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COOPERATIVE ARTIFICIAL PROPAGATION PROGRAMS
FOR SALMON AND STEELHEAD, 1995-1996

by

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Inland Fisheries
Administrative Report No. 98-4

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ABSTRACT

Fifteen cooperative fish rearing and planting programs for salmon and steelhead were active from July 1, 1995 through June 30, 1996. For all programs, 134,213 steelhead trout, (Oncorhynchus mykiss), 7,742,577 chinook salmon, (O. tshawytscha), and 25,075 coho salmon (O. kisutch) were planted.

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INTRODUCTION

The cooperative fish rearing and planting program was started in 1973 in an attempt to restore declining chinook salmon, coho salmon, and steelhead trout populations. The term "cooperative" program designates programs that are operated by nonprofit organizations, corporations, counties, and individuals in cooperation with the State of California, Department of Fish and Game (Department). This report describes the activities of 15 cooperative programs from July 1, 1995 through June 30, 1996. State funding and other funding received by the cooperative programs are reported in Appendix 1. State funding was provided by the Commercial Salmon Trollers Enhancement and Restoration Program (Salmon Stamp). Programs in the process of receiving or planting fish past June 30, 1996 were included in this report to complete the data for the season.

COOPERATORS

Central Coast Salmon Enhancement, Incorporated

Central Coast Salmon Enhancement, Incorporated is a nonprofit organization primarily staffed by volunteers. This organization began operating in 1984. Their goal is to enhance the salmon fishery of central California through the introduction of hatchery-reared fish using ocean rearing net pens.

Seventy-two thousand four hundred chinook salmon smolts were obtained from Feather River Hatchery (Appendix 3). The fish were received into a plastic lined ocean net pen, acclimated to saltwater over a six-day period, then the liner was removed and the fish were reared for three months in floating net-pens anchored in Port San Luis Harbor. Sixty-four thousand nine hundred-seventy three salmon were released directly into the Harbor when they reached a targeted size ranging from 18 to 8 fish per pound. These fish were coded-wire tagged (CWT) with code 06-29-34 (Appendix 2). This completes the third year of the three-year study to monitor the net-pen operation and fishery success.

Fishery Foundation of California

The Fishery Foundation of California is comprised of citizens whose goals are to increase the survival of chinook salmon planted from Department hatcheries into San Pablo Bay and the Carquinez Strait, near Crockett, CA. This effort does not involve rearing fish. Chinook salmon smolts were received from

Feather River, Nimbus and Mokelumne hatcheries and placed directly into mobile floating net-pens. The net-pens afford the salmon protection from predators while they are acclimating to saltwater prior to release. This planting procedure for chinook salmon began in 1993.

The project acclimated 6,938,882 fish received from the three Department hatcheries. Of this total, 150,087 chinook salmon were planted directly into San Pablo Bay with CWT code 06-29-37, and another group of 149,445 chinook salmon were placed into the mobile net-pens. This was the third year of a three year study designed to test the difference in survival of salmon planted directly into the Bay and of salmon placed in the protected environment using floating net-pens. Planting began 5 June 1996 and ended 26 July 1996 (Appendix 2).

The net pens were towed, on an outgoing tide, for two to six hours into the San Pablo Bay and released one-half mile south of Buoy Number 14. CWT recoveries from ocean fisheries, in-river fisheries, and hatcheries will allow estimation of relative survival.

Gualala River Steelhead Project

Gualala River Steelhead Project is a nonprofit program primarily staffed by volunteers. Fish are rescued from the Gualala River system during the warmer, low-flow, summer months and reared in two doughboy-type pools located on Doty Creek, tributary to Gualala River (Appendix 3). Fish are released after stream conditions improve. The program has operated since 1981, with rescue rearing operations since 1992.

On 20 May 1995 through 30 June 1995, 4,300 steelhead were rescued from Dry Creek, Robinson Creek, and Maganns Creek, tributaries of the North Fork Gualala River. These fish ranged in size from 15 to 30 fish-per-pound. The juvenile steelhead were reared until 6 January 1996 when 3,500 fish were planted in N.F. Gualala River (Appendix 2).

Humboldt Fish Action Council

Humboldt Fish Action Council is a local group of citizens concerned over the declining chinook salmon populations in the Humboldt Bay area. The Council operates the main trapping and spawning facility on Freshwater Creek, northeast of Eureka, CA. This facility includes a weir, a trap, two tomato-tub holding tanks, a spawning and storage shed, and a trailer to house personnel. The rearing facility is located 2.4 km (1.5 mi) upstream from the trapping facility, on McCready Gulch. The rearing facility has two vertical stack incubators, four rearing

troughs, and one fiberglass circular rearing pool. The project has been in operation since 1969.

Eighteen chinook salmon were trapped. Eleven fish were released, and 18,639 eggs were taken from five females. Five hundred thirty-six coho salmon and thirty-three steelhead were trapped. All coho salmon and steelhead were released, and no eggs were taken (Appendix 4).

The chinook salmon were raised to fingerling size, and 11,919 fingerlings were released into newly restored habitat areas in Freshwater Creek on 29 May 1996 and 19 June 1996 (Appendix 2). All chinook fingerlings were marked by partial removal of the right maxilla. Two hundred fifty chinook salmon eggs were transferred to local schools for classroom study.

Louisiana Pacific Corporation

The Louisiana Pacific Corporation rearing facility is totally funded and operated by the Louisiana Pacific Corporation. The facility is located on the Russian River near Ukiah, CA, and consists of three doughboy-type pools. Louisiana Pacific Corporation decided this would be the final season to operate the facility. The facility has been in operation since 1991.

This facility received 24,000 Russian River steelhead from Warm Springs Hatchery 12 September 1995 (Appendix 3). Eight thousand fifty fish were released 1 January 1996, and eleven thousand four hundred ten fish were released 2 February 1996 into the Russian River near Ukiah (Appendix 2).

Mattole Watershed Salmon Support Group

Mattole Watershed Salmon Support Group is a nonprofit group comprised of local citizens whose goal is to restore declining chinook and coho salmon populations within the Mattole River watershed. The Group traps fish from the mainstem Mattole River at Ettersburg, CA and the Mattole River headwaters near Whitethorn, CA. Eggs are transported to four small rearing facilities at various locations throughout the watershed. The group has been in operation since 1980.

Thirty chinook salmon were trapped. Twenty-one fish were released and 35,614 eggs were taken from nine females. Fifteen coho salmon were trapped. Twelve fish were released, and 7,906 eggs were taken from three females. Fifteen steelhead were trapped. All steelhead were released and no eggs were taken (Appendix 4).

Twenty thousand four hundred sixty-one chinook salmon and four

thousand six hundred eighty coho salmon were marked by removing the left maxilla and planted throughout the Mattole River watershed (Appendix 2). Five area schools received eyed coho eggs for classroom study.

The project experienced some chinook alevin mortalities when the flow to the hatchbox, located on Squaw Creek, unexplainably decreased. Mortalities were calculated at 70%. A 13% coho egg mortality was experienced during the hatching stage.

Monterey Bay Salmon And Trout Project

Monterey Bay Salmon and Trout Project is a nonprofit organization primarily staffed by volunteers. This project traps, spawns, incubates, and rears steelhead trout and coho salmon. The primary incubation and rearing facility is located at Kingfisher Flat, on Big Creek near Davenport, CA. The eggs are incubated in vertical stack incubators, fry are reared in troughs until reaching 300 fish-per-pound, and then the fingerlings are transferred to an earthen pond. Three satellite facilities located throughout the San Lorenzo River watershed are also used to grow-out steelhead prior to planting. The project also receives chinook salmon fingerlings from Feather River Hatchery. The chinook salmon are reared in floating net-pens in Monterey Bay and released into the Bay. This project has been propagating fish since 1976.

Forty-two coho salmon were trapped in Scotts Creek. Sixteen fish were released after 42,140 eggs were taken from 19 females. Twelve steelhead were trapped from Scotts Creek. All were released after 31,080 eggs were taken from six females. Thirty-three steelhead were trapped from the San Lorenzo River. Thirty fish were released, and 92,180 eggs were taken from 17 females (Appendix 4).

Ten thousand one hundred forty-three Scotts Creek steelhead, and twenty-eight thousand eight hundred San Lorenzo River steelhead were planted by this project. All steelhead planted were marked with an adipose fin-clip. One thousand two hundred nine Scotts Creek coho were also planted. The coho were marked with a right ventral fin-clip (Appendix 2).

Bacterial Coldwater Disease (*Flexibacter psychrophilus*) caused approximately 50% loss of steelhead fry from both San Lorenzo River and Scotts Creek stock. The project is working with Department pathologists to control the bacterial coldwater disease in the steelhead and bacterial kidney disease (*Renibacterium salmoninarum*) present in the coho salmon. Under the pathologist's supervision, the hatchery manager is injecting antibiotics into the female broodstock to aid in the prevention of bacterial kidney disease found in the coho adult broodstock, and the bacterial coldwater disease found present in steelhead.

One thousand six hundred fifty Scotts Creek eyed steelhead eggs were distributed to 55 area schools, and one thousand four hundred seventy San Lorenzo River eyed steelhead eggs were also distributed to 49 area schools for classroom incubation.

The Monterey Bay Salmon and Trout Project also received two groups of chinook salmon from the Feather River Hatchery (Appendix 3). These fish were reared in floating ocean net-pens in Monterey Bay at Moss Landing Harbor and Monterey City Harbor Marina. Sixty-one thousand eight hundred twelve chinook salmon with CWT code 06-29-35 were received into ocean net-pens at Monterey City Harbor Marina. Sixty-two thousand seven hundred seventy-one chinook salmon with CWT code 06-29-36 were received into ocean net-pens at Moss Landing Harbor. The fish were acclimated from freshwater to saltwater at each site for three days. After acclimation, the fish were reared for an additional 12 days, and then released (Appendix 2). Each group of fish were CWTed and used in a study to estimate the contribution to sport and commercial fisheries. This was the third year of the three-year study.

Napa River Steelhead Group

Napa River Steelhead Group is a nonprofit organization comprised of concerned citizens whose goal is to restore the declining steelhead population in the Napa River. This group has been intermittently propagating fish since 1981.

The Napa River Steelhead Group received 7,650 steelhead trout from the Feather River Hatchery on 8 November 1995 (Appendix 3). The fish were reared in a concrete circular pool located on Conn Creek, tributary to Napa River, near the town of Oakville, CA.

Seven thousand six hundred fifty steelhead were released into the Napa River and tributaries: Sulphur Creek, Ritchie Creek, Redwood Creek, and Dry Creek (Appendix 2).

Pacific Coast Federation of Fishermen's Associations (Eel River Project)

Pacific Coast Federation of Fishermen's Associations Eel River Project is a nonprofit organization. The group is comprised of concerned individuals with a goal to help restore the declining populations of salmon in the South Fork Eel River. The project operates a trap on Redwood Creek near Redway, CA. Rearing ponds are located on Marshall Creek approximately 1.6 km (1 mi) upstream of the trap site. This program has operated since 1984.

Thirty-two chinook salmon were trapped. Twenty-two fish were released after 26,580 eggs were taken from five females. Seven

coho salmon were trapped. Two fish were released after 7,505 eggs were taken from three females. Ten steelhead were trapped and all were released without being spawned (Appendix 4).

Twenty thousand five hundred fourteen chinook salmon and three thousand nine hundred ninety-four coho salmon were planted in May and June of 1995. All fish received a right ventral fin-clip (Appendix 2).

Pacific Lumber Company

Pacific Lumber Company operates a trapping and rearing facility and three satellite rearing and imprinting facilities that are entirely funded and staffed by the Pacific Lumber Company. Chinook salmon and steelhead trout are reared for the Van Duzen watershed. These facilities have been in operation since 1976.

The Yager Creek trapping and rearing facility is located near the confluence of Cooper Mill Creek and Yager Creek, both tributaries to the Van Duzen River. This facility has a concrete raceway-type rearing pond, rearing troughs, a fiberglass circular pond, a weir, and a fish ladder.

Two satellite rearing and imprinting facilities, consisting of fiberglass circular tanks, are located on the South Fork Yager Creek and Corner Creek, both tributaries to Yager Creek. The third satellite facility is located at Scotia, CA, just west of Highway 101 and consists of a newly remodeled concrete pond which uses a recirculating water supply. Steelhead trout are reared at this facility primarily during the height of the tourist season as an attraction for visitors touring the lumber mill. These fish are returned to the Yager Creek rearing facility for imprinting prior to release.

Eighty-five chinook salmon were trapped. Forty-eight fish were released after 72,290 eggs were taken from 17 females. Fourteen steelhead were trapped. All fish were released after 17,570 eggs were taken from 4 females. One male coho salmon was trapped and released (Appendix 4).

Forty-eight thousand two hundred forty chinook salmon were released into South Fork Yager, Lawrence, and Cooper Mill creeks. Six thousand one hundred steelhead were released into South Fork Yager, and Lawrence Creeks. All fish were marked with a left ventral fin-clip (Appendix 2).

Rowdy Creek Fish Hatchery

Rowdy Creek Fish Hatchery was built and is operated by the Kiwanis Club of Smith River, a nonprofit organization. This

facility rears salmon and steelhead trout to enhance sport and commercial fisheries in the Smith River and nearby ocean waters. This facility has been in continuous operation since 1968.

The hatchery is located near Highway 101 at the confluence of Rowdy and Dominie Creeks, tributaries to the Smith River. The facility has Burroughs-type concrete ponds, concrete troughs, metal circular tanks, and circular fiberglass fingerling tanks. Eggs are incubated in vertical flow incubators and hatch jars. Rowdy Creek Fish Hatchery releases fingerling and yearling size chinook salmon. Coho salmon and steelhead are all released as yearlings.

Four hundred five chinook salmon were trapped. One hundred fifty-four fish were released after 453,800 eggs were taken from 120 females. One hundred thirty-five coho salmon were trapped. Thirty-nine fish were released after 51,500 eggs were taken from 25 females. One thousand two hundred forty-two steelhead were trapped. One thousand one hundred twenty-one fish were released after 190,700 eggs were taken from 49 females (Appendix 4). Four hundred fifty steelhead eggs were provided to classroom incubators.

Of the 405,317 chinook salmon released into Rowdy Creek, 92,332 were marked with a left maxillary fin-clip. Fifty-eight thousand five hundred sixty steelhead were released into the Smith River. All were marked with an adipose and left maxillary fin-clip. Eleven thousand six hundred eighty-two coho salmon were released into Rowdy Creek, 6,600 were marked with a left maxillary fin-clip (Appendix 2).

Salmon Restoration Association of California
(Hollow Tree Creek)

The Salmon Restoration Association of California is a nonprofit organization, comprised of commercial fishermen and concerned citizens. Chinook salmon are trapped, spawned, reared, and released into the Hollow Tree Creek, tributary to the South Fork Eel River. Fish have been propagated at this facility since 1979.

The Hollow Tree Creek facility is located 3.2 km (2 mi) southeast of Hales Grove, CA. The facility consists of eight circular tanks, ten troughs and eight vertical flow egg incubators. A small cabin provides the housing quarters and workshop. The facility is continuously staffed during the trapping and rearing season.

One hundred fifty-five chinook salmon were trapped. One hundred twenty-eight fish were released after 66,400 eggs were taken from 17 females. One hundred nineteen coho salmon and forty-eight

steelhead were trapped. All fish were released, and no eggs were taken (Appendix 4).

Sixty-one thousand chinook salmon were released on 17 May 1996 into Hollow Tree Creek (Appendix 2).

Salmon Restoration Association of California
(Ten Mile River)

The Salmon Restoration Association of California is a nonprofit organization, comprised of commercial fishermen and concerned citizens. Ten Mile River Hatchery is located 9.6 km (6 mi) north of Fort Bragg, CA. Adult coho salmon are trapped, while adult steelhead are taken by hook-and-line. Fish have been propagated at this facility since 1975.

This season the group built hatch jars for coho salmon egg incubation as a method of isolation for bacterial kidney disease, a disease found in the coho fingerlings at the facility last year. Steelhead eggs were incubated in vertical flow incubators.

Thirty-two coho salmon were trapped. Twenty-five fish were released after 15,337 eggs were taken from seven females. Ten steelhead were caught by hook-and-line method. All fish were released after 23,000 eggs were taken from five females. (Appendix 4).

Three thousand five hundred ten coho salmon were planted into the South Fork Ten Mile River and Big Bear Creek, tributary to Middle Fork Ten Mile River, all tributaries to Ten Mile River (Appendix 2). The steelhead will be reared for release in the spring of 1997.

A storm on 18 January 1996 caused the intake water supply siltation collection box to become plugged with silt and debris. The hatch jars plugged with debris particles causing coho salmon egg mortality. The coho salmon eggs were moved to incubator trays which were set up individually as isolation trays. A new silt collection box and sand filter are scheduled to be installed to prevent this from occurring again. No steelhead eggs were on hand at the time of the incident.

Tyee Club of San Francisco

The Tyee Club of San Francisco is a nonprofit angling club with interests in enhancing the sport and commercial fisheries in the San Francisco Bay and nearby ocean waters. Their facility is located at the Center for Environmental and Ecological Studies, on San Francisco Bay, near Tiburon, CA. The facility pen-rears

chinook salmon in saltwater, and has been rearing fish since 1982.

Forty-nine thousand chinook salmon from Feather River Hatchery were transferred to the floating saltwater net pens in San Francisco Bay (Appendix 3). Twenty-three thousand chinook salmon were released on 20 July 1996. The remaining twenty-five thousand one hundred chinook salmon were released on 5 October 1996 (Appendix 2).

The early release in July reduced the rearing density allowing the remaining fish more room in the net pens to grow.

United Anglers
(Casa Grande High School)

The United Anglers program at Casa Grande High School is made up of 24 students, a teacher, and numerous parents and volunteers. A state-of-the-art hatchery is located on the school grounds and provides aquaculture education for the students. The hatchery operates on a recirculating water system. Well water is pumped and treated through an ozone system. Four raceways, two newly installed rearing troughs, and four half-stack vertical incubators comprise the rearing facilities. The new hatchery is located in Petaluma, CA. The facility has been in operation since 1993.

Chinook salmon were hand seined from the nearby Petaluma River system. No steelhead were caught this year. River inventory suggested the steelhead populations were near river carrying capacities. The chinook salmon were reared at the facility and planted into San Francisco Bay.

Thirty-seven chinook salmon were trapped. Thirty-two thousand two hundred seventy-one eggs were taken from 19 females (Appendix 4).

Forty chinook salmon fingerlings were transferred to the Bodega Marine Laboratory for studies. Three thousand six hundred fifty-two chinook salmon were planted into San Francisco Bay near the Golden Gate Bridge north tower (Appendix 2).

An outbreak of Ich (*Ichthyophthirius multifiliis*), Costia (*Ichthyobodo necatrix*), and columnaris (*Flexibacter columnaris*) caused severe mortalities among the chinook salmon fry. The disease outbreak occurred when adult salmon were brought to the facility and held in the shared recirculating water supply of the eggs and fry.

Whale Rock Reservoir, which traps and rears landlocked steelhead trout from the Whale Rock Reservoir, was unable to trap fish this season. Major storms raised the reservoir level and rendered the Merwyn trap inoperable. Once the reservoir level receded, the steelhead trout spawning season had past.

SUMMARY

Seven of the 15 projects spawned 192 female chinook salmon producing 705,621 eggs. Three of the programs received 246,383 chinook salmon from Feather River Hatchery for rearing. Eleven programs reared and released 803,695 chinook salmon into State waters. Fish production amounts totaled 427,701 yearlings and 375,994 fingerlings. In a project by the Fishery Foundation of California involving the use of mobile net-pens, 6,938,882 chinook salmon were released into San Pablo Bay.

Seven projects spawned 57 female coho salmon producing 124,388 eggs. Five projects released 25,075 coho salmon into State waters. Fish production amounts totaled 16,401 yearlings and 8,675 fingerlings.

Eight projects spawned 96 female steelhead producing 354,530 eggs. One program received 24,000 steelhead from Warm Springs Hatchery, and another program received 7,650 steelhead from Feather River Hatchery for rearing. One program rescued 4,300 young-of-the-year steelhead. Seven projects released 134,213 steelhead into State waters. All steelhead released were yearling age class.

APPENDIX 1. Partial Funding for Salmon and Steelhead Cooperative Artificial Propagation Programs the 1995-96 Fiscal Year.

Program	Funding sources						
	Salmon Stamp	Fund Raisers	Membership	Grants	Merchandise	County Fines	DWR ²
Central Coast Salmon Enhancement	\$27,512	\$10,000				\$8,900	
Fishery Foundation Of California	\$50,697						\$50,649
Gualala River Steelhead Project							
Humboldt Fish Action Council	\$23,019						
Louisianan Pacific Corporation							
Mattole Salmon Group	\$30,000			\$3,228			
Monterey Bay Salmon and Trout Project	\$14,925	\$10,000	\$8,000	\$10,000			
Napa River Steelhead Group							
Pacific Coast Federation of Fishermen's Associations (Eel River Project)	\$6,000			\$6,000			
Pacific Lumber Company							
Rowdy Creek Fish Hatchery	\$30,000	\$32,000	\$5,000	\$23,000	\$1,500		
Salmon Restoration Association of California (Hollow Tree Creek)	\$14,561	\$10,000			\$4,561		
Salmon Restoration Association of California (Ten Mile River)	\$14,202	\$10,000			\$4,203		
Tyee Club of San Francisco		\$30,000					
United Anglers (Casa Grande High School)		\$5,000			\$2,000		
Totals	\$210,916	\$107,000	\$13,000	\$42,228	\$12,264	\$8,900	\$50,649

² Department of Water Resources

APPENDIX 2. Chinook Salmon, Steelhead, and Coho Salmon Planted During the 1995-1996 Season by Cooperative Artificial Propagation Programs.

Program	Source/ Brood Year	Planting Information			Location	CWT No. Or Mark
		Number Planted	Size (no./lb)	Date		
Chinook Salmon						
Central Coast Salmon Enhancement	Feather River /95	28,000	17.0	07-25-96	San Luis Harbor	06-29-34
		36,973	7.0	09-10-96	San Luis Harbor	06-29-34
Fishery Foundation of California	Feather River /95	384,400	56.0	06-05-96	San Pablo Bay	
	Mokelumne River /95	369,600	56.0	06-06-96	San Pablo Bay	
	Feather River /95	230,000	50.0	06-11-96	San Pablo Bay	
		128,800	56.0	06-13-96	San Pablo Bay	
	Nimbus Hatchery /95	101,000	50.5	06-17-96	San Pablo Bay	
	Feather River /95	24,000	20.0	06-17-96	San Pablo Bay	
	Nimbus Hatchery /95	101,000	50.5	06-17-96	San Pablo Bay	
	Feather River /95	271,000	40.0	06-19-96	San Pablo Bay	
		271,400	40.0	06-20-96	San Pablo Bay	
		184,000	40.0	06-21-96	San Pablo Bay	
	174,800	38.0	06-24-96	San Pablo Bay		
	Nimbus Hatchery /95	96,000	48.0	06-25-96	San Pablo Bay	

(Continued)

APPENDIX 2. Continued.

Program	Source/ Brood Year	Planting Information			Location	CWT No. Or Mark	
		Number Planted	Size (no./lb)	Date			
Chinook Salmon Continued							
Fishery Foundation of California	Feather River /95	170,200	37.0	06-25-96	San Pablo Bay		
	Nimbus Hatchery /95	100,000	50.0	06-25-96	San Pablo Bay		
	Feather River /95	96,600	42.0	06-26-96	San Pablo Bay		
			150,087	46.0	06-26-96	San Pablo Bay	06-29-37
			149,445	45.0	06-26-96	San Pablo Bay	06-29-38
			248,400	36.0	06-27-96	San Pablo Bay	
			414,000	46.0	07-01-96	San Pablo Bay	
			202,400	44.0	07-02-96	San Pablo Bay	
			248,400	36.0	07-03-96	San Pablo Bay	
			197,800	43.0	07-08-96	San Pablo Bay	
			276,000	40.0	07-09-96	San Pablo Bay	
			124,200	27.0	07-10-96	San Pablo Bay	
			282,900	41.0	07-11-96	San Pablo Bay	

(Continued)

APPENDIX 2. Continued.

Program	Source Brood Year	Planting Information				CWT No. Or Mark
		Number Planted	Size (no./lb)	Date	Location	
Chinook Salmon Continued						
Fishery Foundation of California	Feather River /95	248,400	36.0	07-12-96	San Pablo Bay	
		138,000	30.0	07-15-96	San Pablo Bay	
		62,100	27.0	07-17-96	San Pablo Bay	
		184,000	40.0	07-17-96	San Pablo Bay	
		184,000	40.0	07-18-96	San Pablo Bay	
		208,450	28.0	07-19-96	San Pablo Bay	
		195,600	27.0	07-22-96	San Pablo Bay	
		216,200	31.0	07-23-96	San Pablo Bay	
		176,400	27.0	07-24-96	San Pablo Bay	
		255,300	37.0	07-25-96	San Pablo Bay	
		74,000	37.0	07-26-96	San Pablo Bay	
Humboldt Fish Action Council	Freshwater Creek /95	6,089	134.0	05-29-96	Freshwater Creek	R. Max.
		5,830	97.0	06-19-96	Freshwater Creek	R. Max.

(Continued)

APPENDIX 2. Continued.

Program	Source/ Brood Year	Planting Information			Location	CWT No. Or Mark
		Number Planted	Size (no./lb)	Date		
Chinook Salmon Continued						
Mattole Salmon Group	Mattole River /95	8,254	191.5	05-16-96	Mattole River	R. Max.
		2,232	140.7	05-18-96	Squaw Creek	R. Max.
		5,825	11.8	11-20-96	S.F. Bear Creek	R. Max.
		4,150	17.1	11-25-96	Mattole River	R. Max.
Monterey Bay Salmon and Trout Project	Feather River /95	58,569	60.0	06-14-96	Monterey Bay Harbor	06-29-35
		60,950	45.0	07-03-96	Moss Landing Harbor	06-29-36
Pacific Coast Federation of Fishermen's Associations (Eel River Project)	Redwood Creek /95	20,514	114.0	05-20-96	Redwood Creek	R. Vent.
Pacific Lumber Company	Yager Creek /95	2,950	15.0	12-02-95	S.F. Yager Creek	L. Vent.
	Yager Creek /95	3,000	95.0	05-17-96	Cooper Mill Creek	L. Vent.
		22,790	95.0	05-17-96	Lawrence Creek	L. Vent.
		19,500	95.0	05-17-96	S.F. Yager Creek	L. Vent.
Rowdy Creek Fish Hatchery	Rowdy Creek /94	23,040	12.0	10-11-95	Rowdy Creek	
		58,393	10.8	11-09-95	Rowdy Creek	

(Continued)

APPENDIX 2. Continued

Program	Source Brood Year	Planting Information			Location	CWT No. Or Mark
		Number Planted	Size (no./lb)	Date		
Chinook Salmon Continued						
Rowdy Creek Fish Hatchery	Rowdy Creek /94	77,590	12.9	11-11-95	Rowdy Creek	L. Max.
	Rowdy Creek /95	99,400	100.0	05-22-96	Rowdy Creek	
		63,336	54.6	06-15-96	Rowdy Creek	
		14,742	54.6	06-15-96	Rowdy Creek	L. Max.
		68,816	73.6	06-19-96	Smith River	
Salmon Restoration Association of California	Hollow Tree Creek/95	61,000	120.0	05-17-96	Hollow Tree Creek	
Tye Club of San Francisco	Feather River /95	23,000	13.0	07-20-96	San Francisco Bay	
		25,100	4.0	10-05-96	San Francisco Bay	
United Anglers (Casa Grande High School)	Petaluma River/95	3,652	35.0	06-06-96	San Francisco Bay	
Total Chinook:		7,742,577				

APPENDIX 2. Continued.

Program	Source/ Brood Year	Planting Information					CWT No. Or Mark
		Number Planted	Size (no./lb)	Date	Location		
Coho Salmon							
Mattole Salmon Group	Mattole River /95	2,350	99.8	06-13-96	S.F. Bear Creek	R. Max.	
		2,330	67.8	06-24-96	S.F. Bear Creek	R. Max.	
Monterey Bay Salmon and Trout Project	Scotts Creek /95	1,209	7.3	04-02-96	Scotts Creek	R. Vent	
Pacific Coast Federation of Fishermen's Associations (Eel River Project)	Redwood Creek/95	3,994	70.0	06-30-96	Leggett Creek	R. Vent.	
Rowdy Creek Fish Hatchery	Rowdy Creek /94	5,082	6.0	02-11-96	Rowdy Creek		
		6,600	6.0	02-11-96	Rowdy Creek	L. Max.	
Salmon Restoration Association of California (Ten Mile River)	Ten Mile River /96	3,510	60.0	06-16-96	Ten Mile River		
Total Coho:		25,075					

APPENDIX 2. Continued.

Program	Source Brood Year	Planting Information			Location	CWT No. Or Mark	
		Number Planted	Size (no./lb)	Date			
Steelhead							
Gualala River Steelhead Project	Gualala River /95	3,500	8.0	01-06-96	Gualala River		
Louisiana Pacific Corporation	Russian River /95	8,050	4.5	01-31-96	Russian River		
		11,410	3.5	02-26-96	Russian River		
Monterey Bay Salmon and Trout Project	Scotts Creek /95	1,008	6.3	03-25-96	San Vincente	Adipose	
		4,095	6.3	04-02-96	Soquel Creek	Adipose	
		1,008	6.3	04-02-96	Scotts Creek	Adipose	
		2,016	6.3	04-02-96	Corralitos Creek	Adipose	
			1,008	6.3	04-11-96	Scotts Creek	Adipose
			1,008	6.3	04-11-96	Arana Creek	Adipose
		San Lorenzo River /95	3,980	7.1	04-03-96	Salinas River	Adipose
			1,920	7.1	04-03-96	San Lorenzo River	Adipose
	3,630		7.1	04-04-96	Uvas/Pajaro River	Adipose	
	3,870		7.1	04-09-96	San Lorenzo River	Adipose	

(Continued)

APPENDIX 2. Continued.

Program	Source/ Brood Year	Planting Information			Location	CWT No. Or Mark
		Number Planted	Size (no./lb)	Date		
Steelhead Continued						
Monterey Bay Salmon and Trout Project	San Lorenzo River/ 95	6,510	6.2	04-09-96	San Lorenzo River	Adipose
		5,090	6.2	04-11-96	San Lorenzo River	Adipose
		3,000	5.7	05-20-96	Camp Evers	Adipose
		800	5.7	06-07-96	Camp Harmon	Adipose
Napa River Steelhead Group	Feather River /95	850	3.4	03-02-96	Sulphur Creek	
		3,196	3.4	03-02-96	Napa River	
		204	3.4	03-02-96	Ritchie Creek	
		1,360	3.4	03-02-96	Redwood Creek	
		2,040	3.4	03-02-96	Dry Creek	
Pacific Lumber Company	Yager Creek /95	2,800	6.0	03-15-96	Lawrence Creek	L. Vent.
		3,300	6.0	03-15-96	S.F. Yager Creek	L. Vent.
Rowdy Creek Fish Hatchery	Rowdy Creek /95	22,230	5.7	03-20-96	Smith River	Adipose + L. Max.
		36,330	4.2	03-20-96	Smith River	Adipose + L. Max.
Total Steelhead:		134,213				

APPENDIX 3. Cooperative Artificial Programs which Received Fish for Rearing during the 1995-96 Season.

Program	Source	Receiving Information			Rearing Location
		Number	Size (no./lb)	Date	
Chinook Salmon					
Central Coast Salmon Enhancement	Feather River Hatchery	72,400	69.0	06-09-96	San Luis Harbor
Monterey Bay Salmon and Trout Project	Feather River Hatchery	61,812	60.0	05-29-96	Monterey Bay Harbor
		62,771	45.0	06-18-96	Moss Landing Harbor
Tyee Club of San Francisco	Feather River Hatchery	49,400	26.0	06-04-96	San Francisco Bay
		Total Chinook: 246,383			
Steelhead					
Gualala River Steelhead Project	Gualala River	4,300	20.0	07-08-95	Gualala River
Louisiana Pacific Corporation	Warm Springs Hatchery	24,000	12.6	09-12-95	Russian River
Napa River Steelhead Group	Feather River Hatchery	7,650	13.5	11-08-95	Napa River
		Total Steelhead: 35,950			

APPENDIX 4. Chinook Salmon, Steelhead, Coho Salmon Trapped and Spawned by Cooperative Artificial Propagation Programs During the 1995-96 Season.

Program	Source	Fish Trapped			Fish Spawned		Fish Released Alive	Eggs taken
		Male	Female	Grilse	Male	Female		
Chinook Salmon								
Humboldt Fish Action Council	Freshwater Creek	9	8	1	9	5	11	18,639
Mattole Salmon Group	Mattole River	15	11	4	9	9	21	35,641
Pacific Coast Federation of Fishermen's Associations (Eel River Project)	Redwood Creek	14	6	12	10	5	22	26,580
Pacific Lumber Company	Yager Creek	36	17	32	31	17	48	72,290
Rowdy Creek Fish Hatchery	Rowdy/Dominie Creek	166	132	107	115	120	154	453,800
Salmon Restoration Association of California	Hollow Tree Creek	53	31	71	24	17	128	66,400
United Anglers (Casa Grande High School)	Petaluma River	18	19	0	18	19	0	32,271
Total Chinook:		311	224	227	216	192	384	705,621
Steelhead								
Humboldt Fish Action Council	Freshwater Creek	12	19	2	0	0	33	0
Mattole Salmon Group	Mattole River	7	8	0	0	15	0	0
Monterey Bay Salmon and Trout Project	Scotts Creek	6	6	0	6	6	12	31,080
	San Lorenzo River	15	18	0	15	17	30	92,180
Pacific Coast Federation of Fishermen's Associations (Eel River Project)	Redwood Creek	7	3	0	0	0	10	0

(Continued)

Appendix 4. Continued.

Program	Source	Fish Trapped			Fish Spawned		Fish Released Alive	Eggs taken
		Male	Female	Grilse	Male	Female		
Steelhead Continued								
Pacific Lumber Company	Yager Creek	9	5	0	5	4	14	17,570
Rowdy Creek Fish Hatchery	Rowdy/Dominie Creek	568	674	0	72	49	1,121	190,700
Salmon Restoration Association of California	Hollow Tree Creek	12	17	19	0	0	119	0
	Ten Mile River	5	5	0	5	5	10	23,000
Total Steelhead:		641	755	21	103	96	1,349	354,530
Coho Salmon								
Humboldt Fish Action Council	Freshwater Creek	246	267	23	0	0	536	0
Mattole Salmon Group	Mattole River	5	10	0	4	3	12	7,906
Monterey Bay Salmon and Trout Project	Scotts Creek	22	20	0	22	19	16	42,140
Pacific Coast Federation of Fishermen's Associations (Eel River Project)	Redwood Creek	3	4	0	3	3	2	7,505
Pacific Lumber Company	Yager Creek	1	0	0	0	0	1	0
Rowdy Creek Fish Hatchery	Rowdy/Dominie Creek	65	37	33	50	25	39	51,500
Salmon Restoration of California	Hollow Tree Creek	50	55	14	0	0	119	0
	Ten Mile River	16	16	0	6	7	25	15,337
Total Coho:		408	409	70	85	57	750	124,388

