



# Nez Perce Tribe

## Department of Fisheries Resources Management

Administration • Enforcement • Habitat/Watershed • Harvest • Production • Research • Resident Fish  
RESEARCH DIVISION

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November 18, 2008

TO: Mr. Scott Marshall, LSRCP  
FR: William Young, Nez Perce Tribe  
CC: D. Johnson, J. Oatman, J. Hesse, E. Larson, B. Johnson, D. Statler, J. Vogel, J. Harbeck, R. Zollman, B. Michaels (NPT), T. Froscher, M. Anderson (USFWS).  
SBJT: Nez Perce Tribe LSRCP Quarterly Activity Report for July-September 2008

### **Project Administration**

Negotiated, completed and submitted FY 2009 budget and SOW package.

All NPT LSRCP employees attended the NPT Spawning Ground Workshop in Big Creek, Idaho on August 6-7, 2008.

Completed multiple pass spawning/carcass surveys the Middle Fork, South Fork, and Imnaha River basins.

Completed final spending to close out Fiscal Year 2008 Budget. Budgets for all three projects (Harvest, O&M, and M&E) were near 100% spent for FY 08.

### **Field Activities and Data Collections**

#### *Adult Spawning Ground Surveys*

NPT LSRCP perform multiple pass redd/carcass surveys below the LSRCP adult facility on the South Fork Salmon River (Table 1), and in upper Big Creek (Table 2). LSRCP staff also assisted Oregon Department of Fish and Wildlife with multiple pass redd surveys in the Imhaha and Grande Ronde River Basins. Spawner abundance was significantly higher in 2008 compared to the previous 2 years. In addition, a large number of carcasses were found that will enable a good estimation of hatchery/natural spawner composition.

Table 1. Number of Chinook salmon redds, live fish, carcasses, and redds per kilometer observed in the South Fork Salmon River in 2008, while performing multiple pass redd/carcass surveys.

Stream Section	Date (mm/dd/yy)	New Redds	Number of Live Fish	Number of Carcasses	Redds/ Kilometer
Fish Weir to Dime Creek (5 km)	8/19/08	49	310	22	49.8
	8/27/08	103	na <sup>1</sup>	72	
	9/3-4/08	89	110	208	
	9/10/08	8	10	84	
	Totals	249	430	386	
Dime Creek to unnamed tributary (6.3 km)	8/19/08	4	6	3	11.1
	8/27/08	14	80	5	
	9/3/08	35	51	30	
	9/10/08	17	5	30	
	Totals	70	142	68	
Poverty Flat to 0.2 km below gauge (1.1 km)	8/20/08	5	31	1	81.8
	8/26/08	10	37	3	
	9/4/08	48	70	31	
	9/9,11/08	25	19	31	
	9/17/08	2	0	2	
	Totals	90	157	68	
Lodgepole CG to Phoebe Creek (6.7 km)	8/20/08	0	5	2	11.6
	8/26/08	7	50	0	
	9/2/08	38	73	10	
	9/9/08	33	34	28	
	9/17/08	na	1	2	
	Totals	78	163	42	
Grand Totals		487		564	

<sup>1</sup>Counting stopped after more than 200 live fish were counted within the first 1.5 km.

Table 2. Number of Chinook salmon redds, live fish, carcasses, and redds per kilometer observed in upper Big Creek in 2008, while performing multiple pass redd/carcass surveys.

Stream Section	Date (mm/dd/yy)	New Redds	Number of Live Fish	Number of Carcasses <sup>1</sup>	Redds/ Kilometer
Smith Cr. to Logan Cr. (4.7 km)	7/29/08	0	0	0	2.6
	8/11/08	7	na	0	
	8/25/08	5	9	2	
	Totals	12	9	2	
Logan Cr. To Jacobs Ladder (5.6 km)	7/29/08	2	8	0	5.7
	8/11/08	13	28	2	
	8/25/08	17	13	7	
	Totals	32	19	9	
Totals		44		11	

<sup>1</sup>Additional carcasses were collected by University of Idaho field crews. We will get data from those carcasses in the future.

*Adult Salmonid Gamete Preservation Collections.*

Table 3. LSRCP staff assisted with the collection of Chinook gametes for long term storage (cryopreservation). Table is a summary of 2008 collections.

Location	Natural- Origin	Hatchery- Origin	Total
Big Creek	19	0	19
Lake Creek	35	0	35
Marsh Creek	18	0	18
Capehorn Creek	5	0	5
Johnson Creek	22	0	22
Lostine River	4	0	4
Grande Ronde River	0	0	0
Catherine Creek	13	0	13
Imnaha River	13	0	13
Totals	129	0	129

*SFSR KRS PIT tag array detections*

A PIT tag array was installed in the SFSR 2.5 miles above the confluence of the EFSFSR and has operated continuously since February, 2008. The array consisted of 5 flat panel antennas spanning the river bottom. During that time the array detected 24,509 unique PIT tags from 23,297 juvenile Chinook salmon, 501 juvenile steelhead, 708 adult Chinook salmon and 3 adult steelhead (Table 4).

Table 4. PIT tag detections at KRS PIT tag array on the SFSR by fish type, life stage, and release site from February through September, 2008.

Fish Type	life stage	Release Site <sup>1</sup>	Total
Chinook	adult	BONAFF	36
		SALTRP	1
		SNAKE1	27
Hatchery Chinook	adult	BO2BCC	1
		BO2BYP	1
		BONAFF	61
		IHRTAL	17
		LGRRBR	23
		LGRRRR	64
		SALTRP	7
		SNKTRP	5
Hatchery Spring Chinook	juvenile	RAPH	2
Hatchery Summer Chinook	adult	JOHNSC	12
		KNOXB	409
		LGRRBR	1
	juvenile	JOHNSC	9
		KNOXB	22,875
Wild Chinook	adult	LGRRBR	12
		LGRRRR	9
		SALTRP	16
Wild Spring Chinook	juvenile	BIG2C	1
Wild Summer Chinook	adult	KNOXB	1
		SFSTRP	5
	juvenile	JOHTRP	3
		KNOXB	400
		LAKEC	1
		SECESR	2
		SECTRP	4
Wild Summer Steelhead	adult	LGRRBR	2
		SNKTRP	1
	juvenile	KNOXB	501
Grand Total			24,509

<sup>1</sup>Release site definitions – LGRRBR, Lower Granite Dam - Release below the PIT-Tag Diversion System Gate with subsequent Barge Transportation from the Facility; LGRRRR, Lower Granite Dam - Release below the PIT-Tag Diversion System Gate with subsequent Return to the River at the Facility; IHRTAL, Ice Harbor Dam - Release into the Tailrace within 0.5 km downstream of Dam; BO2BCC & BO2BYP, Bonneville Dam (archaic); BONAFF, Bonneville Dam - Adult Fish Facility; BIG2C, Big Creek, Middle Fork Salmon River; SNAKE1, Snake River - mouth to Palouse River (km 0-96); SNKTRP, Snake Trap; JOHNSC, Johnson Creek; JOHTRP, Johnson Creek Trap; LAKEC, Lake Creek; RAPH, Rapid River Hatchery; SALRSF, South Fork Salmon River; SECESR, Secesh River; SECTRP, Secesh River Screw Trap; KNOXB, Knox Bridge, SF Salmon River.

### *Adult Chinook salmon detections*

A total of 708 adult Chinook salmon were detected at the KRS PIT tag array in 2008. A majority of the detected fish were tagged and released as part of the McCall Hatchery Knox B release. Other detected adults were tagged as juveniles in the SFSR, Johnson Creek or screw traps in the Salmon River, Snake River or juvenile facilities at the mainstem dams. In addition, PIT tags were detected from adults as they migrated through the mainstem hydrosystem.

Of the 478 KNOXB tagged fish that were interrogated at LGD, 399 were detected at the KRS site (83.5% detection). Of the 407 KNOXB tagged fish that were interrogated at the KRS site, 170 were captured at the McCall Hatchery trap (41.8%). The reduction in PIT tag detections between the KRS site and the McCall Hatchery trap resulted from natural mortality, harvest and fallout spawning between the two sites. Although no survival or efficiency calculations were done, these results indicated that the KRS site was very efficient at detecting PIT tagged adult Chinook salmon. A more comprehensive analysis of survival of juvenile and adult salmon and steelhead will be presented in a future report.

### *Imnaha Juvenile Trapping*

Data server problems prevented the reporting of data from spring juvenile trapping in the 3<sup>rd</sup> quarterly report. These problems were fixed allowing full access to the data. The data from spring juvenile trapping on the Imnaha River are presented below.

Spring trapping started on the Imnaha River February 28, 2008 at 8:00 am and ended trapping on June 18, 2008 at 9:00 am. During this time LSRCP and Smolt Monitoring Project (SMP) personnel operated the rotary screw trap for 90 days totaling 1893.25 hours. During this period we caught 75,873 hatchery Chinook salmon, 5,561 natural Chinook salmon (PIT-tagged 3,278), 19,461 hatchery steelhead (PIT-tagged 3), and 4,238 natural steelhead (PIT-tagged 2,534). Of the total catch, we recaptured 7 natural Chinook, 3,095 hatchery Chinook and 723 hatchery steelhead that were originally tagged at other sites in the basin. A summary of the daily catch and total tagged target species is presented in Table 1. Table 2 illustrates the biological characteristics including, fork length, weight, and condition factor (K) for all the target species. Extreme river flows during spring runoff impacted trapping. As flows increased trapping became more difficult. Initially logs and debris entering the cone and caused the trap door to be pushed open by high water velocities, resulting in a large number of escaped fish. At the highest flows the trap could not operated for 22 days both due to the extreme river levels and debris damaging the trap. On May 19<sup>th</sup>, the Imnaha River peaked with an average daily discharge of 5,160 cfs (provisional data USGS Imnaha River gage at Imnaha, OR). This was the fourth largest average daily discharge recorded on the Imnaha River in 80 years of data.

There were a total of 36 mortalities associated with screw trapping during the entire spring period. Ten were a direct result of trapping, 14 were from handling, 7 were from tagging, and 5 were dead on arrival (DOA).

Table 1. Summary of target catch at the Imnaha River smolt trap for spring, 2008.

END DATE	Hours Fished	Caught in Screw Trap				PIT Tagged Salmonids			
		Chinook		Steelhead		Chinook		Steelhead	
		Hatchery	Natural	Hatchery	Natural	Hatchery	Natural	Hatchery	Natural
2/29/08	27.5	0	15	0	2	0	15	0	1
3/1/08	21.5	0	11	0	0	0	11	0	0
3/2/08	23.5	0	38	0	3	0	38	0	3
3/3/08	23.5	0	32	0	2	0	32	0	2
3/4/08	23.5	0	38	0	2	0	38	0	2
3/5/08	24	0	39	0	1	0	37	0	1
3/6/08	24.5	0	41	0	1	0	40	0	1
3/7/08	24	0	25	0	1	0	25	0	1
3/8/08	24	0	14	0	0	0	14	0	0
3/9/08	25	0	9	0	0	0	9	0	0
3/10/08	24	0	9	0	0	0	8	0	0
3/11/08	23.5	0	4	0	0	0	4	0	0
3/12/08	23	0	16	0	0	0	16	0	0
3/13/08	24.5	0	20	0	0	0	20	0	0
3/14/08	24.5	0	20	0	5	0	19	0	5
3/15/08	23.5	0	13	0	2	0	13	0	2
3/16/08	24	0	5	0	0	0	5	0	0
3/17/08	24	0	10	0	0	0	10	0	0
3/18/08	24	0	14	0	1	0	14	0	1
3/19/08	24	0	6	0	1	0	6	0	1
3/20/08	24	0	13	0	1	0	12	0	1
3/21/08	24	0	23	0	3	0	23	0	2
3/22/08	24.5	0	46	0	0	0	46	0	0
3/23/08	24	0	30	0	1	0	30	0	1
3/24/08	23.5	0	33	0	1	0	33	0	1
3/25/08	24	0	62	0	2	0	60	0	2
3/26/08	23.5	0	101	0	0	0	101	0	0
3/27/08	25	132	76	0	2	0	74	0	2
3/28/08	25.5	545	70	0	5	0	70	0	5
3/29/08	23	1208	81	0	2	0	80	0	2
3/30/08	24	436	200	0	2	0	198	0	2
3/31/08	24	160	125	0	0	0	124	0	0
4/1/08	24	43	78	0	0	0	77	0	0
4/2/08	22.5	36	89	0	1	0	89	0	1
4/3/08	25.5	631	93	0	1	0	93	0	1
4/4/08	24	4592	100	9	4	0	100	0	4
4/5/08	21	4134	58	34	0	0	18	0	0
4/6/08	24	4639	70	49	0	0	25	0	0
4/7/08	24	3992	106	20	0	0	42	0	0
4/8/08	24	6647	93	17	5	0	24	0	2
4/9/08	24	11909	77	49	0	0	17	0	0
4/10/08	24	5372	119	198	6	0	24	0	1
4/11/08	24	4576	85	913	6	0	15	0	1
4/12/08	24	3711	127	1619	3	0	66	0	3
4/13/08	24	1827	179	1018	17	0	39	0	2
4/14/08	27.5	17988	1351	4000	633	0	93	0	30
4/15/08	0	0	0	0	0	0	0	0	0

Nez Perce Tribe 4<sup>th</sup> Quarter Progress Report

4/16/08	14	1669	409	1175	232	0	144	0	57
4/17/08	10	307	157	266	88	0	155	0	88
4/18/08	26.5	107	75	87	56	0	74	0	54
4/19/08	25	47	58	153	67	0	58	0	66
4/20/08	24	154	157	217	109	0	156	0	109
4/21/08	23.5	189	158	249	66	0	157	0	65
4/22/08	23.5	103	69	160	27	0	67	0	26
4/23/08	23	22	31	48	25	0	31	0	25
4/24/08	26.5	44	31	83	30	0	31	0	30
4/25/08	22	75	52	47	28	0	52	0	28
4/26/08	25.5	53	32	74	31	0	31	0	31
4/27/08	23.5	55	43	76	28	0	43	0	28
4/28/08	24.5	65	26	157	53	0	26	0	52
4/29/08	23.5	175	78	1265	480	0	78	0	415
4/30/08	12	61	73	1197	650	0	13	0	78
5/1/08	10.5	64	78	598	111	0	54	0	73
5/2/08	26.5	22	50	276	129	0	50	0	123
5/3/08	24.5	21	38	230	115	0	37	0	114
5/4/08	24	8	18	413	146	0	18	0	146
5/5/08	22	16	2	1395	379	0	2	0	199
5/6/08	0	0	0	0	0	0	0	0	0
5/7/08	0	0	0	0	0	0	0	0	0
5/8/08	0	0	0	0	0	0	0	0	0
5/9/08	9.5	2	6	197	37	0	5	0	37
5/10/08	9.5	8	10	369	73	0	10	0	72
5/11/08	25	3	2	326	60	0	2	0	60
5/12/08	25	4	0	546	85	0	0	0	85
5/13/08	23.5	1	8	504	68	0	8	0	68
5/14/08	15.5	7	7	382	57	0	7	0	57
5/15/08	11.25	9	11	496	176	0	5	0	150
5/16/08	0	0	0	0	0	0	0	0	0
5/17/08	0	0	0	0	0	0	0	0	0
5/18/08	0	0	0	0	0	0	0	0	0
5/19/08	0	0	0	0	0	0	0	0	0
5/20/08	0	0	0	0	0	0	0	0	0
5/21/08	0	0	0	0	0	0	0	0	0
5/22/08	0	0	0	0	0	0	0	0	0
5/23/08	0	0	0	0	0	0	0	0	0
5/24/08	0	0	0	0	0	0	0	0	0
5/25/08	0	0	0	0	0	0	0	0	0
5/26/08	0	0	0	0	0	0	0	0	0
5/27/08	12.5	1	3	81	26	0	3	0	26
5/28/08	9	1	7	105	23	0	7	1	23
5/29/08	8	0	0	8	2	0	0	0	2
5/30/08	8.5	0	0	7	0	0	0	0	0
5/31/08	0	0	0	0	0	0	0	0	0
6/1/08	0	0	0	0	0	0	0	0	0
6/2/08	0	0	0	0	0	0	0	0	0
6/3/08	0	0	0	0	0	0	0	0	0
6/4/08	0	0	0	0	0	0	0	0	0
6/5/08	0	0	0	0	0	0	0	0	0
6/6/08	10.5	1	0	60	19	0	0	0	19

Nez Perce Tribe 4<sup>th</sup> Quarter Progress Report

6/7/08	10	1	0	59	18	0	0	0	18
6/8/08	11	0	1	43	9	0	1	0	9
6/9/08	0	0	0	0	0	0	0	0	0
6/10/08	12	0	2	54	12	0	2	0	12
6/11/08	14	0	1	27	2	0	1	0	1
6/12/08	11.5	0	2	12	1	0	2	1	1
6/13/08	24.5	0	0	13	0	0	0	0	0
6/14/08	14	0	0	17	1	0	0	1	1
6/15/08	16.5	0	0	15	1	0	0	0	1
6/16/08	24	0	1	14	1	0	1	0	1
6/17/08	24	0	1	18	0	0	1	0	0
6/18/08	24	0	0	16	1	0	0	0	1
Totals	1893.25	75873	5561	19461	4238	0	3279	3	2534

Table 2. Biological characteristics including, fork length, weight, and condition factor (K) for all the target species for spring trapping on the Imnaha River smolt trap.

Data	Hatchery Chinook	Natural Chinook	Hatchery Steelhead	Natural Steelhead
Fork Length (n)	435	3282	637	2534
Avg Fork Length (mm)	125.0	98.6	210.4	166.1
Max Fork Length (mm)	173	154	286	245
Min Fork Length (mm)	91	67	117	68
StdDev Fork Length	12.3	9.5	20.9	19.5
Weight (n)	431	3277	628	2520
Avg Weight (g)	22.9	11.5	98.2	50.3
Max Weight (g)	61.5	45.7	292.1	153.2
Min Weight (g)	7.7	3.9	18.4	3.9
StdDev Weight	7.5	3.3	30.3	17.5
K (n)	429	3273	628	2518
Avg K	1.14	1.18	1.02	1.06
Max K	1.64	1.68	1.69	1.67
Min K	0.69	0.65	0.74	0.64
StdDev K	0.10	0.13	0.08	0.10

The incidental catch during spring trapping totaled 1,583 fish. It was comprised of six families of fish: Salmonidae (13%), Cyprinidae (7%), Castomidae (15%), Cottidae (5%), Petromyzotidae (52%), and Centrarchidae (9%). The catch of Salmonidae comprised 113 adult steelhead, 85 rainbow trout, 10 mountain whitefish, and 1 bull trout. The juvenile rainbow trout were resident fish based on morphological characteristics and are not a subset of the natural steelhead catch. A total of 85 long nose dace, 10 northern pike minnow, and 10 chiselmouth accounted for the Cyprinidae catch. The catch of Castomidae comprised 8 largescale suckers, 6 bridgelip suckers and 220 suckers of unknown species. A total of 74 unknown Sculpin species of the family Cottidae were captured. One hundred thirty eight juvenile small mouth bass comprised the Centrarchidae catch. Finally, 823 juvenile lamprey were captured that, due to their size, were

identified as Pacific Lamprey. They were separated into two categories, lamprey brown (712), lamprey silver (111). The lamprey brown category were ammocoetes and the lamprey silver were macrophthalmia assumed to be outmigrants. The bulk of the lamprey catch occurred on the evenings of April 14<sup>th</sup> and 30<sup>th</sup>.

### **NPT Production**

LSRCP Operations & Maintenance staff took the lead in spawning 92 Imhaha River spring/summer Chinook females (460,000 green eggs) at Lookingglass Hatchery.

### **Harvest Monitoring**

The NPT Harvest Monitoring Project was funded by a cost-share between Bonneville Power Administration and LSRCP. Table 4 shows preliminary data on spring/summer Chinook salmon harvest by NPT Tribal members in 2008.

Table 4. Preliminary Nez Perce Tribe spring/summer Chinook Treaty fishery catch estimate for 2008.

<u>Tributary</u>	<u>Hatchery</u>	<u>Wild</u>	<u>Total</u>
North Fork Clearwater	159	0	159
Clear Creek	na	na	na
Rapid River	3,771	29	3,800
South Fork Salmon	432	26	458
Imnaha River	159	1	160
Wallowa/Lostine River	51	0	51
Lookingglass Creek	10	0	10
Totals	4,362	55	4,417

### **Annual Report Submittals/Progress**

Currently working on a Lower Snake River Compensation Plan Hatchery Evaluation Studies Annual Project Report 1996-2006. This report will include adult activities in Upper Big Creek and in South Fork Salmon River (with associated tributaries) for a 10 year period, (Authors: William Young, Jason Vogel, Paul Kucera, Mike Blenden, and Jay Hesse).

### **Future Activities**

Continue with data summary and analysis of LSRCP data for inclusion in annual reports.

Imnaha River juvenile screw trapping operations began October 1, 2008 and will run through mid December.

Project Leader will attend the AFEP meeting in Portland, December 8-10, 2008

All staff will be attending the DFRM Division Retreat, December 18, 2008.