Oregon Department of Fish and Wildlife Comments

NOAA Fisheries Status Review 2015

Section I. Oregon Coast Coho Salmon ESU - Current Status and Trends

Overview

The following discussion, tables, and figures provide information for use by NOAA as part of the 2015 status review for the Oregon Coast Coho Salmon ESU. The status of Oregon Coast coho salmon has improved, largely as a result of actions identified in the Oregon Coast Coho Conservation Plan (OCCCP; http://www.dfw.state.or.us/fish/CRP/docs/coastal_coho/final/Coho_Plan.pdf). Hatchery and harvest issues have been addressed, watershed-based organizations have been created to coordinate habitat needs, significant investments have been made in habitat restoration, and the *Oregon Plan for Salmon and Watersheds* has established a framework for coordination among land managers and owners. ODFW considers the Oregon Coast Coho ESU to be viable and believes there is a strong case to delist the ESU.

Key Findings:

- Long-term trends in coho spawner abundance provide strong evidence of the inherent productivity of coho populations and insight into the resilience of the ESU.
- Coho spawner escapement levels from 1998 to 2014 varied greatly, but combined abundance during this period was higher than any other period since the 1950s.
- Metrics used to evaluate coho population diversity (hatchery influence, spawner occupancy, juvenile occupancy, and spawner abundance) all show improvement.
- Preliminary results from on-going analyses that account for ocean conditions and harvest suggest recently improved freshwater productivity.
- The influence of hatchery coho on native populations is within acceptable levels for all populations.
- Stream and riparian habitat conditions have been relatively stable, and existing stream habitat conditions are capable of producing sufficient coho smolts to maintain viability during extended periods of poor ocean conditions.

Oregon Coast Coho ESU Decision Support Model

ODFW has updated NOAA's Oregon Coast Coho ESU Decision Support System (DSS) through the 2014/15 provisional data for the 2015 status review. Preliminary updates DSS results and input files have been provided to NOAA in a separate communication. Results show stable or, more often, continued improvement across DSS truth values for updated metrics at ESU, stratum, and population scales (Table 1).

Abundance and Productivity

Oregon coast coho abundance and spawner-to-spawner ratios for the period from 1994 to 2014 are summarized at the ESU, stratum, and population scales in Tables 2 and 3. Longer term trends (ca.1950) in spawner abundance and fishery impacts are shown in Figure 1. This information supports assessment of population critical abundance, some measures of productivity, and contributes to assessment of population sustainability. Of particular note is the resiliency with which coho populations have recovered following a long period of poor ocean conditions and low abundance. Reductions in harvest impact and increasing abundance have resulted in some of the highest spawner escapements since the 1950s (Figure 1).

Data Sources:

- ODFW Salmon and Steelhead Recovery Tracker: http://www.odfwrecoverytracker.org/
- ODFW Oregon Adult Spawner Investigations and Sampling (OASIS) Project http://oregonstate.edu/dept/ODFW/spawn/index.htm

Recent Improvements in Freshwater Productivity

ODFW has initiated population-scale spawner-recruit analyses, and we see potential to use these models to better understand changes in coho population dynamics through time. Specifically, we are pooling multiple populations of spawner-recruit data into a single meta-analysis that uses observed and estimated ocean survival rates as temporal covariates, and we are testing the parsimony of competing models that make contrasting statements about whether and how the dynamics of populations are changing through time. This should help us to better understand the current status and trends of individual populations of coastal coho populations, while accounting for known changes in harvest impacts and ocean conditions. Preliminary results suggest recent improvements in habitat and freshwater productivity. Results of these analyses will be forthcoming and will likely prove useful for NOAA's current status review.

Hatchery Influence

Numbers of natural spawners and the proportion of hatchery origin coho for each coho population are shown in Table 4. These data demonstrate the effectiveness of the management actions ODFW has taken to minimize adverse impacts of hatcheries on the Oregon Coast Coho ESU. Changes in ODFW hatchery management, including the termination of coho releases from the Salmon River and North Umpqua hatcheries, have resulted in substantial decreases in the proportion of hatchery fish on the spawning grounds in the North Coast, Mid-Coast and Umpqua Strata (Figure 2). Since 2008, the proportion of hatchery origin coho has stabilized to very low levels for individual strata and the ESU as a whole (Figure 2). NOAA has previously noted the potential benefit of these actions.

Data Sources:

- ODFW Salmon and Steelhead Recovery Tracker: http://www.odfwrecoverytracker.org/
- ODFW OASIS Project: http://oregonstate.edu/dept/ODFW/spawn/index.htm

Harvest Impact

Fisheries for Oregon Coast coho are typically managed under Amendment 13 (A13) of the Pacific Fishery Management Council's Pacific Coast Salmon Fishery Management Plan. The primary goal of A13 is *"to assure that fishery related impacts will not act as a significant impediment to the recovery of depressed OCN coho and to more uniformly rebuild each component population subgroup to a higher level."* A13 sets harvest impact rates using a two dimensional matrix with parental status and a marine survival index as axes. This approach allows impacts to be minimized when populations are at low abundance or where ocean conditions are poor. Harvest impacts at higher abundance may limit progress toward conservation or recovery goals, but they do not represent a threat to viability. Estimated harvest-related impacts to the Oregon Coast Coho ESU declined markedly after 1993 (Figure 1), and ODFW has continued work to refine and improve the A13 harvest impact matrix (e.g., Suring and Lewis 2013).

References and Data Sources:

- ODFW Salmon and Steelhead Recovery Tracker: http://www.odfwrecoverytracker.org/
- ODFW OASIS Project: http://oregonstate.edu/dept/ODFW/spawn/index.htm
- Exploitation Rate: http://www.pcouncil.org/salmon/stock-assessment-and-fishery-evaluation-safe-documents/preseason-reports/
- Suring, S. and M. Lewis 2013. 2013 Technical Revision to the OCN Coho Work Group Harvest Matrix. Oregon Department of Fish and Wildlife, Corvallis, Oregon. (https://nrimp.dfw.state.or.us/CRL/reports/SLCMP/A13TechnicalRevision2013.pdf).

Population Diversity
In the 2005 Oregon Coast Coho ESU Assessment, ODFW presented information on the distribution of coho spawners under the principle that populations that are well distributed across potential spawner habitats demonstrate greater resilience to spatial and temporal alterations in habitat. Well distributed populations retain the capacity to colonize areas impacted by chance catastrophic events and have greater capacity to rebound from periods of poor ocean conditions. In 2008, the Oregon Coast Coho TRT Workgroup used spawner distribution in a similar manner, and added additional viability criteria based on juvenile coho distribution. Spawner occupancy data show generally increasing occupancy in nearly all coho populations with some fluctuations through time tracking abundance (Table 5). Juvenile occupancy of 5th field HUCs has also generally increased relative to the period prior to the 2010 status review (Table 6).

Data Sources:

- ODFW Salmon and Steelhead Recovery Tracker: http://www.odfwrecoverytracker.org/
- ODFW OASIS Project: http://oregonstate.edu/dept/ODFW/spawn/index.htm
- ODFW Western Oregon Rearing Project: https://nrimp.dfw.state.or.us/crl/default.aspx?pn=WORP
- ODFW Aquatic Inventories Project: http://oregonstate.edu/dept/ODFW/freshwater/inventory/index.htm

Habitat Status and Trends in the Oregon Coast Coho ESU
The Oregon Department of Fish and Wildlife (ODFW) Aquatic Inventory Project has conducted systematic evaluation of stream habitat in the Oregon Coast Coho ESU since 1990. ODFW has made extensive use of this information to characterize stream conditions, identify potential limiting factors, and to help prioritize streams and stream reaches that are likely to benefit from habitat restoration. Beginning in 1998, ODFW modified the stream survey methodology and sampling design to be more representative of all wadeable streams and to improve the ability to detect trends in key habitat variables. A new sampling frame based on a 1:24,000 scale digitized stream network was implemented in 2007, facilitating increased sampling precision and efficiency.

For each individual population and for the Oregon Coast Coho ESU to pass viability criteria requires there be sufficient productivity in freshwater habitat to maintain populations through periods of poor marine survival. Analysis of population data, based on the long term record of spawner abundance, demonstrates that sufficient freshwater productivity exists to maintain viable populations through environmental conditions similar to or slightly worse than was experienced in the last fifty years (Anlauf et al. 2009).

Overall habitat condition across the Coastal ESU has been relatively stable (Anlauf et al. 2009; Anlauf et al. 2011; Anlauf-Dunn and Jones 2012). Existing stream habitat conditions are capable of producing sufficient coho smolts to maintain viability during extended periods of poor ocean conditions; and stream productivity, measured as smolt capacity modeled from habitat metrics, is stable or increasing slightly in all monitoring areas except the Umpqua Strata (Anlauf et al. 2009). As restoration in coastal streams continues and expands, the signal of those stream improvements may become detectable at larger spatial scales. Trend analysis updates through 2014 are underway, and results will be shared with NOAA for this status review.

The apparent stability of habitat conditions is important, particularly given that it can be difficult to show trend increases with a random, stratum-scale monitoring design. With the regulatory

protections that have been instituted through time and significant past and on-going restoration projects, current tributary habitat conditions are likely to be better than previous levels. Many restoration projects are addressing legacy effects of historic land practices, and it will likely take significant time for those effects to be reversed through ecosystem processes that manifest as instream metrics. As previously noted, however, the preliminary results of on-going spawner-recruit analyses are suggestive of recently improved habitat conditions and freshwater productivity.

Evaluations of habitat restoration projects have shown positive effects from large wood treatments (e.g., Tippery et al. 2010; Jones et al. 2014). Though the number of miles treated is low relative to the rearing distribution of coho, the projects are beginning to improve habitat in reaches and streams that have high rearing potential. In particular, the projects that have been in place for five years show an overall increase in pool habitat and complex pool habitat, higher wood amounts, and improved substrate characteristics. Most importantly, the increase in habitat complexity is reflected in increase winter rearing capacity for juvenile coho at the restoration sites (Tippery et al. 2010).

References and Data Sources

- ODFW Aquatic Inventories Project: http://oregonstate.edu/dept/ODFW/freshwater/inventory/index.htm
- Anlauf-Dunn, K.J. and K.K. Jones. 2012. Stream Habitat Conditions in Western Oregon, 2006-2010. OPSW-ODFW-2012-5, Oregon Department of Fish and Wildlife, Salem, Oregon. (http://oregonstate.edu/dept/ODFW/freshwater/inventory/pdffiles/5-yr%20Coastal%20Progress%20Report%20doc%20&%20tables%20&%20figures%20FINAL.pdf)
- Anlauf, K.J., W. Gaeuman, and K.K. Jones. 2011. Detection of regional trends in salmonid habitat in coastal streams, Oregon. *Transactions of the American Fisheries Society*, 140:52-66. (http://oregonstate.edu/dept/ODFW/freshwater/inventory/pdffiles/TAFS140.pdf)
- Anlauf, K.J., K.K. Jones, and C.H. Stein. 2009. The Status and Trend of Physical Habitat and Rearing Potential in Coho Bearing Streams in the Oregon Coastal Coho Evolutionary Significant Unit. OPSW-ODFW-2009-5, Oregon Department of Fish and Wildlife, Salem, Oregon. (http://oregonstate.edu/dept/ODFW/freshwater/inventory/pdffiles/OPHabitatCoastalESU2009.pdf)
- Jones, K.K., K. Anlauf-Dunn, P.S. Jacobsen, M. Strickland, L. Tennant, and S.E. Tippery. 2014. Effectiveness of instream wood treatments to restore complexity and winter rearing habitat for juvenile coho salmon. *Transactions of the American Fisheries Society*, 143:334-345. (http://oregonstate.edu/dept/ODFW/freshwater/inventory/pdffiles/Jones%20et%20al%202014%20Effectiveness%20of%20LWD%20TAFS.pdf)
- Tippery, S., K.K. Jones, K.J. Anlauf, C.H. Stein, and M.J. Strickland. 2010. Effectiveness Monitoring Report for the Western Oregon Stream Restoration Program, 1999-2008. OPSW-ODFW-2010-6, Oregon Department of Fish and Wildlife, Salem, Oregon (http://oregonstate.edu/dept/ODFW/freshwater/inventory/pdffiles/Effectiveness%20of%20WOSRP%201999-2008%20OPSW%202010-6%20Final.pdf)

Section II. Strata and Population Issues in the Lower Columbia River Planning Domain

In 2010, ODFW identified several issues with delineations of strata and populations in the Lower Columbia River Planning Domain (ODFW 2010). These included:

- Delineations among Lower Columbia River strata (particularly Cascade and Gorge strata) appear to be subjective and inconsistent with ecoregion definitions identified as the basis of delineation;
- Several populations are identified in the Gorge stratum in areas where the historically accessible habitat does not appear adequate to support demographically independent populations;
- Strata and population designations result in Gorge stratum and delineations of questionable historical viability. Several populations appear to have been too small or fragmented to have been demographically independent. A combination of two few populations of too low inherent capacity suggests that high levels of viability cannot be reached without very great and unlikely improvements. The concern is whether implied recovery strategies are an artifact of subjective or erroneous assumptions.

Given subjectivity of stratum definitions, inconsistences between ecoregions and strata, and the lack of supporting biological data on differences, ODFW believes it is appropriate to consider alternative stratum boundaries that better match the ecological factors the strata are intended to reflect. With respect to Lower Columbia River populations, specific applications of basin size rules were unclear for gorge populations, where natural barriers typically restrict anadromous accessibility such that the available habitat is small even in relatively large watersheds. Many gorge streams are not sufficiently sized to provide reproductive isolation from other populations and lack productivity adequate to ensure long-term independent viability. It is also contrary to the concept of reproductive isolation of independent populations to consider that an amalgamation of fish from 7 to 10 small streams along the Columbia and from both Oregon and Washington constitutes an independent population. These subpopulations would more appropriately be classified as dependent rather than independent populations.

In light of the considerations summarized above, ODFW made several recommendations:

Lower and Upper Gorge Populations

1. (*Recommended*) Consider the lower and upper Gorge tributaries to be part of a population that includes a larger stream such as the Sandy (for the lower streams) and Hood (for the upper streams).
2. Move lower and upper gorge populations into the Cascade stratum
3. Consider these streams to be dependent populations.

Hood and White Salmon Populations

1. (*Recommended*) Eliminate the gorge strata and consider the Hood and White Salmon as unique populations of the Cascade stratum, adding a new de-listing criterion that one of these two populations is required to meet viability criteria.
2. Define the Gorge stratum to include only the Hood River and White Salmon populations.

The effects of changes in these regards would still require substantial improvement in Gorge populations to meet stratum average goals; eliminate unrealistic goals of primary/high viability for marginal gorge populations; and allow recovery efforts to be focused more effectively on opportunities for success. ODFW hopes that NOAA will consider and respond to these recommendations, and would welcomes further discussions with NOAA to cooperatively resolve these issues.

Reference:

ODFW 2010. Lower Columbia River Conservation and Recovery Plan for Oregon Populations of Salmon and Steelhead, Appendix B, Strata and Population Issues in Lower Columbia River Planning Domain. Oregon Department of Fish and Wildlife, Salem, Oregon. (http://www.dfw.state.or.us/fish/CRP/docs/lower-columbia/OR_LCR_Plan_Appendices%20-%20Aug_6_2010_Final.pdf).

Table 1. Decision Support System Comparisons of Updated Truth Values among Status Review Years. Note that there have been some changes to the DSS over the three reviews that are relevant to comparisons across years. Some caveats are included as footnotes to the table. Metric codes and descriptions are from NOAA Technical Memorandum NMFS-NWFSC-118. Results for the 2015 update are considered provisional pending finalization of data for the 2014/15 spawning year.

Scale	Metric	Description	Status Review Year 2005	2010	2015
ESU	EP	ESU Persistence - ESU will persist over the next 100 years	0.40	0.34	0.73
	ES	ESU Sustainability - ESU is self-sustaining over the foreseable future.	0.19	0.24	0.30
	• ES.1	All Strata Sustainable - All biogeographic strata are sustainable	0.28	0.42	0.58
	• ES.2	ESU-Level Diversity - ESU has sufficient broadscale diversity to maintain its ecological and evolutionary functions into the foreseeable future	0.14	0.13	0.14
North Coast Stratum	SP	Stratum Persistence - Most of the historically independent populations in the stratum are persistent	0.23	0.27	0.65
	SD	Stratum Diversity - Most of the historically independent populations in the stratum are at present sustainable	-0.02	0.33	0.47
	SS[1]	Stratum Sustainability - The stratum is self-sustaining	0.11	0.39	-
Mid-Coast Stratum	SP	Stratum Persistence - See Above	0.20	0.25	0.82
	SD	Stratum Diversity - See Above	0.25	0.36	0.61
	SS[1]	Stratum Sustainability - See Above	0.32	0.40	-
Lakes Stratum	SP	Stratum Persistence - See Above	0.91	0.88	0.90
	SD	Stratum Diversity - See Above	0.80	0.64	0.85
	SS[1]	Stratum Sustainability - See Above	0.52	0.47	-
Umpqua Stratum	SP	Stratum Persistence - See Above	0.44	0.40	0.68
	SD	Stratum Diversity - See Above	0.20	0.26	0.49
	SS[1]	Stratum Sustainability - See Above	0.41	0.45	-
Mid-South Coast Stratum	SP	Stratum Persistence - See Above	0.92	0.24	0.66
	SD	Stratum Diversity - See Above	0.69	0.37	0.65
	SS[1]	Stratum Sustainability - See Above	0.68	0.48	-
Population (Avg. of 21 Populations)	PP	Population Persistence - Population will persist for the next 100 years	0.29	0.25	0.52
	• PP.1	Population Productivity - Geometric mean of the natural return ratio for brood years with spawner abundances below the median of the last 4 generations (12 years)	0.57	0.69	0.71
	• PP.3	Critical Abundance - Average peak spawner density in the lowest of the last 12 years	0.35	0.20	0.66
	PD	Population Diversity - Population has sufficient diversity and distribution to ensure continued fitness in the face of environmental change.	0.18	0.32	0.39
	• PD.1	Spawner Abundance - Long-term harmonic mean of naturally produced spawners (both 3-year-old adults and 2-year-old jacks	0.22	0.44[2]	0.26
	• PD.2	Artificial Influence - 6-year (2 generations) mean of annual estimates of the proportion of naturally produced fish in spawning surveys	0.44	0.55	0.87
	• PD.3	Spawner Distribution - Average occupancy rate of watersheds during the most recent 12 years, analyzed by 5th field hydrologic units	0.26	0.52	0.65
	• PD.4	Juvenile Distribution - Average occupancy rate of surveyed reaches with at least two pools during the most recent 12 years, analyzed by 5th field hydrologic units	0.53	0.62	0.73
	PS	Population Sustainability - Population is able to sustain itself into the future	0.18	0.22	0.42

[1] *Stratum Sustainability (SS) was not updated in 2015*

[2] *In 2010, the long-term abundance metric (PD.1) was inadvertently calculated on total instead of wild-only abundance, resulting in an artificially elevated value*

Table 2. Estimated Abundance of Native Origin Coho Spawners: 1994-2014. Abundance data from 1994-2003 are summarized from ODFW Stratified Random Surveys and Spatially Balanced Probabilistic (EMAP) Surveys as used in the Oregon Coast Coho TRT Biological Recovery Criteria report and the Oregon Coast Coho Conservation Strategy. Abundance estimates for 2004-2014 used EMAP sample protocols modified to improve the precision of abundance estimates for the twenty-one independent coho populations.

	Return Year																				
Stratum and Population	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014***
North Coast Stratum	**4,484**	**3,759**	**2,116**	**1,951**	**2,341**	**8,094**	**18,218**	**32,868**	**49,243**	**58,096**	**28,822**	**16,466**	**24,135**	**17,529**	**25,571**	**48,135**	**54,970**	**45,890**	**7,520**	**10,956**	**63,027**
Necanicum River	269	181	416	97	575	351	359	4,832	2,047	2,377	2,198	1,218	750	431	1,055	3,827	4,445	2,120	902	798	5,691
Nehalem River	2,844	1,700	527	1,187	1,206	3,555	14,462	21,928	17,164	32,517	18,736	10,451	11,614	14,033	17,205	21,753	32,215	15,322	2,963	4,539	30,577
Tillamook Bay	1,105	341	733	437	358	1,831	2,178	1,944	13,334	13,008	2,532	1,995	8,774	2,295	4,828	16,251	14,890	19,250	1,686	4,402	16,980
Nestucca River	266	1,537	440	230	202	2,357	1,219	4,164	16,698	10,194	4,695	686	1,876	394	1,844	4,252	1,947	7,857	1,751	946	9,779
NC Dependents	***Not Summarized (N/S)***										661	2,116	1,121	376	639	2,052	1,473	1,341	218	271	***(N/S)***
Mid Coast Stratum	**7,414**	**12,052**	**14,645**	**2,332**	**2,441**	**9,618**	**15,562**	**21,075**	**94,207**	**69,400**	**42,070**	**51,407**	**21,224**	**12,270**	**68,138**	**86,435**	**56,545**	**119,099**	**33,846**	**39,723**	**115,315**
Salmon River	91	105	82	16	86	14	179	225	543	42	1,642	79	513	59	652	753	1,382	3,636	297	1,165	2,805
Siletz River	621	314	395	298	316	1,209	3,387	1,595	2,129	8,038	8,179	14,567	5,205	2,197	20,634	24,070	6,283	33,094	4,495	7,660	18,732
Yaquina River	2,040	4,723	4,578	419	510	2,563	637	3,589	23,800	16,484	5,539	3,441	4,247	3,158	10,913	11,182	8,589	19,074	6,268	3,553	26,652
Beaver Creek	675	308	1,296	497	401	1,511	1,464	1,832	3,217	5,552	4,569	2,264	1,950	611	1,218	3,575	2,072	2,389	1,878	2,015	6,079
Alsea River	828	441	1,060	601	108	1,341	3,363	3,228	9,073	10,281	5,233	13,907	1,972	2,146	13,320	14,638	9,688	28,337	8,470	9,283	23,660
Siuslaw River	3,159	6,161	7,234	501	1,020	2,980	6,532	10,606	55,445	29,003	8,729	16,907	5,869	3,552	17,491	30,607	25,983	28,082	11,946	14,118	37,387
MC Dependents	***Not Summarized (N/S)***										8,179	242	1,468	547	3,910	1,610	2,548	4,487	492	1,929	***(N/S)***
Umpqua Stratum	**6,904**	**20,112**	**21,180**	**3,334**	**9,751**	**8,576**	**14,594**	**35,084**	**43,504**	**34,783**	**29,920**	**42,532**	**18,092**	**11,783**	**37,868**	**57,984**	**70,019**	**94,655**	**20,948**	**27,016**	**63,485**
Lower Umpqua River	2,762	10,854	7,985	1,257	4,552	2,623	5,781	11,639	18,881	16,494	8,989	18,591	7,994	4,237	9,023	19,245	17,516	18,715	3,731	7,792	39,265
Middle Umpqua River	2,162	3,250	5,086	563	1,257	1,748	4,555	8,940	10,738	11,090	6,375	7,608	4,852	1,587	4,472	15,075	18,123	19,962	2,447	4,272	11,385
North Umpqua River	899	1,293	1,069	577	765	1,194	1,677	2,634	3,368	2,862	3,559	1,969	3,000	1,410	3,438	7,720	9,397	6,020	3,134	2,774	3,499
South Umpqua River	1,081	4,715	7,040	937	3,177	3,011	2,581	11,871	10,517	4,337	10,997	14,364	2,246	4,549	20,935	15,944	24,983	49,958	11,636	12,178	9,336
Lakes Stratum	**5,712**	**11,084**	**13,426**	**8,587**	**11,108**	**12,543**	**12,747**	**19,604**	**21,977**	**16,076**	**18,642**	**14,725**	**24,127**	**8,955**	**23,608**	**17,349**	**38,744**	**20,282**	**18,922**	**13,659**	**21,769**
Siltcoos	1,302	4,415	4,707	2,653	3,122	2,756	3,835	5,104	4,636	6,628	7,998	4,364	5,452	1,447	3,873	5,197	7,678	6,354	3,945	3,797	6,958
Tahkenitch	1,056	1,577	1,627	1,842	2,817	3,664	634	3,510	3,480	3,188	3,496	1,897	3,611	3,551	2,604	2,977	10,681	6,644	5,675	3,413	3,670
Tenmile	3,354	5,092	7,092	4,092	5,169	6,123	8,278	10,990	13,861	6,260	7,148	8,464	15,064	3,957	17,131	9,175	20,385	7,284	9,302	6,449	11,141
Mid-South Coast Stratum	**22,510**	**13,764**	**29,655**	**7,457**	**6,834**	**8,211**	**12,570**	**53,187**	**44,163**	**49,202**	**53,324**	**29,465**	**41,241**	**15,734**	**24,501**	**52,832**	**63,127**	**76,318**	**17,909**	**33,057**	**74,573**
Coos River	14,500	10,302	12,128	1,112	2,985	4,818	4,704	33,595	33,120	25,761	23,337	17,048	11,266	1,329	14,881	26,979	27,658	10,999	9,414	6,884	36,907
Coquille River	5,119	2,034	15,814	5,720	2,412	2,667	6,253	13,833	7,676	22,403	22,138	11,806	28,577	13,968	8,791	22,286	23,564	55,667	5,911	23,637	36,324
Floras Creek	2,653	1,351	1,519	482	879	670	1,477	5,664	3,272	952	7,446	506	1,104	340	786	3,203	11,329	9,217	2,502	1,936	1,157
Sixes River	238	77	194	143	558	56	136	95	95	86	403	105	294	97	43	176	92	334	34	567	185
MS Dependents	***Not Summarized (N/S)***															188	484	101	48	33	***(N/S)***
Oregon Coast ESU Total	**47,024**	**60,771**	**81,022**	**23,661**	**32,475**	**47,042**	**73,691**	**161,818**	**253,094**	**227,557**	**172,778**	**154,595**	**128,819**	**66,271**	**179,686**	**262,735**	**283,405**	**356,244**	**99,145**	**124,411**	**338,169**

*2014 data are provisional. Further updates will be made available to BRT.

Table 3. Spawner-to-Spawner Ratios, 1997-2014. Spawner-to-spawner ratios are calculated as: abundance estimate year x / abundance estimate year x-3.

	Return Year																		
Stratum and Population	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014***	**1997-2014 Average**
North Coast Stratum	**0.44**	**0.62**	**3.83**	**9.34**	**14.04**	**6.08**	**3.19**	**0.88**	**0.33**	**0.42**	**0.61**	**1.55**	**1.99**	**3.14**	**1.79**	**0.16**	**0.20**	**1.37**	**2.78**
Necanicum River	0.36	3.18	0.84	3.70	8.40	5.83	6.62	0.45	0.60	0.32	0.20	0.87	5.10	10.31	2.01	0.24	0.18	2.68	**2.88**
Nehalem River	0.42	0.71	6.75	12.18	18.18	4.83	2.25	0.85	0.61	0.36	0.75	1.65	1.87	2.30	0.89	0.14	0.14	2.00	**3.16**
Tillamook Bay	0.40	1.05	2.50	4.98	5.43	7.28	5.97	1.30	0.15	0.67	0.91	2.42	1.85	6.49	3.99	0.10	0.30	0.88	**2.59**
Nestucca River	0.86	0.13	5.36	5.30	20.61	7.08	8.36	1.13	0.04	0.18	0.08	2.69	2.27	4.94	4.26	0.41	0.49	1.24	**3.64**
NC Dependents	-	-	-	-	-	-	-	-	-	-	0.57	0.30	1.83	3.92	2.10	0.11	0.18	-	**1.29**
Mid Coast Stratum	**0.31**	**0.20**	**0.66**	**6.67**	**8.63**	**9.79**	**4.46**	**2.00**	**0.55**	**0.31**	**0.29**	**1.33**	**4.07**	**4.61**	**1.75**	**0.39**	**0.70**	**0.97**	**2.65**
Salmon River	0.18	0.82	0.17	11.19	2.62	38.79	0.23	7.30	0.15	12.21	0.04	8.25	1.47	23.42	5.58	0.39	0.84	0.77	**6.36**
Siletz River	0.48	1.01	3.06	11.37	5.05	1.76	2.37	5.13	6.84	0.65	0.27	1.42	4.62	2.86	1.60	0.19	1.22	0.57	**2.80**
Yaquina River	0.21	0.11	0.56	1.52	7.04	9.29	25.88	1.54	0.14	0.26	0.57	3.17	2.63	2.72	1.75	0.56	0.41	1.40	**3.32**
Beaver Creek	0.74	1.30	1.17	2.95	4.57	2.13	3.79	2.49	0.70	0.35	0.13	0.54	1.83	3.39	1.96	0.53	0.97	2.54	**1.78**
Alsea River	0.73	0.24	1.27	5.60	29.89	6.77	3.06	1.62	1.53	0.19	0.41	0.96	7.42	4.51	2.13	0.58	0.96	0.83	**3.82**
Siuslaw River	0.16	0.17	0.41	13.04	10.40	18.61	4.44	0.82	0.30	0.20	0.41	1.03	5.22	7.32	1.61	0.39	0.54	1.33	**3.69**
MC Dependents	-	-	-	-	-	-	-	-	-	-	0.07	16.16	1.10	4.66	1.15	0.31	0.76	-	**3.46**
Umpqua Stratum	**0.48**	**0.48**	**0.40**	**4.38**	**3.60**	**5.07**	**2.38**	**0.85**	**0.98**	**0.52**	**0.39**	**0.89**	**3.20**	**5.94**	**2.50**	**0.36**	**0.39**	**0.67**	**1.86**
Lower Umpqua River	0.46	0.42	0.33	4.60	2.56	7.20	2.85	0.77	0.98	0.48	0.47	0.49	2.41	4.13	2.07	0.19	0.44	2.10	**1.83**
Middle Umpqua River	0.26	0.39	0.34	8.09	7.11	6.14	2.43	0.71	0.71	0.44	0.25	0.59	3.11	11.42	4.46	0.16	0.24	0.57	**2.63**
North Umpqua River	0.64	0.59	1.12	2.91	3.44	2.82	1.71	1.35	0.58	1.05	0.40	1.75	2.57	6.66	1.75	0.41	0.30	0.58	**1.70**
South Umpqua River	0.87	0.67	0.43	2.75	3.74	3.49	1.68	0.93	1.37	0.52	0.41	1.46	7.10	5.49	2.39	0.73	0.49	0.19	**1.93**
Lakes Stratum	**1.50**	**1.00**	**0.93**	**1.48**	**1.76**	**1.75**	**1.26**	**0.95**	**0.67**	**1.50**	**0.48**	**1.60**	**0.72**	**4.33**	**0.86**	**1.09**	**0.35**	**1.07**	**1.30**
Siltcoos	2.04	0.71	0.59	1.45	1.63	1.68	1.73	1.57	0.94	0.82	0.18	0.89	0.95	5.31	1.64	0.76	0.49	1.10	**1.36**
Tahkenitch	1.74	1.79	2.25	0.34	1.25	0.95	5.03	1.00	0.55	1.13	1.02	1.37	0.82	3.01	2.55	1.91	0.32	0.55	**1.53**
Tenmile	1.22	1.02	0.86	2.02	2.13	2.26	0.76	0.65	0.61	2.41	0.55	2.02	0.61	5.15	0.43	1.01	0.32	1.53	**1.42**
Mid-South Coast Stratum	**0.33**	**0.50**	**0.28**	**1.69**	**7.78**	**5.38**	**3.91**	**1.00**	**0.67**	**0.84**	**0.30**	**0.83**	**1.28**	**4.01**	**3.11**	**0.34**	**0.52**	**0.98**	**1.87**
Coos River	0.08	0.29	0.40	4.23	11.25	6.87	5.48	0.69	0.51	0.44	0.06	0.87	2.39	20.81	0.74	0.35	0.25	3.36	**3.28**
Coquille River	1.12	1.19	0.17	1.09	5.74	2.88	3.58	1.60	1.54	1.28	0.63	0.74	0.78	1.69	6.33	0.27	1.00	0.65	**1.79**
Floras Creek	0.18	0.65	0.44	3.06	6.44	4.88	0.64	1.31	0.15	1.16	0.05	1.55	2.90	33.32	11.73	0.78	0.17	0.13	**3.86**
Sixes River	0.60	7.25	0.29	0.95	0.17	1.70	0.63	4.24	1.11	3.42	0.24	0.41	0.60	0.95	7.77	0.19	6.16	0.55	**2.07**
MS Dependents	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.26	0.07	-	**0.16**
Oregon Coast ESU Total	**0.50**	**0.53**	**0.58**	**3.11**	**4.98**	**5.38**	**3.09**	**1.07**	**0.61**	**0.57**	**0.38**	**1.16**	**2.04**	**4.28**	**1.98**	**0.38**	**0.44**	**0.95**	**1.78**

*2014 data are provisional.

Note: Spawner-to-spawner ratios also are available on the ODFW Salmon and Steelhead Recovery Tracker Website (http://www.odfwrecoverytracker.org/). Recovery Tracker spawner-to-spawner ratio calculations consider recruits as those recruits fish that survive to spawn plus those captured in the fishery, and parental spawners include natural and hatchery-origin fish.

Table 4. Hatchery Influence at Coho Population, Stratum, and ESU Scales, 1994-2014. Hatchery influences is expressed as the percent of total spawning escapement.

ESU / Stratum / Population	Return Year	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014*
Oregon Coast ESU	**Total**	**59,418**	**71,219**	**107,150**	**28,237**	**40,614**	**51,730**	**82,644**	**186,139**	**265,122**	**239,743**	**183,458**	**166,262**	**141,633**	**72,134**	**182,957**	**269,646**	**288,026**	**359,157**	**100,093**	**125,718**	**340,395**
	Hatchery	**12,394**	**10,448**	**26,128**	**4,576**	**8,139**	**4,688**	**8,953**	**24,321**	**12,028**	**12,186**	**10,680**	**11,667**	**12,814**	**5,863**	**3,271**	**6,911**	**4,621**	**2,913**	**948**	**1,307**	**2,235**
	% Hatchery	**20.9%**	**14.7%**	**24.4%**	**16.2%**	**20.0%**	**9.1%**	**10.8%**	**13.1%**	**4.5%**	**5.1%**	**5.8%**	**7.0%**	**9.0%**	**8.1%**	**1.8%**	**2.6%**	**1.6%**	**0.8%**	**0.9%**	**1.0%**	**0.7%**
North Coast Stratum	**Total**	**8,239**	**7,026**	**6,484**	**3,451**	**2,837**	**8,860**	**18,704**	**33,944**	**50,465**	**58,768**	**29,953**	**16,509**	**25,524**	**18,126**	**25,777**	**50,505**	**56,030**	**45,993**	**7,520**	**11,297**	**64,404**
	Hatchery	**3,755**	**3,267**	**4,368**	**1,500**	**496**	**766**	**486**	**1,076**	**1,222**	**672**	**1,131**	**43**	**1,389**	**597**	**206**	**2,370**	**1,060**	**103**	**0**	**341**	**1,377**
	% Hatchery	**45.6%**	**46.5%**	**67.4%**	**43.5%**	**17.5%**	**8.6%**	**2.6%**	**3.2%**	**2.4%**	**1.1%**	**3.8%**	**0.3%**	**5.4%**	**3.3%**	**0.8%**	**4.7%**	**1.9%**	**0.2%**	**0.0%**	**3.0%**	**2.1%**
Necanicum River	Total	448	301	693	161	958	370	378	5,112	2,143	2,535	2,339	1,252	843	464	1,183	3,869	4,445	2,159	902	798	5,816
	Hatchery	179	120	277	64	383	19	19	280	96	158	141	34	93	33	128	42	0	39	0	0	125
	% Hatchery	40.0%	39.9%	40.0%	39.8%	40.0%	5.1%	5.0%	5.5%	4.5%	6.2%	6.0%	2.7%	11.0%	7.1%	10.8%	1.1%	0.0%	1.8%	0.0%	0.0%	2.1%
Nehalem River	Total	5,556	3,818	4,293	2,538	1,257	4,155	14,580	22,342	17,862	32,801	18,825	10,451	12,816	14,458	17,205	23,493	33,052	15,386	2,963	4,539	31,341
	Hatchery	2,712	2,118	3,766	1,351	51	600	118	414	698	284	89	0	1,202	425	0	1,740	837	64	0	0	764
	% Hatchery	48.8%	55.5%	87.7%	53.2%	4.1%	14.4%	0.8%	1.9%	3.9%	0.9%	0.5%	0.0%	9.4%	2.9%	0.0%	7.4%	2.5%	0.4%	0.0%	0.0%	2.4%
Tillamook Bay	Total	1,922	1,096	979	481	384	1,978	2,477	2,119	13,707	13,129	3,360	1,995	8,774	2,429	4,906	16,811	15,000	19,250	1,686	4,706	17,404
	Hatchery	817	755	246	44	26	147	299	175	373	121	828	0	0	134	78	560	110	0	0	304	424
	% Hatchery	42.5%	68.9%	25.1%	9.1%	6.8%	7.4%	12.1%	8.3%	2.7%	0.9%	24.6%	0.0%	0.0%	5.5%	4.3%	4.3%	4.3%	4.3%	4.3%	4.3%	4.3%
Nestucca River	Total	313	1,811	519	271	238	2,357	1,269	4,371	16,753	10,303	4,768	695	1,895	399	1,844	4,252	2,040	7,857	1,751	983	9,843
	Hatchery	47	274	79	41	36	0	50	207	55	109	73	9	19	5	0	0	93	0	0	37	64
	% Hatchery	15.0%	15.1%	15.2%	15.1%	15.1%	0.0%	3.9%	4.7%	0.3%	1.1%	1.5%	1.3%	1.0%	1.3%	0.0%	0.0%	4.6%	0.0%	0.0%	3.8%	0.7%
NC Dependents	Total	-	-	-	-	-	-	-	-	-	-	661	2,116	1,196	376	639	2,080	1,493	1,341	218	271	-
	Hatchery	-	-	-	-	-	-	-	-	-	-	0	0	75	0	0	28	20	0	0	0	-
	% Hatchery	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0.0%	0.0%	6.3%	0.0%	0.0%	1.3%	1.3%	0.0%	0.0%	0.0%	n.a.
Mid Coast Stratum	**Total**	**12,219**	**16,156**	**24,278**	**3,529**	**5,067**	**10,879**	**15,824**	**23,731**	**95,721**	**71,535**	**44,066**	**53,402**	**22,695**	**13,663**	**70,742**	**88,044**	**56,656**	**119,983**	**34,160**	**39,723**	**115,403**
	Hatchery	**4,805**	**4,104**	**9,633**	**1,197**	**2,626**	**1,261**	**262**	**2,656**	**1,514**	**2,135**	**1,996**	**1,995**	**1,471**	**1,393**	**2,604**	**1,609**	**111**	**884**	**314**	**0**	**88**
	% Hatchery	**39.3%**	**25.4%**	**39.7%**	**33.9%**	**51.8%**	**11.6%**	**1.7%**	**11.2%**	**1.6%**	**3.0%**	**4.5%**	**3.7%**	**6.5%**	**10.2%**	**3.7%**	**1.8%**	**0.2%**	**0.7%**	**0.9%**	**0.0%**	**0.1%**
Salmon River	Total	1,554	1,325	2,703	417	432	173	394	877	1,108	1,738	3,525	817	1,160	993	2,664	753	1,438	3,636	297	1,165	2,818
	Hatchery	1,463	1,220	2,621	401	346	159	215	652	565	1,696	1,883	738	647	934	2,012	0	56	0	0	0	13
	% Hatchery	94.1%	92.1%	97.0%	96.2%	80.1%	91.9%	54.6%	74.3%	51.0%	97.6%	53.4%	90.3%	55.8%	94.1%	75.5%	0.0%	3.9%	0.0%	0.0%	0.0%	0.5%
Siletz River	Total	1,200	607	763	336	357	1,364	3,387	2,454	2,504	8,421	8,179	15,234	5,323	2,416	20,634	25,032	6,283	33,094	4,495	7,660	18,807
	Hatchery	579	293	368	38	41	155	0	859	375	383	0	667	118	219	0	962	0	0	0	0	75
	% Hatchery	48.3%	48.3%	48.2%	11.3%	11.5%	11.4%	0.0%	35.0%	15.0%	4.5%	0.0%	4.4%	2.2%	9.1%	0.0%	3.8%	0.0%	0.0%	0.0%	0.0%	0.4%
Yaquina River	Total	2,448	5,668	6,104	529	644	2,567	638	3,760	23,800	16,484	5,652	3,613	4,306	3,355	10,913	11,690	8,589	19,074	6,268	3,553	26,652
	Hatchery	408	945	1,526	110	134	4	1	171	0	0	113	172	59	197	0	508	0	0	0	0	0
	% Hatchery	16.7%	16.7%	25.0%	20.8%	20.8%	0.2%	0.2%	4.5%	0.0%	0.0%	2.0%	4.8%	1.4%	5.9%	0.0%	4.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Beaver Cr	Total	675	308	1,701	644	520	1,511	1,510	2,114	3,360	5,552	4,569	2,264	2,122	611	1,218	3,575	2,072	2,389	1,878	2,015	6,079
	Hatchery	0	0	405	147	119	0	46	282	143	0	0	0	172	0	0	0	0	0	0	0	0
	% Hatchery	0.0%	0.0%	23.8%	22.8%	22.9%	0.0%	3.0%	13.3%	4.3%	0.0%	0.0%	0.0%	8.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 4. Hatchery Influence at Coho Population, Stratum, and ESU Scales, 1994-2014 (Continued).

ESU / Stratum / Population	Return Year	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014*
Alsea River	Total	1,279	681	1,637	928	1,732	2,071	3,363	3,920	9,254	10,281	5,233	13,907	1,972	2,146	13,442	14,777	9,688	28,418	8,470	9,283	23,660
	Hatchery	451	240	577	327	1,624	730	0	692	181	0	0	0	0	0	122	139	0	81	0	0	0
	% Hatchery	35.3%	35.2%	35.2%	35.2%	93.8%	35.2%	0.0%	17.7%	2.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.9%	0.9%	0.0%	0.3%	0.0%	0.0%	0.0%
Siuslaw River	Total	5,063	7,567	11,370	675	1,382	3,193	6,532	10,606	55,695	29,059	8,729	17,321	6,260	3,581	17,864	30,607	25,983	28,885	12,260	14,118	37,387
	Hatchery	1,904	1,406	4,136	174	362	213	0	0	250	56	0	414	391	29	373	0	0	803	314	0	0
	% Hatchery	37.6%	18.6%	36.4%	25.8%	26.2%	6.7%	0.0%	0.0%	0.4%	0.2%	0.0%	2.4%	6.2%	0.8%	2.1%	0.0%	0.0%	2.8%	2.6%	0.0%	0.0%
MC Dependents	Total	-	-	-	-	-	-	-	-	-	-	8179	246	1552	561	4007	1610	2603	4487	492	1929	-
	Hatchery	-	-	-	-	-	-	-	-	-	-	0	4	84	14	97	0	55	0	0	0	-
	% Hatchery	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0.0%	1.6%	5.4%	2.5%	2.4%	0.0%	2.1%	0.0%	0.0%	0.0%	n.a.
Umpqua Stratum	**Total**	**9,639**	**22,423**	**32,758**	**5,126**	**14,639**	**11,004**	**22,787**	**52,842**	**52,036**	**43,702**	**37,207**	**51,896**	**27,677**	**15,643**	**38,302**	**60,429**	**73,231**	**96,009**	**21,581**	**27,831**	**64,246**
	Hatchery	**2,735**	**2,311**	**11,578**	**1,792**	**4,888**	**2,428**	**8,193**	**17,758**	**8,532**	**8,919**	**7,287**	**9,364**	**9,585**	**3,860**	**434**	**2,445**	**3,212**	**1,354**	**633**	**815**	**770**
	% Hatchery	**28.4%**	**10.3%**	**35.3%**	**35.0%**	**33.4%**	**22.1%**	**36.0%**	**33.6%**	**16.4%**	**20.4%**	**19.6%**	**18.0%**	**34.6%**	**24.7%**	**1.1%**	**4.0%**	**4.4%**	**1.4%**	**2.9%**	**2.9%**	**1.2%**
Lower Umpqua River	Total	2,918	10,854	8,435	1,445	4,552	2,708	5,896	12,872	19,787	16,529	9,053	19,014	9,478	4,661	9,332	20,026	17,598	18,715	3,731	7,792	39,256
	Hatchery	156	0	450	188	0	85	115	1,233	906	35	64	423	1,484	424	309	781	82	0	0	0	0
	% Hatchery	5.3%	0.0%	5.3%	13.0%	0.0%	3.1%	2.0%	9.6%	4.6%	0.2%	0.7%	2.2%	15.7%	9.1%	3.3%	3.9%	0.5%	0.0%	0.0%	0.0%	0.0%
Middle Umpqua River	Total	2,309	3,250	5,431	601	1,336	1,914	4,719	9,817	11,669	11,090	6,433	8,203	6,111	1,763	4,472	15,075	18,123	20,033	2,447	4,272	11,385
	Hatchery	147	0	345	38	79	166	164	877	931	0	58	595	1,259	176	0	0	0	71	0	0	0
	% Hatchery	6.4%	0.0%	6.4%	6.3%	5.9%	8.7%	3.5%	8.9%	8.0%	0.0%	0.9%	7.3%	20.6%	10.0%	0.0%	0.0%	0.0%	0.4%	0.0%	0.0%	0.0%
North Umpqua River	Total	1,889	3,049	4,812	1,956	4,144	3,173	9,262	16,728	10,063	11,746	10,312	10,315	9,692	3,988	3,563	8,186	10,035	6,173	3,767	3,396	3,532
	Hatchery	990	1,756	3,743	1,379	3,379	1,979	7,585	14,094	6,695	8,884	6,753	8,346	6,692	2,578	125	466	638	153	633	622	33
	% Hatchery	52.4%	57.6%	77.8%	70.5%	81.5%	62.4%	81.9%	84.3%	66.5%	75.6%	65.5%	80.9%	69.0%	64.6%	3.5%	5.7%	6.4%	2.5%	16.8%	18.3%	0.9%
South Umpqua River	Total	2,523	5,270	14,080	1,124	4,607	3,209	2,910	13,425	10,517	4,337	11,409	14,364	2,396	5,231	20,935	17,142	27,475	51,088	11,636	12,371	10,073
	Hatchery	1,442	555	7,040	187	1,430	198	329	1,554	0	0	412	0	150	682	0	1,198	2,492	1,130	0	193	737
	% Hatchery	57.2%	10.5%	50.0%	16.6%	31.0%	6.2%	11.3%	11.6%	0.0%	0.0%	3.6%	0.0%	6.3%	13.0%	0.0%	7.0%	9.1%	2.2%	0.0%	1.6%	7.3%
Lakes Stratum	**Total**	**5,842**	**11,216**	**13,494**	**8,603**	**11,108**	**12,711**	**12,747**	**19,669**	**22,097**	**16,091**	**18,687**	**14,725**	**24,378**	**8,955**	**23,608**	**17,349**	**38,744**	**20,411**	**18,922**	**13,662**	**21,769**
	Hatchery	**130**	**132**	**68**	**16**	**0**	**168**	**0**	**65**	**120**	**15**	**45**	**0**	**251**	**0**	**0**	**0**	**0**	**129**	**0**	**3**	**0**
	% Hatchery	**2.2%**	**1.2%**	**0.5%**	**0.2%**	**0.0%**	**1.3%**	**0.0%**	**0.3%**	**0.5%**	**0.1%**	**0.2%**	**0.0%**	**1.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.6%**	**0.0%**	**0.0%**	**0.0%**
Siltcoos	Total	1,426	4,497	4,775	2,653	3,122	2,819	3,835	5,104	4,749	6,628	8,025	4,364	5,473	1,447	3,873	5,197	7,678	6,378	3,945	3,797	6,958
	Hatchery	124	82	68	0	0	63	0	0	113	0	27	0	21	0	0	0	0	24	0	0	0
	% Hatchery	8.7%	1.8%	1.4%	0.0%	0.0%	2.2%	0.0%	0.0%	2.4%	0.0%	0.3%	0.0%	0.4%	0.0%	0.0%	0.0%	0.0%	0.4%	0.0%	0.0%	0.0%
Tahkenitch	Total	1,062	1,627	1,627	1,858	2,817	3,769	634	3,526	3,487	3,203	3,496	1,897	3,718	3,551	2,604	2,977	10,681	6,665	5,675	3,416	3,670
	Hatchery	6	50	0	16	0	105	0	16	7	15	0	0	107	0	0	0	0	21	0	3	0
	% Hatchery	0.6%	3.1%	0.0%	0.9%	0.0%	2.8%	0.0%	0.5%	0.2%	0.5%	0.0%	0.0%	2.9%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%	0.1%	0.0%
Tenmile	Total	3,354	5,092	7,092	4,092	5,169	6,123	8,278	11,039	13,861	6,260	7,166	8,464	15,187	3,957	17,131	9,175	20,385	7,368	9,302	6,449	11,141
	Hatchery	0	0	0	0	0	0	0	49	0	0	18	0	123	0	0	0	0	84	0	0	0
	% Hatchery	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.0%	0.0%	0.3%	0.0%	0.8%	0.0%	0.0%	0.0%	0.0%	1.1%	0.0%	0.0%	0.0%

Table 4. Hatchery Influence at Coho Population, Stratum, and ESU Scales, 1994-2014 (Continued).

ESU / Stratum / Population	Return Year	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014*
Mid-South Coast Stratum	**Total**	**23,479**	**14,398**	**30,136**	**7,528**	**6,963**	**8,276**	**12,582**	**55,953**	**44,803**	**49,647**	**53,545**	**29,730**	**41,359**	**15,747**	**24,528**	**53,319**	**63,365**	**76,761**	**17,910**	**33,205**	**74,573**
	Hatchery	**969**	**634**	**481**	**71**	**129**	**65**	**12**	**2,766**	**640**	**445**	**221**	**265**	**118**	**13**	**27**	**487**	**238**	**443**	**1**	**148**	**0**
	% Hatchery	**4.1%**	**4.4%**	**1.6%**	**0.9%**	**1.9%**	**0.8%**	**0.1%**	**4.9%**	**1.4%**	**0.9%**	**0.4%**	**0.9%**	**0.3%**	**0.1%**	**0.1%**	**0.9%**	**0.4%**	**0.6%**	**0.0%**	**0.4%**	**0.0%**
Coos River	Total	15,207	10,447	12,128	1,127	2,985	4,818	4,704	34,259	33,265	25,950	23,450	17,305	11,266	1,342	14,881	27,216	27,888	10,999	9,414	6,884	36,907
	Hatchery	707	145	0	15	0	0	0	664	145	189	113	257	0	13	0	237	230	0	0	0	0
	% Hatchery	4.6%	1.4%	0.0%	1.3%	0.0%	0.0%	0.0%	1.9%	0.4%	0.7%	0.5%	1.5%	0.0%	1.0%	0.0%	0.9%	0.8%	0.0%	0.0%	0.0%	0.0%
Coquille River	Total	5,119	2,116	16,169	5,720	2,412	2,667	6,253	15,665	7,866	22,565	22,182	11,806	28,577	13,968	8,791	22,513	23,564	56,109	5,911	23,785	36,324
	Hatchery	0	82	355	0	0	0	0	1832	190	162	44	0	0	0	0	227	0	442	0	148	0
	% Hatchery	0.0%	3.9%	2.2%	0.0%	0.0%	0.0%	0.0%	11.7%	2.4%	0.7%	0.2%	0.0%	0.0%	0.0%	0.0%	1.0%	0.0%	0.8%	0.0%	0.6%	0.0%
Floras Creek	Total	2,893	1,751	1,628	525	958	730	1,477	5,752	3,568	1,038	7,446	506	1,214	340	803	3,203	11,329	9,217	2,502	1,936	1,157
	Hatchery	240	400	109	43	79	60	0	88	296	86	0	0	110	0	17	0	0	0	0	0	0
	% Hatchery	8.3%	22.8%	6.7%	8.2%	8.2%	8.2%	0.0%	1.5%	8.3%	8.3%	0.0%	0.0%	9.1%	0.0%	2.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sixes River	Total	260	84	211	156	608	61	148	277	104	94	467	113	302	97	53	190	100	334	34	567	185
	Hatchery	22	7	17	13	50	5	12	182	9	8	64	8	8	0	10	14	8	0	0	0	0
	% Hatchery	8.5%	8.3%	8.1%	8.3%	8.2%	8.2%	8.1%	65.7%	8.7%	8.5%	13.7%	7.1%	2.6%	0.0%	18.9%	7.4%	8.0%	0.0%	0.0%	0.0%	0.0%
MSDependent	Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	197	484	102	49	33	-
	Hatchery	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	9	0	1	1	0	-
	% Hatchery	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0.0%	4.6%	0.0%	1.0%	2.0%	0.0%	n.a.

Table 5. Coho Spawner Distribution, 1993-2014. Percentage of random spawner surveys within each 5th Field HUC with a minimum of four spawners per mile. Occupancy as defined as criteria W-Sp by NOAA Oregon Coast Coho TRT Workgroup, 2008.

Population	HUC	Majority Ecoregion	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	12-Year Average
Necanicum	1710020101	Coastal Uplands	60%	30%	38%	67%	13%	44%	46%	36%	100%	100%	89%	100%	67%	75%	53%	75%	95%	100%	90%	41%	48%	100%	**78%**
Nehalem	1710020201	Willapa Hills	60%	43%	58%	30%	38%	28%	50%	85%	95%	95%	94%	78%	58%	91%	100%	88%	91%	89%	78%	36%	67%	80%	**79%**
	1710020202	Willapa Hills	50%	38%	40%	11%	33%	13%	38%	69%	81%	100%	100%	83%	81%	86%	75%	100%	50%	88%	71%	33%	33%	100%	**75%**
	1710020203	Willapa Hills	38%	50%	38%	0%	21%	43%	88%	67%	75%	80%	100%	93%	100%	67%	100%	89%	100%	100%	100%	40%	43%	100%	**86%**
	1710020204	Volcanics										0%									50%		0%		**25%**
	1710020205	Coastal Uplands	63%	20%	0%	0%	25%	0%	33%	67%	50%	63%	86%	50%	83%	67%	50%	67%	100%	100%	33%	0%	40%		**61%**
	1710020206	Volcanics	50%	0%	33%	0%	20%	0%	33%	0%	29%	25%	60%	0%	0%		0%	0%	67%	50%	50%	0%	50%	100%	**34%**
Tillamook	1710020303	Coastal Uplands	0%	75%	20%	6%	9%		17%	0%	100%	100%	100%		67%		33%	100%	100%	40%	100%	0%	50%	100%	**69%**
	1710020304	Volcanics	0%	50%	50%	63%	27%	20%	57%	44%	40%	60%	63%	80%	57%	80%	25%	80%	100%	78%	88%	57%	63%	80%	**71%**
	1710020305	Volcanics	0%	64%	8%	36%	5%	25%	60%	50%	60%	100%	91%	38%	46%	100%	56%	73%	80%	78%	86%	55%	67%	100%	**72%**
	1710020306	Volcanics	25%	60%	20%	40%	0%	0%	0%	50%	63%	67%	75%	80%	67%	100%	100%	100%	100%	100%	100%	33%	80%	100%	**86%**
	1710020307	Volcanics	50%	0%	0%	0%	0%	0%	40%	0%	67%	67%	50%	0%	50%	0%	33%	0%	67%	67%	100%	20%	100%	100%	**49%**
	1710020308														0%		0%	0%	100%		100%	0%			**33%**
Nestucca	1710020301	Volcanics	0%	25%	50%	20%	20%	14%		50%	60%	100%	100%	100%	100%	60%	14%	100%	75%	60%	80%	0%	50%	75%	**68%**
	1710020302	Volcanics	22%	18%	31%	11%	5%	7%	14%	44%	56%	73%	79%	63%	50%	50%	44%	57%	68%	60%	91%	64%	42%	92%	**63%**
Salmon	1710020408	Volcanics	0%	0%	0%	0%	0%	0%	0%	33%	33%	100%	80%	100%	17%	71%	20%	83%	81%	83%	88%	28%	69%	82%	**67%**
Siletz	1710020405	Volcanics	0%	67%	20%	67%	50%	33%	43%	60%	80%	75%	100%	100%	60%	60%	100%	100%	89%	100%	89%	100%	88%	100%	**90%**
	1710020406	Mid-Coastal Sedimentary										100%		100%		100%	50%	67%	100%	100%	100%	50%	83%		**83%**
	1710020407	Coastal Uplands	13%	33%	0%	22%	17%	0%	50%	63%	33%	67%	100%	78%	0%	47%	22%	80%	83%	94%	93%	76%	74%	100%	**71%**
Yaquina	1710020401	Mid-Coastal Sedimentary	60%	100%	83%	80%	40%	0%	100%	25%	80%	100%	100%	100%	100%	57%	40%	89%	75%	86%	89%	100%	75%	100%	**84%**
	1710020402	Mid-Coastal Sedimentary	75%	75%	67%	100%	50%	100%	67%	80%	100%	100%	100%	100%	100%	75%	92%	100%	80%	100%	100%	67%	71%	100%	**90%**
	1710020403	Coastal Uplands		50%			100%	67%	67%	50%	67%	100%	100%	50%		78%	33%	75%	100%	50%	100%	78%	63%	100%	**75%**
Beaver	1710020505	Coastal Uplands	33%	50%	50%	50%	100%	100%	75%	50%	100%	100%	100%	100%	100%	86%	100%	100%	100%	89%	100%	100%	100%	100%	**98%**
Alsea	1710020501	Mid-Coastal Sedimentary	0%	33%	0%	67%	0%	0%	25%	57%	40%	100%	83%	83%	100%	60%	14%	86%	100%	100%	88%	100%	100%	100%	**85%**
	1710020502	Mid-Coastal Sedimentary	44%	27%	38%	47%	0%	0%	44%	40%	63%	100%	86%	90%	75%	50%	38%	100%	91%	100%	100%	100%	100%	100%	**86%**
	1710020503	Mid-Coastal Sedimentary	100%	50%	50%	100%	33%	0%				100%	100%	100%	50%	33%	67%	0%	100%	83%	80%	67%	83%	100%	**72%**
	1710020504	Mid-Coastal Sedimentary	50%	0%	0%	0%	14%	0%	0%	0%	67%	33%	100%	0%	100%	50%	14%	89%	88%	56%	90%	100%	56%	100%	**70%**

Table 5. Coho Spawner Distribution, 1993-2014 (Continued).

Population	HUC	Majority Ecoregion	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	12-Year Average
Siuslaw	1710020601	Mid-Coastal Sedimentary	86%	33%	82%	83%	8%	0%	45%	40%	75%	92%	100%	63%	91%	57%	14%	89%	69%	100%	89%	77%	62%	100%	**76%**
	1710020602	Mid-Coastal Sedimentary	75%			100%	0%	50%	0%	100%	67%	100%	100%	50%	50%	0%	50%	100%	100%	50%	100%	100%	0%		**64%**
	1710020603	Mid-Coastal Sedimentary	67%	0%	100%		0%	33%		67%	100%	100%	100%	83%	100%	100%	50%		0%	100%	100%	100%	100%		**83%**
	1710020604	Mid-Coastal Sedimentary		40%	100%	100%	0%	50%	40%	67%	67%	50%	100%	67%	75%	50%	100%	67%	56%	100%	100%	60%	100%	33%	**76%**
	1710020605	Mid-Coastal Sedimentary	80%	43%	100%	67%	20%	0%	75%	75%	88%	100%	100%	100%	100%	0%	33%	100%	100%	100%	100%	100%	80%	100%	**84%**
	1710020606	Mid-Coastal Sedimentary	100%	33%	100%		0%	20%	50%	88%		100%	83%	100%	100%	67%	67%	100%	100%	100%	100%	100%	80%	100%	**91%**
	1710020607	Mid-Coastal Sedimentary	100%	50%	75%	100%	11%	0%	67%	75%	67%	100%	100%	25%	100%	33%	0%	100%	67%	50%	67%	25%		0%	**52%**
	1710020608	Mid-Coastal Sedimentary		20%		20%	0%	29%	14%	80%	43%	80%	86%	20%	80%	33%	29%	67%	100%	75%	80%	83%	40%	100%	**66%**
Siltcoos	1710020701	Coastal Lowlands						88%	80%	75%	67%	75%	100%	83%	100%	83%	77%	100%	100%	85%	94%	80%	60%		**88%**
Tahkenitch	1710020701	Coastal Lowlands						100%	100%	100%		100%	50%	100%	0%	100%	100%	83%	100%	100%	88%	100%	100%		**84%**
Tenmile	1710030404	Coastal Lowlands						100%	67%		100%	100%	100%	0%	100%	100%	63%	90%	100%	86%	94%	100%	67%		**82%**
L. Umpqua	1710030304	Mid-Coastal Sedimentary	0%			0%	20%	0%	50%	43%	71%	100%	100%	88%	50%	100%	0%	50%	71%	75%	100%	25%	0%	100%	**63%**
	1710030305	Mid-Coastal Sedimentary							50%	50%	100%	50%	100%	50%		0%				100%	33%		0%	0%	**40%**
	1710030306	Mid-Coastal Sedimentary	83%	57%	100%	50%	20%	61%	29%	67%	85%	96%	84%	93%	86%	58%	69%	69%	80%	100%	82%	67%	77%	83%	**79%**
	1710030307	Mid-Coastal Sedimentary	86%	50%	91%	100%	24%	78%	63%	83%	100%	93%	80%	100%	100%	71%	77%	100%	83%	100%	89%	43%	83%	100%	**86%**
	1710030308	Mid-Coastal Sedimentary	67%	80%	100%	100%	67%	33%	33%	100%	75%	100%	100%	100%	100%	50%	33%	100%	100%	100%	75%	100%	25%	100%	**82%**
M. Umpqua	1710030301	Mid-Coastal Sedimentary		75%	50%	0%	17%	50%	40%	50%	88%	83%	86%	75%	71%	36%	14%	33%	62%	88%	88%	36%	64%	60%	**59%**
	1710030302	Umpqua Interior Foothills							67%		100%		100%	50%	75%	83%	50%	25%	75%	100%	50%	100%	33%		**67%**
	1710030303	Valley Foothills	0%	50%	100%	100%	0%	10%	15%	36%	25%	73%	89%	92%	38%	43%	22%	58%	50%	100%	58%	45%	38%	70%	**59%**
N. Umpqua	1710030106	Umpqua Cascades															0%								**0%**
	1710030107	Umpqua Cascades													50%	67%	0%	0%	0%	67%	20%				**29%**
	1710030108	Umpqua Cascades																							**n.a.**
	1710030109	Umpqua Cascades													0%				100%						**50%**
	1710030110	Umpqua Cascades													50%	78%	50%	75%	100%	89%	57%				**71%**
	1710030111	Umpqua Cascades														0%	0%	0%	0%	0%	22%				**4%**
	1710030112	Umpqua Interior Foothills													0%	50%	25%	13%	29%	50%	22%				**27%**

Table 5. Coho Spawner Distribution, 1993-2014 (Continued).

Population	HUC	Majority Ecoregion	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	12-Year Average
S. Umpqua	1710030201	Umpqua Cascades													0%				0%						**0%**
	1710030202	Umpqua Cascades													0%	0%			0%	0%	0%	0%	0%	0%	**0%**
	1710030203	Umpqua Cascades					50%	50%				100%			100%		0%		100%	100%	100%	100%	100%	100%	**88%**
	1710030204	Umpqua Cascades										100%									100%		100%		**100%**
	1710030205	Inland Siskiyous	60%	50%	50%	50%	0%	0%	40%	0%	57%	50%	60%	100%	50%	67%	0%		67%	100%		20%	43%		**56%**
	1710030207	Inland Siskiyous	40%	33%	50%	83%	0%	57%	38%	38%	57%	100%	38%	67%	100%	100%	67%	100%	100%	80%	100%	100%	33%	89%	**81%**
	1710030208	Mid-Coastal Sedimentary		0%	100%		0%	25%	75%	67%	40%	100%	100%	50%		100%	0%	100%	100%	100%	100%	100%	33%		**78%**
	1710030209	Inland Siskiyous			33%	57%	18%	33%	0%	43%	11%	60%	50%	50%	100%	0%	0%	100%	75%	67%	75%	67%	100%	100%	**65%**
	1710030210	Umpqua Interior Foothills					0%	0%	33%	14%	0%	0%		67%			0%	0%		0%	0%		0%	0%	**10%**
	1710030211	Inland Siskiyous	50%	50%	50%	60%	25%	25%	25%	33%	86%	43%	83%	80%	67%	0%	0%	33%	60%	67%	33%	50%	0%	50%	**44%**
	1710030212	Umpqua Interior Foothills					50%	0%	50%	0%	50%	60%		100%	100%	33%	33%	33%	100%	67%	100%	100%	0%	100%	**70%**
	1710030213	Umpqua Interior Foothills						33%	25%	20%	67%	0%	100%	75%	0%	0%	33%	0%	50%	50%	100%	67%	75%	50%	**50%**
Coos	1710030401	Mid-Coastal Sedimentary	80%	50%	100%	70%	50%	42%	69%	50%	100%	92%	100%	69%	92%	80%	67%	70%	80%	100%	90%	56%	67%	100%	**81%**
	1710030402	Mid-Coastal Sedimentary	80%	100%	86%	100%	62%	40%	58%	60%	92%	86%	93%	100%	100%	83%	38%	100%	94%	93%	62%	85%	69%	100%	**85%**
	1710030403	Coastal Uplands						100%	67%		100%	100%	71%	100%	100%	63%	25%	55%	100%	100%	38%	50%	75%	100%	**73%**
Coquille	1710030501	Mid-Coastal Sedimentary	100%	50%	67%	50%	20%	25%	40%		100%	91%	93%	77%	100%	75%	100%	83%	100%	90%	100%	50%	89%	100%	**88%**
	1710030502	Mid-Coastal Sedimentary	80%	71%	33%	60%	44%	15%	63%	63%	89%	50%	75%	75%	20%	0%	67%	50%	40%	50%	86%	50%	29%	57%	**50%**
	1710030503	S.n Oregon Coastal Mtns	50%	67%	33%	67%	25%	80%	100%	20%	33%	100%	100%	100%	100%	33%	67%	67%	100%	75%	100%	100%	75%	100%	**85%**
	1710030504	Mid-Coastal Sedimentary	80%	75%	100%	100%	100%	71%	60%	100%	100%	88%	100%	88%	85%	67%	57%	70%	100%	83%	90%	63%	83%	100%	**82%**
	1710030505	Mid-Coastal Sedimentary	83%	90%	55%	83%	81%	59%	25%	85%	88%	50%	86%	100%	100%	67%	50%	100%	83%	86%	67%	0%	88%	100%	**77%**
	1710030506	Coastal Lowlands	33%	33%	50%	100%	0%	60%	71%	13%	75%														**n.a.**
Floras	1710030601	S.n Oregon Coastal Mtns		89%	56%	88%	50%	80%	40%	40%	100%	0%	0%	100%	67%	67%	70%	54%	67%	100%	69%	83%	89%	100%	**72%**
Sixes	1710030602	S.n Oregon Coastal Mtns		60%	17%	33%						0%		100%	20%	44%	13%	15%	30%	20%	50%	0%	68%	50%	**37%**

Table 6. Juvenile Coho Distribution. Percentage of ODFW snorkel surveys within each 5th Field HUC that held juveniles in at least two pools. Occupancy defined as Criteria W-Ju by NOAA Oregon Coast Coho TRT Workgroup, 2008. 12-year averages are shown for the period prior to the 2010 status review and for the most recent 12 years.

Population	HUC	Majority Ecoregion	Juvenile Occupancy 12-Year Average (1998-2009)	Juvenile Occupancy 12-Year Average (2003-2014)
Necanicum	1710020101	Coastal Uplands	78.9%	71.4%
Nehalem	1710020201	Willapa Hills	74.3%	77.5%
	1710020202	Willapa Hills	80.9%	84.1%
	1710020203	Willapa Hills	94.4%	94.6%
	1710020204	Volcanics	-	75.0%
	1710020205	Coastal Uplands	33.9%	46.4%
	1710020206	Volcanics	75.8%	81.7%
Tillamook	1710020303	Coastal Uplands	46.2%	61.4%
	1710020304	Volcanics	74.0%	88.3%
	1710020305	Volcanics	69.9%	86.0%
	1710020306	Volcanics	70.0%	76.2%
	1710020307	Volcanics	81.3%	100.0%
	1710020308		n.a	n.a
Nestucca	1710020301	Volcanics	72.5%	50.0%
	1710020302	Volcanics	73.7%	89.2%
Salmon	1710020408	Volcanics	81.0%	92.9%
Siletz	1710020405	Volcanics	88.9%	86.9%
	1710020406	Mid-Coastal Sedimentary	-	100.0%
	1710020407	Coastal Uplands	74.7%	87.4%
Yaquina	1710020401	Mid-Coastal Sedimentary	95.5%	93.5%
	1710020402	Mid-Coastal Sedimentary	93.1%	97.9%
	1710020403	Coastal Uplands	85.7%	90.0%
Beaver	1710020505	Coastal Uplands	94.4%	90.7%
Alsea	1710020501	Mid-Coastal Sedimentary	97.2%	100.0%
	1710020502	Mid-Coastal Sedimentary	88.6%	97.2%
	1710020503	Mid-Coastal Sedimentary	87.5%	93.8%
	1710020504	Mid-Coastal Sedimentary	65.0%	82.2%
Siuslaw	1710020601	Mid-Coastal Sedimentary	63.6%	71.7%
	1710020602	Mid-Coastal Sedimentary	71.9%	91.3%
	1710020603	Mid-Coastal Sedimentary	83.3%	80.0%
	1710020604	Mid-Coastal Sedimentary	70.4%	87.9%
	1710020605	Mid-Coastal Sedimentary	91.7%	100.0%
	1710020606	Mid-Coastal Sedimentary	95.1%	97.9%
	1710020607	Mid-Coastal Sedimentary	95.5%	100.0%
	1710020608	Mid-Coastal Sedimentary	77.3%	61.4%
Siltcoos	1710020701	Coastal Lowlands	94.4%	100.0%
Tahkenitch	1710020701	Coastal Lowlands	94.4%	100.0%
Tenmile	1710030404	Coastal Lowlands	39.2%	70.1%

Table 6. Juvenile Coho Distribution (Continued).

Population	HUC	Majority Ecoregion	Juvenile Occupancy 12-Year Average (1998-2009)	Juvenile Occupancy 12-Year Average (2003-2014)
Lower Umpqua	1710030304	Mid-Coastal Sedimentary	93.2%	91.0%
	1710030305	Mid-Coastal Sedimentary	58.3%	56.3%
	1710030306	Mid-Coastal Sedimentary	88.3%	87.4%
	1710030307	Mid-Coastal Sedimentary	85.9%	93.7%
	1710030308	Mid-Coastal Sedimentary	40.5%	62.5%
Middle Umpqua	1710030301	Mid-Coastal Sedimentary	95.9%	90.7%
	1710030302	Umpqua Interior Foothills	42.5%	68.5%
	1710030303	Valley Foothills	70.7%	61.4%
North Umpqua	1710030106	Umpqua Cascades	-	n.a.
	1710030107	Umpqua Cascades	-	35.7%
	1710030108	Umpqua Cascades	-	8.3%
	1710030109	Umpqua Cascades	-	0.0%
	1710030110	Umpqua Cascades	31.3%	31.3%
	1710030111	Umpqua Cascades	0.0%	35.7%
	1710030112	Umpqua Interior Foothills	5.6%	16.7%
South Umpqua	1710030201	Umpqua Cascades	-	16.7%
	1710030202	Umpqua Cascades	0.0%	0.0%
	1710030203	Umpqua Cascades	65.0%	79.2%
	1710030204	Umpqua Cascades	83.3%	100.0%
	1710030205	Inland Siskiyous	63.9%	49.7%
	1710030207	Inland Siskiyous	97.7%	96.7%
	1710030208	Mid-Coastal Sedimentary	76.7%	90.5%
	1710030209	Inland Siskiyous	33.3%	45.8%
	1710030210	Umpqua Interior Foothills	100.0%	12.5%
	1710030211	Inland Siskiyous	85.2%	75.9%
	1710030212	Umpqua Interior Foothills	72.2%	88.9%
	1710030213	Umpqua Interior Foothills	33.3%	55.6%
Coos	1710030401	Mid-Coastal Sedimentary	84.0%	94.8%
	1710030402	Mid-Coastal Sedimentary	89.3%	92.6%
	1710030403	Coastal Uplands	81.3%	43.2%
Coquille	1710030501	Mid-Coastal Sedimentary	47.9%	75.7%
	1710030502	Mid-Coastal Sedimentary	77.3%	73.9%
	1710030503	S.n Oregon Coastal Mtns	91.7%	90.3%
	1710030504	Mid-Coastal Sedimentary	93.9%	90.3%
	1710030505	Mid-Coastal Sedimentary	86.7%	100.0%
	1710030506	Coastal Lowlands	85.7%	n.a.
Floras	1710030601	S.n Oregon Coastal Mtns	81.8%	84.1%
Sixes	1710030602	S.n Oregon Coastal Mtns	32.6%	55.0%

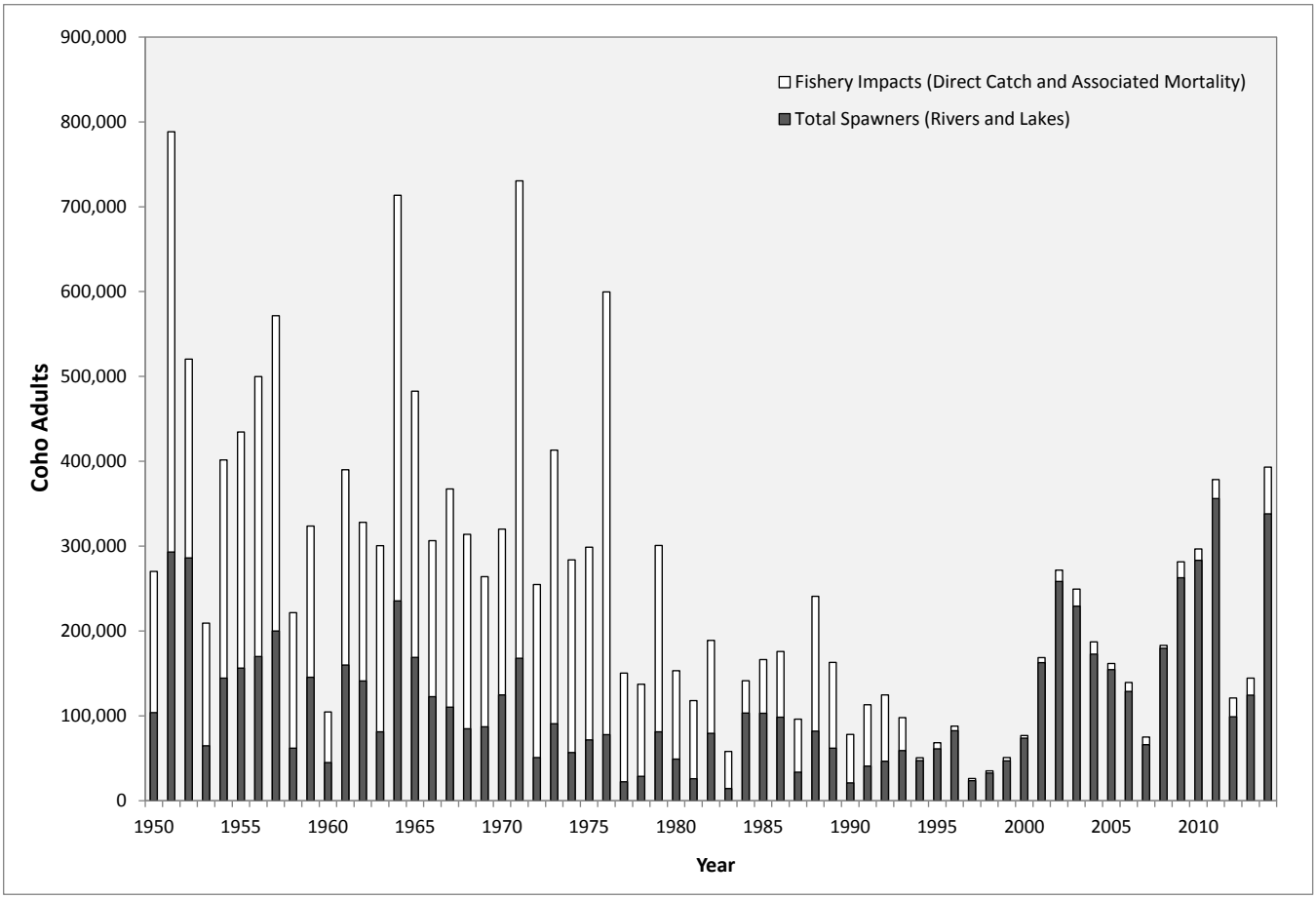

Figure 1. Oregon Coast Coho ESU native spawner abundance and fishery harvest impacts: 1950-2013. Spawner abundance data for 1950-1989 are from standard coho surveys calibrated to ODFW Stratified Random Surveys (1990-1997). Beginning in 1998, spawner abundance data are from EMAP spatially balanced surveys. Estimated fishery impacts were for naturally produced coho in the Oregon Production Index Area (Table III-5 in Review of 2014 Ocean Salmon Fisheries, Pacific Fishery Management Council - http://www.pcouncil.org/wp-content/uploads/salsafe2014_chpIII.pdf). 2014 data are provisional.

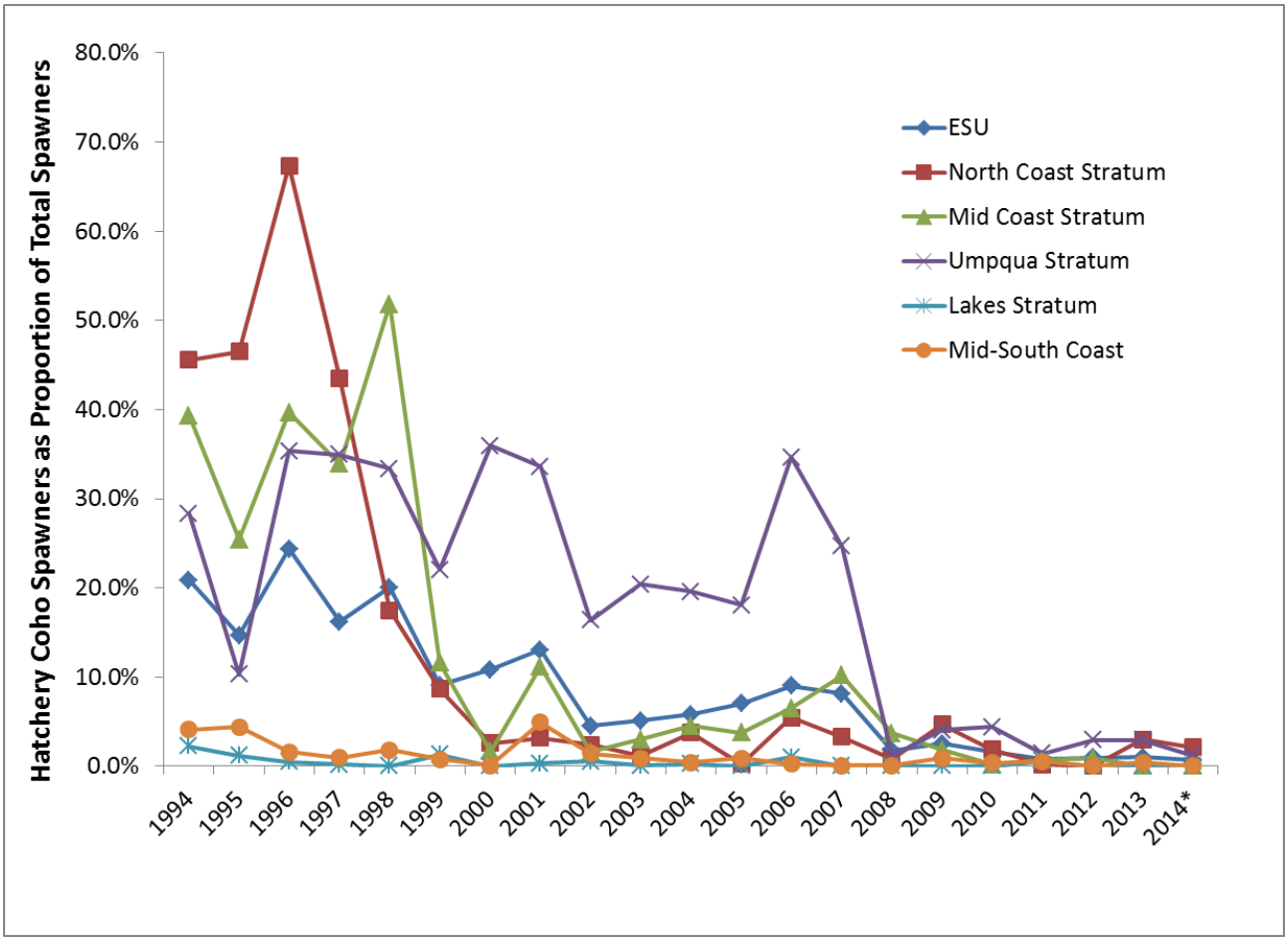

Figure 2. Proportion of hatchery origin coho salmon in each stratum of the Oregon Coast Coho ESU, 1994-2014. *2014 data are provisional.