9	47.4	26.3	4.2	1.2	0	0	0
1992	11.8	38.2	42.8	6.5	0.6	0	0	0
1995	14.8	67.3	17.2	0.6	0	0	0	0
1996	15.8	71.1	12.2	0.9	0	0	0	0
1997	4.1	58.1	37.8	0	0	0	0	0
1998	28.6	60.0	7.6	2.9	0.0	1.0	0	0
1999	27.7	65.1	7.2	0	0	0	0	0
2000	36.5	46.7	13.1	2.9	0.7	0	0	0
2001	16.0	51.2	27.3	4.9	0.7	0	0	0
2002	9.4	62.9	20.1	7.6	0	0	0	0
2003	16.2	58.0	22.1	3.0	0.8	0	0	0
2004	18.3	57.7	20.5	3.2	0.2	0	0	0
2005	19.2	60.5	15	5.4	0	0	0	0
2006	17.7	54.0	23.6	3.7	0.9	0	0	0
2007	7.0	48.5	33.0	10.5	1	0	0	0
2008	7.0	72.8	19.3	0.8	0	0	0	0
2009	14.3	59.5	23.8	2.4	0	0	0	0
2010	11.3	57.1	27.3	3.4	0.8	0	0	0
2011	19.0	51.7	27.6	1.7	0	0	0	0
2012	9.3	63.0	24.0	3.7	0	0	0	0
2013	4.5	68.2	24.4	2.5	0.5	0	0	0
2014	4.5	60.7	30.8	4.0	0	0	0	0
2015	9.2	54.9	28.8	5.8	1.2	0	0	0
2016	2.5	63.3	29.6	4.3	0.3	0	0	0
2017	10.0	73.0	15.4	1.7	0.0	0	0	0
10 yr mean (2008-2018)	9.2	60.0	26.9	3.9	0.4	0.0	0.0	0.0
Overall Mean	16.4	60.9	19.4	2.8	0.3	0.0	0.0	0.0

Table 16. The sea-age (1SW = 1 sea-winter, 2SW = 2 sea-winter, and Previous Spawners) composition of Atlantic salmon (*Salmo salar*) by continent of origin (NA = North American and E = European) and Northwest Atlantic Fisheries Organization (NAFO) division caught at West Greenland in 2017. Table does not include salmon with unknown age or origin (n = 96). Not all rows add to 100 because of rounding errors.

		Sea-age composition (%)			
NAFO	Origin	1SW	2SW	Previous Spawners	Total No.
1B	NA	92.3	2.2	5.5	273
	E	94.1	4.4	1.5	68
		92.7	2.6	4.7	341
1C	NA	94.4	0.8	4.8	250
	E	94.3	4.5	1.1	88
		94.4	1.8	3.8	338
1E	NA	100.0	0.0	0.0	11
	E	100.0	0.0	0.0	4
		100.0	0.0	0.0	15
1F	NA	89.7	1.6	8.6	185
	E	90.7	8.1	1.2	86
		90.0	3.7	6.3	271
All areas	NA	92.5	1.5	6.0	719
	E	93.1	5.7	1.2	246
		92.6	2.6	4.8	965

Table 17. Sea age (1SW = 1 sea-winter, 2SW = 2 sea-winter, and PS = Previous Spawners) distribution (%) for North American and European origin Atlantic salmon (*Salmo salar*) caught at West Greenland, 1985-2017. Table does not include salmon of unknown age or origin. Not all rows add to 100 because of rounding errors. No samples were collected in 1993 or 1994.

	North American			European		
	1SW	2SW	PS	1SW	2SW	PS
1985	92.5	7.2	0.3	95.0	4.7	0.4
1986	95.1	3.9	1.0	97.5	1.9	0.6
1987	96.3	2.3	1.4	98.0	1.7	0.3
1988	96.7	2.0	1.2	98.1	1.3	0.5
1989	92.3	5.2	2.4	95.5	3.8	0.6
1990	95.7	3.4	0.9	96.3	3.0	0.7
1991	95.6	4.1	0.4	93.4	6.5	0.2
1992	91.9	8.0	0.1	97.5	2.1	0.4
1993	-	-	-	-	-	-
1994	-	-	-	-	-	-
1995	96.8	1.5	1.7	97.3	2.2	0.5
1996	94.1	3.8	2.1	96.1	2.7	1.2
1997	98.2	0.6	1.2	99.3	0.4	0.4
1998	96.8	0.5	2.7	99.4	0.0	0.6
1999	96.8	1.2	2.0	100.0	0.0	0.0
2000	97.4	0.0	2.6	100.0	0.0	0.0
2001	98.2	2.6	0.5	97.8	2.0	0.3
2002	97.3	0.9	1.8	100.0	0.0	0.0
2003	96.7	1.0	2.3	98.9	1.1	0.0
2004	97.0	0.5	2.5	97.0	2.8	0.2
2005	92.4	1.2	6.4	96.7	1.1	2.2
2006	93.0	0.8	5.6	98.8	0.0	1.2
2007	96.5	1.0	2.5	95.6	2.5	1.5
2008	97.4	0.5	2.2	98.8	0.8	0.4
2009	93.4	2.8	3.8	89.4	7.6	3.0
2010	98.2	0.4	1.4	97.5	1.7	0.8
2011	93.8	1.5	4.7	82.8	12.1	5.2
2012	93.2	0.7	6.0	98.0	1.6	0.4
2013	94.9	1.4	3.7	96.6	2.4	1.0
2014	91.3	1.1	7.6	96.1	2.4	1.5
2015	97.0	0.7	2.3	98.2	1.2	0.6
2016	93.5	2.5	4.0	95.5	3.5	1.0
2017	92.5	1.5	6.0	93.1	5.7	1.2

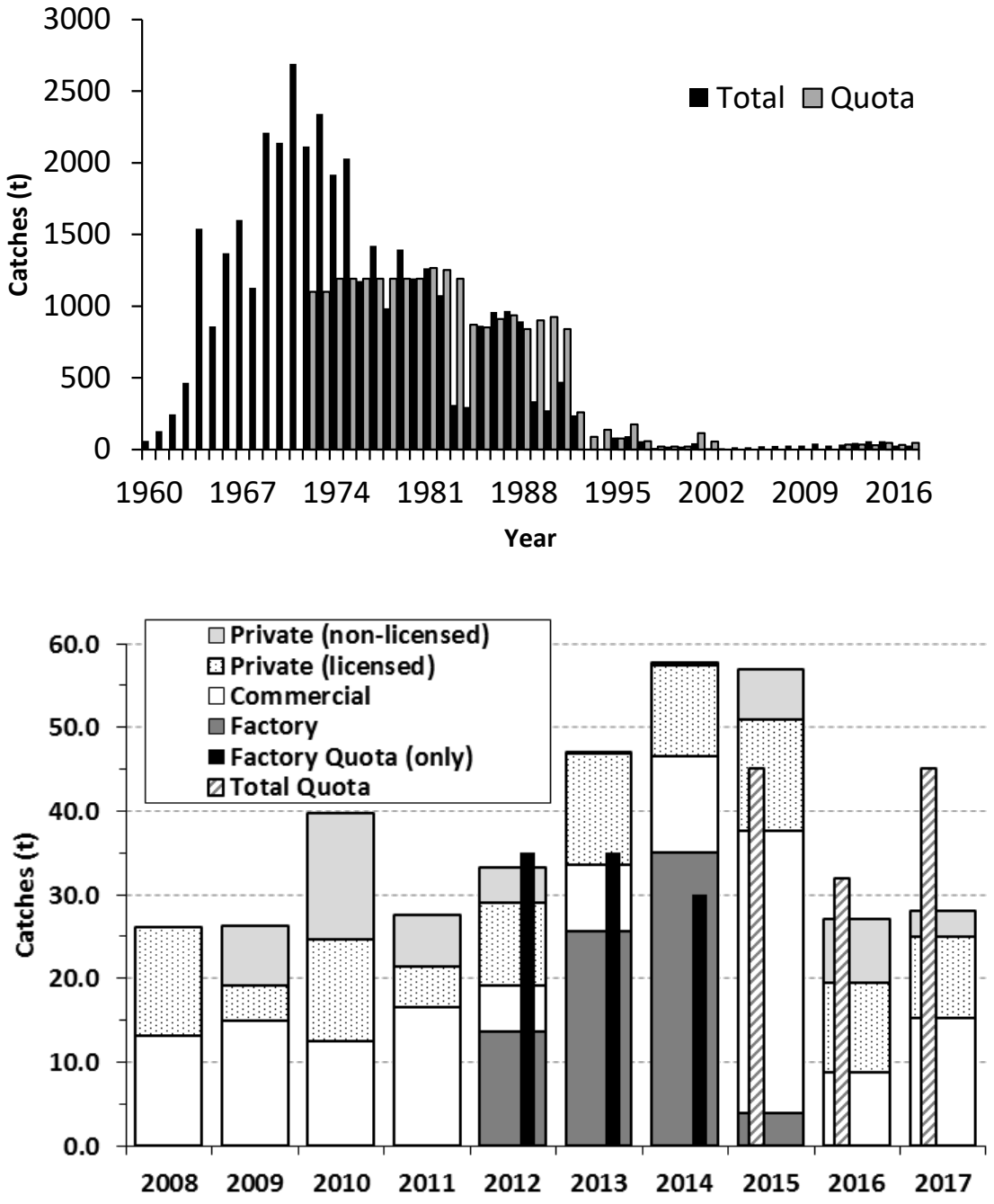

Figure 1. Nominal catches and commercial quotas (metric tons, round fresh weight) of Atlantic salmon (*Salmon salar*) at West Greenland for 1960–2017 (top panel) and 2008–2017 (bottom panel). Total reported landings from 2008-2017 are displayed by landings type. From 2009 to the present, private landings are reported as coming from licensed or nonlicensed fishers. No quotas were set from 2003-2011, but from 2012-2014 an annual quota was set and applied to factory landings only. Starting in 2015, a single quota was set for all components of the fishery.

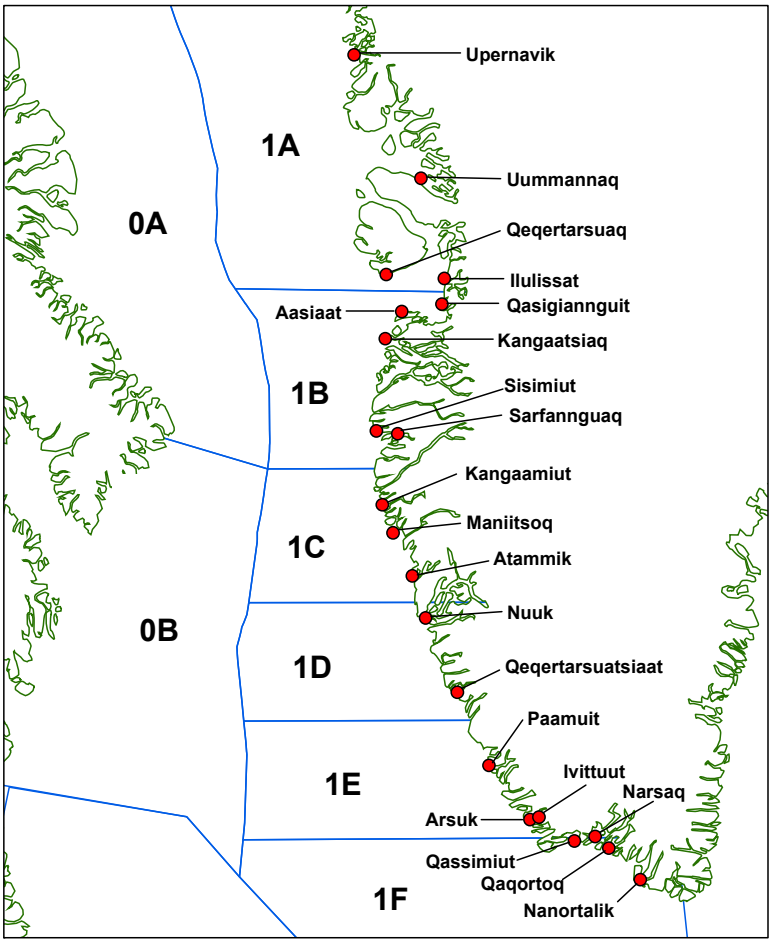

Figure 2. Map of southwest Greenland showing communities to which Atlantic salmon (*Salmo salar*) have historically been landed. Northwest Atlantic Fisheries Organization Division (NAFO) divisions (1A-1F) are also shown. In 2017 samples were obtained from Sisimiut (NAFO Division 1B), Maniitsoq (1C), Paamiut (1E), and Qaqortoq (1F).

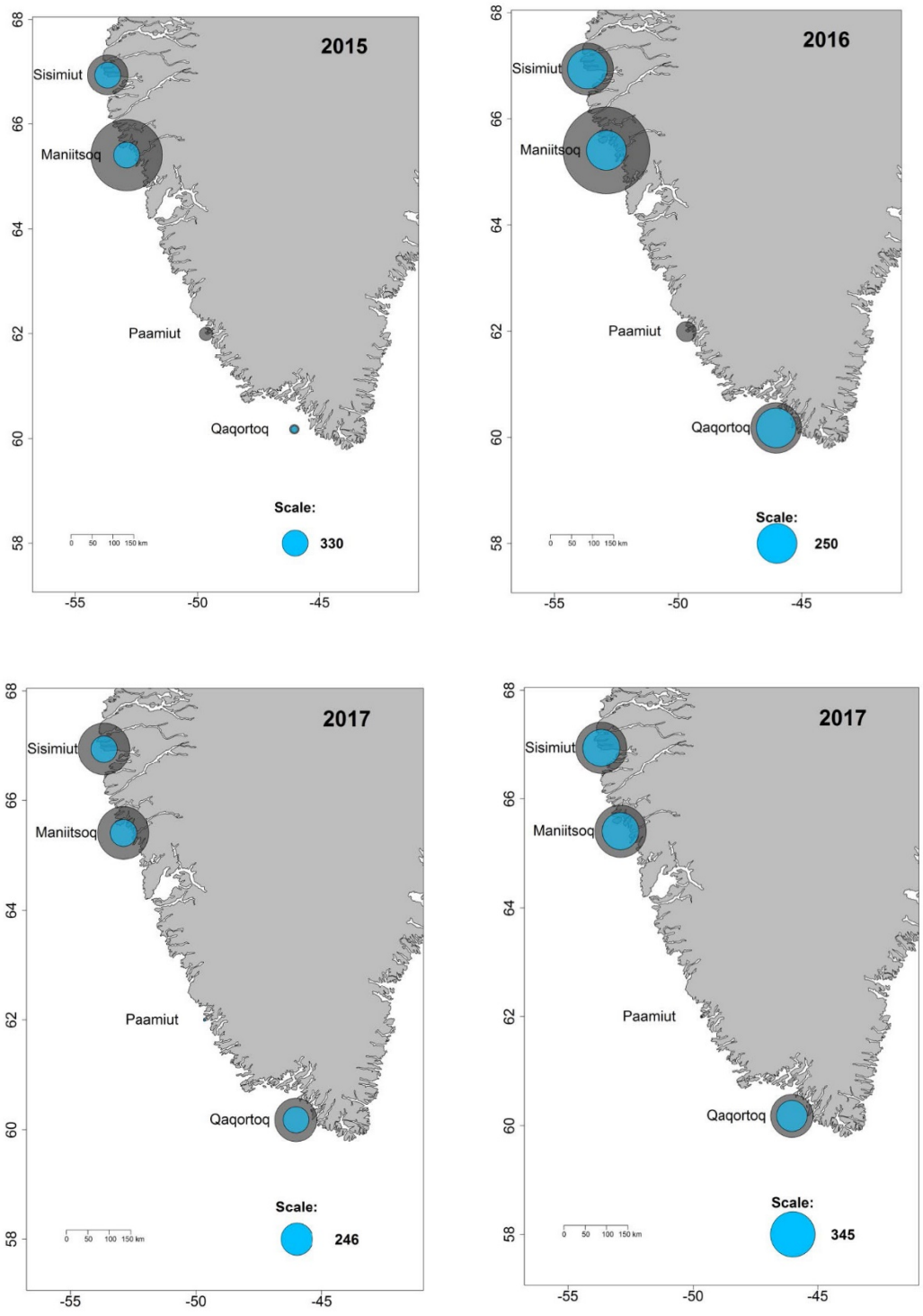

Figure 3. Map showing total samples (gray circles) and analyzed subsamples (blue circles) for the 2015-2017 West Greenland Atlantic salmon (*Salmo salar*) fisheries for both microsatellite and Single Nucleotide Polymorphism (SNP) analyses. Sample locations from north to south are Sisimiut, Maniitsoq, Paamiut and Qaqortoq.

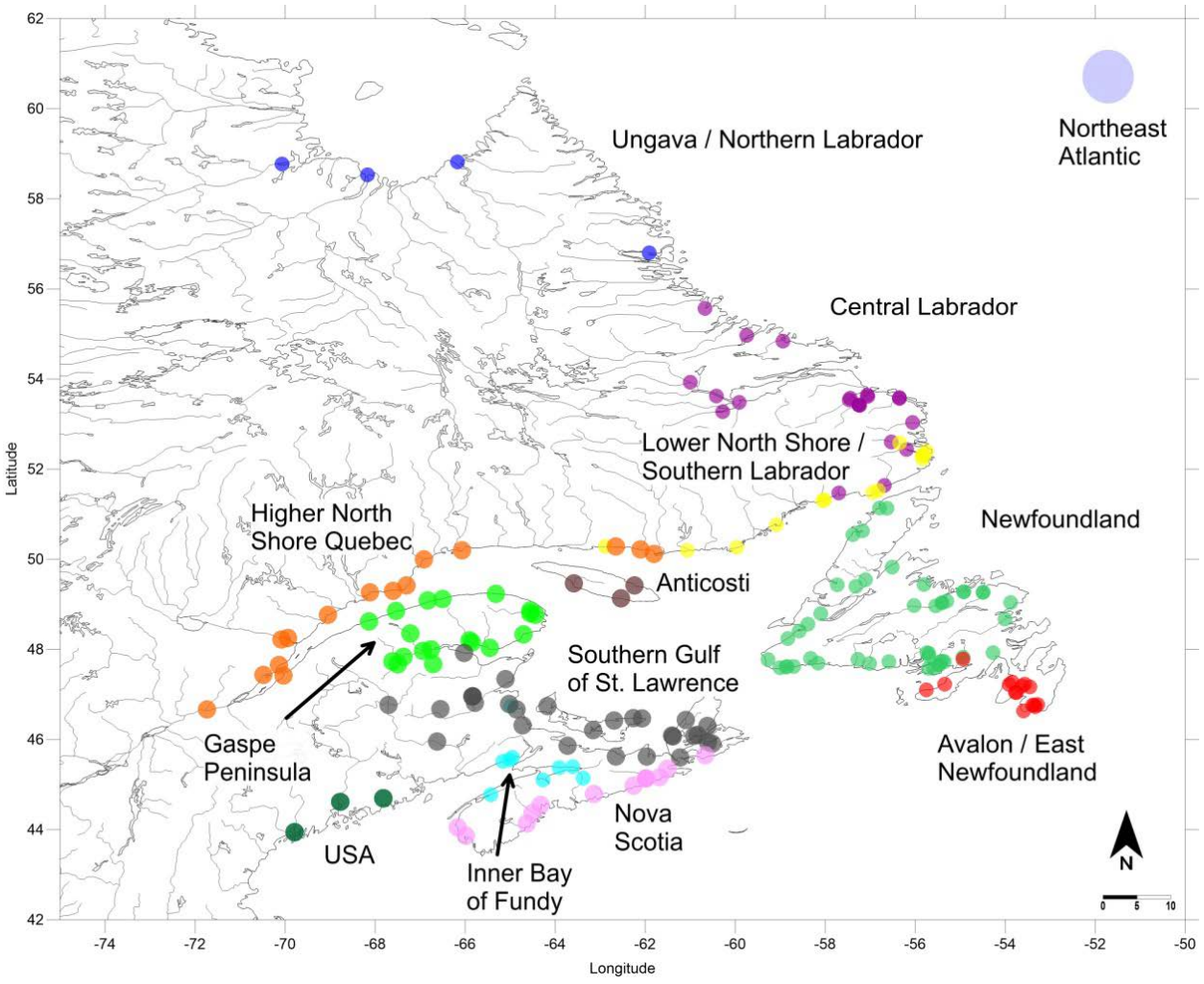

Figure 4. Map of sample locations used in microsatellite baseline for Atlantic salmon (*Salmo salar*) in North America. See Table 5 for location abbreviations and Bradbury et al. 2015 for further details.

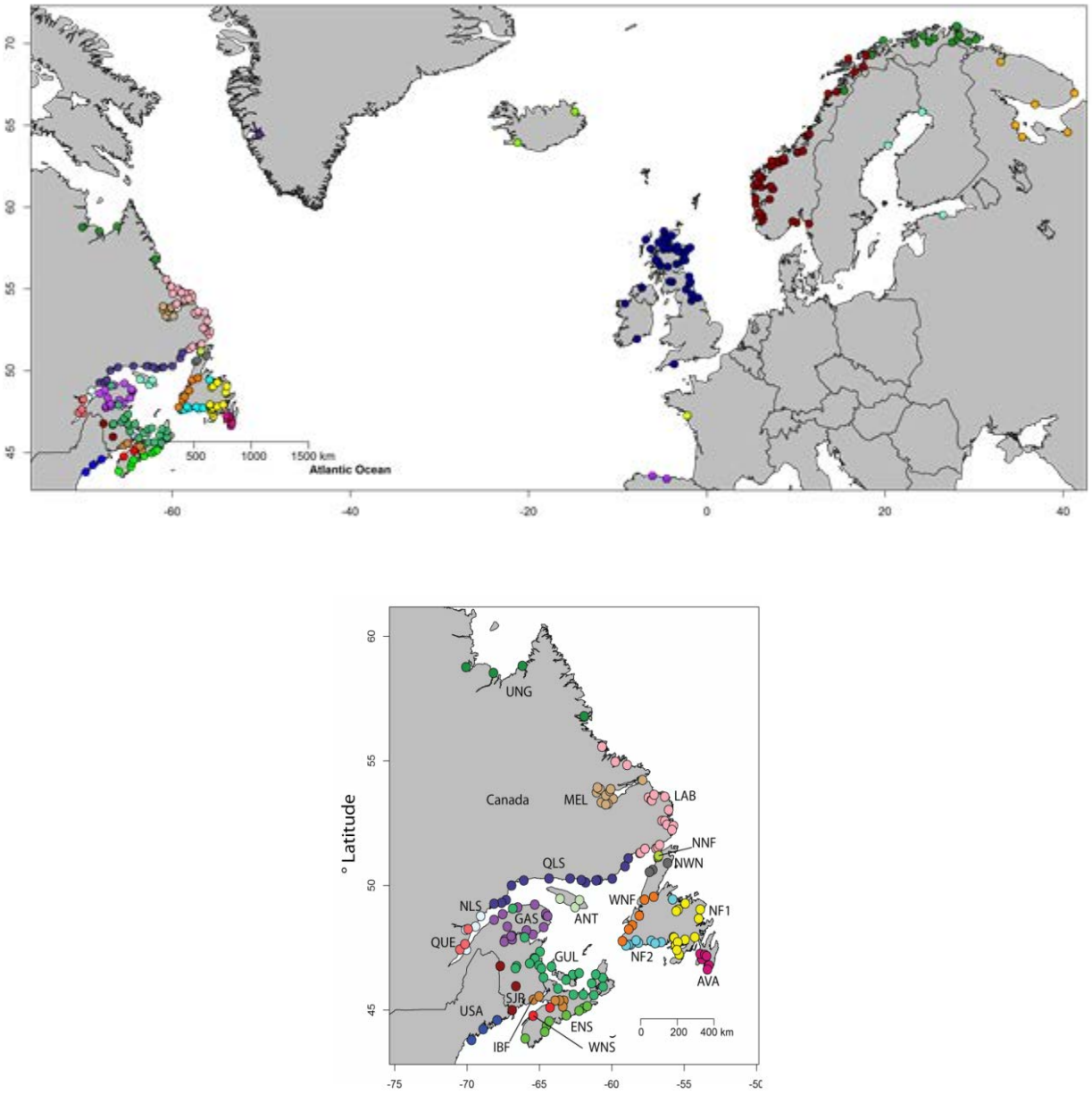

Figure 5. Range-wide (top) and North American focused (bottom) single nucleotide polymorphism genetic baseline Atlantic salmon reporting groups with the inclusion of the Kapisillit reporting group located in Greenland. See Table 6 for location abbreviations Jeffery et al. 2018 for further details.

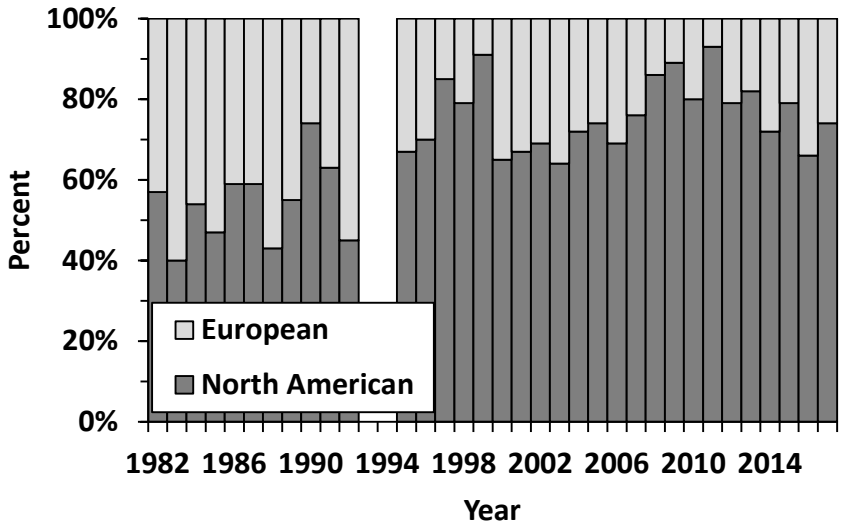

Figure 6. The weighted proportions of North American and European Atlantic salmon (*Salmo salar*) caught at West Greenland from 1982-2017. Proportions were weighted by the estimated numbers of salmon by origin for each division according to the adjusted landings.

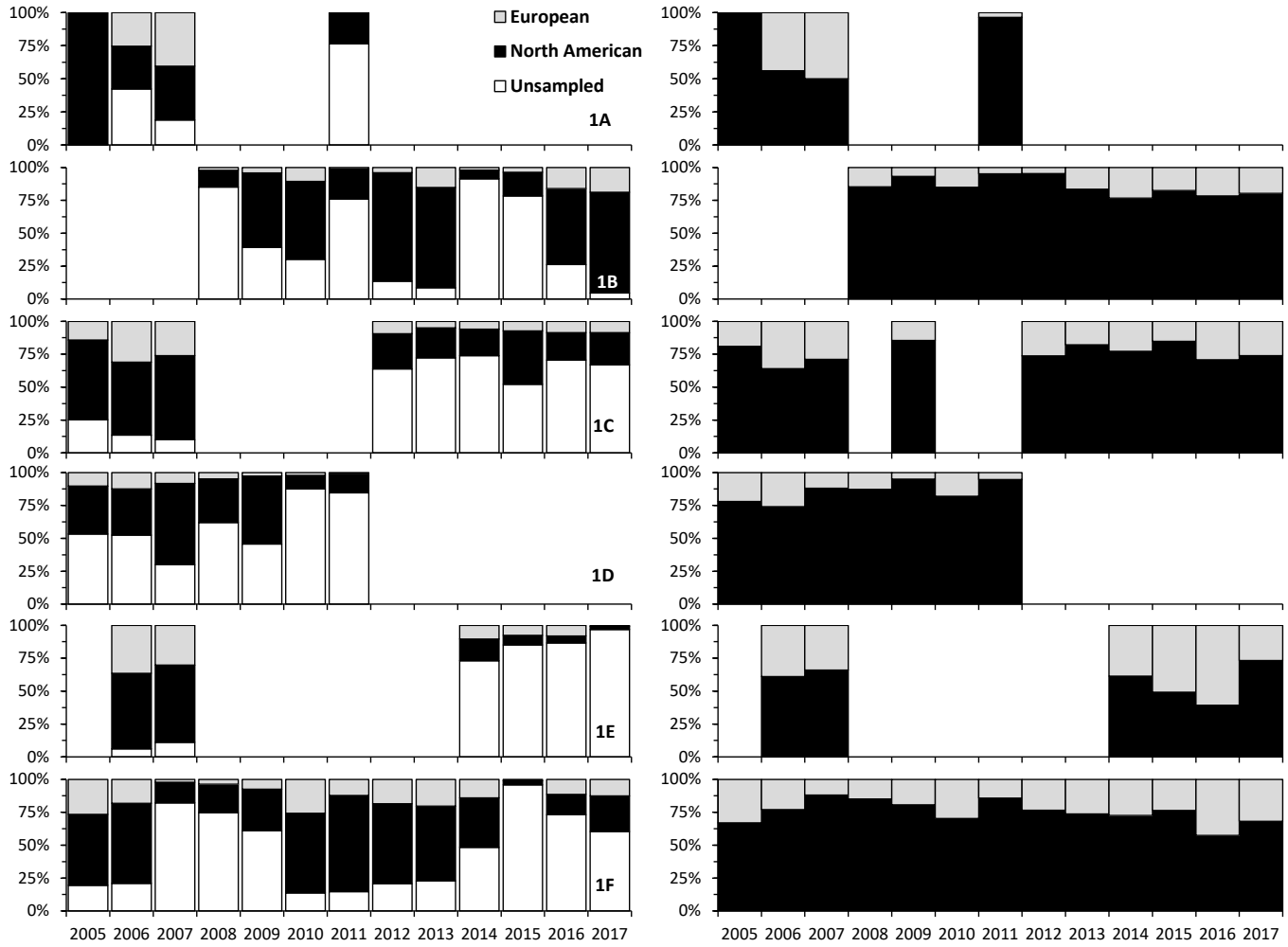

Figure 7. Proportions of unsampled adjusted landings, North American origin and European origin Atlantic salmon (*Salmo salar*, left panels) and of sampled adjusted landings, North American origin and European origin Atlantic salmon (right panels) by North Atlantic Fisheries Organization division (NAFO, top row represents division 1A and bottom row represents division 1F) sampled at West Greenland from 2005–2017. Year-division combinations with data identify when and where sampling occurred. Division 1A 2005 value is from 1 sample.

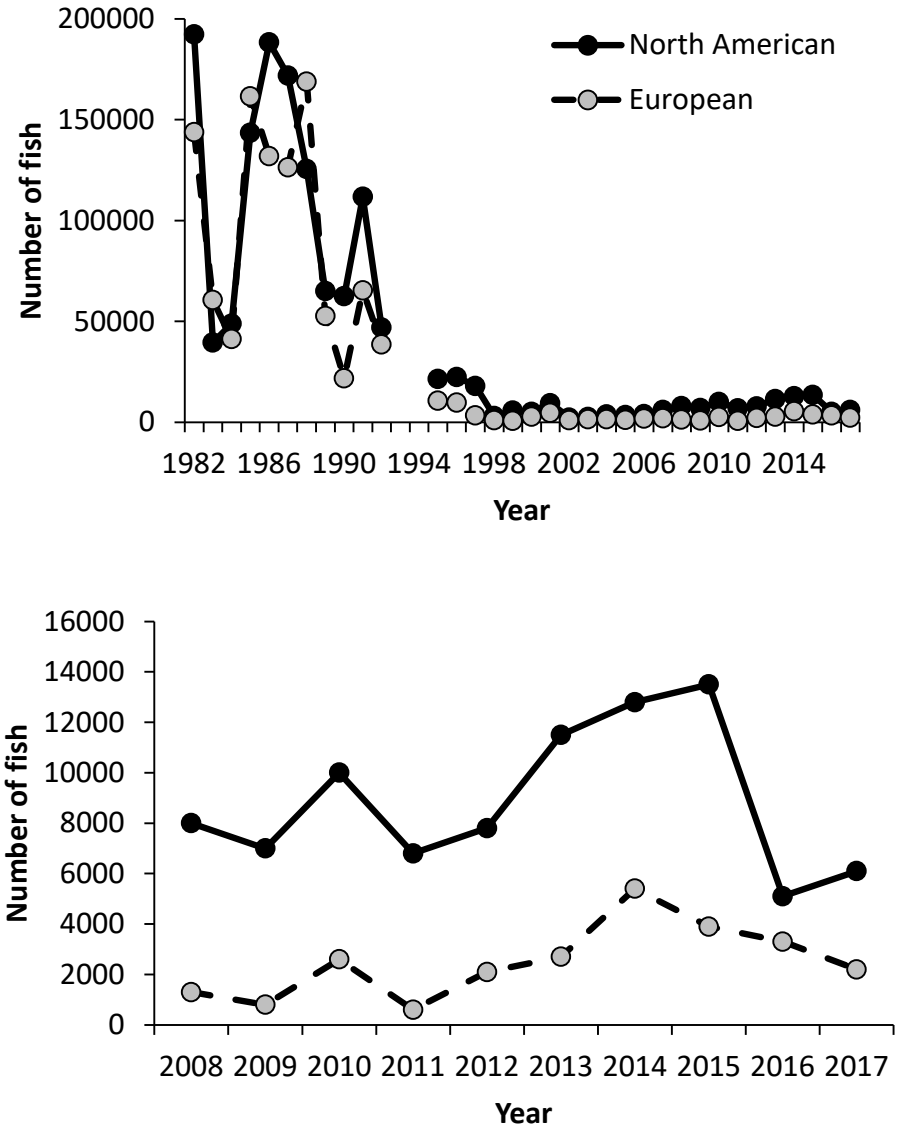

Figure 8. The weighted numbers of North American and European Atlantic salmon (*Salmo salar*) caught at West Greenland from 1982–2017 (top) and 2008–2017 (bottom). Numbers are rounded to the nearest hundred fish. In 2017, it is estimated that approximately 6,100 North American and 2,200 European origin fish were harvested.

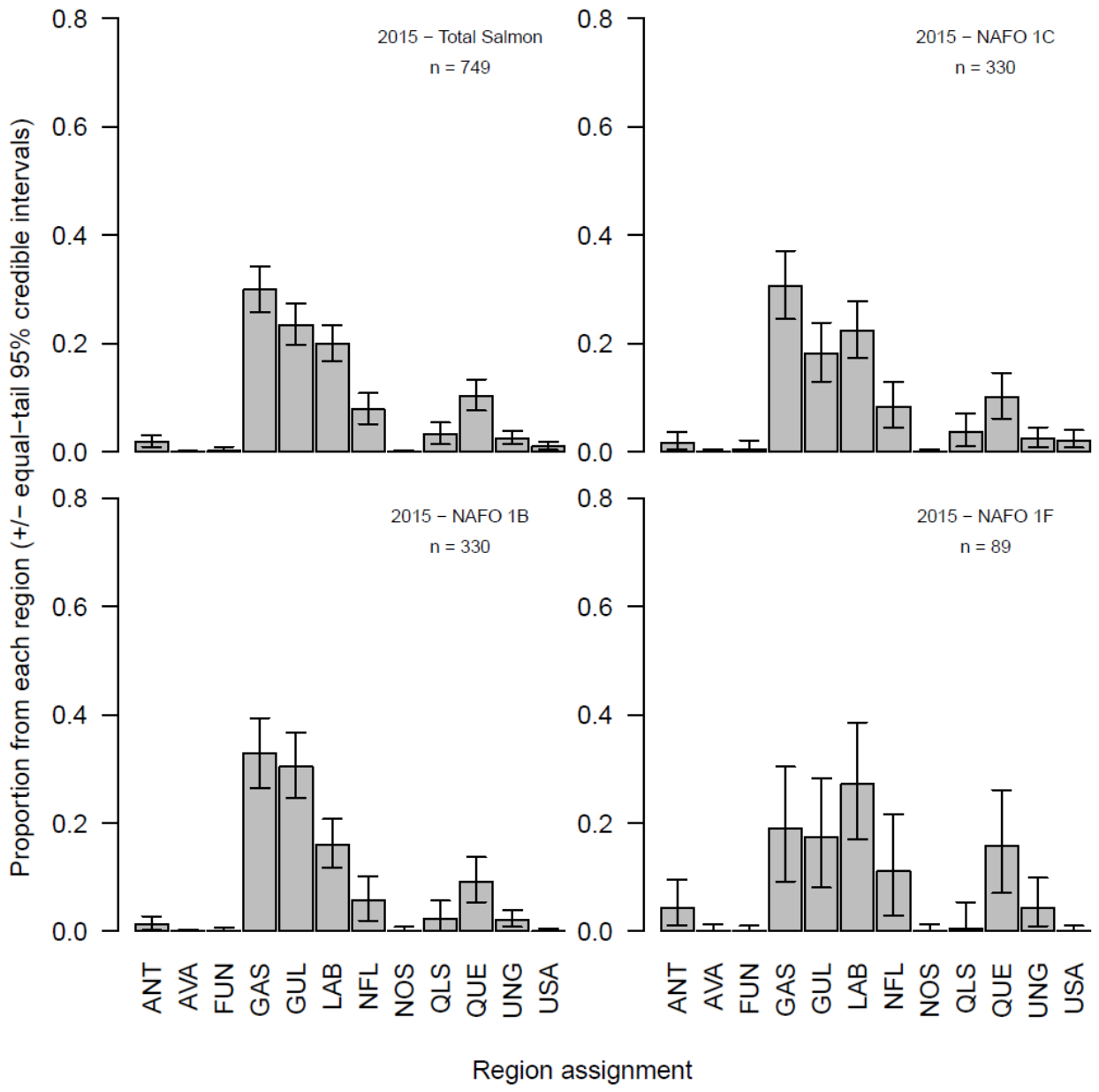

Figure 9. Bayesian estimates of mixture composition of samples from the West Greenland Atlantic salmon (*Salmo salar*) fishery for 2015, overall and by Northwest Atlantic Fisheries Organization (NAFO) division. Reporting Groups are identified in Figure 4 and Table 5.

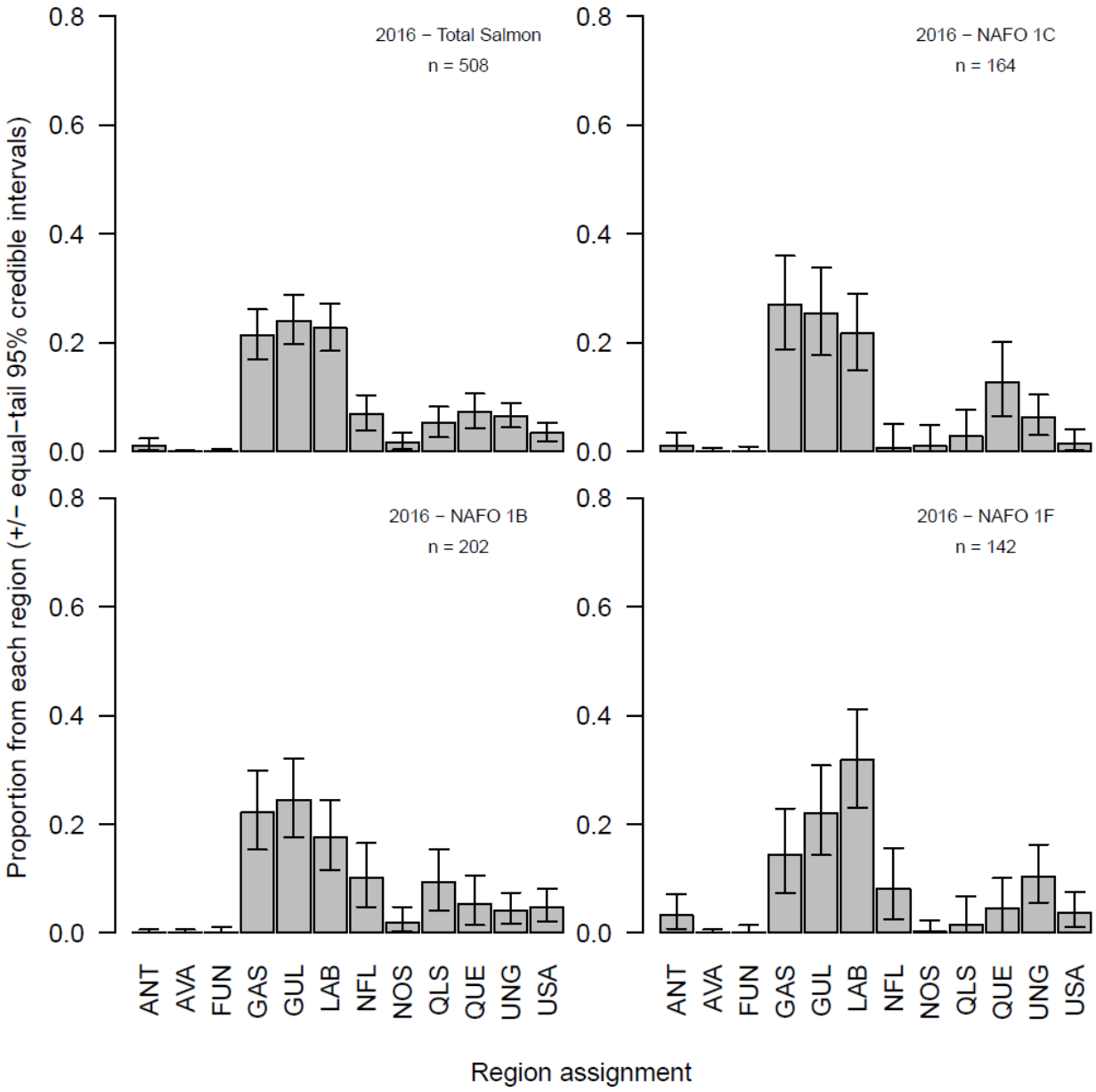

Figure 10. Bayesian estimates of mixture composition of samples from the West Greenland Atlantic salmon (*Salmo salar*) fishery for 2016, overall and by Northwest Atlantic Fisheries Organization (NAFO) division. Reporting Groups are identified in Figure 4 and Table 5.

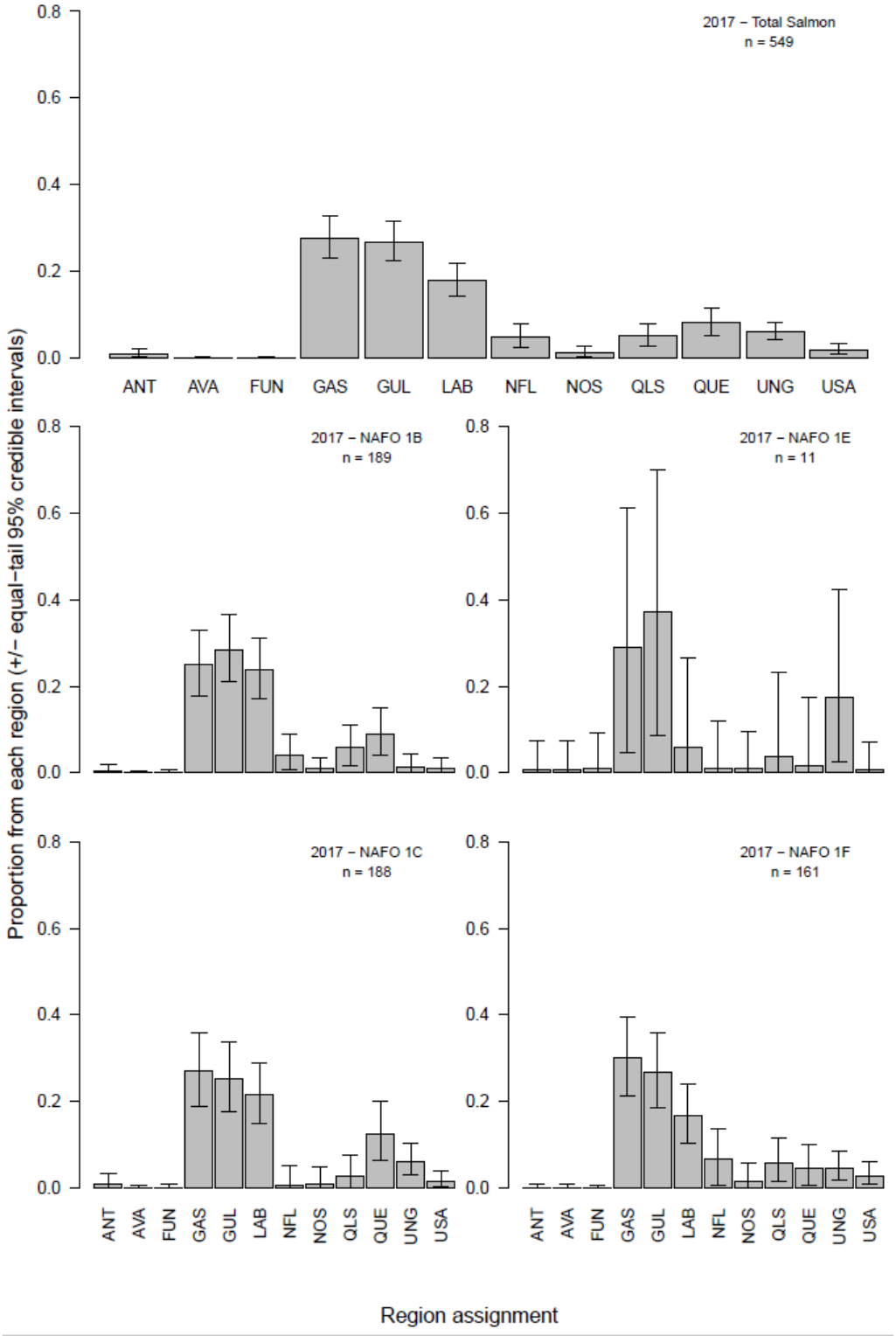

Figure 11. Bayesian estimates of mixture composition of samples from the West Greenland Atlantic salmon (*Salmo salar*) fishery for 2017, overall and by Northwest Atlantic Fisheries Organization (NAFO) division. Reporting Groups are identified in Figure 4 and Table 5.

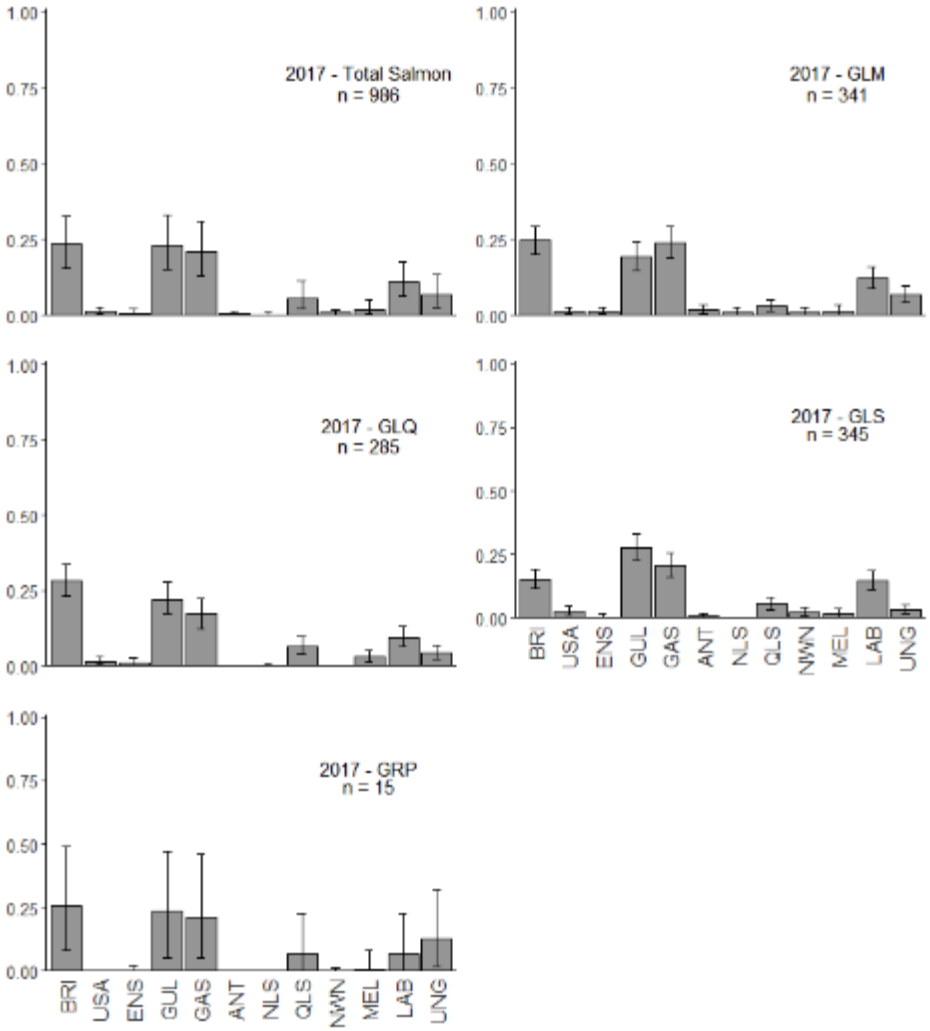

Figure 12. Bayesian estimates of mixture composition of samples from the West Greenland Atlantic salmon (*Salmo salar*) fishery for 2017 using the single nucleotide polymorphism baseline, overall and by Northwest Atlantic Fisheries Organization (NAFO) division. Reporting Groups are identified in Figure 5 and Table 6. Only bolded values from Table 11 are displayed.

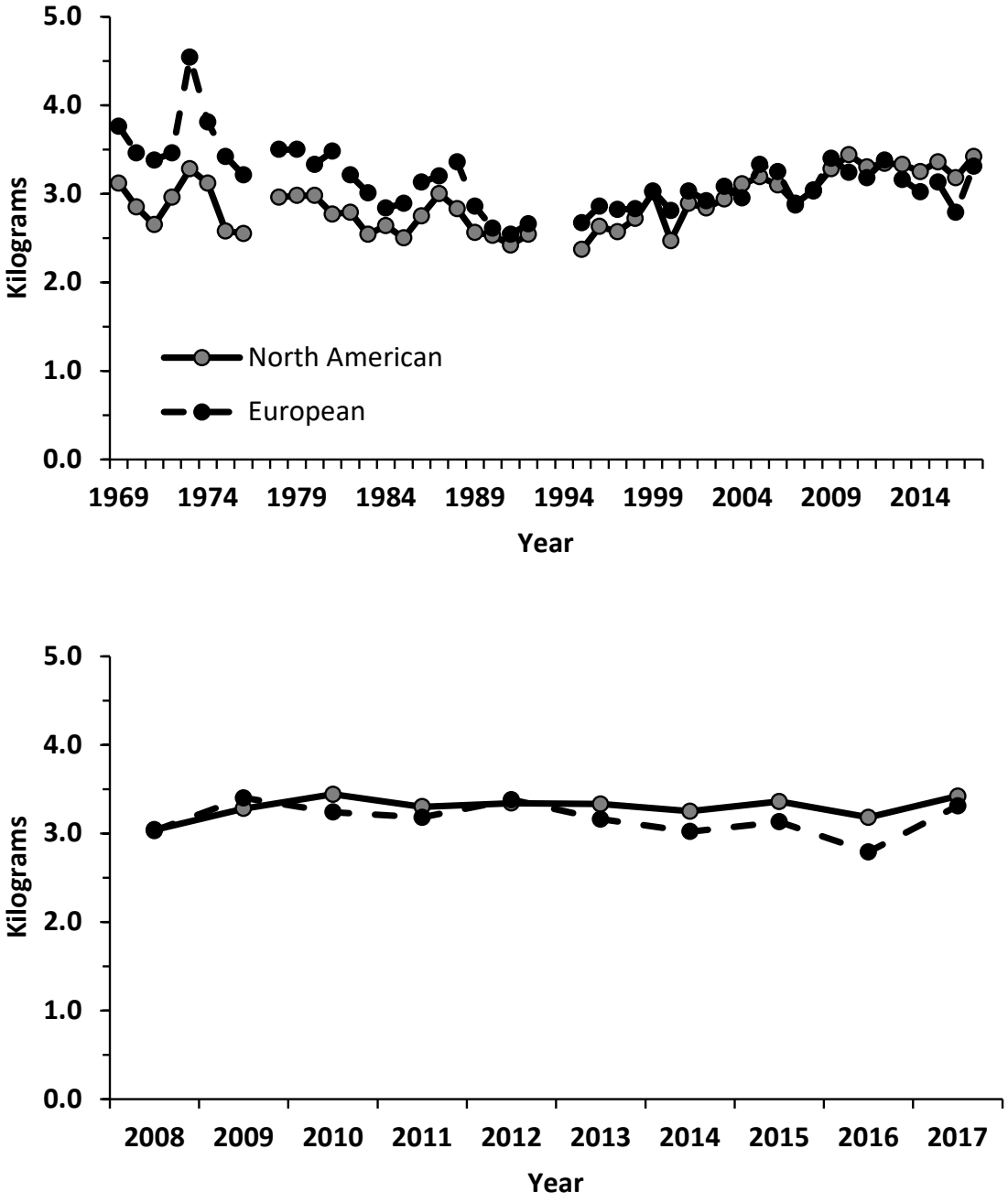

Figure 13. Mean uncorrected whole weight (kg) of European and North American 1 sea winter (fish that have spent 1 winter at sea) Atlantic salmon (*Salmo salar*) sampled in West Greenland from 1969-2017 (top panel) and 2008-2017 (bottom panel).

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