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MEMORANDUM

TO: Henry Franzoni, CRITFC

FROM: Michele DeHart, FPC

DATE: September 15, 2014

RE: Summary of Smolt-to-Adult Return rates distributed through the FPC web site

This memorandum is in response to your request to summarize the Smolt-to-Adult Return data included on the FPC website at (www.fpc.org). The FPC website includes Smolt-to-Adult return rates (SARs) for groups of salmon and steelhead from the Comparative Survival Study (CSS). The CSS began in 1996 as a collaborative study with analyses conducted through a CSS Oversight Committee, with representation from WDFW, ODFW, IDFG, CRITFC and USFWS. All CSS results are distributed to the region through the FPC website. One objective of the CSS is to develop a long-term data series of SARs by Major Population Groups (MPG). The CSS methods and analyses are agreed upon by the CSS Oversight Committee. In addition, the Independent Scientific Advisory Board of the Northwest Power and Conservation Council (NPCC) reviews and comments on the draft CSS Annual Report each year.

One of the key objectives of the CSS is to maximize efficiency and benefit from PIT-tag groups. This includes wild and hatchery fish. To this end, the CSS works collaboratively with regional entities to utilize existing PIT-tag groups as well as CSS-specific mark groups in CSS analyses. Calculation of SARs with some level of precision requires mark groups of adequate size. In some cases, for some MPGs, particularly for wild populations, the number of juveniles available for marking is too low to provide an adequate mark group. In these cases groups may be aggregated to calculate an SAR. The following tables are provided to illustrate the SARs that are available on the FPC website (http://www.fpc.org/survival/css_annual_sars_SNK_COL_queryv3.html).

Table 1. Group names, reaches, and migration years for Snake River spring/summer (sp/su) Chinook, steelhead, and sockeye (above Lower Granite Dam).

CSS Group	Reach(es)	Migration Years^A
Aggregate Snake R wild sp/su Chinook (above LGR)	LGR-to-GRA, LGR-to-BOA	1994-2012
Clearwater R wild sp/su Chinook (MPG)	LGR-to-GRA, LGR-to-BOA	2006-2012
Grande Ronde R. wild sp/su Chinook (MPG)	LGR-to-GRA, LGR-to-BOA	2006-2012
Imnaha R. wild sp/su Chinook (MPG)	LGR-to-GRA, LGR-to-BOA	2006-2012
South Fork Salmon R. wild sp/su Chinook (MPG)	LGR-to-GRA, LGR-to-BOA	2006-2012
Middle Fork Salmon R. wild sp/su Chinook (MPG)	LGR-to-GRA, LGR-to-BOA	2006-2012
Upper Salmon R. wild sp/su Chinook (MPG)	LGR-to-GRA, LGR-to-BOA	2006-2012
Dworshak Hatchery spring Chinook	LGR-to-GRA, LGR-to-BOA	1997-2012
Rapid River Hatchery spring Chinook	LGR-to-GRA, LGR-to-BOA	1997-2012
Catherine Creek Hatchery Chinook	LGR-to-GRA, LGR-to-BOA	2001-2012
McCall Hatchery summer Chinook	LGR-to-GRA, LGR-to-BOA	1997-2012
Imnaha Hatchery summer Chinook	LGR-to-GRA, LGR-to-BOA	1997-2012
Clearwater Hatchery spring Chinook	LGR-to-GRA, LGR-to-BOA	2006-2012
Clearwater Hatchery summer Chinook	LGR-to-GRA, LGR-to-BOA	2011-2012
Sawtooth Hatchery spring Chinook	LGR-to-GRA, LGR-to-BOA	2007-2012
Pahsimeroi Hatchery summer Chinook	LGR-to-GRA, LGR-to-BOA	2008-2012
Aggregate Snake R wild steelhead (above LGR)	LGR-to-GRA, LGR-to-BOA	1997-2011
Clearwater R. wild steelhead (MPG)	LGR-to-GRA, LGR-to-BOA	2006-2011
Grande Ronde R. wild steelhead (MPG)	LGR-to-GRA, LGR-to-BOA	2006-2011
Imnaha R. wild steelhead (MPG)	LGR-to-GRA, LGR-to-BOA	2006-2011
Salmon R. wild steelhead (MPG)	LGR-to-GRA, LGR-to-BOA	2006-2011
Snake R wild A-run steelhead	LGR-to-GRA, LGR-to-BOA	2006-2011
Snake R wild B-run steelhead	LGR-to-GRA, LGR-to-BOA	2006-2011
Snake River Hatchery steelhead (agg. all sub-basins)	LGR-to-GRA, LGR-to-BOA	1997-2011
Grande Ronde R (A-run) hatchery steelhead	LGR-to-GRA, LGR-to-BOA	2008-2011
Imnaha R. (A-run) hatchery steelhead	LGR-to-GRA, LGR-to-BOA	2008-2011
Salmon R. (A-run) hatchery steelhead	LGR-to-GRA, LGR-to-BOA	2008-2011
Salmon R. (B-run) hatchery steelhead	LGR-to-GRA, LGR-to-BOA	2008-2011
Clearwater R. (B-run) hatchery steelhead	LGR-to-GRA, LGR-to-BOA	2008-2011
Hells Canyon Dam (A-run) hatchery steelhead	LGR-to-GRA, LGR-to-BOA	2009-2011
Snake River hatchery sockeye (Sawtooth Hatchery)	LGR-to-GRA, LGR-to-BOA	2009-2012
Snake River hatchery sockeye (Oxbow Hatchery)	LGR-to-GRA, LGR-to-BOA	2009-2012

^A – SARs for 2012 (Chinook and sockeye) and 2011 (steelhead) will be available on the web after Final 2014 CSS Annual Report is finished (~Dec. 2014).

Table 2. Group names, reaches, and migration years for fall Chinook groups from the CSS (subyearling releases only).

CSS Group^A	Reach(es)	Migration Years^B
Snake River wild fall Chinook	LGR-to-BOA, LGR-to-GRA	2006, 2008, 2009, 2011
Big Canyon Creek, Lyons Ferry Hatchery Snake River fall Chinook	LGR-to-BOA, LGR-to-GRA	2006-2011
Captain Johns Rapids, Lyons Ferry Hatchery Snake River fall Chinook	LGR-to-BOA, LGR-to-GRA	2007-2011
Grande Ronde R., Irrigon Hatchery Snake River fall Chinook	LGR-to-BOA, LGR-to-GRA	2008-2011
Pittsburg Landing, Lyons Ferry Hatchery Snake River fall Chinook	LGR-to-BOA, LGR-to-GRA	2006-2011
Captain Johns Rapids, Dworshak Hatchery Snake River fall Chinook (Snake River surrogates)	LGR-to-BOA, LGR-to-GRA	2006-2011
Couse Creek, Lyons Ferry Hatchery Snake River fall Chinook	LGR-to-BOA, LGR-to-GRA	2006-2011
Hells Canyon Dam, Umatilla Hatchery Snake River fall Chinook	LGR-to-BOA, LGR-to-GRA	2006-2011
Hanford Reach wild fall Chinook	MCN-to-BOA, Rel-to-BOA	2000-2011
Spring Creek NFH Hatchery fall Chinook	BON-to-BOA, Rel-to-BOA	2008-2011
Little White Salmon NFH fall Chinook	BON-to-BOA, Rel-to-BOA	2008-2011
Deschutes River wild fall Chinook	BON-to-BOA, Rel-to-BOA	2011

^A – Snake River groups listed here represent only those that have four or more years of SAR data available. More release groups are available via the web but for only 1–3 years.

^B – SARs for 2011 will be available on the web after Final 2014 CSS Annual Report is finished (~Dec. 2014).

Table 3. Group names, reaches, and migration years for Lower, Mid-, and Upper Columbia spring Chinook and steelhead.

CSS Group	Reach(es)	Migration Years^A
John Day R. wild spring Chinook	JDA-to-BOA	2000-2012
Yakima R. wild spring Chinook	MCN-to-MCA ^B , MCN-to-BOA	2000-2012
Carson Hatchery spring Chinook	BON-to-BOA, Rel-to-BOA	2000-2012
Warm Springs NFH spring Chinook	BON-to-BOA, Rel-to-BOA	2007-2012
Cle Elum Hatchery spring Chinook	MCN-to-MCA ^B , MCN-to-BOA	2000-2012
Upper Columbia wild spring Chinook (Wenatchee R)	MCN-to-BOA	2007-2012
Upper Columbia wild spring Chinook (Entiat & Methow R)	MCN-to-BOA RRE-to-BOA	2006-2012 2008-2012
Leavenworth NFH spring Chinook	MCN-to-BOA	2000-2012
Upper Columbia wild and hatchery yearling Chinook (tagged at Rock Island Dam)	RIS-to-BOA	2000-2012
Upper Columbia wild and hatchery subyearling Chinook (tagged at Rock Island Dam)	RIS-to-BOA	2000-2012
John Day R. wild steelhead	JDA-to-BOA	2004-2011
Deschutes R. (Trout Creek) wild steelhead	BON-to-BOA	2006-2011
Yakima R. wild steelhead	MCN-to-MCA ^B , MCN-to-BOA	2002-2011
Upper Columbia wild steelhead (Entiat, Methow, and Wenatchee R)	MCN-to-BOA	2006-2011
Upper Columbia wild steelhead (Entiat & Methow R)	RRE-to-BOA	2008-2011
Upper Columbia hatchery steelhead (Wenatchee R)	MCN-to-BOA	2003-2011
Upper Columbia wild and hatchery steelhead (tagged at Rock Island Dam)	RIS-to-BOA	2000-2011

^A – SARs for 2012 (Chinook) and 2011 (steelhead) will be available on the web after Final 2014 CSS Annual Report is finished (~Dec. 2014).

^B – SARs for MCN-to-MCA reach are only for 2002–2012 and will be available on the web after Final 2014 CSS Annual Report is finished (~Dec. 2014).