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May 2013

Salmon in Haffjardara 2012

Parr survey

The salmon parr population in Haffjardara was investigated July 31 - August 3, 2012. The main river was fished with electricity at 6 sites. The tributary Flatna was fished at one site. The parr were aged and density of the various year classes estimated. The fry of the year (0+) dominated the catches an densities of older parr was low, especially 2+ and 3+ parr, the smolt candidates for the next year (table 5 and fig 6). Condition of parr was good. Table 1 shows the results from the parr survey.

				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	1/8	50	20	3.4	7	6.0	5	8.4	4	10.0	36	72
2	Above Aquarium	3/8	50	19	3.5	5	5.5					24	48
3	Below Falls Pool	2/8	60	13	3.3	17	4.9	6	6	1	11.2	37	62
4	Home Pool	31/7	50	34	3.4	4	6.8	1	9.5			39	78
5	Sheep	3/8	80	34	3.7	11	6.5	3	9.5			48	60
6	Above Sea Pool	31/7	100	22	3.6	8	5.8					30	30
7	Flatna		70	22	3.7	3	6.2					25	36
Total 2012:			**460**	**164**	**3.5**	**55**	**5.9**	**15**	**8.4**	**5**	**10.6**	**239**	**52**
Total 2011:			380	184		83		30		8		302	79

Table 1. Mean length at age (ml), and number of salmon parr (no) caught at various sites in Haffjardara July 31 - August 3 2012. The total catch of parr in 2011 is also shown.

The salmon catch in 2012

The total catch in 2012 was 1146 fish. The catch of grilse and salmon since 1990 is shown in table 2. Out of the total caught in Haffjardara, 854 (75%) were released.

The catch of grilse (I SW fish) was 921 fish and the catch of salmon (II SW fish) was 225 fish, 20% of the total catch (fig 3). The size distribution of the catch is similar to what it has been in previous years.

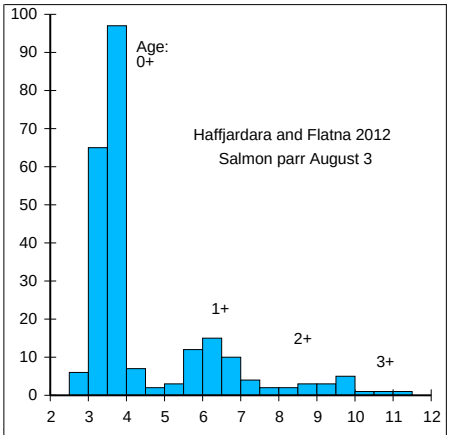


Fig. 1. Length distribution of salmon parr caught in Haffjardara and Flatna 2012. Fry of the year dominated the catches. The 2+ fish will leave as smolts in the spring of 2013.

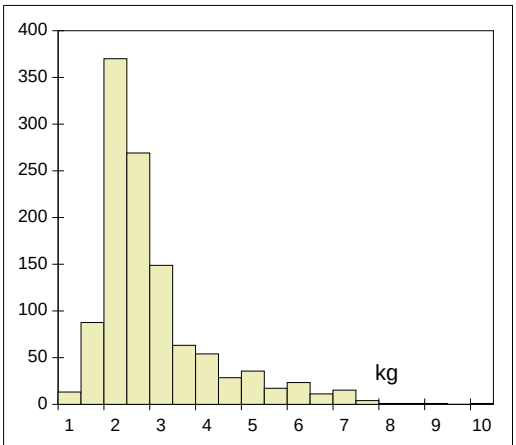


Fig. 2. Weight distribution of the salmon catch in Haffjardara in 2012. One 10 kg kilo fish was caught. 4 fish 8-10 kg were caught.

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%
Avg 90-01:	**576**	**100**	**676**			
Avg 02-07:	**927**	**155**	**1088**			
Avg 08-12:	**1373**	**282**	**1655**			

Table 2. Catch of grilse (I SW), salmon (II SW), number and percentage of released fish in Haffjardara 1990-2001, 2002-2007 and 2008-2012.

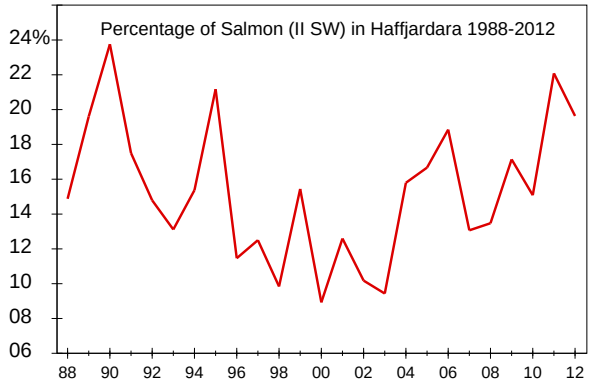


Fig. 3. Percentage of Salmon (II SW) in Haffjardara 1988- 2012. Since 2003 the proportion of Salmon has increased.

Tagging from 1999

Since 1999, 1057 fish have been tagged in Haffjardara. 156 (14.8 %) 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
2012	62	13	21
Total:	**1057**	**156**	**14.8**

Table 3. Tagging results 1999-2012. Fish, tagged and recovered within the same fishing season.

Tagging 2012

62 fish were tagged and released from 1/7 to 21/7 2012. 13 fish (21%) were recaptured within the fishing season. Tag number was missing in two instances.

One female fish that was tagged in 2011 was recaptured in June 2012. Results from the 2012 recoveries are shown in table 4.

Tagged			Recovered		Time out
Date	Tag No.	Pool	Dags	Pool	Days
15.7.2012	103697	2	6.8.2012	2	22
10.7.2012	103671	2	13.7.2012	14	3
6.7.2012	103633	23	17.7.2012	33	11
4.7.2012	103627	2	4.8.2012	10	31
4.7.2012	103626	2	24.8.2012	7	51
10.7.2012	103529	2	11.9.2012		63
10.7.2012	103528	2	3.9.2012	24	55
3.7.2012	103480	2	4.8.2012		32
2.7.2012	103453	2	5.7.2012	10	3
2.7.2012	103452	2	25.8.2012	10	54
2.7.2012	103450	2	8.7.2012	2	6
1.7.2011	101865		16.6.2012	2	351

Table 4. Tagged and recaptured salmon in Haffjardara 2012. 'Time out' is the time between tagging and recapture.

Parr density

Mean density of parr in the years 1994-2012 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 fourfold while the density of 1+ has been stable, around 20 fish/100 m^2. But since 2003, numbers of 2+ parr have shown a clear downwards trend. The 2+ parr in a particular year can be regarded as the smolt candidates the following year.

In good growth years, as recent years have been, some of the 1+ parr are able to smoltify the following year and add to the "normal" smolt production. The few scale samples taken last year verify that the part of the run had left the river as 2+ smolts.

Runs have been extremely good since 2002 and can be explained by fast growth of parr in the river and 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				
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

Table 5. Mean density of parr in the years 1994-2012.
The 2+ parr are the smolt candidates for the following year.

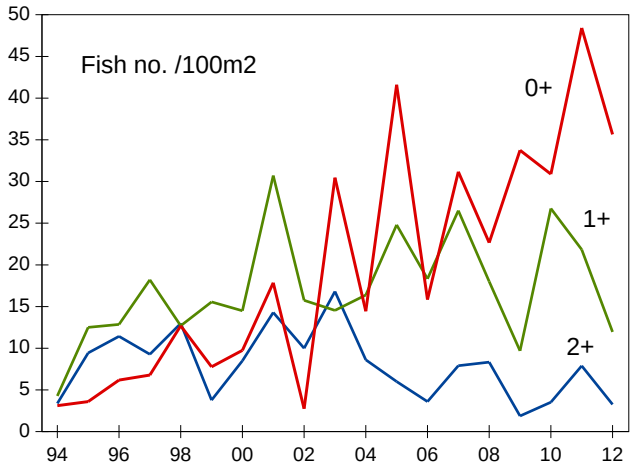


Fig 4. Density of 0+, 1+ and 2+ parr 1994-2012, There is a strong upward trend of 0+, the fry of the year.

Smolt age

Scale samples were collected from 16 fish. 18% spent 2 years in fresh water before they left the river as smolts, 69% spent 3 years and 13% 4 years.

These few samples manifest that some parr grow very fast, 20% smoltify after 2 years.

Scale samples taken in 1993 showed that 50/50 of the samples had been 3+ and 4+ smolts when they went to sea. Then, no 2+ smolts were found.