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**Biostatistical Information on Salmon Catches,  
Escapement, Outmigrants Number, and Enhancement  
Production in Russia in 1999**

by

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by

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In 1999 in Russia salmon fishery season demonstrates all general tendencies which are indicated for last years. The main stocks of pink salmon and sockeye salmon remain in good condition on the Russian Far East. Wild stocks of chum salmon are currently in poor condition in many far-eastern regions, except for those of the north Okhotsk Sea coast and Okhotsk region. Coho and chinook salmon contribute insignificant portion in total Russian catch of Pacific salmon.

Pink salmon catch exceeded forecast on both main fishery areas. In the eastern Kamchatka pink salmon run beat all creation and reached a level of historical record: 83,64 thousand tons (Tables 1, 3/1). On the eastern Sakhalin coast total catch coincided to past year forecast based on pelagic survey on pink salmon juveniles in the southern Okhotsk Sea: 81,29 thousand tons. In general, the pink salmon catch on the Russian far-eastern coast totaled 187,73 thousand tons. In numbers, pink salmon catch has reached 155,95 million fish (Tables 2, 3).

Chum salmon fishery results reached a predicted level despite the low rates during summer months. About third part (31,3% in weight and 31,6% in number units) of chum salmon harvest was caught after September 1 (Table 4/1). In general, it totaled 23,64 thousand metric tons (Table 1). The continental coast of the Okhotsk Sea remained a main region of chum salmon fishery through the Russian Far East. It contributed at 34,9% of coastal chum salmon catch in Russia in 1999. The Amur River chum stocks remained in poor condition. There are some evidences of restoration of chum salmon stocks in the eastern Kamchatka. Chum salmon catch there totaled 1,79 million fish, or 6,03 thousand tons (Tables 4, 4/1).

Sockeye salmon run was rather intensive on the eastern Kamchatka area. Beside the Kamchatka River drainage, where sockeye catch reached at 6 thousand tons, about 800 tons of sockeye were caught on other fishery areas of the northeastern Kamchatka region. Sockeye salmon fishery conditions were rather moderate on the western side of the Kamchatka Peninsula. About 2,28 million fish, or 4,97 thousand tons of sockeye has been caught there (Tables 5, 5/1).

Coho salmon harvest reached 0,41 million fish, or 1,25 thousand tons (Tables 6, 6/1). Chinook salmon catch has totaled 91,6 thousand fish, or 717,03 tons (Tables 7, 7/1).

Significant lag of salmon run was fixed on the most fishery areas of the Russian Far East in 1999: from 1,5 to three weeks (Tables 3-7, 3/1 – 7/1). This lag can be explained by late development of physical processes in offshore and coastal ecosystem: late ice dissolution, slow heating of upper water layer, etc.

Foreign vessels salmon catch in the Russian EEZ totaled 16,825 t in 1999 (Table 15).

Escapement of mature Pacific salmon to spawning grounds was at the established level in the most fishery regions (Table 8). As for pink salmon, escapement of adult fish was slightly above optimal in the eastern Kamchatka region (25,56 million fish versus 20,0 million of optimal spawner numbers, or OSN), and on the eastern Sakhalin coast (22,22 million fish versus 21,5 million of OSN). Pink salmon escapement in rivers of the Okhotsk Sea continental coast, Kuril Islands, and the southwestern Sakhalin was slightly below OSN, on the western Kamchatka coast, the Amur River Basin and Primorie region – noticeably below OSN.

Above 1380 fishing gears were used for coastal Pacific salmon fishery through the Russian Far East (Table 10). The most number of beach seines was set in the eastern Kamchatka region, on the Kuril Islands, and the eastern Sakhalin coasts. River seines were mainly used in the eastern Kamchatka and northern Okhotsk Sea coasts.

Russian hatcheries released 566,4 million salmon smolts in 1999, in particular 268,4 million pink salmon, 278,7 million chum, 16,9 million sockeye, 1,3 million coho, 618,8 thousand chinook, and 463 thousand masu (Table 11).

Body length and weight of pink salmon are slightly lower than average (Table 12). It is a common thing for high-yielded years. For example, pink salmon body weight averaged 1,06 kg on the eastern Kamchatka coast. For other species, these parameters are in limits of normal ones.

Numbers of Pacific salmon outmigrants from monitored rivers (Table 9), sport (Table 13) and subsistence catches (Table 14) of Pacific salmon on the Russian Far East are also presented.

Table 1

**Commercial salmon catch in Russia ( Far East ) by species, region  
and subregion , in tonnes, 1999.**

Region, subregion	Pink	Chum	Sockeye	Coho	Chinook	Total
Western Bering Sea	36.00	958.80	87.76			1082.56
Eastern Kamchatka	83640.06	6028.50	6801.53	771.92	673.77	97915.78
Kuriles	16101.00	1351.40				17452.40
<b>The Sea of Okhotsk</b>						
Western Kamchatka	54.96	1218.47	4967.70	288.83	43.26	6573.22
Continental coast	5962.60	8241.90	70.30	185.20		14460.00
Sakhalin coast	81294.80	2364.70				83659.50
Amur Basin	474.60	1503.50				1978.10
<b>The Sea of Japan</b>						
Primor'e	59.70	25.28				84.98
Southwestern Sakhalin	110.00	1944.00				2054.00
<b>Total</b>	<b>187733.72</b>	<b>23636.55</b>	<b>11927.29</b>	<b>1245.95</b>	<b>717.03</b>	<b>225260.54</b>

Table 2

**Commercial salmon catch in Russia ( Far East ) by species, region  
and subregion, in thousands of fish, 1999.**

Region, subregion	Pink	Chum	Sockeye	Coho	Chinook	Total
Western Bering Sea	21.95	269.30	26.68			317.93
Eastern Kamchatka	78668.20	1794.30	3119.90	246.70	86.40	83915.50
Kuriles	10770.10	343.40				11113.50
<b>The Sea of Okhotsk</b>						
Western Kamchatka	44.40	377.20	2278.80	112.80	5.20	2818.40
Continental coast	4483.16	2490.00	28.48	50.53		7052.17
Sakhalin coast	61411.60	872.40				62284.00
Amur Basin	427.59	574.20				1001.79
<b>The Sea of Japan</b>						
Primor'e	53.06	6.98				60.04
Southwestern Sakhalin	69.20	541.42				610.62
<b>Total</b>	<b>155949.26</b>	<b>7269.20</b>	<b>5453.86</b>	<b>410.03</b>	<b>91.60</b>	<b>169173.95</b>

Table 3

**Commercial pink salmon catch in Russia (Far East)  
by regions, subregions and month in number of fish, 1999.**

Region, subregion	May	June	July	August	September	Октябрь	Total
Western Bering Sea			no data				
Eastern Kamchatka		1000	52306800	26323100	37300		78668200
Kuriles			226400	7432600	3111100		10770100
The Sea of Okhotsk							
Western Kamchatka			18500	12800	13100		44400
Continental Coast			3332107	1150541	511		4483159
Sakhalin Coast		20300	15976800	45284300	130200		61411600
Amur Basin			425699	1892			427591
The Sea of Japan							
Primor'e		5902	41608	5410	139		53059
Southwestern Sakhalin		69200					69200
<b>Total</b>		96402	72327914	80210643	3292350		155927309

Table 4

**Commercial chum salmon catch in Russia (Far East)  
by regions, subregions and month in number of fish, 1999.**

Region, subregion	June	July	August	September	October	November	Total
Western Bering Sea			no data				
Eastern Kamchatka	27500	608000	1009400	149400			1794300
Kuriles			2960	158260	182180		343400
The Sea of Okhotsk							
Western Kamchatka		55800	284700	36700			377200
Continental Coast		204507	2101462	184031			2490000
Sakhalin Coast		171600	25360	284000	391290	150	872400
Amur Basin		258390	28710	287100			574200
The Sea of Japan							
Primor'e			no data				
Southwestern Sakhalin			2340	532720	6360		541420
<b>Total</b>	27500	1298297	3454932	1632211	579830	150	6992920

Table 5

**Commercial sockeye salmon catch in Russia (Far East)  
by regions, subregions and month in number of fish, 1999.**

Region, subregion	June	July	August	September	Total
Western Bering Sea		no data			
Eastern Kamchatka	1373665	1369235	284900	92100	3119900
The Sea of Okhotsk					
Western Kamchatka		139100	1951300	188400	2278800
Continental Coast		24810	3632	40	28482
<b>Total</b>	<b>1373665</b>	<b>1533145</b>	<b>2239832</b>	<b>280540</b>	<b>5427182</b>

Table 6

**Commercial coho salmon catch in Russia (Far East)  
by regions, subregions and month in number of fish, 1999.**

Region, subregion	July	August	September	October	Total
Eastern Kamchatka	1600	109900	135200		246700
The Sea of Okhotsk					
Western Kamchatka	1500	40700	70600		112800
Continental Coast		35686	14841		50527
<b>Total</b>	<b>3100</b>	<b>186286</b>	<b>220641</b>		<b>410027</b>

Table 7

**Commercial chinook salmon catch in Russia (Far East)  
by regions, subregions and month in number of fish, 1999.**

Region, subregion	June	July	August	September	Total
Eastern Kamchatka	52400	28300	2698	3000	86398
The Sea of Okhotsk					
Western Kamchatka	3700	1500			5200
<b>Total</b>	<b>56100</b>	<b>29800</b>	<b>2698</b>	<b>3000</b>	<b>91598</b>

Table 3/1

**Commercial pink salmon catch in Russia (Far East)  
by regions, subregions and month in tonnes, 1999.**

Region, subregion	May	June	July	August	September	October	Total
Western Bering Sea				no data			
Eastern Kamchatka		1.18	55612.75	27982.52	43.61		83640.06
Kuriles			338.46	11111.53	4651.01		16101.00
<b>The Sea of Okhotsk</b>							
Western Kamchatka			22.94	15.82	16.20		54.96
Continental Coast			4431.70	1530.22	0.68		5962.60
Sakhalin Coast		26.87	21205.08	59890.28	172.57		81294.80
Amur Basin			472.50	2.10			474.60
<b>The Sea of Japan</b>							
Primor'e		6.42	47.02	6.10	0.16		59.70
Southwestern Sakhalin		110.00					110.00
<b>Total</b>		144.47	82130.45	100538.57	4884.23		187697.72

Table 4/1

**Commercial chum salmon catch in Russia (Far East)  
by regions, subregions and month in tonnes, 1999.**

Region, subregion	June	July	August	September	October	November	Total
Western Bering Sea				no data			
Eastern Kamchatka	92.28	2042.84	3391.34	502.04			6028.50
Kuriles			11.60	622.90	716.90		1351.40
<b>The Sea of Okhotsk</b>							
Western Kamchatka		180.26	919.67	118.54			1218.47
Continental Coast		676.90	6956.00	609.00			8241.90
Sakhalin Coast		465.20	68.70	769.80	1060.60	0.40	2364.70
Amur Basin		676.60	75.20	751.70			1503.50
<b>The Sea of Japan</b>							
Primor'e				no data			
Southwestern Sakhalin			8.40	1912.80	22.80		1944.00
<b>Total</b>	92.28	4041.80	11430.91	5286.78	1800.30	0.40	22652.47

Table 5/1

**Commercial sockeye salmon catch in Russia (Far East)  
by regions, subregions and month in tonnes, 1999.**

Region, subregion	June	July	August	September	Total
Western Bering Sea			no data		
Eastern Kamchatka	2994.59	2985.00	621.18	200.76	6801.53
The Sea of Okhotsk					
Western Kamchatka	0.07	303.25	4253.76	410.62	4967.70
Continental Coast		61.20	9.00	0.10	70.30
Total	2994.66	3349.45	4883.94	611.48	11839.53

Table 6/1

**Commercial coho salmon catch in Russia (Far East)  
by regions, subregions and month in tonnes, 1999.**

Region, subregion	June	July	August	September	October	Total
Eastern Kamchatka		4.90	344.08	422.94		771.92
The Sea of Okhotsk						
Western Kamchatka		3.76	104.23	180.84		288.83
Continental Coast			131.40	53.80		185.20
Total		8.66	579.71	657.58		1245.95

Table 7/1

**Commercial chinook salmon catch in Russia (Far East)  
by regions, subregions and month in tonnes, 1999.**

Region, subregion	June	July	August	September	Total
Eastern Kamchatka	408.50	221.16	20.37	23.74	673.77
The Sea of Okhotsk					
Western Kamchatka	30.67	12.43	0.16		43.26
Total	439.17	233.59	20.53	23.74	717.03



Table 8

Escapement of adult pacific salmon to spawning areas in Russia, by species, region and subregion in thousands of fishes, 1999

Region, subregion	Pink	Chum	Sockeye	Coho	Chinook	Total
Western Bering Sea	no data	2000.00	210.00			2210.00
Eastern Kamchatka	25563.70	575.10	1031.10	115.20	52.00	27337.10
Kuriles	1771.00	83.00				1854.00
The Sea of Okhotsk						
Western Kamchatka	37.10	532.40	1479.70	88.80	45.50	2183.50
Continental Coast	8252.50	2681.40	no data	no data		10933.90
Sakhalin Coast	22227.10	113.60				22340.70
Amur Basin	680.60	877.20				1557.80
The Sea of Japan						
Primor'e	9.50	43.87				53.37
Southwestern Sakhalin	179.20	no data				179.20
Total	58720.70	6906.57	2720.80	204.00	97.50	68649.57

Table 11

Salmon fry released from Russian hatcheries, in thousands of fish, 1999.

Region, subregion	Pink	Chum	Sockeye	Coho	Chinook	Masu	Total
Eastern Kamchatka		20700.7		22.0			20722.7
Kuriles	65802.0	15403.0					81205.0
The Sea of Okhotsk							
Western Kamchatka		1440.9	16533.2		618.6		18592.7
Continental Coast	40050.5	12226.0	348.7	416.7			53041.9
Sakhalin Coast	158733.0	137093.0		897.0		243.0	296966.0
Amur River Basin		2098.8					2098.8
The Sea of Japan							
Primor'e		13100.0				220.0	13320.0
Southwestern Sakhalin	3857.0	76606.0					80463.0
Total	268442.5	278668.4	16881.9	1335.7	618.6	463.0	566410.1

Table 10

Quantity of different gears on pacific salmon fishery in Russia, by regions  
and subregions, in number of units, 1999.

Region, subregion	Gears		Total
	Set (beach) seine	River seine	
Eastern Kamchatka	166	146	312
Kuriles	105	19	124
<b>The Sea of Okhotsk</b>			
Western Kamchatka		77	77
Continental Coast	60	250	310
Sakhalin Coast	329	55	384
Amur Basin	28	30	58
<b>The Sea of Japan</b>			
Primor'e	15	40	55
Southwestern Sakhalin	63	1	64

Table 12

Average weights (kg) of salmon in commercial catches in Russia ( Far East )  
by species, region and subregion, 1999.

Region, subregion	Pink	Chum	Sockeye	Coho	Chinook
Western Bering Sea	1.64	3.56	3.29		
Eastern Kamchatka	1.06	3.36	2.18	3.13	7.80
Kuriles	1.49	3.94			
<b>The Sea of Okhotsk</b>					
Western Kamchatka	1.24	3.23	2.18	2.56	8.32
Continental coast	1.33	3.31	2.47	3.67	
Sakhalin coast	1.32	2.71			
Amur Basin	1.11	2.62			
<b>The Sea of Japan</b>					
Primor'e	1.13	3.62			
Southwestern Sakhalin	1.59	3.59			

Table 9

Number of outmigrants of pacific salmon from Russian rivers in 1999, in  
thousands of fish.

Region, subregion, river	Pink	Chum	Sockeye	Coho	Chinook	Masu
1	2	3	4	5	6	7
Eastern Kamchatka						
R. Kamchatka basin						
R. Kamchatka	212.06	6787.27	7848.88	4081.53	978.86	
L. Ushki		0.44	0.63	43.07		
R. Nikolka		163.95	242.42	1485.09		
R. Zhupanovka		234.98	127.62	108.32	21.75	
R. Avacha	7906.74	4919.73	157.72	1420.27	160.68	
South Kuril						
R. Olya	11502.00					
R. Rybatskaja	10532.00	591.00				
R. Ilushina	7882.00	1211.00				
The Sea of Okhotsk						
Western Kamchatka						
R. Bystraja	130044.49	14295.82	49367.22	22340.18	8454.20	
R. Kluchevka	10863.92	209.08	367.47	503.04	62.94	
R. Kihchik	51224.00	3648.00	885.00	3527.00	691.00	618.00
R. Icha	83.04	879.26	173.95	225.35		
R. Sadushka	511.48	4.37				1.16
R. Kiumshich	285.60	106.00	37.93	147.42	18.64	3.66
Continental coast						
R. Najahan	1100.00	2094.80				
R. Ola	130000.00	250.00				
R. Tauy	4600.00	2121.00		62.00		
R. Okhota	43.00	3500.00				
R. Amur basin						
R. Amur	60348.00	119808.00				
R. Amgun	332300.00	50500.00				
R. Anui		10967.00				
R. Ul	444.40	2929.00				
Amur mouth region						
R. Isky	4179.00	1072.00				

## Continuation of table 9

1	2	3	4	5	6	7
Sakhalin coast						
R. Langry	6000.00	3800.00				
R. Bakhura	8500.00					
R. Tym		800.00				
Cr. Holdnyi	751.00					
R. Ljutoga	5850.00					
R. Dudinka	1400.00					
R. Kura	1851.00					
R. Dagi	3370.00					
R. Melkaja	7620.00					
The Sea of Japan						
South Western Sakhalin						
R. Pokosnaja	45870.00					
Primor'ie						
R. Tumnin	222869.00					
R. Ulika	27300.00					
R. Avvakumovka		2280.00				
R. Samarga	25000.00					

Table 13

**Sport catch of Pacific salmon in Russia (Far East) by species, and area, in numbers of fish, 1999.**

Region, subregion	Pink	Chum	Sockeye	Coho	Chinook	Masu	Total
Western Bering Sea		24157					24157
Eastern Kamchatka				430			430
Kuriles	5300						5300
The Sea of Okhotsk							
Western Kamchatka				200	630		830
Continental Coast	147551	47174	31	1193			195949
Sakhalin Coast	70100	2900					73000
Amur River Basin	6727	28800					35527
The Sea of Japan							
Primor'e	26568					360	26928
Southwestern Sakhalin	4200						4200
Total	260446	103031	31	1823	630	360	366321

Table 14

**Subsistence catch of Pacific salmon in Russia (Far East) by species, and area, in numbers of fish, 1999.**

Region, subregion	Pink	Chum	Sockeye	Coho	Chinook	Total
Western Bering Sea		81742				81742
Eastern Kamchatka	179460	42710	97200	20520	3390	343280
The Sea of Okhotsk						
Western Kamchatka	1680	6200	44760	9790	740	63170
Continental Coast	8500	43663				52163
Sakhalin Coast	99100	38700				137800
Amur River Basin	1801	115239				117040
The Sea of Japan						
Primor'e	1530	550				2080
Total	292071	328804	141960	30310	4130	797275

Table 15

Catch of Pacific salmon by foreign fishery fleet in far-eastern Russian exclusive economic zone  
by species, by region, in tonnes, 1999.

Region, subregion	Pink	Chum	Sockeye	Coho	Chinook	Masu	Total
Eastern Kamchatka	41.0	3587.0	1108.0		107.0		4843.0
Southern Kuriles	163.0	4834.0	884.0	396.0	81.0		6358.0
Northern Kuriles	29.0	156.0	484.0	17.0	14.0		700.0
The Sea of Okhotsk							
Western Kamchatka	60.0	1078.0	172.0	23.0	13.0		1346.0
Sakhalin coast	225.0	3002.0	9.0	50.0	8.0		3294.0
The Sea of Japan							
Primor'e	284.0						284.0
Total	802.0	12657.0	2657.0	486.0	223.0	0.0	16825.0