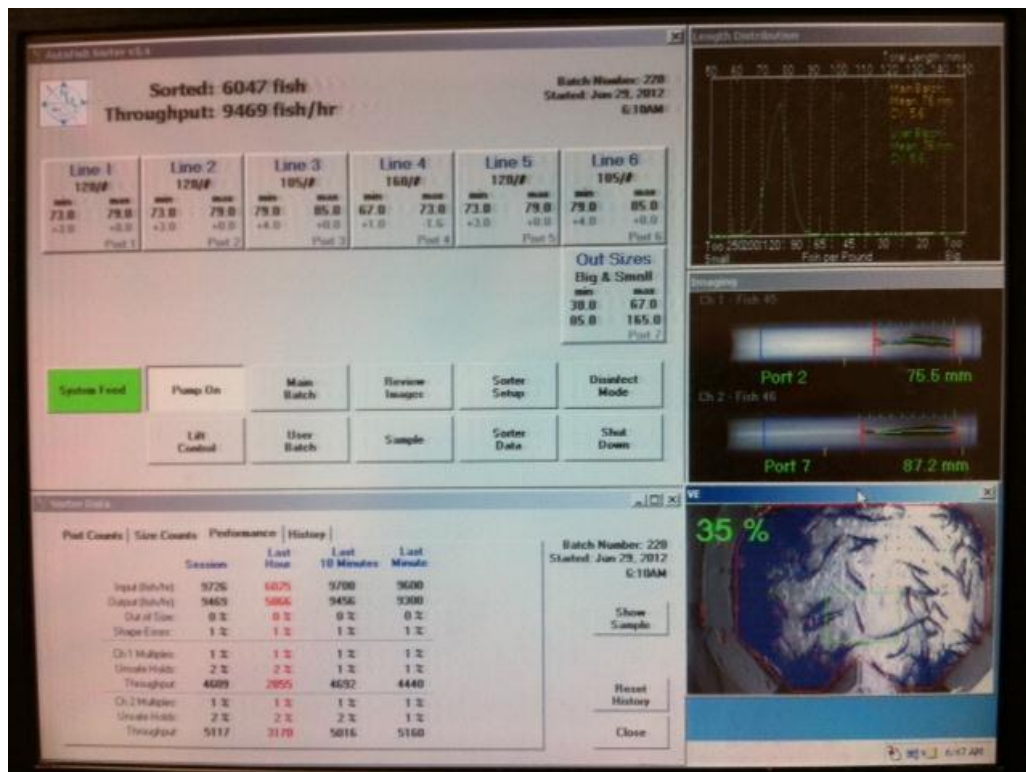


Fall-run Chinook Salmon
Spring-run Chinook Salmon
Coho Salmon
Steelhead

2012 Marking Season



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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 targets 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, 2011, and 2012. 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 in the 2011 and 2012 seasons 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 and Feather River Fish Hatchery. At Mokelumne River Fish Hatchery and Nimbus Fish Hatchery, the majority of the steelhead were adipose fin-clipped with the AutoFish Trailer but some of the first and last eggs takes were manually marked due to the fish being too large or too small to process through the AutoFish Trailers.

This report covers the marking/tagging activities conducted with the AutoFish Systems at the five Central Valley hatcheries in 2012 (Brood Year 2011 fall-run Chinook salmon, spring-run Chinook salmon, 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 33,836,489 fish (this does not include the 51,795 fall-run Chinook that got through the set screen at the Feather River Annex and the 8,586 unclipped/tagged fall-run Chinook that were accidentally diverted to raceway P at Mokelumne River). Of the fall-run Chinook total, approximately 27.45% were coded-wire tagged and adipose fin-clipped (a total of 9,290,639 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 2,248,737 fish and 291,791 fish, respectively), and adipose fin-clipped 100% of the steelhead produced at Coleman National Fish Hatchery and Feather River Fish Hatchery. At Nimbus Fish Hatchery and Mokelumne River Fish Hatchery, the majority of the steelhead were processed through the AutoFish Trailers but some of the early and late egg takes were not due to the fish being too large or too small to run through the trailers (a total of 1,574,818 steelhead were fin-clipped at these four facilities).

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, 2011, and 2012 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.

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 and 2012, the AutoFish Trailers were used for the spring-run Chinook 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 in 2011 and 2012 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. The majority of the steelhead reared at Central Valley hatcheries were also marked using the AutoFish Trailers in 2012. Marking allows selective harvest of hatchery-reared steelhead in sport fisheries.

This report covers the sixth year of the CFM program's marking/tagging activities at the five major Central Valley hatcheries in the spring/summer of 2012 (Brood Year 2011 fall-run Chinook). The report also includes the marking/tagging of Brood Year 2011 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, 2011, and 2012. Coded-wire tags for the 2012 season were ordered from Northwest Marine Technology in November 2011. Tags used in the program were all 1.1 mm standard length 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 much 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 Constant Fractional Marking 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 2012.

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 of AutoFish Trailer operations 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/tagging season began the second week of February at the Feather River Annex in Thermalito and ended at Nimbus Fish Hatchery the first week of May. Marking/tagging of hatchery-produced fall-run Chinook in 2012 therefore spanned a 13-week period. The spring-run Chinook marking/tagging season began the second 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 at the Feather River Fish hatchery were conducted during the week of June 18th.

The fish-marking crew also conducted an in-river tagging project on the Feather River with spring-run Chinook 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. At least one hundred fish were sampled two times per day. These fish were then checked for the presence of a coded-wire tag and a successful adipose fin-clip.

Throughout the season, fin-clipping rates and 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. Except as otherwise noted below, 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 due to the large number of tag codes used (28). For the 2012 season, we also only held approximately 400 retention fish for each larger tag code at Mokelumne River Fish Hatchery. Again, this was due to the large number of individual tag codes used (24). Study fish were sampled from throughout the tagging period for each tag code. Fish were electronically tested for tag retentions and visually inspected for fin-clip quality at the end of the study period. For the quality checks, for a fish to be counted as successfully retaining a tag, 60% or more of the adipose fin must be removed and a coded-wire tag is present. A partial clip has approximately 10-40% of the adipose fin still present but does not count against the successful clipping rate. If more than 40% of the adipose fin is still intact, it is classified as unclipped and therefore counts against the successful tagging rate (i.e. it likely would not be checked for a CWT since the adipose fin is intact or mostly intact). 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 2012 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 2012 production releases of fall-run Chinook salmon from the Central Valley hatcheries (totaling 33,836,489 fish not counting the 51,795 fish that got through the set screen at the Feather River Annex and the 8,586 fish accidentally sent to raceway P at Mokelumne River that were not clipped or tagged). The 25% target rate for marking/tagging was achieved for Brood Year 2011 (approximately 27.45% were CWT/ad-clipped, a total of 9,290,639 fish). The AutoFish Trailers also marked and tagged 100% of the Brood Year 2011 spring-run Chinook salmon and coho salmon reared at the Feather River Fish Hatchery (a total of 2,248,737 fish and 291,791 fish, respectively).

The AutoFish Trailers marked 100% of the steelhead reared at Coleman National Fish Hatchery, and Feather River Fish Hatchery. At Mokelumne River Fish Hatchery, the last egg take was manually fin-clipped as they were 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. A total of 1,574,818 steelhead were adipose fin-clipped at these four facilities which does not include the fish that were manually clipped.

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: 99.15 - 100% with an average of 99.73%
- Feather River Hatchery Annex: 99.63% with an average of 99.63%
- Feather River Hatchery: 99.67% - 100% with an average of 99.77%
- Mokelumne River Hatchery: 92.14% - 100% with average of 99.06%
- Nimbus Hatchery: 99.77% - 100.00% with an average of 99.89%

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: 97.79% – 99.87% with an average of 98.95%
- Feather River Hatchery coho: 99.31% with an average of 99.31%

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.rmpc.org>, for the number of fish that were successfully clipped and tagged and then released.

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 2012 tagging season. The program started with seven Trailer Operators and ended with six Trailer 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 18 week season.

The four Central Valley AutoFish Trailers are now six years old and the annual maintenance costs have been increasing. We replaced 12-15 cutters this season in the four AutoFish Trailers, two of the air compressors had to be replaced, as well as some other smaller internal parts.

Coleman National Fish Hatchery requested that the retention study net pens be placed in a raceway that they typically rear steelhead in. The net pens were elevated by way of placing them on a piece of angle iron. A strong windstorm blew several of them over allowing the retention fish to escape. The fish from all of these tag codes were mixed but held in the same raceway so all of the fish were checked as a group and this retention rate was applied to the tag codes that were associated with these net pens.

All of the Feather River Hatchery coho were triploid fish that had less genetic problems than what we saw with the triploid coho in 2011. An ongoing debate over whether or not to coded-wire tag these fish created a significant delay in marking these fish. This compounded the difficulty in running these fish through the AutoFish Trailer due to the fish being much larger than the ideal marking size.

There were significant electrical issues at Coleman National Fish Hatchery in the 2012 season. We ended up running the trailers and fish pumps off of generators for a large portion of time which created a few challenges with some of the internal equipment being fogged up every morning and not having heat in the trailers overnight.

Due to cooler water temperatures at Coleman National Fish Hatchery in the 2012 season, trailer operations started one week later than in most 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.

The spring-run Chinook at Feather River Hatchery were slightly larger than the previous year so we were able to start them a week earlier this year.

The fall-run Chinook at Mokelumne River and Nimbus Hatcheries were ahead in growth rates when compared to previous years so AutoFish Trailer operations began a few weeks earlier than ever before at these two facilities. This created some challenges since this condensed the fall-run Chinook marking season.

There was an issue at the Feather River Fish Hatchery in raceway G which contained spring-run Chinook salmon. Unmarked fish got through the set screen and mixed with marked fish which resulted in a tag retention rate for that raceway of 97.79% (which is much lower than the average rate).

There was an issue at Mokelumne River with the yearling group of fall-run Chinook salmon. The Trailer Operator forgot to switch the internal plumbing over for the 100% marking process, therefore unmarked fish were sent to the raceway. This resulted in a lower tag retention rate of 92.14%.

None of the spring-run Chinook salmon for the in-river clipping/tagging project were held for tag retention purposes as all of these fish were released within 24 hours of tagging. The clipping and tagging daily quality checks were used for the tag code data submitted to RMPC.

This report includes all of the anadromous marking/tagging activities in the Central Valley with the exception of the Coleman National Fish Hatchery late-fall-run Chinook and steelhead, and Livingston Stone National Fish Hatchery winter-run Chinook. These three groups of fish are in a separate annual report that is completed in early Spring and is available upon request.

Acknowledgements

The Constant Fractional Marking Program would not have existed or successfully completed the first six 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 where we conduct the marking/tagging program. 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), 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 Scott Merlette and Patrick Jarrett (PSMFC) for their work on the data entry and Chad Dale (PSMFC) for all of his maintenance work on the AutoFish Trailers to ensure that everything was operational. I want to thank the rest of the professional and hard working CFM crew that made this sixth 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 Chad Collier (PSMFC-Idaho), Joseph Coutu (PSMFC), Chad Dale (PSMFC), Casey Frantz (PSMFC-Idaho), Tara Gardner (PSMFC), Travis House (PSMFC-Idaho), Patrick Jarrett (PSMFC), Tim Kuzan (PSMFC), Scott Merlette (PSMFC), Ryan Revnak (PSMFC). Tagging Trailer Assistants included seasonal PSMFC staff members Nichole Clemente, Elizabeth Ferris, Cheryl Fullerton, Tracy Foreman, Brian Moore, Eric Patch, and Jennifer Raino.

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

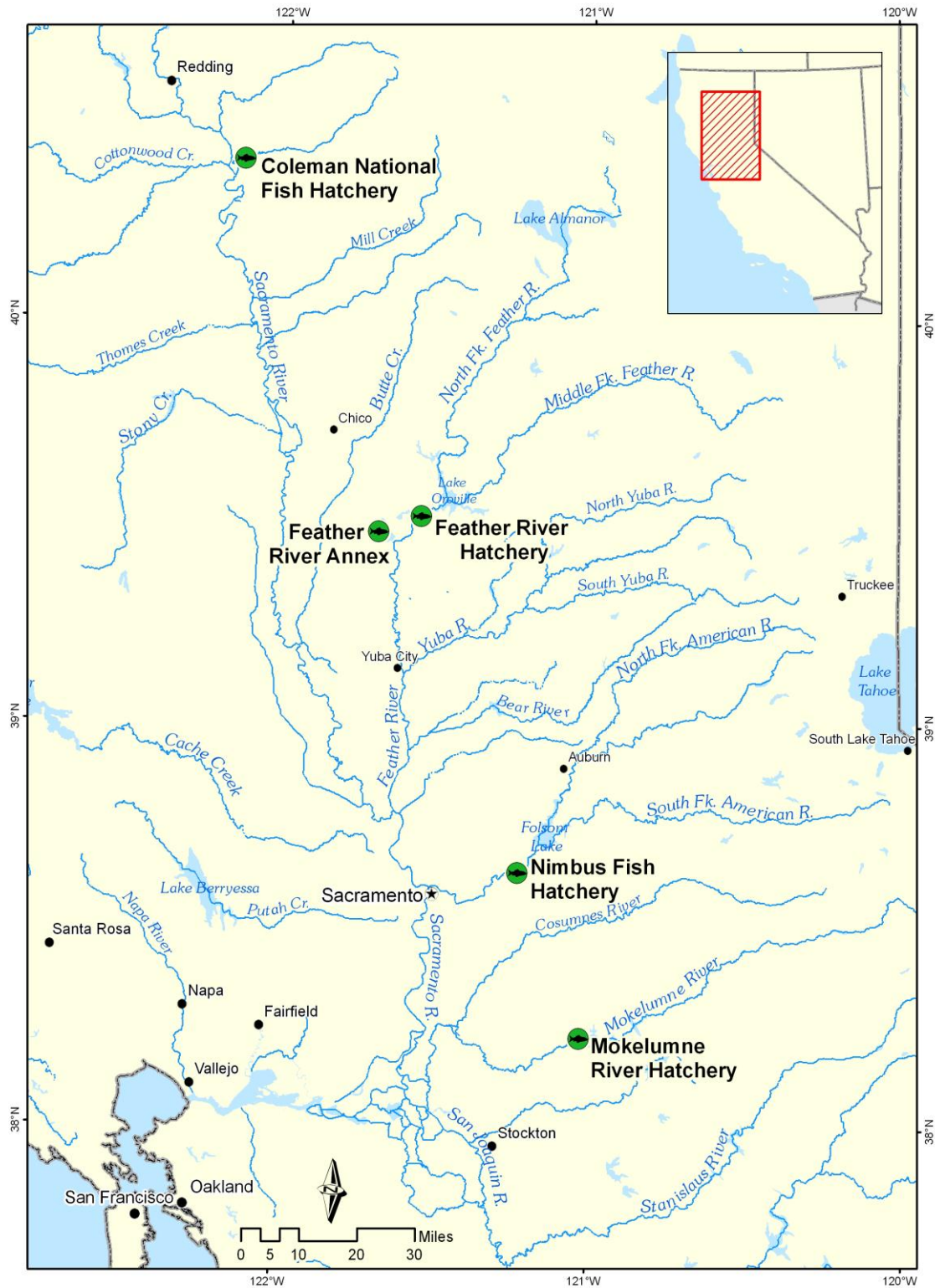
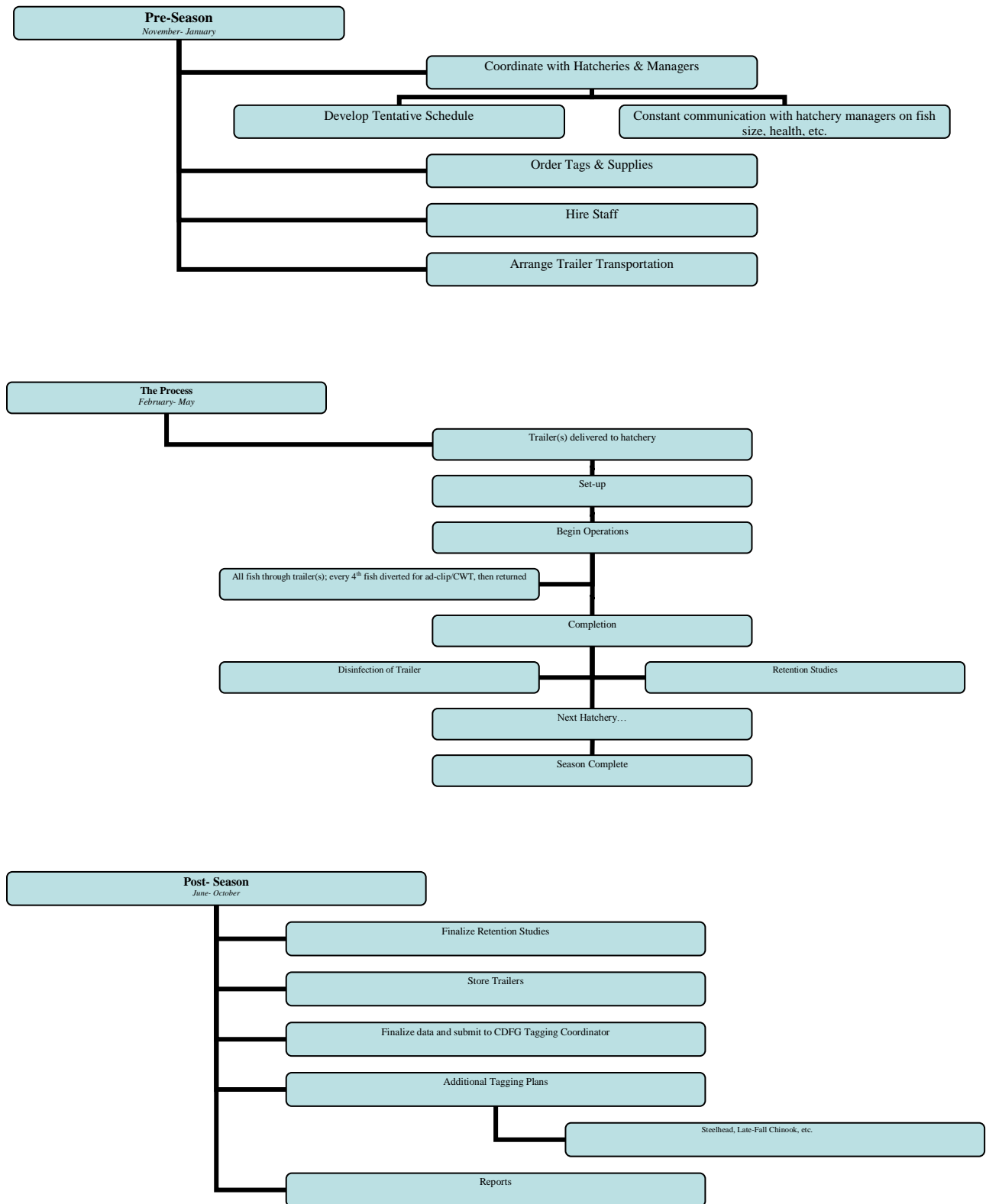


Figure 2. Constant Fractional Marking Program Annual Work Flow Summary



Appendix

Coleman National Fish Hatchery



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

Coleman National Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 05/54/95			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
3/12/2012	14	14	46,052	-	138,228	-	184,280
3/13/2012	14	14	67,463	113,515	202,512	340,740	454,255
3/14/2012	14	14	7,739	121,254	23,247	363,987	485,241
Tag Code Totals:			-	121,254	-	363,987	485,241

Coleman National Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 05/54/96			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
3/14/2012	13	13	13,571	-	40,764	-	54,335
3/15/2012	13	13	58,114	71,685	174,462	215,226	286,911
3/16/2012	13	13	40,324	112,009	121,038	336,264	448,273
Tag Code Totals:			-	112,009	-	336,264	448,273

Coleman National Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 05/54/97			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
3/16/2012	12	12	23,672	-	71,100	-	94,772
3/19/2012	12	12	67,977	91,649	203,994	275,094	366,743
3/20/2012	12	12	15,788	107,437	47,421	322,515	429,952
Tag Code Totals:			-	107,437	-	322,515	429,952

Coleman National Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 05/54/98			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
3/20/2012	11	11	44,515	-	133,665	-	178,180
3/21/2012	11	11	70,484	114,999	211,587	345,252	460,251
3/22/2012	11	11	4,187	119,186	12,612	357,864	477,050
Tag Code Totals:			-	119,186	-	357,864	477,050

Coleman National Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 05/55/10			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
3/20/2012	7	7	53,459	-	160,491	-	213,950
3/21/2012	7	7	67,266	120,725	201,945	362,436	483,161
Tag Code Totals:			-	120,725	-	362,436	483,161

Coleman National Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 05/54/99			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
3/22/2012	10	10	44,949	-	134,958	-	179,907
3/23/2012	10	10	73,747	118,696	221,373	356,331	475,027
Tag Code Totals:			-	118,696	-	356,331	475,027

Coleman National Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 05/55/11			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
3/22/2012	8	8	59,103	-	177,408	-	236,511
3/23/2012	8	8	48,749	107,852	146,379	323,787	431,639
Tag Code Totals:			-	107,852	-	323,787	431,639

Coleman National Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 05/55/12			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
3/26/2012	9	9	60,694	-	182,145	-	242,839
3/27/2012	9	9	44,824	105,518	134,565	316,710	422,228
Tag Code Totals:			-	105,518	-	316,710	422,228

Coleman National Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 05/55/09			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
3/26/2012	6	6	70,035	-	210,237	-	280,272
3/27/2012	6	6	35,263	105,298	105,861	316,098	421,396
3/27/2012	6	6	-	105,298	300	316,398	421,696
Tag Code Totals:			-	105,298	-	316,398	421,696

Coleman National Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 05/55/08			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
3/27/2012	5	5	29,033	-	87,195	-	116,228
3/28/2012	5	5	76,398	105,431	229,272	316,467	421,898
3/29/2012	5	5	12,450	117,881	37,416	353,883	471,764
Tag Code Totals:			-	117,881	-	353,883	471,764

Coleman National Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 05/55/13			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
3/28/2012	15	15	220	-	669	-	889
3/29/2012	15	15	65,864	66,084	197,679	198,348	264,432
3/30/2012	15	15	51,091	117,175	153,336	351,684	468,859
Tag Code Totals:			-	117,175	-	351,684	468,859

Coleman National Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 05/55/07			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
3/29/2012	4	4	52,483	-	157,536	-	210,019
3/30/2012	4	4	59,828	112,311	179,565	337,101	449,412
Tag Code Totals:			-	112,311	-	337,101	449,412

Coleman National Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 05/55/14			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
4/2/2012	16	16	52,192	-	156,720	-	208,912
4/3/2012	16	16	32,090	84,282	96,321	253,041	337,323
Tag Code Totals:			-	84,282	-	253,041	337,323

Coleman National Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 05/55/06			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
4/2/2012	3	3	53,680	-	161,256	-	214,936
4/3/2012	3	3	47,502	101,182	142,677	303,933	405,115
Tag Code Totals:			-	101,182	-	303,933	405,115

Coleman National Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 05/55/15			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
4/3/2012	17	17	36,748	-	110,322	-	147,070
4/4/2012	17	17	80,766	117,514	242,475	352,797	470,311
Tag Code Totals:			-	117,514	-	352,797	470,311

Coleman National Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 05/55/05			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
4/3/2012	2	2	14,756	-	44,295	-	59,051
4/4/2012	2	2	76,052	90,808	228,300	272,595	363,403
4/5/2012	2	2	24,432	115,240	73,386	345,981	461,221
Tag Code Totals:			-	115,240	-	345,981	461,221

Coleman National Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 05/55/04			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
4/5/2012	1	1	48,414	-	145,350	-	193,764
4/6/2012	1	1	60,777	109,191	182,496	327,846	437,037
Tag Code Totals:			-	109,191	-	327,846	437,037

Coleman National Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 05/55/16			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
4/5/2012	18	18	80,514	-	241,680	-	322,194
4/6/2012	18	18	13,825	94,339	41,529	283,209	377,548
Tag Code Totals:			-	94,339	-	283,209	377,548

Coleman National Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 05/55/17			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
4/9/2012	19	19	46,379	-	139,296	-	185,675
4/10/2012	19	19	67,515	113,894	202,638	341,934	455,828
Tag Code Totals:			-	113,894	-	341,934	455,828

Coleman National Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 05/55/18			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
4/10/2012	20	20	12,436	-	37,329	-	49,765
4/11/2012	20	20	84,226	96,662	252,837	290,166	386,828
Tag Code Totals:			-	96,662	-	290,166	386,828

Coleman National Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 05/55/19			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
4/12/2012	21	21	82,325	-	247,083	-	329,408
4/13/2012	21	21	37,415	119,740	112,287	359,370	479,110
Tag Code Totals:			-	119,740	-	359,370	479,110

Coleman National Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 05/55/20			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
4/13/2012	22	22	41,402	-	124,278	-	165,680
4/16/2012	22	22	69,762	111,164	209,409	333,687	444,851
Tag Code Totals:			-	111,164	-	333,687	444,851

Coleman National Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 05/55/21			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
4/17/2012	23	23	82,620	-	248,010	-	330,630
4/18/2012	23	23	27,963	110,583	83,982	331,992	442,575
Tag Code Totals:			-	110,583	-	331,992	442,575

Coleman National Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 05/55/22			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
4/18/2012	24	24	47,934	-	143,847	-	191,781
4/19/2012	24	24	70,549	118,483	211,794	355,641	474,124
Tag Code Totals:			-	118,483	-	355,641	474,124

Coleman National Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 05/55/23			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
4/20/2012	25	25	46,796	-	140,493	-	187,289
4/20/2012	25	25	31,369	78,165	94,164	234,657	312,822
4/23/2012	25	25	48,337	126,502	145,095	379,752	506,254
Tag Code Totals:			-	126,502	-	379,752	506,254

Coleman National Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 05/55/24			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
4/23/2012	26	26	24,765	-	74,322	-	99,087
4/24/2012	26	26	46,071	70,836	138,309	212,631	283,467
4/24/2012	26	26	37,324	108,160	111,987	324,618	432,778
4/25/2012	26	26	11,724	119,884	35,244	359,862	479,746
Tag Code Totals:			-	119,884	-	359,862	479,746

Coleman National Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 05/55/25			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
4/25/2012	27	27	59,517	-	178,653	-	238,170
4/26/2012	27	27	57,023	116,540	171,198	349,851	466,391
Tag Code Totals:			-	116,540	-	349,851	466,391

Coleman National Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 05/55/26			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
4/26/2012	28	28	14,449	-	43,368	-	57,817
4/27/2012	28	28	37	14,486	111	43,479	57,965
4/27/2012	28	28	76,594	91,080	229,884	273,363	364,443
4/30/2012	28	28	16,351	107,431	49,080	322,443	429,874
Tag Code Totals:			-	107,431	-	322,443	429,874

Hatchery Totals:		3,127,973		9,390,465	12,518,438
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Table 1b. Summary of Hatchery Tag Codes and Tag Retention Study

Coleman National Fish Hatchery- Fall Run Chinook										
Tag Code Size and Location			Tag Code Totals			Retention Calculations				
Tag Code	Size	Raceway	Total Tagged	Number Untagged	Total Processed	# of Fish Held	Days Held	% Retention	# Retaining Tags	Calculated Untagged
05/55/04	110K	1	109,191	327,846	437,037	401	21	100%	109,191	327,846
05/55/05	110K	2	115,240	345,981	461,221	396	22	100%	115,240	345,981
05/55/06	110K	3	101,182	303,933	405,115	400	25	100%	101,182	303,933
05/55/07	110K	4	112,311	337,101	449,412	396	28	100%	112,311	337,101
05/55/08	110K	5	117,881	353,883	471,764	4320	19	99.56%	117,362	354,402
05/55/09	110K	6	105,298	316,398	421,696	4320	21	99.56%	104,835	316,861
05/55/10	110K	7	120,725	362,436	483,161	4320	27	99.56%	120,194	362,967
05/55/11	110K	8	107,852	323,787	431,639	4320	25	99.56%	107,378	324,261
05/55/12	110K	9	105,518	316,710	422,228	4320	21	99.56%	105,054	317,174
05/54/99	110K	10	118,696	356,331	475,027	4320	25	99.56%	118,174	356,853
05/54/98	110K	11	119,186	357,864	477,050	4320	26	99.56%	118,662	358,388
05/54/97	110K	12	107,437	322,515	429,952	4320	28	99.56%	106,964	322,988
05/54/96	110K	13	112,009	336,264	448,273	4320	32	99.56%	111,516	336,757
05/54/95	110K	14	121,254	363,987	485,241	4320	34	99.56%	120,721	364,520
05/55/13	110K	15	117,175	351,684	468,859	1045	28	99.16%	116,191	352,668
05/55/14	110K	16	84,282	253,041	337,323	408	45	100%	84,282	253,041
05/55/15	110K	17	117,514	352,797	470,311	1045	23	99.15%	116,515	353,796
05/55/16	110K	18	94,339	283,209	377,548	1045	21	99.15%	93,537	284,011
05/55/17	110K	19	113,894	341,934	455,828	380	15	99.48%	113,302	342,526
05/55/18	110K	20	96,662	290,166	386,828	400	14	100%	96,662	290,166
05/55/19	110K	21	119,740	359,370	479,110	402	12	100%	119,740	359,370
05/55/20	110K	22	111,164	333,687	444,851	394	32	100%	111,164	333,687
05/55/21	110K	23	110,583	331,992	442,575	397	30	100%	110,583	331,992
05/55/22	110K	24	118,483	355,641	474,124	400	29	100%	118,483	355,641
05/55/23	110K	25	126,502	379,752	506,254	469	25	100%	126,502	379,752
05/55/24	110K	26	119,884	359,862	479,746	398	23	100%	119,884	359,862
05/55/25	110K	27	116,540	349,851	466,391	326	22	100%	116,540	349,851
05/55/26	110K	28	107,431	322,443	429,874	402	18	100%	107,431	322,443
Hatchery Totals			3,127,973	9,390,465	12,518,438	Retention Average		99.73%	3,119,600	9,398,838

Note- The net pens for raceways 5 through 14 all fell over in the raceway. The total number of retention fish for these ten tag codes was 4,320 so this retention rate was applied to raceways 5 through 14. A similar thing happened with raceways 17 and 18.

Feather River Fish Hatchery



Table 2a. Daily Tagging Rates at Feather River Hatchery

Feather River Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 06/03/91			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
3/5/2012	F2	CH2	40,329	-	121,281	-	161,610
3/6/2012	F2	CH2	34,646	74,975	104,019	225,300	300,275
3/6/2012	F2	CH2	31,365	106,340	94,182	319,482	425,822
3/7/2012	F2	CH2	32,692	139,032	98,175	417,657	556,689
3/7/2012	F2	CH2	27,336	166,368	82,179	499,836	666,204
3/8/2012	F2	CH2	32,262	198,630	96,897	596,733	795,363
3/8/2012	F2	CH2	37,553	236,183	112,800	709,533	945,716
3/9/2012	F2	CH2	30,016	266,199	90,123	799,656	1,065,855
3/9/2012	F2	CH2	24,427	290,626	73,359	873,015	1,163,641
3/12/2012	F2	CH2	28,962	319,588	87,006	960,021	1,279,609
3/12/2012	F2	CH2	35,330	354,918	106,239	1,066,260	1,421,178
3/13/2012	E2	CH2	31,509	386,427	94,776	1,161,036	1,547,463
Tag Code Totals:			-	386,427	-	1,161,036	1,547,463

Feather River Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 06/03/92			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
3/13/2012	E2	CH1	30,613	-	91,992	-	122,605
3/14/2012	E2	CH1	39,061	69,674	117,396	209,388	279,062
3/14/2012	E2	CH1	38,341	108,015	115,341	324,729	432,744
3/15/2012	E3	CH1	31,141	139,156	93,594	418,323	557,479
3/15/2012	E3	CH1	25,822	164,978	77,652	495,975	660,953
3/16/2012	E3	CH1	30,962	195,940	93,108	589,083	785,023
3/16/2012	E3	CH1	24,821	220,761	74,616	663,699	884,460
3/19/2012	E3	CH1	30,100	250,861	90,447	754,146	1,005,007
3/19/2012	E3	CH1	36,338	287,199	109,089	863,235	1,150,434
3/20/2012	E3	CH1	42,252	329,451	126,921	990,156	1,319,607
3/20/2012	E3/D2	CH1	38,602	368,053	115,941	1,106,097	1,474,150
3/21/2012	D2	CH1	23,607	391,660	70,896	1,176,993	1,568,653
Tag Code Totals:			-	391,660	-	1,176,993	1,568,653

Feather River Fish Hatchery- Fall Run Chinook Salmon- 100% Mark/ Tag							
Tag Code: 06/87/35			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
3/21/2012	D2	D1	15,643	-	-	-	15,643
3/21/2012	D2	D1	1,116	16,759	-	-	16,759
Tag Code Totals:			-	16,759	-	-	16,759

Feather River Fish Hatchery- Fall Run Chinook Salmon- 100% Mark/ Tag							
Tag Code: 06/03/74			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
3/21/2012	D2	D1	44,064	-	-	-	44,064
3/22/2012	D2	D1	61,063	105,127	-	-	105,127
3/22/2012	D2	D1	64,383	169,510	-	-	169,510
Tag Code Totals:			-	169,510	-	-	169,510

Feather River Fish Hatchery- Fall Run Chinook Salmon- 100% Mark/ Tag							
Tag Code: 06/04/29			Size: 215K			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
3/23/2012	D2	D2	52,540	-	-	-	52,540
3/23/2012	D2	D1	51,904	104,444	-	-	104,444
3/26/2012	D3	D2	52,780	157,224	-	-	157,224
3/26/2012	D3	D2	69,270	226,494	-	-	226,494
3/27/2012	D3	D2	15,706	242,200	-	-	242,200
Tag Code Totals:			-	242,200	-	-	242,200

Feather River Fish Hatchery- Fall Run Chinook Salmon- 100% Mark/ Tag							
Tag Code: 06/86/85			Size: 90K			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
3/27/2012	D3	F1	36,644	-	-	-	36,644
3/27/2012	D3	F1	64,703	101,347	-	-	101,347
Tag Code Totals:			-	101,347	-	-	101,347

Feather River Fish Hatchery- Fall Run Chinook Salmon- 100% Mark/ Tag							
Tag Code: 06/95/04			Size: 90K			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
3/28/2012	D3	F2	19,193	-	-	-	19,193
3/28/2012	D3	F2	79,483	98,676	-	-	98,676
Tag Code Totals:			-	98,676	-	-	98,676

Feather River Fish Hatchery- Fall Run Chinook Salmon- 100% Mark/ Tag							
Tag Code: 06/95/02			Size: 90K			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
3/28/2012	D3	F1	65,162	-	-	-	65,162
3/28/2012	D3	F1	35,199	100,361	-	-	100,361
Tag Code Totals:			-	100,361	-	-	100,361

Feather River Fish Hatchery- Fall Run Chinook Salmon- 100% Mark/Tag							
Tag Code: 06/03/84			Size: 10K			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
3/29/2012	D3	D1	10,207	-	-	-	10,207
Tag Code Totals:			-	10,207	-	-	10,207

Feather River Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 06/03/93			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
3/30/2012	D3	F2	27,892	-	83,739	-	111,631
3/30/2012	D3	F2	634	28,526	1,902	85,641	114,167
3/30/2012	D3	F4	22,573	-	67,791	-	90,364
4/2/2012	D3	F4	28,427	51,000	85,425	153,216	204,216
4/2/2012	D3	F4	38,227	89,227	114,723	267,939	357,166
4/3/2012	D3	F4	4,437	93,664	13,392	281,331	374,995
4/3/2012	D3/C2	E4	68,314	-	205,104	-	273,418
4/4/2012	C2	E4	37,991	106,305	114,180	319,284	425,589
4/4/2012	C2	F6	34,853	-	104,622	-	139,475
4/5/2012	C2/C3	F6	40,175	75,028	120,573	225,195	300,223
4/5/2012	C3	F6	12,689	87,717	38,097	263,292	351,009
4/5/2012	C3	E6	22,778	-	68,340	-	91,118
4/6/2012	C3	E6	53,799	76,577	161,484	229,824	306,401
Tag Code Totals:			-	392,789	-	1,179,372	1,572,161

Feather River Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 06/03/94			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
4/9/2012	C3	C2	31,603	-	94,908	-	126,511
4/9/2012	C3	C2	33,453	65,056	100,416	195,324	260,380
4/10/2012	C3	C2	22,476	87,532	67,494	262,818	350,350
4/10/2012	C3/B2	D3	36,288	-	108,942	-	145,230
4/11/2012	B2	D3	46,106	82,394	138,456	247,398	329,792
4/11/2012	B2	C4	32,897	-	98,709	-	131,606
4/12/2012	B2/B4	C4	49,482	82,379	148,530	247,239	329,618
4/12/2012	B4	C6	16,126	-	48,387	-	64,513
4/13/2012	B4	C6	58,906	75,032	176,796	225,183	300,215
4/13/2012	B4	D6	9,597	-	28,797	-	38,394
4/16/2012	B4	D6	69,445	179,634	179,634	208,431	277,876
Tag Code Totals:			-	396,782	-	1,191,069	1,587,851

Feather River Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 06/03/95			Size: 250K			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
4/16/2012	B4	B2	10,104	-	30,321	-	40,425
4/17/2012	B4/A2	B2	65,328	75,432	196,122	226,443	301,875
4/19/2012	A2/A4	B2	37,160	112,592	111,579	338,022	450,614
4/17/2012	A2	B4	4,095	-	12,288	-	16,383
4/18/2012	A2	B4	77,496	81,591	232,638	244,926	326,517
4/19/2012	A2	B4	12,205	93,796	36,636	281,562	375,358
4/19/2012	A4	B6	14,592	-	43,782	-	58,374
4/20/2012	A4	B6	56,121	70,713	168,609	212,391	283,104
Tag Code Totals:			-	277,101	-	831,975	1,109,076

Hatchery Totals:		2,583,819		5,540,445	8,124,264
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Table 2b. Summary of Hatchery Fall-run Tag Codes and Tag Retention Study

Feather River Fish Hatchery- Fall Run Chinook										
Tag Code Size and Location			Tag Code Totals			Retention Calculations				
Tag Code	Size	Raceway	Total Tagged	Number Untagged	Total Processed	# of Fish Held	Days Held	% Retention	# Retaining Tags	Calculated Untagged
06/03/95	250K	B2,4,6	277,101	831,975	1,109,076	909	19	100%	277,101	831,975
06/03/94	350K	C2,4,6,D 3,6	396,782	1,191,069	1,587,851	897	23	99.89%	396,346	1,191,505
06/03/91	350K	Channel 2	386,427	1,161,036	1,547,463	941	21	99.68%	385,190	1,162,273
06/03/93	350K	F2,4,6,E 4,6	392,789	1,179,372	1,572,161	950	21	99.89%	392,357	1,179,804
06/03/84	10K*	D1 (top 10')	10,207	-	10,207	900	21	99.67%	10,173	34
06/95/04	90K*	F2	98,676	-	98,676	900	21	99.67%	98350	326
06/95/02	90K*	F1 (second 50')	100,361	-	100,361	900	21	99.67%	100,030	331
06/86/85	90K*	F1 (top 50')	101,347	-	101,347	900	21	99.78%	101,124	223
06/04/29	215K *	D2	242,200	-	242,200	900	21	99.78%	241,667	533
06/03/74	150K *	D1	169,510	-	169,510	900	21	99.67%	168,951	559
06/87/35	15K*	D1	16,759	-	16,759	900	21	99.67%	16,704	55
06/03/92	350K	Channel 1	391,660	1,176,993	1,568,653	977	21	99.90%	391,268	1,177,385
Hatchery Totals			2,583,819	5,540,445	8,124,264	Retention Average		99.77%	2,579,261	5,545,003

* 100% Mark/ Tag Group

The smaller tag codes did not have separate groups of retention fish set aside so they are an average of the other groups that were held for this facility.

Feather River Fish Hatchery- Spring Run - 100% Mark/Tag							
Tag Code: 06/03/89			Size: 1 million			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
2/13/2012	H1	H6	42,713	-	-	-	42,713
2/13/2012	H1	H6	45,080	87,793	-	-	87,793
2/14/2012	H1	H6	58,211	146,004	-	-	146,004
2/14/2012	H1	H6	57,320	203,324	-	-	203,324
2/15/2012	H1	H6	56,472	259,796	-	-	259,796
2/15/2012	H1	H6	53,843	313,639	-	-	313,639
2/16/2012	H1	H6	11,700	325,339	-	-	325,339
2/16/2012	H2	H1	40,807	-	-	-	40,807
2/16/2012	H2	H1	57,890	98,697	-	-	98,697
2/17/2012	H2	H1	50,218	148,915	-	-	148,915
2/17/2012	H2	H1	54,555	203,470	-	-	203,470
2/21/2012	H2/H3	H1	56,177	259,647	-	-	259,647
2/21/2012	H3	H1	63,734	323,381	-	-	323,381
2/22/2012	H3	H1	54,714	378,095	-	-	378,095
2/22/2012	H3	H1	32,247	410,342	-	-	410,342
2/22/2012	H3	H4	22,165	-	-	-	22,165
2/23/2012	H3	H4	64,936	87,101	-	-	87,101
2/23/2012	H3	H4	60,821	147,922	-	-	147,922
2/24/2012	H3	H4	59,407	207,329	-	-	207,329
2/24/2012	H3	H4	58,065	265,394	-	-	265,394
2/27/2012	H3	H4	102,880	368,274	-	-	368,274
2/28/2012	H3	H4	32,378	400,652	-	-	400,652
Tag Code Totals:			-	1,136,333	-	-	1,136,333

Feather River Fish Hatchery- Spring Run - 100% Mark/Tag							
Tag Code: 06/03/90			Size: 1 million			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
2/28/2012	G1	G6	71,201	-	-	-	71,201
2/29/2012	G2	G6	117,169	188,370	-	-	188,370
3/1/2012	G2	G6	109,190	297,560	-	-	297,560
3/2/2012	G2	G6	29,150	326,710	-	-	326,710
3/2/2012	G2	G1	72,363	-	-	-	72,363
3/5/2012	G2	G1	48,748	121,111	-	-	121,111
3/5/2012	G2	G1	53,305	174,416	-	-	174,416
3/6/2012	G2/G3	G1	57,968	232,384	-	-	232,384
3/6/2012	G3	G2	54,197	286,581	-	-	286,581
3/7/2012	G3	G2	68,853	355,434	-	-	355,434
3/7/2012	G3	G2	56,070	411,504	-	-	411,504
3/8/2012	G3	G4	63,596	-	-	-	63,596
3/8/2012	G3	G4	61,474	125,070	-	-	125,070
3/9/2012	G3	G4	104,754	229,824	-	-	229,824
3/12/2012	G3	G4	45,246	275,070	-	-	275,070
Tag Code Totals:			-	1,013,284	-	-	1,013,284

Feather River Fish Hatchery- Spring Run - 100% Mark/Tag							
Tag Code: 06/95/01			Size: 90K			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
3/13/2012	G3	G1	59,014	-	-	-	59,014
3/14/2012	G3	G1	40,106	99,120	-	-	99,120
Tag Code Totals:			-	99,120	-	-	99,120

Hatchery Totals:		2,248,737				2,248,737
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Table 2c. Summary of Hatchery Spring-Run Tag Codes and Retention Study

Feather River Fish Hatchery- Spring Run Chinook								
Tag Code Size, Location, and Totals				Retention Calculations				
Tag Code	Size	Raceway	Total Tagged	# of Fish Held	Days Held	% Retention	# Retaining Tags	Calculated Untagged
06/03/90	1 Million	G2-6	1,013,284	905	23	97.79%	990,890	22,394
06/03/89	1 Million	H1-6	1,136,333	879	21	99.20%	1,127,242	9,091
06/95/01	100 K	G1	99,120	775	28	99.87%	98,991	129
Hatchery Totals			2,248,737	Retention Average		98.95%	2,217,123	31,614

Feather River Fish Hatchery- Coho- 100% Mark/Tag							
Tag Code: 06/03/73			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
6/18/2012	Y	X	27,729	-	-	-	27,729
6/19/2012	Y	X	95,229	122,958	-	-	122,958
6/20/2012	Y	X	48,901	171,859	-	-	171,859
Tag Code Totals:			-	171,859	-	-	171,859

Feather River Fish Hatchery- Coho- 100% Mark/Tag							
Tag Code: 06/03/80			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
6/20/2012	Y	X	40,526	-	-	-	40,526
Tag Code Totals:			-	40,526	-	-	40,526

Feather River Fish Hatchery- Coho- 100% Mark/Tag							
Tag Code: 06/04/14			Size: 90K			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
6/20/2012	Y	lower X	9,652	-	-	-	9,652
6/21/2012	Y	lower X	69,754	79,406	-	-	79,406
Tag Code Totals:			-	79,406	-	-	79,406

Hatchery Total: 291,791

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

Feather River Fish Hatchery- Coho										
Tag Code Size and Location			Tag Code Totals			Retention Calculations				
Tag Code	Size	Raceway	Total Tagged	Number Untagged	Total Processed	# of Fish Held	Days Held	% Retention	# Retaining Tags	Calculated Untagged
06/03/73	150K	X	171,859	-	171,859	1,009	33	99.31%	170,673	1,186
06/03/80	40K*	X	40,526	-	40,526	1,009	33	99.31%	40,246	280
06/04/14	90K**	Lower X	79,406	-	79,406	-	-	99.31%	78,858	548
Hatchery Totals			291,791	-	291,791	Retention Average		99.31%	289,777	2,014

* Both tag codes are mixed in the same raceway so sampled 1,009 fish and applied this rate to both tag codes.

** Fish released before retention check. Used information from other Coho tag codes.

Feather River Fish Hatchery- In-River Spring Run Chinook Salmon 100% Manual Mark/Tag							
Tag Code: 06/87/40			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	Raceway Total
1/9/2012	Vat	Vat	4,966	-	-	-	4,966
Tag Code Totals:			-	4,966	-	-	4,966

Feather River Fish Hatchery- In-River Spring Run Chinook Salmon 100% Manual Mark/Tag							
Tag Code: 06/87/41			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	Raceway Total
1/10/2012	Vat	Vat	4,979	-	-	-	4,979
Tag Code Totals:			-	4,979	-	-	4,979

Feather River Fish Hatchery- In-River Spring Run Chinook Salmon 100% Manual Mark/Tag							
Tag Code: 06/87/38			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	Raceway Total
1/10-1/11/2012	Vat	Vat	5,227	-	-	-	5,227
Tag Code Totals:			-	5,227	-	-	5,227

Feather River Fish Hatchery- In-River Spring Run Chinook Salmon 100% Manual Mark/Tag							
Tag Code: 06/87/39			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	Raceway Total
1/11-1/12/2012	Vat	Vat	5,046	-	-	-	5,046
Tag Code Totals:			-	5,046	-	-	5,046

Feather River Fish Hatchery- In-River Spring Run Chinook Salmon 100% Manual Mark/Tag							
Tag Code: 06/87/42			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	Raceway Total
1/12/2012	Vat	Vat	4,884	-	-	-	4,884
Tag Code Totals:			-	4,884	-	-	4,884

Feather River Fish Hatchery- In-River Spring Run Chinook Salmon 100% Manual Mark/Tag							
Tag Code: 06/87/43			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	Raceway Total
1/16/2012	Vat	Vat	5,430	-	-	-	5,430
Tag Code Totals:			-	5,430	-	-	5,430

Feather River Fish Hatchery- In-River Spring Run Chinook Salmon 100% Manual Mark/Tag							
Tag Code: 06/87/44			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	Raceway Total
1/16-1/17/2012	Vat	Vat	5,239	-	-	-	5,239
Tag Code Totals:			-	5,239	-	-	5,239

Feather River Fish Hatchery- In-River Spring Run Chinook Salmon 100% Manual Mark/Tag							
Tag Code: 06/87/45			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	Raceway Total
1/17/2012	Vat	Vat	5,511	-	-	-	5,511
Tag Code Totals:			-	5,511	-	-	5,511

Feather River Fish Hatchery- In-River Spring Run Chinook Salmon 100% Manual Mark/Tag							
Tag Code: 06/87/46			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	Raceway Total
1/17-1/18/2012	Vat	Vat	5,599	-	-	-	5,599
Tag Code Totals:			-	5,599	-	-	5,599

Feather River Fish Hatchery- In-River Spring Run Chinook Salmon 100% Manual Mark/Tag							
Tag Code: 06/87/47			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	Raceway Total
1/18/2012	Vat	Vat	5,702	-	-	-	5,702
Tag Code Totals:			-	5,702	-	-	5,702

Feather River Fish Hatchery- In-River Spring Run Chinook Salmon 100% Manual Mark/Tag							
Tag Code: 06/87/48			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	Raceway Total
1/19/2012	Vat	Vat	5,275	-	-	-	5,275
Tag Code Totals:			-	5,275	-	-	5,275

Feather River Fish Hatchery- In-River Spring Run Chinook Salmon 100% Manual Mark/Tag							
Tag Code: 06/87/49			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	Raceway Total
1/19/2012	Vat	Vat	1,574	-	-	-	1,574
Tag Code Totals:			-	1,574	-	-	1,574

Feather River Fish Hatchery- In-River Spring Run Chinook Salmon 100% Manual Mark/Tag							
Tag Code: 06/80/68			Size: 10K			Tag Shack	
Tagging Date	Raceway Prior to Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
1/23/2012	Vat	Vat	9,163	-	-	-	9,163
Tag Code Totals:			-	9,163	-	-	9,163

Feather River Fish Hatchery- In-River Spring Run Chinook Salmon 100% Manual Mark/Tag							
Tag Code: 06/80/69			Size: 10K			Tag Shack	
Tagging Date	Raceway Prior to Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
1/24/2012	Vat	Vat	10,299	-	-	-	10,299
Tag Code Totals:			-	10,299	-	-	10,299

Feather River Fish Hatchery- In-River Spring Run Chinook Salmon 100% Manual Mark/Tag							
Tag Code: 06/80/70			Size: 10K			Tag Shack	
Tagging Date	Raceway Prior to Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
1/25/2012	Vat	Vat	10,240	-	-	-	10,240
Tag Code Totals:			-	10,240	-	-	10,240

Feather River Fish Hatchery- In-River Spring Run Chinook Salmon 100% Manual Mark/Tag							
Tag Code: 06/80/71			Size: 10K			Tag Shack	
Tagging Date	Raceway Prior to Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
1/25- 1/26/2012	Vat	Vat	10,325	-	-	-	10,325
Tag Code Totals:			-	10,325	-	-	10,325

Feather River Fish Hatchery- In-River Spring Run Chinook Salmon 100% Manual Mark/Tag							
Tag Code: 06/80/72			Size: 10K			Tag Shack	
Tagging Date	Raceway Prior to Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
1/30/2012	Vat	Vat	10,218	-	-	-	10,218
Tag Code Totals:			-	10,218	-	-	10,218

Feather River Fish Hatchery- In-River Spring Run Chinook Salmon 100% Manual Mark/Tag							
Tag Code: 06/80/73			Size: 10K			Tag Shack	
Tagging Date	Raceway Prior to Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
1/30-1/31/2012	Vat	Vat	8,934	-	-	-	8,934
Tag Code Totals:			-	8,934	-	-	8,934

Feather River Fish Hatchery- In-River Spring Run Chinook Salmon 100% Manual Mark/Tag							
Tag Code: 06/80/74			Size: 10K			Tag Shack	
Tagging Date	Raceway Prior to Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
2/1/2012	Vat	Vat	10,202	-	-	-	10,202
Tag Code Totals:			-	10,202	-	-	10,202

Feather River Fish Hatchery- In-River Spring Run Chinook Salmon 100% Manual Mark/Tag							
Tag Code: 06/80/75			Size: 10K			Tag Shack	
Tagging Date	Raceway Prior to Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
2/2/2012	Vat	Vat	8,364	-	-	-	8,364
Tag Code Totals:			-	8,364	-	-	8,364

Feather River Fish Hatchery- In-River Spring Run Chinook Salmon 100% Manual Mark/Tag							
Tag Code: 06/80/76			Size: 10K			Tag Shack	
Tagging Date	Raceway Prior to Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
2/6/2012	Vat	Vat	8,623	-	-	-	8,623
Tag Code Totals:			-	8,623	-	-	8,623

Feather River Fish Hatchery- In-River Spring Run Chinook Salmon 100% Manual Mark/Tag							
Tag Code: 06/80/77			Size: 10K			Tag Shack	
Tagging Date	Raceway Prior to Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
2/7/2012	Vat	Vat	9,899	-	-	-	9,899
Tag Code Totals:			-	9,899	-	-	9,899

Feather River Fish Hatchery- In-River Spring Run Chinook Salmon 100% Manual Mark/Tag							
Tag Code: 06/80/78			Size: 10K			Tag Shack	
Tagging Date	Raceway Prior to Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
2/8/2012	Vat	Vat	8,905	-	-	-	8,905
Tag Code Totals:			-	8,905	-	-	8,905

Feather River Fish Hatchery- In-River Spring Run Chinook Salmon 100% Manual Mark/Tag							
Tag Code: 06/80/79			Size: 10K			Tag Shack	
Tagging Date	Raceway Prior to Tagging	Raceway Following Tagging	Daily Tagged Total	Cumulative Tagged Total	Daily Untagged Total	Cumulative Untagged Total	Raceway Total
2/9/2012	Vat	Vat	7,806	-	-	-	7,806
Tag Code Totals:			-	7,806	-	-	7,806

Tag Shack Totals:			172,410				172,410
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NOTE: None of these fish were held for retention purposes as all fish were released within 24 hours after tagging.

Feather River Fish Hatchery- Steelhead- 100% Mark only					
Trailer # CA3					
Tagging Date	Raceway Prior to Marking	Raceway Following Marking	Daily Marked Total	Cumulative Marked Total	Raceway Total
6/26/2012	F2	F4	83,496	-	83,496
6/27/2012	F2	F4	43,372	126,868	126,868
6/27/2012	F2	F1	46,355	-	46,355
6/28/2012	F2	F1	52,592	98947	98,947
6/28/2012	E2	E4	36,253	-	36,253
6/29/2012	E2	E4	66,608	102,861	102,861
7/2/2012	E2	E1	97,039	-	97,039

Hatchery Total: 425,715

Feather River Hatchery Annex



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

Feather River Annex- Fall Run Chinook Salmon							
Tag Code: 06/03/88			Size: 475K			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
2/13/2012	A2	A6	17,241	-	51,804	-	69,045
2/13/2012	A2	A1	22,799	-	68,409	-	91,208
2/14/2012	A2/A4	A1	33,534	56,333	100,620	169,029	225,362
2/14/2012	A4	A3	13,970	-	41,958	-	55,928
2/15/2012	A4	A3	21,423	35,393	64,314	106,272	141,665
						51,795*	
2/15/2012	B2	B6	17,598	-	52,824	-	70,422
2/16/2012	B2	B1	54,242	-	162,783	-	217,025
2/17/2012	B2	B1	1,980	56,222	5,979	168,762	224,984
2/17/2012	B4	B3	36,726	-	110,301	-	147,027
2/21/2012	B4	B3	10,033	46,759	30,201	140,502	187,261
2/21/2012	C2	C6	17,580	-	52,740	-	70,320
2/21/2012	C2	C1	12,335	-	37,008	-	49,343
2/22/2012	C4	C1	41,685	54,020	125,055	162,063	216,083
2/23/2012	C4	C1	1,846	55,866	5,589	167,652	223,518
2/23/2012	C4	C3	42,303	-	126,951	-	169,254
2/24/2012	D2	D6	17,495	-	52,515	-	70,010
2/24/2012	D2	D1	16,525	-	49,611	-	66,136
2/27/2012	D2	D1	39,928	56,453	119,940	169,551	226,004

2/28/2012	D4	D3	39,097	-	117,465	-	156,562
2/29/2012	D4	D3	4,633	43,730	13,926	131,391	175,121
Tag Code Totals:			-	462,973	-	1,441,788	1,852,966

*Unmarked fish made it through set screen. These fish were not counted or factored into CFM.

Hatchery Totals:		462,973		1,441,788	1,904,761
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Table 3b. Summary of Hatchery Tag Codes and Tag Retention Studies

Feather River Annex- Fall Run Chinook										
Tag Code Size and Location			Tag Code Totals			Retention Calculations				
Tag Code	Size	Raceway	Total Tagged	Number Untagged	Total Processed	# of Fish Held	Days Held	% Retention	# Retaining Tags	Calculated Untagged
06/03/88	475K	Net Pen	462,973	1,441,788	1,904,761	808	20	99.63%	461,260	1,443,501
Hatchery Totals			462,973	1,441,788	1,904,761	Retention Average		99.63%	461,260	1,443,501

Mokelumne River Hatchery



Table 4a. Daily Tagging Rates at Mokelumne River Hatchery

Mokelumne River Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 06/04/03			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
3/5/2012	B	A	23,854	-	71,592	-	95,446
3/6/2012	B/C	A	30,288	54,142	90,939	162,531	216,673
3/7/2012	C	A	46,023	100,165	138,174	300,705	400,870
	Tag Code Totals:		-	100,165	-	300,705	400,870

Mokelumne River Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 06/04/04			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
3/7/2012	C	B	6,444	-	19,332	-	25,776
3/8/2012	C/D	B	54,905	61,349	164,772	184,104	245,453
3/9/2012	D	B	35,045	96,394	105,234	289,338	385,732
3/12/2012	D	B	4,605	100,999	13,839	303,177	404,176
	Tag Code Totals:		-	100,999	-	303,177	404,176

Mokelumne River Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 06/04/05			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
3/12/2012	D	C	28,120	-	84,456	-	112,576
3/13/2012	E	C	50,163	78,283	150,582	235,038	313,321
3/14/2012	E	C	21,724	100,007	65,232	300,270	400,277
	Tag Code Totals:		-	100,007	-	300,270	400,277

Mokelumne River Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 06/04/06			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
3/14/2012	E	D	33,072	-	99,345	-	132,417
3/15/2012	E/F	D	62,703	95,775	188,262	287,607	383,382
3/16/2012	F	D	2,795	98,570	8,415	296,022	394,592
	Tag Code Totals:		-	98,570	-	296,022	394,592

Mokelumne River Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 06/04/15			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
3/16/2012	F	E	36,859	-	110,688	-	147,547
3/19/2012	F	E	45,263	82,122	135,891	246,579	328,701
3/20/2012	G	E	26,325	108,447	79,074	325,653	434,100
	Tag Code Totals:		-	108,447	-	325,653	434,100

Mokelumne River Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 06/03/98			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
3/20/2012	G	F	28,639	-	86,037	-	114,676
3/21/2012	G/H	F	71,179	99,818	213,759	299,796	399,614
	Tag Code Totals:		-	99,818	-	299,796	399,614

Mokelumne River Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 06/03/99			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
3/22/2012	H	G	49,133	-	147,556	-	196,689
3/23/2012	H	G	41,152	90,285	123,609	271,165	361,450
3/23/2012	I	G	8,136	98,421	24,376	295,541	393,962
	Tag Code Totals:		-	98,421	-	295,541	393,962

Mokelumne River Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 06/87/07			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
3/22/2012	H	G	23,562	-	70,753	-	94,315
	Tag Code Totals:		-	23,562	-	70,753	94,315

Mokelumne River Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 06/04/09			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
3/26/2012	I	H	24,927	-	74,900	-	99,827
3/27/2012	I	H	62,993	87,920	189,180	264,080	352,000
3/28/2012	I	H	7,992	95,912	23,937	288,017	383,929
	Tag Code Totals:		-	95,912	-	288,017	383,929

Mokelumne River Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 06/86/91			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
3/26/2012	I	H	16,822	-	50,503	-	67,325
3/27/2012	I	H	6,970	23,792	20,943	71,446	95,238
	Tag Code Totals:		-	23,792	-	71,446	95,238

Mokelumne River Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 06/04/07			Size: 90K			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
4/9/2012	J	I	12,151	-	36,564	-	48,715
4/10/2012	J	I	65,069	77,220	195,330	231,894	309,114
4/11/2012	J	I	22,963	100,183	69,033	300,927	401,110
	Tag Code Totals:		-	100,183	-	300,927	401,110

Mokelumne River Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 06/04/08			Size: 90K			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
4/11/2012	J	J	18,518	-	55,613	-	74,131
4/12/2012	J/K	J	43,885	62,403	131,725	187,338	249,741
4/13/2012	K	J	37,607	100,010	112,844	300,182	400,192
	Tag Code Totals:		-	100,010	-	300,182	400,192

Mokelumne River Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 06/87/04			Size: 30K			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
4/11/2012	J	J	17,471	-	52,429	-	69,900
4/12/2012	J/K	J	17,035	34,506	51,141	103,570	138,076
	Tag Code Totals:		-	34,506	-	103,570	138,076

Mokelumne River Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 06/04/10			Size: 90K			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
4/16/2012	K	K	7,787	-	23,411	-	31,198
4/17/2012	K/L	K	16,984	24,771	51,006	74,417	99,188
4/18/2012	L	K	32,887	57,658	98,713	173,130	230,788
4/19/2012	L	K	35,076	92,734	105,318	278,448	371,182
4/20/2012	L	K	10,018	102,752	30,099	308,547	411,299
	Tag Code Totals:		-	102,752	-	308,547	411,299

Mokelumne River Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 06/03/82			Size: 30K			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
4/16/2012	K	K	12,214	-	36,679	-	48,893
4/17/2012	K/L	K	20,342	32,556	61,080	97,759	130,315
4/18/2012	L	K	2,345	34,901	7,043	104,802	139,703
	Tag Code Totals:		-	34,901	-	104,802	139,703

Mokelumne River Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 06/03/78			Size: 100K			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
4/20/2012	L	L	9,091	-	27,287	-	36,378
4/23/2012	L/M	L	36,076	45,167	108,343	135,630	180,797
4/24/2012	M	L	68,729	113,896	206,290	341,920	455,816
	Tag Code Totals:		-	113,896	-	341,920	455,816

Mokelumne River Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 06/87/06			Size: 20K			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
4/20/2012	L	L	5,464	-	16,396	-	21,860
4/23/2012	L/M	L	14,932	20,396	44,786	61,182	81,578
4/24/2012	M	L	2,594	22,990	7,835	69,017	92,007
	Tag Code Totals:		-	22,990	-	69,017	92,007

Mokelumne River Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 06/04/11			Size: 90K			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
4/25/2012	M/N	M	63,942	-	191,928	-	255,870
4/26/2012	N	M	36,734	100,676	110,229	302,157	402,833
	Tag Code Totals:		-	100,676	-	302,157	402,833

Mokelumne River Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 06/87/85			Size: 10K			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
4/25/2012	M/N	M	11,667	-	35,016	-	46,683
	Tag Code Totals:		-	11,667	-	35,016	46,683

Mokelumne River Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 06/87/87			Size: 10K			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
4/26/2012	N	N	4,631	-	13,908	-	18,539
4/27/2012	N	N	6,835	11,466	20,522	34,430	45,896
	Tag Code Totals:		-	11,466	-	34,430	45,896

Mokelumne River Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 06/87/86			Size: 10K			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
4/26/2012	N	N	4,354	-	13,067	-	17,421
4/27/2012	N	N	7,362	11,716	22,113	35,180	46,896
	Tag Code Totals:		-	11,716	-	35,180	46,896

Mokelumne River Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 06/04/12			Size: 90K			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
4/26/2012	N	N	17,356	-	52,123	-	69,479
4/27/2012	N	N	37,686	55,042	113,118	165,241	220,283
5/2/2012	P	N	39,231	94,273	117,783	283,024	377,297
5/2/2012	P	N	7,159	101,432	21,551	304,575	406,007
	Tag Code Totals:		-	101,432	-	304,575	406,007

Mokelumne River Fish Hatchery- Fall Run - 100% Mark/Tag							
Tag Code: 06/04/13			Size: 90K			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
4/30/2012	P	P	40,498	-	* 8,586	-	49,084
5/1/2012	P	P	60,510	101,008	-	8,586	109,594
	Tag Code Totals:		-	101,008	-	8,586	109,594
* Number of fish sent to raceway without tag/mark.							

Mokelumne River Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 06/87/33			Size: 25K			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
5/3/2012	P	N	10,587	-	31,790	-	42,377
	Tag Code Totals:		-	10,587	-	31,790	42,377
Hatchery Totals:				1,707,483		4,832,079	6,539,562

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

Mokelumne River Fish Hatchery- Fall Run Chinook										
Tag Code Size and Location			Tag Code Totals			Retention Calculations				
Tag Code	Size	Raceway	Total Tagged	Number Untagged	Total Processed	# of Fish Held	Days Held	% Retention	# Retaining Tags	Calculated Untagged
06/04/03	90K	A	100,165	300,705	400,870	400	21	100%	100,165	300,705
06/04/04	90K	B	100,999	303,177	404,176	412	29	100%	100,999	303,177
06/04/05	90K	C	100,007	300,270	400,277	461	27	99.78%	99,787	300,490
06/04/06	90K	D	98,570	296,022	394,592	402	25	100%	98,570	296,022
06/04/15	100K	E	108,447	325,653	434,100	489	22	99.80%	108,230	325,870
06/03/98	90K	F	99,818	299,796	399,614	402	22	100%	99,818	299,796
06/03/99	90K	G	98,421	295,541	393,962	329	21	99.70%	98,126	295,836
06/87/07	20K*	G	23,562	70,753	94,315	329	21	99.70%	23,491	70,824
06/04/09	90K	H	95,912	288,017	383,929	429	21	97.90%	93,898	290,031
06/86/91	20K*	H	23,792	71,446	95,238	429	21	97.90%	23,292	71,946
06/04/07	90K	I	100,183	300,927	401,110	398	21	99.50%	99,682	301,428
06/04/08	90K	J	100,010	300,182	400,192	404	20	99.75%	99,760	300,432
06/87/04	30K*	J	34,506	103,570	138,076	404	20	99.75%	34,420	103,656
06/04/10	90K	K	102,752	308,547	411,299	419	13	100%	102,752	308,547
06/03/82	30K*	K	34,901	104,802	139,703	419	13	100%	34,901	104,802
06/03/78	100K**	L	113,896	341,920	455,816	-	-	99.56%	113,395	342,421
06/87/06	20K**	L	22,990	69,017	92,007	-	-	99.56%	22,889	69,118
06/04/11	90K	M	100,676	302,157	402,833	405	28	98.77%	99,438	303,395
06/87/85	10K*	M	11,667	35,016	46,683	405	28	98.77%	11,524	35,159
06/04/12	90K	N	101,432	304,575	406,007	421	21	99.05%	100,468	305,539
06/87/87	10K*	N	11,466	34,430	45,896	421	21	99.05%	11,357	34,539
06/87/86	10K*	N	11,716	35,180	46,896	421	21	99.05%	11,604	35,292
06/87/33	25K*	N	10,587	31,790	42,377	421	21	99.05%	10,486	31,891
06/04/13	90K***	P	101,008	8,586	109,594	878	23	92.14%	93,069	16,525
Hatchery Totals			1,707,483	4,832,079	6,539,562	Retention Average		99.06%	1,692,121	4,847,441

* Fish held with other tag code fish from same raceway. Retention percentage applied to all tag codes in one raceway.

** Retention fish not checked. Used CFM average to obtain retention rate.

*** Not an accurate representation. 8,586 unmarked fish unintentionally sent to raceway.

Mokelumne River Fish Hatchery- Steelhead- 100% Mark only					
Trailer # CA4					
Tagging Date	Raceway Prior to Marking	Raceway Following Marking	Daily Marked Total	Cumulative Marked Total	Raceway Total
7/9/2012	VATS	T	133	-	133
7/9/2012	VATS	T	43,390	43,523	43,523
7/9/2012	VATS	Q	20,141	-	20,141
7/10/2012	VATS	Q	22,448	42,589	42,589
7/10/2012	VATS	N	43,792	-	43,792
7/10/2012	VATS	M	17,611	-	17,611
7/11/2012	VATS	M	18,096	35,707	35,707

Hatchery Totals: 165,611

Nimbus Hatchery



Table 5a. Daily Tagging Rates at Nimbus Hatchery

Nimbus Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 06/04/23			Size: 350K			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
3/29/2012	A3	A1	39,154	-	117,675	-	156,829
3/30/2012	A3	A1	42,117	81,271	126,459	244,134	325,405
4/2/2012	A3	A2	41,684	122,955	125,178	369,312	492,267
4/3/2012	A3	A2	54,314	177,269	163,068	532,380	709,649
4/4/2012	A3	A2	21,004	198,273	63,063	595,443	793,716
4/4/2012	B2	B1	34,079	-	102,285	-	136,364
4/5/2012	B2/B3	B1	62,075	96,154	186,321	288,606	384,760
4/6/2012	B3	B1/B2	49,248	145,402	147,816	436,422	581,824
4/9/2012	B3	B2	33,764	179,166	101,394	537,816	716,982
4/9/2012	B3	B2	24,903	204,069	74,835	612,651	816,720
Tag Code Totals:			-	402,342	-	1,208,094	1,610,436

Nimbus Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 06/04/24			Size: 350K			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
4/9/2012	B3	C1	5,073	-	15,234	-	20,307
4/10/2012	C3	C1	32,601	37,674	97,896	113,130	150,804
4/10/2012	C3	C1	37,738	75,412	113,325	226,455	301,867
4/11/2012	C3	C1/C2	35,004	110,416	105,054	331,509	441,925
4/11/2012	C3	C2	38,275	148,691	114,894	446,403	595,094
4/12/2012	C3	C2	40,281	188,972	120,912	567,315	756,287
4/12/2012	C3	C2	36,884	225,856	110,730	678,045	903,901
4/13/2012	D3	D1	34,963	-	104,934	-	139,897
4/16/2012	D3	D1	20,862	55,825	62,625	167,559	223,384
4/17/2012	D3	D1	33,964	89,789	101,967	269,526	359,315
4/18/2012	D3	D1/D2	28,351	118,140	85,122	354,648	472,788
4/19/2012	D3	D2	32,672	150,812	98,067	452,715	603,527
4/20/2012	D3	D2	25,652	176,464	77,004	529,719	706,183
Tag Code Totals:			-	402,320		1,207,764	1,610,084

Nimbus Fish Hatchery- Fall Run Chinook Salmon- 100% Mark/ Tag							
Tag Code: 06/04/25			Size: 245K			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
4/23/2012	D3	F4	53,181	-	-	-	53,181
4/24/2012	D3/E3	F4	115,123	168,304	-	-	168,304
4/25/2012	E3	F4	107,106	275,410	-	-	275,410
Tag Code Totals:			-	275,410	-	-	275,410

Nimbus Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 06/04/26			Size: 175K			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
4/25/2012	E3	E1	6,449	-	19,347	-	25,796
4/26/2012	E3	E1	39,587	46,036	118,824	138,171	184,207
4/26/2012	E3	E1	37,104	83,140	111,408	249,579	332,719
4/27/2012	E3	E1	59,387	142,527	178,257	427,836	570,363
4/30/2012	E3/F3	E1	54,384	196,911	163,272	591,108	788,019
Tag Code Totals:			-	196,911	-	591,108	788,019

Nimbus Fish Hatchery- Fall Run Chinook Salmon							
Tag Code: 06/03/96			Size: 150K			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
5/1/2012	F3	F1	38,800	-	116,484	-	155,284
5/1/2012	F3	F1	40,243	79,043	120,816	237,300	316,343
5/2/2012	F3	F1	52,365	131,408	157,188	394,488	525,896
Tag Code Totals:			-	131,408	-	394,488	525,896

Hatchery Totals:			1,408,391			3,401,454	4,809,845
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Table 5b. Summary of Hatchery Tag Codes and Tag Retention Studies

Nimbus Fish Hatchery- Fall Run Chinook										
Tag Code Size and Location			Tag Code Totals			Retention Calculations				
Tag Code	Size	Raceway	Total Tagged	Number Untagged	Total Processed	# of Fish Held	Days Held	% Retention	# Retaining Tags	Calculated Untagged
06/04/23	350K	A/B	402,342	1,208,094	1,610,436	870	23	99.77%	401,417	1,209,019
06/04/24	350K	C/D	402,320	1,207,764	1,610,084	825	19	100%	402,320	1,207,764
06/04/25	245K*	F4	275,410	-	275,410	-	-	99.89%	275,107	303
06/04/26	175K**	E2	196,911	591,108	788,019	-	-	99.89%	196,694	591,325
06/03/96	150K***	F1	131,408	394,488	525,896	-	-	99.89%	131,263	394,633
Hatchery Totals			1,408,391	3,401,454	4,809,845	Retention Average		99.89%	1,406,801	3,403,044

* Fish were released before retention check. Applied average of A/B and C/D.

** Hole in Live Pen. Applied average of A/B and C/D.

*** No Fish checked for retention due to release shortly after tagging. Applied average of A/B and C/D.

Nimbus Fish Hatchery- Steelhead- 100% Mark only					
Trailer # CA2					
Tagging Date	Raceway Prior to Marking	Raceway Following Marking	Daily Marked Total	Cumulative Marked Total	Raceway Total
5/29/2012	Lower B1	Top B1	44,178	-	44,178
5/30/2012	Lower B1	Top B1	10,125	54,303	54,303
5/30/2012	Lower C1	Top C1	41,900	-	41,900
5/31/2012	Lower C1	Top C1	27,277	69,177	69,177
6/4/2012	Lower D1	Top D1	46,277	-	46,277
7/2/2012	Lower D1	Top D1	26,968	73,245	73,245
7/2/2012	Lower E1	Top E1	34,976	-	34,976
7/3/2012	Lower E1	Top E1	13,590	48,566	48,566
7/3/2012	Lower F1	Top F1	51,737	-	51,737

Hatchery Total: 297,028