

Comprehensive Plan – p. 1

Goal: Recovery of pink and chum salmon stocks in Okhinskii district during 4 years

Indicators: 1.1.1, 1.1.2

To recover pink and chum salmon stocks, fishery management system and authorities of OOO “Okha” and OOO “Rybovskii losos” companies took measures aimed to create favorable conditions for pink and chum salmon to enter rivers and spawn. The main indicator of success of the activities is data on spawning escapements of pink and chum salmon generously provided by Sakhalinrybvod ichthyologists.

PINK

Sakhalinrybvod ichthyologists data on river filling with pink and chum salmon producers is presented in Table 1:

Filling of the major rivers of Okhinskii district with PINK spawners

Table 1

River name	Spawning area m ²	Optimal number of spawners	Filling of rivers of Okhinskii district by years, %									
			2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Pilvo	295000	590000	14.5	37.5	78.0	13.0	66.0	21.2	20.0	5.0	33.0	35.0
Langry	242000	484000	74.0	20.0	46.0	22.4	68.6	19.2	19.6	5.0	6.0	48.0
Chingai	39320	78640	n/d	n/d	n/d	24.0	24.5	19.3	13,0	5.6	8,0	25.0
Kongi	20000	40000	125.0	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d
Tum’	15000	30000	110.5	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d
Berezovka	38000	76000	n/d	73.5	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d
Vodopadnaya	15000	30000	66.7	10.0	133.3	n/d	n/d	n/d	n/d	n/d	n/d	n/d
Bolshaya	36000	72000	20.5	n/d	16.7	21.9	62.3	18,4	21.3	6.2	5.0	47.5
Mat’	5000	10000	n/d	n/d	n/d	n/d	61.3	n/d	n/d	n/d	n/d	n/d
B. Longri	14000	28000	n/d	n/d	n/d	n/d	n/d	2.0	n/d	n/d	n/d	85.0
Romanovka	8000	16000	n/d	n/d	n/d	n/d	n/d	9.5	n/d	5.3	n/d	n/d
Kobzak	1000	2000	n/d	n/d	n/d	n/d	n/d	12.8	26.0	n/d	6.0	n/d
Volchanka	10000	20000	n/d	n/d	n/d	n/d	n/d	n/d	5.6	10.0	5.0	65.0
B. Nelma	5000	10000	n/d	n/d	n/d	n/d	n/d	n/d	18.9	9,4	10.0	48.0
Muzma	1000	2000	n/d	n/d	n/d	n/d	n/d	n/d	n/d	2.0	n/d	n/d
Slavyanka	26250	52500	n/d	n/d	n/d	n/d	n/d	n/d	n/d	2.9	3.0	24.0
Komulan	62570	125140	n/d	n/d	n/d	n/d	n/d	n/d	n/d	7.0	n/d	28.0
Bulkunar	1000	2000	n/d	n/d	n/d	n/d	n/d	n/d	n/d	8.2	n/d	26.0
Total:	834140	1668280	45.0	31.9	62.5	18.0	64.1	19.6	19.3	5.2	19.9	39.8

Note: n/d – no data

In 2018, even-year pink salmon returned to spawn (odd-year pink returns are typically much greater). Changes in dynamic of its population on spawning grounds can be seen in Table 2:

Filling with pink of EVEN years

Table 2

River name	Spawning area m ²	Optimal number of spawners	Filling of rivers of Okhinskii district by years, %				
			2010	2012	2014	2016	2018
Pilvo	295000	590000	37.5	13.0	21.2	5.0	35.0
Langry	242000	484000	20.0	22.4	19.2	5.0	48.0
Cingai	39320	78640		24.0	19.3	5.6	25.0
Beresovka	38000	76000	73.5				
Vodopanayaya	15000	30000	10.0				
Bolshaya	36000	72000		21.9	18.4	6.2	47.5
B. Longri	14000	28000			2.0		85.0
Romanovka	8000	16000			9.5	5.3	
Kobzak	1000	2000			12.8		
Volchanka	10000	20000				10.0	65.0
B. Nelma	5000	10000				9.4	48.0
Muzma	1000	2000				2.0	
Slavyanka	26250	52500				2.9	24.0
Komulan	62570	125140				7.0	28.0
Bulkunar	1000	2000				8.2	26.0
Total:	794140	1588280	31.9	18.0	19.6	5.2	39.8

As you can see from Table 2, some rivers due to various reasons during the last years were not monitored (Beresovka, Vodopadnaya). For a range of rivers, monitoring has started only in 2015: rivers Volchanka, B. Nelma, Slavyanka, Komulan, Bulkunar. Like in previous years, the major efforts of ichthyologists were put towards monitoring particularly important rivers of the district: Pilvo, Langry, Chingai, Bolshaya, B. Longri. Filling of major rivers with pink salmon producers of even years is presented in Figure 1:

Filling of the major rivers of Okhinskii district with pink producers of EVEN years

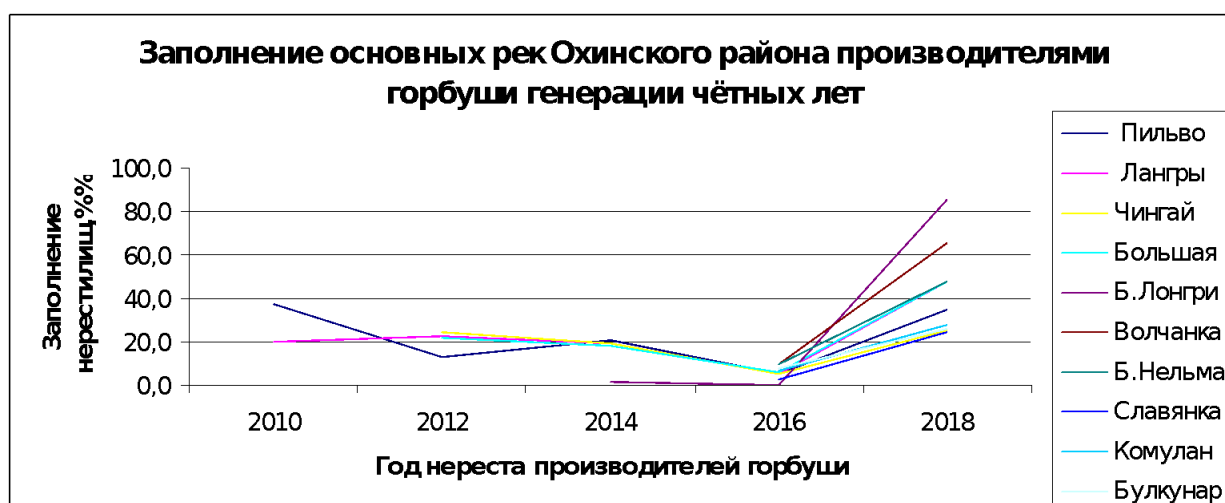


Fig. 1: The list of the rivers from top to bottom: Pilvo, Langry, Chingai, Bolshaya, B. Longri, Volchanka, B. Nelma, Slavyanka, Komulan, Bulkunar

Figure 1 illustrates that filling of major rivers of Okhinskii district during even years was extremely small, and in 2016 it came down to critical minimum 5%.

Decisions, made by management system during spawning migration 2018 (establishment of “passing” days and other), the actions of the company to meet requirements of the Anadromous Commission, as well as investment of its own resources into river protection against poachers lead to significant increase in river filling in 2018 - almost 8 times in comparison with 2016 (the year of parent generation).

CHUM

Filling of the major rivers of Okhinskii district with CHUM producers

Table 3

River name	Spawning area m ²	Optimal number of spawners	Filling of rivers of Okhinskii district by years, %									
			2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Langry	160600	256960	65.0	41.3	43.7	24.8	43.1	19.9	22.5	22.6	16.3	48.8
Chingai	3700	5920	33.8	20.6		21.2	46.3	29.3	12.5	17.5	35.0	52.0
Bolshaya	36000	57600	44.3	35.0	46.9	23.5	40.6		30.0	24.0	13.1	42.0
Kobzak	1000	1600							26.9	12.8	13.1	
Volchanka	5000	8000				27.2			20.0	2.7	11.5	65.0
B. Nelma	700	1120							17.9	10.3	12.5	46.0
Komulan	27305	43688		48.5				38.1		26.0	5.7	40.0
Piltun	17000	27200								13.8		
Irkir	5000	8000								15.0		
Total:	256305	410088	60.7	40.8	44.3	24.6	42.7	22.7	23.6	21.9	14.8	47.3

As we can see from Table 3, starting from 2015 monitoring activities were set for the majority of rivers. Indicator of average river filling for all rivers in 2018 was 2 times larger than same indicator for the period 2012-2017 years (excluding 2013) and approaching indicator of 2009-2011.

Dynamics of indicator “river filling, %” changes we can see in Figure 2:

Dynamics of the recorded number of chum producers in the rivers of Okhinskii District

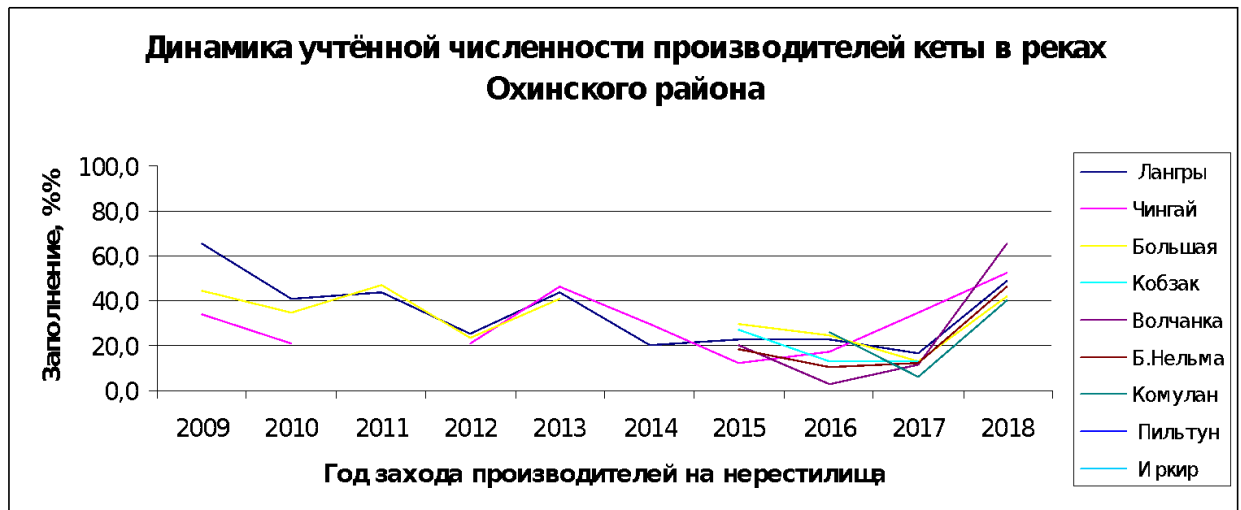


Fig. 2: The list of the rivers from top to bottom: Langry, Chingai, Bolshaya, Kobzak, Volchanka, B. Nelma, Komulan, Piltun, Irkir

The spawning run of chum salmon consists of several age groups: 2+, 3+, 4+, 5+. Adults returning in 2018 therefore consisted of generations that spawned in 2012, 2013, 2014 and 2015. As it is seen from Table 3, in those years filling of the spawning grounds did not exceed 25% of optimal levels (except 2013 - 42.7%). Thus, measures and efforts taken to fight against poaching increased spawning escapements in 2018 more than 2 times and approached 50% of optimal chum spawning ground filling.

The data presented in this report are considered preliminary. Spawning migrations of chum continue through the end of November, that is why actual number of adult chum salmon on spawning grounds will likely be greater.

Addendum to PI 1 FIP CP provided by SakhNIRO

Filling of the spawning rivers of the North-Eastern part of the Okhinskii district

Pink salmon

The major spawning rivers of the Eastern coast of the Okhinskii District are located in its southern part and belong to the Piltun Bay system. The Piltun River flows into this Bay, having 124 thousand m² of spawning grounds. The remaining rivers, except the Tropto river (65 thousand m²), have an extremely small amount of Pacific salmon spawning habitat. In addition a few small rivers, due to natural contamination of oil, have almost no significant salmon reproduction. In 2018, for the first time in the last ten years, pink salmon spawned in the Okha river. In the area of the river near the operational facility of OOO “Okha”, about a hundred pink salmon spawned. When calculating the percent of optimal spawning in the rivers of the Eastern coast of the Okhinskii district, the average calculated level of filling of the surveyed streams was used (Table 2.2).

Table 2.2 - Filling of the surveyed spawning rivers on the Eastern coast of Okhinskii district with pink salmon spawners in 2018

Date of Last survey	River	Spawning grounds, m ²	Number of spawners	Filling of river, %
Eastern Coast of Okhinskii district				
08/5	Tomi	-	-	95
08/22	B. Longri	14000	23800	85
08/25	Tropto	65000	84500	65
09/2	Kheiton Stream	-		90
Total		213000	345000	81

In the Northern part of the Schmidt Peninsula there are two main pink salmon spawning rivers; the Dianovskaya and Aerodromnaya rivers. They account for 210 thousand m² of spawning habitat. A foot survey was conducted on August 5 and pink escapements were estimated to be about 70% of optimal levels. Because the peak of the pink salmon occurs later, the filling of the rivers of the Northern part of the coast of the Okhinskii district probably exceeded 100% of optimal levels. However, on the basis of the precautionary approach, the calculation of the number in rivers was assumed to be 90% filling level (table 2.4).

Table 2.4 - Filling of the main spawning rivers of the northern section of the coast of the Okhinskii district with pink salmon producers in 2018

Date of Last survey	River	Spawning grounds, m ²	Number of spawners	Filling of river, %
Northern Coast of Okhinskii district				
Ns*	Voroni	-	Na**	
Ns	Ulyef	-	Na	
Ns	Kekspiri	-	Na	
Ns	Akhspiri	-	Na	
Ns	Dianovskaya	60000	Na	
Ns	Valovskaya	15000	Na	
08/5	Orlinaya	-	-	70
Ns	Nyvrovo	-	Na	
Total		210000	378000	90

Note: * – Not surveyed, ** – not available

Chum salmon

In performing work on the assessment of the entry of chum salmon into the rivers of the North-Eastern part of the Okhinskii district, there were certain difficulties, namely: the only river in this region where the spawning areas, used by chum for spawning were assessed is the Piltun River. In this river, there are 17,000 m² of chum salmon spawning habitat. In other rivers there is only information about the spawning of chum (B. Longry). Without data on the quantity and quality of the spawning grounds, it is impossible to assess the filling of rivers. It was not possible to inspect the Piltun River at the beginning of September (beginning of the run of fall chum) as a result of difficult weather conditions: the ground road was impassable due to frequent rains. Expeditionary work was completed on September 15, which did not allow a survey of this river during the peak of chum salmon spawning. Since there is no data on the number of chum salmon spawners, it is not possible to make any calculations on the effectiveness of the reproduction of chum salmon in this area.