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 DEPARTMENT OF FISH AND WILDLIFE  
 Fish Program • Science Division  
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**FINAL**

**PART II**

Adult Abundance Analysis Review, Interpretation by Salmon Recovery Partners

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**PART II**  
Status and Trends Analysis of Adult Abundance Data

Prepared in Support of  
 Governor's Salmon Recovery Office  
 2022 State of Salmon in Watersheds Report

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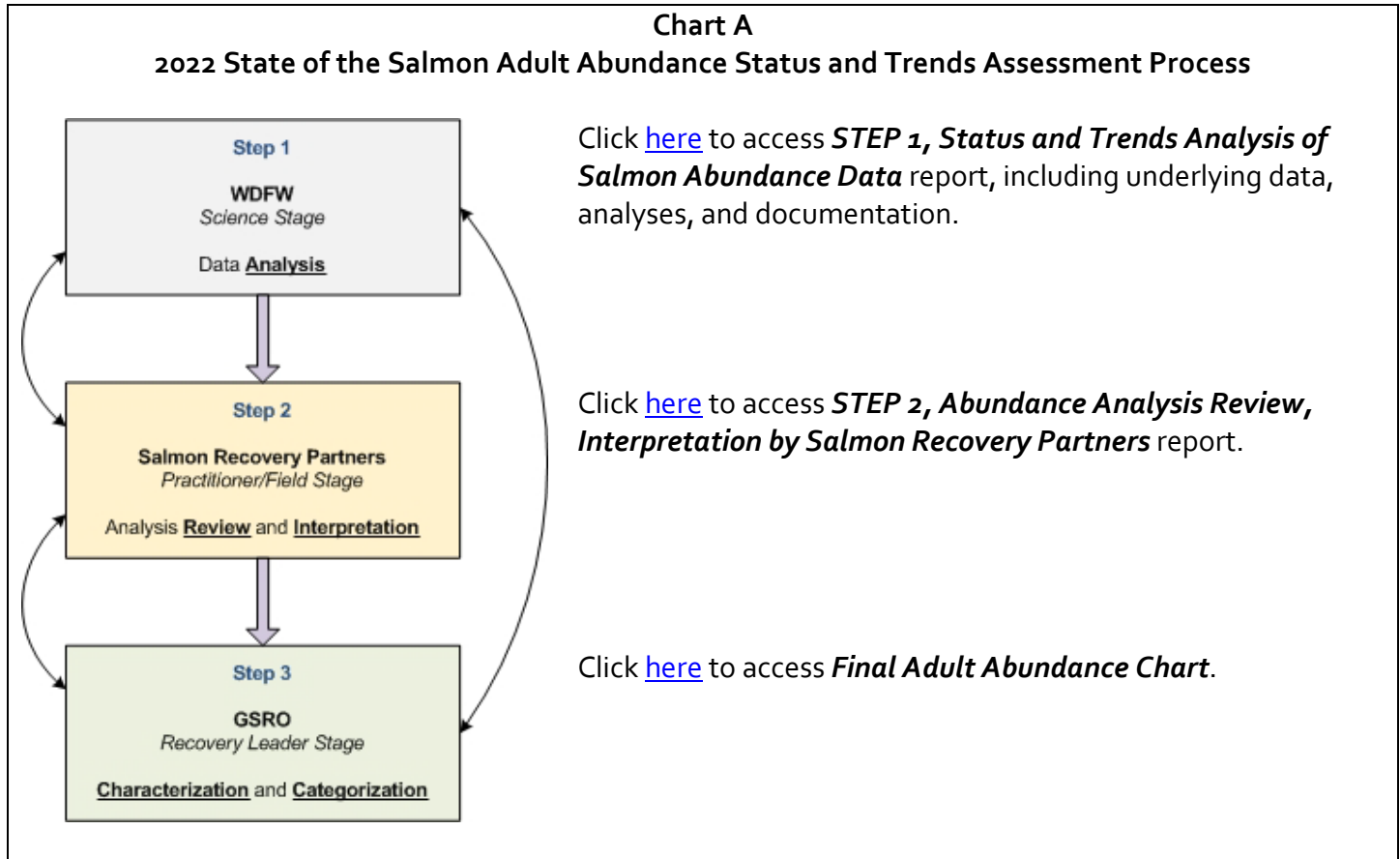
Step 1: Status and Trends Abundance Analysis (1) 12/21/2022

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## I. Introduction

The Governor's Salmon Recovery Office (GSRO) is tasked with producing a biennial "State of the Salmon" report. For 2022, WDFW (Fish Science Division) has assisted GSRO with development of a sound body of analytic work to assess adult abundance status and trends in Washington. This body of work is documented consistent with Chart A, Step 1 and 2. [This document is WDFW's contribution to Step 2.](#)



**II. Salmon Recovery Partner Review Perspectives**

**TABLE 1**  
**Documentation of Salmon Recovery Partner Review Perspectives**

Based on 10/04/2022 Step 1 analysis <a href="#">here</a> .	
<p><b>Hood Canal:</b>  <a href="#">Hood Canal Coordinating Council (HCCC)</a></p>	<p>For <b>Hood Canal Summer Chum ESU</b>, HCCC suggests that recovery goals employed in the State of Salmon Step 1 adult abundance analysis are from outdated viability analyses by the Technical Recovery Team (TRT). Though the National Marine Fisheries Service (NMFS) final supplement to Hood Canal Summer Chum recovery plan (2005) accepted the results of the TRT’s viability analysis in describing recovery goals (i.e., delisting criteria, as used by NMFS in the supplement; NMFS 2007), NMFS made it clear that the goals were likely to be updated as new information became available.</p> <p>HCCC, together with state and tribal co-managers, more recently updated the viability analyses along with associated viability thresholds (i.e., recovery goals). HCCC requests that these updated recovery goals be used in State of Salmon analyses, and has provided the following in support of this request:</p> <ul style="list-style-type: none"> <li>• SCSCI 5-year review 2014 thru 2018 Suppl. Report 9. 9.24.2020: <a href="https://data.wa.gov/Natural-Resources-Environment/SCSCI-5-year-review-2014-thru-2018-Suppl-Report-9-/phgk-36dr">https://data.wa.gov/Natural-Resources-Environment/SCSCI-5-year-review-2014-thru-2018-Suppl-Report-9-/phgk-36dr</a>.</li> <li>• Sands_2009_Independent pops HC summer chum: <a href="https://data.wa.gov/dataset/Sands_2009_Independent-pops-HC-summer-chum/gqpu-3irt">https://data.wa.gov/dataset/Sands_2009_Independent-pops-HC-summer-chum/gqpu-3irt</a>.</li> <li>• LL memo to SB on the 2022 SOS report_10192022: <a href="https://data.wa.gov/dataset/LL-memo-to-SB-on-the-2022-SOS-report_10192022/45nt-ntf7">https://data.wa.gov/dataset/LL-memo-to-SB-on-the-2022-SOS-report_10192022/45nt-ntf7</a>.</li> <li>• HC Summer Chum Recovery Goal Guidance_08312018 FINAL: <a href="https://data.wa.gov/dataset/HC-Summer-Chum-Recovery-Goal-Guidance_08312018-FIN/cvna-ugwn">https://data.wa.gov/dataset/HC-Summer-Chum-Recovery-Goal-Guidance_08312018-FIN/cvna-ugwn</a>.</li> <li>• Guidance for Updating SumChum Goals_FINAL_2014: <a href="https://data.wa.gov/dataset/Guidance-for-Updating-SumChum-Goals_FINAL_2014/kskc-cw8m">https://data.wa.gov/dataset/Guidance-for-Updating-SumChum-Goals_FINAL_2014/kskc-cw8m</a>.</li> </ul>
<p><b>Lower Columbia River:</b>  <a href="#">Lower Columbia Fish Recovery Board (LCFRB)</a></p>	<p>For <b>Lower Columbia River Coho ESU</b>, LCFRB recommends changing the risk status from “Approaching Goal” to “Making Progress.” Based on the NOAA five-year status review, five of seventeen Washington State populations have met viability goals, and eight have improved viability since ESA listings, less than half of total populations. None of the coast or gorge stratum populations have improved or met recovery viability goals, with viability for these populations still estimated to be “Very Low.” Average viability for all Washington populations is estimated to be “Low.” Although improvements have</p>

occurred, the limited spatial distribution as well as high pHOS rates in some populations leads us to think this ESU aligns more with the "Making Progress" risk category.

For **Columbia River Chum ESU**, LCFRB states that only four of ten Washington State populations have estimated improvements in viability since ESA listings, with only one achieving viability goals. The distribution of these populations is limited to the western and eastern extents of the region. Based on the NOAA five-year status review, average viability is assumed to be "Low" for fall chum and "Very Low" for summer chum populations. For these reasons, the LCFRB thinks that < 50% of supporting populations are improving and achieving goals today and thus this ESU aligns more with the "Not Keeping Pace" risk category.

III. WDFW Response and Perspective

**TABLE 2**  
**WDFW Response and Perspective Regarding ESU/DPS Placement**

ESU/DPS	Initial Placement (10-04-2022)	Final Placement (12-21-2022)	WDFW Response
Puget Sound Chinook ESU	In Crisis	In Crisis	
Snake River Spring/Summer Chinook ESU	In Crisis	In Crisis	
Upper Columbia River Spring Chinook ESU	In Crisis	In Crisis	
Ozette Lake Sockeye ESU	In Crisis	In Crisis	
Puget Sound Steelhead DPS*	In Crisis	In Crisis	
Lower Columbia River Chinook ESU	Not Keeping Pace	Not Keeping Pace	
Middle Columbia River Steelhead DPS	Not Keeping Pace	Not Keeping Pace	
Snake River Basin Steelhead DPS	Not Keeping Pace	Not Keeping Pace	
Upper Columbia River Steelhead DPS	Not Keeping Pace	Not Keeping Pace	
Hood Canal Summer Chum ESU	Making Progress	Approaching Goal	HCCC requests that updated recovery goals be used rather than those currently approved by NOAA. Use of NOAA-approved recovery goals would put status at "Making Progress" while use of updated recovery goals would put placement at "Approaching Goal." WDFW, for the quantitative Step 1 portion of this analysis, as well prior SOS adult abundance analyses, uses current NOAA-approved recovery goals. WDFW agrees that consideration of other factors like as have been provided by HCCC or other Salmon Recovery Regions should come into play when ultimately making final chart placement decisions.
Lower Columbia River Steelhead DPS	Making Progress	Making Progress	
Snake River Fall Chinook ESU	Approaching Goal	Approaching Goal	

Lower Columbia River Coho ESU	Approaching Goal	Making Progress	WDFW agrees with the points of LCFRB that, based on the NOAA five-year status review, a minority of the Washington populations have met viability goals and have improved viability since ESA listings, and average viability for all Washington populations is estimated to be "Low." While improvements have occurred, there is still limited spatial distribution as well as high pHOS rates in some populations. When WDFW takes into consideration the issues raised by LCFRB, such as high pHOS and current recovery being jeopardized by poor passage around dams for some of the largest populations (Cowlitz Basin, Lewis Basin), we agree with the conclusion of LCFRB that the appropriate placement is "Making Progress."
<i>Columbia River Chum ESU*</i>	Approaching Goal	Not Keeping Pace	WDFW agrees with the points of LCFRB that only four of ten Washington populations have estimated improvements in viability since ESA listings, with only one achieving viability goals. The distribution of these populations is limited to the western and eastern extents of the region, and average viability is assumed to be "Low" for fall chum and "Very Low" for summer chum populations. For these reasons, we believe that < 50% of supporting populations are improving and achieving goals today. Thus, WDFW agrees with the conclusion of LCFRB that the appropriate placement is "Not Keeping Pace."

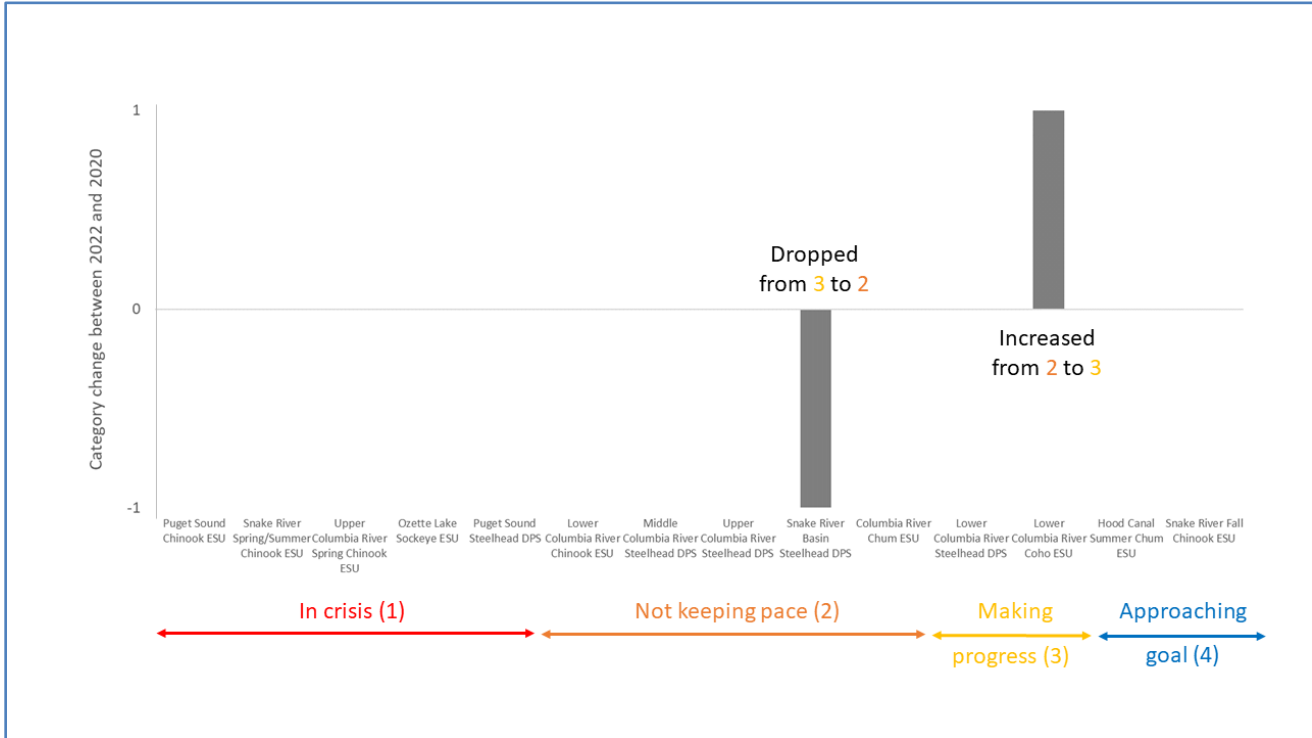
**IV. Final Adult Abundance Risk Placement**

**TABLE 3**  
**2022 Initial and Final Abundance Risk Placement Compared to 2020 Initial and Final Placement**

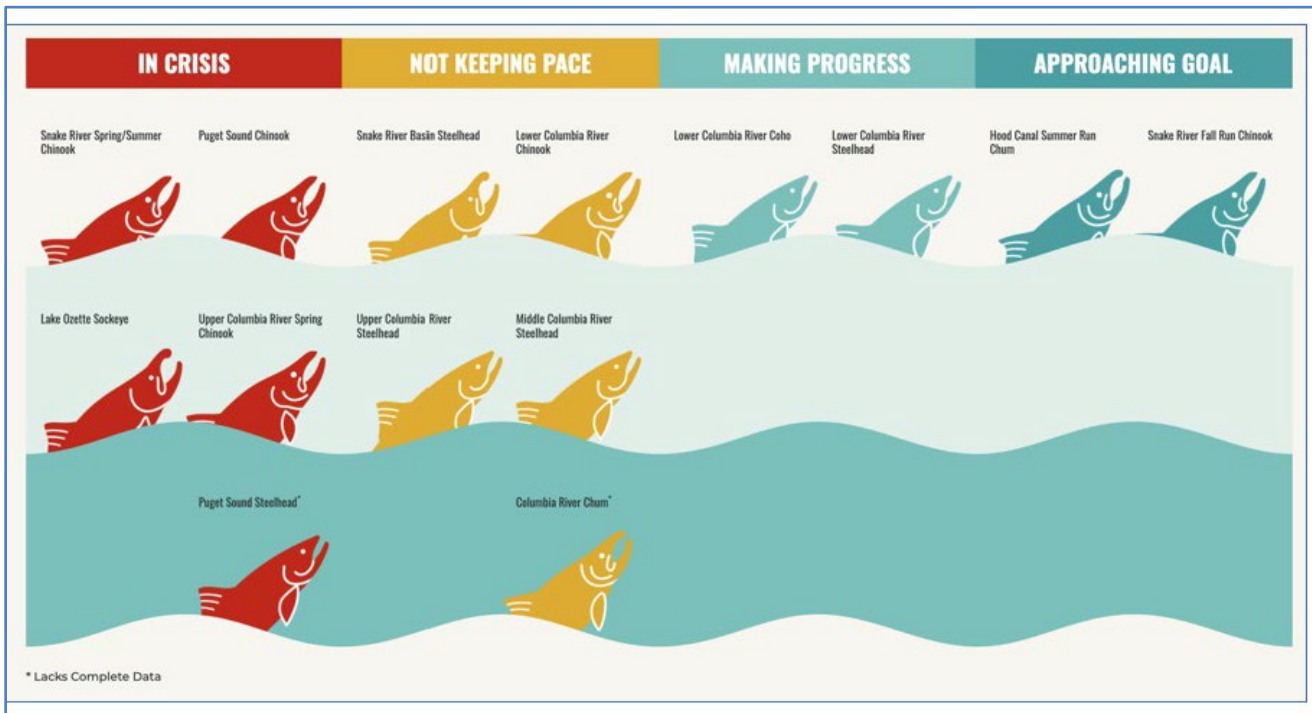
<b>ESU/DPS</b>	<b>Initial Placement (<u>10-09-2020</u>)</b>	<b>Final Placement (<u>1-13-2021</u>)</b>	<b>Initial Placement (<u>10-04-2022</u>)</b>	<b>Final Placement (<u>12-21-2022</u>)</b>	<b>WDFW Agreement with Final Placement (<u>12-21-2022</u>)</b>
Puget Sound Chinook ESU	In Crisis	In Crisis	In Crisis	In Crisis	Yes
Snake River Spring/Summer Chinook ESU	In Crisis	In Crisis	In Crisis	In Crisis	Yes
Upper Columbia River Spring Chinook ESU	In Crisis	In Crisis	In Crisis	In Crisis	Yes
Ozette Lake Sockeye ESU	In Crisis	In Crisis	In Crisis	In Crisis	Yes
Puget Sound Steelhead DPS*	In Crisis	In Crisis	In Crisis	In Crisis	Yes
Lower Columbia River Chinook ESU	Not Keeping Pace	Not Keeping Pace	Not Keeping Pace	Not Keeping Pace	Yes
Middle Columbia River Steelhead DPS	Not Keeping Pace	Not Keeping Pace	Not Keeping Pace	Not Keeping Pace	Yes
Snake River Basin Steelhead DPS	<b>Making Progress</b>	<b>Making Progress</b>	<b>Not Keeping Pace</b>	<b>Not Keeping Pace</b>	<b>Yes</b>
Upper Columbia River Steelhead DPS	Not Keeping Pace	Not Keeping Pace	Not Keeping Pace	Not Keeping Pace	Yes
Hood Canal Summer Chum ESU	Approaching Goal	Approaching Goal	<i>Not Keeping Pace</i>	<i>Approaching Goal</i>	Yes
Lower Columbia River Steelhead DPS	<i>Approaching Goal</i>	<i>Making Progress</i>	Making Progress	Making Progress	Yes
Snake River Fall Chinook ESU	<i>Making Progress</i>	<i>Approaching Goal</i>	Approaching Goal	Approaching Goal	Yes
Lower Columbia River Coho ESU	Not Keeping Pace	Not Keeping Pace	<i>Approaching Goal</i>	<i>Making Progress</i>	Yes
Columbia River Chum ESU*	<i>Approaching Goal</i>	<i>Not Keeping Pace</i>	<i>Approaching Goal</i>	<i>Not Keeping Pace</i>	Yes

[Note: Italicized text show change from Initial to Final based on local review. Green highlighting shows an improvement (movement to lower risk category) from 2020 to 2022. Red means a decline (movement to a higher risk category) from 2020 to 2022.]

**FIGURE 5**  
ESU-DPS Change Between 2020 and 2022



**FIGURE 6**  
Final Abundance Chart (2022 SOS)





**V. Contact**

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