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Salmon in Haffjardara 2015

1. Parr survey

Parr survey took place on July 30 and 31. The main river was fished with electricity at three sites. The tributary Flatna was fished at one site, below the first waterfall.

	Age classes												
Site No.	Location	Date	Areal	0+		1+		2+		3+		Sum	Density
			m²	no.	ml	no.	ml	no	ml	no.	ml		Fish/100 m²
1	Below Falls Pool	30/7	50	1	3.5	9	5.1	11	7.5	1	12.2	22	44
2	Home Pool	1/8	50	19	3	15	5.5	1	9.4			35	70
3	Above Sea Pool	30/7	50	22	3.8	4	6.3					26	52
4	Flatna	31/7	50	3	3.2	4	5.3	6	6.4	1	8.4	14	28
Total 2015:			**200**	**45**	**3.4**	**32**	**5.6**	**18**	**7.8**	**2**	**10.3**	**97**	**49**
Fish/100m2				**23**		**16**		**9**		**1**		**49**	
Fish/100m 2014				37		20		7		0		64	

Table 1. Mean length at age and number of salmon parr caught at various sites in Haffjardara and Flatna July 30-31 2015.

The density of parr was lower than in previous years, especially in Flatna. This is probably related to numerous winter floodings the winter 2014-2015. Also, the parr growth was slower than in 2014 due to unusually cold spring. On the average, one year old parr were 5.6 cm long 2015 compared to 6.2 at the same time 2014. Two year old parr were 7.8 cm long in 2014 compared to 8.7 cm in 2014.

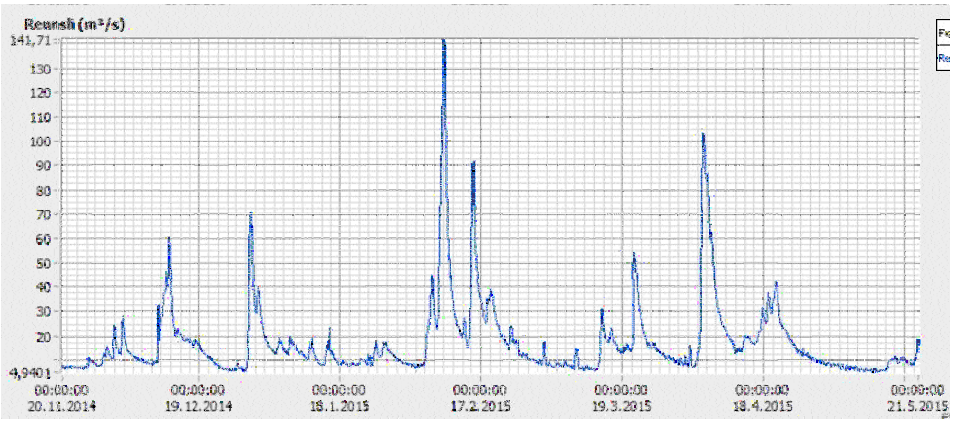


Fig. 1. Water flow in Haffjardara from November 2014 to May 2015.

In this period there were 6 floods larger than 50 m³/sec. The largest flood was 142 m³/sec. Normal flow in Haffjardara is 5-7 m³/sec.

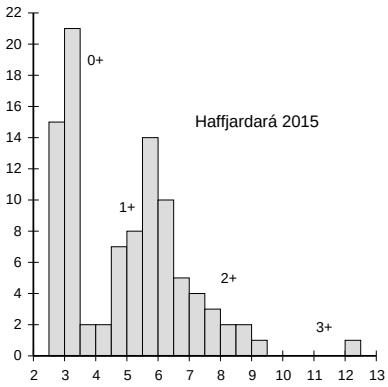


Fig. 2. Length distribution of salmon parr caught in Haffjardara and Flatna 2015. 1+ old fry of the year were numerous. The 2+ fish will leave as smolts in the spring of 2016.

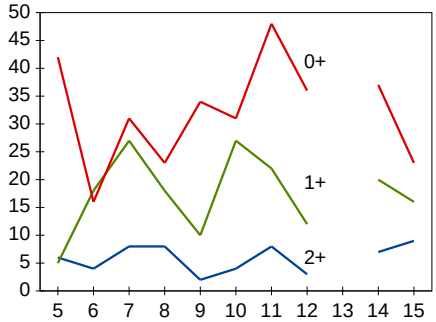


Fig 3. Density of 0+, 1+ and 2+ parr 2005-2015. No parr survey was performed in 2013.

Year	N.of parr / 100m²				
Age:	0+	1+	2+	3+	Sum
94	3	4	3	1	11
95	4	12	9	1	26
96	6	13	11	1	31
97	7	18	9	1	35
98	13	13	13	2	41
99	8	16	4	2	30
00	10	14	8	0	32
01	18	31	14	1	64
02	3	16	10	2	31
03	30	15	17	2	64
04	14	16	9	0	39
05	42	5	6	1	54
06	16	18	4	0	38
07	31	27	8	3	69
08	23	18	8	2	51
09	34	10	2	0	46
10	31	27	4	2	63
11	48	22	8	1	79
12	36	12	3	1	52
13	n.a.				
14	37	20	7	0	64
15	23	16	9	1	49

Table 2. Mean density of parr in the years 1994-2015. The 2+ parr are the smolt candidates for the following year.

The salmon catch in 2015

The total catch in 2015 was 1651 fish. The catch of grilse and salmon since 1990 is shown in table 3.

Out of the total caught in Haffjardara, 1318 (80%) were released.

The catch of grilse (I SW fish) was 1422 fish and the catch of salmon (II SW fish) was 229 fish, 14% of the total catch (table 3, fig 5). This was obtained using the weight distribution; 50% of 3.5 kg fish and all larger fish were classified as II SW fish. Weight distribution of the catch is shown in fig. 4.

The catch in 2015 doubled from the year before. The catch of II winter salmon has been relatively stable, but the grilse runs have varied greatly from 2012.

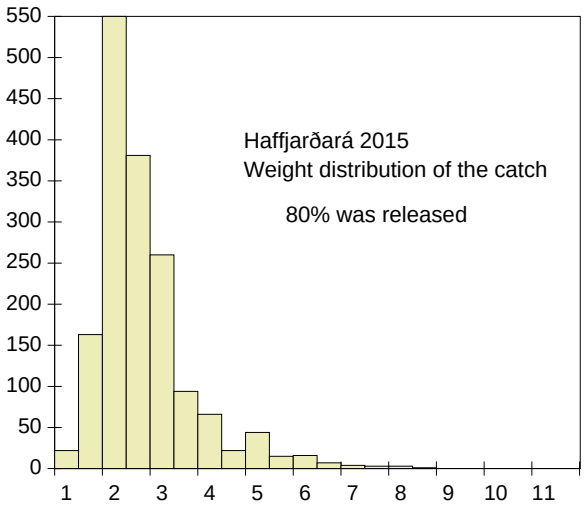


Fig. 4. Weight distribution of the salmon catch in Haffjardara in 2015. 12 fish 7 kilo or more were caught, the largest fish was 9.2 kg.

Year	I SW	II SW	Total	II SW%	Rel.	% Rel.
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%
2012	921	225	1146	20%	854	75%
2013	1633	524	2157	24%	1821	84%
2014	601	220	821	27%	630	77%
2015	1422	229	1651	14%	1318	80%
Avg 90-01:	**576**	**100**	**676**			
Avg 02-07:	**927**	**155**	**1088**			
Avg 08-13:	**1417**	**322**	**1739**			

Table 3. Catch of grilse (I SW), salmon (II SW) in Haffjardara 1990-2015, number and percentage of released fish. Averages 1990-2001, 2002-2007 and 2008-2013.

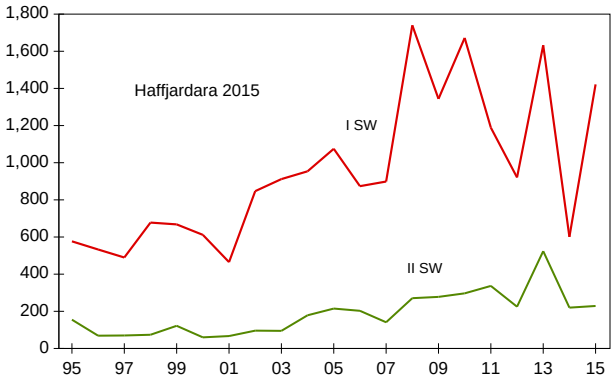


Fig. 5. Number of I and II SW fish in Haffjardara 1995 - 2015.

Temperature measurements

Temperature recorder was situated at the Old Bridge and the temperature was recorded at three hours interval from the late April until late September. Fig. 5 shows the temperature from 22/4 to 30/6 2015

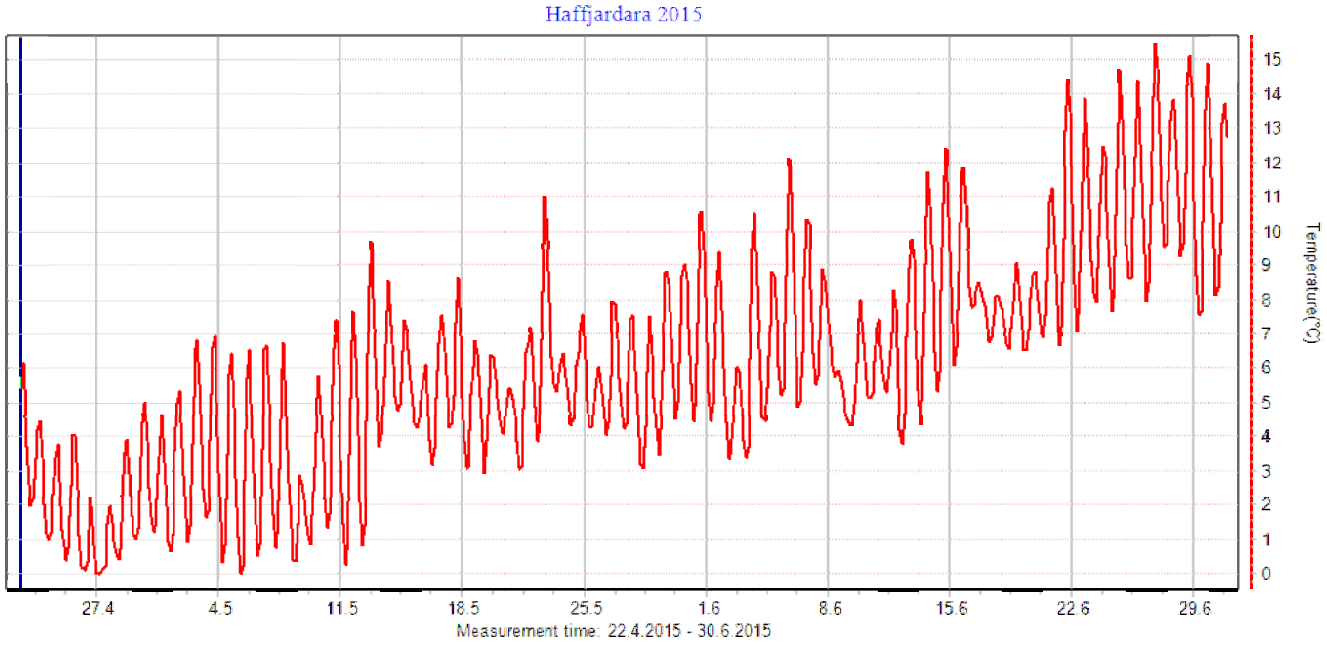


Fig 6. Temperature at Old Bridge 22/4 - 30/6 2015

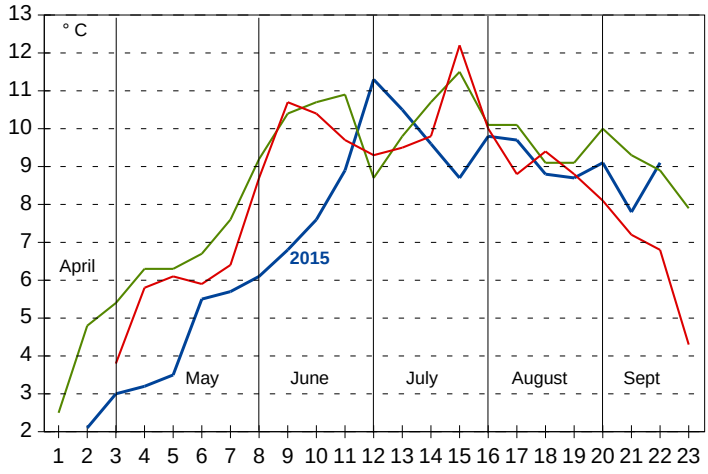


Fig 7. Mean weekly temperature at Old bridge 2014 (green), 2013 (red) and 2015 (blue) 15/4-22/9.

Temperature in 2015

The spring in 2015 was extremely cold compared to both 2013 and 2014. The temperature in the period from April to the middle of June is important for the smoltification process. Low temperatures retard and prolong the smoltification.

From the end of June the temperature was normal.