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Length, weight, sex and age characteristics of Atlantic salmon
(Salmo salar) of North American and European
origin caught at West Greenland in 1979

by

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Abstract

Research vessel and commercial catches of Atlantic salmon (Salmo salar) at West Greenland in 1979 were analyzed for length, weight, sex and age differences among fish identified to continent of origin. None of these characteristics were significantly different when compared between male and female fish from the research vessel catches. North American wild origin salmon were shorter, weighed less and had a higher mean smolt age than did salmon of European origin. The sex ratio was 1:2.69 (males: females) in West Greenland catches. The sea age composition in the West Greenland commercial catches was 1-96.6%, 2-2.1% and previous spawners 1.3%.

Introduction

Research vessel catches since the late 1960's have been used to define the biological characteristics of Atlantic salmon exploited at West Greenland (Munro and Swain 1980). Recent analyses have used this information in a mathematical model analyzing losses to homewater stocks (Ritter, Marshall, Reddin and Doubleday 1980). This paper reports and analyzes biological characteristics of catches from both commercial samples taken at fish plants and research vessel catches.

Methods

Samples were collected from "M.V. Zagreb" which operated in Greenland coastal waters from August 8, 1979 to September 7, 1979. Research vessel samples were collected using 5000 m of monofilament driftnets (gillnets). They were arrayed in basic units of 3 nets as follows: 1 monofilament, 126 mm; 1 monofilament, 142 mm; and 1 monofilament, 154 mm so that equivalent

amounts of each mesh size were fished at each set. Commercial catches were examined randomly at fish plants at Frederikshaab, Godthaab, Holsteinsborg and Egedesminde. The fish were sampled for fork length (FL) to the nearest centimeter, gutted weight head on (GW) to the nearest 1/10th of a kilogram, sex and then a scale sample was taken from the left side of the fish between 3 to 6 scale rows above the lateral line, on a line extending from the posterior edge of the dorsal fin to the anterior edge of the anal fin. The smolt age, sex age, spawning marks and reliability (on a scale of 1-4) were then interpreted from these scales after impressions were made on plastic slides. In addition, the salmon from research vessel catches were weighed for GW and whole round weight (RW) to the nearest 1/10th of a kilogram. The linear relationship of GW on RW was used to convert the gutted weights of the commercial plant samples to round weights.

Individual specimens were typed as (1) North American wild, (2) North American hatchery, and (3) European origin according to scale analysis utilizing the techniques of Lear and Sandeman (1980) as present in Reddin et al. (1979).

Results

The linear relationship between whole weight and gutted weight was significant ($r^2 = 0.98$, $F_{1,522} = 9135.97$, $P < 0.0001$, $r^2 = 0.98$).

Table 1a and 1b shows length distributions of North American wild, North American hatchery and European origin salmon. These distributions are similar for the research vessel and commercial catches. ANOVAs testing the mean fork lengths, whole weights and smolt ages (Tables 2, 3 and 4) demonstrated that there was no significant differences between these characteristics of European, North American wild and North American hatchery origin salmon for the research and commercial samples ($F = 1.116$, $P = 0.328$; $F = 0.114$, $P = 0.736$; and $F = 2.385$, $P = 0.092$). The research samples when tested for differences among males and females and showed that mean fork lengths were similar ($F = 0.138$, $P = 0.711$), mean whole weights were similar ($F = 1.446$, $P = 0.230$) and mean smolt ages were similar ($F = 3.079$, $P = 0.080$) for fish of North American wild, North American hatchery and European origin.

However, ANOVAs on salmon of North American wild, North American hatchery, and European origin showed that mean fork lengths ($F = 36.504$, $P = 0.000$), mean whole weights ($F = 6.954$, $P = 0.001$) and mean river ages ($F = 236.17$, $P = 0.000$) were significantly different for the combined commercial and research samples.

Discussion

In 1979, the research samples consisted of 96.7%, 1-sea-winter salmon, 1.8%, 2-sea-winter salmon; and 1.5% previous spawners (Table 5a). The commercial samples consisted of 96.6%, 1-sea-winter fish; 2.1%, 2-sea-winter fish and 1.3% previous. Munro and Swain (1980) reported that during the 1972 International Salmon Tagging Experiment the research vessels underestimated the two-sea-winter fish caught. However, they reported that 92.0% of the fish caught by the research vessels were one-sea-winter fish, 6.4% were 2-sea-winter fish, and less than 1% had previously spawned. Munro and Swain (1980) also reported a

significant increase in 1-sea-winter fish and subsequent decrease in 2-sea-winter fish southwards. In 1978, 97.9% were one-sea-winter, 1.0% were two-sea-winter, and 1.1% previous spawners (1979). Comparison of the 1978 samples with 1972 and 1979 is difficult because the majority of the samples in 1978 were from 1B and 1C whereas Munro and Swain's data came from the whole coast. However, it is evident from comparing 1972 and 1979 that the stocks at West Greenland consist of much less 2-sea-winter fish than was previously the case.

Salmon of European, North American wild and North American hatchery origin have been compared for fork lengths, whole weights and smolt ages from samples collected in 1978 (Reddin and Burfitt 1979) and 1979. In all cases fish of North American wild origin were significantly shorter, lighter and of higher mean smolt ages than European origin salmon.

Salmon of smolt ages from 1 to 7 years were found in the catches at West Greenland. The North American wild origin salmon smoltified predominantly after 2 and 3 years spent in the river while fish of European origin smoltified predominantly after 1 and 2. If the samples in NAFO Div. 1B, 1C and 1D were compared, it can be seen that salmon of higher river age composition are found further north. This compares favourably with data collected between 1965 and 1972 (Munro and Swain 1980) and in 1978 (Reddin and Burfitt 1979). Templeman (1967), Lear (1972) and Lear and Misra (1978) have shown that smolt age increases from south to north along the east coast of North America. Thus, salmon from a northerly latitude are found further north at West Greenland.

The overall sex ratio at West Greenland was approximately 1: 2.7 (males and females). Previously Reddin and Burfitt (1979) reported it was approximately 1:3 in 1978 and Munro and Swain (1980) reported it was 1:2.8 in 1972 and higher in previous years (1: between 3 and 4). If the fish are separated by continent of origin, it is apparent that the sex ratio of the North American wild fish of 1:2.83 is similar to 1:2.84 for European origin salmon; although variations from area to area are apparent.

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Table 1a. The fork length frequency distribution by continent of origin and mesh size of Atlantic salmon caught at West Greenland in 1979 by research vessel.

Area	Length Interval (cm)	North American			N. American Hatch			European			Not Determined			Total
		126 mm mesh	142 mm mesh	154 mm mesh	126 mm mesh	142 mm mesh	154 mm mesh	126 mm mesh	142 mm mesh	154 mm mesh	126 mm mesh	142 mm mesh	154 mm mesh	
West Greenland	51	0	0	0	0	0	0	0	0	0	0	0	1	1
	54	1	0	0	0	0	0	0	0	0	0	0	1	2
	55	0	0	0	1	0	0	0	0	0	0	0	0	1
	56	4	0	0	0	0	0	0	0	0	0	0	0	4
	57	3	0	0	0	0	0	1	0	0	0	0	0	4
	58	2	2	0	0	0	0	0	0	0	0	0	1	5
	59	4	1	0	1	0	0	0	0	0	0	0	0	6
	60	5	2	0	0	0	0	1	2	0	0	0	0	10
	61	10	2	0	0	0	0	2	3	0	0	0	0	17
	62	9	7	2	0	1	0	4	3	2	2	0	0	30
	63	6	6	1	1	1	0	6	4	0	1	0	0	26
	64	6	7	1	1	0	0	8	8	3	0	0	0	34
	65	9	5	3	1	0	0	9	7	7	0	0	0	41
	66	4	2	1	0	1	0	5	11	5	2	0	0	31
	67	4	2	1	1	0	0	9	6	6	0	0	0	29
	68	1	2	1	0	3	1	4	5	4	1	0	0	22
	69	0	0	3	0	0	1	4	4	5	0	0	0	17
	70	2	2	0	1	0	0	1	8	2	0	0	0	16
	71	1	0	1	0	0	0	5	1	1	0	0	1	10
	72	0	0	0	0	0	1	2	2	3	0	0	0	8
	73	0	0	0	0	0	0	2	2	0	0	0	0	4
	74	0	0	0	0	0	0	0	1	0	0	0	0	1
	76	0	0	0	0	0	0	1	0	0	0	0	0	1
	77	1	0	0	0	0	0	1	0	1	0	0	0	3
	79	0	0	0	1	0	0	0	0	0	0	0	0	1
	83	0	0	0	0	0	0	0	1	0	0	0	0	1
	84	1	0	0	0	0	0	0	0	0	0	0	0	1
	88	0	0	2	0	0	0	0	0	1	0	0	0	3
Total		73	40	16	8	6	3	65	68	40	6	0	4	329

Table 1b. The fork length frequency distribution by continent of origin of Atlantic salmon samples taken from commercial fishery at West Greenland in 1979.

Area	Length Interval (cm)	North American	North American Hatchery	European	Origin not Determined	Total	
West Greenland	52	1	0	0	0	1	
	53	2	0	0	0	2	
	54	3	1	0	0	4	
	55	4	0	0	0	1	5
	56	12	0	0	0	0	12
	57	18	0	0	1	0	19
	58	27	0	0	1	0	28
	59	38	3	0	4	0	45
	60	69	2	0	11	0	82
	61	76	5	0	18	0	99
	62	67	4	0	45	0	116
	63	81	3	0	64	0	148
	64	77	6	0	58	0	141
	65	55	10	0	81	0	146
	66	62	5	0	97	0	164
	67	43	6	0	109	0	158
	68	39	4	0	93	0	136
	69	27	5	0	70	0	102
	70	17	5	0	63	0	85
	71	13	2	0	47	1	63
	72	3	0	0	20	0	23
	73	4	0	0	13	0	17
	74	0	2	0	2	0	4
	75	0	0	0	8	0	8
	76	2	0	0	2	0	4
	77	3	0	0	1	0	4
	78	3	0	0	1	0	4
	79	0	0	0	1	0	1
	80	3	0	0	2	0	5
	81	4	0	0	0	0	4
	82	4	0	0	1	0	5
	83	1	0	0	0	0	1
84	2	0	0	0	0	2	
85	1	0	0	1	0	2	
86	2	0	0	1	0	3	
87	3	0	0	0	0	3	
88	0	0	0	2	0	2	
90	1	0	0	0	0	1	
91	0	0	0	3	0	3	
92	1	0	0	0	0	1	
93	1	0	0	1	0	2	
Total		769	63	821	2	1655	

Table 2. Comparison of mean fork length (cm) of each sea age class of Atlantic salmon by area and continent of origin (exclusive of previous spawners) caught by research vessel sampling in 1979.

Area	Sea age class						Total	
	1		2		3		Length	number
	length	number	length	number	length	number		
North American (wild & hatchery) & European								
1B	64.7	102	73.5	2	0	0	64.9	104
1C	64.6	92	0	0	0	0	64.6	92
1D	65.3	95	85.0	3	0	0	65.9	98
1E	66.2	25	88.0	1	0	0	67.0	26
West Greenland	65.0	314	81.7	6	0	0	65.3	320
North American Wild								
1B	62.7	46	70.0	1	0	0	62.9	47
1C	62.6	35	0	0	0	0	62.6	35
1D	63.3	38	86.0	2	0	0	64.4	40
1E	64.1	8	0	0	0	0	64.1	8
West Greenland	63.0	127	80.7	3	0	0	63.4	130
North American Hatchery								
1B	65.4	5	0	0	0	0	65.4	5
1C	64.2	5	0	0	0	0	64.2	5
1D	66.6	5	0	0	0	0	66.6	5
1E	66.0	1	0	0	0	0	66.0	1
West Greenland	65.4	16	0	0	0	0	65.4	16
European								
1B	66.4	51	77.0	1	0	0	66.6	52
1C	66.0	52	0	0	0	0	66.0	52
1D	66.7	52	83.0	1	0	0	67.0	53
1E	67.3	16	88.0	1	0	0	68.5	17
West Greenland	66.5	171	82.7	3	0	0	66.8	174

Table 2b. Comparison of mean fork length (cm) of Atlantic salmon that had previously spawned, caught by research vessel sampling in 1979.

Area	Sea age class						Total Salmon	
	2		3		Total Previous Spawners		Length	Number
	Length	Number	Length	Number	Length	Number		
North American (wild and hatchery) and European								
West Greenland	65.5	2	81.3	3	75.0	5	65.5	325
North American Wild								
West Greenland	65.5	2	82.5	2	74.0	4	63.7	134
North American Hatchery								
West Greenland	0	0	79.0	1	79.0	1	66.2	17
European								
West Greenland	0	0	0	0	0	0	66.8	174

Table 2c. Comparison of mean fork length (cm) of each sea age class of Atlantic salmon by area and continent origin (exclusive of previous spawners) taken from commercial fishery at West Greenland in 1979.

Area	Sea age class							
	1		2		3		Total	
	length	number	length	number	length	number	length	number
North American (wild & hatchery) & European								
1A	64.1	205	76.0	1	0	0	64.2	206
1B	65.7	528	80.5	10	0	0	65.9	538
1D	64.7	655	84.9	19	0	0	65.3	674
1E	65.7	210	81.7	6	0	0	66.1	216
West Greenland	65.1	1598	82.9	36	0	0	65.5	1634
North American Wild								
1A	62.7	92	76.0	1	0	0	62.8	93
1B	63.4	244	80.0	9	0	0	64.0	253
1D	63.1	310	83.4	11	0	0	63.8	321
1E	64.0	79	82.0	5	0	0	65.0	84
West Greenland	63.2	725	81.7	26	0	0	63.9	751
North American Hatchery								
1A	64.5	13	0	0	0	0	64.5	13
1B	65.8	22	0	0	0	0	65.8	22
1D	64.5	22	0	0	0	0	64.5	22
1E	68.5	6	0	0	0	0	68.5	6
West Greenland	65.3	63	0	0	0	0	65.3	63
European								
1A	65.4	100	0	0	0	0	65.4	100
1B	67.8	261	85.0	1	0	0	67.8	262
1D	66.3	323	87.0	8	0	0	66.8	331
1E	66.5	124	80.0	1	0	0	66.7	125
West Greenland	66.7	808	86.1	10	0	0	66.9	818

Table 2d. Comparison of mean fork length (cm) of Atlantic salmon that had previously spawned, taken from commercial fishery at West Greenland in 1979.

Area	Sea age class						Total Salmon Length Number	
	2		3		Total Previous Spawners			
	Length	Number	Length	Number	Length	Number	Length	Number
North American (wild and hatchery) and European								
West Greenland	64.3	10	78.9	11	72.0	21	65.6	1655
North American Wild								
West Greenland	64.3	10	77.8	8	70.3	18	64.9	769
North American Hatchery								
West Greenland	0	0	0	0	0	0	65.3	63
European								
West Greenland	0	0	82.0	3	82.0	3	67.0	821

Table 3a. Comparison of mean round weights (kg) of each sea age class of Atlantic salmon by area and continent of origin (exclusive of previous spawners) caught by research vessel sampling in 1979.

Area	Sea age class						Total	
	1		2		3		weight	number
	weight	number	weight	number	weight	number		
North American (wild & hatchery) & European								
1B	3.37	101	6.20	2	0	0	3.42	103
1C	3.20	91	0	0	0	0	3.20	91
1D	3.34	94	8.67	3	0	0	3.50	97
1E	3.43	25	7.40	1	0	0	3.58	26
West Greenland	3.31	311	7.63	6	0	0	3.40	317
North American Wild								
1B	3.02	45	6.60	1	0	0	3.10	46
1C	2.88	35	0	0	0	0	2.88	35
1D	2.97	38	9.25	2	0	0	3.28	40
1E	3.10	8	0	0	0	0	3.10	8
West Greenland	2.97	126	8.37	3	0	0	3.09	129
North American Hatchery								
1B	3.46	5	0	0	0	0	3.46	5
1C	3.12	5	0	0	0	0	3.12	5
1D	3.54	5	0	0	0	0	3.54	5
1E	3.50	1	0	0	0	0	3.50	1
West Greenland	3.38	16	0	0	0	0	3.38	16
European								
1B	3.67	51	5.80	1	0	0	3.71	52
1C	3.42	51	0	0	0	0	3.42	51
1D	3.59	51	7.50	1	0	0	3.67	52
1E	3.59	16	7.50	1	0	0	3.82	17
West Greenland	3.56	169	6.90	3	0	0	3.62	172

Table 3b. Comparison of mean round weights (kg) of Atlantic salmon that had previously spawned, caught by research vessel sampling in 1979.

Area	Sea age class						Total Salmon Weight Number	
	2		3		Total Previous Spawners			
	Weight	Number	Weight	Number	Weight	Number	Weight	Number
North American (wild and hatchery) and European								
West Greenland	3.50	2	5.60	3	4.76	5	3.42	322
North American Wild								
West Greenland	3.50	2	5.75	2	4.63	4	3.14	133
North American Hatchery								
West Greenland	0	0	5.30	1	5.30	1	3.49	17
European								
West Greenland	0	0	0	0	0	0	3.62	172

Table 3c. Comparison of mean round weights (kg) of each sea age class of Atlantic salmon by area and continent of origin (exclusive of previous spawners) taken from commercial fishery at West Greenland in 1979.

Area	Sea age class							
	1		2		3		Total	
	weight	number	weight	number	weight	number	weight	number
North American (wild & hatchery) & European								
1A	3.08	205	5.40	1	0	0	3.09	206
1B	3.26	486	6.63	10	0	0	3.33	496
1D	3.25	655	7.60	19	0	0	3.37	674
1E	3.28	210	6.95	6	0	0	3.38	216
West Greenland	3.23	1556	7.16	36	0	0	3.32	1592
North American wild								
1A	2.86	92	5.40	1	0	0	2.89	93
1B	2.89	227	6.51	9	0	0	3.03	236
1D	2.99	310	7.27	11	0	0	3.14	321
1E	2.99	79	7.14	5	0	0	3.24	84
West Greenland	2.94	708	6.91	26	0	0	3.08	734
North American hatchery								
1A	3.25	13	0	0	0	0	3.25	13
1B	3.43	22	0	0	0	0	3.43	22
1D	3.23	22	0	0	0	0	3.23	22
1E	3.78	6	0	0	0	0	3.78	6
West Greenland	3.36	63	0	0	0	0	3.36	63
European								
1A	3.25	100	0	0	0	0	3.25	100
1B	3.60	236	7.70	1	0	0	3.62	237
1D	3.50	323	8.05	8	0	0	3.61	331
1E	3.44	124	6.00	1	0	0	3.46	125
West Greenland	3.49	783	7.81	10	0	0	3.54	793

Table 3d. Comparison of mean round weights (kg) of Atlantic salmon that had previously spawned, taken from commercial fishery at West Greenland in 1979

Area	Sea age class						Total Salmon Weight Number	
	2		3		Total Previous Spawners			
	Weight	Number	Weight	Number	Weight	Number	Weight	Number
North American (wild and hatchery) and European								
West Greenland	2.86	10	5.29	10	4.07	20	3.33	1612
North American Wild								
West Greenland	2.86	10	4.84	7	3.68	17	3.09	751
North American Hatchery								
West Greenland	0	0	0	0	0	0	3.36	63
European								
West Greenland	0	0	6.33	3	6.33	3	3.55	796

Table 4a. Comparison of the mean smolt age (years) of each sea age class of Atlantic salmon by area and continent of origin caught by research vessel sampling in 1979.

Area		Sea Age			Previous Spawner	Number	
		1SW	2SW	3SW		Origin Not Determined	Sample
1B	NA	2.8	2.0	0	4.3	0	51
	NAH	2.0	0	0	0	0	5
	E	1.8	3.0	0	0	0	52
	Total	2.3	2.5	0	4.3	11	119
1C	NA	2.6	0	0	0	0	35
	NAH	2.0	0	0	2.0	0	6
	E	1.8	0	0	0	0	52
	Total	2.1	0	0	2.0	0	93
1D	NA	2.7	2.0	0	0	0	40
	NAH	2.0	0	0	0	0	3
	E	1.9	1.0	0	0	0	53
	Total	2.2	1.7	0	0	0	96
1E	NA	2.3	0	0	0	0	8
	NAH	2.0	0	0	0	0	1
	E	1.9	1.0	0	0	0	16
	Total	2.0	1.0	0	0	1	26
West Green- land	NA	2.7	2.0	0	4.3	0	134
	NAH	2.0	0	0	2.0	0	15
	E	1.8	1.7	0	0	0	173
	Total	2.2	1.8	0	3.8	12	334

NA - North American wild
 NAH - North American hatchery
 E - European

Table 4b. Comparison of the mean smolt age (years) of each sea age class of Atlantic salmon by area and continent of origin taken from commercial fishery at West Greenland in 1979.

Area		Sea age				Number	
		1SW	2SW	3SW	Previous Spawners	Origin not Determined	Sample
1A	NA	2.9	2.0	0	3.8	0	98
	NAH	1.8	0	0	0	0	12
	E	1.9	0	0	0	0	98
	Total	2.3	2.0	0	3.8	0	208
1B	NA	2.8	2.6	0	3.9	0	255
	NAH	1.5	0	0	0	0	22
	E	1.9	1.0	0	2.0	0	258
	Total	2.3	2.4	0	3.6	0	535
1D	NA	2.8	3.0	0	4.3	0	321
	NAH	1.4	0	0	0	0	21
	E	1.9	1.3	0	1.0	0	325
	Total	2.3	2.4	0	3.5	0	667
1E	NA	2.8	3.2	0	0	0	81
	NAH	1.2	0	0	0	0	5
	E	1.9	2.0	0	0	0	117
	Total	2.2	3.0	0	0	0	203
West Greenland	NA	2.8	2.9	0	3.9	0	755
	NAH	1.5	0	0	0	0	60
	E	1.9	1.4	0	1.7	0	798
	Total	2.3	2.5	0	3.6	0	1613

NA - North American wild
 NAH - North American hatchery
 E - European

Table 5a. The sea age composition of Atlantic salmon caught at West Greenland in 1979 from research vessel samples.

Area	Sea Age Composition (%)				Number		
	1SW	2SW	3SW	Previous Spawners	Origin Not Determined	Sample	
1B	NA	90.2	2.0	0	7.8	0	51
	NAH	100.2	0	0	0	0	5
	E	98.1	1.9	0	0	0	52
	Total	94.4	1.9	0	3.7	11	119
1C	NA	100.0	0	0	0	0	37
	NAH	83.3	0	0	16.7	0	6
	E	100.0	0	0	0	0	53
	Total	99.0	0	0	1.0	0	96
1D	NA	95.0	5.0	0	0	0	40
	NAH	100.0	0	0	0	0	5
	E	98.1	1.9	0	0	0	53
	Total	96.9	3.1	0	0	0	98
1E	NA	100.0	0	0	0	0	8
	NAH	100.0	0	0	0	0	1
	E	94.1	5.9	0	0	0	17
	Total	96.2	3.8	0	0	1	27
West Greenland	NA	94.9	2.2	0	2.9	0	136
	NAH	94.1	0	0	5.9	0	17
	E	98.3	1.7	0	0	0	175
	Total	96.7	1.8	0	1.5	12	340

Table 5b. The sea age composition of Atlantic salmon samples taken from commercial fishery at West Greenland in 1979.

Area		Sea age composition (%)				Number	
		1SW	2SW	3SW	Previous Spawners	Origin not Determined	Sample
1A	NA	93.9	1.0	0	5.1	0	98
	NAH	100.0	0	0	0	0	13
	E	100.0	0	0	0	0	100
	Total	97.2	0.5	0	2.3	0	211
1B	NA	92.8	3.4	0	3.8	0	263
	NAH	100.0	0	0	0	0	22
	E	98.9	0.4	0	0.7	0	264
	Total	96.0	1.8	0	2.2	1	550
1D	NA	95.7	3.4	0	0.9	0	324
	NAH	100.0	0	0	0	0	22
	E	97.3	2.4	0	0.3	0	332
	Total	96.6	2.8	0	0.6	0	678
1E	NA	94.0	6.0	0	0	0	84
	NAH	100.0	0	0	0	0	6
	E	99.2	0.8	0	0	0	125
	Total	97.2	2.8	0	0	1	216
West Greenland	NA	94.3	3.4	0	2.3	0	769
	NAH	100.0	0	0	0	0	63
	E	98.4	1.2	0	0.4	0	821
	Total	96.6	2.1	0	1.3	2	1655

NA - North American wild
NAH - North American hatchery
E - European

Table 6a. The smolt age composition at West Greenland in 1979 from research vessel samples.

Area		Smolt Age Composition (%)							Number	
		1	2	3	4	5	6	7	Origin Not Determined	Sample
B	NA	0	33.3	49.0	13.7	2.0	2.0	0	0	51
	NAH	0	100.0	0	0	0	0	0	0	5
	E	30.8	55.8	13.4	0	0	0	0	0	52
	Total	14.8	47.2	29.7	6.5	0.9	0.9	0	11	119
C	NA	0	57.1	28.6	11.4	2.9	0	0	0	35
	NAH	0	100.0	0	0	0	0	0	0	6
	E	30.8	63.5	3.8	1.9	0	0	0	0	52
	Total	17.2	63.4	12.9	5.4	1.1	0	0	0	93
D	NA	0	50.0	40.0	5.0	5.0	0	0	0	40
	NAH	0	100.0	0	0	0	0	0	0	3
	E	26.4	62.3	9.4	1.9	0	0	0	0	53
	Total	14.6	58.3	21.9	3.1	2.1	0	0	0	96
E	NA	12.5	50.0	37.5	0	0	0	0	0	8
	NAH	0	100.0	0	0	0	0	0	0	1
	E	31.3	50.0	18.7	0	0	0	0	0	16
	Total	24.0	52.0	24.0	0	0	0	0	1	26
West Greenland	NA	0.7	45.5	40.3	9.7	3.0	0.8	0	0	134
	NAH	0	100.0	0	0	0	0	0	0	15
	E	29.5	59.5	9.8	1.2	0	0	0	0	173
	Total	16.1	55.6	22.1	4.7	1.2	0.3	0	12	334

- North American wild
- North American hatchery
- European

Table 6b. The smolt age composition of Atlantic salmon samples taken from commercial fishery at West Greenland in 1979.

Area		Smolt age composition (%)							Number	
		1	2	3	4	5	6	7	origin not determined	sample
1A	NA	0	30.6	55.1	9.2	4.1	1.0	0	0	98
	NAH	41.7	50.0	0	8.3	0	0	0	0	12
	E	22.4	65.3	11.2	1.0	0	0	0	0	98
	Total	13.0	48.1	31.2	5.3	1.9	0.5	0	0	208
1B	NA	0.4	41.2	38.4	15.3	3.9	0.8	0	0	255
	NAH	50.0	50.0	0	0	0	0	0	0	22
	E	25.2	63.9	9.3	1.6	0	0	0	0	258
	Total	14.4	52.5	22.8	8.0	1.9	0.4	0	0	535
1D	NA	0.3	38.3	46.7	9.7	2.5	2.2	0.3	0	321
	NAH	57.1	42.9	0	0	0	0	0	0	21
	E	24.9	64.3	10.5	0.3	0	0	0	0	325
	Total	14.1	51.1	27.6	4.8	1.2	1.0	0.2	0	667
1E	NA	1.2	40.7	42.0	11.1	2.5	2.5	0	0	81
	NAH	80.0	20.0	0	0	0	0	0	0	5
	E	19.7	67.5	12.8	0	0	0	0	0	117
	Total	13.8	55.7	24.1	4.4	1.0	1.0	0	0	203
West Greenland	NA	0.4	38.5	44.5	11.7	3.2	1.6	0.1	0	755
	NAH	53.3	45.0	1.7	0	0	0	0	0	60
	E	23.9	64.8	10.5	0.8	0	0	0	0	798
	Total	14.0	51.8	26.0	5.9	1.5	0.7	0.1	0	1613

NA - North American wild
NAH - North American hatchery
E - European

Table 7. The sex ratio of salmon caught at West Greenland in 1979.

Area	Ratio male:female	No. in sample	North American wild	North American hatchery	European
1B	1:1.95	118	1:1.78	1:1.50	1:2.47
1C	1:3.70	94	1:3.00	1:2.00	1:4.78
1D	1:3.62	97	1:7.00	0:5	1:2.25
1E	1:1.70	27	1:1.67	1:0	1:2.40
West Greenland	1:2.69	336	1:2.83	1:2.40	1:2.84