

Central Valley Salmon and Steelhead Marking/Coded-wire Tagging Program

**Fall-run Chinook Salmon
Spring-run Chinook Salmon
Coho Salmon
Steelhead**

2011 Marking Season



Prepared by:

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Abstract

The Central Valley Constant Fractional Marking/Tagging Program (CFM) was initiated in the spring of 2007 following the purchase of four automated fish tagging trailers (AutoFish Systems). Planning studies indicated that the optimal marking/tagging rate for the Central Valley CFM program was 25% of the fall-run Chinook production releases. For each production release (fish released at the same time and location), the program therefore targeted marking with an adipose fin clip and coded-wire tagging a representative 25% of each release of fall-run Chinook salmon from the Central Valley hatcheries in 2007, 2008, 2009, 2010, and 2011. The program was conducted at Coleman National Fish Hatchery, Feather River Fish Hatchery, Feather River Fish Hatchery Annex, Nimbus Fish Hatchery, and Mokelumne River Fish Hatchery in these years.

The AutoFish Trailers were also used for the first time in the 2011 season to adipose fin-clip and coded-wire tag 100% of the spring-run Chinook salmon and coho salmon reared at the Feather River Fish Hatchery, and adipose fin-clip 100% of the steelhead reared at Coleman National Fish Hatchery, Feather River Fish Hatchery, Mokelumne River Fish Hatchery, and Nimbus Fish Hatchery.

This report covers the marking/tagging activities conducted with the AutoFish Systems at the five Central Valley hatcheries in 2011 (Brood Year 2010 fall-run Chinook salmon, spring-run Chinook, coho salmon, and steelhead). The program successfully processed 100% of the production releases of fall-run Chinook salmon through the automated marking trailers, a total of 34,365,739 fish. Of the fall-run Chinook total, approximately 26.46% were coded-wire tagged and adipose fin-clipped (a total of 9,092,172 fish). In addition, the program marked and coded-wire tagged 100% of the spring-run Chinook salmon and coho salmon produced at the Feather River Fish Hatchery (a total of 2,342,995 fish and 241,684 fish, respectively), and successfully adipose fin-clipped 100% of the steelhead produced at Coleman National Fish Hatchery, Feather River Fish Hatchery, Nimbus Fish Hatchery, and Mokelumne River Fish Hatchery (a total of 1,596,692 fish).

Introduction

In most years, over 32 million fall-run Chinook salmon are produced at five hatcheries in California's Central Valley, including Coleman National Fish Hatchery, Feather River Fish Hatchery, Feather River Fish Hatchery Annex, Nimbus Fish Hatchery, and Mokelumne River Fish Hatchery (Figure 1). Production from these hatcheries contributes to major sport and commercial fisheries in ocean and inland areas. Until 2007, only experimental releases of fall-run Chinook were externally marked and coded-wire tagged on a regular basis.

In 2004, the CALFED Ecosystem Restoration Program (ERP) funded a study to design a constant fractional marking/coded-wire tagging program for production releases of fall-run Chinook salmon from Central Valley hatcheries, with the goal of estimating in a statistically valid manner the relative contribution of hatchery production. The study recommended the implementation of a system-wide marking/tagging program for production releases.

In 2006, the ERP Program provided funding to begin implementation of the Central Valley Constant Fractional Marking (CFM) program. The initial contract provided funding to Pacific States Marine Fisheries Commission for the purchase of four automated tagging systems (AutoFish Systems) and the first two years of operating costs for marking/tagging production releases of fall-run Chinook salmon at the five major Central Valley hatcheries (in 2007 and 2008). This program is a cooperative effort of the California Department of Fish and Game, California Department of Water Resources, U.S. Fish and Wildlife Service, Pacific States Marine Fisheries Commission, U.S. Bureau of Reclamation, and East Bay Municipal Utility District. In 2009, 2010, and 2011 funding to conduct tagging operations at each hatchery was provided by the following entities: Coleman National Fish Hatchery, U.S. Bureau of Reclamation; Feather River Fish Hatchery, California Department of Water Resources; Feather River Fish Hatchery Annex, California Department of Fish and Game; Mokelumne River Fish Hatchery, East Bay Municipal Utility District; and Nimbus Fish Hatchery, U.S. Bureau of Reclamation.

From 2002 to 2010 100% of the spring-run Chinook salmon reared at Feather River Hatchery were marked and coded-wire tagged using manual techniques. In 2011, the AutoFish Trailers were used for the first time for the spring-run marking/tagging. Funding was provided by the California Department of Water Resources.

The overall objectives of the fall and spring-run Chinook salmon tagging programs are:

1. To evaluate the contribution rates of hatchery fish to Central Valley Chinook salmon populations,
2. To evaluate the Central Valley propagation program's genetic and ecological effects on natural Chinook populations,
3. To estimate exploitation rates of hatchery and natural Central Valley Chinook salmon in ocean and inland fisheries,
4. To evaluate the success of restoration actions designed to increase natural production of Central Valley Chinook salmon,
5. To evaluate the relative impacts of water project operations on hatchery and naturally-produced Chinook salmon,
6. To evaluate the recovery of listed stocks of Chinook salmon.

In addition, the AutoFish Trailers were used for the first time in 2011 to mark and coded-wire tag 100% of the coho salmon reared at Feather River Hatchery. These fish are released into Oroville Reservoir to support a sport fishery. All steelhead reared at Central Valley hatcheries were also marked using the AutoFish Trailers in 2011. Marking allows selective harvest of hatchery-reared steelhead in sport fisheries.

This report covers the fifth year of the CFM program's marking/tagging activities at the five major Central Valley hatcheries in the spring/summer of 2011 (Brood Year 2010 fall-run Chinook). The report also includes the marking/tagging of Brood Year 2010 spring-run Chinook salmon and coho salmon reared at the Feather River Fish Hatchery, and marking of steelhead reared at Coleman National Fish Hatchery, Feather River Fish Hatchery, Mokelumne River Fish Hatchery, and Nimbus Fish Hatchery.

Methods

The coded-wire tag/adipose fin clip is the method agreed to by the Pacific Salmon Treaty (1999) to monitor Chinook salmon in ocean fisheries along the Pacific Coast. It is a cost-effective method to apply a long-term mark that gives data on hatchery origin and release group, and provides for external identification of tagged fish. The coded-wire tag/adipose fin clip marking method has been used throughout the West Coast of North America since the 1970's. Currently, over 50 million Chinook and coho salmon are coded-wire tagged each year. This Central Valley program is an integral part of this Coast-wide tagging program; tagged fish are recovered in ocean fisheries throughout the West Coast.

Four state-of-the-art automated tagging trailers were purchased for the Central Valley program in late 2006 and early 2007 from Northwest Marine Technology. The trailers incorporated the latest advanced technology for marking and coded-wire tagging fish. The AutoFish System™ has the capacity to mark and implant coded-wire tags very rapidly without any use of anesthetic or human contact. These systems have been in use for many years in the Pacific Northwest, but the Central Valley trailers were the first to be purchased for use in California.

Planning studies indicated that the optimal marking/tagging rate for the Central Valley CFM program was 25% of the fall-run Chinook production releases. For each production release (fish released at the same time and location), the program therefore targeted marking/tagging a representative 25% in 2007, 2008, 2009, 2010, and 2011. Coded-wire tags for the 2011 season were ordered from Northwest Marine Technology in November 2010. Tags used in the program were all 1.1 mm standard size tags with the exception of the Feather River spring-run Chinook in-river tagging for which half tags were used. The in-river tagging was all performed by manual techniques as these fish are too small to process through an AutoFish Trailer.

The program was conducted at Coleman National Fish Hatchery, Feather River Fish Hatchery, Feather River Fish Hatchery Annex, Nimbus Fish Hatchery, and Mokelumne River Fish Hatchery (Figure 1). Fall-run Chinook coded-wire tagged and released for experimental purposes were not included in the program. The Merced River Hatchery therefore was not included in the program, as all the fall-run Chinook at this hatchery are raised for experimental purposes, and were marked and coded-wire tagged using manual techniques in 2011.

The automated marking trailers have the ability to process fish that are a minimum length of 57 mm and a maximum length of 142 mm. With this in mind, timing at each facility was critical to maximize efficiency and productivity while meeting hatchery release deadlines. Double shifts were often used to maximize efficiency and output of the AutoFish Trailers. Trailers were moved as needed when fish at each hatchery reached the appropriate marking size. The fall-run Chinook marking season began the second week of February at the Feather River Annex in Thermalito and ended at Nimbus Fish Hatchery the second week of May. Marking of hatchery-produced fall-run Chinook in 2011 therefore spanned a 14-week period. The spring-run Chinook marking season began the third week of February at the Feather River Fish Hatchery and was completed the third week of March for a total of 5 weeks. The Central Valley steelhead marking was conducted intermittently based on the number of fish that were the appropriate size to

process through the AutoFish Trailers, from the third week of May through the second week of July. The AutoFish Trailer operations for coho salmon were conducted from May 16th through May 24th.

The fish-marking crew also conducted an in-river tagging project on the Feather River in which wild fish were captured in screw traps, brought to a tagging shack, and 100% of these fish were adipose fin-clipped and coded-wire tagged with half tags using manual techniques. The fish were generally released back into the river within 24 hours; therefore no retention groups were held. The clipping and tagging rates were determined by the two quality control checks that were conducted daily.

Throughout the season, tag retention studies were conducted for fall and spring-run Chinook and coho salmon to determine actual marking/tagging rates for each coded-wire tag code. Approximately 800-900 marked/tagged fish per tag code were retained and held separately for a period of approximately 21 days following the completion of each tag code. At Coleman National Fish Hatchery, approximately 400 fish were held for retention purposes for each tag code. The lower number of fish held per tag code at this facility was determined with the assistance of USFWS personnel because of the large number of tag codes used (28). For the 2011 season, we also only held approximately 400 retention fish for each tag code at Mokelumne River Fish Hatchery. Again, this was due to the large number of individual tag codes used (17). Study fish were sampled from throughout the tagging period for each tag code. Fish were electronically tested for tag retention at the end of the study period. In some instances fish were held for less than the standard 21-day time period due to specific hatchery release strategies. For some smaller tag codes, tag retention studies were not feasible; for these tag groups, retention rates were extrapolated from larger groups tagged at the same hatchery during similar time periods.

Following the tagging season, coded-wire tag data were summarized for submission to [the Regional Mark Processing Center \(RMPC\)](http://www.rmipc.org), operated by the Pacific States Marine Fisheries Commission (<http://www.rmipc.org>). The RMPC provides regional coordination of salmon tagging and fin marking programs, and maintenance of coastwide databases for coded-wire tag releases, recoveries, and associated catch/sample information, in the Regional Mark Information System (RMIS).

Figure 2 summarizes the annual project work flow.

Results

Daily tagging rates, tag codes, and results of retention studies for the 2011 tagging season are shown in Appendix Tables 1 – 5 for each of the hatcheries. The technology allowed an accurate count of all production fish, and the marking/tagging of an exact percentage of those fish.

The program successfully processed 100% of the 2011 production releases of fall-run Chinook salmon from the Central Valley hatcheries (totaling 34,701,129 fish). The 25% target rate for marking/tagging was achieved for Brood Year 2010 (approximately 26.46% were CWT/ad-clipped, a total of 9,092,172 fish). The AutoFish Trailers also successfully marked and tagged 100% of the Brood Year 2010 spring-run Chinook salmon and coho salmon reared at the Feather River Fish Hatchery (a total of 2,342,995 fish and 241,684 fish, respectively), and marked 100% of the steelhead reared at Coleman National Fish Hatchery, Feather River Fish Hatchery, Mokelumne River Fish Hatchery, and Nimbus Fish Hatchery (a total of 1,596,692 fish).

At Mokelumne River Fish Hatchery, the first few egg takes and the last egg take were manually fin-clipped as they were too large or too small to process through the AutoFish Trailers at the time of trailer operations. At Nimbus Fish Hatchery, the first few egg takes were manually fin-clipped as they would have been too large to efficiently process through the AutoFish Trailer at the time of trailer operations.

Tag retention studies for the fall-run Chinook indicated very high rates of tag/mark retention. Retention rates ranged as follows:

- Coleman National Fish Hatchery: 99.45 - 100% with an average of 99.86%
- Feather River Hatchery Annex: 99.57% with an average of 99.57%
- Feather River Hatchery: 99.13% - 99.59% with an average of 99.39%
- Mokelumne River Hatchery: 98.75% - 100% with average of 99.46%
- Nimbus Hatchery: 99.11% - 100.00% with an average of 99.80%

Tag retention studies for the spring-run Chinook and coho also indicated high rates of tag/mark retention. Retention rates ranged as follows:

- Feather River Hatchery spring-run Chinook: 98.67% – 99.04% with an average of 98.86%
- Feather River Hatchery coho: 97.68% – 99.60% with an average of 98.64%

The steelhead from each facility are generally released during the winter months and clip quality will be checked just prior to release.

The numbers of fish included in this report were those processed and returned to the raceways during the tagging process. The actual numbers of fish released may differ. Please refer to the RMIS website, <http://www.rmhc.org>, for the correct release numbers.

The tag codes for the Feather River in-river tagging were all half tags and recorded in this report as they will be found on the RMIS website.

Discussion

Similar to past tagging seasons, finding and retaining qualified technical personnel for program operations continued to be a challenge in the 2011 tagging season. The program started with seven Trailer Operators and ended with six operators. Three experienced Trailer Operators from Idaho spent two weeks each assisting with trailer operations in California. Six to eight Trailer Assistants were also employed throughout the 21 week season.

The four Central Valley AutoFish Trailers are now five years old and the annual maintenance costs are increasing. We replaced the computer monitors in CA 2 (the trailer which is mostly used at Mokelumne River Fish Hatchery) and we now have two spare monitors that can be used in the other three trailers. We also replaced 12-15 cutters this season in the four AutoFish Trailers as well as some other smaller internal parts.

Coleman National Fish Hatchery requested that the retention study net pens be placed in the adult holding pond to start; part way through the marking season they were moved to the eight-foot raceways. Some fish escaped or were killed when hatchery personnel moved the retention net pens, resulting in significant inconsistencies in the number of retention fish held for each tag code.

At the Feather River Fish Hatchery steelhead were found to enter the raceway jump box where the AutoFish Trailer water supply pump was located. Some steelhead were entrained in the pump and unintentionally killed. In future years, the fish-marking program will enclose the water supply pumps in boxes to prevent entrainment of fish.

This was the first year that the coho salmon at the Feather River Fish Hatchery were adipose fin-clipped and coded-wire tagged with an AutoFish Trailer. The hatchery had a group of triploid fish that had significant genetic problems and fish health issues that created a high percentage of deformities. This particular group of fish proved to be very challenging to process through the AutoFish Trailer. This also created a lower than normal tag retention rate for that particular group of fish. The diploid coho salmon were processed smoothly through the AutoFish Trailer.

Due to cooler water temperatures at Coleman National Fish Hatchery in the 2011 season, trailer operations started one week later than in any of the previous seasons. The cooler water temperatures also resulted in some delays in trailer operations in order for the smaller fish to grow large enough to process through the AutoFish Trailers. This resulted in fish being released later than the hatchery target date.

Acknowledgements

The Constant Fractional Marking Program would not have existed or successfully completed the first five years of tagging without significant contributions from a number of people and agencies. I would like to thank the following individuals for their support, dedication and cooperation in this program:

The IEP Central Valley Salmonid Project Work Team provided guidance over the years in the development of the project. Members included Jim Smith (USFWS), Russell Bellmer (CDFG), Kenneth Lentz (USBR retired), John Hannon (USBR), Rich Dixon (CDFG retired), Alice Low (CDFG), Brad Cavallo (formerly DWR), Pete Adams (NOAA Fisheries), Stan Allen (PSMFC) and Joseph Miyamoto (EBMUD).

Management, administration, problem solving, and the existence of this program would not have been possible without Alice Low, Tom Schroyer, and Dave Zezulak, California Department of Fish and Game (CDFG); Stan Allen and Amy Roberts, Pacific States Marine Fisheries Commission (PSMFC); and Kevin Niemela, U.S. Fish and Wildlife Service (USFWS).

In particular, I want to thank the managers and staff working at the hatcheries we conduct the Constant Fractional Marking. Without your help, cooperation and support this program would not be possible. Your willingness to work with us in adjusting the agendas and scheduling is critical in meeting the goals of all of the facilities. Kurtis Brown (USFWS - Coleman National Fish Hatchery), Anna Kastner (CDFG - Feather River Fish Hatchery), Allen Dill (CDFG - Feather River Fish Hatchery), Paula Hoover (CDFG - Nimbus Fish Hatchery), Bob Burks (CDFG - Nimbus Fish Hatchery), William Smith (CDFG - Mokelumne River Fish Hatchery), and their very professional hatchery staff did a significant amount of work to accommodate the trailers at their hatcheries, and made us feel welcome while we were on-site. I look forward to continuing to work with you all.

I also want to thank Ryan Revnak (PSMFC) for his work on the data entry and Chad Dale (PSMFC) for all of his maintenance work on the AutoFish Trailers prior to trailer operations to ensure that everything was operational. I want to thank the rest of the professional and hard working CFM crew that made this fifth season a great success. They each spent many long days away from home to accomplish the goals of this very demanding program. Trailer Operators included Taylor Call (PSMFC), Chad Collier (PSMFC-Idaho), Chad Dale (PSMFC), Casey Frantz (PSMFC-Idaho), Travis House (PSMFC-Idaho), Patrick Jarrett (PSMFC), Scott Merlette (PSMFC), Kate Merrick (PSMFC), Ryan Revnak (PSMFC), and Carlos Zegarra (PSMFC). Tagging Trailer Assistants included seasonal PSMFC staff members Nichole Clemente, Elizabeth Ferris, Cheryl Fullerton, Tara Gardner, Camille Jacoby, Tracy Foreman, Scott Pepper, and Merilee Skinner.

Figure 1. Hatchery Locations: Central Valley Constant Fractional Marking Program (2011)

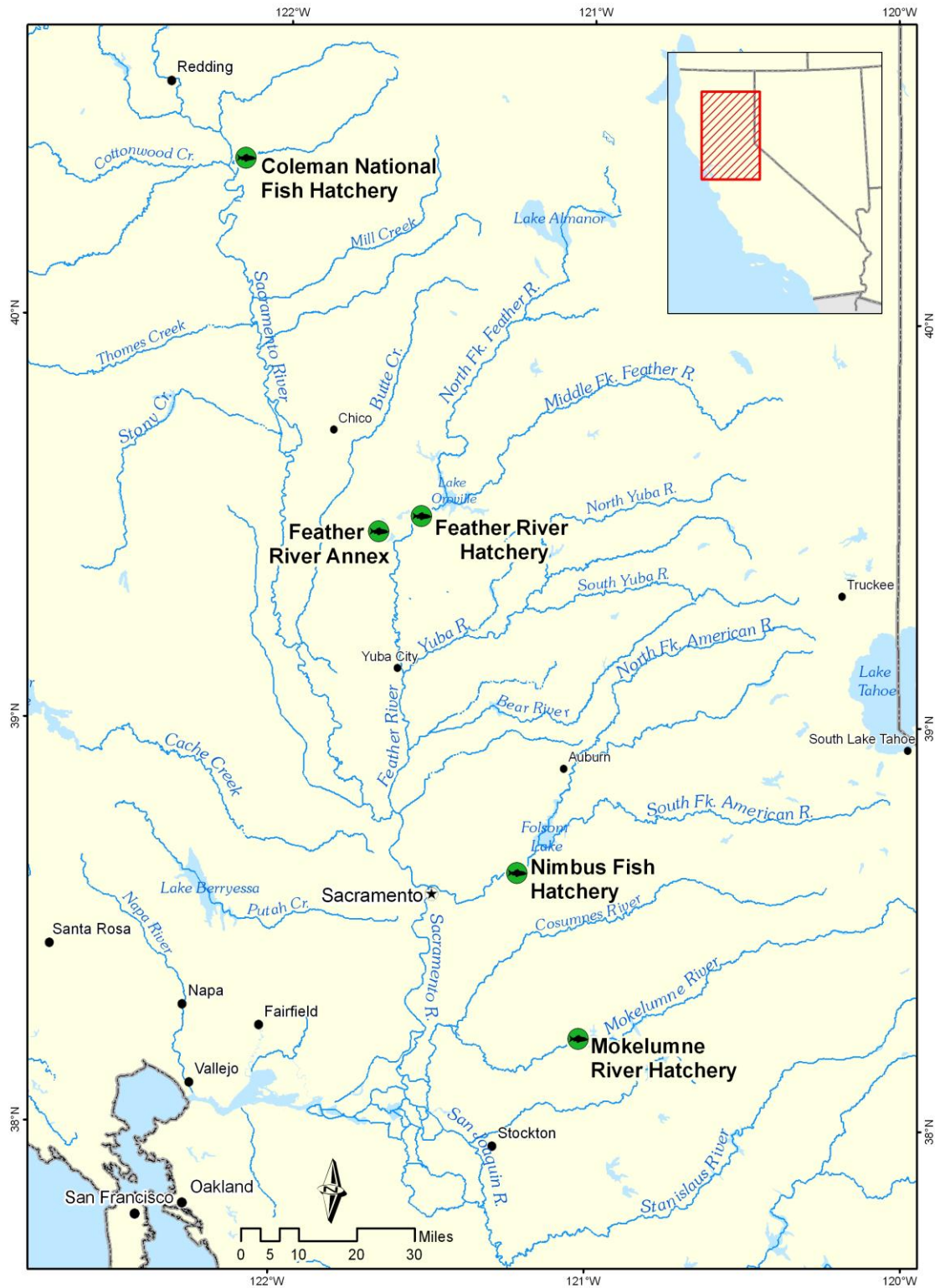
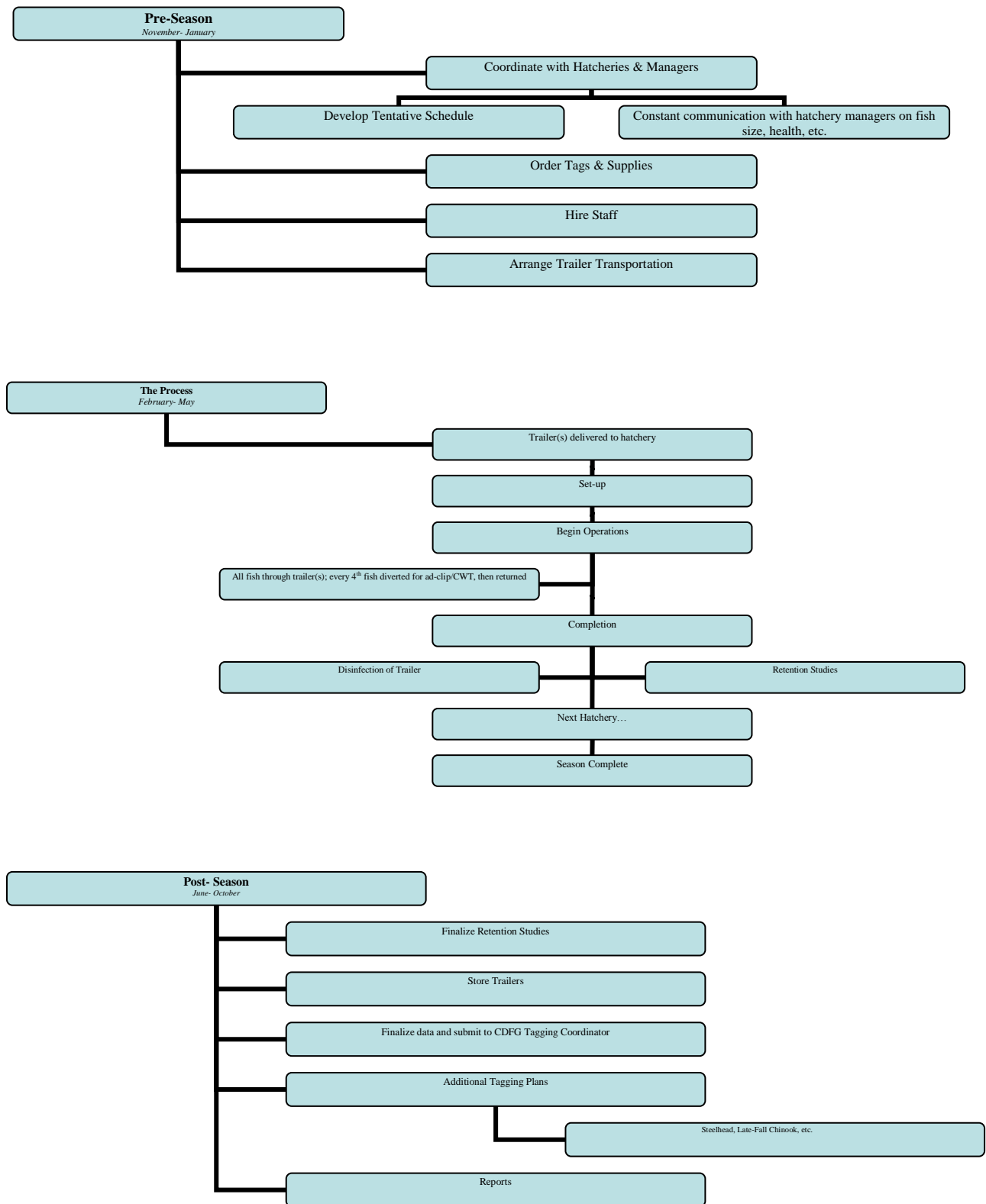


Figure 2. Constant Fractional Marking Program Annual Work Flow Summary



Appendix

Coleman National Fish Hatchery



Table 1a. Daily Tagging Rates at Coleman National Fish Hatchery

Coleman National Fish Hatchery Fall-run							
Tag Code: 05/53/82			Size: 110K			Trailer # CA1	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
3/14/2011	14	14	27,289	-	82,056	-	109,345
3/15/2011	14	14	35,439	62,728	106,473	188,529	251,257
3/15/2011	14	14	23,187	85,915	69,618	258,147	344,062
3/17/2011	13	14	17,810	103,725	53,487	311,634	415,359
Tag Code Totals:			-	103,725	-	311,634	415,359

Coleman National Fish Hatchery Fall-run							
Tag Code: 05/53/81			Size: 110K			Trailer # CA1	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
3/16/2011	13	13	33,831	-	101,553	-	135,384
3/16/2011	13	13	38,806	72,637	116,517	218,070	290,707
3/17/2011	13	13	42,946	115,583	128,955	347,025	462,608
Tag Code Totals:			-	115,583	-	347,025	462,608

Coleman National Fish Hatchery Fall-run							
Tag Code: 05/53/80			Size: 110K			Trailer # CA1	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
3/18/2011	12	12	72,105	-	216,453	-	288,558
3/21/2011	12	12	37,845	109,950	113,694	330,147	440,097
Tag Code Totals:			-	109,950	-	330,147	440,097

Coleman National Fish Hatchery Fall-run							
Tag Code: 05/53/77			Size: 110K			Trailer # CA1	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
3/21/2011	9	9	30,735	-	92,244	-	122,979
3/22/2011	9	9	39,308	70,043	118,044	210,288	280,331
3/22/2011	9	9	42,174	112,217	126,624	336,912	449,129
3/23/2011	9	9	3,318	115,535	10,020	346,932	462,467
Tag Code Totals:			-	115,535	-	346,932	462,467

Coleman National Fish Hatchery Fall-run							
Tag Code: 05/53/79			Size: 110K			Trailer # CA1	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
3/23/2011	8	8	53,058	-	159,237	-	212,295
3/24/2011	8	8	53,740	106,798	161,286	320,523	427,321
Tag Code Totals:			-	106,798	-	320,523	427,321

Coleman National Fish Hatchery Fall-run							
Tag Code: 05/53/74			Size: 110K			Trailer # CA1	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
3/24/2011	7	6	16,051	-	48,177	-	64,228
3/25/2011	7	6	81,942	97,993	245,961	294,138	392,131
3/28/2011	7	6	16,355	114,348	49,119	343,257	457,605
Tag Code Totals:			-	114,348	-	343,257	457,605

Coleman National Fish Hatchery Fall-run							
Tag Code: 05/53/75			Size: 110K			Trailer # CA1	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
3/28/2011	7	7	53,712	-	161,223	-	214,935
3/29/2011	7	7	62,699	116,411	188,169	349,392	465,803
Tag Code Totals:			-	116,411	-	349,392	465,803

Coleman National Fish Hatchery Fall-run							
Tag Code: 05/53/96			Size: 110K			Trailer # CA1	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
4/4/2011	28	28	21,268	-	63,822	-	85,090
4/5/2011	28	28	58,210	79,478	174,717	238,539	318,017
4/6/2011	28	28	38,303	117,781	114,963	353,502	471,283
Tag Code Totals:			-	117,781	-	353,502	471,283

Coleman National Fish Hatchery Fall-run							
Tag Code: 05/53/95			Size: 110K			Trailer # CA1	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
4/6/2011	27	27	24,966	-	74,961	-	99,927
4/7/2011	27	27	35,425	60,391	106,302	181,263	241,654
4/7/2011	27	27	33,391	93,782	100,245	281,508	375,290
4/8/2011	27	27	29,193	122,975	87,639	369,147	492,122
Tag Code Totals:			-	122,975	-	369,147	492,122

Coleman National Fish Hatchery Fall-run							
Tag Code: 05/53/94			Size: 110K			Trailer # CA1	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
4/8/2011	26	26	29,592	-	88,833	-	118,425
4/11/2011	26	26	64,486	94,078	193,635	282,468	376,546
4/12/2011	26	26	16,136	110,214	48,474	330,942	441,156
Tag Code Totals:			-	110,214	-	330,942	441,156

Coleman National Fish Hatchery Fall-run							
Tag Code: 05/53/93			Size: 110K			Trailer # CA1	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
4/12/2011	25	25	44,266	-	132,864	-	177,130
4/13/2011	25	25	74,846	119,112	224,703	357,567	476,679
4/14/2011	25	25	1,876	120,988	5,652	363,219	484,207
Tag Code Totals:			-	120,988	-	363,219	484,207

Coleman National Fish Hatchery Fall-run							
Tag Code: 05/53/76			Size: 110K			Trailer # CA4	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
3/15/2011	11	11	19,023	-	57,150	-	76,173
3/16/2011	11	11	85,188	104,211	255,741	312,891	417,102
3/17/2011	11	11	7,979	112,190	23,973	336,864	449,054
Tag Code Totals:			-	112,190	-	336,864	449,054

Coleman National Fish Hatchery Fall-run							
Tag Code: 05/53/78			Size: 110K			Trailer # CA4	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
3/17/2011	10	10	55,324	-	166,029	-	221,353
3/18/2011	10	10	53,574	108,898	160,779	326,808	435,706
3/23/2011	9	10	4,978	113,876	14,976	341,784	455,660
Tag Code Totals:			-	113,876	-	341,784	455,660

Coleman National Fish Hatchery Fall-run							
Tag Code: 05/53/73			Size: 110K			Trailer # CA4	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
3/21/2011	5	5	69,896	-	209,841	-	279,737
3/22/2011	5	5	46,805	116,701	140,469	350,310	467,011
Tag Code Totals:			-	116,701	-	350,310	467,011

Coleman National Fish Hatchery Fall-run							
Tag Code: 05/53/72			Size: 110K			Trailer # CA4	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
3/22/2011	4	4	27,582	-	82,812	-	110,394
3/23/2011	4	4	80,382	107,964	241,365	324,177	432,141
Tag Code Totals:			-	107,964	-	324,177	432,141

Coleman National Fish Hatchery Fall-run							
Tag Code: 05/53/71			Size: 110K			Trailer # CA4	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
3/24/2011	3	3	32,263	-	96,900	-	129,163
3/24/2011	3	3	40,397	72,660	121,299	218,199	290,859
3/25/2011	3	3	29,649	102,309	89,007	307,206	409,515
Tag Code Totals:			-	102,309	-	307,206	409,515

Coleman National Fish Hatchery Fall-run							
Tag Code: 05/53/70			Size: 110K			Trailer # CA4	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
3/25/2011	2	2	31,412	-	94,389	-	125,801
3/30/2011	2	2	76,597	108,009	230,043	324,432	432,441
3/31/2011	2	2	7,015	115,024	21,108	345,540	460,564
Tag Code Totals:			-	115,024	-	345,540	460,564

Coleman National Fish Hatchery Fall-run							
Tag Code: 05/53/69			Size: 110K			Trailer # CA4	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
3/31/2011	1	1	61,248	-	183,891	-	245,139
4/1/2011	1	1	46,669	107,917	140,127	324,018	431,935
Tag Code Totals:			-	107,917	-	324,018	431,935

Coleman National Fish Hatchery Fall-run							
Tag Code: 05/53/89			Size: 110K			Trailer # CA4	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
4/4/2011	21	21	22,723	-	68,367	-	91,090
4/5/2011	21	21	79,753	102,476	239,457	307,824	410,300
4/6/2011	21	21	18,336	120,812	55,077	362,901	483,713
Tag Code Totals:			-	120,812	-	362,901	483,713

Coleman National Fish Hatchery Fall-run							
Tag Code: 05/53/88			Size: 110K			Trailer # CA4	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
4/6/2011	20	20	58,540	-	175,734	-	234,274
4/7/2011	20	20	53,536	112,076	160,791	336,525	448,601
Tag Code Totals:			-	112,076	-	336,525	448,601

Coleman National Fish Hatchery Fall-run							
Tag Code: 05/53/90			Size: 110K			Trailer # CA4	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
4/7/2011	22	22	9,759	-	29,286	-	39,045
4/8/2011	22	22	70,072	79,831	210,357	239,643	319,474
4/11/2011	22	22	39,741	119,572	119,313	358,956	478,528
Tag Code Totals:			-	119,572	-	358,956	478,528

Coleman National Fish Hatchery Fall-run							
Tag Code: 05/53/87			Size: 110K			Trailer # CA4	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
4/11/2011	19	19	7,375	-	22,155	-	29,530
4/20/2011	19	19	17,418	24,793	52,371	74,526	99,319
4/21/2011	19	19	76,772	101,565	230,463	304,989	406,554
4/22/2011	19	19	7,531	109,096	22,605	327,594	436,690
Tag Code Totals:			-	109,096	-	327,594	436,690

Coleman National Fish Hatchery Fall-run							
Tag Code: 05/53/91			Size: 110K			Trailer # CA4	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
4/12/2011	23	23	50,021	-	150,150	-	200,171
4/13/2011	23	23	34,949	84,970	104,928	255,078	340,048
4/13/2011	23	23	34,286	119,256	102,888	357,966	477,222
Tag Code Totals:			-	119,256	-	357,966	477,222

Coleman National Fish Hatchery Fall-run							
Tag Code: 05/53/85			Size: 110K			Trailer # CA4	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
4/14/2011	17	17	59,942	-	179,883	-	239,825
4/15/2011	17	17	36,473	96,415	109,521	289,404	385,819
4/18/2011	17	17	19,757	116,172	59,289	348,693	464,865
Tag Code Totals:			-	116,172	-	348,693	464,865

Coleman National Fish Hatchery Fall-run							
Tag Code: 05/53/92			Size: 110K			Trailer # CA4	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
4/14/2011	24	24	61,072	-	183,369	-	244,441
4/18/2011	24	24	53,267	114,339	159,942	343,311	457,650
Tag Code Totals:			-	114,339	-	343,311	457,650

Coleman National Fish Hatchery Fall-run							
Tag Code: 05/53/86			Size: 110K			Trailer # CA4	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
4/19/2011	18	18	73,872	-	221,802	-	295,674
4/20/2011	18	18	42,813	116,685	128,679	350,481	467,166
Tag Code Totals:			-	116,685	-	350,481	467,166

Coleman National Fish Hatchery Fall-run							
Tag Code: 05/53/84			Size: 110K			Trailer # CA4	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
4/22/2011	16	16	44,920	-	134,811	-	179,731
4/25/2011	16	16	65,616	110,536	197,007	331,818	442,354
4/26/2011	16	16	8,928	119,464	26,838	358,656	478,120
Tag Code Totals:			-	119,464	-	358,656	478,120

Coleman National Fish Hatchery Fall-run							
Tag Code: 05/53/83			Size: 110K			Trailer # CA4	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
4/26/2011	15	15	69,280	-	207,912	-	277,192
4/27/2011	15	15	32,636	101,916	97,950	305,862	407,778
Tag Code Totals:			-	101,916	-	305,862	407,778

Coleman Steelhead - 100% Mark Only					
			Trailer # CA4		
Marking Date	Raceway Prior To Marking	Raceway Following Marking	Daily Mark Total	Cumulative Marked	Raceway Total
5/23/2011	57	58	48,215	48,215	48,215
5/23/2011	56	57	20,540	20,540	20,540
5/24/2011	56	57	28,412	48,952	48,952
5/24/2011	55	56	51,008	51,008	51,008
5/24/2011	54	55	16,275	16,275	16,275
5/25/2011	54	55	31,927	48,202	48,202
5/25/2011	53	54	47,760	47,760	47,760
6/1/2011	52	53	48,084	48,084	48,084
6/2/2011	51	52	48,247	48,247	48,247
6/3/2011	50	51	47,218	47,218	47,218
6/6/2011	49	50	48,123	48,123	48,123
6/15/2011	48	49	34,280	34,280	34,280
6/16/2011	48	49	14,991	49,271	49,271
6/16/2011	47	48	47,505	47,505	47,505
6/17/2011	46	47	47,975	47,975	47,975
6/22/2011	45	46	46,535	46,535	46,535
7/5/2011	44	45	47,340	47,340	47,340

Hatchery Total = 674,435

Table 1b. Summary of Hatchery Tag Codes and Tag Retention Study

Coleman National Fish Hatchery Summary										
Tag Code Size and Location			Tag Code Totals			Retention calculations				
Tag Code	Size	Raceway	Number Tagged	Number Untagged	Total Processed	# of Fish Held	Days Held	% Retention	# Retaining Tags	Calculated Untagged
05/53/69	110k	1	107,917	324,018	431,935	379	19	99.74%	107,632	324,303
05/53/70	110k	2	115,024	345,540	460,564	378	21	100.00%	115,024	345,540
05/53/71	110k	3	102,309	307,206	409,515	29	26	100.00%	102,309	307,206
05/53/72	110k	4	107,964	324,177	432,141	385	21	100.00%	107,964	324,177
05/53/73	110k	5	116,701	350,310	467,011	397	29	100.00%	116,701	350,310
05/53/74	110k	6	114,348	343,257	457,605	538	23	99.44%	113,710	343,895
05/53/75	110k	7	116,411	349,392	465,803	253	15	100.00%	116,411	349,392
05/53/79	110k	8	106,798	320,523	427,321	60	20	100.00%	106,798	320,523
05/53/77	110k	9	115,535	346,932	462,467	-	-	*	115,535	346932
05/53/78	110k	10	113,876	341,784	455,660	36	17	100.00%	113,876	341,784
05/53/76	110k	11	112,190	336,864	449,054	417	27	100.00%	112,190	336,864
05/53/80	110k	12	109,950	330,147	440,097	395	23	100.00%	109,950	330,147
05/53/81	110k	13	115,583	347,025	462,608	394	27	99.24%	114,703	347,905
05/53/82	110k	14	103,725	311,634	415,359	428	27	99.77%	103,483	311,876
05/53/83	110k	15	101,916	305,862	407,778	391	0	100.00%	101,916	305,862
05/53/84	110k	16	119,464	358,656	478,120	210	0	100.00%	119,464	358,656
05/53/85	110k	17	116,172	348,693	464,865	386	11	100.00%	116,172	348,693
05/53/86	110k	18	116,685	350,481	467,166	292	6	100.00%	116,685	350,481
05/53/87	110k	19	109,096	327,594	436,690	393	4	100.00%	109,096	327,594
05/53/88	110k	20	112,076	336,525	448,601	404	14	100.00%	112,076	336,525
05/53/89	110k	21	120,812	362,901	483,713	402	20	99.75%	120,511	363,202
05/53/90	110k	22	119,572	358,956	478,528	394	15	99.49%	118,965	359,563
05/53/91	110k	23	119,256	357,966	477,222	348	2	100.00%	119,256	357,966
05/53/92	110k	24	114,339	343,311	457,650	143	7	100.00%	114,339	343,311
05/53/93	110k	25	120,988	363,219	484,207	348	9	100.00%	120,988	363,219
05/53/94	110k	26	110,214	330,942	441,156	398	13	100.00%	110,214	330,942
05/53/95	110k	27	122,975	369,147	492,122	340	13	99.71%	122,613	369,509
05/53/96	110k	28	117,781	353,502	471,283	383	35	100.00%	117,781	353,502
Grand Total = 12,726,241			3,179,677	9,546,564	12,726,241	Avg % Retention =		99.89%	Total 3,176,362	Total 9,549,879

* No suitable retention group kept

Feather River Fish Hatchery



Table 2a. Daily Tagging Rates at Feather River Hatchery

Feather River Fish Hatchery Fall-run							
Tag Code: 06/87/49			Size: 350K			Trailer # CA3	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
3/1/2011	F2	CH2	8,811	-	26,496	-	35,307
3/2/2011	F2	CH2	36,165	44,976	108,708	135,204	180,180
3/2/2011	F2	CH2	32,621	77,597	97,902	233,106	310,703
3/3/2011	F2	CH2	36,305	113,902	109,032	342,138	456,040
3/3/2011	F2/F3	CH2	34,927	148,829	104,835	446,973	595,802
3/4/2011	F3	CH2	32,526	181,355	97,698	544,671	726,026
3/4/2011	F3	CH2	24,461	205,816	73,437	618,108	823,924
3/7/2011	F3	CH2	25,853	231,669	77,640	695,748	927,417
3/7/2011	F3	CH2	28,746	260,415	86,313	782,061	1,042,476
3/8/2011	F3	CH2	34,844	295,259	104,592	886,653	1,181,912
3/8/2011	F3	CH2	37,428	332,687	112,332	998,985	1,331,672
3/9/2011	F6/E2	CH2	29,144	361,831	87,507	1,086,492	1,448,323
3/9/2011	E2	CH2	35,901	397,732	107,766	1,194,258	1,591,990
Tag Code Totals:			-	397,732	-	1,194,258	1,591,990

Feather River Fish Hatchery Fall-run							
Tag Code: 06/87/50			Size: 350K			Trailer # CA3	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
3/10/2011	E2	CH1	25,660	-	77,055	-	102,715
3/10/2011	E2	CH1	37,917	63,577	113,844	190,899	254,476
3/11/2011	E2/E4	CH1	68,318	131,895	205,005	395,904	527,799
3/14/2011	E4	CH1	22,671	154,566	68,106	464,010	618,576
3/14/2011	E4	CH1	41,005	195,571	123,144	587,154	782,725
3/15/2011	E4/D2	CH1	31,395	226,966	94,260	681,414	908,380
3/15/2011	D2	CH1	37,865	264,831	113,691	795,105	1,059,936
3/16/2011	D2	CH1	40,014	304,845	120,129	915,234	1,220,079
3/16/2011	D2	CH1	42,246	347,091	126,810	1,042,044	1,389,135
3/17/2011	D2	CH1	1,073	348,164	3,273	1,045,317	1,393,481
3/17/2011	D4	CH1	28,962	377,126	86,952	1,132,269	1,509,395
3/17/2011	D4	CH1	23,785	400,911	71,424	1,203,693	1,604,604
Tag Code Totals:			-	400,911	-	1,203,693	1,604,604

Feather River Fish Hatchery Fall-run							
Tag Code: 06/87/51			Size: 350K			Trailer # CA3	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
3/22/2011	D4	F6	28,675	-	86,118	-	114,793
3/23/2011	D4/C2	F6	34,329	63,004	103,032	189,150	252,154
3/23/2011	C2	E6	35,874	-	107,688	-	143,562
3/24/2011	C2	E6	33,189	69,063	99,624	207,312	276,375
3/24/2011	C2	E6	20,262	89,325	60,891	268,203	357,528
3/24/2011	C2	F4	10,121	-	30,372	-	40,493
3/25/2011	C2	F4	30,408	40,529	91,287	121,659	162,188
3/25/2011	C2	F4	35,846	76,375	107,634	229,293	305,668
3/28/2011	C4	E4	9,357	-	28,242	-	37,599
3/28/2011	C4	E4	32,650	42,007	98,061	126,303	168,310
3/29/2011	C4	E4	39,765	81,772	119,415	245,718	327,490
3/29/2011	C4	E4	7,312	89,084	21,951	267,669	356,753
3/29/2011	C4	F2	20,069	-	60,258	-	80,327
3/30/2011	C4	F2	40,938	61,007	122,922	183,180	244,187
3/30/2011	C4	F2	23,990	84,997	72,072	255,252	340,249
Tag Code Totals:			-	402,785	-	1,209,567	1,612,352

Feather River Fish Hatchery Fall-run							
Tag Code: 06/87/52			Size: 350K			Trailer # CA3	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
3/31/2011	C4/B4	D4	28706	-	86,337	-	115,043
3/31/2011	B4	D4	36661	65,367	110,097	196,434	261,801
4/1/2011	B4	D4	23264	88,631	69,873	266,307	354,938
4/1/2011	B4	D6	2532	-	7,596	-	10,128
4/1/2011	B4	D6	25441	27,973	76,389	83,985	111,958
4/4/2011	B4	D6	23231	51,204	69,879	153,864	205,068
4/4/2011	B4	D6	36702	87,906	110,226	264,090	351,996
4/5/2011	B4	C6	36679	-	110,070	-	146,749
4/5/2011	B4/B2	C6	26107	62,786	78,405	188,475	251,261
4/5/2011	B2	C4	4856	-	14,568	-	19,424
4/6/2011	B2	C4	26875	31,731	80,706	95,274	127,005
4/6/2011	B2	C4	24808	56,539	74,550	169,824	226,363
4/7/2011	B2	C4	21662	78,201	65,040	234,864	313,065
4/7/2011	B2	C2	10635	-	31,905	-	42,540
4/7/2011	B2	C2	33297	43,932	99,945	131,850	175,782
4/8/2011	B2	C2	28307	72,239	84,957	216,807	289,046
4/8/2011	B2	C2	16619	88,858	49,914	266,721	355,579
Tag Code Totals:			-	406,382	-	1,220,457	1,626,839

Feather River Fish Hatchery Fall-run - 100% Mark/Tag - Santa Cruz Release							
Tag Code: 06/87/53			Size: 150K			Trailer # CA3	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
3/17/2011	D4	D1	2,980	-	-	-	2,980
3/18/2011	D4	D1	38,318	41,298	-	-	41,298
3/18/2011	D4	D1	50,933	92,231	-	-	92,231
3/21/2011	D4	D1	40,963	133,194	-	-	133,194
3/21/2011	D4	D1	39,579	172,773	-	-	172,773
Tag Code Totals:			-	172,773	-	-	172,773

Feather River Fish Hatchery Fall-run - 100% Mark/Tag - Santa Cruz Release							
Tag Code: 06/87/36			Size: 15K			Trailer # CA3	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
3/21/2011	D4	D1	15,751	15,751	-	-	15,751
Tag Code Totals:			-	15,751	-	-	15,751

Feather River Fish Hatchery Fall-run - 100% Mark/Tag- Tyee Foundation							
Tag Code: 06/87/02			Size: 40K			Trailer # CA3	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
3/22/2011	D4	D2	42,298	42,298	-	-	42,298
Tag Code Totals:			-	42,298	-	-	42,298

Feather River Fish Hatchery Fall-run							
Tag Code: 06/87/09			Size: 150K			Trailer # CA3	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
4/11/2011	B2/A2	B4	25,005	-	75,072	-	100,077
4/11/2011	A2	B4	38,724	63,729	116,253	191,325	255,054
4/12/2011	A2	B4	17,278	81,007	51,885	243,210	324,217
4/12/2011	A2	B2	9,128	-	27,384	-	36,512
4/12/2011	A2	B2	34,976	44,104	104,961	132,345	176,449
4/13/2011	A2/A4	B2	42,373	86,477	127,218	259,563	346,040
Tag Code Totals:			-	167,484	-	502,773	670,257

Feather River Fish Hatchery Fall-run							
Tag Code: 06/86/74			Size: 130K			Trailer # CA3	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
4/13/2011	A4	A1	6,647	-	19,941	-	26,588
4/14/2011	A4	A1	31,575	38,222	94,761	114,702	152,924
4/14/2011	A4	A1	26,796	65,018	80,475	195,177	260,195
4/15/2011	A4	A1	29,817	94,835	89,535	284,712	379,547
4/15/2011	A4	A1	31,487	126,322	94,530	379,242	505,564
4/18/2011	A4	A1	18,979	145,301	57,039	436,281	581,582
Tag Code Totals:			-	145,301	-	436,281	581,582

Feather River Fish Hatchery Fall-run							
Tag Code: 06/87/54			Size: 100K			Trailer # CA3	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
4/19/2011	A4	A6	23,907	-	71,772	-	95,679
4/20/2011	A4	A6	33,668	57,575	101,040	172,812	230,387
4/21/2011	A4	A6	33,239	90,814	99,783	272,595	363,409
4/22/2011	A4	A6	19,605	110,419	58,893	331,488	441,907
Tag Code Totals:			-	110,419	-	331,488	441,907

Feather River Fish Hatchery Fall-run							
Tag Code: 06/86/92			Size: 20K			Trailer # CA3	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
4/22/2011	A3	A6	9,141	-	27,423	-	36,564
Tag Code Totals:			-	9,141	-	27,423	36,564

Table 2b. Summary of Hatchery Fall-run Tag Codes and Tag Retention Study

Feather River Fish Hatchery Summary										
Tag Code Size and Location			Tag Code Totals			Retention Calculations				
Tag Code	Size	Raceway	Number Tagged	Number Untagged	Total Processed	# of Fish Held	Days Held	% Retention	# Retaining Tag	Calculated Untagged
06/86/74	130k	A1	145,301	436,281	581,582	857	23	99.53%	144,623	436,959
06/87/54	100k	A6	110,419	331,488	441,907	618	19	99.19%	109,526	332,381
06/87/53	150k*	D1	172,773	-	172,773	915	21	99.67%	172,207	566
06/87/02	40k*	D2	42,298	-	42,298	923	21	99.13%	41,931	367
06/87/49	350k	CH2	397,732	1,194,258	1,591,990	832	21	99.16%	394,386	1,197,604
06/87/52	350k	C2, C4, C6, D4, D6	406,382	1,220,457	1,626,839	980	20	99.59%	404,723	1,222,116
06/87/51	350k	F2, F4, F6, E4, E6	402,785	1,209,567	1,612,352	968	21	99.28%	399,872	1,212,480
06/87/09	150k	B4, B2	167,484	502,773	670,257	867	21	99.54%	166,711	503,546
06/87/50	350k	CH1	400,911	1,203,693	1,604,604	870	21	99.43%	398,607	1,205,997
06/86/92	20k**	A4	9,141	27,423	36,564	-	-	99.39%	9,085	27,479
06/87/36	15k***	D1	15,751	-	15,751	-	-	99.67%	15,699	52
Grand Total = 8,396,917			2,270,977	6,125,940	8,396,917	Avg % Retention =		99.39%	Total 2,257,370	Total 6,139,547

* 100% Mark and Tag

** Tag Retention study included with other group

*** 100% Mark and Tag group with no tag retention group, uses retention study from other group

Feather River Fish Hatchery Spring-run - 100% Mark/Tag							
Tag Code: 06/87/47			Size: 1 million			Trailer # CA2	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
2/22/2011	H2	H6	78,780	-	-	-	78,780
2/23/2011	H2	H6	65,411	144,191	-	-	144,191
2/23/2011	H2	H6	48,434	192,625	-	-	192,625
2/24/2011	H2	H6	64,485	257,110	-	-	257,110
2/24/2011	H2	H6	60,287	317,397	-	-	317,397
2/25/2011	H2	H6	8,983	326,380	-	-	326,380
2/25/2011	H2	H2	42,703	-	-	-	42,703
2/25/2011	H2	H2	56,387	99,090	-	-	99,090
3/1/2011	H2	H2	69,852	168,942	-	-	168,942
3/2/2011	H2	H2	65,148	234,090	-	-	234,090
3/2/2011	H2	H2	59,121	293,211	-	-	293,211
3/3/2011	H2/H4	H2	54,175	347,386	-	-	347,386
3/3/2011	H2/H4	H2	53,129	400,515	-	-	400,515
3/4/2011	H4	H2	50,562	451,077	-	-	451,077
3/4/2011	H4	H4	43,486	-	-	-	43,486
3/7/2011	H4	H4	46,317	89,803	-	-	89,803
3/7/2011	H4	H4	54,493	144,296	-	-	144,296
3/8/2011	H4	H4	39,769	184,065	-	-	184,065
3/8/2011	H4	H4	23,856	207,921	-	-	207,921
3/8/2011	H4	H4	6,868	214,789	-	-	214,789
3/8/2011	H4	H4	2,729	217,518	-	-	217,518
3/9/2011	H4	H4	19,566	237,084	-	-	237,084
3/9/2011	H4	H4	83,403	320,487	-	-	320,487
3/10/2011	H4	H4	59,578	380,065	-	-	380,065
Tag Code Totals:			-	1,157,522	-	-	1,157,522

Feather River Fish Hatchery Spring-run - 100% Mark/Tag							
Tag Code: 06/87/41			Size: 10K			Trailer # CA2	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
3/10/2011	H4	H4	1,036	1,036	-	-	1,036
Tag Code Totals:			-	1,036	-	-	1,036

Feather River Fish Hatchery Spring-run - 100% Mark/Tag							
Tag Code: 06/87/48			Size: 1 million			Trailer # CA2	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
3/10/2011	G2	G6	63,236	-	-	-	63,236
3/11/2011	G2	G6	57,728	120,964	-	-	120,964
3/11/2011	G2	G6	53,548	174,512	-	-	174,512
3/14/2011	G2	G6	36,546	211,058	-	-	211,058
3/14/2011	G2	G6	52,157	263,215	-	-	263,215
3/15/2011	G2	G6	48,147	311,362	-	-	311,362
3/15/2011	G2	G6	15,327	326,689	-	-	326,689
3/15/2011	G2	G2	29,557	-	-	-	29,557
3/16/2011	G2	G2	63,528	93,085	-	-	93,085
3/16/2011	G2	G2	60,906	153,991	-	-	153,991
3/17/2011	G2	G2	56,578	210,569	-	-	210,569
3/17/2011	G4	G2	54,732	265,301	-	-	265,301
3/18/2011	G4	G2	50,478	315,779	-	-	315,779
3/18/2011	G4	G2	42,961	358,740	-	-	358,740
3/21/2011	G4	G2	50,022	408,762	-	-	408,762
3/21/2011	G4	G2	42,815	451,577	-	-	451,577
3/21/2011	G4	G4	6,148	-	-	-	6,148
3/22/2011	G4	G4	65,622	71,770	-	-	71,770
3/22/2011	G4	G4	61,399	133,169	-	-	133,169
3/23/2011	G4	G4	62,262	195,431	-	-	195,431
3/23/2011	G4	G4	55,993	251,424	-	-	251,424
3/24/2011	G4	G4	62,849	314,273	-	-	314,273
3/24/2011	G4	G4	52,758	367,031	-	-	367,031
3/25/2011	G4	G4	33,897	400,928	-	-	400,928
Tag Code Totals:			-	1,179,194	-	-	1,179,194

Feather River Fish Hatchery Spring-run - 100% Mark/Tag							
Tag Code: 06/87/43			Size: 5K			Trailer # CA2	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
3/25/2011	G4	G4	5,243	5,243	-	-	5,243
Tag Code Totals:			-	5,243	-	-	5,243

Table 2c. Summary of Hatchery Spring-Run Tag Codes and Tag Retention Study

Feather River Fish Hatchery 100% Mark/Tag Spring-run Summary								
Tag Code Size and Location			Tag Code Totals	Retention Calculations				
Tag Code	Size	Raceway	Total Tagged	# of Fish Held	Days Held	% Retention	# Retaining Tag	Calculated Untagged
06/87/47	1.0mil	H2, H4, H6	1,157,522	900	21	98.67%	1,142,088	15,434
06/87/41	10k*	H4	1,036	-	-	98.67%	1,022	14
06/87/43	5k*	G4	5,243	-	-	99.04%	5,193	50
06/87/48	1.0mil	G2, G4, G6	1,179,194	935	21	99.04%	1,167,843	11,351
Grand Total = 2,342,995			2,342,995	Avg % Retention =		98.86%	Total 2,316,146	Total 26,849

*No separate retention fish were held for the smaller tag codes as they were in the same raceways as the larger tag codes. Random samples of fish were taken from each raceway section (3 sections each from raceways G and H) and the retention rate was applied to both tag codes in the same raceway.

Feather River Fish Hatchery Coho Triploids - 100% Mark/Tag							
Tag Code: 06/87/34			Size: 25K			Trailer # CA3	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
5/16/2011	Vats	X1	2,986	-	-	-	2,986
5/17/2011	Vats	X1	16,902	19,888	-	-	19,888
Tag Code Totals:			-	19,888	-	-	19,888

Feather River Fish Hatchery Coho Diploids - 100% Mark/Tag							
Tag Code: 06/87/82			Size: 125K			Trailer # CA3	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
5/17/2011	Y1	X3	28,302	-	-	-	28,302
5/18/2011	Y1	X3	52,779	81,081	-	-	81,081
5/19/2011	Y1	X3	43,835	124,916	-	-	124,916
5/20/2011	Y1	X3	16,078	140,994	-	-	140,994
Tag Code Totals:			-	140,994	-	-	140,994

Feather River Fish Hatchery Coho Diploids - 100% Mark/Tag							
Tag Code: 06/86/98			Size: 50K			Trailer # CA3	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
5/20/2011	Y	X3	17,810	-	-	-	17,810
5/23/2011	Y	X3	34,539	52,349	-	-	52,349
Tag Code Totals:			-	52,349	-	-	52,349

Feather River Fish Hatchery Coho Diploids - 100% Mark/Tag							
Tag Code: 06/87/05			Size: 30K			Trailer # CA3	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
5/23/2011	Y	X3	10,069	-	-	-	10,069
5/24/2011	Y	X3	18,384	28,453	-	-	28,453
Tag Code Totals:			-	28,453	-	-	28,453

Table 2d. Summary of Hatchery Coho Tag Codes and Tag Retention Study

Feather River Fish Hatchery Summary								
Tag Code Size and Location			Tag Code Totals	Retention Calculations				
Tag Code	Size	Raceway	Total Tagged	# of Fish Held	Days Held	% Retention	# Retaining Tag	Calculated Untagged
06/87/34	25k	Coho 1	19,888	905	27	97.68%	19,427	461
06/87/82	125k*	X4	140,994	900	23	99.56%	140,367	627
06/86/98	50k*	X4	52,349	-	23	99.56%	52,116	233
06/87/05	30k*	X4	28,453	-	23	99.56%	28,327	126
Grand Total = 241,684			241,684	Avg % Retention =		98.61%	Total 240,237	Total 1,447

* 100% Mark and Tag group that had all three tag codes in the same raceway. 900 fish were sampled and this tag rate was applied to all three tag codes.

Feather River Steelhead - 100% Mark Only					
			Trailer # CA3		
Marking Date	Raceway Prior To Marking	Raceway Following Marking	Daily Mark Total	Cumulative Marked	Raceway Total
6/14/2011	E2	E4	38,505	38,505	38,505
6/15/2011	E2	E4	49,578	88,083	88,083
6/16/2011	E2	E4	40,152	128,235	128,235
6/21/2011	E2	E1	24,252	24,252	24,252
6/22/2001	E2	E1	32,111	56,363	56,363
7/6/2011	F1	F4	37,063	37,063	37,063
7/7/2011	F1	F4	34,728	71,791	71,791
7/11/2011	F1	F4	46,476	118,267	118,267
7/12/2011	F1	F4	8,369	126,636	126,636
7/12/2011	F2	F1	28,508	28,508	28,508
7/13/2011	F2	F1	50,208	78,716	78,716
7/14/2011	F2	F1	38,543	117,259	117,259

Hatchery Total = 428,493

Feather River Fish Hatchery In-river 100% Manual Mark/Tag							
Tag Code: 06/8/7/0/0			Size: 5K			Tag Shack	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Vat Total
12/22/2011	Vat	Vat	2,959	-	-	-	2,959
Tag Code Totals:			-	2,959	-	-	2,959

Feather River Fish Hatchery In-river 100% Manual Mark/Tag							
Tag Code: 06/8/7/0/1			Size: 5K			Tag Shack	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Vat Total
1/4-1/5/2011	Vat	Vat	5,876	-	-	-	5,876
Tag Code Totals:			-	5,876	-	-	5,876

Feather River Fish Hatchery In-river 100% Manual Mark/Tag							
Tag Code: 06/8/7/0/2			Size: 5K			Tag Shack	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Vat Total
1/5-1/6/2011	Vat	Vat	5,585	-	-	-	5,585
Tag Code Totals:			-	5,585	-	-	5,585

Feather River Fish Hatchery In-river 100% Manual Mark/Tag							
Tag Code: 06/8/7/0/3			Size: 5K			Tag Shack	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Vat Total
1/6/2011	Vat	Vat	2,103	-	-	-	2,103
Tag Code Totals:			-	2,103	-	-	2,103

Feather River Fish Hatchery In-river 100% Manual Mark/Tag							
Tag Code: 06/8/7/0/4			Size: 5K			Tag Shack	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Vat Total
1/10-1/11/2011	Vat	Vat	6,093	-	-	-	6,093
Tag Code Totals:			-	6,093	-	-	6,093

Feather River Fish Hatchery In-river 100% Manual Mark/Tag							
Tag Code: 06/8/7/0/5			Size: 5K			Tag Shack	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Vat Total
1/11-1/12/2011	Vat	Vat	6,081	-	-	-	6,081
Tag Code Totals:			-	6,081	-	-	6,081

Feather River Fish Hatchery In-river 100% Manual Mark/Tag							
Tag Code: 06/8/7/0/6			Size: 5K			Tag Shack	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Vat Total
1/12-1/13/2011	Vat	Vat	6,140	-	-	-	6,140
Tag Code Totals:			-	6,140	-	-	6,140

Feather River Fish Hatchery In-river 100% Manual Mark/Tag							
Tag Code: 06/8/7/0/7			Size: 5K			Tag Shack	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Vat Total
1/13/2011	Vat	Vat	3,196	-	-	-	3,196
Tag Code Totals:			-	3,196	-	-	3,196

Feather River Fish Hatchery In-river 100% Manual Mark/Tag							
Tag Code: 06/8/7/0/8			Size: 5K			Tag Shack	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Vat Total
1/17/2011	Vat	Vat	5,690	-	-	-	5,690
Tag Code Totals:			-	5,690	-	-	5,690

Feather River Fish Hatchery In-river 100% Manual Mark/Tag							
Tag Code: 06/8/7/0/9			Size: 5K			Tag Shack	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Vat Total
1/17-1/18/2011	Vat	Vat	5,803	-	-	-	5,803
Tag Code Totals:			-	5,803	-	-	5,803

Feather River Fish Hatchery In-river 100% Manual Mark/Tag							
Tag Code: 06/8/7/1/0			Size: 5K			Tag Shack	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Vat Total
1/18-1/19/2011	Vat	Vat	5,705	-	-	-	5,705
Tag Code Totals:			-	5,705	-	-	5,705

Feather River Fish Hatchery In-river 100% Manual Mark/Tag							
Tag Code: 06/8/7/1/1			Size: 5K			Tag Shack	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Vat Total
1/19/2011	Vat	Vat	4,404	-	-	-	4,404
Tag Code Totals:			-	4,404	-	-	4,404

* This group was cut short to finish the rest of the wire on 1/20/2011 and used for a screw trap efficiency release.

Feather River Fish Hatchery In-river 100% Manual Mark/Tag							
Tag Code: 06/8/7/1/1			Size: 5K			Tag Shack	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Vat Total
1/20/2011	Vat	Vat	756	-	-	-	756
Tag Code Totals:			-	756	-	-	756

Feather River Fish Hatchery In-river 100% Manual Mark/Tag							
Tag Code: 06/8/7/1/2			Size: 5K			Tag Shack	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Vat Total
1/20/2011	Vat	Vat	5,673	-	-	-	5,673
Tag Code Totals:			-	5,673	-	-	5,673

Feather River Fish Hatchery In-river 100% Manual Mark/Tag							
Tag Code: 06/8/7/1/3			Size: 5K			Tag Shack	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Vat Total
1/24/2011	Vat	Vat	5,690	-	-	-	5,690
Tag Code Totals:			-	5,690	-	-	5,690

Feather River Fish Hatchery In-river 100% Manual Mark/Tag							
Tag Code: 06/8/7/1/4			Size: 5K			Tag Shack	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Vat Total
1/24-1/25/2011	Vat	Vat	5,370	-	-	-	5,370
Tag Code Totals:			-	5,370	-	-	5,370

Feather River Fish Hatchery In-river 100% Manual Mark/Tag							
Tag Code: 06/8/7/1/5			Size: 5K			Tag Shack	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Vat Total
1/25/2011	Vat	Vat	5,721	-	-	-	5,721
Tag Code Totals:			-	5,721	-	-	5,721

Feather River Fish Hatchery In-river 100% Manual Mark/Tag							
Tag Code: 06/8/7/1/6			Size: 5K			Tag Shack	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Vat Total
1/25-1/26/2011	Vat	Vat	5,450	-	-	-	5,450
Tag Code Totals:			-	5,450	-	-	5,450

Feather River Fish Hatchery In-river 100% Manual Mark/Tag							
Tag Code: 06/8/7/1/7			Size: 5K			Tag Shack	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Vat Total
1/26-1/27/2011	Vat	Vat	5,172	-	-	-	5,172
Tag Code Totals:			-	5,172	-	-	5,172

Feather River Fish Hatchery In-river 100% Manual Mark/Tag							
Tag Code: 06/8/7/1/8			Size: 5K			Tag Shack	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Vat Total
1/27/2011	Vat	Vat	5,163	-	-	-	5,163
Tag Code Totals:			-	5,163	-	-	5,163

Feather River Fish Hatchery In-river 100% Manual Mark/Tag							
Tag Code: 06/8/7/1/9			Size: 5K			Tag Shack	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Vat Total
1/27/2011	Vat	Vat	2,234	-	-	-	2,234
Tag Code Totals:			-	2,234	-	-	2,234

Feather River Fish Hatchery In-river 100% Manual Mark/Tag							
Tag Code: 06/8/2/0			Size: 5K			Tag Shack	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Vat Total
1/31/2011	Vat	Vat	5,733	-	-	-	5,733
Tag Code Totals:			-	5,733	-	-	5,733

Feather River Fish Hatchery In-river 100% Manual Mark/Tag							
Tag Code: 06/8/7/2/1			Size: 5K			Tag Shack	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Vat Total
1/31-2/1/2011	Vat	Vat	5,546	-	-	-	5,546
Tag Code Totals:			-	5,546	-	-	5,546

Feather River Fish Hatchery In-river 100% Manual Mark/Tag							
Tag Code: 06/8/7/2/2			Size: 5K			Tag Shack	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Vat Total
2/1/2011	Vat	Vat	5,264	-	-	-	5,264
Tag Code Totals:			-	5,264	-	-	5,264

Feather River Fish Hatchery In-river 100% Manual Mark/Tag							
Tag Code: 06/8/7/2/3			Size: 5K			Tag Shack	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Vat Total
2/1-2/2/2011	Vat	Vat	5,705	-	-	-	5,705
Tag Code Totals:			-	5,705	-	-	5,705

Feather River Fish Hatchery In-river 100% Manual Mark/Tag							
Tag Code: 06/8/7/2/4			Size: 5K			Tag Shack	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Vat Total
2/2/2011	Vat	Vat	5,351	-	-	-	5,351
Tag Code Totals:			-	5,351	-	-	5,351

Feather River Fish Hatchery In-river 100% Manual Mark/Tag							
Tag Code: 06/8/7/2/5			Size: 5K			Tag Shack	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Vat Total
2/3/2011	Vat	Vat	5,312	-	-	-	5,312
Tag Code Totals:			-	5,312	-	-	5,312

Feather River Fish Hatchery In-river 100% Manual Mark/Tag							
Tag Code: 06/8/7/2/6			Size: 5K			Tag Shack	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Vat Total
2/3/2011	Vat	Vat	4,889	-	-	-	4,889
Tag Code Totals:			-	4,889	-	-	4,889

Feather River Fish Hatchery In-river 100% Manual Mark/Tag							
Tag Code: 06/8/7/2/7			Size: 5K			Tag Shack	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Vat Total
2/7/2011	Vat	Vat	5,326	-	-	-	5,326
Tag Code Totals:			-	5,326	-	-	5,326

Feather River Fish Hatchery In-river 100% Manual Mark/Tag							
Tag Code: 06/8/7/2/8			Size: 5K			Tag Shack	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Vat Total
2/7/2011	Vat	Vat	5,596	-	-	-	5,596
Tag Code Totals:			-	5,596	-	-	5,596

Feather River Fish Hatchery In-river 100% Manual Mark/Tag							
Tag Code: 06/8/7/2/9			Size: 5K			Tag Shack	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Vat Total
2/8/2011	Vat	Vat	5,193	-	-	-	5,193
Tag Code Totals:			-	5,193	-	-	5,193

Feather River Fish Hatchery In-river 100% Manual Mark/Tag							
Tag Code: 06/8/7/3/0			Size: 5K			Tag Shack	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Vat Total
2/8/2011	Vat	Vat	5,259	-	-	-	5,259
Tag Code Totals:			-	5,259	-	-	5,259

Feather River Fish Hatchery In-river 100% Manual Mark/Tag							
Tag Code: 06/8/7/3/1			Size: 5K			Tag Shack	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Vat Total
2/9/2011	Vat	Vat	5,379	-	-	-	5,379
Tag Code Totals:			-	5,379	-	-	5,379

Feather River Fish Hatchery In-river 100% Manual Mark/Tag							
Tag Code: 06/8/7/3/2			Size: 5K			Tag Shack	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Vat Total
2/9/2011	Vat	Vat	5,739	-	-	-	5,739
Tag Code Totals:			-	5,739	-	-	5,739

Feather River Fish Hatchery In-river 100% Manual Mark/Tag							
Tag Code: 06/8/7/3/3			Size: 5K			Tag Shack	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Vat Total
2/10/2011	Vat	Vat	5,604	-	-	-	5,604
Tag Code Totals:			-	5,604	-	-	5,604

Feather River Fish Hatchery In-river 100% manual Mark/Tag							
Tag Code: 06/8/7/3/4			Size: 5K			Tag Shack	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Vat Total
2/14/2011	Vat	Vat	5,263	-	-	-	5,263
Tag Code Totals:			-	5,263	-	-	5,263

Feather River Fish Hatchery In-river 100% Manual Mark/Tag							
Tag Code: 06/8/7/3/5			Size: 5K			Tag Shack	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Vat Total
2/15/2011	Vat	Vat	5,461	-	-	-	5,461
Tag Code Totals:			-	5,461	-	-	5,461

Feather River Fish Hatchery In-river 100% Manual Mark/Tag							
Tag Code: 06/8/7/3/6			Size: 5K			Tag Shack	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Vat Total
2/15-2/16/2011	Vat	Vat	5,768	-	-	-	5,768
Tag Code Totals:			-	5,768	-	-	5,768

Feather River Fish Hatchery In-river 100% Manual Mark/Tag							
Tag Code: 06/8/7/3/7			Size: 5K			Tag Shack	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Vat Total
2/17/2011	Vat	Vat	2,639	-	-	-	2,639
Tag Code Totals:			-	2,639	-	-	2,639

None of these fish were held for retention purposes as all fish were released within 24 hours after tagging. The clipping and tagging daily quality checks were used for the tag code data that was submitted to the RMPC.

Total for in-river tagging = 195,891

Feather River Hatchery Annex



Table 3a. Daily Tagging Rates at the Feather River Hatchery Annex

Feather River Annex Fall-run							
Tag Code: 06/87/46			Size: 470K			Trailer # CA3	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
2/11/2011	A2	A6	6,475	-	19,548	-	26,023
2/14/2011	A2	A6	19,411	25,886	58,293	77,841	103,727
2/14/2011	A2	A2	31,315	-	93,960	-	125,275
2/15/2011	A2/A4	A2	28,364	59,679	85,284	179,244	238,923
2/15/2011	A4	A4	33,504	-	100,530	-	134,034
2/16/2011	A4	A4	6,299	39,803	19,071	119,601	159,404
2/16/2011	B2	B6	24,746	-	74,271	-	99,017
2/16/2011	B2/B4	B2	29,005	-	87,021	-	116,026
2/17/2011	B4	B2	35,014	64,019	105,108	192,129	256,148
2/17/2011	B4	B4	34,687	-	104,067	-	138,754
2/18/2011	C2	C6	26,854	-	80,664	-	107,518
2/18/2011	C2	C2	18,516	-	55,548	-	74,064
2/21/2011	C2	C2	21,687	40,203	65,145	120,693	160,896
2/22/2011	C4	C2	29,036	69,239	87,273	207,966	277,205
2/22/2011	C4	C4	30,224	-	90,696	-	120,920
2/23/2011	C4	C4	21,086	51,310	63,330	154,026	205,336
2/23/2011	D2	D6	28,721	-	86,235	-	114,956
2/24/2011	D2	D2	34,713	-	104,301	-	139,014
2/24/2011	D2/D4	D2	24,578	59,291	73,794	178,095	237,386
2/25/2011	D4	D2	11,923	71,214	35,910	214,005	285,219
2/25/2011	D4	D4	34,554	-	103,722	-	138,276
2/28/2011	D4	D4	10,597	45,151	31,932	135,654	180,805
Tag Code Totals:			-	541,309	-	1,625,703	2,167,012

Table 3b. Summary of Hatchery Tag Codes and Tag Retention Studies

Feather River Annex Hatchery Fall-run Summary										
Tag Code Size and Location			Tag Code Totals			Retention Calculations				
Tag Code	Size	Raceway	Total Tagged	Total Untagged	Total Processed	# of Fish Held	Days Held	% Retention	# Retaining Tags	Calculated Untagged
06/87/46	470k	A,B,C,D	541,309	1,625,703	2,167,012	933	21	99.57%	538,988	1,628,024
Grand Total = 2,167,012			541,309	1,625,703	2,167,012	Avg % Retention =		99.57%	Total 538,988	Total 1,628,024

Mokelumne River Hatchery



Table 4a. Daily Tagging Rates at Mokelumne River Hatchery

Mokelumne River Fish Hatchery Fall-run							
Tag Code: 06/87/56			Size: 90K			Trailer # CA2	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
3/28/2011	B	A	35,167	-	105,558	-	140,725
3/29/2011	B	A	25,170	60,337	75,549	181,107	241,444
3/29/2011	B	A	23,595	83,932	70,839	251,946	335,878
3/29/2011	C	A	15,406	99,338	47,298	299,244	398,582
Tag Code Totals:			-	99,338	-	299,244	398,582

Mokelumne River Fish Hatchery Fall-run							
Tag Code: 06/87/57			Size: 90K			Trailer # CA2	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
3/29/2011	C	B	8,143	-	24,432	-	32,575
3/30/2011	C	B	21,115	29,258	63,369	87,801	117,059
3/30/2011	C	B	21,237	50,495	63,792	151,593	202,088
3/30/2011	C	B	24,165	74,660	72,552	224,145	298,805
3/31/2011	D	B	26,276	100,936	78,894	303,039	403,975
Tag Code Totals:			-	100,936	-	303,039	403,975

Mokelumne River Fish Hatchery Fall-run							
Tag Code: 06/87/58			Size: 90K			Trailer # CA2	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
3/31/2011	D	C	26,796	-	80,499	-	107,295
3/31/2011	D	C	32,004	58,800	96,084	176,583	235,383
4/1/2011	D/E	C	23,647	82,447	70,986	247,569	330,016
4/1/2011	E	C	16,971	99,418	50,997	298,566	397,984
Tag Code Totals:			-	99,418	-	298,566	397,984

Mokelumne River Fish Hatchery Fall-run							
Tag Code: 06/86/94			Size: 100K			Trailer # CA2	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
4/1/2011	E	D	35,261	-	105,822	-	141,083
4/4/2011	E	D	22,492	57,753	67,623	173,445	231,198
4/4/2011	F	D	22,896	80,649	68,787	242,232	322,881
4/5/2011	F	D	32,412	113,061	97,347	339,579	452,640
Tag Code Totals:			-	113,061	-	339,579	452,640

Mokelumne River Fish Hatchery Fall-run							
Tag Code: 06/87/59			Size: 90K			Trailer # CA2	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
4/5/2011	F	E	22,554	-	67,668	-	90,222
4/6/2011	F	E	22,961	45,515	68,967	136,635	182,150
4/6/2011	G	E	27,998	73,513	84,051	220,686	294,199
4/7/2011	G	E	25,744	99,257	77,313	297,999	397,256
Tag Code Totals:			-	99,257	-	297,999	397,256

Mokelumne River Fish Hatchery Fall-run							
Tag Code: 06/87/60			Size: 90K			Trailer # CA2	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
4/7/2011	G	F	35,684	-	107,151	-	142,835
4/8/2011	G/H	F	27,988	63,672	84,036	191,187	254,859
4/8/2011	H	F	29,808	93,480	89,466	280,653	374,133
4/11/2011	H	F	5,911	99,391	17,817	298,470	397,861
Tag Code Totals:			-	99,391	-	298,470	397,861

Mokelumne River Fish Hatchery Fall-run							
Tag Code: 06/87/61			Size: 90K			Trailer # CA2	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
4/11/2011	H	G	15,906	-	47,721	-	63,627
4/11/2011	H	G	33,121	49,027	99,450	147,171	196,198
4/12/2011	H	G	13,607	62,634	40,878	188,049	250,683
4/12/2011	I	G	39,863	102,497	119,679	307,728	410,225
Tag Code Totals:			-	102,497	-	307,728	410,225

Mokelumne River Fish Hatchery Fall-run							
Tag Code: 06/87/62			Size: 90K			Trailer # CA2	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
4/13/2011	I	H	26,244	-	78,789	-	105,033
4/13/2011	I	H	28,804	55,048	86,496	165,285	220,333
4/14/2011	I/J	H	27,524	82,572	82,626	247,911	330,483
4/14/2011	J	H	18,343	100,915	55,107	303,018	403,933
Tag Code Totals:			-	100,915	-	303,018	403,933

Mokelumne River Fish Hatchery Fall-run							
Tag Code: 06/87/63			Size: 90K			Trailer # CA2	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
4/14/2011	J	I	9,886	-	29,685	-	39,571
4/15/2011	J	I	24,893	34,779	74,745	104,430	139,209
4/15/2011	J	I	34,004	68,783	102,108	206,538	275,321
4/18/2011	K	I	18,897	87,680	56,769	263,307	350,987
4/18/2011	K	I	13,260	100,940	39,780	303,087	404,027
Tag Code Totals:			-	100,940	-	303,087	404,027

Mokelumne River Fish Hatchery Fall-run							
Tag Code: 06/87/55			Size: 100K			Trailer # CA2	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
4/19/2011	K	J	29,258	-	87,810	-	117,068
4/19/2011	K	J	31,998	61,256	96,003	183,813	245,069
4/20/2011	K/L	J	32,751	94,007	98,343	282,156	376,163
4/20/2011	L	J	17,691	111,698	53,088	335,244	446,942
Tag Code Totals:			-	111,698	-	335,244	446,942

Mokelumne River Fish Hatchery Fall-run							
Tag Code: 06/87/64			Size: 90K			Trailer # CA2	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
4/20/2011	L	K	5,788	-	17,367	-	23,155
4/21/2011	L	K	30,605	36,393	91,914	109,281	145,674
4/21/2011	L	K	28,091	64,484	84,288	193,569	258,053
4/22/2011	L/M	K	24,037	88,521	72,204	265,773	354,294
4/22/2011	L/M	K	10,527	99,048	31,590	297,363	396,411
Tag Code Totals:			-	99,048	-	297,363	396,411

Mokelumne River Fish Hatchery Fall-run							
Tag Code: 06/86/93			Size: 125K			Trailer # CA2	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
4/27/2011	N	M	16,466	-	49,428	-	65,894
4/28/2011	N	M	30,896	47,362	92,715	142,143	189,505
4/28/2011	N	M	39,423	86,785	118,286	260,429	347,214
4/29/2011	N	M	13,156	99,941	39,489	299,918	399,859
4/29/2011	Q	M	42,655	142,596	128,028	427,946	570,542
Tag Code Totals:			-	142,596	-	427,946	570,542

Mokelumne River Fish Hatchery Fall-run							
Tag Code: 06/87/65			Size: 90K			Trailer # CA2	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
4/22/2011	M	L	8,690	-	26,073	-	34,763
4/25/2011	M	L	46,238	54,928	138,777	164,850	219,778
4/26/2011	M	L	43,811	98,739	131,463	296,313	395,052
4/27/2011	N	L	6,714	105,453	20,127	316,440	421,893
Tag Code Totals:			-	105,453	-	316,440	421,893

Mokelumne River Fish Hatchery Fall-run							
Tag Code: 06/86/63			Size: 30K			Trailer # CA2	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
4/27/2011	N	L	30,934	-	92,850	-	123,784
Tag Code Totals:			-	30,934	-	92,850	123,784

Mokelumne River Fish Hatchery Fall-run - 100% Mark/Tag							
Tag Code: 06/87/66			Size: 90K			Trailer # CA2	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
5/2/2011	Q	S	55,671	-	-	-	55,671
5/3/2011	Q	T	45,340	101,011	-	-	45,340
Tag Code Totals:			-	101,011	-	-	101,011

Mokelumne River Fish Hatchery Fall-run							
Tag Code: 06/95/05			Size: 90K			Trailer # CA2	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
5/3/2011	Q	N	25,064	-	75,240	-	100,304
5/4/2011	Q	N	46,461	71,525	139,488	214,728	286,253
5/4/2011	R	N	14,027	-	42,117	-	56,144
5/5/2011	R	N	10,927	24,954	32,838	74,955	99,909
Tag Code Totals:			-	96,479	-	289,683	386,162

Mokelumne River Fish Hatchery Fall-run							
Tag Code: 06/95/03			Size: 90K			Trailer # CA2	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
5/5/2011	R	Q	39,280		117,873		157,153
5/6/2011	R	Q	50,124	89,404	150,441	268,314	357,718
5/9/2011	R	Q	12,694	102,098	38,133	306,447	408,545
Tag Code Totals:				102,098		306,447	408,545

Mokelumne River Fish Hatchery Fall-run							
Tag Code: 06/86/90			Size: 20K			Trailer # CA2	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
5/9/2011	R	Q	6,567	-	19,701		26,268
Tag Code Totals:			-	6,567		19,701	26,268

Mokelumne Steelhead - 100% Mark Only					
			Trailer # CA2		
Marking Date	Raceway Prior To Marking	Raceway Following Marking	Daily Mark Total	Cumulative Marked	Raceway Total
6/20/2011	Vats	H	9,476	9,476	9,476
6/21/2011	Vats	H	20,597	30,073	30,073
6/21/2011	Vats	I	22,221	22,221	22,221
6/22/2001	Vats	I	7,854	30,075	30,075
6/22/2011	Vats	J	30,064	30,064	30,064
6/22/2011	Vats	K	19,543	19,543	19,543
6/23/2011	Vats	K	10,488	30,031	30,031
6/23/2011	Vats	L	28,107	28,107	28,107
6/27/2011	Vats	M	23,920	23,920	23,920

Hatchery Total = 172,270

Table 4b. Summary of Hatchery Tag Codes and Tag Retention Studies

Mokelumne River Fish Hatchery Summary										
Tag Code Size and Location			Tag Code Totals			Retention Calculations				
Tag Code	Size	Raceway	Total Tagged	Total Untagged	Total Processed	# of Fish Held	Days Held	% Retention	# Retaining Tags	Calculated Untagged
06/95/03	90k	Q	102,098	306,447	408,545	401	11	99.75%	101,843	306,702
06/86/90	20k**	Q	6,567	19,701	26,268	-	-	-	6,567	19,701
06/87/63	90k	I	100,940	303,087	404,027	324	18	100.00%	100,940	303,087
06/87/62	90k	H	100,915	303,018	403,933	388	21	99.74%	100,655	303,278
06/87/65	90k	L	105,453	316,440	421,893	400	23	99.75%	105,189	316,704
06/86/63	30k**	L	30,934	92,850	123,784	-	-	-	30,857	92,927
06/86/93	125k	M	142,596	427,946	570,542	406	21	99.75%	142,245	428,297
06/87/58	90k	C	99,418	298,566	397,984	400	20	99.50%	98,921	299,063
06/87/57	90k	B	100,936	303,039	403,975	400	20	98.75%	99,674	304,301
06/87/60	90k	F	99,391	298,470	397,861	383	21	99.48%	98,872	298,989
06/87/59	90k	E	99,257	297,999	397,256	393	19	98.98%	98,247	299,009
06/87/55	100k	J	111,698	335,244	446,942	403	18	99.50%	111,144	335,798
06/87/56	90k	A	99,338	299,244	398,582	402	22	99.50%	98,844	299,738
06/95/05	90k	N	96,479	289,683	386,162	350	15	99.71%	96,203	289,959
06/86/94	100k	D	113,061	339,579	452,640	400	16	99.50%	112,496	340,144
06/87/61	90k	G	102,497	307,728	410,225	400	22	98.75%	101,216	309,009
06/87/64	90k	K	99,048	297,363	396,411	403	20	99.26%	98,311	298,100
06/87/66	90k*	S/T	101,011	0	101,011	-	-	-	101,011	-
Grand Total = 6,548,041			1,711,637	4,836,404	6,548,041	Avg % Retention =		99.46%	Total 1,703,235	Total 4,844,806

* 100% Mark and Tag group for yearling study, no tag retention to date

** Used retention study group from associated tag code

Nimbus Hatchery



Table 5a. Daily Tagging Rates at Nimbus Hatchery

Nimbus Fish Hatchery Fall-run							
Tag Code: 06/87/67			Size: 350K			Trailer # CA1	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
4/18/2011	A	A	39,770	-	119,328	-	159,098
4/19/2011	A	A	38,177	77,947	114,570	233,898	311,845
4/19/2011	A	A	36,875	114,822	110,697	344,595	459,417
4/20/2011	A	A	33,725	148,547	101,223	445,818	594,365
4/20/2011	A	A	20,163	168,710	60,549	506,367	675,077
4/20/2011	B	B	14,745	-	44,277	-	59,022
4/21/2011	B	B	43,454	58,199	130,401	174,678	232,877
4/21/2011	B	B	37,538	95,737	112,653	287,331	383,068
4/22/2011	B	B	39,399	135,136	118,248	405,579	540,715
4/22/2011	B	B	38,318	173,454	115,014	520,593	694,047
4/25/2011	B	B	25,167	198,621	75,534	596,127	794,748
Tag Code Totals:			-	367,331	-	1,102,494	1,469,825

Nimbus Fish Hatchery Fall-run							
Tag Code: 06/87/68			Size: 350K			Trailer # CA1	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
4/25/2011	C	C	41,049	-	123,198	-	164,247
4/26/2011	C	C	35,408	76,457	106,251	229,449	305,906
4/26/2011	C	C	42,814	119,271	128,484	357,933	477,204
4/27/2011	C	C	31,328	150,599	94,011	451,944	602,543
4/27/2011	C	C	24,641	175,240	73,977	525,921	701,161
4/27/2011	D	D	10,391	-	31,197	-	41,588
4/28/2011	D	D	36,670	47,061	110,034	141,231	188,292
4/28/2011	D	D	42,969	90,030	129,012	270,243	360,273
4/29/2011	D	D	31,766	121,796	95,337	365,580	487,376
4/29/2011	D	D	40,275	162,071	120,870	486,450	648,521
5/2/2011	D	D	20,995	183,066	63,048	549,498	732,564
5/2/2011	D	D	22,403	205,469	67,236	616,734	822,203
Tag Code Totals:			-	380,709	-	1,142,655	1,523,364

Nimbus Fish Hatchery Fall-run							
Tag Code: 06/87/70			Size: 175K			Trailer # CA1	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
5/2/2011	E	E	15,204	-	45,648	-	60,852
5/3/2011	E	E	42,483	57,687	127,500	173,148	230,835
5/3/2011	E	E	42,766	100,453	128,364	301,512	401,965
5/4/2011	E	E	36,144	136,597	108,483	409,995	546,592
5/4/2011	E	E	40,145	176,742	120,717	530,712	707,454
5/9/2011	E	E	24,827	201,569	74,583	605,295	806,864
Tag Code Totals:			-	201,569	-	605,295	806,864

Nimbus Fish Hatchery Fall-run							
Tag Code: 06/87/83			Size: 40K			Trailer # CA1	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
5/9/2011	E1	E1	16,669	-	50,034	-	66,703
5/10/2011	E1	E1	18,358	35,027	55,119	105,153	140,180
Tag Code Totals:			-	35,027	-	105,153	140,180

Nimbus Fish Hatchery Fall-run - 100% Mark/Tag							
Tag Code: 06/87/69			Size: 245K			Trailer # CA1	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
5/10/2011	F4	F4	36,093	-	-	-	36,093
5/11/2011	F4	F4	67,138	103,231	-	-	103,231
5/11/2011	F4	F4	60,786	164,017	-	-	164,017
5/12/2011	F4	F4	64,611	228,628	-	-	228,628
5/12/2011	F4	F4	39,858	268,486	-	-	268,486
5/13/2011	F4	F4	3,074	271,560	-	-	271,560
Tag Code Totals:			-	271,560	-	-	271,560

Nimbus Fish Hatchery Fall-run							
Tag Code: 06/87/71			Size: 125K			Trailer # CA1	
Tagging Date	Raceway Prior To Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
5/13/2011	F2	F2	13,702	-	41,121	-	54,823
5/13/2011	F2	F2	19,142	32,844	57,462	98,583	131,427
5/16/2011	F2	F2	12,646	45,490	85,131	183,714	229,204
5/17/2011	F2	F2	21,379	66,869	138,436	322,150	389,019
5/18/2011	F2	F2	30,305	97,174	90,963	413,113	510,287
5/19/2011	F2	F2	35,202	132,376	105,636	518,749	651,125
Tag Code Totals:			-	132,376	-	518,749	651,125

Nimbus Steelhead - 100% Mark Only					
			Trailer # CA4		
Marking Date	Raceway Prior To Marking	Raceway Following Marking	Daily Mark Total	Cumulative Marked	Raceway Total
6/27/2011	C2	C1	21,261	21,261	21,261
6/28/2011	C2	C1	45,241	66,502	66,502*
6/29/2011	D2	D1	56,016	56,016	56,016
6/30/2011	D2	D1	34,967	90,983	90,983
6/30/2011	E2	E1	12,043	12,043	12,043
7/1/2011	E2	E1	47,814	59,857	59,857
7/5/2011	E2	E1	21,772	81,629	81,629
7/5/2011	F2	F1	16,944	16,944	16,944
7/6/2011	F2	F1	46,799	63,743	63,743
7/7/2011	F2	F1	18,637	82,380	82,380

* Hatchery personnel ponded unknown number of manually clipped steelhead into raceway C which had not been processed

Hatchery Total = 321,494

Table 5b. Summary of Hatchery Tag Codes and Tag Retention Studies

Nimbus Fish Hatchery Fall-run Summary										
Tag Code Size and Location			Tag Code Totals			Retention Calculations				
Tag Code	Size	Raceway	Total Tagged	Total Untagged	Total Processed	# of Fish Held	Days Held	% Retention	# Retaining Tags	Calculated Untagged
06/87/67	350k	A, B	367,331	1,102,494	1,469,825	896	18	100.00%	367,331	1,102,494
06/87/68	350k	C, D	380,709	1,142,655	1,523,364	860	9	100.00%	380,709	1,142,655
06/87/70	175k	E	201,569	605,295	806,864	399	21	100.00%	201,569	605,295
06/87/83	40k**	E	35,027	105,153	140,180	-	-	100.00%	35,027	105,153
06/87/71	125k	F2	132,376	518,749	651,125	898	21	100.00%	132,376	518,749
06/87/69	245k*	F4	271,560	0	271,560	900	21	99.11%	269,146	2,414
Grand Total = 4,862,918			1,388,572	3,474,346	4,862,918	Avg % Retention =		99.82%	Total 1,386,158	Total 3,476,760

* 100% Mark and Tag group

** Used retention study group from larger associated tag codes