

Salmon in Laxá á Ásum 2021

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Introduction:

Parr survey took place in Laxá á Ásum in august 11-13th 2021. The river was fished with electricity at 6 sites. See map at the end of this report. The sites are marked from 1 to 6. The parr were aged and density of the various year classes estimated. In addition to that we did some test fishing with electricity on three small sites near to the fishing places Holtskvörn and Klapparkvörn for the sole purpose too check the status of parrs on sites which in recent years have not been as good fishing places as they were while the electric power station was operating. These small sites are marked from 11-13 on the map. During the fishing the water level was normal and conditions for electrofishing were good.

The salmon catch in 2021:

There were 600 salmon caught in 2021.

The catch in neighbourhood rivers Vatnsdalsá and Víðidalsá oscillates in similar manner as the catch in Laxá á Ásum and the catch has been similar last decade (see fig.3). The catch in Laxa á Ásum decreased by 75 from last year.

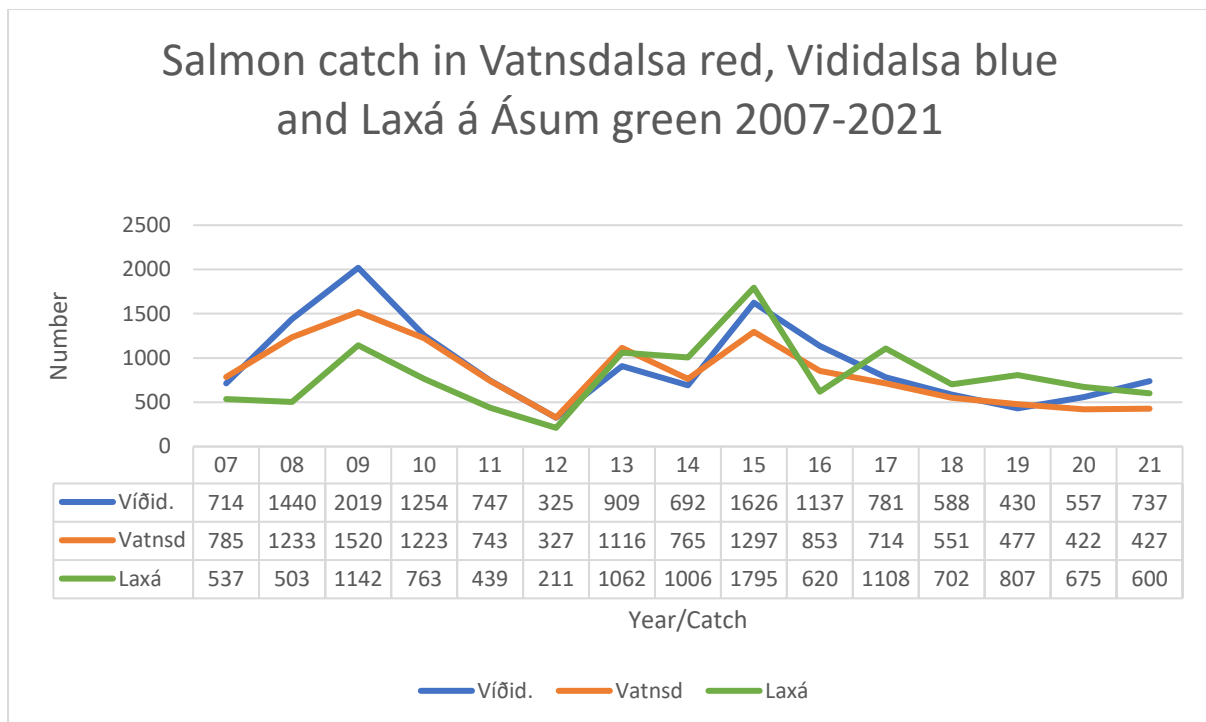


Fig 1. Salmon catch in Vatnsdalsá , Víðidalsá and Laxa á Ásum from 2007 to 2021.

Parr survey:

The river was fished with electricity at 6 sites. (sites 1 to 6 on map at the end of this report). The parr were aged and density of the various year classes estimated. During the fishing the water flow was normal and conditions for electrofishing were good.

Table 1 shows the results from the parr survey. (There were also 30 small trout caught from year classes 0⁺ to 2⁺).

Site no.	Name	Date	Areal	Age								Sum	Density
				0+		1+		2+		3+			
			m ²	no.	ml.	no.	ml.	no.	ml.	no.	ml.		no./100 m ²
1	Húnsstaðahorn	11-Aug	60	28	4.35	4	6.6					32	53
2	Holt	11-Aug	36	52	3.7	28	5.9	7	8.4	1	13.6	88	244
5	Below Krókhyll	12-Aug	50	23	3.95	16	6.5	1	8			40	80
4	Above Mánafoss	12-Aug	55	26	3.7	13	6.2	4	9.2	2	11.2	45	82
5	50 m below Tumi	12-Aug	30	26	3.6	9	6.2	9	8.9			44	147
6	Below Skotti	12-Aug	30	35	3.9	9	7.1	1	9.4			45	150
Total			261	190		79		22		5		296	113
Number/100m ²				73		30		8		2			

Table 1. Number(no) and mean length (ml) of salmon parr caught at various sites (1-6) in Laxá á Ásum
0⁺ = fry, 1⁺ = one winter old parr, 2⁺ = two winters old parr, 3⁺ = three winters old parr.

Growth is fair and fry's (age 0⁺) and parr's (age 1⁺, 2⁺ and 3⁺) are in average condition.

Most (around 60 to 70%) parr in Laxá á Ásum smoltify in spring at the age of 3⁺, around 30% at the age of 4⁺ and a small part at the age of 2⁺

The main food for the parr in august are common pond snail (*Lymnaea peregre*) and to a lesser extent segmented worms (*annelida*) and black fly (*Simuliidae*).

Length distribution of salmon parr caught in Laxá á Ásum is shown in figure 4.

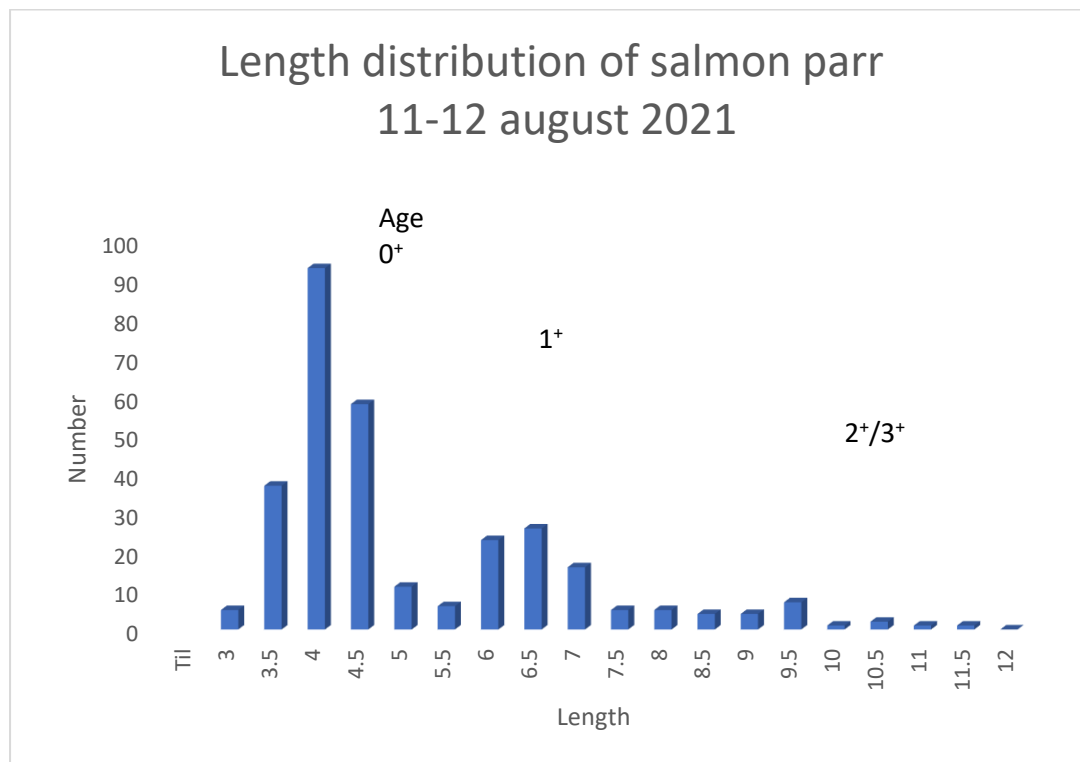


Fig 2. Length distribution of salmon parr caught in 2021.

Parr density :

The catchability of parr depends on several factors including temperature, water flow etc. Each year, sampling conditions are different. The number of 0⁺ fish is often vastly underestimated due to the fact that they are small and are difficult to catch and some are still in the gravel. Estimate of the density of one- and two years old fish is more reliable, but most of the 3 years old will have left the river as smolts. The trend in parr mean density is plotted in fig. 3. Although the estimate of parr density is not an accurate figure, a clear trend can be seen through the years.

Fry's (0⁺) are strong (second strongest since 2000 while last year was the strongest) and one winter (1⁺) year class is strong and two winter (2⁺) year class is little above average.

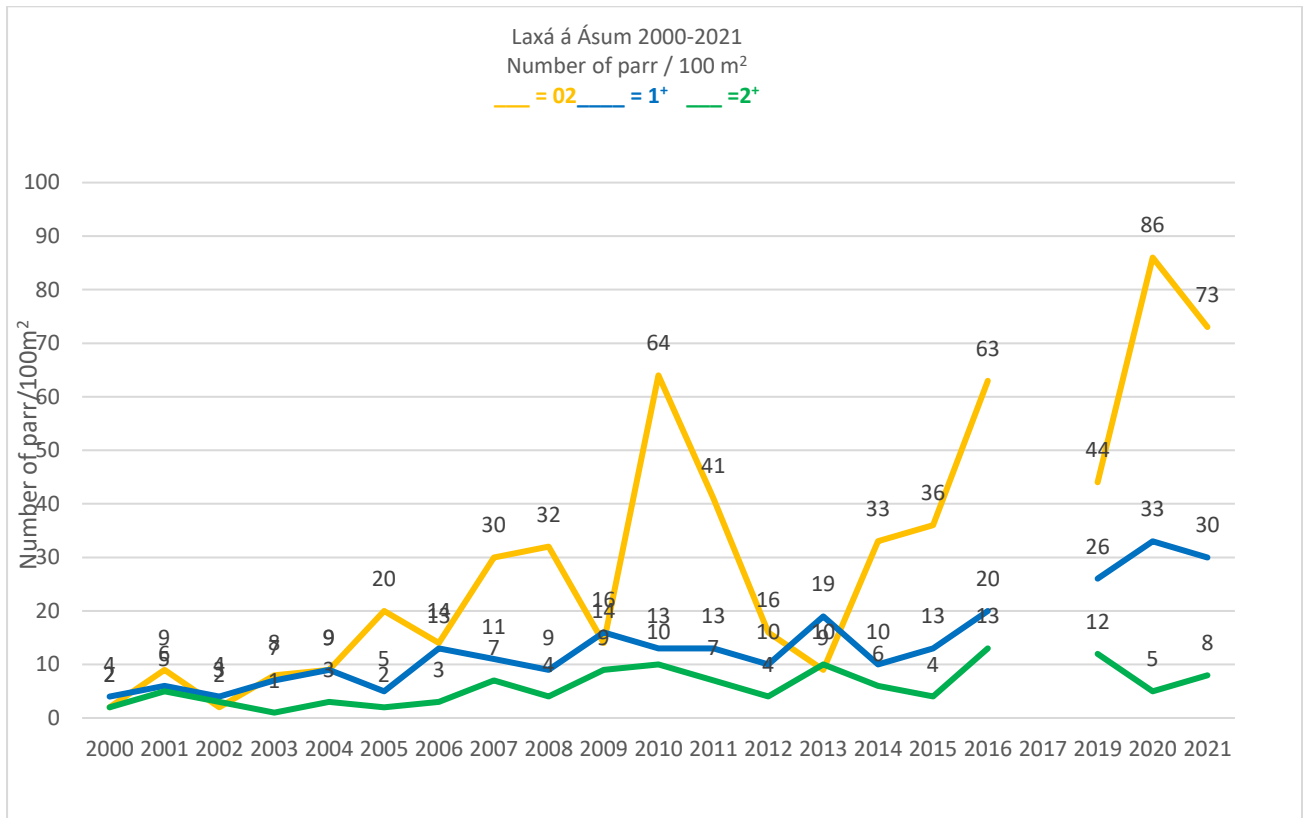
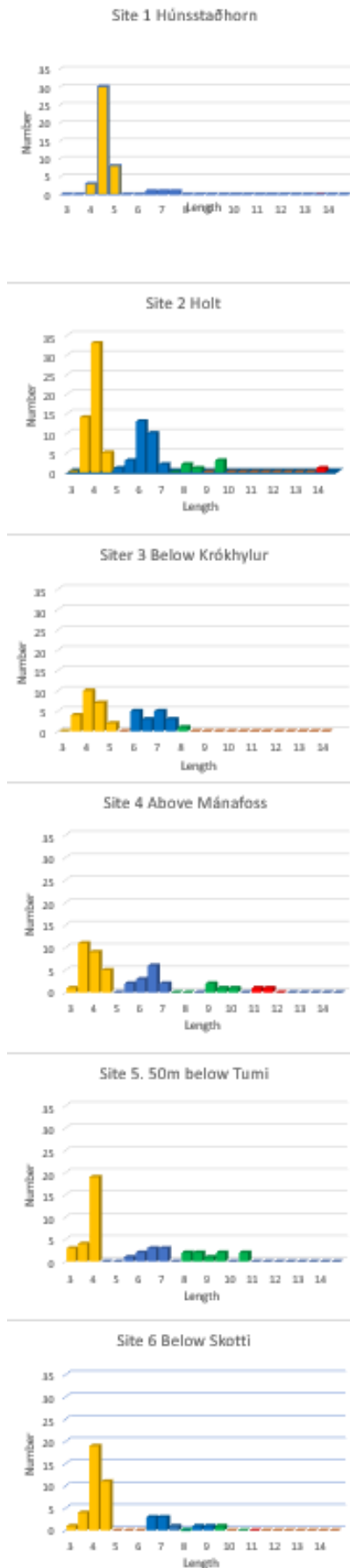


Fig.3 Mean density of parr in year 2000-2021 minus year 2017.

Yellow line is 0⁺, blue line is 1⁺ and green line is 2⁺.

Parr condition and numbers at the various survey sites. Discussion



The results from the electrofishing on sites 1-6 and also the test-electrofishing on sites 11-13 shows that the spawning in 2020 was very successful. While the spawning in 2019 was most successful since year 2000 the spawning in 2020 was just a little less. In 2019 there was a difference in the density of fry's (0⁺) in upper part of the river Laxá (above Manafoss) and the lower part where the spawning seemed to be far above the average. In 2020 the density of fry's are uniformly distributed in both lower and upper parts. These facts can be easily spotted by looking at the length distribution on sites 1 -3 which are in the lower part and sites 4-6 which are in the upper part. See fig. 4.

The test electrofishing on sites 11 to 13 also confirm that there was excessive spawning on these sites and the overall status of parrs (1⁺ and 2⁺) is very good even though the fishing places are not as good as they used to be.

The results of last two years good spawning remains to be seen as these year classes will support the grilse catch in year 2024 and 2025 given that most of parrs will smoltify at the age of 3⁺.

It has though to be stated that increased density of fry's and parrs can result in decreased growth due to increased competition for food and space. This could result that larger portion of parrs will smoltify one year later with increased mortality as a result.

Fig 4. Length distribution of parr at sites 1-6. Site 1-3 are in lower part of the river. Site 4-6 are in the upper part.

Yellow = 0⁺ Blue = 1⁺, Green = 2⁺, Red = 3⁺

Below are pictures from Site 6 Below Skotti, showing the electrofishing site. Samples of parrs taken for age analysis and otoliths showing age rings.



Fig 5. Electrofishing sites below Skotti. Bottom consists of small stones 5 -10 cm in diameter.



Fig6. Parrs fished below Skotti in 2020. The parr lowest on picture is 2 winters old and 10,6 cm long. Fig 7 shows otolith from it. The parr next to lowest is 3 winters old and 11,3 cm long. Fig 8 shows otoliths from it. The two uppermost parrs (7,1 and 7,9 cm) are 1 winter old and the parr in the middle is 8,1 cm long and 2 winters old, same age as the lowest one.



Fig 7 Otolith form 2 winters old parr 10,6 cm long

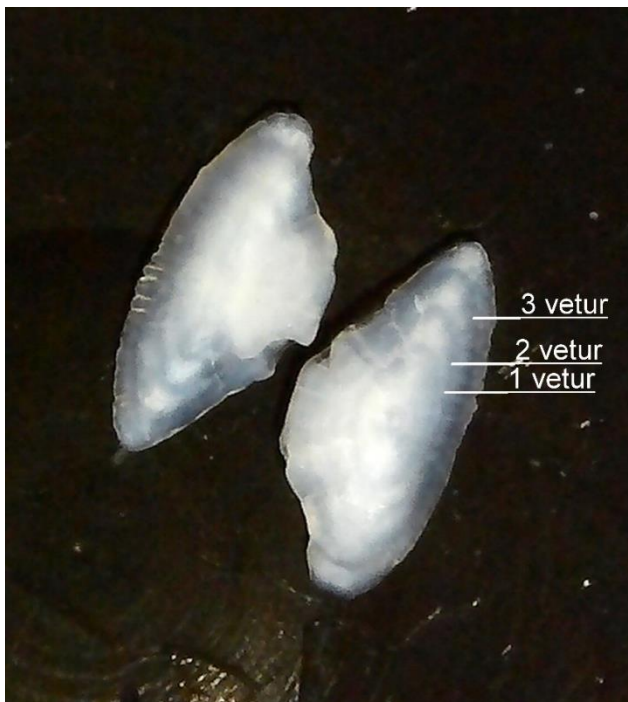


Fig 8 Otoliths from 3 winters old parr 11,3 cm long.

Water temperature.

River temperature at Holt was recorded at three hours interval between 22.april -13th august 2021. The water temperature in May and June is very important for the smoltification process and the timing of the seaward migration of the smolts. The water temperature till 11th of June is around average. It is assumed that the parrs had already smoltified and run to sea before the slight cold period from 11th June to 26th June so this is supposed to have had no effect.

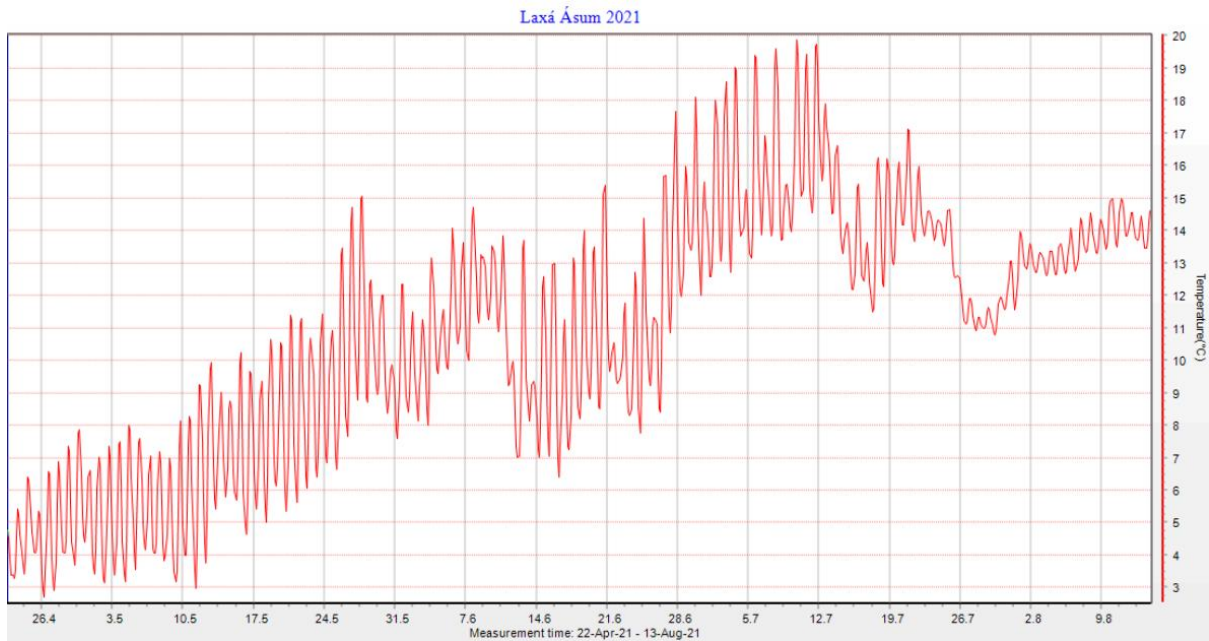


Fig 9. Water temperature in Laxá á Ásum 22/4 till 13/8 2021. Measured at 3 hours interval. 12.00, 15.00 and so forth. Right axis show temperature between 3-20° C

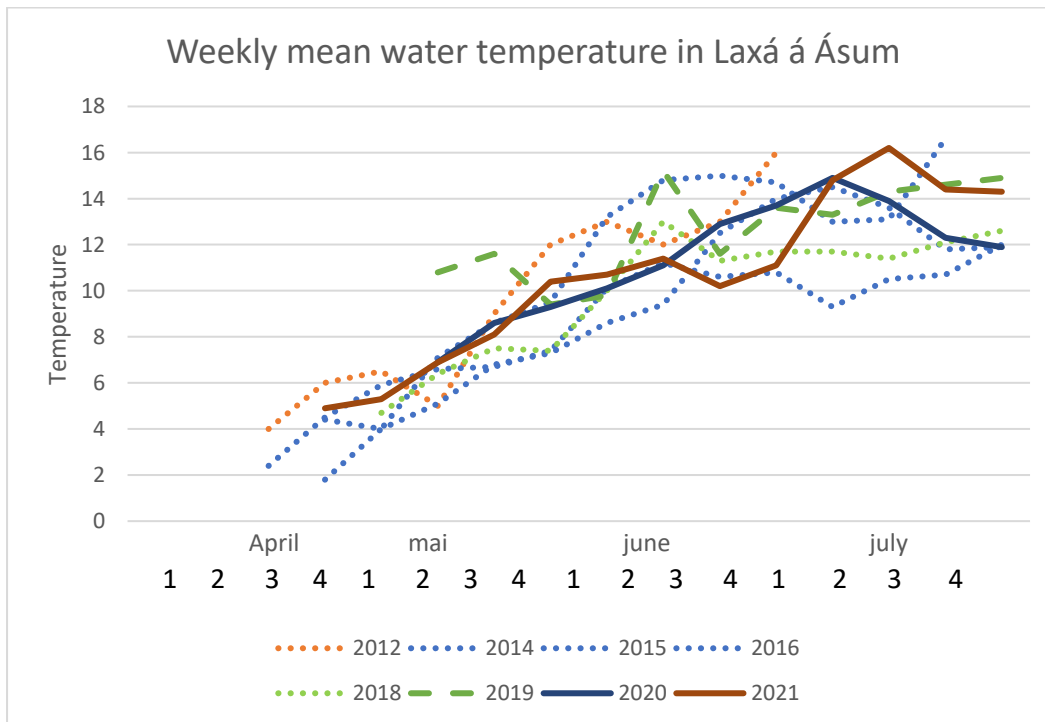
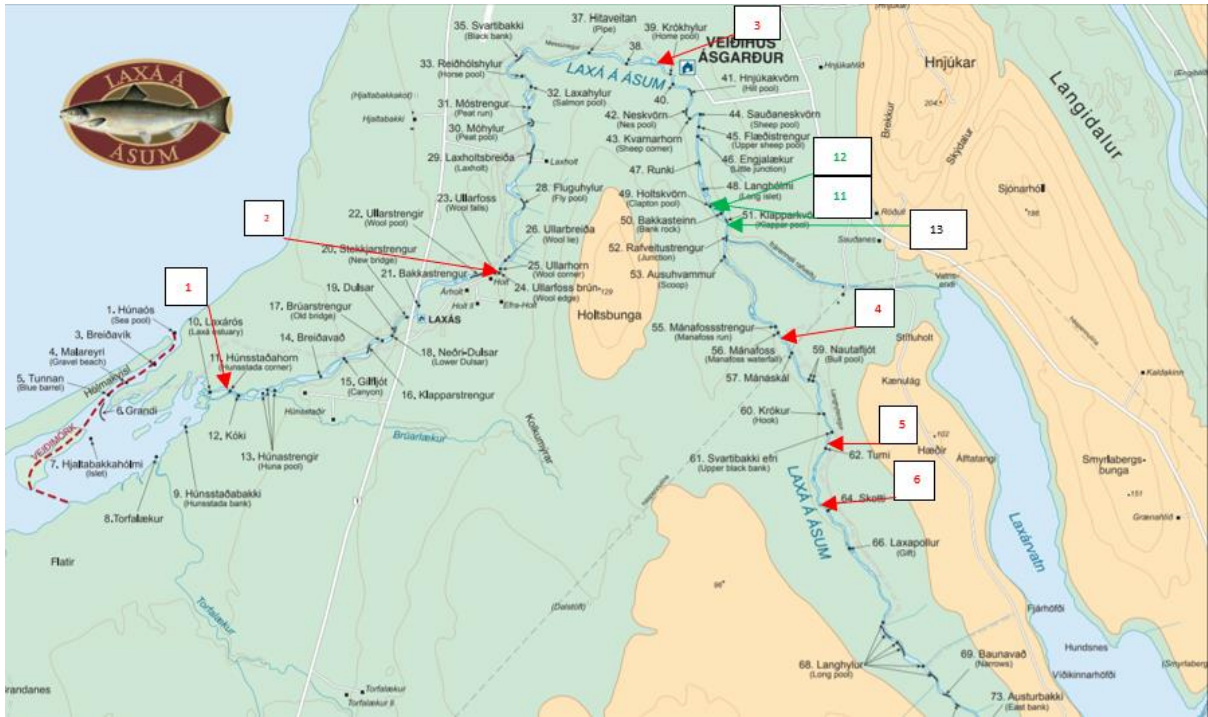


Fig 10. weekly mean temperatures



Map which shows fishing sites in rive Laxá á Ásum. The sites are marked with red colour from 1 -6. The sites from test fishing are marked from 101 -106. Sites 1-3 and 11-13 are in lower part of the river. Sites 4-6 are in upper part of river.