Northwest **Power** and **Conservation** Council

Quantitative Objectives Report

Report: **Coho**

Document: **Washington Lower Columbia Salmon Recovery and Fish and Wildlife Subbasin Plan - Washington Management Plan in Lower Columbia River Recovery Plan for Salmon and Steelhead**

Author: Lower Columbia Fish Recovery Board

Document Year: **2010**

Link: http://media.wix.com/ugd/810197_ed97ad06e02445f5927163b568dccd3c.pdf

Coho

Recovery Domain	Recovery Sub Domain	ESU/DPS	MPG	Population	Run	ESA Listed	Abundance Target	Contribution	Viability Objective	Productivity Improvement Target(%)
Willamette Lower Columbia	Lower Columbia River	Lower Columbia River Coho	Cascade	Toutle SF	Early-run (Type-S)and Late-run (Type-N)	Threatened	1900	Primary	High	180
				Washougal	Late-run (Type-N)	Threatened	1500	Contributing	Moderate +	>500
				Salmon	Late-run (Type-N)	Threatened	NA	Stabilizing	Very Low	0
				EF Lewis	Early-run (Type-S)and Late-run (Type-N)	Threatened	2000	Primary	High	>500
				NF Lewis	Early-run (Type-S)and Late-run (Type-N)	Threatened	500	Contributing	Low	50
				Kalama	Late-run (Type-N)	Threatened	500	Contributing	Low	>500
				Toutle NF	Early-run (Type-S)and Late-run (Type-N)	Threatened	1900	Primary	High	180
				Tilton	Early-run (Type-S)and Late-run (Type-N)	Threatened	NA	Stabilizing (2)	Very Low (2)	0
				Cispus	Early-run (Type-S)and Late-run (Type-N)	Threatened	2000	Primary (1)	High (1)	>500

Willamette Lower Columbia	Lower Columbia River	Lower Columbia River Coho	Cascade	Upper Cowlitz	Late-run (Type-N)	Threatened	2000	Primary (1)	High (1)	>500
				Lower Cowlitz	Late-run (Type-N)	Threatened	3700	Primary	High	100
				Coweeman	Late-run (Type-N)	Threatened	1200	Primary	High	170
Willamette Lower Columbia	Lower Columbia River	Lower Columbia River Coho	Coast	Elochoman/Skamokawa	Late-run (Type-N)	Threatened	2400	Primary	High	170
				Grays/Chinook	Late-run (Type-N)	Threatened	2400	Primary	High	370
				Mill/Abernathy/Germany	Late-run (Type-N)	Threatened	1800	Contributing	Moderate	>500
Willamette Lower Columbia	Lower Columbia River	Lower Columbia River Coho	Gorge	Upper Gorge	Late-run (Type-N)	Threatened	1900	Primary (1)	High	400
				Lower Gorge	Late-run (Type-N)	Threatened	1900	Primary	High	400

FOOTNOTES:
(1) Increase relative to Interim Plan
(2) Reduction relative to the Interim Plan

Document: **Lower Columbia River Conservation and Recovery Plan for Oregon Populations of Salmon and Steelhead**

Author: ODFW

Document Year: **2010**

Link: http://www.dfw.state.or.us/fish/CRP/docs/lower-columbia/OR_LCR_Plan%20-%20Aug_6_2010_Final.pdf

Coho

Recovery Domain	Recovery Sub Domain	ESU/DPS	MPG	Population	Run	ESA Listed	Abundance	Overall Risk Class	A&P Gap	Contribution to Delisting
Willamette Lower Columbia	Lower Columbia River	Lower Columbia River Coho	Coast	Clatskanie	Late (Type N)	Threatened	3201	Very Low	1838	Primary
				Sandy River	Early and Late	Threatened	5685	Low	4063	Primary

Willamette Lower Columbia	Lower Columbia River	Lower Columbia River Coho	Coast	Youngs Bay	Late	Threatened	7	Very High	3	Stabalizing
				Clackamas	Early and Late	Threatened	11232	Very Low	4684	Primary
				Black Creek	Late	Threatened	12	Very High	4	Stabalizing
				Scappoose River	Late	Threatened	3208	Very Low	1266	Primary
Willamette Lower Columbia	Lower Columbia River	Lower Columbia River Coho	Gorge	Lower Gorge Tributaries	Late (Type N)	Threatened	962	High (Low)	940	Support WA (L)
				Upper Gorge/Hood River	Early (Type N)	Threatened	5203	Low	5162	Primary
Willamette Lower Columbia	Lower Columbia River	Lower Columbia River Coho	N/A	Bonneville			NA	NA	NA	NA

NOTES:
Oregon recognizes the ESU as a State Management Unit - Lower Columbia River Coho□
Oregon State Status - Endangered□
Oregon identified the Gorge populations as a single population □
Oregon identified the Bonneville populaitons as a single population □
The desired status (Overall Risk Class) for population which are not part of an ESA-listed ESU are indicated in parentheses

Document: **Revised Viability Criteria for Salmon and Steelhead in the Willamette and Lower Columbia Basins**

Author: Willamette/Lower Columbia Technical Recovery Team, ODFW Document Year: **2006**

Link: http://www.fws.gov/pacific//Fisheries/Hatcheryreview/Reports/columbiagorge/EC--032Revised_Viability_CriteriaLC-TRTApril_2006.pdf

Coho

Recovery Domain	Recovery Sub Domain	ESU/DPS	MPG	Population	Run	ESA Listed	Size Category	RFT and QET
Willamette Lower Columbia	Lower Columbia River	Lower Columbia River Coho	Cascade	Clackamas	Early and Late	Threatened	Large	300
				Sandy River	Eraly and Late	Threatened	Large	300

Willamette Lower Columbia	Lower Columbia River	Lower Columbia River Coho	Coast	Clatskanie	Late Type-N	Threatened		Medium	200
				Scappoose River	Late	Threatened		Medium	200
				Youngs Bay	Late	Threatened		Small	100
				Big Creek	Late	Threatened		Small	100
Willamette Lower Columbia	Lower Columbia River	Lower Columbia River Coho	Gorge	Lower Gorge Tributaries	Late Type-N	Threatened		Small	100
				Hood River	Early Type-S	Threatened		Medium	200

Document: **ESA Recovery Plan for Lower Columbia River Coho Salmon, Lower Columbia River Chinook Salmon, Columbia River Chum Salmon, and Lower Columbia River Steelhead**

Author: NOAA Fisheries

Document Year: **2013**

Link: http://www.westcoast.fisheries.noaa.gov/publications/recovery_planning/salmon_steelhead/domains/willamette_lowercol/lower_columbia/final_plan_documents/final_lcr_plan_june_2013_-corrected.pdf

Coho

Recovery Domain	Recovery Sub Domain	ESU/DPS	MPG	Population	Run	ESA Listed	Target Persistence Probability	Expected level of Contribution	Target Abundance	% Survival Improvement
Willamette Lower Columbia	Lower Columbia River	Lower Columbia River Coho	Cascade	Toutle NF	Late - Type N	Threatened	High	Primary	1900	180
				Lower Cowlitz	Early and Late Type S and N	Threatened	High	Primary	3700	100
				Upper Cowlitz	Late - Type N	Threatened	High	Primary	2000	>500
				Cispus	Early and Late Type S and N	Threatened	High	Primary	2000	>500

Willamette Lower Columbia	Lower Columbia River	Lower Columbia River Coho	Cascade	EF Lewis	Early - Type S and N	Threatened	High	Primary	2000	>500
				Toutle SF	Early – Type S	Threatened	High	Primary	1900	180
				Coweeman	Late - Type N	Threatened	High	Primary	1200	170
				Kalama	Late - Type N	Threatened	Low	Contributing	500	>500
				NF Lewis	Early - Type S and N	Threatened	Low	Contributing	500	50
				Clackamas	Early and Late	Threatened	Very High	Primary	11232	70
				Sandy River	Early and Late	Threatened	High	Primary	5685	250
				Tilton	Early and Late Type S and N	Threatened	Very Low	Stabalizing	NA	0
				Washougal	Late - Type N	Threatened	Moderate +	Contributing	1500	>500
Willamette Lower Columbia	Lower Columbia River	Lower Columbia River Coho	Coast	Grays/Chinook	Late – Type-N	Threatened	High	Primary	2400	370
				Mill/Abernathy /Germany	Type-N	Threatened	Moderate	Contributing	1800	>500
				Elochoman/Skamokawa	Late – Type-N	Threatened	High	Primary	2400	170
				Clatskanie	Late – Type N	Threatened	Very High	Primary	3201	140
				Scappoose River	Late	Threatened	Very High	Primary	3208	60
				Youngs Bay	Late	Threatened	Very Low	Stabalizing	7	60
				Big Creek	Late	Threatened	Very Low	Stabalizing	12	60
Willamette Lower Columbia	Lower Columbia River	Lower Columbia River Coho	Gorge	Upper Gorge/Hood River	Early Type S	Threatened	High (2)	Primary	5162	>500
				Lower Gorge	Late - Type N	Threatened	High	Primary	1900	400 (WA), >500 (OR)
				Upper Gorge/White Salmon	Late - Type N	Threatened	High	Primary	1900	>400

FOOTNOTES:
(1) Survival improvements indicate the percentage improvement (rounded to the nearest 10) in population survival needed to achieve target impacts and are derived from the cumulative values (baseline and target). For most populations this was calculated using the following equation: [(1-CumulativeTarget)-(1-CumulativeBaseline)]/[1-CumulativeBaseline] x 100. For some Washington populations (Mill/Abernathy/Germany, Lower Cowlitz, Kalama, Upper Gorge), this equation yields a different result than that reported in 2010 by the LCFRB. Because, for populations that have a very low probability of persistence and require very large improvements, the Washington management unit plan limited threat-specific reductions to 50 percent of the current impact as interim targets until the population response to improvements can be accurately gauged. For those populations, the numbers reported in this table are consistent with the LCFRB's recommendations rather than with the aforementioned equation. In addition, these cumulative impact numbers are not explicitly reported by ODFW in 2010 but are implicit in the modeling approach that Oregon recovery planners used to derive target impacts. For populations where the survival improvement needed is larger than 500 percent, this table does not report the exact value, for the reasons explained in Section 6.5. For Oregon populations designated as stabilizing (Youngs Bay and Big Creek), a survival improvement is shown because of improvements that are expected in tributary habitat, estuary conditions, and predation.

(2) Oregon's analysis indicates a low probability of meeting the delisting or objecive of High persistence probability for this population.

Document: **Tucannon Subbasin Plan**

Author: Northwest Power and Conservation Council and Partners

Document Year: **2004**

Link: http://www.nwcouncil.org/media/120068/Entire_Document.pdf

Coho

Recovery Domain	Recovery Sub Domain	ESU/DPS	MPG	Population	Run	ESA Listed	Long-Term Return	Natural Spawning Component
No Recovery Domain	NA	Upper Columbia River Coho	N/A	Tucannon		Not Listed	Undefined	Undefined

FOOTNOTES:
(1) Nez Perce Tribe Coho Adult Return Goals -Goals are derived from various management plans as described in Appendix A. This table does not necessarily imply consensus by all management agencies but merely gives direction to managers who must workout the restoration and recovery of each specie and population over time through implementation of the plan.

Document: **Umatilla Subbasin Plan**

Author: Northwest Power and Conservation Council and Partners

Document Year: **2004**

Link: http://www.nwcouncil.org/media/120142/EntirePlan.pdf

Coho

Recovery Domain	Recovery Sub Domain	ESU/DPS	MPG	Population	Run	ESA Listed	Total Return	Natural Return	Hatchery Return
No Recovery Domain	NA	NA	N/A	Umatilla		Not Listed	6000	1568	6000

FOOTNOTES:
(1) 1987 United States vs Oregon Subbasin Production Reports;
(2) 1990 NPPC Subbasin Plan
(3) EDT natural production estimates were derived from the PFC analysis in this this plan in Section 3.6.1.2. Total return objectives using the EDT tool are under development by fisheries managers.

Document: **Nez Perce Tribe Department of Fisheries Resources Management Management Plan 2013-2018**

Author: Nez Perce Tribe

Document Year: **2013**

Link: http://www.nptfisheries.org/portals/0/images/dfrm/home/fisheries-management-plan-final-sm.pdf

Coho

Recovery Domain	Recovery Sub Domain	ESU/DPS	MPG	Population	Run	ESA Listed	Escapement Goals
Interior Columbia	Snake River	NA	Clearwater	Clearwater			14000
Interior Columbia	Snake River	NA	Grande-Ronde-Imnaha	White Salmon			20000
				Grande Ronde			3500
Interior Columbia	Snake River	NA	N/A	Tucannon			Undefined

FOOTNOTES:
(1) Summary of escapement goals from NPCC subbain plans presented in the NPT 2013 Management Plan

Document: **Lower Columbia Salmon Recovery and Fish and Wildlife Subbasin Plan**

Author: Northwest Power and Conservation Council and Partners

Document Year: **2004**

Link: http://www.nwcouncil.org/media/6865748/RP.pdf

Coho

Recovery Domain	Recovery Sub Domain	ESU/DPS	MPG	Population	Run	ESA Listed	Abundance Goal	Viability Goal	Scenerio Contribution
Willamette Lower Columbia	Lower Columbia River	Lower Columbia River Coho	Cascade	Kalama	Late - Type N	Threatened	300	Medium	Contributing
				Lower Cowlitz	Early and Late Type S and N	Threatened	600	High	Primary
				Upper Cowlitz	Late - Type N	Threatened	300	Medium	Contributing
				Cispus	Early and Late Type S and N	Threatened	300	Medium	Contributing
				Tilton	Early and Late Type S and N	Threatened	150	Low	Contributing
				Toutle SF	Early - Type S	Threatened	600	High	Primary
				Salmon		Threatened	75	Very Low	Stabilizing
				Coweeman	Late - Type N	Threatened	600	High	Primary
				NF Lewis	Early - Type S and N	Threatened	600	High	Contributing
				Toutle NF	Late - Type N	Threatened	600	High	Primary
				Washougal	Late - Type N	Threatened	300	Medium	Contributing
				Clackamas	Early and Late	Threatened	NA	High+	Primary
				EF Lewis	Early - Type S and N	Threatened	600	High	Primary
				Sandy River	Early and Late	Threatened	NA	High+	Primary

Willamette Lower Columbia	Lower Columbia River	Lower Columbia River Coho	Coast	Grays/Chinook	Late - Type-N	Threatened	600	High	Primary
				Scappoose River	Late	Threatened	NA	High	Primary
				Clatskanie	Late - Type N	Threatened	NA	Low	Stabilizing
				Elochoman/Skamokawa	Late - Type-N	Threatened	600	High	Primary
				Big Creek	Late	Threatened	NA	High	Primary
				Mill/Abernathy/Germany	Type-N	Threatened	300	Medium	Contributing
				Youngs Bay	Late	Threatened	NA	Low	Stabilizing
Willamette Lower Columbia	Lower Columbia River	Lower Columbia River Coho	Gorge	Wind	Late - Type N	Threatened	600	High	Primary
				White Salmon		Threatened	150	Low	Contributing
				Lower Gorge	Late - Type N	Threatened	600	High	Primary
				Hood River	Early Type S	Threatened	NA	Medium	Contributing

Document: **Grays Subbasin Plan**

Author: Northwest Power and Conservation Council and Partners

Document Year: **2004**

Link: http://www.nwcouncil.org/media/21265/Vol_II_C__Grays.pdf

Coho

Recovery Domain	Recovery Sub Domain	ESU/DPS	MPG	Population	Run	ESA Listed	Number Objective	Viability Objective
Willamette Lower Columbia	Lower Columbia River	Lower Columbia River Coho	Coast	Grays/Chinook	Late-run (Type-N)	Threatened	600	High

NOTES:
Primary population in recovery scenario

Document: **Elochoman, Skamakowa, Mill, Abernathy, and Germany Subbasin Plan**

Author: Northwest Power and Conservation Council and Partners

Document Year: **2004**

Link: http://www.nwcouncil.org/media/119235/Vol_II_D__Eloch_MAG.pdf

Coho

Recovery Domain	Recovery Sub Domain	ESU/DPS	MPG	Population	Run	ESA Listed	Number Objective	Viability Objective
Willamette Lower Columbia	Lower Columbia River	Lower Columbia River Coho	Coast	Elochoman/Skamokawa	Late-run (Type-N)	Threatened	600	High

NOTES:
Primary population in recovery scenario

Document: **Cowlitz, Coweeman, and Toutle Subbasin Plan**

Author: Northwest Power and Conservation Council and Partners

Document Year: **2004**

Link: http://www.nwcouncil.org/media/119238/Vol_II_E__Cowlitz.pdf

Coho

Recovery Domain	Recovery Sub Domain	ESU/DPS	MPG	Population	Run	ESA Listed	Number Objective	Viability Objective
Willamette Lower Columbia	Lower Columbia River	Lower Columbia River Coho	Cascade	Lower Cowlitz	Late-run (Type-N)	Threatened	600	High

NOTES:
Primary population in recovery scenario

Document: **Kalama Subbasin Plan**

Author: Northwest Power and Conservation Council and Partners

Document Year: **2004**

Link: http://www.nwcouncil.org/media/21268/Vol_II_F__Kalama.pdf

Coho

Recovery Domain	Recovery Sub Domain	ESU/DPS	MPG	Population	Run	ESA Listed	Number Objective	Viability Objective
Willamette Lower Columbia	Lower Columbia River	Lower Columbia River Coho	Cascade	Kalama	Late-run (Type-N)	Threatened	300	Medium

NOTES:
Contributing population in recovery scenario

Document: **NF and EF Lewis Subbasin Plan**

Author: Northwest Power and Conservation Council and Partners

Document Year: **2004**

Link: http://www.nwcouncil.org/media/119241/Vol_II_G__Lewis.pdf

Coho

Recovery Domain	Recovery Sub Domain	ESU/DPS	MPG	Population	Run	ESA Listed	Number Objective	Viability Objective
Willamette Lower Columbia	Lower Columbia River	Lower Columbia River Coho	Cascade	EF Lewis	Early-run (Type-S)and Late-run (Type-N)	Threatened	600	High

NOTES:
Primary population in recovery scenario

Document: **Lower Columbia Tributaries: Bonneville and Salmon Subbasin Plan**

Author: Northwest Power and Conservation Council and Partners

Document Year: **2004**

Link: http://www.nwcouncil.org/media/21271/Vol_II_H__L_Columbia_Tribs.pdf

Coho

Recovery Domain	Recovery Sub Domain	ESU/DPS	MPG	Population	Run	ESA Listed	Number Objective	Viability Objective
Willamette Lower Columbia	Lower Columbia River	Lower Columbia River Coho	Gorge	Lower Gorge Tributaries	Late-run (Type-N)	Threatened	600	High

NOTES:
Primary population in recovery scenario

Document: **Washougal Subbasin Plan**

Author: Northwest Power and Conservation Council and Partners

Document Year: **2004**

Link: http://www.nwcouncil.org/media/21274/Vol_II_I__Washougal.pdf

Coho

Recovery Domain	Recovery Sub Domain	ESU/DPS	MPG	Population	Run	ESA Listed	Number Objective	Viability Objective
Willamette Lower Columbia	Lower Columbia River	Lower Columbia River Coho	Cascade	Washougal	Late-run (Type-N)	Threatened	300	Medium

NOTES:
Contributing population in recovery scenario

Document: **Wind Subbasin Plan**

Author: Northwest Power and Conservation Council and Partners

Document Year: **2004**

Link: http://www.nwcouncil.org/media/21277/Vol_II_J__Wind.pdf

Coho

Recovery Domain	Recovery Sub Domain	ESU/DPS	MPG	Population	Run	ESA Listed	Number Objective	Viability Objective
Willamette Lower Columbia	Lower Columbia River	Lower Columbia River Coho	Gorge	Wind	Late-run (Type-N)	Threatened	600	High

NOTES:
Primary population in recovery scenario

Document: **Upper Gorge Tributaries Subbasin Plan**

Author: Northwest Power and Conservation Council and Partners

Document Year: **2004**

Link: http://www.nwcouncil.org/media/21283/Vol_II_L__Gorge_Tribs.pdf

Coho

Recovery Domain	Recovery Sub Domain	ESU/DPS	MPG	Population	Run	ESA Listed	Number Objective	Viability Objective
Willamette Lower Columbia	Lower Columbia River	Lower Columbia River Coho	Gorge	Upper Gorge	Late-run (Type-N)		600	High

NOTES:
Primary population in recovery

Document: **White Salmon Subbasin Plan**

Author: Northwest Power and Conservation Council and Partners

Document Year: **2004**

Link: http://www.nwcouncil.org/media/116777/EntirePlan.pdf

Coho

Recovery Domain	Recovery Sub Domain	ESU/DPS	MPG	Population	Run	ESA Listed	Abundance	Productivity	Diversity Index %	Capacity
Willamette Lower Columbia	Lower Columbia River	Lower Columbia River Coho	Gorge	White Salmon	Late - Type N	Threatened	Short-Term: 952; Long-Term: 1227	Short-Term: 2; Long-Term: 3	Short-Term: 15; Long-Term: 57	Short-Term: 1898; Long-Term: 1828

NOTES:
WDFW objectives
Short-term biological objective under dam removal
Long-term biological objective under dam removal and PFC