



U.S. Fish & Wildlife Service

Arcata Fish & Wildlife Office Fisheries Program

In-Season Trapping Update –June 20, 2007

Mainstem Klamath River Downstream Outmigrant Trapping

Synopsis: The 2007 downstream migrant trapping season at four sites on the mainstem Klamath River is being conducted jointly by the USFWS Arcata Fish and Wildlife Office (AFWO) and the Karuk Tribe of California (KTOC). The season began March 14, 2007 using rotary screw traps (RST) near Kinsman Creek and Carson Creek (the I-5 crossing) and a fyke net near Bogus Creek. Additional fyke nets were installed downstream of the I-5 RST March 15, 2007 and at a fourth site, near Cottonwood Creek, on March 26, 2007. A second RST was installed at the Kinsman site March 28, 2007. The downstream (DNS) trap was placed at the original RST location. The upstream (UPS) trap was approximately 40 m upstream of the DNS trap, at the entrance of a split from the main channel formed by a shallow gravel bar. Another fyke net was installed downstream of the Kinsman RSTs April 10, 2007.

Outmigrant monitoring at the four sites concluded with the beginning of the young-of-the-year (YOY) Chinook salmon release from the Iron Gate Hatchery on May 18, 2007. Trapping continued at the Kinsman RSTs and I-5 RST as a means of collecting YOY Chinook and YOY and age 1+ coho salmon for fish health analysis. This catch summary includes data from March 15, 2007 through June 28, 2007. Expansions have not been applied at this time.

Trap catches primarily consisted of wild YOY Chinook salmon. Peak YOY Chinook salmon catches occurred in the second week of April, Julian Week (JW) 15, for all traps. Peak catches of age 1+ steelhead occurred in mid-May (JW 19 and JW 20). Peak catches of YOY coho salmon occurred in mid-April (JW 15 and JW 16) with a second peak occurring at the Kinsman site in mid-May (JW 19 and JW 20). Trap catches of age 1+ coho salmon with left maxillary (LM) clips were mostly distributed between April 3 (JW 14) and May 18 (JW 20), following the beginning of volitional releases on April 1, 2007. Age 1+ Chinook salmon, YOY steelhead, and age 1+ wild coho salmon were not captured in significant numbers.

In addition to juvenile salmonids, a number of other native and non-native fishes were captured in the traps. Native fishes included lamprey (*Entosphenus* spp. ammocoetes, eyed juvenile and adult Pacific lamprey, and eyed juvenile and adult Klamath River lamprey), speckled dace, suckers (*Catostomus* spp.), and marbled sculpin. Non-native fishes included crappie, fathead minnow, golden shiner, bullhead, yellow perch, and various sunfish.

Fish health analyses began on April 10, 2007 (JW 15). Analyses were conducted at the four trapping sites and at Klamathon, under the Copco-Ager Bridge, where weekly seining was performed. If the target sample size for fish health analyses in Reach 5 could not be completed at Klamathon or the outmigrant traps, additional seining was conducted at Cottonwood (JW 26). This summary of clinical signs of disease includes percentages of live YOY Chinook salmon with distended bellies and healthy (red) gills. Gills of juvenile salmonids $\geq 40\text{mmFL}$ were evaluated as red (healthy), pink/pale, red eroded, pale/pink eroded, tan, blue/white, tan eroded, or blue/white eroded. The proportion of healthy gills decreased the first week of May (JW 18) at all trapping sites. Distended bellies, a clinical sign of *Ceratomyxa shasta* and *Parvicapsula minibicornis* infection, were mostly noticed at the Bogus site. We merely noted external symptoms of infection, which may not always be revealed by infected fish. QPCR assays and histology analyses conducted by the California-Nevada Fish Health Center will provide more accurate infection rates.

If you have any questions regarding this summary, please contact Steve Gough at (707) 822-7201.

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USFWS 2007 Mainstem Klamath River Outmigrant Trap Juvenile Salmonid Catch Summary (Cont.)

Trap	Julian Week	Sampling Dates	IGD Flow (cfs)*		Water Temp. (F)**		Trapping Days***	CHINOOK (<i>O. tshawytscha</i>)				STEELHEAD (<i>O. mykiss</i>)			COHO (<i>O. kisutch</i>)			
			Min	Max	Min	Max		YOY			YOY	Age 1+		YOY	Age 1+			
								No Clip	AD Clip	Total		Age 1+	No Clip		LM+AD Clip	No Clip	LM Clip	
Bogus	11	Mar 15-16	3480	3580	44.9	44.9	2	436	-	436	0	0	1	0	0	0	0	0
Fyke	12	Mar 20-23	3950	4050	47.8	48.9	4	1293	-	1293	0	0	1	0	0	0	0	0
	13	Mar 27-30	3170	3730	49.8	50.2	4	526	-	526	0	0	0	0	0	0	0	0
	14	Apr 03-06	1980	2600	50.6	52	4	3517	-	3517	0	28	0	0	7	0	0	0
	15	Apr 10-13	1800	2450	51	52.7	4	3908	-	3908	0	18	2	0	71	0	1	1
	16	Apr 17-20	2000	2430	50.5	53.8	4	1288	-	1288	0	14	1	0	45	0	0	0
	17	Apr 24-27	2050	2470	54	55.2	4	230	-	230	0	23	0	0	4	0	4	4
	18	May 01-04	1410	1680	53	55.4	4	131	-	131	0	17	0	0	0	0	0	0
	19	May 08-11	1620	1930	57.8	59.2	4	146	-	146	0	44	0	0	0	0	0	0
	20	May 15-18	1420	1420	60.4	61.5	4	66	-	66	0	22	2	0	0	0	0	1

* recorded at 08:00 of sampling date

** recorded at time of trap check

*** may be less than number of days sampled due to flawed sets

Arcata Fish Wildlife Office Fisheries Program



USFWS 2007 Mainstem Klamath River Outmigrant Trap Juvenile Salmonid Catch-per-Day Summary

Preliminary Data - Subject to Revision

U.S. Fish & Wildlife Service, Arcata Field Office, 1655 Heindon Road, Arcata, CA 95521, (707)822-7201

Trap	Julian Week	Sampling Dates	IGD Flow (cfs)*		Water Temp. (F)**		Trapping Days***	CHINOOK (<i>O. tshawytscha</i>)				STEELHEAD (<i>O. mykiss</i>)			COHO (<i>O. kisutch</i>)		
			Min	Max	Min	Max		YOY			Age 1+		YOY	Age 1+			
								No Clip	AD Clip	Total	Age 1+	YOY		No Clip	LM+AD Clip	No Clip	LM Clip
Kinsman Fyke	15	Apr 11-13	1800	2450	49.8	49.8	3	13.0	-	13.0	0.0	0.0	0.7	0.0	2.7	0.0	0.0
	16	Apr 17-20	2000	2430	50.5	51.1	4	5.8	-	5.8	0.0	0.0	0.5	0.0	1.5	0.0	0.0
	17	Apr 24-27	2050	2470	53.6	55.4	4	0.5	-	0.5	0.0	0.0	2.5	0.0	0.8	0.0	0.0
	18	May 01-04	1410	1680	52	56.5	4	0.5	-	0.5	0.0	0.0	0.0	0.0	0.8	0.0	0.0
	19	May 08-11	1620	1930	59.5	61.9	3	2.3	-	2.3	0.0	0.0	3.0	0.0	2.7	0.0	0.7
20	May 15-18	1420	1420	60.5	63.8	4	4.8	-	4.8	0.0	0.0	2.5	0.0	1.0	0.0	0.0	
Kinsman RST	11	Mar 15-16	3480	3580	45.1	45.1	1	13.0	-	13.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0
	12	Mar 20-23	3950	4050	46.6	48.9	2	12.5	-	12.5	0.0	0.0	2.5	0.0	1.5	0.0	0.0
	13	Mar 27-28	3520	3730	48.6	49.5	2	11.0	-	11.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0
Kinsman DNS RST	13	Mar 29-30	3170	3360	48	49.4	2	12.0	-	12.0	0.0	0.0	3.0	0.0	19.0	0.0	0.0
	14	Apr 03-06	1980	2600	50.4	55	4	23.3	-	23.3	0.0	0.0	2.5	0.0	1.3	0.0	1.0
	15	Apr 10-13	1800	2450	49.8	49.8	3	133.0	-	133.0	0.0	0.0	4.7	0.0	1.3	0.0	0.0
	16	Apr 17-20	2000	2430	50.5	53.1	4	34.5	-	34.5	0.0	0.0	7.8	0.3	2.0	0.3	1.0
	17	Apr 24-27	2050	2470	53.6	55.4	4	17.8	-	17.8	0.0	0.0	4.8	0.0	0.3	0.0	2.8
	18	May 01-04	1410	1680	52	56.5	4	10.3	-	10.3	0.0	0.5	7.5	0.0	2.8	0.5	1.5
	19	May 08-11	1620	1930	59.5	61.9	4	16.5	-	16.5	0.0	0.0	22.8	0.0	3.5	0.8	1.5
	20	May 15-18	1420	1420	61.8	63.8	4	30.3	-	30.3	0.0	0.0	16.3	0.0	8.8	0.0	0.8
	21	May 22	1420	1420	59.8	59.8	1	40.0	0.0	40.0	0.0	1.0	19.0	0.0	7.0	0.0	0.0
	22	May 30-31	1420	1420	65.6	66.3	2	49.0	0.5	49.5	0.0	0.0	10.0	0.0	4.5	0.0	0.5
	23	Jun 05	1560	1560	64.9	64.9	1	200.0	12.0	212.0	0.0	0.0	19.0	0.0	5.0	0.0	0.0
	24	Jun 13-14	1540	1540	67.9	68.4	2	80.0	7.0	87.0	0.0	0.0	19.0	0.0	2.0	0.0	0.0
25	Jun 19	1540	1540	68.4	68.4	1	44.0	1.0	45.0	0.0	1.0	23.0	0.0	6.0	0.0	0.0	
26	Jun 27-28	1530	1540	69	70.1	2	17.0	1.5	18.5	0.0	0.0	10.0	0.0	1.5	0.0	0.0	
Kinsman UPS RST	13	Mar 29-30	3170	3360	48	49.4	2	18.5	-	18.5	0.0	0.0	3.0	0.0	0.0	0.0	0.0
	14	Apr 03-06	1980	2600	50.4	55	4	47.3	-	47.3	0.0	0.0	2.3	0.0	0.3	0.0	1.3
	15	Apr 10-13	1800	2450	49.8	49.8	4	184.0	-	184.0	0.3	0.0	3.5	0.0	1.0	0.8	0.8
	16	Apr 17-20	2000	2430	50.5	53.1	4	62.5	-	62.5	0.0	0.0	4.8	0.3	1.5	0.0	0.8
	17	Apr 24-27	2050	2470	53.6	55.4	4	41.5	-	41.5	0.3	0.0	3.0	0.0	0.0	1.0	2.3
	18	May 01-04	1410	1680	52	56.5	4	22.5	-	22.5	0.0	0.0	7.3	0.0	0.5	1.0	1.8
	19	May 08-11	1620	1930	59.5	61.9	4	20.5	-	20.5	0.0	0.0	14.8	0.0	0.8	0.0	4.8
	20	May 15-18	1420	1420	61.8	63.8	4	36.0	-	36.0	0.0	0.0	8.8	0.0	0.8	0.3	0.8
	21	May 22	1420	1420	59.8	59.8	1	97.0	0.0	97.0	0.0	0.0	5.0	0.0	1.0	0.0	1.0
	22	May 30-31	1420	1420	65.6	66.3	2	46.0	0.0	46.0	0.0	0.0	3.5	0.0	0.5	0.0	0.0
	23	Jun 05	1560	1560	64.9	64.9	1	52.0	2.0	54.0	0.0	0.0	8.0	1.0	0.0	0.0	0.0
	24	Jun 13-14	1540	1540	67.9	68.4	2	20.0	2.0	22.0	0.0	0.0	3.5	0.0	0.0	0.0	0.0
25	Jun 19	1540	1540	68.4	68.4	1	9.0	0.0	9.0	0.0	0.0	13.0	0.0	0.0	0.0	0.0	
26	Jun 27-28	1530	1540	69	70.1	2	29.5	0.5	30.0	0.0	0.0	6.5	0.0	0.5	0.0	0.0	
I-5 Fyke	11	Mar 16	3480	3480	44.6	44.6	1	5.0	-	5.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
	12	Mar 20-23	3950	4050	48.5	48.7	4	5.3	-	5.3	0.0	0.0	0.3	0.0	0.0	0.0	0.0
	13	Mar 27-30	3170	3730	48.7	50.5	4	9.5	-	9.5	0.0	0.0	0.0	0.0	1.5	0.0	0.0
	14	Apr 03-06	1980	2600	51.5	54.1	4	53.5	-	53.5	0.0	0.0	0.0	0.0	0.5	0.0	0.0
	15	Apr 10-13	1800	2450	51	54.3	4	113.5	-	113.5	0.0	0.3	0.3	0.0	5.0	0.0	0.0
	16	Apr 17-20	2000	2430	50.5	55.2	4	48.3	-	48.3	0.0	0.3	0.8	0.0	4.5	0.0	0.0
	17	Apr 25-27	2050	2460	54.1	55.9	3	8.3	-	8.3	0.0	0.0	0.3	0.0	0.3	0.0	0.7
	18	May 01-04	1410	1680	52.5	56.3	4	5.5	-	5.5	0.0	0.8	0.0	0.0	0.0	0.0	0.3
	19	May 08-11	1620	1930	57.7	62.4	4	8.0	-	8.0	0.0	3.0	1.0	0.0	0.0	0.0	1.5
	20	May 15-18	1420	1420	61	64.1	4	12.5	-	12.5	0.0	2.8	2.5	0.0	0.5	0.0	2.3
	21	May 22	1420	1420	62.8	62.8	1	15.0	0.0	15.0	0.0	0.0	1.0	0.0	2.0	0.0	0.0
I-5 RST	11	Mar 15-16	3480	3580	44.6	44.6	2	5.5	-	5.5	0.0	0.0	1.0	0.0	0.0	0.0	0.0
	12	Mar 20-23	3950	4050	48.5	48.7	4	3.0	-	3.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0
	13	Mar 27-30	3170	3730	48.7	50.5	4	3.8	-	3.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	14	Apr 03-06	1980	2600	51.5	54.1	4	50.0	-	50.0	0.0	0.0	0.8	0.0	0.0	0.3	16.8
	15	Apr 10-13	1800	2450	51	54.3	4	134.8	-	134.8	0.0	0.3	2.0	0.0	0.0	0.0	4.5
	16	Apr 17-20	2000	2430	50.5	55.2	4	41.0	-	41.0	0.0	0.0	3.3	0.0	0.3	0.0	7.0
	17	Apr 24-27	2050	2470	52	55.9	4	51.8	-	51.8	0.0	0.0	2.3	0.0	0.0	1.3	4.5
	18	May 01-04	1410	1680	52.5	56.3	4	24.5	-	24.5	0.0	0.5	1.5	0.0	0.0	0.0	6.0
	19	May 08-11	1620	1930	57.7	62.4	3	43.0	-	43.0	0.0	2.3	3.3	0.0	1.0	0.3	8.3
	20	May 15-18	1420	1420	61	64.1	4	57.3	-	57.3	0.0	1.3	8.3	0.0	0.8	0.3	4.8
	21	May 22	1420	1420	62.8	62.8	1	89.0	0.0	89.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	May 30	1420	1420	68.2	68.2	1	70.0	4.0	74.0	0.0	0.0	1.0	0.0	1.0	0.0	0.0	
23	Jun 05	1560	1560	65.5	65.5	1	386.0	20.0	406.0	0.0	6.0	1.0	0.0	4.0	0.0	0.0	

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USFWS 2007 Mainstem Klamath River Outmigrant Trap Juvenile Salmonid Catch-per-Day Summary (cont.)

Trap	Julian Week	Sampling Dates	IGD Flow (cfs)*		Water Temp. (F)**		Trapping Days***	CHINOOK (<i>O. tshawytscha</i>)				STEELHEAD (<i>O. mykiss</i>)			COHO (<i>O. kisutch</i>)		
			Min	Max	Min	Max		YOY			Age 1+			YOY	Age 1+		
								No Clip	AD Clip	Total	Age 1+	No Clip	LM+AD Clip		No Clip	LM Clip	
Cottonwood 2 Fyke	13	Mar 27-30	3170	3730	49.8	50.6	4	5.8	-	5.8	0.0	0.0	0.3	0.0	2.5	0.0	0.0
	14	Apr 03-06	1980	2600	52	53.2	4	71.0	-	71.0	0.0	0.0	1.0	0.0	3.3	0.0	0.3
	15	Apr 10-11	1800	1800	53.7	55.4	2	216.5	-	216.5	0.0	5.5	0.0	0.0	7.0	0.0	0.0
	16	Apr 17-20	2000	2430	51	53	4	60.8	-	60.8	0.0	0.3	0.0	0.0	6.8	0.0	0.0
	17	Apr 24-27	2050	2470	53.8	57.4	4	6.8	-	6.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	18	May 01-04	1410	1680	53.8	54.9	4	18.8	-	18.8	0.0	1.3	0.5	0.0	0.3	0.0	0.5
	19	May 08-10	1670	1930	60.5	63	0	-	-	-	-	-	-	-	-	-	-
20	May 16	1420	1420	61.4	61.4	0	-	-	-	-	-	-	-	-	-	-	
Bogus Fyke	11	Mar 15-16	3480	3580	44.9	44.9	2	218.0	-	218.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0
	12	Mar 20-23	3950	4050	47.8	48.9	4	323.3	-	323.3	0.0	0.0	0.3	0.0	0.0	0.0	0.0
	13	Mar 27-30	3170	3730	49.8	50.2	4	131.5	-	131.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	14	Apr 03-06	1980	2600	50.6	52	4	879.3	-	879.3	0.0	7.0	0.0	0.0	1.8	0.0	0.0
	15	Apr 10-13	1800	2450	51	52.7	4	977.0	-	977.0	0.0	4.5	0.5	0.0	17.8	0.0	0.3
	16	Apr 17-20	2000	2430	50.5	53.8	4	322.0	-	322.0	0.0	3.5	0.3	0.0	11.3	0.0	0.0
	17	Apr 24-27	2050	2470	54	55.2	4	57.5	-	57.5	0.0	5.8	0.0	0.0	1.0	0.0	1.0
	18	May 01-04	1410	1680	53	55.4	4	32.8	-	32.8	0.0	4.3	0.0	0.0	0.0	0.0	0.0
	19	May 08-11	1620	1930	57.8	59.2	4	36.5	-	36.5	0.0	11.0	0.0	0.0	0.0	0.0	0.0
	20	May 15-18	1420	1420	60.4	61.5	4	16.5	-	16.5	0.0	5.5	0.5	0.0	0.0	0.0	0.0

* recorded at 08:00 of sampling date

** recorded at time of trap check

*** may be less than number of days sampled due to flawed sets

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USFWS 2007 Mainstem Klamath River YOY Chinook Salmon Clinical Signs of Disease Summary

Preliminary Data - Subject to Revision

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Trap Site	Julian Week	Sampling Dates	IGD Flow (cfs)*		Water Temp (F)**		Belly Condition			Gill Condition		
			Min	Max	Min	Max	Sample Size	Distended N	Distended %	Sample Size	Red (Healthy) N	Red (Healthy) %
Kinsman (Reach 4)	15	Apr 10-12	1800	2410	49.8	49.8	150	0	0.0%	94	91	96.8%
	16	Apr 17-19	2310	2430	50.5	53.1	163	3	1.8%	91	89	97.8%
	17	Apr 24-26	2090	2470	53.6	54.3	121	0	0.0%	120	118	98.3%
	18	May 1-3	1410	1680	54.0	56.5	88	0	0.0%	87	78	89.7%
	19	May 8-10	1670	1930	59.5	61.9	69	2	2.9%	60	50	83.3%
	20	May 15-17	1420	1420	60.5	63.8	82	2	2.4%	81	64	79.0%
	21	May 22	1420	1420	59.8	59.8	30	2	6.7%	30	21	70.0%
	22	May 30	1420	1420	65.6	65.6	30	0	0.0%	30	18	60.0%
	23	Jun 5	1560	1560	64.9	64.9	30	0	0.0%	30	24	80.0%
	24	Jun 13	1540	1540	67.9	67.9	30	0	0.0%	30	23	76.7%
I-5 (Reach 5)	15	Apr 10-12	1800	2410	54.3	54.3	120	0	0.0%	88	88	100.0%
	16	Apr 17-19	2310	2430	51.0	55.2	176	4	2.3%	104	97	93.3%
	17	Apr 24-26	2090	2470	52.0	55.9	71	0	0.0%	57	56	98.2%
	18	May 1-3	1410	1680	52.5	56.3	69	0	0.0%	49	35	71.4%
	19	May 8-10	1670	1930	61.4	62.4	59	4	6.8%	54	43	79.6%
	20	May 15-17	1420	1420	61.6	64.1	97	5	5.2%	95	79	83.2%
	21	May 22	1420	1420	62.8	62.8	30	1	3.3%	30	28	93.3%
	22	May 30	1420	1420	68.2	98.2	30	0	0.0%	30	20	66.7%
	23	Jun 5	1560	1560	65.5	65.5	30	0	0.0%	30	23	76.7%
	Cottonwood (Reach 5)	16	Apr 18	2310	2310	52.0	52.0	30	0	0.0%	9	9
17		Apr 24-26	2090	2470	54.8	57.4	17	0	0.0%	14	14	100.0%
18		May 1-3	1410	1680	54.2	54.9	36	0	0.0%	22	13	59.1%
19		May 8-10	1670	1810	60.5	63.0	20	0	0.0%	13	9	69.2%
26		Jun 27	1540	1540	69.2	69.2	7	0	0.0%	7	7	100.0%
Klamathon (Reach 5)	16	Apr 19	2430	2430	52.5	52.5	30	0	0.0%	29	29	100.0%
	17	Apr 26	2090	2090	56.0	56.0	30	0	0.0%	29	29	100.0%
	18	May 3	1410	1410	55.9	55.9	30	0	0.0%	30	28	93.3%
	19	May 10	1810	1810	60.0	60.0	30	0	0.0%	29	29	100.0%
	20	May 17	1420	1420	64.3	64.3	30	0	0.0%	30	30	100.0%
	24	Jun 13	1540	1540	69.0	69.0	30	0	0.0%	30	30	100.0%
	26	Jun 26-27	1540	1540	67.7	70.2	23	0	0.0%	23	22	95.7%
Bogus (Reach 5)	16	Apr 18-19	2310	2430	52.0	53.8	60	4	6.7%	25	15	60.0%
	17	Apr 24-26	2090	2470	54.0	55.2	90	3	3.3%	57	51	89.5%
	18	May 1-3	1410	1680	54.6	55.4	84	1	1.2%	78	35	44.9%
	19	May 8-10	1670	1930	57.8	59.2	71	11	15.5%	70	47	67.1%
	20	May 15-17	1420	1420	60.4	61.5	44	25	56.8%	42	35	83.3%

* recorded at 08:00 of sampling date

** recorded at time of trap check