

DEPARTMENT OF PARKS AND RECREATION

North Coast Redwoods District
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November 1, 1993

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FROM DFG, EUR.

Deborah L. Harmon, Chief
Environmental Planning Branch
District 1, Calif. Dept. of Transportation
P.O. Box 3700
Eureka, CA 95502-3700

Dear Deborah: Re: Prairie Creek Mitigation

On October 28, 1993 representatives of the North Coast Redwoods District attended a meeting held by the California Department of Transportation. The purpose of this meeting was to discuss the latest findings of research being conducted by Redwood National Park scientists on the impacts and persistence of fine sediment in the Prairie Creek watershed. A representative of the Pacific Coast Fish, Wildlife & Wetlands Restoration Association also presented a report on their fish trapping and rearing operations on Prairie Creek during the 1992/93 fiscal year.

As you know, both of these projects are part of the ongoing mitigation resulting from CalTrans' sediment spill into the Prairie Creek watershed in October of 1989.

Based on the information presented, the extent of the damage to Prairie Creek and its tributaries is still not fully known. Data collected on salmonoid habitat and populations indicate that the upper reaches of Prairie Creek (above Boyes Creek) may be improving, however, the lower reaches (between Boyes Creek and Wolf Creek) may be getting worse. Egg survival rates of salmonoids improved on the main stem of Prairie Creek between Boyes Creek and Brown Creek while there was virtually no egg survival between Boyes Creek and Wolf Creek. Although there was an increase in wild chinook trapped, the downstream migrant surveys for salmonoids was inconclusive because spring rains washed out the trap during significant portions of the migration period. Also, the data collected on spawning gravel permeability and dissolved oxygen concentrations was inconsistent with egg survival data collected in the same location.

The monitoring of sediment transportation and deposition indicated that larger volumes of sediment was recorded throughout the entire study area in 1992/93. This

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most likely resulted from the "normal" level of rainfall received last year. Although the level of suspended sediment increase was substantial, there appeared to be no major movement of fines out of the system. Even though last year we received the first normal level of rainfall in the last six years, there were no significant storm events which could have generated the flows necessary to scour and transport intragravels in Prairie Creek's tributaries and mainstem.

At the conclusion of this meeting Mark Moore from CalTrans expressed his Department's wishes to reduce or discontinue the level of research on Prairie Creek and eliminate the fish trapping and rearing operation.

The North Coast Redwoods District would like to see the research being performed by Redwood National Park scientists continued at the same level as the 1992/93 fiscal year. The fish trapping and rearing activities should also be continued at the 1992/93 level. We agree the egg survival research should no longer be continued but the monitoring of intragravel movement should be expanded. The downstream fish migration monitoring should also be improved through the use of a more efficient trap.

The purpose of the research being performed by Redwood National Park scientists was to determine what damage, if any, occurred to the Prairie Creek watershed as a result of the October, 1989 sediment spill. Once the extent of the damage is determined a prescription for mitigation to restore Prairie Creek's watershed can be developed and implemented. The purpose of the trapping and rearing program was to sustain a viable salmonoid population in Prairie Creek until it is determined that the habitat is restored to its pre-1989 condition.

Obviously, the information generated to date is not sufficient to quantify the damage that occurred to Prairie Creek, develop a prescription for full restoration or determine that salmonoids can naturally sustain their pre-1989 population levels.

The North Coast Redwoods District has been very happy with the co-operation we have received from CalTrans on mitigating the 1989 sediment spill. Unfortunately, damage to pristine ecosystems is not easily assessed or corrected. It is important that whatever action taken is based on sound, scientific information. The better the information, the easier it will be for all of us to agree on the proper course of action.

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Because the 1993/94 rainfall and spawning season is rapidly approaching, this matter needs to be resolved quickly. Please let me know as soon as possible what level of research and trapping/rearing your Department intends on conducting this year.

Sincerely,

Handwritten signature of William R. Beat in cursive script.

WILLIAM R. BEAT
District Superintendent

cc: Benjamin D. Kor, Reg. Water Quality Control Board
Dave McCleod, F&G ✓
Carolyn Meyer, Redwood National Park

Larry Preston

The coho collected displaced 63 milliliters of water, biomass being 63 grams. The estimated 100 coho would weigh 378 grams. Coho numbers averaged 0.83 fish/m², with a biomass of 3.13 g/m² based on the estimate.

The total number of steelhead trout captured in three passes was 29 (15,11,3). The total estimated population was 32. With a level of confidence of at least 95%, the total population was no less than 29 and no greater than 39.

The 90 steelhead collected displaced 80 milliliters of water, biomass being 80 grams. The estimated 92 steelhead would then weigh 88.3 grams. Steelhead numbers averaged 0.76 fish/m², with a biomass of 0.73g/m² based on the estimate.

Summary

	<u>Est. # Coho</u>	<u>Surface area(m²)</u>	<u>Total Biomass(g)</u>	<u>Density (fish/m²)</u>	<u>Unit Biomass(g/m²)</u>
1987	38	52.7	93.1	0.72	1.77
1988	19	50.6	52.3	0.38	1.03
1989	19	48.8	48	0.39	0.98
1990	24	61.3	61.6	0.39	1.01
1991	0	54.0	--	--	--
1992	11	48.8	32	0.23	0.66
1993	6	58.2	25	0.10	0.43
1994	90	111.4	183.1	0.81	1.64
1995	22	151.6	75	0.15	0.49
1996	33	110.5	130	0.30	1.18
1997	120*	120.8	88.3	0.83	3.13

	<u>Est. # SH</u>	<u>Surface area(m²)</u>	<u>Total Biomass(g)</u>	<u>Density (fish/m²)</u>	<u>Unit Biomass(g/m²)</u>	<u>BOTH sp.</u>
1987	73	52.7	153.5	1.39	2.91	4.68
1988	57	50.6	127	1.13	2.51	3.54
1989	69	48.8	101	1.41	2.07	3.05
1990	28	61.3	45.5	0.46	0.74	1.75
1991	112	54.0	184	2.07	3.41	3.41
1992	50	48.8	82	1.02	1.68	2.34
1993	18	58.2	74	0.31	1.27	1.70
1994	37	111.4	70	0.33	0.63	2.27
1995	104	151.6	148.2	0.69	0.98	1.47
1996	92	110.5	229	0.83	2.07	3.25
1997	32	120.8	88.3	0.76	0.73	3.86

*Because of the non-dependent removal pattern, results from computer based model caution the population estimate is not reliable.

Written by: Larry Preston
Associate Fishery Biologist

cc: Barnum Timber Company