

**1986 COLUMBIA RIVER  
SPRING DIP-NET TRIBAL  
SUBSISTENCE FISHERY**

*Technical Report 87-3*

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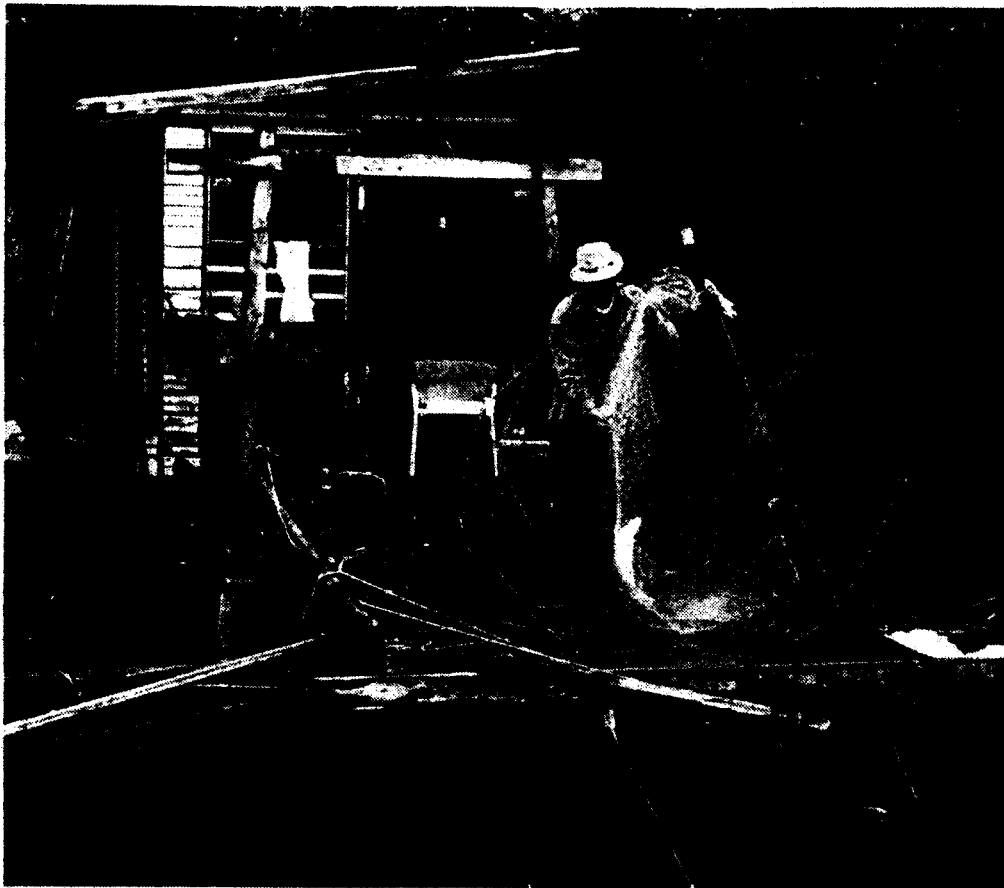


Illustration 1: Dip-net fishing at the Bridge of the Gods/Cascade Locks area.

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## INTRODUCTION

The four treaty Indian tribes that have ceremonial and subsistence fishing rights on the Columbia River between Bonneville and McNary dams are the Nez Perce, Umatilla, Warm Springs, and Yakima tribes.

Dip-net fishing is the primary method used for harvesting fish for subsistence purposes during the spring season. These sites are scattered throughout the open fishing areas between Bonneville and McNary dams (Figure 1). Minimal sanctuaries prohibiting platform fishing have been established near dams and some tributary mouths. Fishing activity is concentrated at the Lone Pine area immediately below The Dalles Dam and at a two-mile section in the Bridge of the Gods/Cascade Locks area (Figure 1). Fishing is generally done from wooden platforms built out from the banks of the river. There are approximately 40 platforms in the Bridge of the Gods/Cascade Locks area, approximately 25 in the Lone Pine area, and about 25 additional platforms scattered throughout Zone 6, but primarily in the Bonneville and The Dalles pools.

Treaty Indian platform fishing is permitted 365 days a year. Fishing may be closed by tribal or Columbia River Compact regulatory authority if a conservation concern is identified. No such action was taken in 1986.

The set-hoop net is the type of gear most commonly used on main-stem platforms. For the 1986 season, the following regulations were in place for hoop-nets:

	<u>Circumference</u>	<u>Nets/Mesh</u>	<u>Net/Platform</u>	<u>Attendance</u>
Yakima	26 feet	5" max	2	At all times
Warm Springs	18 feet	5" max	2	At all times
Nez Perce		No Regulations		
Umatilla		No Regulations		
State of Washington	26 feet	5" max	2	At all times
State of Oregon	24 feet	5" max	2	At all times

Set-hoop nets are used passively and are fixed to the platforms by ropes. In some areas the hoop is attached to a long pole (20'-30') and fixed to the platform by support lines (Illustration 1).

In the past, catch estimates for spring chinook fishing were attempted from limited fishery monitoring by Oregon Department of Fish and Wildlife (ODFW) and Washington Department of Fisheries (WDF) (Bowers 1985). On March 19, 1985, the Columbia River Technical Advisory Committee (TAC) formed a subcommittee to develop a sampling program for the purpose of improving the previously limited data-base and developing a method to estimate platform catch. As a result, a cooperative monitoring program was developed for 1985 by the Columbia River Inter-Tribal Fish Commission (CRITFC), Yakima Indian Nation (YIN), and ODFW (Schaller et al. 1985).

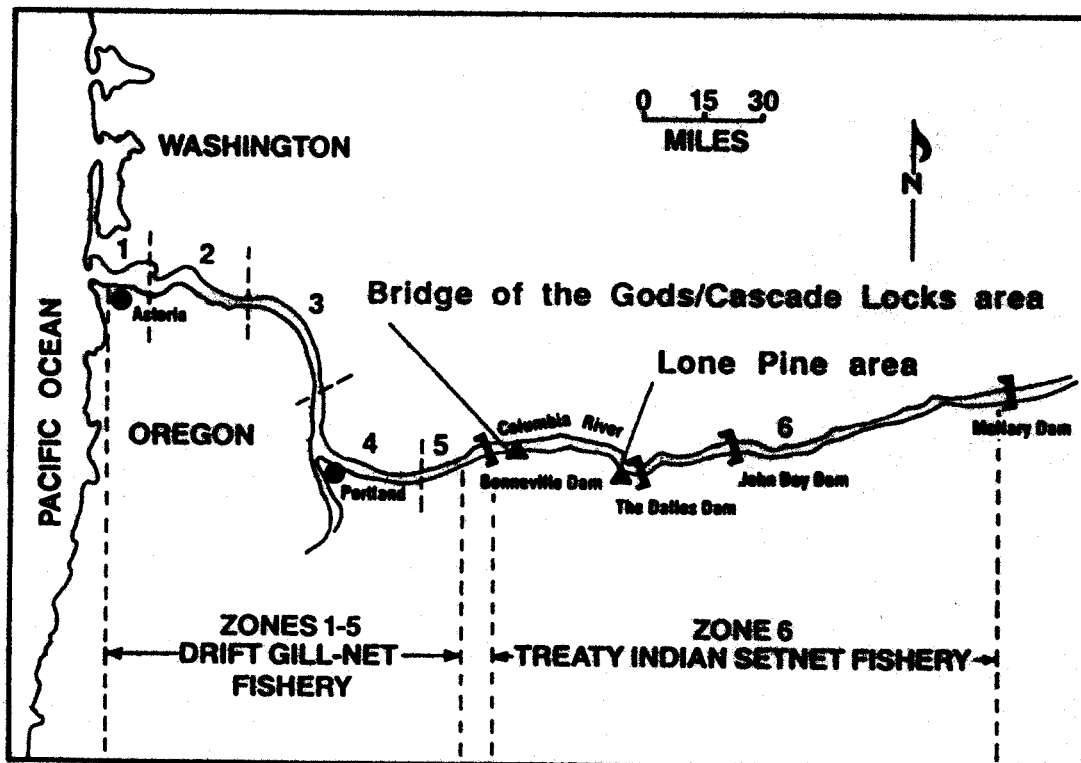


Figure 1

## METHODS

In 1986 the spring platform monitoring program began on April 15 and continued through May 31. Personnel for data collection were supplied by YIN. Sampling took place at the Bridge of the Gods/Cascade Locks and Lone Pine areas. Harvest-estimation methods for the two areas monitored differed slightly and are described below.

### Lone Pine Monitoring

The monitor had free access to all platforms and was able to obtain interview data for the previous evening's catch. During daylight hours, monitors selected a vantage point from where most of the active platforms could be observed. At the start of each two-hour sampling period, the monitor would count the number of active platforms (effort) for the Lone Pine area. Fish caught were recorded (by species) for a selected number of platforms for the remaining two-hour period. This was done for a predetermined number of sampling periods in a day. During the 1985 season, harvest from noon to 6 PM was minimal, and more fish were caught at night (YIN 1986). Therefore sampling was reduced during these hours.

The following are the methods used to calculate harvests for daylight hours and night:

#### Daylight Effort & Harvest Estimation

- 1) Expand observed catch for the total number of active platforms.
- 2) Expand estimate of catch during monitoring hours for 12-hour fishing period.
- 3) Average estimated daily catches for all observation dates in a statistical week.

4) Estimate statistical-week harvest by totaling estimated catches on observation dates and adding average daily catch for each non-observation date.

### Night Effort & Harvest Estimation

1) Estimated night harvest was calculated from one of the following methods:

a) early morning interview data; or

b) monitoring observations made in the 6 PM - midnight time frame expanded, as described above for daylight observations, to a 12-hour fishing period.

2) Average night catch was estimated by statistical week from the interview and monitoring information.

3) Estimate statistical-week night-harvest by totaling estimated catches on observation dates and adding average nightly catch for each non-observation date.

### **Bridge of the Gods/Cascade Locks Monitoring**

The monitor selected a vantage point from where a majority of active platforms could be viewed. At the start of every two-hour sampling period, the observer would count total effort (measured in active platforms) for the area. Interview data was collected for non-observation periods.

The methodology used for estimating daylight harvest at Lone Pine was used to estimate total harvest at Bridge of the Gods/Cascade Locks. Night catch was not estimated, since it was considered to be negligible for this area (Schaller et al 1985).

## RESULTS

For spring 1986, 24 percent of the spring platform daylight fishing time was sampled at Bridge of the Gods/Cascade Locks. At Lone Pine, 19 percent of the spring platform daylight fishing time was sampled.

### Lone Pine

The average daylight effort, measured in average active platforms per day, was five for 1986 and was identical to the 1985 estimate of effort. However, the 1986 average night effort estimate of 6.0 platforms, measured in early morning peak platform counts, was down from the average 1985 effort estimate of 7.4 (Tables 1 and 2).

The observations from this area reveal that the daytime catch was slightly greater than the night catch for 1986 (Table 1). The ratio of day catch to night catch in 1986 showed a different pattern than observed in 1985 (Table 2).

The estimated daytime harvest at Lone Pine of 146 chinook and 87 steelhead was similar to the 1985 harvest of 158 chinook and 81 steelhead. The 1986 night harvest appeared to drop significantly from 1985 levels. The species composition of overall catch at the Lone Pine area was 67 percent chinook, which was similar to the 70 percent in 1985.

### Bridge of the Gods/Cascade Locks

The results for the Bridge of the Gods/Cascade Locks monitoring program have been summarized in Table 3. The average effort for the spring monitoring period was 5.3 average active platforms per day. This was a considerable increase above the average 1985 effort measurement of 3.9 average active platforms per day (Table 4).



The estimated harvest of spring chinook at Cascade Locks was 143 fish, which was above the 1985 estimated harvest of 100 fish. Once again there was a significant steelhead harvest during the spring platform season at 1594 fish. The 1986 species composition of catch at Cascade Locks was 8 percent chinook compared to a 6 percent chinook composition in 1985.

## DISCUSSION

As in 1985, we were able to maintain a targeted 20% sample of the daytime platform hours available for fishing during the spring chinook season.

The total platform harvest of 389 chinook was a 55% reduction from the 1985 chinook catch. The reduction in chinook harvest was attributable to the Lone Pine night catch. There is speculation by biologists and fishermen that dip-net catch success at the Lone Pine site is related to project discharge at The Dalles Dam.

The average monthly discharge at The Dalles Dam was slightly less than the previous ten-year average (Table 5). However, the average monthly discharge at The Dalles Dam was greater in 1986 than it was in 1985 (Table 5). In addition, the average nightly total discharge at The Dalles Dam (as measured for the hours of 9:00 PM to 3:00 PM the following day and for the time period of April 15 - May 15) was 214 cubic feet per second (cfs) higher in 1985 than in 1986. It does not appear that the reduction in night catch at Lone Pine from 1985 levels was related to a reduction in total project discharge from 1985. In addition, spring chinook abundance at Bonneville Dam was 123,177 fish, as compared to 90,961 in 1985. The reduction in night effort, estimated by peak platform counts from early morning observation periods, was most likely the prime reason for the reduction of night harvest at Lone Pine.

Chinook and steelhead harvest at Bridge of the Gods/Cascade Locks increased considerably. Effort, as measured by average active platforms, increased over 1985. This was likely a result of doubling of effort over 1985 levels.

**TABLE 1. 1986 SPRING CHINOOK PLATFORM FISHERY AT LONE PINE SITE, COLUMBIA RIVER**

WEEK	DATE	HRS. NON.	APP#	DAYTIME OBSERVED		DAYTIME CATCH RATE		DAYTIME ESTIMATED		NIGHT INTERVIEW CATCH			ESTIMATED WEEKLY HARVEST							
				MRS.	CHIN	STND	CHIN	STND	CHIN	STND	* PP	CHIN	STND	CHIN	STND	CHIN	STND			
1	416	6	3	9	0	0	0.000	0.000	0	0	3	0	0	0	0	0	0	0	0	0
	419	6	2.5	16	0	0	0.000	0.000	0	0	5	0	0	0	0	0	0	0	0	0
2	422	6	5	16	0	0	0.000	0.000	0	0	5	0	0	0	0	0	0	0	0	0
3	501	10	7.9	56	4	1	0.071	0.018	7	2	11	4	0	69	14	20	0	77	16	
	504	6	5.3	24	1	1	0.042	0.042	3	3	9	2	0	35	21	23	2	50	23	
4	506	7	5.7	19	1	0	0.053	0.000	4	0	9	8	1							
	508	11	5.9	34	4	3	0.118	0.088	8	6	9	0	0							
5	512	6	0.6	26	2	0	0.077	0.000	8	0	8	0	0	44	5	27	7	82	12	
	513	4	9	18	1	0	0.056	0.000	6	0	9	0	0							
	515	12	6.4	32	2	1	0.063	0.031	5	2	7	8	3							
6	518	6	6	24	2	2	0.083	0.083	6	6	7	0	0	14	26	2	5	16	32	
	520	6	6	16	0	1	0.000	0.063	0	5	5	0	0							
7	522	10	6	36	1	1	0.028	0.028	2	2	6	0	0							
	524	6	3	18	0	1	0.000	0.056	0	2	3	1	3							
8	528	10	2.7	22	1	2	0.045	0.091	1	3	5	2	2	4	16	7	14	11	28	
	531	10	2	20	0	1	0.000	0.050	0	1	2	0	2							
9	604	10	2	20	0	1	0.000	0.050	0	1	2	1	1	0	7	4	7	4	14	
	607	10	2.4	26	0	1	0.000	0.038	0	1	3	0	1							
TOTAL		142		432										146	87	101	36	247	123	
AVERAGE			4.97							1.00										

\*APP - AVERAGE ACTIVE PLATFORM/ OBSERVATION PERIOD  
 \*PP - Feet platform count, estimated from early morning observation period.

**TABLE 2. 1985 SPRING CHINOOK PLATFORM FISHERY AT LONE PINE SITE, COLUMBIA RIVER**

WEEK	DATE	MPS. HRS.	AMP*	DAYTIME PLAT. OBSERVED		DAYTIME CATCH RATE		DAYTIME ESTIMATED		NIGHT INTERVIEW CATCH			ESTIMATED WEEKLY HARVEST						
				HRS.	CHIN	STHD	CHIN	STHD	CHIN	STHD	PP	CHIN	STHD	CHIN	STHD	CHIN	STHD		
1	409	4	0.7	20	0	0	0.000	0.000	0	0	2	2	0	7	11	25	14	32	25
	413	10	5	35	1	2	0.029	0.037	2	3	7	5	4						
2	414	9	6.7	56	2	1	0.036	0.010	3	1	8	6	3	42	2	84	12	126	14
	416	10	5.0	45	5	0	0.111	0.000	8	0	10	8	0						
	418	10	7.3	50	4	0	0.080	0.000	7	0	9	22	2						
3	421	12	9.1	76	12	1	0.158	0.013	17	1	10	27	0	44	9	128	7	173	16
	423	10	2.8	27	1	1	0.037	0.037	1	1	5	16	1						
	425	12	4.7	52	1	2	0.019	0.038	1	2	8	12	2						
4	428	10	5.5	26	0	0	0.000	0.000	0	0	7	13	3	0	7	77	14	77	21
	501	6	6.5	29	0	0	0.000	0.000	0	0	14	19	1						
	503	11	6.6	31	0	1	0.000	0.032	0	3	8	1	2						
5	505	10	4.5	22	2	0	0.091	0.000	5	0	10	1	5	25	8	14	25	39	25
	509	10	7.5	46	1	0	0.022	0.000	2	0	15	3	2						
6	514	8	5.7	24	0	0	0.000	0.000	0	0	7	3	6	5	5	12	14	17	19
	516	6	4	24	0	0	0.000	0.000	0	0	8	2	0						
	517	6	4	20	1	1	0.050	0.050	2	2	9	0	0						
7	518	6	4	20	0	1	0.000	0.050	0	2	3	4	2	7	5	9	7	16	12
	524	5	3	12	0	0	0.000	0.000	0	0	5	0	0						
	525	6	4.5	17	1	0	0.029	0.000	3	0	7	0	1						
8	528	6	3	18	2	1	0.111	0.056	4	2	3	9	1	28	16	0	7	28	21
	602	6	2.5	15	0	3	0.000	0.200	0	6	5	0	3	0	20	0	26	0	54
9	603	6	5.5	30	0	0	0.000	0.000	0	0	6	0	12						
	606	6	4.5	27	0	4	0.000	0.140	0	8	6	0	0						
	607	6	4	24	0	1	0.000	0.042	0	2	6	0	0						
TOTAL		191		746									158	81	349	125	507	206	
AVERAGE			4.89							7.42									

\*AMP - AVERAGE ACTIVE PLATFORMS/ OBSERVATION PERIOD

\*\*PP - Peak platform count, estimated from early morning observation period.

**TABLE 3. 1986 SPRING CHINOOK PLATFORM FISHERY AT BRIDGE OF THE GODS/CASCADE LOCKS SITES, COLUMBIA RIVER**

WEEK	DATE	HRS. NON.	AAP*	DAYTIME PLAT. OBSERVED		DAYTIME CATCH RATE		DAYTIME ESTIMATED		ESTIMATED WEEKLY TOTAL		
				HRS.	CHIN	STHD	CHIN	STHD	CHIN	STHD	CHIN	STHD
1	415	8	8	20	0	3	0.000	0.250	0	24	30	189
	417	8	5	14	1	7	0.071	0.500	4	30		
	419	8	6	16	2	6	0.125	0.375	9	27		
2	421	8	5	18	0	3	0.000	0.167	0	10	42	217
	422	10	5	22	0	3	0.000	0.136	0	8		
	424	8	7	18	0	5	0.000	0.278	0	23		
	425	8	8	16	1	6	0.063	0.375	6	34		
	426	8	8	16	4	13	0.250	0.813	24	78		
3	428	8	5	14	0	3	0.000	0.214	0	13	0	77
	503	8	3	12	0	3	0.000	0.250	0	9		
4	508	8	3	24	0	0	0.000	0.000	0	0	0	0
	510	8	3	24	0	0	0.000	0.000	0	0		
5	512	8	2	16	0	0	0.000	0.000	0	0	0	75
	515	8	3	24	0	7	0.000	0.292	0	11		
	517	8	4	16	0	7	0.000	0.438	0	21		
6	518	8	4	16	0	6	0.000	0.375	0	18	70	133
	522	8	5	20	0	13	0.000	0.650	0	39		
	524	8	4	16	10	0	0.625	0.000	30	0		
7	528	10	5.3	26	0	14	0.000	0.538	0	34	0	256
	531	10	5	26	0	17	0.000	0.654	0	39		
8	604	6	4	14	0	7	0.000	0.500	0	24	0	648
	607	10	15	28	0	25	0.000	0.893	0	161		
<b>TOTAL</b>		182		414						142	1594	
<b>AVERAGE</b>			5.33									

\*AAP - AVERAGE ACTIVE PLATFORM/ OBSERVATION PERIOD

**TABLE 4. 1985 SPRING CHINOOK PLATFORM FISHERY AT BRIDGE OF THE GODS/CASCADE LOCKS SITES, COLUMBIA RIVER**

WEEK	DATE	HRS. MON.	AAP*	DAYTIME OBSERVED		DAYTIME CATCH RATE		DAYTIME ESTIMATED		ESTIMATED WEEKLY HARVEST TOTAL		
				HRS.	CHIN	STHD	CHIN	STHD	CHIN	STHD	CHIN	STHD
1	409	2	1.3	2	0	1	0.000	0.500	0.00	8.00	0	35
	411	4.5	1.4	10.1	0	1	0.000	0.099	0.00	2.00		
2	414	4.8	6.8	33.3	0	0	0.000	0.000	0.00	0.00	0	30
	416	5.3	4	11.3	0	0	0.000	0.000	0.00	0.00		
	418	7	2.2	10	0	5	0.000	0.500	0.00	13.00		
3	421	11.5	6.4	73	0	11	0.000	0.151	0.00	12.00	46	134
	423	6.8	4.5	13	0	4	0.000	0.308	0.00	17.00		
	425	12	3	12	3	8	0.250	0.667	9.00	24.00		
	426	10	3.8	14	1	3	0.071	0.214	3.00	10.00		
	427	10	6	28	8	13	0.286	0.444	21.00	33.00		
4	428	4.5	6	18	0	3	0.000	0.167	0.00	12.00	14	103
	501	5	1.7	5	0	5	0.000	1.000	0.00	20.00		
	504	12	7	42	3	6	0.071	0.143	6.00	12.00		
5	505	8	7.8	54	0	4	0.000	0.074	0.00	7.00	32	107
	506	10	4	24	1	10	0.042	0.417	2.00	20.00		
	507	5.5	3	5.5	0	2	0.000	0.344	0.00	13.00		
	509	12	5.6	24	7	13	0.292	0.542	20.00	36.00		
	510	10	2	14	2	5	0.143	0.357	3.00	9.00		
511	6.5	4	19.5	1	3	0.051	0.154	2.00	7.00			
6	515	7	2	12	0	5	0.000	0.417	0.00	10.00	0	70
7	519	6	2	12	0	9	0.000	0.750	0.00	18.00	7	112
	524	6	2	12	1	7	0.083	0.583	2.00	14.00		
8	528	6	6	20	0	15	0.000	0.750	0.00	54.00	0	276
	529	6	5	14	0	18	0.000	1.286	0.00	77.00		
	530	6	4	14	0	12	0.000	0.857	0.00	41.00		
	531	6	2	6	0	2	0.000	0.333	0.00	8.00		
601	6	4	14	0	5	0.000	0.357	0.00	17.00			
9	602-608	12								0	166	
TOTAL		196		517						99	1034	
AVERAGE			3.98									

\*AAP - AVERAGE ACTIVE PLATFORM/ OBSERVATION PERIOD  
 †2 Interpolated between weekly catches.

**TABLE 5. AVERAGE MONTHLY PROJECT DISCHARGE  
MEASURED IN KCFS**

	BONNEVILLE		THE DALLES	
	<u>APRIL</u>	<u>MAY</u>	<u>APRIL</u>	<u>MAY</u>
1975	216.8	310.4	212.5	306.3
1976	270.9	350.9	260.0	345.9
1977	111.5	140.8	104.3	134.8
1978	242.6	268.6	232.5	252.6
1979	188.9	249.1	178.1	241.7
1980	167.3	262.2	152.8	253.7
1981	170.8	245.6	161.2	239.5
1982	294.2	347.4	275.2	336.9
1983	283.4	320.5	263.0	306.0
1984	289.2	326.4	276.6	310.4
1985	219.0	246.1	206.2	232.9
1986	269.7	268.0	258.6	260.9
'75-'83 AVE.	223.6	282.2	211.6	272.8

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The Columbia River Inter-Tribal Fish Commission (CRITFC) is the coordinating fisheries agency for the Nez Perce, Umatilla, Warm Springs, and Yakima tribes—four Columbia River tribes that reserved fishing rights in 1855 treaties with the United States government.

Since time immemorial, Indian people have lived and fished in the Columbia River's vast basin, and salmon and steelhead have always been central to the culture and lifestyles of these Native Americans. Anadromous fish, in addition to being the mainstay of the diet, have great religious significance. Salmon and steelhead, which in prehistoric times were dried for trading to other tribes, have also been of great economic importance.

Court decisions in the 1960s and 1970s reaffirmed not only the tribes' right to fish, but also their right to co-manage this once plentiful renewable resource. To fulfill their responsibilities as co-managers, the Nez Perce, Umatilla, Warm Springs, and Yakima tribes formed CRITFC in 1977 to be these tribes' coordinating technical arm on fisheries issues. CRITFC, through its staff of biologists, policy analysts, law enforcement officers, and other specialists, works closely with state and federal agencies, citizen groups, and other tribes to help restore the Columbia Basin's salmon and steelhead runs.

For a free subscription to *CRITFC News*, the commission's newsletter, and information on other publications, please write to the Public Information Office, Columbia River Inter-Tribal Fish Commission, 975 S.E. Sandy, #202, Portland, OR 97214.