

## Coded-wire Tagged Chinook Salmon in the Gulf of Alaska Rockfish Trawl Fishery, 2013–2015<sup>1</sup>

### Introduction

In 2013–2015, electronic detection of coded-wire tags (CWTs) was conducted for nearly all Chinook salmon in the prohibited species catch (PSC) of the Gulf of Alaska (GOA) rockfish trawl fishery (primary species: northern rockfish [*Sebastes polycarpus*], Pacific ocean perch [*S. alutus*], and dusky rockfish [*S. variabilis*]; secondary species: Pacific cod, roughey rockfish [*S. aleutianus*], shortraker rockfish [*S. borealis*], sablefish [*Anoplopoma fimbria*], and thornyhead rockfish [*S. alascanus*]). The new sampling program was initiated to supplement the CWTs collected in the GOA groundfish fisheries. Historically, the only sampling for coded-wire tagged Chinook salmon in the PSC of the GOA was conducted by vessel and plant observers of the North Pacific Groundfish and Halibut Observer Program (NPGHOP) of the National Marine Fisheries Service (NMFS). Sampling by NPGHOP observers is based on visual detection only of a missing adipose fin in subsamples of salmon catches; in addition, not all vessels carry observers. A missing adipose fin can be a visual indicator of the presence of a CWT; however, a small percentage of salmon are released from hatcheries with a CWT but no adipose fin clip. Electronic detection is the only way to recover CWTs from salmon without the external mark of a fin clip.

### Methods

#### Sampling for coded-wire tags

Electronic detection of coded-wire tagged Chinook salmon in the PSC of the GOA rockfish trawl fishery was conducted by Alaska Groundfish Data Bank (AGDB) in 2013–2015, and nearly all Chinook salmon in the PSC were scanned with handheld CWT detection wands. If a positive signal was detected by the wand, then the snout was collected for recovery of a CWT and biological information was recorded: length, weight, gender, and status of the adipose fin (i.e. clipped or not clipped). Other information recorded for the sample were the location and date of capture. Snouts were frozen and shipped by staff of AGDB to the NMFS CWT lab in Juneau, Alaska. The CWT was extracted in the lab from each snout and the tag code read under a microscope. Recovery information was entered into a NMFS database and submitted to the publicly-available coastwide Regional Mark Information System (RMIS) of the Pacific States Marine Fisheries Commission. The RMIS database allows the tag codes of recovered CWTs to be matched with release information: release location, run type, rearing type, etc.

#### Estimating numbers of fish from hatchery release groups based on coded-wire tag recoveries in catches

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One method for estimating the number of fish in a catch from a particular release group is a simple two-step process (Nandor et al., 2010). The first step accounts for the fraction of the catch sampled, and the second step accounts for the fraction of the release group that was tagged.

In the first step, the observed number of CWTs in a sample are extrapolated to the whole catch by scaling the observed number by the inverse of the catch sample fraction. Assuming the sample is representative of the entire catch, the number of fish in the whole catch can be estimated by expanding the observed number of CWTs by a sampling expansion factor or the inverse of the fraction sampled. The number of fish,  $N_{samp,i}$ , in the catch from release group  $i$ , accounting for the sampling fraction, can be estimated by

$$\hat{N}_{samp,i} = F_{samp} \cdot N_{obs,i},$$

where  $N_{obs,i}$  = observed number of tags from release group  $i$  and  $F_{samp}$  = (total catch) / (total sampled), the sampling expansion factor or the inverse of the fraction sampled.

The second step involves scaling the estimated number of fish in the catch from a particular release group  $i$ ,  $\hat{N}_{samp,i}$  defined above, by a marking expansion factor to account for the fraction of the release group that was tagged. The number of fish,  $N_{samp,mark,i}$ , in the catch from release group  $i$ , accounting for the sampling and marking fractions, can be estimated by

$$\hat{N}_{samp,mark,i} = F_{mark,i} \cdot \hat{N}_{samp,i},$$

where  $F_{mark,i}$  = (total number of fish released from group  $i$ ) / (total number of fish marked from group  $i$ ) is the marking expansion factor.

### **Coded-wire tagged Chinook salmon from evolutionarily significant units listed under the Endangered Species Act**

The North Pacific Fishery Management Council contracted Cramer Fish Sciences to compile a database of CWT release groups of West Coast salmon listed under the Endangered Species Act (ESA); this database was last updated in June 2015 (Caldwell, 2015). The database was compiled using the RMIS database and a list of artificial propagation programs determined by NMFS to be included in ESA-listed evolutionarily significant units (ESUs). We determined from this database the coded-wire tagged Chinook salmon recovered in the GOA rockfish trawl fishery that originated from ESA-listed ESUs.

## **Results**

Electronic detection of Chinook salmon coded-wire tagged in the PSC of the GOA rockfish trawl fishery occurred in 2013–2015, and virtually the entire Chinook salmon PSC was scanned with handheld CWT detection wands: 2,111 of 2,128 salmon in 2013 (99.2%), 468 of 483 salmon in 2014 (96.9%), and 638 of 641 salmon in 2015 (99.5%) (Table 1). The numbers of CWTs recovered from sampled catches were 114 (5.4%), 17 (3.6%), and 28 (4.4%) in 2013–2015, respectively (Table 1). Approximately 15% of sampled catches were adipose-fin clipped, and approximately one quarter of the adipose-fin clipped salmon had

CWTs (Table 1). A small fraction of coded-wire tagged fish were not externally marked with an adipose-fin clip in 2013 and 2015 but were detected with the handheld detection wands: 1.3% and 0.8%, respectively (Table 1). Electronic detection resulted in a 25% increase ( $25\% = 32 / 127 * 100$ ) in recovered CWTs for the three years if visual detection alone had been used. All decoded tags are listed with release and recovery locations in Appendix Tables 1–3 for years 2013–2015, respectively.

### **Estimated numbers of fish from hatchery release groups based on coded-wire tag recoveries in catches**

Numbers of fish in catches from release groups were estimated from observed numbers of CWTs by expanding observed numbers with sampling and marking expansion factors. Since nearly all of the Chinook salmon catches were scanned for coded-wire tags, the sampling expansion factors were close to 1: 1.01, 1.03, and 1.00 for 2013–2015, respectively. Marking expansion factors for release tag codes were downloaded from the RMIS database. Percentages of the catches that were estimated to originate from hatchery release groups are provided in Table 2. The overall percentage based on CWTs was estimated to be approximately 18% (Table 2). Some of the numbers in Tables 1 and 3 are repeated in Table 2 for clarity.

### **Origins of coded-wire tagged Chinook salmon**

Coded-wire tagged Chinook salmon recovered in the PSC of the GOA rockfish trawl fishery were comprised of stocks originating from Alaska, British Columbia, Idaho, Oregon, and Washington (Tables 3 and 4; Fig. 1). Observed numbers and mark- and sample-expanded numbers are reported by state (Table 3) as well as the estimated proportions of coded-wire tagged salmon (Table 4). For the year with the most recoveries (113 tags recovered in 2013), most of the recoveries, after mark and sample expansions, were estimated to originate from Oregon (40%) and Washington (32%) and the remaining from British Columbia (18%), Alaska (8%), and Idaho (2%) (Table 4). In 2014–2015, when there were fewer CWT recoveries, proportionally more tagged salmon originated from Alaska and fewer from Washington (Table 4).

### **Time and location of capture of coded-wire tagged Chinook salmon**

Most coded-wire tagged Chinook salmon in the GOA rockfish trawl fisheries in 2013–2015 were recovered in May with the second largest number of recoveries in November (Fig. 2). Most were caught in NMFS statistical area 630, although some were caught in 620 (Fig. 3 and Appendix Tables 1–3). Of the 157 CWTs recovered and decoded in 2013–2015, 69 had latitude and longitude information; 28 were identified to NMFS statistical area only; and 60 were identified to Alaska Department of Fish and Game statistical area only (Fig. 3 and Appendix Tables 1–3).

### **Biological information on coded-wire tagged Chinook salmon**

In addition to location and date of capture information, staff of AGDB recorded biological information: length, weight, and gender of sampled Chinook salmon. More female coded-wire tagged Chinook salmon (59%) were caught in 2013–2015 than male (41%); lengths averaged 593 mm; and weights averaged 2.9 kg (Table 5). In addition to release location, tag codes of recovered CWTs can be matched with run type, rearing type, etc. in the RMIS database. Coded-wire tagged Chinook salmon were comprised of a variety of run types (Table 5) that are designated by the tagging agency. More than half of the coded-wire tagged Chinook salmon

were fall-run type (Table 5). All but three of the coded-wire tagged salmon were hatchery reared; the others were designated as wild from Alaska, Oregon, and Washington and (Appendix Tables 1–3). Age composition is reported in Table 6. Age of a coded-wire tagged Chinook salmon was calculated as the run year minus the brood year of the release group. Most recovered coded-wire tagged Chinook salmon were ages 3 and 4 (Table 6).

### **Occurrence of coded-wire tagged Chinook salmon from evolutionarily significant units listed under the Endangered Species Act**

Coded-wire tagged Chinook salmon recovered in the 2013–2015 GOA rockfish trawl fisheries (Table 7) were from six ESA-listed ESUs: Lower Columbia River, Puget Sound, Snake River fall, Snake River spring/summer, Upper Columbia River spring, and Upper Willamette River. By applying sampling and marking expansion factors, estimated numbers of fish from the ESA-listed ESUs in the entire 2013–2015 catch were calculated (Table 7). Most of the Chinook salmon from ESA-listed ESUs were recovered in May (Table 8); however, a few were recovered in April, September, October, and November (Table 8).

### **Summary**

In 2013–2015, electronic detection of CWTs with handheld wands was conducted for nearly all Chinook salmon in the PSC of the GOA rockfish trawl fishery (overall sampling rate of 99%). Electronic detection is the only way to recover CWTs from salmon without the external mark of a fin clip and resulted in a 25% increase in recovered CWTs for the three years if visual detection alone had been used. To estimate total tag recoveries for a given area and time, a statistically adequate sampling rate for CWTs is considered 20% (Nandor et al., 2010). Approximately 15% of sampled catches were adipose-fin clipped, and approximately one quarter of the adipose-fin clipped salmon had CWTs. The overall percentage of the catch that was estimated to originate from hatchery release groups, by expanding observed numbers with sampling and marking expansion factors, was approximately 18%. Coded-wire tagged Chinook salmon recovered in the PSC of the GOA rockfish trawl fishery were comprised of stocks originating from Alaska, British Columbia, Idaho, Oregon, and Washington. For the year with the most recoveries, 2013, most of the recoveries, after mark and sample expansions, were estimated to originate from Oregon and Washington and the remaining from British Columbia, Alaska, and Idaho. Most coded-wire tagged Chinook salmon in the GOA rockfish trawl fisheries in 2013–2015 were recovered in May with the second largest number of recoveries in November. Most were caught in NMFS statistical area 630, although some were caught in 620. Coded-wire tagged Chinook salmon recovered in the 2013–2015 GOA rockfish trawl fisheries were from six ESA-listed ESUs: Lower Columbia River, Puget Sound, Snake River fall, Snake River spring/summer, Upper Columbia River spring, and Upper Willamette River.

## References

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- Nandor, G.F., J. R. Longwill, and D.L. Webb. 2010. Overview of the coded wire tag program in the Greater Pacific Region of North America, *in* Wolf, K.S. and O’Neal, J.S. eds., PNAMP Special Publication: Tagging, Telemetry and Marking Measures for Monitoring Fish Populations—A compendium of new and recent science for use in informing technique and decision modalities: Pacific Northwest Aquatic Monitoring Partnership Special Publication 2010-002, chap. 2, p. 5–46.
- Pacific Salmon Commission’s Data Standards Work Group. 2014. Specifications and definitions for the exchange of coded wire tag data for the North American Pacific coast, PSC Format Version 4.1. Regional Mark Processing Center. Portland, OR.  
[http://www.rmhc.org/files/PSC\\_V41\\_Specification.pdf](http://www.rmhc.org/files/PSC_V41_Specification.pdf).

Table 1. Numbers of Chinook salmon that were caught, sampled, adipose fin clipped (ad-clipped), ad-clipped with coded-wire tags (CWTs), and not ad-clipped with CWTs in the prohibited species catch of the Gulf of Alaska rockfish trawl fishery. The actual numbers of CWTs that were decoded are in parentheses.

Year	Number caught	Total sampled		Ad-clipped		Ad-clipped with CWTs		Not ad-clipped with CWTs		Total CWTs	
		Number	Percent of catch	Number	Percent of sample	Number	Percent of sample	Number	Percent of sample	Number	Percent of sample
2013	2,128	2,111	99.2	300	14.2	87 <sup>1</sup> (86)	4.1	27	1.3	114 <sup>1</sup> (113)	5.4
2014	483	468	96.9	74	15.8	17 (17)	3.6	0	0	17 (17)	3.6
2015	641	638	99.5	100	15.7	23 <sup>1</sup> (22)	3.6	5	0.8	28 <sup>1</sup> (27)	4.4
Total	3,252	3,217	98.9	474	14.7	127 (125)	3.9	32	1.0	159 (157)	4.9

<sup>1</sup>One tag was lost before it could be read.

Table 2. Observed and expanded numbers of coded-wire tagged Chinook salmon, numbers sampled and caught, and percentages in the prohibited species catches of the 2013–2015 Gulf of Alaska rockfish trawl fisheries.

Year	Number of CWTs	Number sampled	Percent of sample	Expanded number	Number caught	Percent of catch
2013	114 <sup>1</sup> (113)	2,111	5.4	346.5	2,128	16.3
2014	17 (17)	468	3.6	84.2	483	17.4
2015	28 <sup>1</sup> (27)	638	4.4	144.0	641	22.5
Total	159 (157)	3,217	4.9	574.7	3,252	17.7

<sup>1</sup>One tag was lost before it could be read.

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Table 3. Observed number and mark- and sample-expanded number of coded-wire tagged Chinook salmon by release state and year recovered in the prohibited species catch of the Gulf of Alaska rockfish trawl fishery.

Year	Alaska		British Columbia		Idaho		Oregon		Washington		Total	
	Observed number	Expanded number	Observed number	Expanded number	Observed number	Expanded number	Observed number	Expanded number	Observed number	Expanded number	Observed number	Expanded number
2013	4	27.1	9	62.3	5	7.4	28	137.8	67	111.9	113	346.5
2014	3	35.8	1	4.6	0	0	10	39.1	3	4.8	17	84.2
2015	3	75.3	2	17.0	1	2.0	13	39.8	8	9.9	27	144.0
Total	10	138.2	12	83.8	6	9.3	51	216.7	78	126.6	157	574.7



Table 4. Estimated proportions of coded-wire tagged Chinook salmon by release state and year recovered in the prohibited species catch of the Gulf of Alaska rockfish trawl fishery based on mark- and sample-expanded numbers. Proportions are also calculated for numbers pooled over years, 2013–2015. Actual numbers of coded-wire tagged Chinook salmon recovered are in parentheses.

Year	Alaska	British Columbia	Idaho	Oregon	Washington	Expanded number
2013	0.08	0.18	0.02	0.40	0.32	346.5 (113)
2014	0.42	0.05	0.00	0.46	0.06	84.2 (17)
2015	0.52	0.12	0.01	0.28	0.07	144.0 (27)
Total	0.24	0.15	0.02	0.38	0.22	574.7 (157)

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Table 5. Summary of biological information collected for the coded-wire tagged Chinook salmon recovered in the prohibited species catches of the 2013–2015 Gulf of Alaska rockfish trawl fisheries. SE = standard error of the mean.

Gender		Length (mm)				Weight (kg)				Type of run			
Female	Male	Mean	SE	Range	<i>N</i>	Mean	SE	Range	<i>N</i>	Spring	Summer	Fall	Late fall upriver bright
81 (59%)	57 (41%)	593	6.0	(360, 770)	157	2.9	0.09	(0.6, 6.4)	154	20 (13%)	19 (12%)	95 (61%)	21 (14%)

Table 6. Age composition of the coded-wire tagged Chinook salmon recovered in the prohibited species catches of the 2013–2015 Gulf of Alaska rockfish trawl fisheries. Age of a coded-wire tagged Chinook salmon is calculated as the run year minus the brood year of the release group.

Year	Age			
	1	3	4	5
2013	0	66	46	1
2014	0	12	5	0
2015	1	18	7	1
Total	1	96	58	2

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Table 7. Observed numbers and mark- and sample-expanded numbers of coded-wire tagged Chinook salmon from evolutionarily significant units (ESUs) listed under the Endangered Species Act and recovered in the prohibited species catches of the 2013–2015 Gulf of Alaska rockfish trawl fisheries.

ESU name	Observed number	Expanded number
Lower Columbia River	1	1.0
Puget Sound	1	1.0
Snake River fall	4	6.3
Snake River spring/summer	1	1.0
Upper Columbia River spring	1	1.0
Upper Willamette River	7	21.5

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Table 8. Observed numbers by recovery month of coded-wire tagged Chinook salmon from evolutionarily significant units (ESUs) listed under the Endangered Species Act and recovered in the prohibited species catches of the 2013–2015 Gulf of Alaska rockfish trawl fisheries.

ESU name	Recovery month				
	April	May	September	October	November
Lower Columbia River		1			
Puget Sound		1			
Snake River fall	1	3			
Snake River spring/summer			1		
Upper Columbia River spring			1		
Upper Willamette River		4		1	2

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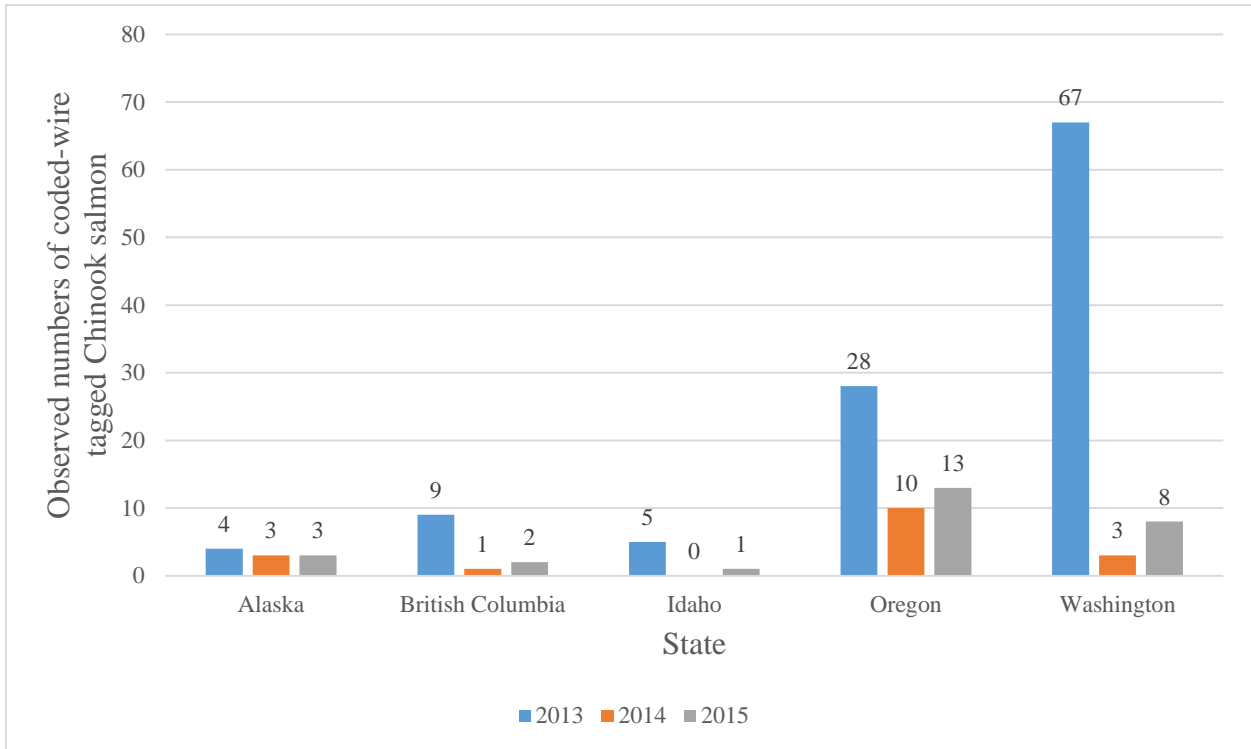


Figure 1. Observed numbers of coded-wire tagged Chinook salmon by release state and run year in the prohibited species catches of the 2013–2015 Gulf of Alaska rockfish trawl fisheries.

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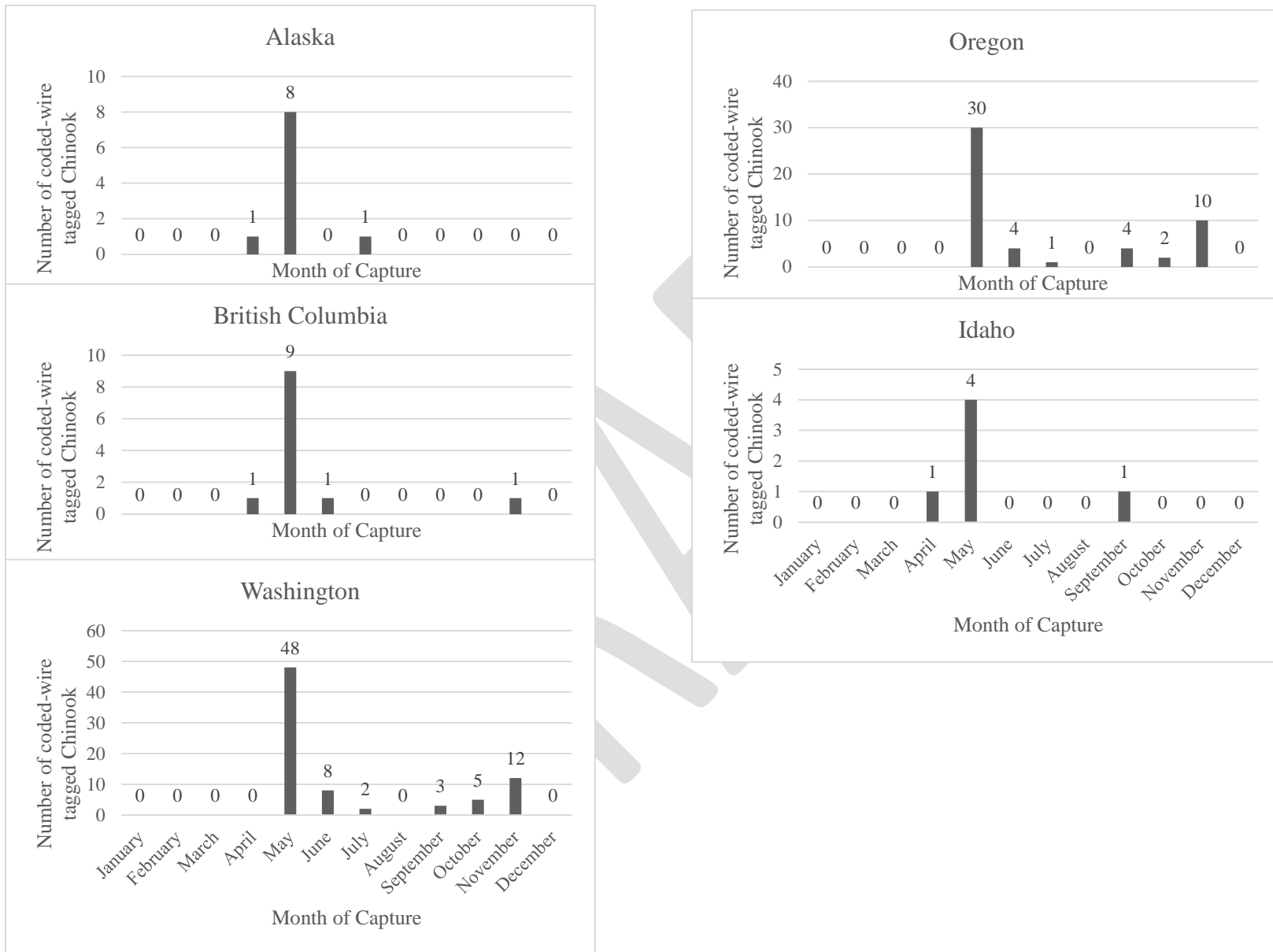


Figure 2. Observed numbers of coded-wire tagged Chinook salmon by capture month and release state in the prohibited species catches of the 2013–2015 Gulf of Alaska rockfish trawl fisheries. Note that the scales on the y-axes are not the same.

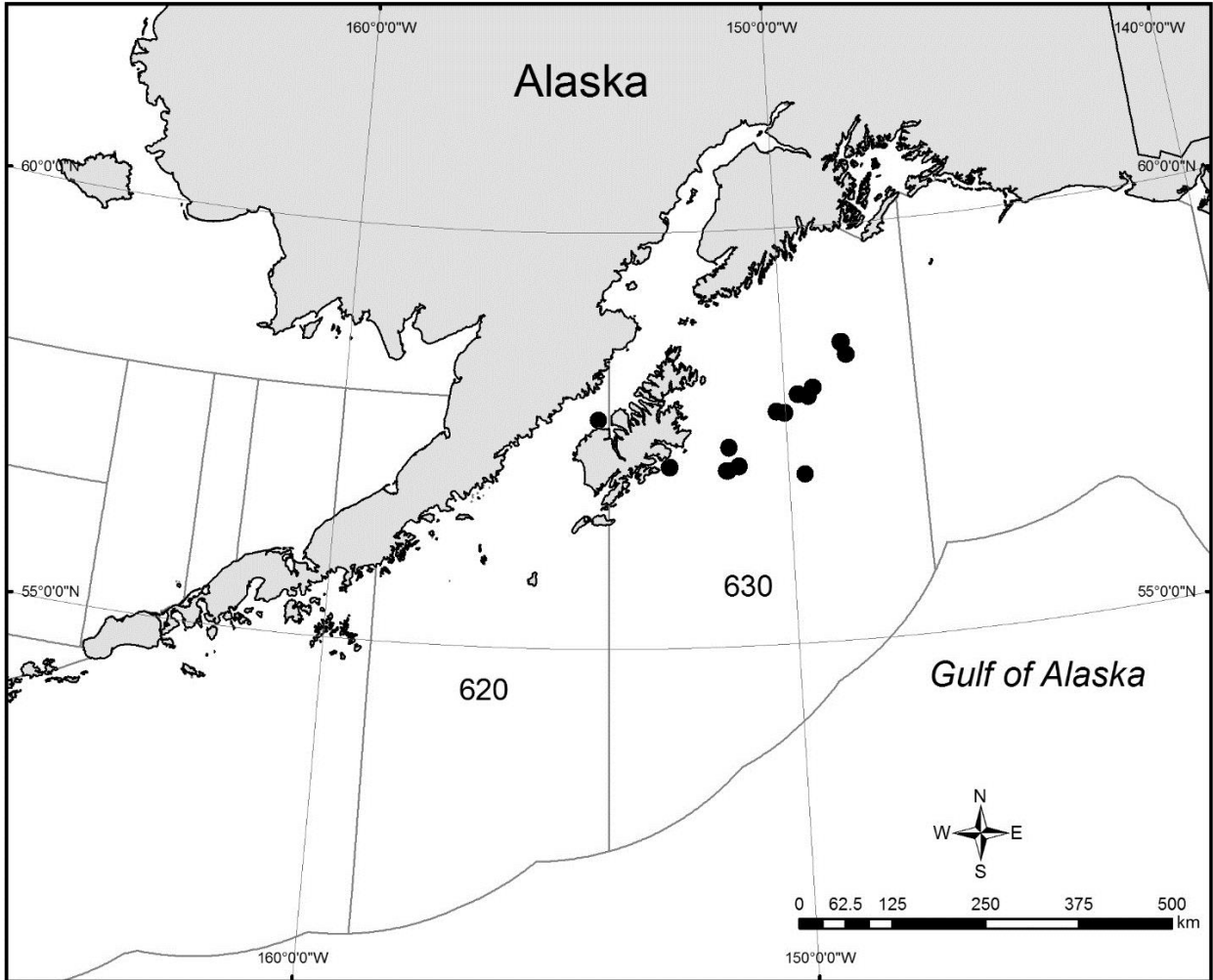


Figure 3. Locations of capture ( $N = 69$ ) of coded-wire tagged Chinook salmon in the 2013–2015 Gulf of Alaska rockfish trawl fisheries. National Marine Fisheries Service (NMFS) statistical areas 620 and 630 are indicated. Sixty-nine recoveries had recorded latitude and longitude of capture; 28 were only identified by NMFS statistical area 620 or 630; and 60 recoveries were identified by Alaska Department of Fish and Game statistical area.



Appendix Table 1. Release and recovery information for coded-wire tagged Chinook salmon captured as prohibited species catch in the 2013 Gulf of Alaska rockfish trawl fishery. Run: 1 = Spring, 2 = Summer, 3 = Fall, 8 = Late Fall Upriver Bright Chinook; Rearing type: H = Hatchery reared fish (includes any wild fish reared in the hatchery, W = Wild fish; Release state: AK = Alaska, BC = British Columbia, ID = Idaho, OR = Oregon, WA = Washington. National Marine Fisheries Service (NMFS) statistical areas 620 and 630 are shown in Figure 3. Acronyms for Pacific Salmon Commission (PSC) release region, basin, and agency are defined in Appendix Tables 4–6.

Recovery ID	Tag code	Stock location name	Run	Rearing type	Release location PSC region	Release location PSC basin	Release location name	Release location state	Release agency	Brood year	Run year	Latitude (degrees)	Longitude (degrees)	NMFS area
2013170020	031668	UNUK R 101-75	1	H	SEAK	SENE	LITTLE PORT WALTER	AK	NMFS	2008	2013	58	-148	
2013170055	042481	CRYSTAL CR	1	H	SEAK	SESE	CRYSTAL LK/ANITA BAY	AK	SSRA	2009	2013	57	-150	
2013170094	042483	CRYSTAL CR	1	H	SEAK	SESE	CRYSTAL LK/ANITA BAY	AK	SSRA	2009	2013			630
2013170053	042675	CHICKAMIN R 101-71	1	H	SEAK	SESW	PORT SAINT NICHOLAS	AK	PWHA	2009	2013	58	-148	
2013170031	181195	S-Shuswap R Middle	2	H	FRTH	TOMF	H-Shuswap River, Middle,	BC	CDFO	2010	2013	58	-148	
2013170060	181475	S-Atnarko R Low	2	H	COBC	CCST	H-Snootli Creek H	BC	CDFO	2010	2013			630
2013170057	181476	S-Atnarko R Up	2	H	COBC	CCST	H-Snootli Creek H	BC	CDFO	2010	2013			630
2013170034	181483	S-Robertson Cr	3	H	WCVI	SWVI	H-Robertson Creek H	BC	CDFO	2010	2013	57	-150	
2013170048	181483	S-Robertson Cr	3	H	WCVI	SWVI	H-Robertson Creek H	BC	CDFO	2010	2013	58	-148	
2013170011	181484	S-Robertson Cr	3	H	WCVI	SWVI	H-Robertson Creek H	BC	CDFO	2010	2013	57	-150	
2013170003	186320	S-Sarita R	3	H	WCVI	SWVI	H-Omega Pacific H	BC	CDFO	2009	2013			630
2013170007	186320	S-Sarita R	3	H	WCVI	SWVI	H-Omega Pacific H	BC	CDFO	2009	2013			630
2013170013	186320	S-Sarita R	3	H	WCVI	SWVI	H-Omega Pacific H	BC	CDFO	2009	2013			630
2013170098	100152	PAH CH-2	2	H	SNAK	SALM	PAHSIMEROI HATCHERY	ID	IDFG	2010	2013			630
2013170082	220121	LYONS FERRY HATCHERY	8	H	SNAK	UPSN	LYONS FERRY HATCHERY	ID	NEZP	2010	2013	58	-148	
2013170081	220207	LYONS FERRY HATCHERY	8	H	SNAK	CLEA	NPT HATCHERY	ID	NEZP	2010	2013	58	-148	

Appendix Table 1. Continued.

Recovery ID	Tag code	Stock location name	Run	Rearing type	Release location PSC region	Release location PSC basin	Release location name	Release location state	Release agency	Brood year	Run year	Latitude (degrees)	Longitude (degrees)	NMFS area
2013170032	220210	LYONS FERRY HATCHERY	8	H	SNAK	CLEA	NPT HATCHERY	ID	NEZP	2010	2013	57	-149	
2013170075	220210	LYONS FERRY HATCHERY	8	H	SNAK	CLEA	NPT HATCHERY	ID	NEZP	2010	2013	57	-150	
2013170043	090281	ELK R (ELK R HT)	3	H	SOOR	SIXE	ELK R HATCHERY	OR	ODFW	2010	2013			630
2013170041	090342	ELK R (ELK R HT)	3	H	SOOR	SIXE	ELK R HATCHERY	OR	ODFW	2009	2013			630
2013170046	090343	SALMON R	3	H	NOOR	SIYA	SALMON R HATCHERY	OR	ODFW	2009	2013			630
2013170059	090343	SALMON R	3	H	NOOR	SIYA	SALMON R HATCHERY	OR	ODFW	2009	2013			630
2013170080	090343	SALMON R	3	H	NOOR	SIYA	SALMON R HATCHERY	OR	ODFW	2009	2013	58	-148	
2013170089	090343	SALMON R	3	H	NOOR	SIYA	SALMON R HATCHERY	OR	ODFW	2009	2013			630
2013170099	090343	SALMON R	3	H	NOOR	SIYA	SALMON R HATCHERY	OR	ODFW	2009	2013			630
2013170079	090385	WILLAMETTE R MID FK	1	H	LOCR	WILL	DEXTER PONDS (WILLAM	OR	ODFW	2009	2013	58	-148	
2013170074	090390	MCKENZIE HATCHERY	1	H	LOCR	WILL	MCKENZIE HATCHERY	OR	ODFW	2009	2013			630
2013170083	090434	UMATILLA R	8	H	CECR	UMAT	UMATILLA HATCHERY	OR	ODFW	2010	2013	58	-148	
2013170012	090435	UMATILLA R	8	H	CECR	UMAT	UMATILLA HATCHERY	OR	ODFW	2010	2013			630
2013170021	090442	COOS R - PUBLIC	3	H	SOOR	COOS	MORGAN CR (STEP-COOS	OR	ODFW	2009	2013			630
2013170004	090443	COOS R - PUBLIC	3	H	SOOR	COOS	BANDON HATCHERY	OR	ODFW	2010	2013	57	-150	
2013170056	090443	COOS R - PUBLIC	3	H	SOOR	COOS	BANDON HATCHERY	OR	ODFW	2010	2013			630
2013170113	090443	COOS R - PUBLIC	3	H	SOOR	COOS	BANDON HATCHERY	OR	ODFW	2010	2013	57	-150	
2013170015	090448	SALMON R	3	H	NOOR	SIYA	SALMON R HATCHERY	OR	ODFW	2010	2013			630
2013170026	090448	SALMON R	3	H	NOOR	SIYA	SALMON R HATCHERY	OR	ODFW	2010	2013	58	-148	
2013170033	090448	SALMON R	3	H	NOOR	SIYA	SALMON R HATCHERY	OR	ODFW	2010	2013	57	-150	
2013170071	090448	SALMON R	3	H	NOOR	SIYA	SALMON R HATCHERY	OR	ODFW	2010	2013			630

Appendix Table 1. Continued.

Recovery ID	Tag code	Stock location name	Run	Rearing type	Release location PSC region	Release location PSC basin	Release location name	Release location state	Release agency	Brood year	Run year	Latitude (degrees)	Longitude (degrees)	NMFS area
2013170073	090448	SALMON R	3	H	NOOR	SIYA	SALMON R HATCHERY	OR	ODFW	2010	2013			630
2013170116	090448	SALMON R	3	H	NOOR	SIYA	SALMON R HATCHERY	OR	ODFW	2010	2013			630
2013170103	090494	SANTIAM R N FK	1	H	LOCR	WILL	MARION FORKS HATCH	OR	ODFW	2010	2013			630
2013170115	090538	MCKENZIE HATCHERY	1	H	LOCR	WILL	MCKENZIE HATCHERY	OR	ODFW	2010	2013			630
2013170002	090539	WILLAMETTE R MID FK	1	H	LOCR	WILL	WILLAMETTE HATCHERY	OR	ODFW	2010	2013			630
2013170016	092049	COLUMBIA R UPRIVER S	8	H	LOCR	SAND	BONNEVILLE HATCHERY	OR	ODFW	2010	2013			630
2013170087	092049	COLUMBIA R UPRIVER S	8	H	LOCR	SAND	BONNEVILLE HATCHERY	OR	ODFW	2010	2013	57	-150	
2013170010	093939	NESTUCCA R (CEDAR CR	1	H	NOOR	TILN	CEDAR CR HATCHERY	OR	ODFW	2010	2013			630
2013170028	093939	NESTUCCA R (CEDAR CR	1	H	NOOR	TILN	CEDAR CR HATCHERY	OR	ODFW	2010	2013	58	-148	
2013170118	051267	WELLS HATCHERY	2	H	UPCR	WECH	ENTIAT NFH	WA	FWS	2010	2013			630
2013170025	053577	COLUMBIA R UPRIVER S	8	H	CECR	WIND	LTL WHITE SALMON NFH	WA	FWS	2009	2013	58	-148	
2013170090	054596	COLUMBIA R UPRIVER S	8	H	CECR	WIND	LTL WHITE SALMON NFH	WA	FWS	2009	2013	58	-148	
2013170023	055232	COLUMBIA R UPRIVER S	8	H	CECR	WIND	LTL WHITE SALMON NFH	WA	FWS	2010	2013			630
2013170017	055305	SOOES R 20.0015	3	H	NWC	QUHO	MAKAH NFH ON SOOES R	WA	FWS	2010	2013			630
2013170024	090487	COLUMBIA R UPRIVER S	8	H	CECR	WIND	LTL WHITE SALMON NFH	WA	FWS	2010	2013	58	-148	
2013170065	090488	PRIEST RAPIDS (36)	3	H	UPCR	PRGC	RINGOLD SPRINGS HATCHERY	WA	WDFW	2010	2013	57	-151	
2013170119	190214	WELLS DAM (47)	2	H	UPCR	YAKI	MARION YAKAMA TRIB HAT	WA	YAKA	2010	2013			630
2013170030	210909	QUEETS R 21.0016	3	H	NWC	QEQU	SALMON R FISH CULTUR	WA	QDNR	2009	2013	58	-148	
2013170047	210909	QUEETS R 21.0016	3	H	NWC	QEQU	SALMON R FISH CULTUR	WA	QDNR	2009	2013			630
2013170049	210909	QUEETS R 21.0016	3	H	NWC	QEQU	SALMON R FISH CULTUR	WA	QDNR	2009	2013	58	-148	
2013170070	210909	QUEETS R 21.0016	3	H	NWC	QEQU	SALMON R FISH CULTUR	WA	QDNR	2009	2013			630

Appendix Table 1. Continued.

Recovery ID	Tag code	Stock location name	Run	Rearing type	Release location PSC region	Release location PSC basin	Release location name	Release location state	Release agency	Brood year	Run year	Latitude (degrees)	Longitude (degrees)	NMFS area
2013170086	210909	QUEETS R 21.0016	3	H	NWC	QEQU	SALMON R FISH CULTUR	WA	QDNR	2009	2013	58	-148	
2013170095	210909	QUEETS R 21.0016	3	H	NWC	QEQU	SALMON R FISH CULTUR	WA	QDNR	2009	2013			630
2013170035	210910	QUINAULT R 21.0398	3	H	NWC	QEQU	QUINAULT LK HATCHERY	WA	QDNR	2009	2013	58	-148	
2013170051	210910	QUINAULT R 21.0398	3	H	NWC	QEQU	QUINAULT LK HATCHERY	WA	QDNR	2009	2013	58	-148	
2013170061	210910	QUINAULT R 21.0398	3	H	NWC	QEQU	QUINAULT LK HATCHERY	WA	QDNR	2009	2013			630
2013170072	210910	QUINAULT R 21.0398	3	H	NWC	QEQU	QUINAULT LK HATCHERY	WA	QDNR	2009	2013			630
2013170100	210910	QUINAULT R 21.0398	3	H	NWC	QEQU	QUINAULT LK HATCHERY	WA	QDNR	2009	2013			630
2013170102	210910	QUINAULT R 21.0398	3	H	NWC	QEQU	QUINAULT LK HATCHERY	WA	QDNR	2009	2013			630
2013170117	210910	QUINAULT R 21.0398	3	H	NWC	QEQU	QUINAULT LK HATCHERY	WA	QDNR	2009	2013			630
2013170045	210911	QUINAULT R 21.0398	3	H	NWC	QEQU	QUINAULT LK HATCHERY	WA	QDNR	2009	2013			630
2013170104	210959	HOKO R 19.0148	3	H	JUAN	LYHO	HOKO FALLS HATCHERY	WA	MAKA	2010	2013			630
2013170037	210960	QUEETS R 21.0016	3	H	NWC	QEQU	SALMON R FISH CULTUR	WA	QDNR	2010	2013	57	-150	
2013170040	210960	QUEETS R 21.0016	3	H	NWC	QEQU	SALMON R FISH CULTUR	WA	QDNR	2010	2013	58	-149	
2013170084	210960	QUEETS R 21.0016	3	H	NWC	QEQU	SALMON R FISH CULTUR	WA	QDNR	2010	2013			630
2013170096	210960	QUEETS R 21.0016	3	H	NWC	QEQU	SALMON R FISH CULTUR	WA	QDNR	2010	2013			630
2013170106	210960	QUEETS R 21.0016	3	H	NWC	QEQU	SALMON R FISH CULTUR	WA	QDNR	2010	2013	57	-150	
2013170005	210961	QUINAULT R 21.0398	3	H	NWC	QEQU	QUINAULT LK HATCHERY	WA	QDNR	2010	2013			630
2013170050	210961	QUINAULT R 21.0398	3	H	NWC	QEQU	QUINAULT LK HATCHERY	WA	QDNR	2010	2013	58	-148	
2013170062	210961	QUINAULT R 21.0398	3	H	NWC	QEQU	QUINAULT LK HATCHERY	WA	QDNR	2010	2013	57	-151	
2013170064	210961	QUINAULT R 21.0398	3	H	NWC	QEQU	QUINAULT LK HATCHERY	WA	QDNR	2010	2013	58	-148	
2013170068	210961	QUINAULT R 21.0398	3	H	NWC	QEQU	QUINAULT LK HATCHERY	WA	QDNR	2010	2013	57	-150	
2013170091	210961	QUINAULT R 21.0398	3	H	NWC	QEQU	QUINAULT LK HATCHERY	WA	QDNR	2010	2013	58	-148	

Appendix Table 1. Continued.

Recovery ID	Tag code	Stock location name	Run	Rearing type	Release location PSC region	Release location PSC basin	Release location name	Release location state	Release agency	Brood year	Run year	Latitude (degrees)	Longitude (degrees)	NMFS area
2013170105	210961	QUINAULT R 21.0398	3	H	NWC	QEQU	QUINAULT LK HATCHERY	WA	QDNR	2010	2013			630
2013170107	210961	QUINAULT R 21.0398	3	H	NWC	QEQU	QUINAULT LK HATCHERY	WA	QDNR	2010	2013	57	-150	
2013170110	210961	QUINAULT R 21.0398	3	H	NWC	QEQU	QUINAULT LK HATCHERY	WA	QDNR	2010	2013	57	-150	
2013170114	210961	QUINAULT R 21.0398	3	H	NWC	QEQU	QUINAULT LK HATCHERY	WA	QDNR	2010	2013	57	-150	
2013170018	210962	QUINAULT R 21.0398	3	H	NWC	QEQU	QUINAULT LK HATCHERY	WA	QDNR	2010	2013			630
2013170039	210962	QUINAULT R 21.0398	3	H	NWC	QEQU	QUINAULT LK HATCHERY	WA	QDNR	2010	2013	58	-149	
2013170076	210962	QUINAULT R 21.0398	3	H	NWC	QEQU	QUINAULT LK HATCHERY	WA	QDNR	2010	2013			630
2013170092	210962	QUINAULT R 21.0398	3	H	NWC	QEQU	QUINAULT LK HATCHERY	WA	QDNR	2010	2013	57	-150	
2013170108	210962	QUINAULT R 21.0398	3	H	NWC	QEQU	QUINAULT LK HATCHERY	WA	QDNR	2010	2013	57	-150	
2013170085	610438	HANFORD REACH STOCK	8	W	UPCR	MNPR	NA	WA	CRFC	2010	2013			630
2013170042	635088	WELLS HATCHERY	2	H	UPCR	WECH	CHELAN RIVER NP	WA	WDFW	2009	2013	58	-149	
2013170077	635088	WELLS HATCHERY	2	H	UPCR	WECH	CHELAN RIVER NP	WA	WDFW	2009	2013	57	-150	
2013170022	635268	LTL WHITE SALMON- NFH	8	H	CECR	KLIC	KLICKITAT HATCHERY (YKFP)	WA	YAKA	2009	2013	58	-148	
2013170029	635271	WENATCHEE R 45.0030	2	H	UPCR	WECH	DRYDEN POND	WA	WDFW	2009	2013	58	-148	
2013170001	635274	PRIEST RAPIDS (36)	3	H	UPCR	MNPR	PRIEST RAPIDS HATCHERY	WA	WDFW	2010	2013			630
2013170054	635289	LTL WHITE SALMON- NFH	8	H	CECR	KLIC	KLICKITAT HATCHERY (YKFP)	WA	YAKA	2009	2013	58	-148	
2013170044	635293	SKYKOMISH R 07.0012	2	H	NPS	SNOH	WALLACE R HATCHERY	WA	WDFW	2009	2013	58	-149	
2013170067	635295	WILLAPA R 24.0251	3	H	WILP	WILR	FORKS CREEK HATCHERY	WA	WDFW	2009	2013	57	-151	
2013170078	635295	WILLAPA R 24.0251	3	H	WILP	WILR	FORKS CREEK HATCHERY	WA	WDFW	2009	2013	57	-150	
2013170109	635364	WELLS HATCHERY	2	H	UPCR	PRGC	WELLS HATCHERY	WA	WDFW	2009	2013	57	-150	
2013170093	635368	LTL WHITE SALMON- NFH	8	H	CECR	KLIC	KLICKITAT HATCHERY (YKFP)	WA	YAKA	2009	2013			620

Appendix Table 1. Continued.

Recovery ID	Tag code	Stock location name	Run	Rearing type	Release location PSC region	Release location PSC basin	Release location name	Release location state	Release agency	Brood year	Run year	Latitude (degrees)	Longitude (degrees)	NMFS area
2013170111	635368	LTL WHITE SALMON-NFH	8	H	CECR	KLIC	KLICKITAT HATCHERY (YKFP)	WA	YAKA	2009	2013	57	-150	
2013170069	635485	PRIEST RAPIDS (36)	3	H	UPCR	MNPR	PRIEST RAPIDS HATCHERY	WA	WDFW	2009	2013	57	-150	
2013170006	635578	WENATCHEE R 45.0030	2	H	UPCR	WECH	DRYDEN POND	WA	WDFW	2009	2013	57	-150	
2013170019	635578	WENATCHEE R 45.0030	2	H	UPCR	WECH	DRYDEN POND	WA	WDFW	2009	2013			630
2013170066	635579	METHOW & OKANOGAN	2	H	UPCR	MEOK	SIMILKAMEEN HATCHERY	WA	WDFW	2009	2013	58	-148	
2013170101	635687	METHOW R 48.0002	1	H	UPCR	MEOK	METHOW HATCHERY	WA	WDFW	2010	2013			630
2013170112	635690	METHOW & OKANOGAN	2	H	UPCR	MEOK	SIMILKAMEEN HATCHERY	WA	WDFW	2010	2013	57	-150	
2013170038	635699	PRIEST RAPIDS (36)	3	H	UPCR	MNPR	PRIEST RAPIDS HATCHERY	WA	WDFW	2010	2013	58	-148	
2013170088	635775	WELLS HATCHERY	2	H	UPCR	PRGC	WELLS HATCHERY	WA	WDFW	2010	2013			630
2013170014	635965	LTL WHITE SALMON-NFH	8	H	CECR	KLIC	KLICKITAT HATCHERY (YKFP)	WA	YAKA	2010	2013			630
2013170052	635972	PRIEST RAPIDS (36)	3	H	UPCR	MNPR	PRIEST RAPIDS HATCHERY	WA	WDFW	2010	2013	57	-150	
2013170063	635978	LTL WHITE SALMON-NFH	8	H	CECR	KLIC	KLICKITAT HATCHERY (YKFP)	WA	YAKA	2010	2013	57	-151	

Appendix Table 2. Release and recovery information for coded-wire tagged Chinook salmon captured as prohibited species catch in the 2014 Gulf of Alaska rockfish trawl fishery. Run: 1 = Spring, 2 = Summer, 3 = Fall; Rearing type: H = Hatchery reared fish (includes any wild fish reared in the hatchery); Release state: AK = Alaska, BC = British Columbia, OR = Oregon, WA = Washington. National Marine Fisheries Service (NMFS) statistical areas 620 and 630 are shown in Figure 3. Acronyms for Pacific Salmon Commission (PSC) release region, basin, and agency are defined in Appendix Tables 4–6.

Recovery ID	Tag code	Stock location name	Run	Rearing type	Release location PSC region	Release location PSC basin	Release location name	Release location state	Release agency	Brood year	Run year	Latitude (degrees)	Longitude (degrees)	NMFS area
2014070033	030716	UNUK R 101-75		H	SEAK	SENE	LITTLE PORT WALTER	AK	NMFS	2010	2014			630
2014070031	042874	CRYSTAL CR	1	H	SEAK	SESE	CRYSTAL LAKE	AK	SSRA	2010	2014			630
2014070024	042994	MEDVEJIE	1	H	SEAK	SENV	MEDVEJIE	AK	NSRA	2011	2014	57	-151	
2014070034	182192	S-Atnarko R Low	2	H	COBC	CCST	H-Snootli Creek H	BC	CDFO	2011	2014	57	-154	
2014070028	071156	COOS R	3	H	SOOR	COOS	MORGAN CR (STEP-COOS	OR	ODFW	2011	2014			630
2014070040	090281	ELK R (ELK R HT)	3	H	SOOR	SIXE	ELK R HATCHERY	OR	ODFW	2010	2014			630
2014070041	090431	ELK R (ELK R HT)	3	H	SOOR	SIXE	ELK R HATCHERY	OR	ODFW	2011	2014			630
2014070036	090448	SALMON R	3	H	NOOR	SIYA	SALMON R HATCHERY	OR	ODFW	2010	2014			630
2014070039	090463	SANTIAM R S FK	1	H	LOCR	WILL	SOUTH SANTIAM HATCH	OR	ODFW	2011	2014			630
2014070038	090464	SANTIAM R S FK	1	H	LOCR	WILL	MARION FORKS HATCH	OR	ODFW	2011	2014			630
2014070021	090599	SALMON R	3	H	NOOR	SIYA	SALMON R HATCHERY	OR	ODFW	2011	2014			630
2014070032	090599	SALMON R	3	H	NOOR	SIYA	SALMON R HATCHERY	OR	ODFW	2011	2014			630
2014070037	090599	SALMON R	3	H	NOOR	SIYA	SALMON R HATCHERY	OR	ODFW	2011	2014			620
2014070035	094235	NESTUCCA R (CEDAR CR	1	H	NOOR	TILN	CEDAR CR HATCHERY	OR	ODFW	2011	2014			630
2014070026	090488	PRIEST RAPIDS (36)	3	H	UPCR	PRGC	RINGOLD SPRINGS HATCHERY	WA	WDFW	2010	2014			630
2014070023	211009	QUINAULT R 21.0398	3	H	NWC	QEQU	QUINAULT LK HATCHERY	WA	QDNR	2011	2014			630
2014070030	636172	WILLAPA R 24.0251	3	H	WILP	WILR	FORKS CREEK HATCHERY	WA	WDFW	2011	2014			630

Appendix Table 3. Release and recovery information for coded-wire tagged Chinook salmon captured as prohibited species catch in the 2015 Gulf of Alaska rockfish trawl fishery. Run: 1 = Spring, 2 = Summer, 3 = Fall, 8 = Late Fall Upriver Bright Chinook; Rearing type: H = Hatchery reared fish (includes any wild fish reared in the hatchery), W = Wild fish; Release state: AK = Alaska, BC = British Columbia, ID = Idaho, OR = Oregon, WA = Washington. National Marine Fisheries Service (NMFS) statistical areas 620 and 630 are shown in Figure 3. Acronyms for Pacific Salmon Commission (PSC) release region, basin, and agency are defined in Appendix Tables 4–6.

Recovery ID	Tag code	Stock location name	Run	Rearing type	Release location PSC region	Release location PSC basin	Release location name	Release location state	Release agency	Brood year	Run year	Latitude (degrees)	Longitude (degrees)	NMFS area
2015170016	040993	UNUK R 101-75		W	STUN	STUNG	NA	AK	ADFG	2010	2015	57	-151	630
2015170006	042995	MEDVEJIE	1	H	SEAK	SENV	MEDVEJIE	AK	NSRA	2011	2015			630
2015170007	042995	MEDVEJIE	1	H	SEAK	SENV	MEDVEJIE	AK	NSRA	2011	2015			630
2015170035	180684	S-Robertson Cr	3	H	WCVI	SWVI	H-Robertson Creek H	BC	CDFO	2012	2015			630
2015170024	182192	S-Atnarko R Low	2	H	COBC	CCST	H-Shootli Creek H	BC	CDFO	2011	2015			630
2015170003	220231	LYONS FERRY HATCHERY	8	H	SNAK	CLEA	NPT HATCHERY	ID	NEZP	2012	2015			630
2015170002	090599	SALMON R	3	H	NOOR	SIYA	SALMON R HATCHERY	OR	ODFW	2011	2015			630
2015170010	090599	SALMON R	3	H	NOOR	SIYA	SALMON R HATCHERY	OR	ODFW	2011	2015	57	-151	630
2015170001	090713	SALMON R	3	H	NOOR	SIYA	SALMON R HATCHERY	OR	ODFW	2012	2015			630
2015170018	090713	SALMON R	3	H	NOOR	SIYA	SALMON R HATCHERY	OR	ODFW	2012	2015	58	-149	630
2015170023	090713	SALMON R	3	H	NOOR	SIYA	SALMON R HATCHERY	OR	ODFW	2012	2015	57	-152	630
2015170029	090713	SALMON R	3	H	NOOR	SIYA	SALMON R HATCHERY	OR	ODFW	2012	2015			630
2015170032	090713	SALMON R	3	H	NOOR	SIYA	SALMON R HATCHERY	OR	ODFW	2012	2015			630
2015170033	090713	SALMON R	3	H	NOOR	SIYA	SALMON R HATCHERY	OR	ODFW	2012	2015			630
2015170025	090718	ELK R (ELK R HT)	3	H	SOOR	SIXE	ELK R HATCHERY	OR	ODFW	2012	2015			630
2015170026	090718	ELK R (ELK R HT)	3	H	SOOR	SIXE	ELK R HATCHERY	OR	ODFW	2012	2015			630
2015170030	090861	UMATILLA R	1	H	CECR	UMAT	UMATILLA HATCHERY	OR	ODFW	2014	2015			630



Appendix Table 3. Continued.

Recovery ID	Tag code	Stock location name	Run	Rearing type	Release location PSC region	Release location PSC basin	Release location name	Release location state	Release agency	Brood year	Run year	Latitude (degrees)	Longitude (degrees)	NMFS area
2015170009	092055	COOS R	3	H	SOOR	COOS	MORGAN CR (STEP-COOS	OR	ODFW	2012	2015			630
2015170027	093651	SALMON R WILD	3	W	NOOR	SIYA	NA	OR	ODFW	2012	2015			630
2015170005	055363	WELLS HATCHERY	2	H	UPCR	WECH	ENTIAT NFH	WA	FWS	2011	2015			630
2015170015	055367	COLUMBIA R UPRIVER S	8	H	CECR	WIND	LTL WHITE SALMON NFH	WA	FWS	2011	2015	57	-151	630
2015170028	211049	QUEETS R 21.0016	3	H	NWC	QEQU	SALMON R FISH CULTUR	WA	QDNR	2012	2015			630
2015170036	211049	QUEETS R 21.0016	3	H	NWC	QEQU	SALMON R FISH CULTUR	WA	QDNR	2012	2015			630
2015170008	636475	KALAMA R 27.0002	3	H	LOCR	LEWI	FALLERT CR HATCHERY	WA	WDFW	2012	2015			630
2015170014	636507	PRIEST RAPIDS (36)	3	H	UPCR	MNPR	PRIEST RAPIDS HATCHERY	WA	WDFW	2012	2015	57	-149	630
2015170011	636508	PRIEST RAPIDS (36)	3	H	UPCR	MNPR	PRIEST RAPIDS HATCHERY	WA	WDFW	2012	2015	57	-151	630
2015170020	636508	PRIEST RAPIDS (36)	3	H	UPCR	MNPR	PRIEST RAPIDS HATCHERY	WA	WDFW	2012	2015			630

Appendix Table 4. Acronym definitions for the geographic regions (Pacific Salmon Commission’s Data Standards Work Group, 2014).

Acronym	Region
CECR	Central Columbia River (Bonneville Dam to McNary Dam)
COBC	Coastal British Columbia
FRTH	Fraser River - Thompson River
JUAN	Strait of Juan De Fuca
LOCR	Lower Columbia River (mouth to Bonneville Dam)
NOOR	Northern Oregon Coast
NPS	Northern Puget Sound
NWC	Northern Washington Coast
SEAK	Southeastern Alaska
SNAK	Snake River
SOOR	Southern Oregon Coast
STUN	Stikine River - Unuk River
UPCR	Upper Columbia R (above McNary Dam; excludes Snake River)
WCVI	Western Vancouver Island
WILP	Willapa Bay

Appendix Table 5. Acronym definitions for the geographic basins (Pacific Salmon Commission's Data Standards Work Group, 2014).

Acronym	Basin
CCST	Coastal British Columbia; Central
CLEA	Clearwater River (only) / ID
COOS	Coos River; Coos Bay; includes shoreline from South Jetty Umpqua River to Fivemile Point
KLIC	Klickitat River; includes below John Day Dam / WA
LEWI	Lewis River; Kalama River / WA
LYHO	Neah Bay, Hoko River, Lyre River, Coville Creek; shoreline: Flattery Creek - Elwha River
MEOK	Methow River; Okanogan River / WA
MNPR	McNary Dam to Priest Rapids Dam; Walla Walla River / OR, WA
PRGC	Priest Rapids Dam to Grand Coulee; Lower Crab Creek; Banks Lake / WA
QEUQ	Queets River; Quinault River; shoreline: Kalalock Creek - Oyhut State Park
QUHO	Sooes River; Quillayute River; Hoh River; shoreline: Flattery Creek - Kalalock Creek
SALM	Salmon River (only) / ID
SAND	Sandy River; Tanner Creek; Sandy River to Bonneville Dam / OR
SENE	Alaska, Southeast; Northeastern quadrant
SENW	Alaska, Southeast; Northwestern quadrant
SESE	Alaska, Southeast; Southeastern quadrant
SESW	Alaska, Southeast; Southwestern quadrant
SIXE	Sixes River; Elk R; Floras Creek; including shoreline
SIYA	Salmon River; Siletz River; Yaquina River; including shoreline
SNOH	Snohomish River; Tulalip Bay; shoreline: McKees Beach - Elliot Point
STUNG	Stikine River - Unuk River; general
SWVI	SW Vancouver Island
TILN	Tillamook Bay; Nestucca R; including shoreline

Appendix Table 5. Continued.

Acronym	Basin
TOMF	Thompson River (North & South forks)
UMAT	Umatilla River; includes above confluence Glade Creek / WA to below McNary Dam / OR
UPSN	Headwaters above the Clearwater River; excluding the Salmon R / ID
WECH	Wenatchee River; Lake Chelan / WA
WILL	Willamette River; Multnomah Channel; Milton Creek / OR
WILR	Willapa River
WIND	Wind River; White Salmon River; Major Creek / WA
YAKI	Yakima River / WA

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Appendix Table 6. Acronym definitions for the release agencies (Pacific Salmon Commission’s Data Standards Work Group, 2014).

Acronym	Agency
ADFG	Alaska Department of Fish and Game
CDFO	Department of Fisheries and Oceans, Canada
CRFC	Columbia River Inter-Tribal Fish Commission
FWS	U.S. Fish and Wildlife Service
IDFG	Idaho Department of Fish and Game
MAKA	Makah Tribe (WA)
NEZP	Nez Perce Tribe (ID)
NMFS	National Marine Fisheries Service (AK)
NSRA	Northern Southeast Regional Aquaculture Assn. (AK)
ODFW	Oregon Department of Fish and Wildlife
PWHA	Prince of Wales Hatchery Association (AK)
QDNR	Quinault Department of Natural Resources (WA)
SSRA	Southern Southeast Regional Aquaculture Assn. (AK)
WDFW	Washington Department of Fish and Wildlife
YAKA	Yakama Nation (WA)