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Salmon in Haffjardara 2011

Parr survey

The salmon parr population in Haffjardara was investigated August 21 and 22, 2011. The main river was fished with electricity at 5 sites. The tributary Flatna was fished at one site. The parr were aged and density of the various year classes estimated.

Table 1 shows the results from the parr survey. Fry density was high and the total density was the highest ever recorded (table 5). Growth of parr was normal, the best growth was in Flatna.

				Age classes									
Site No.	Location	Date	Areal	0+		1+		2+		3+		Sum	Density
			m^2	no	ml	no.	ml	no	ml	no.	ml		Fish/100 m^2
1	Below Long Pool	21/8	50	24	3.2	16	6.9	14	9.3	4	10.5	58	116
2	Below Falls Pool	22/8	50	16	3.5	18	5.7	2	8.9	1	10.6	37	74
3	Home Pool	22/8	50	42	3.4	8	6.0	6	9.2			56	112
4	Sheep	21/8	60	42	3.9	25	6.6	4	10.1			71	118
5	Above Sea Pool	21/8	120	42	3.9	9	7.0	1	10.9			52	43
6	Flatna	21/8	50	18	4.3	7	7.4	3	9.4			28	56
Total:			**380**	**184**		**83**		**30**		**5**		**302**	**79**
2010			340	105		91		12		8		216	64

Table 1. Mean length at age (ml), and number of salmon parr (no) caught at various sites in Haffjardara August 21 and 22, 2011. The total catch of parr in 2010 is also shown.

The salmon catch in 2011

The total catch in 2011 was 1526 fish. The catch of grilse and salmon since 1984 is shown in table 2. Out of the 1526 fish caught in Haffjardara, 1274 (83%) were released.

The catch of grilse (I SW fish) was 1189 fish and the catch of salmon (II SW fish) was 337 fish, 22% of the total catch (fig 3).

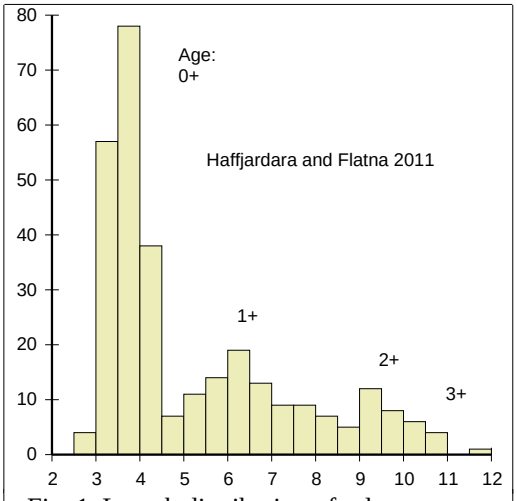


Fig. 1. Length distribution of salmon parr caught in Haffjardara and Flatna 2011.

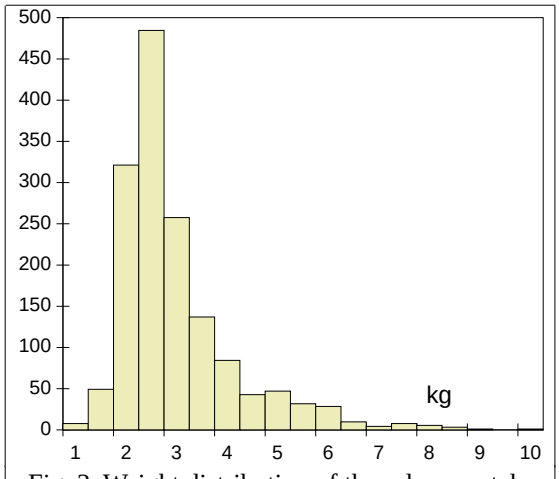


Fig. 2. Weight distribution of the salmon catch in Haffjardara in 2011. One 10 kg and one 12 kilo fish were caught.

Year	I SW	II SW	Total	II SW%	Rel.	% Rel.
1984	202	351	553	63%		
1985	364	215	579	37%		
1986	978	161	1139	14%		
1987	309	226	535	42%		
1988	744	130	874	15%		
1989	533	130	663	20%		
1990	475	148	623	24%		
1991	594	126	720	18%		
1992	703	122	825	15%		
1993	550	83	633	13%		
1994	567	103	670	15%	4	1%
1995	577	155	732	21%	0	
1996	533	69	602	11%	24	4%
1997	490	70	560	12%	0	
1998	678	74	752	10%	193	26%
1999	668	122	790	15%	302	38%
2000	612	60	672	9%	278	41%
2001	465	67	532	13%	246	46%
2002	847	96	943	10%	493	52%
2003	912	95	1007	9%	525	52%
2004	954	179	1133	16%	616	55%
2005	1075	215	1290	17%	929	72%
2006	874	203	1077	19%	749	70%
2007	899	141	1079	13%	767	71%
2008	1740	271	2011	13%	1599	80%
2009	1344	278	1622	17%	1227	76%
2010	1672	297	1969	15%	1509	77%
2011	1189	337	1526	22%	1274	83%
Avg 84-11:	**770**	**162**	**933**			
Avg 01-11:	**1088**	**198**	**1290**			

Table 2. Catch of grilse (I SW), salmon (II SW), number and percentage of released fish in Haffjardara 1984-2011.

Tagging from 1999

Since 1999, 995 fish have been tagged in Haffjardara. 143 (14.4 %) have been recaptured within the same season (table 3).

Year	No. tagged	No. recaptured	% rec.
1999	45	1	2
2000	0	0	0
2001	14	4	29
2002	91	17	19
2003	73	22	30
2004	96	18	19
2005	131	18	14
2006	76	13	17
2007	68	5	7
2008	156	21	13
2009	88	9	10
2010	144	12	8
2011	13	3	23
Total:	**995**	**143**	**14.4**

Table 3. Tagging results 1999-2011. Fish, tagged and recovered within the same fishing season.

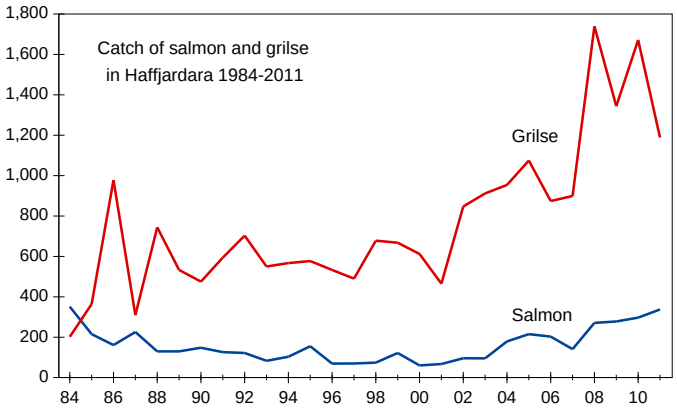


Fig. 3. Number of salmon (II SW) and grilse (ISW) caught in Haffjardara 1984- 2011.

Tagging 2011

13 fish were tagged and released from 20/6 to 22/8 2011. Three fish (23%) were recaptured within the fishing season. Results from the 2011 recoveries are shown in table 4.

Tagged			Recovered			
Tag No.	Date	Pool No.	Date	Pool No.	Timeout Days	Up/Down N.of pools
101810	30.6.2011	2	14.8.2011	2	45	0
101811	1.7.2011	32	24.8.2011	2	54	-30
94054	8.7.2011	20	4.8.2011	20	27	0

Table 4. Tagged and recaptured salmon in Haffjardara 2011. 'Time out' is the time between tagging and recapture. 'Up/down' is the movement of the fish, how many pools the fish moved up or down (minus sign).

Parr density

Mean density of parr in the years 1994-2011 is shown in table 5. The trend in parr density is plotted in fig. 4. Although the estimate of parr density is not an accurate figure, a clear trend can be seen through the years.

From year 2000, numbers of 0+ have increased by a factor of four while the density of 1+ has been stable, around 20 fish/m^2. But since 2002, numbers of 2+ parr have shown a clear downwards trend. As the 2+ parr in a particular year can be regarded as the smolt candidates the following year, the overall smolt production has been decreasing in the last few years. Runs have been extremely good and can be explained by higher survival of smolts in the sea. Data from smolt tagging in other rivers verify increased marine survival of smolts last few years.

Year	N.of parr / 100m^2					Ratio
Age:	0+	1+	2+	3+	Sum	2+/1+
94	3	4	3	1	11	0.79
95	4	12	9	1	26	0.76
96	6	13	11	1	31	0.89
97	7	18	9	1	35	0.51
98	13	13	13	2	41	1.02
99	8	16	4	2	30	0.24
00	10	14	8	0	32	0.59
01	18	31	14	1	64	0.47
02	3	16	10	2	31	0.63
03	30	15	17	2	64	1.16
04	14	16	9	0	39	0.53
05	42	5	6	1	54	0.24
06	16	18	4	0	38	0.20
07	31	27	8	3	69	0.30
08	23	18	8	2	51	0.46
09	34	10	2	0	46	0.19
10	31	27	4	2	63	0.13
11	48	22	8	1	79	0.36

Table 5. Mean density of parr in the years 1994-2011 and the ratio 2+/1+ parr. The 2+ parr are the smolt candidates for the following year.



Fig 4. Density of 0+, 1+ and 2+ parr 1994-2011, smoothed by 3 year running average. There is a strong upward trend of 0+, the fry of the year, One year old parr slightly increasing but 2+ parr are decreasing, indicating declining smolt production in recent years.