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IDAHO ANADROMOUS FISH-MARKING PROGRAM

Report to:
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Introduction

In April 2009, IDFG contracted all anadromous fish-marking in the state of Idaho to PSMFC. In 2015, all fish-marking personnel were employees of PSMFC. The marking program was based out of Lewiston, Idaho and consisted of one Tagging Coordinator, six Trailer Operators, four Trailer Assistants, and a varying number of temporary Trailer Assistants as needed for the 2015 marking season. This report summarizes all fish marked by the Idaho Anadromous Fish-Marking Program in the year 2015. The program was responsible for the marking of anadromous fish at the following nine fish hatcheries: Clearwater, Rapid River, McCall, Sawtooth, Springfield, Pahsimeroi, Niagara Springs, Magic Valley, and Hagerman National. While at these fish hatcheries a variety of different marks and tags were applied including adipose fin-clips, coded-wire tags (CWT), and passive integrated transponder (PIT) tags to steelhead (*Oncorhynchus mykiss*), Sockeye salmon (*Oncorhynchus nerka*), and Chinook salmon (*Oncorhynchus tshawytscha*).

The IDFG research division develops a mark plan that indicates the number of fish at each hatchery that are to receive specific marks. Coded-wire tags were implanted from the second week of May through the end of August. The adipose fin-clipping took place from the second week of May through the end of August. PIT-tags were implanted from January through March, and again in November, and provide a unique alphanumeric code to each individual fish.

The overall objectives of the Idaho Anadromous Fish-Marking Program are as follows:

Objective 1: Provide technical and administrative services associated with performing and completing the work identified in the 2015 Fish Marking Contract. Technical and administrative tasks may include: project management, budgeting, scheduling, coordination, crew supervision, report preparation, grant management, invoicing, equipment maintenance and data collection, storage and analysis, and all other tasks that may be necessary to complete the scope of work specified in the 2015 contract.

Objective 2: Purchase supplies as per the contracted budget, hire and supervise project personnel for marking and tagging operations specified in the contract. Operate IDFG owned marking and tagging trailers, vehicles and associated equipment.

Objective 3: Conduct quality control studies for each fin-clipped and coded-wire tagged release group and report to the IDFG Project Manager. Coordinate all project activities and share all project data with IDFG hatchery staff.

Objective 4: Coordinate with IDFG to ensure marking and tagging information is uploaded to IDFG's data storage location. Information will be accurate and timely and conform to the established formatting protocols established by IDFG.

Objective 5: Prepare and submit an annual report to the IDFG Project Manager in electronic form no later than December 31 of the current contract period. Each report shall detail work accomplished, numbers of fish marked and tagged, results of tag retention studies, a discussion of any problems encountered and recommendations to correct challenges or problems encountered during the year. Additionally, PSMFC will provide monthly financial reports as well as preliminary data reports that summarize numbers of fish handled, numbers and types of marks and tags applied, and hatcheries where work was performed.

Methods

The Idaho marking program used four state-of-the-art automated tagging trailers. Two of these automated trailers have six automated lines, and the other two with five automated lines each. These trailers incorporate the latest advanced technology for adipose fin-clipping and coded-wire tagging fish. These automated trailers have the capacity to mark and implant coded-wire tags very rapidly without the use of anesthetic or human contact. These systems have been in use for many years in the Pacific Northwest and in Idaho since 2002. Steelhead and Chinook salmon were PIT-tagged using a four-station manual PIT-tagging trailer.

The automated trailers are able to process fish that are a minimum of 57mm in total length and a maximum of 142mm in total length. This size restriction means that timing at each facility is critical to maximize efficiency and productivity. At many facilities the fish were processed through the automated trailers when the hatcheries were ready to move the fish from inside rearing vats to outside rearing ponds or raceways, making timing of the mark event even more critical to ensure that the density limits of the inside rearing containers were not exceeded. Double shifts were typically used to maximize efficiency and output of the automated trailers. Trailers were moved as needed between hatcheries relative to fish reaching appropriate marking size.

Fish were delivered to the automated trailers by means of a forklift mounted live fish transfer tank and electric Matsusaka four-inch fish-transfer pumps. The forklifts were operated by hatchery personnel and the fish pumps were operated by members of the fish-marking crew. Once inside the trailers fish were pumped via an internal fish lift system into the sorter. The sorter takes an image of each individual fish and records the total length of the fish (within .1mm) and then diverts the fish to the appropriate line. Each of the automated lines is set up to run a specific size range of fish. Once the fish have reached the automated line they travel down a channel and are separated by a series of gates that ensure one fish at a time arrive at the clamping mechanism. Once the clamps come together on the fish a camera takes an image of the back of the fish and locates the adipose fin. The computer relays the exact X and Y coordinates of the adipose fin in relation to the back of the fish to a clipping mechanism that excises the adipose fin. Once the clipping is complete the camera takes a second image to ensure that the fin-clip was successful. At the moment the clamps come together to hold the fish for imaging the coded-wire tag is inserted into the snout of the fish via a MK IV tag injector that is positioned at the end of each channel. After the fish has been clipped and/or tagged it is released from the clamps and travels through a Quality Control Device (QCD) that checks for the presence of a coded-wire tag. If the fish passes the clip quality check and tag detection, it is then delivered from the trailer to the proper raceway or pond via four-inch discharge pipe. If the fish fails either the tag detection or clip quality check, it is diverted into a reject container and will be processed manually in the back of the trailer by a Trailer Assistant.

In the manual section of the trailer fish that were either too large or too small to be processed through the automated lines, or were rejected by the automated lines, were anesthetized and clipped and/or tagged manually.

At most facilities tag retention studies were conducted to determine the coded-wire tag shed rate for each specific tag code and/or raceway. A minimum of 300 fish were checked 21 days post tagging to check for the presence of a coded-wire tag. Adipose fin clips were also checked on the fish if they had been attempted to be clipped. For the 2015 season, there was a large reduction in the number of

groups of fish that received an adipose fin-clip and coded-wire tag, resulting in not as many groups of fish being checked for adipose-fin clip quality. Due to this the adipose-fin clip quality information for this report is incomplete.

Upon completion of marking operations at each facility all trailers and equipment were disinfected prior to being transported off the hatchery compound following the Idaho Trailer Disinfection Protocol. The first step in this process was to scrub all inside surfaces with diluted liquid Lysol. A large water trough was then used to create a closed water circulating system and a bleach solution (350ppm) was run through the trailer for a minimum of 45 minutes. Upon completion of the disinfection process Sodium Thiosulfate was used to neutralize the bleach and the water was then emptied out of the trailer according to hatchery protocol. Upon arrival at the next facility the entire trailer was extensively flushed with fresh hatchery water before exposing fish to the trailer.

The numbers in this report reflect the fish handled and type of mark that the Idaho Anadromous Fish-Marking Crew applied at each of the respective hatcheries at the time of marking. This information is not intended to be used for release numbers or information regarding release.

Results

The Marking Program performed the adipose fin-clipping and coded-wire tagging according to the 2015 Mark Plan. A total of 18,546,949 adipose fin-clips (AD) and/or coded wire tag (CWT) marks were applied to 17,307,269 fish in 2015 (Table 1).

Table 1: Mark Year 2015 Total number of fish marked, type of mark put on each fish, brood year (BY), and breakdown by each hatchery

HATCHERY	# OF FISH MARKED	AD/CWT	CWT ONLY	AD ONLY	TOTAL MARKS
CLEARWATER SPRING-RUN CHINOOK BY 2014	3,505,779	580,112	154,276	2,771,391	4,085,891
CLEARWATER SUMMER-RUN CHINOOK BY 2014	244,772	-	244,772	-	244,772
CLEARWATER STEELHEAD BY 2015	757,992	-	163,147	594,845	757,992
HAGERMAN NATIONAL STEELHEAD BY 2015	1,636,478	175,782	85,006	1,375,690	1,812,260
MAGIC VALLEY STEELHEAD BY 2015	1,339,401	-	254,261	1,085,140	1,339,401
MCCALL CHINOOK BY 2014	1,152,036	124,020	273,412	754,604	1,276,056
NIAGARA SPRINGS STEELHEAD BY 2015	1,888,849	-	-	1,888,849	1,888,849
PAHSIMEROI CHINOOK BY 2014	1,162,583	120,177	68,192	974,214	1,282,760
RAPID RIVER CHINOOK BY 2014	3,260,236	120,048	-	3,140,188	3,380,284
SAWTOOTH CHINOOK BY 2014	1,814,350	119,541	155,025	1,539,784	1,933,891
SPRINGFIELD SOCKEYE BY 2014	544,793	-	-	544,793	544,793
MARK YEAR 2015 TOTALS	**17,307,269**	**1,239,680**	**1,398,091**	**14,669,498**	**18,546,949**

Tag retention studies indicated very high rates of tag/mark retention; our program wide goal is to achieve 99% or better tag retention on all groups of tagged fish (Table 2). Adipose fin-clip rates were only checked on those groups of fish that also received a coded-wire tag.

Table 2: Mark Year 2015 overall CWT retention rate, Hatchery average, total # of fish with CWT mark, Successful # of CWT marks

OVERALL CWT RETENTION			
HATCHERY	HATCHERY AVERAGE RETENTION	TOTAL # MARKED	SUCCESSFUL # MARKED
CLEARWATER SPRING CHINOOK	99.97%	734,388	734,185
CLEARWATER SUMMER CHINOOK	99.67%	244,772	243,956
CLEARWATER STEELHEAD	94.05%	163,147	153,438
HAGERMAN NATIONAL STEELHEAD	94.54%	260,788	246,559
MAGIC VALLEY STEELHEAD	98.51%	254,261	250,472
MCCALL CHINOOK	99.63%	397,432	395,528
PAHSIMEROI CHINOOK	99.88%	188,369	188,142
RAPID RIVER CHINOOK	99.83%	120,048	119,838
SAWTOOTH CHINOOK	96.88%	274,566	266,005
TOTALS		**2,637,771**	**2,598,123**
OVERALL AVERAGE			**98.50%**

- Clearwater Fish Hatchery: 88.00 – 100.00% with an average of 98.67%
- Pahsimeroi Fish Hatchery: 99.67 – 100.00% with an average of 99.88%
- Rapid River Fish Hatchery: 99.83 – 99.83% with an average of 99.83%
- McCall Fish Hatchery: 98.40 – 100.00% with an average of 99.63%
- Magic Valley Fish Hatchery: 98.29 – 99.33% with an average of 98.51%
- Hagerman National Fish Hatchery: 83.67 – 99.33% with an average of 94.54%
- Niagara Springs Fish Hatchery: No CWT at Niagara Springs Hatchery in 2015
- Sawtooth Fish Hatchery: 94.50 – 99.80% with an average of 96.88%
- Springfield Fish Hatchery: No CWT at Springfield Hatchery in 2015

In addition to the coded-wire tags and adipose fin-clips, 403,271 fish were PIT-tagged by the Marking Program in 2015 on fish that were marked during the 2014 Mark year (Table 3).

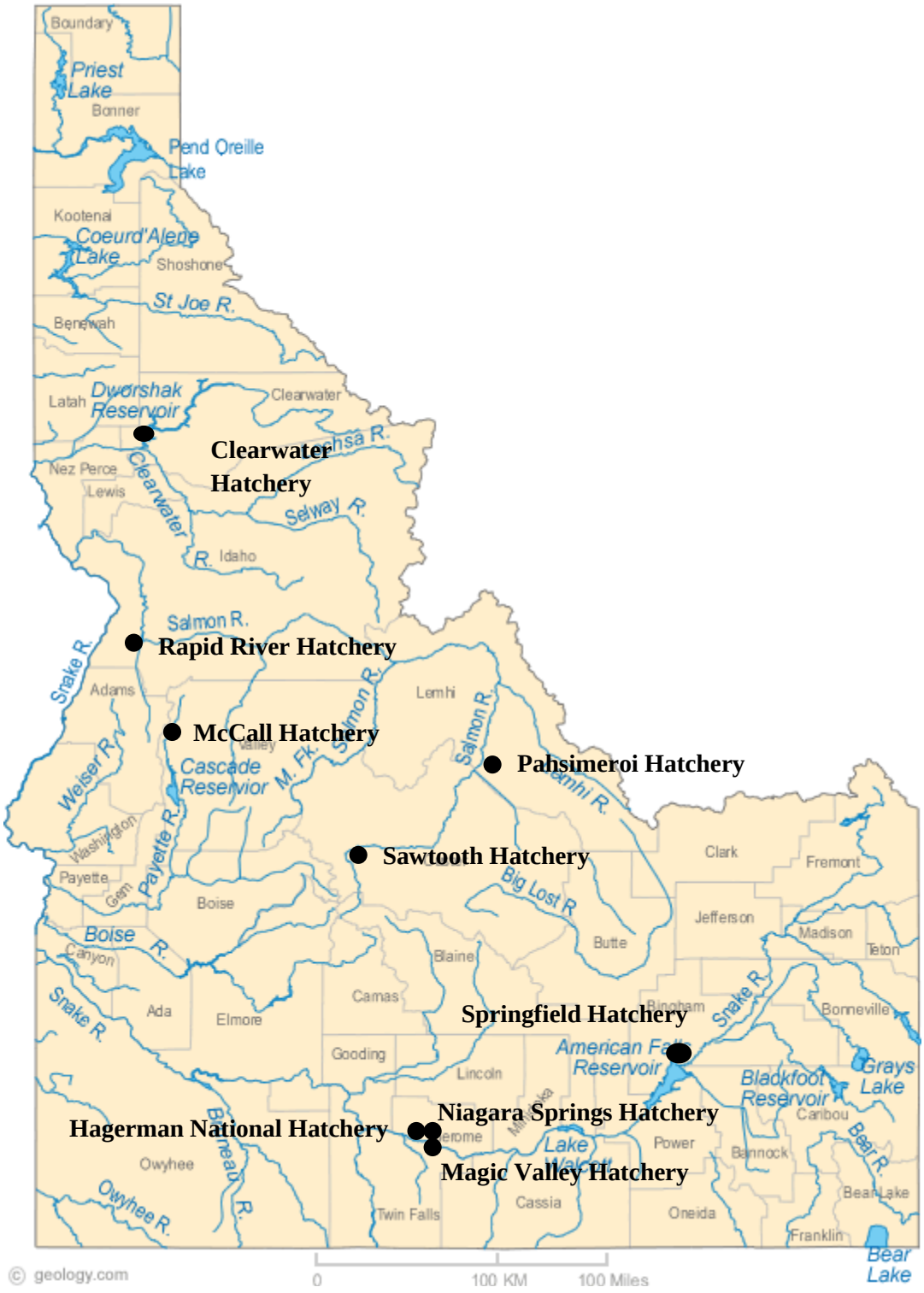
Table 3: Mark Year 2015 Summary of total PIT-Tagged fish and how many tagged at each hatchery

HATCHERY	**# TAGGED**
CLEARWATER SPRING-RUN CHINOOK BY 2013	43,976
CLEARWATER SUMMER-RUN CHINOOK BY 2013	25,491
CLEARWATER STEELHEAD BY 2014	18,093
HAGERMAN NATIONAL STEELHEAD BY 2014	34,683
MAGIC VALLEY STEELHEAD BY 2014	34,776
MC CALL SUMMER-RUN CHINOOK BY 2013	51,964
NIAGARA SPRINGS STEELHEAD BY 2014	22,691
PAHSIMEROI SUMMER-RUN CHINOOK BY 2013	22,385
RAPID RIVER SPRING-RUN CHINOOK BY 2013	51,968
SAWTOOTH SPRING-RUN CHINOOK BY 2013	22,377
SAWTOOTH SOCKEYE BY 2013	24,887
SPRINGFIELD SOCKEYE BY 2013	49,980
TOTAL PIT TAGS FOR 2015	**403,271**

Schedule of Mark Events

- November 4th-5th of 2014 Pit tagging Steelhead at Hagerman National
- January 21st -22nd Pit tagging Sockeye Salmon at Springfield
- January 27th-28th Pit tagging Steelhead at Magic Valley
- January 29th-30th Pit tagging Steelhead at Niagara Springs
- February 4th-11th Pit tagging Chinook and Steelhead at Clearwater
- February 17th-19th Pit tagging Chinook at Rapid River
- February 23rd-25th Pit tagging Chinook at McCall
- March 10th Pit tagging Chinook at Pahsimeroi
- March 12th-14th Pit tagging Chinook and Sockeye at Sawtooth
- May 11th-May 15th Marking Chinook at Clearwater
- May 12th-18th Marking Chinook at Pahsimeroi
- May 21st-26th Marking Chinook at Sawtooth
- June 1st-June 12th Marking Chinook at Clearwater
- June 15th-18th Marking Chinook at McCall
- June 15th-July 7th Marking Chinook at Rapid River
- June 30th- July 2nd Marking Sockeye at Springfield
- July 6th-10th Marking Chinook at McCall
- July 27th- August 5th Marking Steelhead at Clearwater
- July 28th-August 4th Marking Steelhead at Magic Valley
- August 8th-14th Marking Steelhead at Niagara Springs
- August 19th-26th Marking Steelhead at Hagerman National

Figure 1: Hatchery Locations for the 2015 Idaho Anadromous Fish-Marking Program



Clearwater Fish Hatchery

Clearwater Fish Hatchery Spring Chinook

The Idaho Anadromous Fish-Marking Crew processed BY 2014 spring-run Chinook salmon at Clearwater Fish Hatchery on two separate occasions. The first trip occurred May 11th through May 15th using one five-line automated marking trailer. Fish were loaded in to the trailer using an electric Matsusaka fish-transfer pump. Two six-line and one five-line automated fish marking trailers were used during the second mark event, June 1st through June 12th. Three electric Matsusaka fish-transfer pumps were used to load the fish into the trailers. A total of 3,505,779 spring-run Chinook salmon were coded-wire tagged and/or adipose fin-clipped during the two trips (Table 4). After marking, fish were distributed to raceways via four-inch aluminum discharge pipe.

Table 4: Clearwater Fish Hatchery Spring Chinook BY 2014 Raceway Totals and Mark Totals by date, trailer, mark type, tag code, MATS and manual numbers

Raceway Totals and Mark Totals at Clearwater Fish Hatchery Spring Chinook									
RWY	DATE	TRAILER	MARK TYPE	TAG CODE	MATS	MANUAL	MARK TOTAL	RWY TOTAL	STOCK
E1 UPPER	5/14/2015	M3	AD ONLY		6,288	2,974	9,262		S F CLWR
E1 UPPER	5/15/2015	M3	AD ONLY		30,142	6,378	36,520	45,782	S F CLWR
3W LOWER	5/11/2015	M3	AD/CWT	10/02/69	46,565	3,465	50,030		S F CLWR
3W LOWER	5/11/2015	M3	AD ONLY		10,744	5,093	15,837		S F CLWR
3W LOWER	5/12/2015	M3	AD ONLY		35,133	7,000	42,133	108,000	S F CLWR
4W LOWER	5/12/2015	M3	AD ONLY		55,680	16,063	71,743		S F CLWR
4W LOWER	5/13/2015	M3	AD ONLY		29,760	6,500	36,260	108,003	S F CLWR
5W LOWER	5/13/2015	M3	AD/CWT	10/02/69	46,067	3,977	50,044		S F CLWR
5W LOWER	5/13/2015	M3	AD ONLY		12,570	5,431	18,001		S F CLWR
5W LOWER	5/14/2015	M3	AD ONLY		13,961	4,500	18,461	86,506	S F CLWR
6W LOWER	5/14/2015	M3	AD ONLY		70,010	16,500	86,510	86,510	S F CLWR
1A	6/1/2015	M1	AD/CWT	10/03/06	28,901	1,099	30,000		S F CLWR
1A	6/1/2015	M1	AD ONLY		36,700	10,405	47,105	77,105	S F CLWR
1B	6/8/2015	M1	AD ONLY		62,643	14,393	77,036	77,036	S F CLWR
1E LOWER	6/4/2015	M4	AD ONLY		23,513	5,547	29,060		S F CLWR
1E LOWER	6/8/2015	M3	AD ONLY		22,208	5,177	27,385		S F CLWR
1E LOWER	6/9/2015	M3	AD ONLY		25,779	8,317	34,096	90,541	S F CLWR
2A	6/1/2015	M1	AD ONLY		21,245	6,731	27,976		S F CLWR
2A	6/2/2015	M1	AD ONLY		43,552	5,500	49,052	77,028	S F CLWR
2B	6/8/2015	M1	AD ONLY		903	29	932		S F CLWR
2B	6/9/2015	M1	AD ONLY		67,015	9,068	76,083	77,015	S F CLWR
2E	6/1/2015	M3	AD/CWT	10/02/95	38,003	2,016	40,019		POWELL
2E	6/1/2015	M3	AD ONLY		45,834	14,909	60,743		POWELL
2E	6/2/2015	M3	AD ONLY		44,759	12,500	57,259	158,021	POWELL
3A	6/2/2015	M1	AD ONLY		62,702	10,460	73,162		S F CLWR
3A	6/3/2015	M1	AD ONLY		3,343	500	3,843	77,005	S F CLWR
3B	6/9/2015	M1	AD/CWT	10/03/06	27,872	2,128	30,000		S F CLWR
3B	6/9/2015	M1	AD ONLY		8,939	3,873	12,812		S F CLWR
3B	6/10/2015	M1	AD ONLY		30,348	3,850	34,198	77,010	S F CLWR
3E	6/3/2015	M3	AD/CWT	10/02/95	37,312	2,697	40,009		POWELL
3E	6/2/2015	M3	AD ONLY		22,960	7,300	30,260		POWELL
3E	6/3/2015	M3	AD ONLY		63,545	21,040	84,585		POWELL
3E	6/4/2015	M3	AD ONLY		2,367	800	3,167	158,021	POWELL
4A	6/3/2015	M1	AD ONLY		66,801	10,200	77,001	77,001	S F CLWR
4B	6/10/2015	M1	AD ONLY		64,000	13,002	77,002	77,002	S F CLWR
4E	6/4/2015	M3	AD/CWT	10/02/95	40,003	-	40,003		POWELL
4E	6/4/2015	M3	AD ONLY		8,838	-	8,838		POWELL
4E	6/4/2015	M3	AD ONLY		3,874	17,149	21,023		POWELL
4E	6/5/2015	M3	AD ONLY		66,523	21,761	88,284	158,148	POWELL

Table 4: Continued

Raceway Totals and Mark Totals at Clearwater Fish Hatchery Chinook									
RWY	DATE	TRAILER	MARK TYPE	TAG CODE	MATS	MANUAL	MARK TOTAL	RWY TOTAL	STOCK
4W UPPER	6/3/2015	M4	AD/CWT	10/02/88	57,255	2,745	60,000		S F CLWR
4W UPPER	6/2/2015	M4	AD ONLY		6,991	2,321	9,312		S F CLWR
4W UPPER	6/3/2015	M4	AD ONLY		50,659	12,742	63,401		S F CLWR
4W UPPER	6/4/2015	M4	AD ONLY		24,295	5,992	30,287	163,000	S F CLWR
5A	6/3/2015	M1	AD/CWT	10/03/06	27,700	2,300	30,000		S F CLWR
5A	6/3/2015	M1	AD ONLY		2,309	1,281	3,590		S F CLWR
5A	6/4/2015	M1	AD ONLY		38,871	4,550	43,421	77,011	S F CLWR
5B	6/10/2015	M1	AD ONLY		12,402	4,556	16,958		S F CLWR
5B	6/11/2015	M1	AD ONLY		52,486	7,608	60,094	77,052	S F CLWR
5E	6/8/2015	M3	AD ONLY		13,248	5,514	18,762		POWELL
5E	6/9/2015	M3	AD ONLY		56,941	19,967	76,908		POWELL
5E	6/10/2015	M3	AD ONLY		49,668	12,700	62,368	158,038	POWELL
5W UPPER	6/4/2015	M4	AD ONLY		56,983	10,049	67,032		S F CLWR
5W UPPER	6/5/2015	M4	AD ONLY		82,237	14,287	96,524	163,556	S F CLWR
6A	6/4/2015	M1	AD ONLY		62,997	14,003	77,000	77,000	S F CLWR
6B	6/11/2015	M1	AD ONLY		24,867	7,313	32,180		S F CLWR
6B	6/12/2015	M1	AD ONLY		31,796	4,630	36,426		S F CLWR
6B	6/11/2015	M3	AD ONLY		6,149	2,681	8,830	77,436	S F CLWR
6E	6/2/2015	M3	AD ONLY		24,973	7,856	32,829		POWELL
6E	6/4/2015	M3	AD ONLY		27,132	9,825	36,957		POWELL
6E	6/8/2015	M3	AD ONLY		34,640	10,354	44,994		POWELL
6E	6/10/2015	M3	AD ONLY		35,484	10,527	46,011	160,791	POWELL
6W UPPER	6/8/2015	M4	AD/CWT	10/02/88	60,000	-	60,000		S F CLWR
6W UPPER	6/8/2015	M4	AD ONLY		43,896	19,956	63,852		S F CLWR
6W UPPER	6/9/2015	M4	AD ONLY		31,152	8,000	39,152	163,004	S F CLWR
7A	6/4/2015	M1	AD ONLY		7,584	2,216	9,800		S F CLWR
7A	6/5/2015	M1	AD ONLY		62,568	4,657	67,225	77,025	S F CLWR
7B	6/11/2015	M1	AD/CWT	10/03/06	30,000	-	30,000		S F CLWR
7B	6/11/2015	M3	AD ONLY		30,509	16,500	47,009	77,009	S F CLWR
8A	6/5/2015	M1	AD ONLY		10,833	9,717	20,550		S F CLWR
8A	6/8/2015	M1	AD ONLY		51,260	5,310	56,570	77,120	S F CLWR
8B	6/11/2015	M3	AD ONLY		61,021	16,002	77,023	77,023	S F CLWR
9A	6/9/2015	M4	CWT ONLY	10/03/09	72,709	5,291	78,000	78,000	POWELL
9B	6/11/2015	M4	AD/CWT	10/03/05	60,000	-	60,000		POWELL
9B	6/12/2015	M4	AD ONLY		5,400	13,600	19,000	79,000	POWELL
10A	6/10/2015	M4	AD ONLY		62,250	16,750	79,000	79,000	POWELL
10B	6/12/2015	M4	AD ONLY		17,645	3,991	21,636		S F CLWR/POWELL
10B	6/12/2015	M3	AD ONLY		44,929	6,651	51,580	73,216	S F CLWR
11A	6/10/2015	M4	AD/CWT	10/03/05	54,861	1,783	56,644		POWELL
11A	6/11/2015	M4	AD/CWT	10/03/05	3,363	-	3,363		POWELL
11A	6/12/2015	M4	AD ONLY		12,373	7,108	19,481	79,488	POWELL
11B	6/11/2015	M4	CWT ONLY	10/03/09	53,089	3,492	56,581		POWELL
11B	6/12/2015	M4	CWT ONLY	10/03/09	18,584	1,111	19,695	76,276	POWELL

Supplemental Tables: Tag Code sizes and amount of fish tagged using that tag code; # of fish by mark type; CWT retention rates by raceway; max, min. and average retention rates of checked fish; Adipose fin clip rates on those fish that also received a coded-wire tag

TAG CODE TOTALS		
TAG CODE	**TAG CODE SIZE**	**# TAGGED**
10/02/69	100K	100,074
10/03/06	110K	120,000
10/02/95	110K	120,031
10/02/88	110K	120,000
10/03/09	135K	154,276
10/03/05	110K	120,007

TOTAL AD/CWT	580,112
TOTAL CWT ONLY	154,276
TOTAL AD ONLY	2,771,391
TOTAL MARKED	3,505,779

CLEARWATER SPRING CHINOOK CWT RETENTION					
RACEWAY	**# CHECKED**	**# TAGGED**	**% SUCCESSFUL**	**# MARKED**	**SUCCESSFUL # MARKED**
3W, 5W LOWER	494	493	99.80%	100,074	99,871
2E, 3E, 4E	841	841	100.00%	120,031	120,031
4W,6W UPPER	600	600	100.00%	120,000	120,000
9A	300	300	100.00%	78,000	78,000
11B	300	300	100.00%	76,276	76,276
11A, 9B	615	615	100.00%	120,007	120,007
1A, 5A, 3B, 7B	806	806	100.00%	120,000	120,000
MAX. RETENTION			**100.00%**	**734,388**	**734,185**
MIN. RETENTION			**99.80%**	**AVERAGE**	**99.97%**

CLEARWATER SPRING CHINOOK ADIPOSE FIN-CLIP RATE						
RWY	**# SAMPLED**	**NO CLIP**	**PARTIAL**	**DEEP**	**# GOOD**	**% SUCCESSFUL**
3W, 5W LOWER	494	2	4	0	492	99.60%
2E, 3E, 4E	841	0	2	0	841	100.00%
4W, 6W	600	1	5	0	599	99.83%
11A, 9B	615	1	0	0	614	99.84%
1A, 5A, 3B, 7B	806	0	0	0	806	100.00%
					AVERAGE	**99.85%**

A total of 43,976 BY 2013 spring-run Chinook salmon (Table 5) were PIT-tagged at Clearwater Fish Hatchery February 4th through February 6th using the four-station manual PIT-tagging trailer. Fish were loaded into the main trough of the trailer by an electric Matsusaka fish-transfer pump. After marking, fish were distributed to raceways via four-inch aluminum discharge pipe.

Table 5: BY 2013 Clearwater Spring-Run Chinook pit tagged by raceway

Clearwater BY 2013 Spring-Run Chinook		
DATE	RWY	# OF FISH TAGGED
2/4/2015	1B	3,996
2/4/2015	3A	3,993
2/4/2015	5B	5,097
2/5/2015	7A	3,999
2/5/2015	9A	3,000
2/5/2015	11B	2,798
2/5/2015	3E	3,998
2/5/2015	4E	5,099
2/6/2015	5E	5,997
2/6/2015	6E	5,999
TOTAL FISH TAGGED:		**43,976**

Clearwater Fish Hatchery Summer Chinook

The Idaho Anadromous Fish-Marking Crew processed BY 2014 summer-run Chinook salmon at Clearwater Fish Hatchery. June 1st through June 2nd of 2015, a total of 244,772 fish were coded-wire tagged or adipose fin-clipped (Table 6). One six-line automated marking trailer was used to process fish that received a coded-wire tag. Fish were loaded into the main trough of the trailer by an electric Matsusaka fish-transfer pump. After marking, fish were distributed to raceways via four-inch aluminum discharge pipe.

Table 6: Clearwater Fish Hatchery Summer Chinook BY 2014 Raceway Totals and Mark Totals by date, trailer, mark type, tag code, MATS and manual numbers

Raceway Totals and Mark Totals at Clearwater Fish Hatchery Summer Chinook									
RWY	**DATE**	**TRAILER**	**MARK TYPE**	**TAG CODE**	**MATS**	**MANUAL**	**MARK TOTAL**	**RWY TOTAL**	**STOCK**
2W	6/1/2015	M4	CWT ONLY	10/03/13	107,595	8,005	115,600	115,600	S F CLWR
3W UPPER	6/1/2015	M4	CWT ONLY	10/03/13	6,772	1,446	8,218		S F CLWR
3W UPPER	6/2/2015	M4	CWT ONLY	10/03/13	113,455	7,499	120,954	129,172	S F CLWR

Supplemental Tables: Tag Code sizes and amount of fish tagged using that tag code; # of fish by mark type; CWT retention rates by raceway; max, min. and average retention rates of checked fish

TAG CODE TOTALS		
TAG CODE	**TAG CODE SIZE**	**# TAGGED**
10/03/13	225K	244,772

TOTAL AD/CWT	-
TOTAL CWT ONLY	244,772
TOTAL AD ONLY	-
TOTAL # FISH MARKED	244,772

CLEARWATER SUMMER CHINOOK CWT RETENTION					
RACEWAY	# CHECKED	# TAGGED	% SUCCESSFUL	# MARKED	SUCCESSFUL # MARKED
2W	300	299	99.67%	115,600	115,215
3W	300	299	99.67%	129,172	128,741
MAX. RETENTION			**99.67%**	**244,772**	**243,956**
MIN. RETENTION			**99.67%**	**AVERAGE**	**99.67%**

*Coded-Wire tagged fish only, No Adipose Fin-Clip Rates

A total of 25,491 BY 2013 summer-run Chinook salmon (Table 7) were PIT-tagged at Clearwater Fish Hatchery February 6th and 9th using the four-station manual PIT-tagging trailer. Fish were loaded into the main trough of the trailer by an electric Matsusaka fish-transfer pump. After marking, fish were distributed to raceways via four-inch aluminum discharge pipe.

Table 7: BY 2013 Clearwater Summer-Run Chinook pit tagged by raceway

Clearwater BY 2013 Summer-Run Chinook		
DATE	RWY	# OF FISH TAGGED
2/6/2015	W2	6,401
2/9/2015	W3	6,297
2/9/2015	W4	6,395
2/9/2015	W5	6,398
TOTAL FISH TAGGED:		**25,491**

Clearwater Fish Hatchery Steelhead

The Idaho Anadromous Fish-Marking Crew processed BY 2015 summer-run steelhead at Clearwater Fish Hatchery July 30th- August 5th. A total of 698,290 fish were coded-wire tagged or adipose fin-clipped (Table 8). One six-line automated marking trailer was used to process fish that received a coded-wire tag or adipose fin-clip. Fish were loaded into the main trough of the trailer by an electric Matsusaka fish-transfer pump. After marking, fish were distributed to raceways via four-inch aluminum discharge pipe.

Table 8: Clearwater Fish Hatchery Summer Steelhead BY 2015 Raceway Totals and Mark Totals by date, trailer, mark type, tag code, MATS and manual numbers

Raceway Totals and Mark Totals at Clearwater Fish Hatchery Steelhead									
RWY	DATE	TRAILER	MARK TYPE	TAG CODE	MATS	MANUAL	MARK TOTAL	RWY TOTAL	STOCK
7W	7/30/2015	M1	AD ONLY		31,692	10,269	41,961		S F CLWR
7W	7/30/2015	M1	AD ONLY		31,542	10,000	41,542	83,503	S F CLWR
8W	7/30/2015	M1	AD ONLY		22,355	8,590	30,945		S F CLWR
8W	7/31/2015	M1	AD ONLY		42,010	10,580	52,590	83,535	S F CLWR
9E	8/3/2015	M1	AD ONLY		49,289	15,503	64,792		S F CLWR
9E	8/4/2015	M1	AD ONLY		16,360	1,263	17,623	82,415	S F CLWR
9W	7/31/2015	M1	AD ONLY		15,682	6,232	21,914		S F CLWR
9W	8/3/2015	M1	AD ONLY		37,286	9,173	46,459	68,373	S F CLWR
10E	8/4/2015	M1	AD ONLY		65,005	17,100	82,105	82,105	S F CLWR
10W	7/27/2015	M1	CWT ONLY	10/03/10	75,095	7,144	82,239	82,239	S F CLWR
11E	7/29/2015	M1	AD ONLY		50,684	16,648	67,332		S F CLWR
11E	8/4/2015	M1	AD ONLY		11,507	3,268	14,775	82,107	S F CLWR
11W	8/5/2015	M1	AD ONLY		25,300	5,407	30,707	30,707	S F CLWR
12E	7/27/2015	M1	CWT ONLY	10/03/10	12,672	2,415	15,087		S F CLWR
12E	7/28/2015	M1	CWT ONLY	10/03/10	61,141	4,680	65,821	80,908	S F CLWR
12W	7/28/2015	M1	AD ONLY		25,684	10,411	36,095		S F CLWR
12W	7/29/2015	M1	AD ONLY		35,699	10,306	46,005	82,100	S F CLWR

Supplemental Tables: Tag Code sizes and amount of fish tagged using that tag code; # of fish by mark type; CWT retention rates by raceway; max, min. and average retention rates of checked fish

TAG CODE TOTALS		
TAG CODE	**TAG CODE SIZE**	**# TAGGED**
10/03/10	140K	163,147

TOTAL AD/CWT	0
TOTAL CWT ONLY	163,147
TOTAL AD ONLY	594,845
TOTAL MARKED	**757,992**

CLEARWATER STEELHEAD CWT RETENTION					
RACEWAY	**# CHECKED**	**# TAGGED**	**% SUCCESSFUL**	**# MARKED**	**SUCCESSFUL # MARKED**
10W	150	150	100.00%	82,239	82,239
12E	150	132	88.00%	80,908	71,199
MAX. RETENTION			**100.00%**	**163,147**	**153,438**
MIN. RETENTION			**88.00%**	**AVERAGE**	**94.05%**

*Coded-Wire tagged fish only, No Adipose Fin-Clip Rates

A total of 18,093 BY 2014 summer-run steelhead were PIT-tagged at Clearwater Fish Hatchery February 9th through February 10th using the four-station manual PIT-tagging trailer (Table 9). Fish were loaded into the main trough of the trailer by an electric Matsusaka fish-transfer pump. After marking, fish were distributed to raceways via four-inch aluminum discharge pipe.

Table 9: BY 2014 Clearwater Summer-Run Steelhead pit tagged by raceway

Clearwater BY 2014 Steelhead		
DATE	**RWY**	**# OF FISH TAGGED**
2/9/2015	E8	1,298
2/10/2015	E10	1,300
2/10/2015	E11	1,299
2/10/2015	E12	1,297
2/10/2015	W12	3,399
2/10/2015	W11	4,601
2/10/2015	W9	3,398
2/10/2015	W7	1,501
TOTAL FISH TAGGED:		**18,093**

Pahsimeroi Fish Hatchery

The Idaho Anadromous Fish-Marking Crew processed BY 2014 summer-run Chinook salmon at Pahsimeroi Fish Hatchery May 12th through May 18th. A total of 1,162,583 fish were coded-wire tagged and/or adipose-fin-clipped (Table 10). One five-line and one six-line automated marking trailers were used to process fish that received a coded-wire tag and/or adipose fin-clip. Fish were loaded into the main trough of the two trailers by two electric Matsusaka fish-transfer pumps. After marking, fish were distributed to ponds via four-inch aluminum discharge pipe.

Table 10: Pahsimeroi Fish Hatchery Summer Chinook BY 2014 Raceway Totals and Mark Totals by date, trailer, mark type, tag code, MATS and manual numbers

Raceway Totals and Mark Totals at Pahsimeroi Fish Hatchery Chinook									
RWY	DATE	TRAILER	MARK TYPE	TAG CODE	MATS	MANUAL	MARK TOTAL	RWY TOTAL	STOCK
POND 1	5/12/2015	M2	AD ONLY		10,732	13,937	24,669		PAH
POND 1	5/12/2015	M4	CWT ONLY	10/02/98	41,223	-	41,223		PAH
POND 1	5/12/2015	M2	AD/CWT	10/03/07	6,130	753	6,883		PAH
POND 1	5/12/2015	M4	CWT ONLY	10/37/73	8,697	5,048	13,745		PAH
POND 1	5/13/2015	M4	AD ONLY		73,131	33,472	106,603		PAH
POND 1	5/13/2015	M4	CWT ONLY	10/02/98	9,436	-	9,436		PAH
POND 1	5/13/2015	M4	CWT ONLY	10/37/73	2,101	1,687	3,788		PAH
POND 1	5/14/2015	M2	AD ONLY		7,449	8,131	15,580		PAH
POND 1	5/14/2015	M4	AD ONLY		61,503	30,104	91,607		PAH
POND 1	5/14/2015	M2	AD/CWT	10/03/07	13,240	-	13,240		PAH
POND 1	5/16/2015	M2	AD ONLY		39,926	15,920	55,846		PAH
POND 1	5/16/2015	M2	AD ONLY		-	5,977	5,977		PAH
POND 1	5/16/2015	M2	AD/CWT	10/03/07	20,011	-	20,011		PAH
POND 1	5/17/2015	M2	AD ONLY		79,548	25,342	104,890		PAH
POND 1	5/17/2015	M2	AD ONLY		-	4,201	4,201		PAH
POND 1	5/17/2015	M2	AD/CWT	10/03/07	9,553	-	9,553		PAH
POND 1	5/18/2015	M2	AD ONLY		31,745	18,061	49,806		PAH
POND 1	5/18/2015	M2	AD/CWT	10/03/07	10,423	-	10,423	587,481	PAH
POND 2	5/14/2015	M4	AD ONLY		34,569	8,253	42,822		PAH
POND 2	5/15/2015	M4	AD ONLY		20,658	3,441	24,099		PAH
POND 2	5/15/2015	M4	AD ONLY		56,841	14,719	71,560		PAH
POND 2	5/15/2015	M2	AD ONLY		47,532	16,857	64,389		PAH
POND 2	5/15/2015	M2	AD ONLY		10,686	10,021	20,707		PAH
POND 2	5/15/2015	M4	AD/CWT	10/03/07	19,839	161	20,000		PAH
POND2	5/15/2015	M2	AD/CWT	10/03/07	20,067	-	20,067		PAH
POND 2	5/16/2015	M2	AD ONLY		14,769	6,242	21,011		PAH
POND 2	5/16/2015	M4	AD ONLY		98,024	16,546	114,570		PAH
POND 2	5/17/2015	M4	AD ONLY		96,192	17,736	113,928		PAH
POND 2	5/17/2015	M4	AD/CWT	10/03/07	20,000	-	20,000		PAH
POND 2	5/18/2015	M4	AD ONLY		35,528	6,421	41,949	575,102	PAH

Supplemental Tables: Tag Code sizes and amount of fish tagged using that tag code; # of fish by mark type; CWT retention rates by raceway; max, min. and average retention rates of checked fish; Adipose fin clip rates on those fish that also received a coded-wire tag

TAG CODE TOTALS		
TAG CODE	**TAG CODE SIZE**	**# TAGGED**
10/02/98	50K	50,659
10/03/07	110K	120,177
10/37/73	20K	17,533

TOTAL AD/CWT	120,177
TOTAL CWT ONLY	68,192
TOTAL AD ONLY	974,214
TOTAL MARKED	**1,162,583**

PAHSIMEROI SUMMER CHINOOK CWT RETENTION					
RACEWAY	**# CHECKED**	**# TAGGED**	**% SUCCESSFUL**	**# MARKED**	**SUCCESSFUL # MARKED**
POND 1, 2	601	601	100.00%	120,177	120,177
POND 1	300	299	99.67%	68,192	67,965
MAX. RETENTION			**100.00%**	**188,369**	**188,142**
MIN. RETENTION			**99.67%**	**AVERAGE**	**99.88%**

PAHSIMEROI SUMMER CHINOOK ADIPOSE FIN-CLIP RATE						
RWY	**# SAMPLED**	**NO CLIP**	**PARTIAL**	**DEEP**	**# GOOD**	**% SUCCESSFUL**
Pond 1, 2	601	1	0	0	600	99.83%
					AVERAGE	**99.83%**

A total of 22,385 BY 2013 summer-run Chinook salmon were PIT-tagged at Pahsimeroi Fish Hatchery March 10th using the four-station manual PIT-tagging trailer (Table 11). Fish were loaded into the main trough of the trailer by manually netting the fish out of the pond and transporting them in five-gallon buckets. After marking, fish were distributed back to the ponds via four-inch discharge hose.

Table 11: BY 2013 Pahsimeroi Summer-Run Chinook pit tagged by raceway

Pahsimeroi BY 2013 Chinook		
DATE	**RWY**	**# OF FISH TAGGED**
3/10/2015	Pond 1	21,384
3/10/2015	Pond 1	1,001
TOTAL FISH TAGGED:		**22,385**

Sawtooth Fish Hatchery

The Idaho Anadromous Fish-Marking Crew processed BY 2014 spring-run Chinook salmon at Sawtooth Fish Hatchery May 21st through 26th using two six-line automated trailers and one five-line automated trailer. Fish were loaded into the trailers using three electric Matsusaka fish-transfer pumps. A total of 1,814,350 spring-run Chinook salmon were coded-wire tagged and/or adipose fin-clipped (Table 12). After marking, fish were distributed to the raceways via four-inch aluminum discharge pipe.

Table 12: Sawtooth Fish Hatchery Spring Chinook BY 2014 Raceway Totals and Mark Totals by date, trailer, mark type, tag code, MATS and manual numbers

Raceway Totals and Mark Totals at Sawtooth Fish Hatchery Chinook									
RWY	DATE	TRAILER	MARK TYPE	TAG CODE	MATS	MANUAL	MARK TOTAL	RWY TOTAL	STOCK
DISPLAY	5/21/2015	M2	AD ONLY		4,000	1,000	5,000		SALMON R
3	5/21/2015	M2	AD ONLY		39,186	22,534	61,720		SALMON R
3	5/21/2015	M2	AD ONLY		8,517	5,040	13,557		SALMON R
3	5/22/2015	M2	AD ONLY		61,986	28,833	90,819		SALMON R
3	5/23/2015	M2	AD ONLY		13,320	6,227	19,547	185,643	SALMON R
4	5/23/2015	M2	CWT ONLY	10/03/11	59,582	9,764	69,346		SALMON R
4	5/24/2015	M2	CWT ONLY	10/03/11	75,911	9,768	85,679	155,025	SALMON R
5	5/24/2015	M2	AD ONLY		1,649	2,019	3,668		SALMON R
5	5/25/2015	M2	AD ONLY		42,410	25,450	67,860		SALMON R
5	5/26/2015	M2	AD ONLY		29,124	11,400	40,524		SALMON R
5	5/25/2015	M2	AD/CWT	10/02/94	28,604	914	29,518	141,570	SALMON R
6	5/26/2015	M2	AD ONLY		10,522	6,383	16,905		SALMON R
6	5/23/2015	M1	AD ONLY		12,181	3,329	15,510		SALMON R
6	5/24/2015	M1	AD ONLY		85,858	26,464	112,322	144,737	SALMON R
7	5/22/2015	M1	AD ONLY		61,879	15,749	77,628		SALMON R
7	5/23/2015	M1	AD ONLY		9,965	1,589	11,554		SALMON R
7	5/23/2015	M1	AD/CWT	10/02/94	28,221	1,787	30,008		SALMON R
7	5/23/2015	M1	AD ONLY		18,200	5,800	24,000		SALMON R
7	5/23/2015	M1	AD ONLY		2,601	800	3,401	146,591	SALMON R
8	5/21/2015	M1	AD ONLY		49,066	18,823	67,889		SALMON R
8	5/22/2015	M1	AD ONLY		15,700	3,000	18,700		SALMON R
8	5/25/2015	M1	AD ONLY		54,206	8,300	62,506	149,095	SALMON R
9	5/25/2015	M1	AD ONLY		49,002	13,728	62,730		SALMON R
9	5/26/2015	M1	AD ONLY		73,002	11,070	84,072	146,802	SALMON R
10	5/25/2015	M4	AD ONLY		33,695	10,872	44,567		SALMON R
10	5/26/2015	M4	AD ONLY		78,579	23,178	101,757		SALMON R
10	5/26/2015	M1	AD ONLY		2,779	1,165	3,944	150,268	SALMON R
11	5/24/2015	M4	AD ONLY		32,743	10,940	43,683		SALMON R
11	5/25/2015	M4	AD ONLY		60,183	12,702	72,885		SALMON R
11	5/24/2015	M4	AD/CWT	10/02/94	26,557	3,445	30,002	146,570	SALMON R
12	5/23/2015	M4	AD ONLY		64,583	14,725	79,308		SALMON R
12	5/24/2015	M4	AD ONLY		55,268	12,018	67,286	146,594	SALMON R
13	5/22/2015	M4	AD ONLY		41,255	-	41,255		SALMON R
13	5/22/2015	M4	AD ONLY		9,858	17,471	27,329		SALMON R
13	5/22/2015	M4	AD/CWT	10/02/94	29,167	846	30,013		SALMON R
13	5/23/2015	M4	AD ONLY		42,118	9,074	51,192	149,789	SALMON R
14	5/21/2015	M4	AD ONLY		96,005	22,630	118,635		SALMON R
14	5/22/2015	M4	AD ONLY		22,614	5,417	28,031	146,666	SALMON R

Supplemental Tables: Tag Code sizes and amount of fish tagged using that tag code; # of fish by mark type; CWT retention rates by raceway; max, min. and average retention rates of checked fish.

TAG CODE TOTALS		
TAG CODE	**TAG CODE SIZE**	**# TAGGED**
10/03/11	200K	155,025
10/02/94	110K	119,541

TOTAL AD/CWT	119,541
TOTAL CWT ONLY	155,025
TOTAL AD ONLY	1,539,784
TOTAL MARKED	**1,814,350**

SAWTOOTH SPRING CHINOOK CWT RETENTION					
RACEWAY	**# CHECKED**	**# TAGGED**	**% SUCCESSFUL**	**# MARKED**	**ACTUAL # MARKED**
4	300	290	96.67%	155,025	149,858
5,7	400	378	94.50%	59,526	56,252
11,13	500	499	99.80%	60,015	59,895
MAX. RETENTION			**99.80%**	**274,566**	**266,005**
MIN. RETENTION			**94.50%**	**AVERAGE**	**96.88%**

*Adipose Fin-Clip rates were not reported during the tag retention checks by the hatchery personnel.

A total of 49,853 BY 2013 sockeye salmon were PIT-tagged at Sawtooth Fish Hatchery March 12th through March 13th using the four-station manual PIT-tagging trailer (Table 13). A total of 22,377 BY 2013 spring-run Chinook salmon were PIT-tagged at Sawtooth Fish Hatchery March 14th using the four-station manual PIT-tagging trailer (Table 14). Fish were loaded into the main trough of the trailer by an electric Matsusaka fish-transfer pump. After marking, fish were distributed back to the raceways via four-inch discharge hose.

Table 13: BY 2013 Sawtooth Sockeye pit tagged by raceway

Sawtooth BY 2013 Sockeye		
DATE	**RWY**	**# OF FISH TAGGED**
3/12/2015	1	24,966
3/13/2015	2	24,887
TOTAL FISH TAGGED:		**49,853**

Table 14: BY 2013 Sawtooth Spring-Run Chinook pit tagged by raceway

Sawtooth BY 2013 Chinook		
DATE	**RWY**	**# OF FISH TAGGED**
3/14/2015	13	4,692
3/14/2015	11	4,795
3/14/2015	8	4,700
3/14/2015	5	4,693
3/14/2015	4	2,496
3/14/2015	3	1,001
TOTAL FISH TAGGED:		**22,377**

Rapid River Fish Hatchery

The Idaho Anadromous Fish-Marking Crew processed BY 2014 spring-run Chinook salmon at Rapid River Fish Hatchery June 15th through July 7th. A total of 3,260,236 fish were coded-wire tagged and/or adipose fin-clipped (Table 16). Two six-line and one five-line automated marking trailers were used to process fish that received a coded-wire tag and/or adipose fin-clip. Fish were loaded into the main trough of the trailers by two electric Matsusaka fish-transfer pumps. After marking, fish were distributed to the rearing ponds via four-inch aluminum discharge pipe. Due to the long distances between marking trailers and rearing ponds much of the discharge pipe is provided by Rapid River Hatchery and is stored on site at the hatchery.

Table 16: Rapid River Fish Hatchery Spring Chinook BY 2014 Raceway Totals and Mark Totals by date, trailer, mark type, tag code, MATS and manual numbers

Raceway Totals and Mark Totals at Rapid River Fish Hatchery Chinook									
RWY	DATE	TRAILER	MARK TYPE	TAG CODE	MATS	MANUAL	MARK TOTAL	RWY TOTAL	STOCK
POND 1A	6/15/2015	M4	AD ONLY		20,385	10,387	30,772		RAPID RIVER
POND 1A	6/15/2015	M4	AD/CWT	10/03/08	20,000	-	20,000		RAPID RIVER
POND 1A	6/17/2015	M4	AD ONLY		113,902	22,435	136,337		RAPID RIVER
POND 1A	6/19/2015	M4	AD ONLY		70,583	13,026	83,609		RAPID RIVER
POND 1A	6/22/2015	M4	AD ONLY		55,413	13,138	68,551		RAPID RIVER
POND 1A	6/25/2015	M4	AD ONLY		85,048	19,291	104,339		RAPID RIVER
POND 1A	6/26/2015	M4	AD ONLY		55,616	13,594	69,210		RAPID RIVER
POND 1A	7/2/2015	M4	AD ONLY		3,018	12,275	15,293		RAPID RIVER
POND 1A	7/2/2015	M4	AD/CWT	10/03/08	19,079	960	20,039		RAPID RIVER
POND 1A	7/6/2015	M4	AD ONLY		43,035	11,000	54,035		RAPID RIVER
POND 1A	7/7/2015	M4	AD ONLY		8,091	1,900	9,991		RAPID RIVER
POND 1A	7/7/2015	M4	AD ONLY		4,077	1,696	5,773	617,949	RAPID RIVER
POND 1B	6/16/2015	M4	AD ONLY		95,583	21,346	116,929		RAPID RIVER
POND 1B	6/18/2015	M4	AD ONLY		112,792	22,129	134,921		RAPID RIVER
POND 1B	6/22/2015	M4	AD ONLY		11,154	3,842	14,996		RAPID RIVER
POND 1B	6/22/2015	M4	AD/CWT	10/03/08	18,276	1,724	20,000		RAPID RIVER
POND 1B	6/23/2015	M4	AD ONLY		107,399	25,860	133,259		RAPID RIVER
POND 1B	6/24/2015	M4	AD ONLY		29,122	6,812	35,934		RAPID RIVER
POND 1B	6/24/2015	M4	AD ONLY		66,968	16,615	83,583		RAPID RIVER
POND 1B	6/24/2015	M4	AD/CWT	10/03/08	19,385	615	20,000		RAPID RIVER
POND 1B	6/25/2015	M4	AD ONLY		27,311	7,256	34,567		RAPID RIVER
POND 1B	7/7/2015	M4	AD ONLY		13,017	2,087	15,104	609,293	RAPID RIVER
POND 2A	6/16/2015	M1	AD ONLY		91,749	18,519	110,268		RAPID RIVER
POND 2A	6/17/2015	M1	AD/CWT	10/03/08	20,008	-	20,008		RAPID RIVER
POND 2A	6/18/2015	M1	AD ONLY		116,536	25,925	142,461		RAPID RIVER
POND 2A	6/19/2015	M1	AD/CWT	10/03/08	19,576	425	20,001		RAPID RIVER
POND 2A	6/23/2015	M3	AD ONLY		90,353	30,860	121,213		RAPID RIVER
POND 2A	6/25/2015	M3	AD ONLY		80,302	28,259	108,561	522,512	RAPID RIVER
POND 2B	6/22/2015	M1	AD ONLY		79,118	16,268	95,386		RAPID RIVER
POND 2B	6/24/2015	M1	AD ONLY		105,297	21,138	126,435		RAPID RIVER
POND 2B	6/26/2015	M1	AD ONLY		52,028	9,562	61,590		RAPID RIVER
POND 2B	6/29/2015	M1	AD ONLY		65,628	11,981	77,609		RAPID RIVER
POND 2B	7/1/2015	M1	AD ONLY		21,888	6,919	28,807		RAPID RIVER
POND 2B	7/6/2015	M1	AD ONLY		21,474	5,809	27,283		RAPID RIVER
POND 2B	7/7/2015	M1	AD ONLY		63,902	14,100	78,002	495,112	RAPID RIVER

Table 16: Continued

Raceway Totals and Mark Totals at Rapid River Fish Hatchery Chinook									
RWY	DATE	TRAILER	MARK TYPE	TAG CODE	MATS	MANUAL	MARK TOTAL	RWY TOTAL	STOCK
POND 2C	6/23/2015	M1	AD ONLY		104,195	20,154	124,349		RAPID RIVER
POND 2C	6/25/2015	M1	AD ONLY		91,770	22,883	114,653		RAPID RIVER
POND 2C	6/30/2015	M1	AD ONLY		114,526	22,255	136,781		RAPID RIVER
POND 2C	7/1/2015	M1	AD ONLY		95,203	21,085	116,288	492,071	RAPID RIVER
POND 2D	6/15/2015	M1	AD ONLY		42,614	8,324	50,938		RAPID RIVER
POND 2D	6/17/2015	M1	AD ONLY		80,750	16,198	96,948		RAPID RIVER
POND 2D	6/18/2015	M1	AD ONLY		40,669	10,307	50,976		RAPID RIVER
POND 2D	6/22/2015	M3	AD ONLY		80,410	25,617	106,027		RAPID RIVER
POND 2D	6/24/2015	M3	AD ONLY		103,720	35,831	139,551		RAPID RIVER
POND 2D	6/25/2015	M3	AD ONLY		12,297	3,957	16,254		RAPID RIVER
POND 2D	6/26/2015	M3	AD ONLY		46,150	16,455	62,605	523,299	RAPID RIVER

Supplemental Tables: Tag Code sizes and amount of fish tagged using that tag code; # of fish by mark type; CWT retention rates by raceway; max, min. and average retention rates of checked fish; Adipose fin clip rates on those fish that also received a coded-wire tag

TAG CODE TOTALS		
TAG CODE	TAG CODE SIZE	# TAGGED
10/03/08	110K	120,048

TOTAL AD/CWT	120,048
TOTAL CWT ONLY	-
TOTAL AD ONLY	3,140,188
TOTAL MARKED	**3,260,236**

RAPID RIVER SPRING CHINOOK CWT RETENTION					
RACEWAY	# CHECKED	# TAGGED	% SUCCESSFUL	# MARKED	SUCCESSFUL # MARKED
POND 1A,1B,2A	573	572	99.83%	120,048	119,838
MAX. RETENTION			**99.83%**	**120,048**	**119,838**
MIN. RETENTION			**99.83%**	**AVERAGE**	**99.83%**

RAPID RIVER SPRING CHINOOK ADIPOSE FIN-CLIP RATE						
RWY	# SAMPLED	NO CLIP	PARTIAL	DEEP	# GOOD	% SUCCESSFUL
POND 1A, 1B, 2A	573	0	1	0	573	100.00%
					AVERAGE	**100.00%**

A total of 51,968 BY 2014 spring-run Chinook salmon were PIT-tagged at Rapid River Fish Hatchery February 17th through February 19th using the four-station manual PIT-tagging trailer (Table 17). Fish were loaded into the main trough of the trailer by manually netting the fish out of the pond and transporting them in five-gallon buckets. After marking, fish were distributed back to the pond via four-inch aluminum discharge pipe.

Table 17: BY 2013 Rapid River Spring-Run Chinook pit tagged by raceway

Rapid River BY 2013 Chinook		
DATE	**RWY**	**# OF FISH TAGGED**
2/17/2015	2B	13,542
2/18/2015	2B	24,037
2/19/2015	2B	14,389
TOTAL FISH TAGGED:		**51,968**

McCall Fish Hatchery

The Idaho Anadromous Fish-Marking Crew processed BY 2014 summer-run Chinook salmon at McCall Fish Hatchery on two separate occasions. A total of 1,152,036 fish were coded-wire tagged and/or adipose fin-clipped (Table 18). The first mark event occurred June 15th through June 18th; one five-line automated marking trailer was used to adipose fin-clip and move fish to outside rearing ponds in order to reduce fish densities in the indoor vats. The second mark event occurred July 6th through July 10th; one five-line and one six-line automated marking trailers were used to process fish that received an adipose fin-clip and/or coded-wire tag. Fish were loaded into the main trough of the two trailers by two electric Matsusaka fish-transfer pumps. After marking, fish were distributed to ponds via four-inch aluminum discharge pipe.

Table 18: McCall Fish Hatchery Summer Chinook BY 2014 Raceway Totals and Mark Totals by date, trailer, mark type, tag code, MATS and manual numbers

Raceway Totals and Mark Totals at McCall Fish Hatchery Chinook									
RWY	DATE	TRAILER	MARK TYPE	TAG CODE	MATS	MANUAL	MARK TOTAL	RWY TOTAL	STOCK
POND 1	6/15/2015	M2	AD ONLY		29,224	14,491	43,715		S F SALMON
POND 1	6/16/2015	M2	AD ONLY		89,283	30,488	119,771		S F SALMON
POND 1	6/17/2015	M2	AD ONLY		92,275	31,581	123,856		S F SALMON
POND 1	6/18/2015	M2	AD ONLY		81,955	30,767	112,722		S F SALMON
POND 1	7/72015	M2	AD/CWT	10/02/93	20,494	3,901	24,395		S F SALMON
POND 1	7/8/2015	M2	AD/CWT	10/02/93	33,328	4,297	37,625		S F SALMON
POND 1	7/8/2015	M2	AD/CWT	10/02/93	50,621	11,379	62,000	524,084	S F SALMON
POND 2	7/6/2015	M4	CWT ONLY	10/02/96	48,506	6,879	55,385		S F SALMON
POND 2	7/7/2015	M4	CWT ONLY	10/02/96	88,420	11,195	99,615		S F SALMON
POND 2	7/6/2015	M2	AD ONLY		40,700	14,693	55,393		S F SALMON
POND 2	7/7/2015	M2	AD ONLY		54,015	18,779	72,794		S F SALMON
POND 2	7/7/2015	M4	AD ONLY		8,044	2,453	10,497		S F SALMON
POND 2	7/8/2015	M4	AD ONLY		93,171	33,404	126,575		S F SALMON
POND2	7/9/2015	M4	AD ONLY		64,309	24,972	89,281	509,540	S F SALMON
VAT 1	7/9/2015	M2	CWT ONLY	22/01/58	33,296	8,076	41,372	41,372	JOHNSON CREEK
VAT 2	7/9/2015	M2	CWT ONLY	22/01/59	14,462	2,330	16,792		JOHNSON CREEK
VAT 2	7/10/2015	M2	CWT ONLY	22/01/59	16,086	4,159	20,245	37,037	JOHNSON CREEK
VAT 3	7/9/2015	M2	CWT ONLY	22/01/59	17,595	2,405	20,000		JOHNSON CREEK
VAT 3	7/9/2015	M2	CWT ONLY	22/01/58	16,707	3,296	20,003	40,003	JOHNSON CREEK

Supplemental Tables: Tag Code sizes and amount of fish tagged using that tag code; # of fish by mark type; CWT retention rates by raceway; max, min. and average retention rates of checked fish; Adipose fin clip rates on those fish that also received a coded-wire tag

TAG CODE TOTALS		
TAG CODE	TAG CODE SIZE	# TAGGED
10/02/93	110K	124,020
10/02/96	200K	155,000
22/01/58	60K	61,375
22/01/59	60K	57,037

TOTAL AD/CWT	124,020
TOTAL CWT ONLY	273,412
TOTAL AD ONLY	754,604
TOTAL MARKED	**1,152,036**

MCCALL SUMMER CHINOOK CWT RETENTION					
RACEWAY	# CHECKED	# TAGGED	% SUCCESSFUL	# MARKED	SUCCESSFUL # MARKED
VAT 1, 3	312	307	98.40%	61,375	60,391
VAT 2, 3	312	308	98.72%	57,037	56,306
POND 2	819	818	99.88%	155,000	154,811
POND 1	603	603	100.00%	124,020	124,020
MAX. RETENTION			**100.00%**	**397,432**	**395,528**
MIN. RETENTION			**98.40%**	**AVERAGE**	**99.52%**

McCALL SUMMER CHINOOK ADIPOSE FIN-CLIP RATE						
RWY	# SAMPLED	NO CLIP	PARTIAL	DEEP	# GOOD	% SUCCESSFUL
Pond 1	603	0	1	0	603	100.00%
					AVERAGE	**100.00%**

A total of 53,978 BY 2013 summer-run Chinook salmon were PIT-tagged at McCall Fish Hatchery February 23rd through February 25th using the four-station manual PIT-tagging trailer (Table 19). Fish were loaded into the main trough of the trailer by an electric Matsusaka fish-transfer pump. After marking, fish were sent back to the pond via four-inch aluminum discharge pipe.

Table 19: BY 2013 McCall Spring-Run Chinook pit tagged by raceway

McCall BY 2013 Chinook		
DATE	RWY	# OF FISH TAGGED
2/23/2015	Pond 1	15,094
2/24/2015	Pond 1	10,882
2/24/2015	Pond 2	10,718
2/25/2015	Pond 2	15,270
TOTAL FISH TAGGED:		**51,964**

Magic Valley Fish Hatchery

The Idaho Anadromous Fish-Marking Crew processed BY 2015 summer-run steelhead at Magic Valley Fish Hatchery July 28th through August 4th. A total of 1,339,401 fish were coded-wire tagged or adipose fin-clipped using one five-line and one six-line automated marking trailers (Table 20). Fish were loaded into the main trough of the two trailers by two electric Matsusaka fish-transfer pumps. After marking, fish were distributed to raceways via four-inch aluminum discharge pipe.

Table 20: Magic Valley Fish Hatchery Steelhead BY 2015 Raceway Totals and Mark Totals by date, trailer, mark type, tag code, MATS and manual numbers

Raceway Totals and Mark Totals at Magic Valley Fish Hatchery Steelhead									
RWY	DATE	TRAILER	MARK TYPE	TAG CODE	MATS	MANUAL	MARK TOTAL	RWY TOTAL	STOCK
E1A	7/31/2015	M4	AD ONLY		27,221	4,779	32,000	32,000	DWOR B
E1B	8/1/2015	M4	AD ONLY		27,565	4,438	32,003	32,003	DWOR B
E2A	7/31/2015	M4	AD ONLY		27,073	4,927	32,000	32,000	DWOR B
E2B	7/31/2015	M4	AD ONLY		14,193	8,635	22,828		DWOR B
E2B	8/1/2015	M4	AD ONLY		7,872	1,301	9,173	32,001	DWOR B
E3A	8/3/2015	M4	AD ONLY		15,323	3,394	18,717		U SALMON B
E3A	8/4/2015	M4	AD ONLY		10,300	3,000	13,300	32,017	U SALMON B
E3B	8/4/2015	M4	AD ONLY		27,400	4,600	32,000	32,000	U SALMON B
E4A	8/3/2015	M3	AD ONLY		737	559	1,296		U SALMON B
E4A	8/4/2015	M3	AD ONLY		23,304	7,400	30,704	32,000	U SALMON B
E4B	8/4/2015	M3	AD ONLY		7,609	2,401	10,010		U SALMON B
E4B	8/4/2015	M4	AD ONLY		6,958	1,938	8,896		U SALMON B
E4B	8/4/2015	M4	AD ONLY		12,329	3,755	16,084	34,990	U SALMON B
E5A	8/3/2015	M3	AD ONLY		23,802	8,200	32,002	32,002	DWOR B / U SAL B
E5B	8/4/2015	M4	AD ONLY		25,273	6,727	32,000	32,000	U SALMON B
E9A	8/2/2015	M3	AD ONLY		15,012	6,423	21,435		PAH A
E9A	8/3/2015	M3	AD ONLY		8,301	2,265	10,566	32,001	PAH A
E9B	8/3/2015	M3	AD ONLY		24,903	7,100	32,003	32,003	DWOR B
E10A	8/1/2015	M3	AD ONLY		18,266	8,542	26,808		PAH A
E10A	8/2/2015	M3	AD ONLY		4,096	1,100	5,196	32,004	PAH A
E10B	8/2/2015	M3	AD ONLY		25,500	6,500	32,000	32,000	PAH A
E11A	8/1/2015	M3	AD ONLY		23,514	8,501	32,015	32,015	PAH A
E11B	8/2/2015	M3	AD ONLY		22,716	9,305	32,021	32,021	PAH A
E12A	7/31/2015	M3	AD ONLY		6,239	1,710	7,949		PAH A
E12A	8/1/2015	M3	AD ONLY		19,051	5,000	24,051	32,000	PAH A
E12B	7/30/2015	M3	AD ONLY		18,619	7,835	26,454		PAH A
E12B	7/31/2015	M3	AD ONLY		4,546	1,000	5,546	32,000	PAH A
E13A	7/31/2015	M3	AD ONLY		21,319	10,695	32,014	32,014	PAH A
E13B	7/31/2015	M3	AD ONLY		24,700	7,300	32,000	32,000	PAH A
E14A	7/29/2015	M3	AD ONLY		4,381	3,704	8,085		PAH A
E14A	7/30/2015	M3	AD ONLY		19,889	4,030	23,919	32,004	PAH A
E14B	7/29/2015	M3	AD ONLY		23,416	8,600	32,016	32,016	PAH A
E15A	7/30/2015	M3	AD ONLY		24,526	7,500	32,026	32,026	PAH A
E15B	7/29/2015	M3	AD ONLY		28,397	6,070	34,467	34,467	PAH A
E16A	7/28/2015	M3	AD ONLY		26,001	5,999	32,000	32,000	PAH A
E16B	7/28/2015	M3	AD ONLY		16,109	11,187	27,296		PAH A
E16B	7/29/2015	M3	AD ONLY		3,797	908	4,705	32,001	PAH A

Table 20: Continued

Raceway Totals and Mark Totals at Magic Valley Fish Hatchery Steelhead									
RWY	DATE	TRAILER	MARK TYPE	TAG CODE	MATS	MANUAL	MARK TOTAL	RWY TOTAL	STOCK
W1A	7/28/2015	M4	CWT ONLY	10/03/02	30,504	1,496	32,000	32,000	DWOR B
W1B	7/28/2015	M4	CWT ONLY	10/03/02	29,680	2,324	32,004	32,004	DWOR B
W2A	7/28/2015	M4	CWT ONLY	10/03/02	19,710	1,729	21,439		DWOR B
W2A	7/29/2015	M4	CWT ONLY	10/03/02	10,128	433	10,561	32,000	DWOR B
W2B	7/30/2015	M4	CWT ONLY	10/03/04	29,948	2,052	32,000	32,000	U SALMON B
W3A	7/29/2015	M4	CWT ONLY	10/03/04	30,177	1,829	32,006	32,006	U SALMON B
W3B	7/29/2015	M4	CWT ONLY	10/03/04	24,255	3,678	27,933		U SALMON B
W3B	7/30/2015	M4	CWT ONLY	10/03/04	3,867	200	4,067	32,000	U SALMON B
W4A	7/30/2015	M4	CWT ONLY	10/02/97	29,782	2,218	32,000	32,000	U SALMON B
W4B	7/30/2015	M4	CWT ONLY	10/03/04	5,956	309	6,265		U SALMON B
W4B	7/30/2015	M4	CWT ONLY	10/02/97	11,143	2,523	13,666		U SALMON B
W4B	7/31/2015	M4	CWT ONLY	10/02/97	9,687	633	10,320	30,251	U SALMON B
W5A	8/3/2015	M4	AD ONLY		6,718	1,944	8,662	8,662	U SALMON B
W5B	8/3/2015	M4	AD ONLY		9,135	5,711	14,846	14,846	PAH A
W9A	8/1/2015	M4	AD ONLY		27,085	4,915	32,000	32,000	DWOR B
W9B	8/2/2015	M4	AD ONLY		27,400	4,600	32,000	32,000	U SALMON B
W10A	8/1/2015	M4	AD ONLY		13,814	2,838	16,652		DWOR B
W10A	8/2/2015	M4	AD ONLY		13,293	2,099	15,392	32,044	DWOR B
W10B	8/2/2015	M4	AD ONLY		27,800	4,201	32,001	32,001	DWOR B / U SAL B
W11A	8/2/2015	M4	AD ONLY		27,145	4,855	32,000	32,000	U SALMON B
W11B	8/3/2015	M4	AD ONLY		27,000	5,000	32,000	32,000	U SALMON B
W12B	8/3/2015	M4	AD ONLY		26,602	5,400	32,002	32,002	U SALMON B

Supplemental Tables: Tag Code sizes and amount of fish tagged using that tag code; # of fish by mark type; CWT retention rates by raceway; max, min. and average retention rates of checked fish

TAG CODE TOTALS		
TAG CODE	TAG CODE SIZE	# TAGGED
10/03/02	90K	96,004
10/03/04	90K	102,271
10/02/97	50K	55,986

TOTAL AD/CWT	-
TOTAL CWT ONLY	254,261
TOTAL AD ONLY	1,085,140
TOTAL MARKED	**1,339,401**

MAGIC VALLEY STEELHEAD CWT RETENTION					
RACEWAY	# CHECKED	# TAGGED	% SUCCESSFUL	# MARKED	SUCCESSFUL # MARKED
W1A, W1B, W2A	700	688	98.29%	96,004	94,358
W2B, W3A, W3B	500	491	98.20%	96,006	94,278
W4A, W4B	300	298	99.33%	62,251	61,836
MAX. RETENTION			**99.33%**	**254,261**	**250,472**
MIN. RETENTION			**98.20%**	**AVERAGE**	**98.51%**

*Adipose Fin-Clip rates were not reported during the tag retention checks by the hatchery personnel.

A total of 34,776 BY 2014 summer-run steelhead were PIT-tagged at Magic Valley Fish January 27th through January 28th using the four-station manual PIT-tagging trailer (Table 21). Fish were loaded into the main trough of the trailer by hatchery personnel utilizing a forklift mounted live fish transfer tank. After marking, fish were distributed to raceways via four-inch aluminum discharge pipe.

Table 21: BY 2014 Magic Valley Summer-Run Steelhead pit tagged by raceway

Magic Valley BY 2014 Steelhead		
DATE	**RWY**	**# OF FISH TAGGED**
1/27/2015	W2B	2,200
1/27/2015	W3A	5,696
1/27/2015	W4B	5,695
1/27/2015	W5A	3,399
1/27/2015	W12B	3,593
1/28/2015	W13A	1,797
1/28/2015	W14B	2,300
1/28/2015	W15A	2,198
1/28/2015	E16B	1,900
1/28/2015	E13A	1,900
1/28/2015	E10A	1,897
1/28/2015	E4B	1,100
1/28/2015	E2A	1,101
TOTAL FISH TAGGED:		**34,776**

Hagerman National Fish Hatchery

Photo Credit: Hagerman National Fish Hatchery, USFWS

The Idaho Anadromous Fish-Marking Crew processed BY 2015 summer-run steelhead at Hagerman National Fish Hatchery from August 19th through August 26th. A total of 1,636,478 fish were coded-wire tagged or adipose fin-clipped using one five-line and two six-line automated marking trailers (Table 22). Fish were loaded into the main trough of one six-line trailer by hatchery personnel utilizing a forklift mounted live fish transfer tank. Fish were loaded into the main trough of one five-line by an electric Matsusaka fish-transfer pump. Fish were loaded into the main trough of one six-line trailer by manually netting the fish out of the tank and transporting them in five-gallon buckets, hatchery personnel utilizing a forklift mounted live fish transfer tank, and an electric Matsusaka fish-transfer pump. After marking, fish were distributed to raceways via four-inch aluminum discharge pipe by all three trailers.

Table 22: Hagerman National Fish Hatchery Steelhead BY 2015 Raceway Totals and Mark Totals by date, trailer, mark type, tag code, MATS and manual numbers

Raceway Totals and Mark Totals at Hagerman National Fish Hatchery Steelhead									
RWY	DATE	TRAILER	MARK TYPE	TAG CODE	MATS	MANUAL	MARK TOTAL	RWY TOTAL	STOCK
CIRCULAR TANK 1	8/19/2015	M4	AD/CWT	10/03/01	25,298	5,020	30,318	30,318	SAW A
CIRCULAR TANK 2	8/19/2015	M4	AD/CWT	10/03/01	21,995	3,026	25,021		SAW A
CIRCULAR TANK 2	8/20/2015	M4	AD/CWT	10/03/01	5,748	807	6,555	31,576	SAW A
CIRCULAR TANK 3	8/20/2015	M4	AD/CWT	10/03/01	28,181	4,830	33,011	33,011	SAW A
37	8/20/2015	M4	AD ONLY		1,575	2,156	3,731		SAW A
37	8/21/2015	M4	AD ONLY		17,571	5,500	23,071	26,802	SAW A
38	8/21/2015	M4	AD ONLY		21,180	5,620	26,800	26,800	SAW A
39	8/21/2015	M4	AD ONLY		18,341	5,817	24,158		SAW A
39	8/22/2015	M4	AD ONLY		2,008	637	2,645	26,803	SAW A
40	8/22/2015	M4	AD ONLY		22,703	4,102	26,805	26,805	SAW A
41	8/22/2015	M4	AD ONLY		17,555	5,254	22,809	22,809	SAW A
42	8/25/2015	M1	AD ONLY		24,209	5,380	29,589	29,589	SAW A
43	8/25/2015	M1	AD ONLY		22,057	5,658	27,715		SAW A
43	8/26/2015	M4	AD ONLY		1,313	474	1,787	29,502	SAW A
44	8/26/2015	M4	AD ONLY		22,807	6,702	29,509	29,509	SAW A
45	8/26/2015	M4	AD ONLY		24,002	5,500	29,502	29,502	SAW A
46	8/25/2015	M4	AD ONLY		15,220	5,643	20,863		SAW A
46	8/26/2015	M4	AD ONLY		6,899	1,738	8,637	29,500	SAW A
47	8/25/2015	M4	AD ONLY		23,850	5,650	29,500	29,500	SAW A
48	8/22/2015	M4	AD ONLY		22,089	4,914	27,003		SAW A
48	8/23/2015	M4	AD ONLY		2,147	350	2,497	29,500	SAW A
49	8/23/2015	M4	AD ONLY		24,401	5,100	29,501	29,501	SAW A
50	8/23/2015	M4	AD ONLY		24,000	5,500	29,500	29,500	SAW A
51	8/23/2015	M4	AD ONLY		24,702	4,800	29,502	29,502	SAW A
52	8/23/2015	M4	AD ONLY		1,698	1,088	2,786		SAW A
52	8/24/2015	M4	AD ONLY		22,768	4,000	26,768	29,554	SAW A
53	8/24/2015	M4	AD ONLY		23,830	5,672	29,502	29,502	SAW A
54	8/24/2015	M4	CWT ONLY	10/02/99	17,494	4,014	21,508	21,508	E F SALMON
55	8/25/2015	M4	CWT ONLY	10/02/99	22,044	3,272	25,316	25,316	E F SALMON
59	8/23/2015	M1	AD/CWT	10/03/03	12,077	1,443	13,520		SAW A
59	8/24/2015	M1	AD/CWT	10/03/03	9,060	605	9,665		SAW A
59	8/24/2015	M1	AD ONLY		-	308	308	23,493	SAW A
60	8/24/2015	M1	AD/CWT	10/03/03	21,405	3,121	24,526	24,526	SAW A
61	8/24/2015	M1	AD/CWT	10/03/03	22,310	2,145	24,455	24,455	SAW A
62	8/24/2015	M1	AD/CWT	10/03/03	4,191	4,520	8,711		SAW A
62	8/25/2015	M1	AD ONLY		12,215	2,600	14,815	23,526	SAW A
63	8/23/2015	M1	AD ONLY		2,932	1,550	4,482		SAW A
63	8/24/2015	M1	AD ONLY		9,069	4,620	13,689		SAW A
63	8/26/2015	M1	AD ONLY		10,236	6,674	16,910	35,081	SAW A

Table 22: Continued

Raceway Totals and Mark Totals at Hagerman National Fish Hatchery Steelhead									
RWY	DATE	TRAILER	MARK TYPE	TAG CODE	MATS	MANUAL	MARK TOTAL	RWY TOTAL	STOCK
64	8/19/2015	M1	AD ONLY		21,809	6,700	28,509	28,509	SAW A
65	8/19/2015	M1	AD ONLY		22,012	6,523	28,535	28,535	SAW A
66	8/19/2015	M1	AD ONLY		8,187	3,975	12,162		SAW A
66	8/20/2015	M1	AD ONLY		12,341	4,000	16,341	28,503	SAW A
67	8/20/2015	M1	AD ONLY		21,008	7,500	28,508	28,508	SAW A
68	8/20/2015	M1	AD ONLY		8,087	3,856	11,943		SAW A
68	8/21/2015	M1	AD ONLY		13,359	3,200	16,559	28,502	SAW A
69	8/21/2015	M1	AD ONLY		23,157	5,400	28,557	28,557	SAW A
70	8/21/2015	M1	AD ONLY		25,326	3,200	28,526	28,526	SAW A
71	8/21/2015	M1	AD ONLY		12,207	3,724	15,931		SAW A
71	8/22/2015	M1	AD ONLY		9,674	2,900	12,574	28,505	SAW A
72	8/22/2015	M1	AD ONLY		22,512	6,000	28,512	28,512	SAW A
73	8/22/2015	M1	AD ONLY		22,508	6,000	28,508	28,508	SAW A
74	8/22/2015	M1	AD ONLY		6,517	3,634	10,151		SAW A
74	8/23/2015	M1	AD ONLY		14,062	4,300	18,362	28,513	SAW A
75	8/23/2015	M1	AD ONLY		22,005	6,631	28,636	28,636	SAW A
76	8/26/2015	M1	CWT ONLY	10/02/99	16,233	1,916	18,149	18,149	E F SALMON
77	8/26/2015	M1	CWT ONLY	10/02/99	1,377	121	1,498		E F SALMON
77	8/26/2015	M1	CWT ONLY	10/27/73	15,188	3,347	18,535	20,033	E F SALMON
81	8/19/2015	M3	AD ONLY		19,200	7,600	26,800	26,800	SAW A
82	8/19/2015	M3	AD ONLY		19,579	6,875	26,454		SAW A
82	8/20/2015	M3	AD ONLY		160	200	360	26,814	SAW A
83	8/20/2015	M3	AD ONLY		21,381	5,419	26,800	26,800	SAW A
84	8/20/2015	M3	AD ONLY		20,200	6,600	26,800	26,800	SAW A
85	8/20/2015	M3	AD ONLY		17,772	4,697	22,469		SAW A
85	8/21/2015	M3	AD ONLY		3,157	1,200	4,357	26,826	SAW A
86	8/21/2015	M3	AD ONLY		22,072	4,731	26,803	26,803	SAW A
87	8/21/2015	M3	AD ONLY		19,800	7,000	26,800	26,800	SAW A
88	8/21/2015	M3	AD ONLY		7,371	4,629	12,000		SAW A
88	8/22/2015	M3	AD ONLY		11,668	3,150	14,818	26,818	SAW A
89	8/22/2015	M3	AD ONLY		21,000	5,800	26,800	26,800	SAW A
90	8/22/2015	M3	AD ONLY		21,600	5,200	26,800	26,800	SAW A
91	8/22/2015	M3	AD ONLY		2,909	2,295	5,204		SAW A
91	8/23/2015	M3	AD ONLY		16,710	4,900	21,610	26,814	SAW A

Table 22: Continued

Raceway Totals and Mark Totals at Hagerman National Fish Hatchery Steelhead									
RWY	DATE	TRAILER	MARK TYPE	TAG CODE	MATS	MANUAL	MARK TOTAL	RWY TOTAL	STOCK
92	8/23/2015	M3	AD ONLY		19,600	7,200	26,800	26,800	SAW A
93	8/23/2015	M3	AD ONLY		16,267	6,132	22,399		SAW A
93	8/24/2015	M3	AD ONLY		3,318	1,085	4,403	26,802	SAW A
94	8/24/2015	M3	AD ONLY		21,313	5,500	26,813	26,813	SAW A
95	8/24/2015	M3	AD ONLY		19,900	6,900	26,800	26,800	SAW A
96	8/24/2015	M3	AD ONLY		14,067	5,988	20,055		SAW A
96	8/25/2015	M3	AD ONLY		4,886	1,961	6,847	26,902	SAW A
97	8/25/2015	M3	AD ONLY		21,620	5,200	26,820	26,820	SAW A
98	8/25/2015	M3	AD ONLY		20,400	6,400	26,800	26,800	SAW A
99	8/25/2015	M3	AD ONLY		7,978	3,448	11,426		SAW A
99	8/26/2015	M3	AD ONLY		2,349	2,605	4,954	16,380	SAW A

Supplemental Tables: Tag Code sizes and amount of fish tagged using that tag code; # of fish by mark type; CWT retention rates by raceway; max, min. and average retention rates of checked fish; Adipose fin clip rates on those fish that also received a coded-wire tag

TAG CODE TOTALS		
TAG CODE	TAG CODE SIZE	# TAGGED
10/03/01	90K	94905
10/02/99	60K	66471
10/03/03	90K	80877
10/27/73	20K	18535

TOTAL AD/CWT	175,782
TOTAL CWT ONLY	85,006
TOTAL AD ONLY	1,375,690
TOTAL MARKED	**1,636,478**

HAGERMAN NATIONAL STEELHEAD CWT RETENTION					
RACEWAY	# CHECKED	# TAGGED	% SUCCESSFUL	# MARKED	SUCCESSFUL # MARKED
Circ 1	300	251	83.67%	30,318	25,366
Circ 2	300	272	90.67%	31,576	28,629
Circ 3	300	273	91.00%	33,011	30,040
54	150	141	94.00%	21,508	20,218
55	150	149	99.33%	25,316	25,147
59	300	295	98.33%	23,185	22,799
60	300	298	99.33%	24,526	24,362
61, 62	300	297	99.00%	33,166	32,834
76	150	146	97.33%	18,149	17,665
77	150	146	97.33%	20,033	19,499
MAX. RETENTION			**99.33%**	**260,788**	**246,559**
MIN. RETENTION			**83.67%**	**AVERAGE**	**94.54%**

HAGERMAN NATIONAL STEELHEAD ADIPOSE FIN-CLIP RATE						
RWY	**# SAMPLED**	**NO CLIP**	**PARTIAL**	**DEEP**	**# GOOD**	**% SUCCESSFUL**
Circ 1	300	1	0	0	299	99.67%
Circ 2	300	2	0	0	298	99.33%
Circ 3	300	0	2	0	300	100.00%
59	300	2	1	0	298	99.33%
60	300	2	1	0	298	99.33%
61, 62	300	3	1	0	297	99.00%
					AVERAGE	**99.44%**

A total of 34,683 BY 2014 summer-run steelhead were PIT-tagged at Hagerman National Fish Hatchery November 4th through November 5th of 2014, using the four-station manual PIT-tagging trailer (Table 23). Fish were loaded into the main trough of the trailer by hatchery personnel utilizing a forklift mounted live fish transfer tank. After marking, fish were distributed to raceways via four-inch aluminum discharge pipe.

Table 23: BY 2014 Hagerman National Summer-Run Steelhead pit tagged by raceway

Hagerman BY 2014 Steelhead		
DATE	**RWY**	**# OF FISH TAGGED**
10/4/2014	CIRC 1	2,900
10/4/2014	CIRC 2	2,899
10/4/2014	CIRC 3	2,900
10/4/2014	38	800
10/4/2014	41	798
10/4/2014	46	699
10/4/2014	51	800
10/4/2014	53	2,901
10/4/2014	54	2,899
10/5/2014	61	2,200
10/5/2015	62	801
10/5/2014	64	2,193
10/5/2014	65	801
10/5/2014	70	2,199
10/5/2014	72	799
10/5/2014	74	2,199
10/5/2014	76	2,799
10/5/2014	85	800
10/5/2014	89	798
10/5/2014	92	702
10/5/2014	96	796
TOTAL FISH TAGGED:		**34,683**

Niagara Springs Fish Hatchery

The Idaho Anadromous Fish-Marking Crew processed BY 2015 summer-run steelhead at Niagara Springs Fish Hatchery August 8th through August 14th. A total of 1,888,849 fish were adipose fin-clipped (Table 24). One five-line and two six-line automated marking trailers were used to process fish that received an adipose fin-clip. Fish were loaded into the main trough of the trailers by three electric Matsusaka fish-transfer pumps. After marking, fish were distributed to raceways via four-inch aluminum discharge pipe.

Table 24: Niagara Springs Fish Hatchery Steelhead BY 2015 Raceway Totals and Mark Totals by date, trailer, mark type, tag code, MATS and manual numbers

Raceway Totals and Mark Totals at Niagara Springs Fish Hatchery Steelhead									
RWY	DATE	TRAILER	MARK TYPE	TAG CODE	MATS	MANUAL	MARK TOTAL	RWY TOTAL	STOCK
1	8/8/2015	M3	AD ONLY		57,197	17,443	74,640		OX
1	8/9/2015	M3	AD ONLY		19,642	6,811	26,453	101,093	OX
2	8/9/2015	M3	AD ONLY		44,363	16,080	60,443		OX
2	8/10/2015	M3	AD ONLY		21,356	7,875	29,231	89,674	OX
3	8/10/2015	M3	AD ONLY		49,243	17,040	66,283		OX
3	8/11/2015	M3	AD ONLY		31,646	7,576	39,222	105,505	OX
4	8/11/2015	M3	AD ONLY		43,656	15,750	59,406		OX
4	8/12/2015	M3	AD ONLY		36,952	9,761	46,713	106,119	OX
5	8/12/2015	M3	AD ONLY		38,328	16,585	54,913		OX
5	8/13/2015	M3	AD ONLY		34,627	13,420	48,047	102,960	OX
6 LOWER	8/13/2015	M3	AD ONLY		27,319	12,201	39,520		OX
6 LOWER	8/14/2015	M3	AD ONLY		21,355	6,040	27,395	66,915	OX
6 UPPER	8/14/2015	M3	AD ONLY		9,746	4,363	14,109		OX
6 UPPER	8/14/2015	M4	AD ONLY		16,504	3,504	20,008	34,117	OX
7	8/8/2015	M4	AD ONLY		80,508	18,531	99,039	99,039	OX
8	8/9/2015	M4	AD ONLY		39,272	-	39,272		OX
8	8/9/2015	M4	AD ONLY		39,629	18,100	57,729	97,001	OX
9	8/10/2015	M4	AD ONLY		80,500	16,507	97,007	97,007	OX / PAH
10	8/11/2015	M4	AD ONLY		80,804	16,288	97,092	97,092	PAH
11 UPPER	8/11/2015	M4	AD ONLY		4,391	1,641	6,032		PAH
11 UPPER	8/12/2015	M4	AD ONLY		35,413	7,604	43,017	49,049	PAH
11 LOWER	8/12/2015	M4	AD ONLY		35,752	9,026	44,778	44,778	PAH
12	8/12/2015	M4	AD ONLY		10,007	2,978	12,985		PAH
12	8/13/2015	M4	AD ONLY		69,499	16,559	86,058	99,043	PAH
13	8/13/2015	M4	AD ONLY		19,692	5,384	25,076		PAH
13	8/14/2015	M4	AD ONLY		20,807	4,477	25,284		PAH
13	8/14/2015	M1	AD ONLY		44,508	8,550	53,058	103,418	PAH
14	8/12/2015	M1	AD ONLY		4,145	1,381	5,526		PAH
14	8/13/2015	M1	AD ONLY		80,913	18,370	99,283	104,809	PAH
15	8/12/2015	M1	AD ONLY		83,422	18,786	102,208	102,208	PAH
16	8/11/2015	M1	AD ONLY		84,229	18,881	103,110	103,110	PAH
17	8/10/2015	M1	AD ONLY		64,835	16,264	81,099	81,099	PAH
18	8/9/2015	M1	AD ONLY		68,845	15,286	84,131		PAH
18	8/10/2015	M1	AD ONLY		15,304	3,799	19,103	103,234	PAH
19	8/8/2015	M1	AD ONLY		68,390	25,095	93,485		PAH
19	8/9/2015	M1	AD ONLY		6,188	1,906	8,094	101,579	PAH

Supplemental Table: # of fish by mark type.

TOTAL AD/CWT	-
TOTAL CWT ONLY	-
TOTAL AD ONLY	1,888,849
TOTAL MARKED	**1,888,849**

* No Adipose Fin-Clip Rates were checked

A total of 22,691 BY 2014 summer-run steelhead were PIT-tagged at Niagara Springs Fish Hatchery January 29th through January 30th using the four-station manual PIT-tagging trailer (Table 25). Fish were loaded into the main trough of the trailer by an electric Matsusaka fish-transfer pump. After marking, fish were distributed to raceways via four-inch aluminum discharge pipe.

Table 25: BY 2014 Niagara Springs Summer-Run Steelhead pit tagged by raceway

Niagara Springs BY 2014 Steelhead		
DATE	**RWY**	**# OF FISH TAGGED**
1/29/2015	1	2,100
1/29/2015	2	2,204
1/29/2015	5	2,099
1/29/2015	6	2,196
1/30/2015	8	2,499
1/30/2015	10	2,600
1/30/2015	13	2,199
1/30/2015	14	2,295
1/30/2015	16	2,299
1/30/2015	17	2,200
TOTAL FISH TAGGED:		**22,691**

Springfield Fish Hatchery

The Idaho Anadromous Fish-Marking Crew processed BY 2014 summer-run sockeye at Springfield Fish Hatchery June 30th through July 2nd. A total of 544,793 fish were adipose fin-clipped (Table 26). One six-line automated marking trailer and one five-line automated marking trailer were used to process fish that received an adipose fin-clip. Fish were loaded into the main trough of the trailers by two electric Matsusaka fish-transfer pumps. After marking, fish were distributed to raceways via four-inch aluminum discharge pipe.

Table 26: Springfield Fish Hatchery Sockeye BY 2014 Raceway Totals and Mark Totals by date, trailer, mark type, tag code, MATS and manual numbers

Raceway Totals and Mark Totals at Springfield Fish Hatchery Sockeye									
RWY	DATE	TRAILER	MARK TYPE	TAG CODE	MATS	MANUAL	MARK TOTAL	RWY TOTAL	STOCK
4	7/2/2015	M4	AD ONLY		21,987	7,592	29,579	29,579	REDFISH LK
5	7/2/2015	M4	AD ONLY		16,063	5,651	21,714		REDFISH LK
5	7/2/2015	M3	AD ONLY		15,074	3,967	19,041	40,755	REDFISH LK
6	7/2/2015	M4	AD ONLY		40,614	12,777	53,391	53,391	REDFISH LK
7	7/2/2015	M3	AD ONLY		37,926	11,589	49,515	49,515	REDFISH LK
8	7/1/2015	M4	AD ONLY		33,114	10,745	43,859	43,859	REDFISH LK
9	7/1/2015	M3	AD ONLY		20,069	5,635	25,704		REDFISH LK
9	7/2/2015	M3	AD ONLY		14,527	5,702	20,229	45,933	REDFISH LK
10	7/1/2015	M4	AD ONLY		35,064	11,448	46,512	46,512	REDFISH LK
11	7/1/2015	M3	AD ONLY		34,553	11,047	45,600	45,600	REDFISH LK
12	6/30/2015	M4	AD ONLY		32,266	7,899	40,165		REDFISH LK
12	7/1/2015	M4	AD ONLY		7,092	2,235	9,327	49,492	REDFISH LK
13	6/30/2015	M3	AD ONLY		19,185	4,843	24,028		REDFISH LK
13	7/1/2015	M3	AD ONLY		18,765	7,603	26,368	50,396	REDFISH LK
14	6/30/2015	M4	AD ONLY		31,938	12,226	44,164	44,164	REDFISH LK
15	6/30/2015	M3	AD ONLY		28,361	17,236	45,597	45,597	REDFISH LK

Supplemental Table:

TOTAL AD/CWT	-
TOTAL CWT ONLY	-
TOTAL AD ONLY	544,793
TOTAL MARKED	**544,793**

* No Adipose Fin-Clip Rates were checked

A total of 49,980 BY 2013 sockeye salmon were PIT-tagged at Springfield Fish Hatchery January 21st through January 22nd using the four-station manual PIT-tagging trailer (Table 26). Fish were loaded into the main trough of the trailer by an electric Matsusaka fish-transfer pump. After marking, fish were distributed to raceways via four-inch aluminum discharge pipe.

Table 26: BY 2013

Springfield BY 2013 Sockeye		
DATE	RWY	# OF FISH TAGGED
1/22/2015	2	12,503
1/22/2015	3	12,487
1/21/2015	5	12,492
1/21/2015	8	12,498
TOTAL FISH TAGGED:		**49,980**

Discussion

Again in 2015, all trailer transportation requiring a CDL was contracted out to Peters and Keatts Trucking LLC. The only exception to this was that Hagerman National Fish Hatchery employee Steve Money transporting the trailers between the three Southern Idaho steelhead facilities. Peters and Keatts Trucking was once again able to move the trailers in the time frame necessary in order for the program to meet the very strict deadlines that it operates under.

This year the program purchased a third electric Matsusaka fish-transfer pump and a goose-neck trailer to haul all the three fish pumps and associated four inch hoses. This allows the marking crew to be more flexible and/or available to meet all the hatcheries needs and deadlines.

Hagerman National started using an electric Matsusaka fish-transfer pumps for the first time this year in 2015. This process made handling fish easier for the hatchery staff and marking crews. The trailers were also parked in different locations: One trailer was between Hatch House 2 and the upper level raceways; one trailer was between the upper and middle level raceways; and the third trailer was between Hatch House 1 and the lower level raceways. The upper and lower level trailers used the electric Matsusaka fish-transfer pumps and the middle trailer continued using the forklift with transfer tank. There is discussion to put in new power receptacles around the raceways so that the automated trailers could be moved to desired locations throughout the marking process to increase efficiency and productivity.