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Washington

February 23, 2012

## MEMORANDUM

**TO:** Chair Rockefeller and members of the Fish and Wildlife Committee

**FROM:** Tony Grover, Fish and Wildlife Division Director

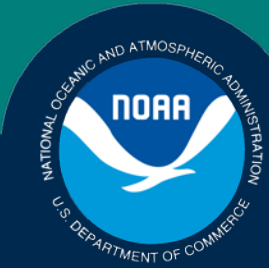
**SUBJECT:** Briefing on the latest NOAA Bi-Op Five-year review: Elizabeth Gaar, Mike Ford, Tom Cooney, and Garth Griffin, NOAA Fisheries

NOAA recently published the results of their five-year review of Pacific salmon and steelhead populations listed under the Endangered Species Act (ESA). The ESA requires a review of listed species at least every five years. Based on the review, NOAA Fisheries determines whether a species should be delisted, reclassified from endangered to threatened or threatened to endangered, or whether the current classification should be retained.

After considering the best available information, we concluded that all listed salmon and steelhead species in Oregon, Washington and Idaho will retain their current ESA listing classifications.

There are seven geographically oriented reviews. They're supported by an exhaustive 346-page science report, *Status review update for Pacific salmon and steelhead listed under the Endangered Species Act, Pacific Northwest*. Read the [reviews, science report and other supporting documents](http://www.nwr.noaa.gov/ESA-Salmon-Listings/5-yr-review.cfm) at <http://www.nwr.noaa.gov/ESA-Salmon-Listings/5-yr-review.cfm>

Science, Service, Stewardship



# Endangered Species Act 5-year Reviews for West Coast Salmon and Steelhead

*Mike Ford, Tom Cooney – Northwest Fisheries Science Center*

*Garth Griffin – Northwest Regional Office*

Northwest Power and Conservation Council

March 6, 2012

**NOAA  
FISHERIES  
SERVICE**



## Outline

- Overview of 2011 NMFS' 5-year Reviews
  - Background
  - Process and products
  - Updated viability assessments
  - Evaluation of listing factors
  - Findings
- Looking ahead to the next 5-year Reviews in 2015



# ESA Requirements for 5-Year Reviews

Section 4 of the ESA requires Secretary to:

At least once every five years, review the list of T&E species and determine based on that review whether the species should:

- Retain its current listing status;
- Be removed from the list;
- Be changed from an endangered to a threatened species; or
- Be changed from a threatened to an endangered species.



## Announcement of Salmon and Steelhead 5-Year Reviews

- On March 18, 2010, we announced 5-year reviews for 27 species of salmon and steelhead in CA, OR, WA, ID
- 60-day comment period; letters to Tribes
- Co-manager review of biological data and viability analyses
- Released findings on Aug. 15, 2011



## 5-Year Review Process

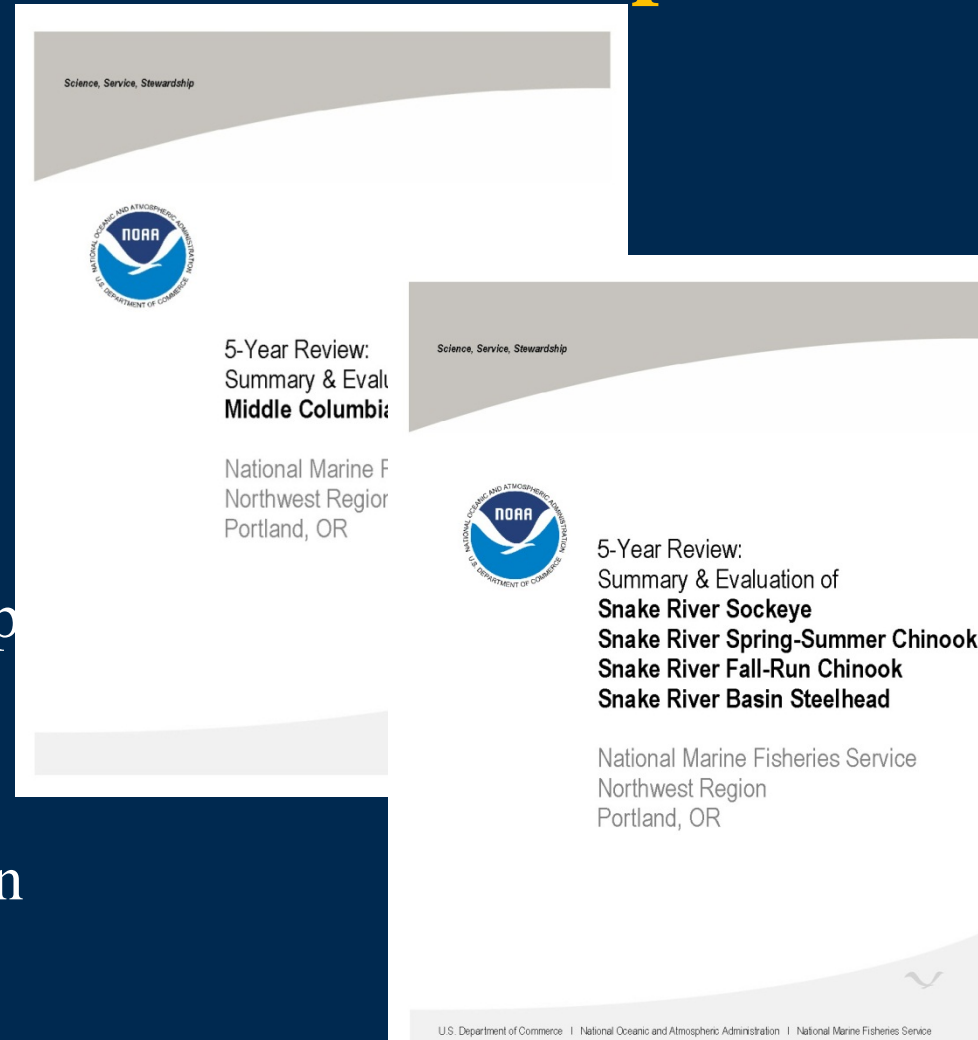
- Northwest Fisheries Science Center reviewed new information and produced an updated report on ESU/DPS viability.
- Recovery Domain teams of specialists from the regional office reviewed new information on ESA listing factors.
- Information from these two sources was integrated into 5-Year Review Reports that provide the basis for our listing classification conclusions.



# 5-Year Review Domain Reports

## Each report contains:

- Updated information on ESU/DPS viability
- Recommended ESU/DPS boundary adjustments
- Recommended changes to ESU/DPS hatchery membership
- New information on listing factors
- Listing classification conclusion





# 2011 5-Year Review Findings

- No changes in ESA listing status
- No changes in ESU or DPS boundaries
- Some changes to hatchery membership
  - Terminated programs
  - New programs

50448 Federal Register / Vol. 76, No. 157 / Monday, August 15, 2011 / Proposed Rules

status assessment, and additional information concerning these species are available on the Southwest Region's Web site: <http://swr.nmfs.noaa.gov/>.

With regard to the salmon and steelhead species subject to this notice of availability, we evaluated information that has become available on the species since they were previously reviewed in 2005 (70 FR 37160) and 2006 (71 FR 634), respectively. After considering the best available information, our 5-year reviews recommend that each of these species should remain listed as determined in 2005 and 2006. Our reviews also recommend that the southern boundaries of two species (California Coastal Chinook salmon and Central California Coast coho salmon ESUs) should be extended. Finally, our reviews also recommend that six hatchery stocks should be removed from the California Coastal Chinook salmon ESU based on information demonstrating the hatchery programs propagating these stocks have been terminated since the last status review.

In furtherance of these recommendations, we have already proposed to change the southern boundary of Central California Coast coho salmon (76 FR 6393). We will consider proposing the adjustment of the species boundary and hatchery status for California Coastal Chinook salmon in a separate rulemaking. We conclude that these 5-year reviews meet the requirements of the ESA.

Authority: 16 U.S.C. 1531 et seq.  
Dated: August 8, 2011.

**Theresa Conant,**  
Deputy Chief, Endangered Species Division,  
Office of Protected Resources, National  
Marine Fisheries Service.  
[FR Doc. 2011-2049 Filed 8-12-11; 8:45 am;  
BILLING CODE 3199-22-9]

DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric  
Administration

50 CFR Parts 223 and 224

RIN 0648-XA535

Endangered and Threatened Species;  
5-Year Reviews for 17 Evolutionarily  
Significant Units and Distinct  
Population Segments of Pacific  
Salmon and Steelhead

AGENCY: National Marine Fisheries  
Service (NMFS), National Oceanic and  
Atmospheric Administration (NOAA),  
Commerce.

ACTION: Notice of availability of 5-year  
reviews.

**SUMMARY:** NMFS Northwest Region announces the availability of 5-year reviews for 17 evolutionarily significant units (ESUs) of Pacific salmon (*Oncorhynchus* sp.) and 6 distinct population segments (DPSs) of steelhead (*Oncorhynchus mykiss*) in Oregon, Washington, and Idaho as required by the Endangered Species Act of 1973, as amended (ESA). The purpose of the reviews was to evaluate whether the listing classifications of these salmonids remains accurate or should be changed. After reviewing the best available scientific and commercial data, we conclude that the 11 ESUs of Pacific salmon and 6 DPSs of steelhead in Oregon, Washington, and Idaho shall remain listed as determined in 2005, 2006, and 2007.

**ADDRESSES:** Additional information about the 5-year reviews may be obtained by visiting the NMFS Northwest Regional Office Web site: <http://www.nwr.noaa.gov/>, or by writing to us at: NMFS Northwest Region, 1201 Lloyd Blvd., Suite 1100, Portland, OR 97232.

**FOR FURTHER INFORMATION CONTACT:** Eric Murray (503) 231-2378.

**SUPPLEMENTARY INFORMATION:**

**Background**

Under the ESA, a list of endangered and threatened wildlife and plant species must be maintained. The list is published at 50 CFR 17.11 and 50 CFR 223.102 (for animals) and 17.12 (for plants). Section 4(c)(2)(A) of the ESA requires that we conduct a review of listed species at least once every 5 years. On the basis of such reviews under section 4(c)(2)(B), we determine whether any species should be removed from the list (deleted), or reclassified from endangered to threatened or from threatened to endangered. During 5-year reviews, we consider the best scientific and commercial data available, including new information that has become available since the last listing determination or most recent status review of a species.

On March 18, 2010, the NMFS Northwest and Southwest Regional Offices announced initiation of 5-year reviews of Pacific salmon ESUs and steelhead DPSs (75 FR 13082). Both ESUs and DPSs are treated as 'species' under the ESA, and we use the term 'species' to refer to both in the remainder of this notice. At the time of our announcement, we requested information on species viability, protective efforts, and threats to the species from the public, concerned governmental agencies, Tribes, the

scientific community, environmental entities, and other interested parties.

This notice addresses the following salmon species: (1) Upper Columbia River spring-run Chinook salmon; (2) Snake River spring/summer-run Chinook salmon; (3) Puget Sound Chinook salmon; (4) Lower Columbia River Chinook salmon; (5) Upper Willamette Chinook salmon; (6) Snake River fall-run Chinook salmon; (7) Hood Canal summer-run chum salmon; (8) Columbia River chum salmon; (9) Lower Columbia River coho salmon; (10) Snake River sockeye salmon; and (11) Orette Lake sockeye salmon. We did not complete a 5-year review for the Oregon Coast coho salmon because, as part of a legal settlement, we previously agreed to conduct a new review of the status of this species. On June 20, 2011, we issued a final rule re-promulgating the threatened listing for Oregon Coast coho salmon (76 FR 33755).

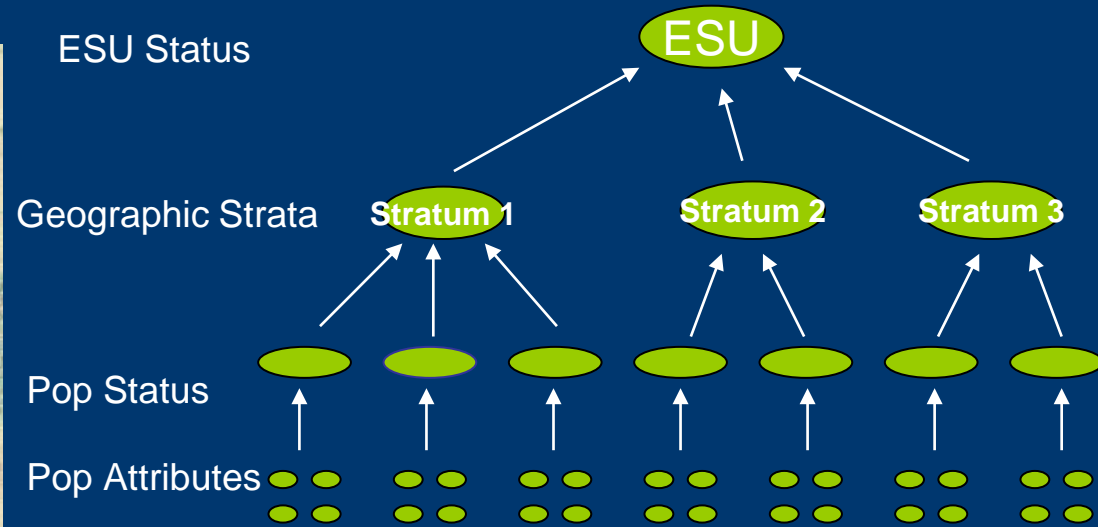
This notice also addresses the following steelhead species: (1) Upper Columbia River steelhead DPS; (2) Middle Columbia River steelhead DPS; (3) Snake River Basin steelhead DPS; (4) Lower Columbia River steelhead DPS; (5) Upper Willamette steelhead DPS; and (6) Puget Sound steelhead DPS. Information about these species can be found at our Northwest Regional Web site: <http://www.nwr.noaa.gov/>.

We used a two-step process to complete the reviews of the listed salmonid species in Oregon, Washington, and Idaho. First, we asked scientists from our Northwest Fisheries Science Center to collect and analyze new information about species viability. To evaluate viability, our scientists apply the Viable Salmonid Population (VSP) concept. The VSP concept relies on evaluating four criteria—abundance, productivity, spatial structure, and diversity—to assess species viability. They also considered new genetic and biogeographic information regarding species' boundaries. At the end of this process, the science team prepared a report detailing the results of their analyses. This report is available at our regional Web site.

Salmon management biologists from our Northwest Regional Office completed the second step in the review process. These biologists, organized into geographically-based teams, reviewed new information related to the five ESA section 4(a)(1) factors, which we consider when determining if a species should be listed as threatened or endangered or be delisted. These are: (1) The present or threatened destruction, modification, or curtailment of the species' habitat or range; (2) overutilization for



# Updated Viability Assessments




## Population status:

- Abundance (e.g., natural-origin spawning)
- Productivity (trend, recruits/spawner, modeled)
- Spatial structure (distribution, habitat)
- Diversity (life-history, hatchery/wild)

# Spawning Abundance and Composition

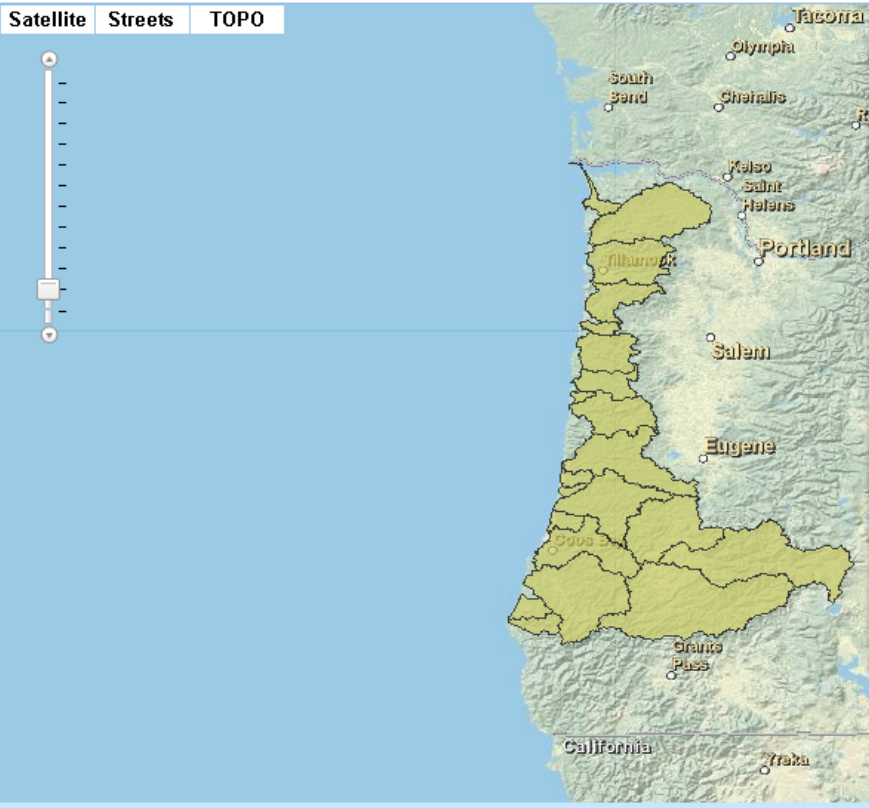
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[NOAA Fisher...tem \(PCTS\)](#)
[NOAA Budge...t Summary\)](#)
[ISAB ONLY](#)
[Salmon Moni...ing Advisor](#)
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**NOAA SALMON POPULATION SUMMARY**  
 SPS DATABASE  
 NOAA FISHERIES NORTHWEST FISHERIES SCIENCE CENTER

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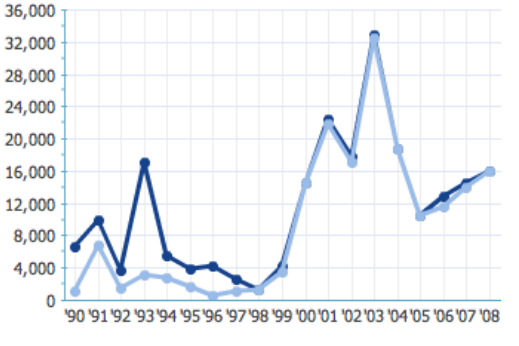
**Map**  
[Satellite](#)
[Streets](#)
[TOPO](#)



**Spawner Graphs**

All Spawners
  Percent Hatchery
  Percent Harvested

Spawner returns for  
Coho Salmon (Oregon Coast ESU) - Nehalem River



Year	All Spawners	Natural Spawners
'90	8,000	2,000
'91	10,000	4,000
'92	4,000	3,000
'93	18,000	3,000
'94	6,000	3,000
'95	4,000	2,000
'96	4,000	2,000
'97	2,000	2,000
'98	2,000	2,000
'99	4,000	2,000
'00	15,000	2,000
'01	22,000	2,000
'02	18,000	2,000
'03	32,000	2,000
'04	18,000	2,000
'05	10,000	2,000
'06	12,000	2,000
'07	14,000	2,000
'08	16,000	2,000

Start Year: 1990 | End Year: 2008 | [Update Charts](#)

**Populations**

Interior Columbia (46)

- Middle Columbia River Steelhead DPS
- Snake River Basin Steelhead DPS (3)
- Snake River Fall-run Chinook Salmon
- Snake River Sockeye Salmon ESU (1)
- Snake River Spring/Summer-run Chinook
- Upper Columbia River Spring-run Chinook
- Entiat River
- Methow River
- Wenatchee River
- Upper Columbia River Steelhead DPS

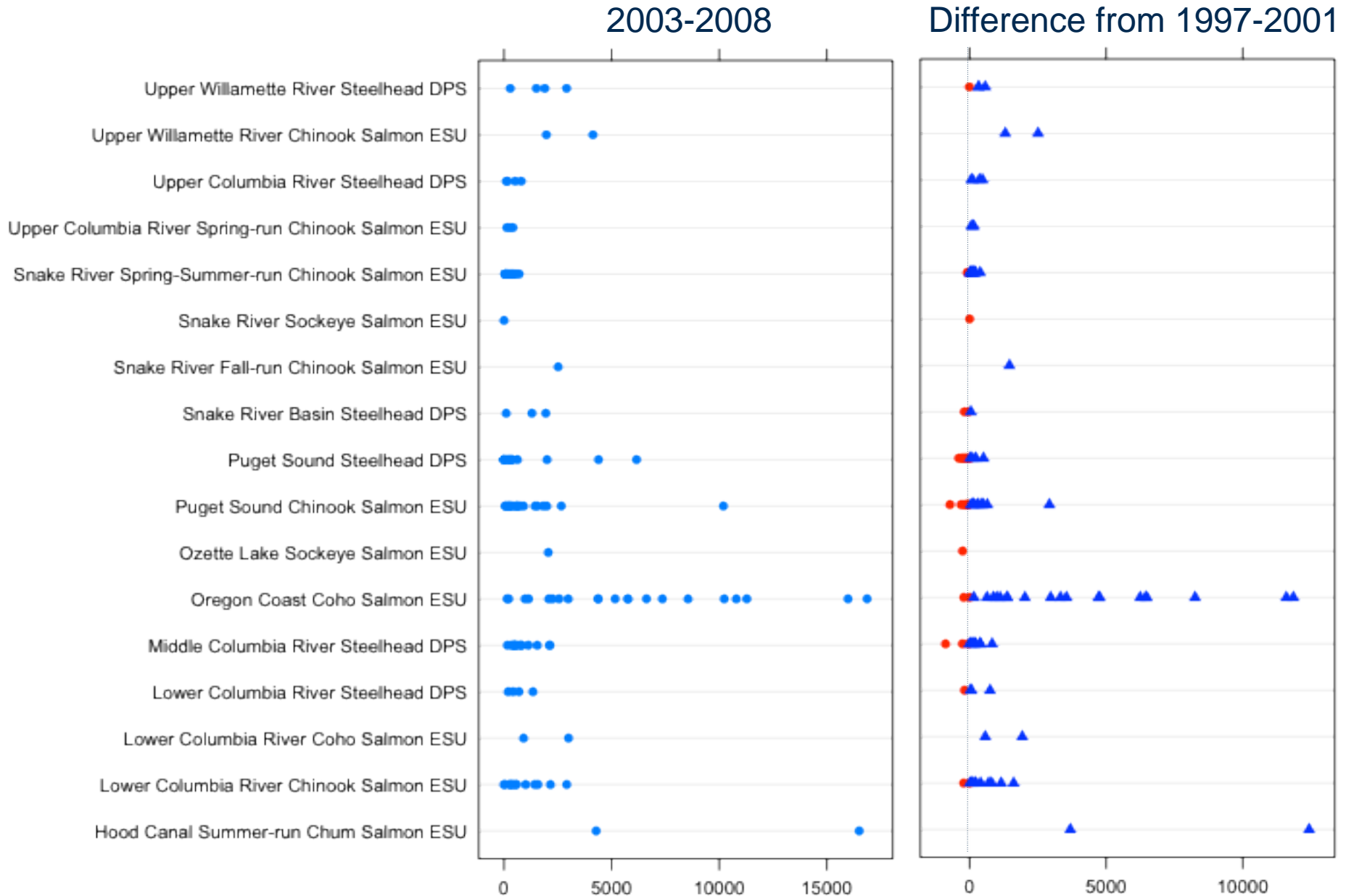
Oregon Coast (21)

- Oregon Coast Coho Salmon ESU (21)
  - Alsea River
  - Beaver Creek
  - Coos River
  - Coquille River
  - Floras/New River
  - Lower Umpqua River
  - Middle Umpqua River
  - Necanicum River

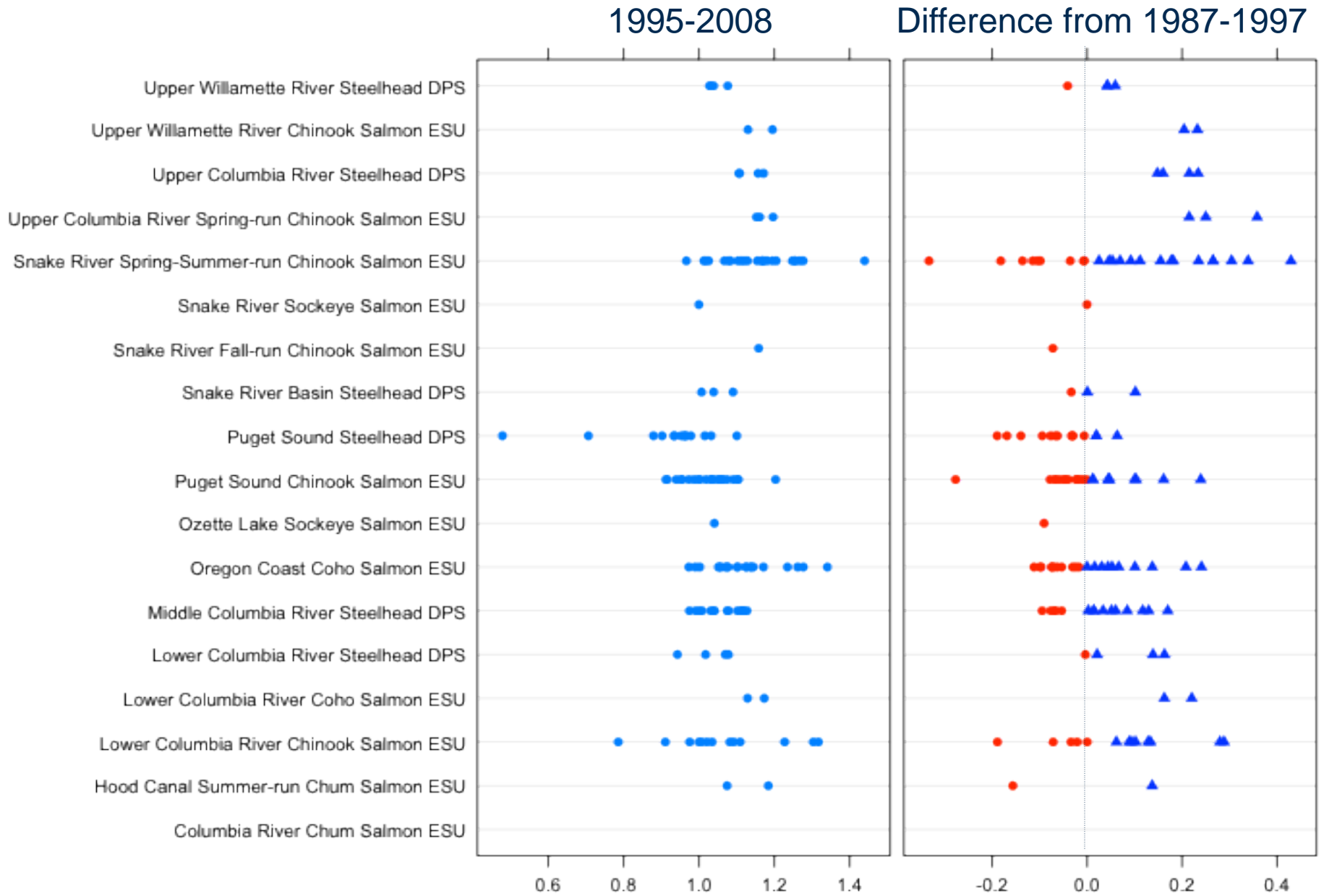
[Clear All](#)
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[Map Abundance Distribution](#)
[Map Legend](#)

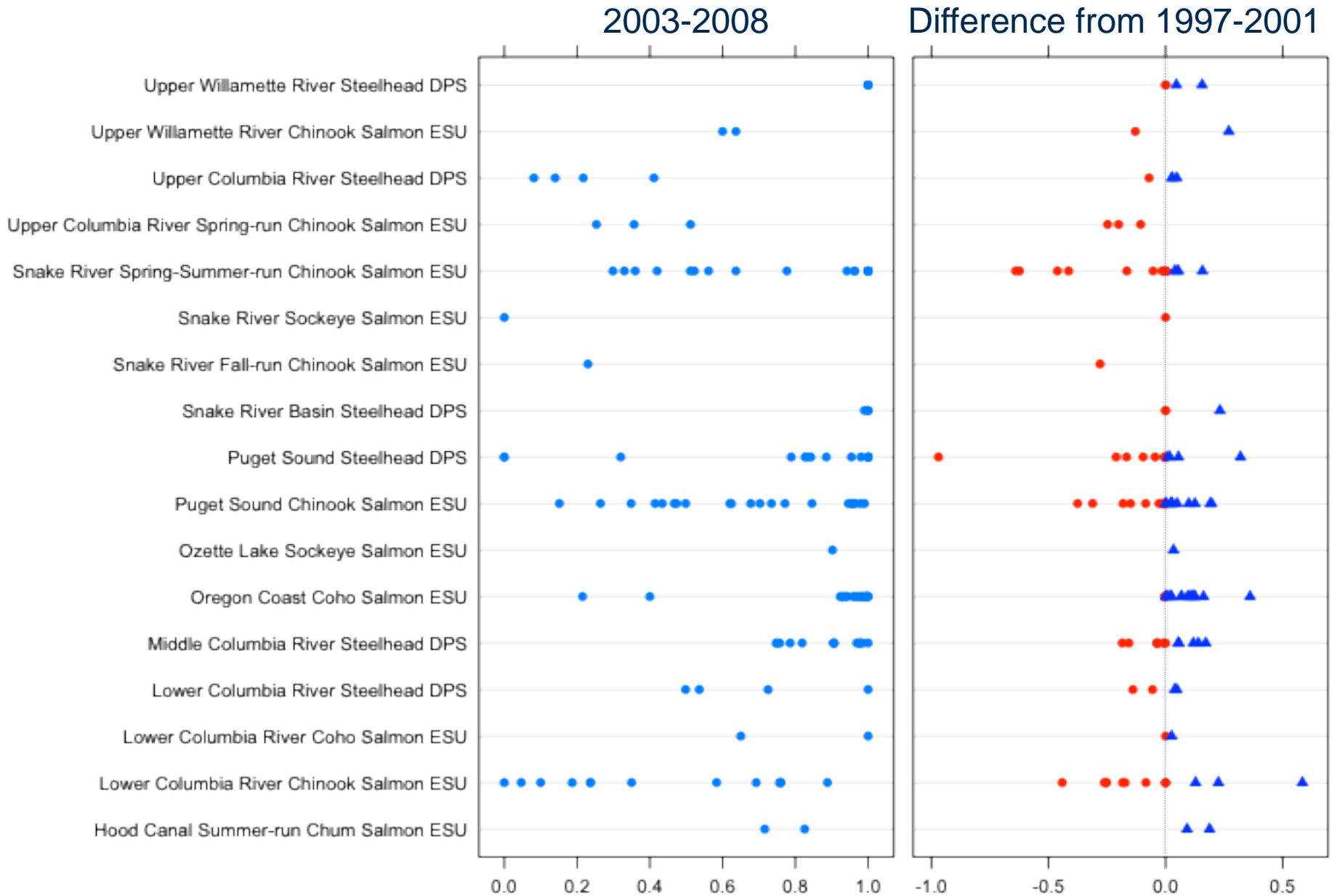
# Summary – abundance (natural origin)



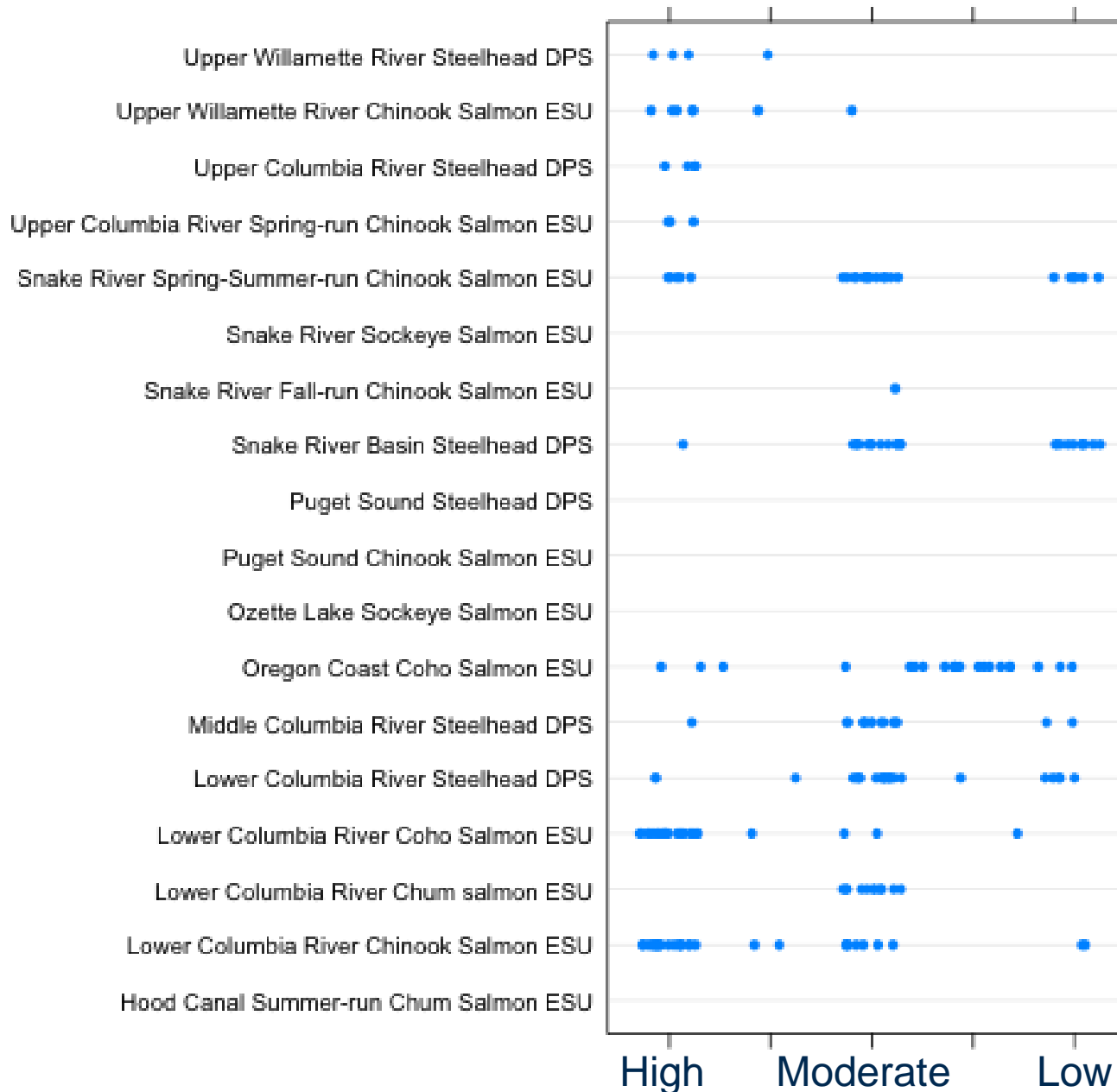
# Summary – trend (natural origin)



# Summary – fraction natural origin



# Summary – spatial structure and diversity





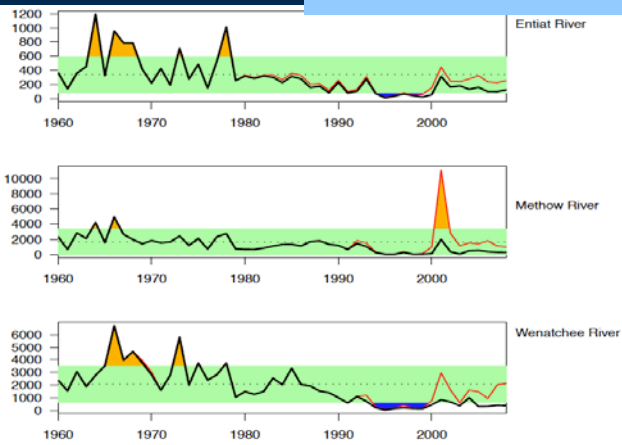
## Summary of Updated Viability Assessments

- Mostly positive trends since listing
- Some populations meet or exceed viability criteria (but most do not)
- No ESUs meet viability criteria
- No change in risk category

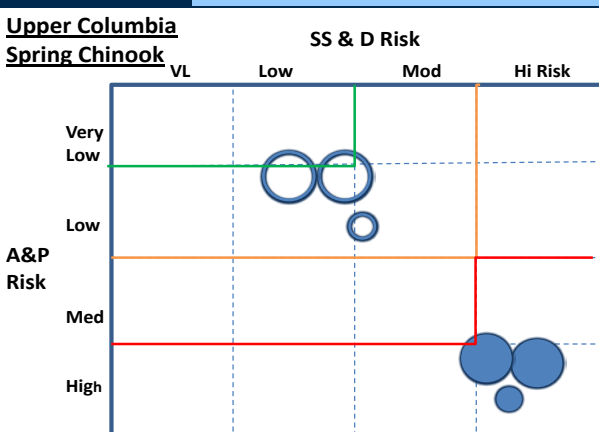




## Trends (1995-2008)



## Viability (current vs VSP minimum)



**Current Trends:** Recent natural origin spawner trends for all three extant populations reflect increases relative to status at listing and previous reviews

- Productivity at low to moderate spawner escapements remains well below sustainable levels.
- Hatchery origin proportions in natural spawning areas have increased in recent years
- **2009/2010 natural origin escapements at or above high end of range reported in status assessment**

**Viability Status:** All three populations remain at High overall Viability risk

- Combination of abundance and productivity remains well below projected levels associated with sustained natural production.
- Natural returns reflect ongoing subsidies from directed supplementation programs in Wenatchee and Methow.
- Diversity risk remains high primarily due to lack of natural genetic patterns, chronically high current inputs from hatchery supplementation programs
- Spatial structure risks moderate for Entiat, low for Wenatchee & Methow populations

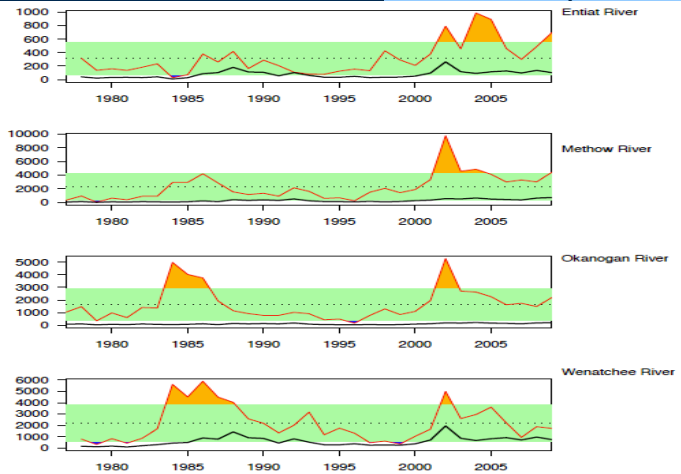
**Anticipated Information prior to next 5 Yr Reviews**

- Improved SAR series applicable to natural populations
- Habitat condition indices at population and MPG scale

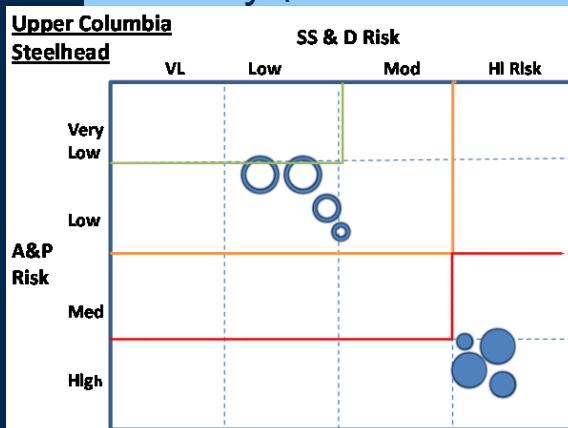




## Trends (1995-2009)



## Viability (current vs VSP minimum)



## Current Trends:

- **Spawning escapements (total and natural origin) increased for all four populations relative to the 2005 BRT review.**
  - Trend in natural origin spawners reflected the increased abundance.
- **Hatchery proportions remain at very high levels**
  - Averaged over 80% in natural spawning areas for 3 out of the 4 extant populations, and over 50% in the Wenatchee.

## Viability Status:

- **All populations in this ESU remained rated at High Risk**
- Abundance and productivity combinations remained at high risk for almost all populations
- Diversity risks remained high, largely driven by loss of population level genetic diversity, uncertainty associated by chronically high hatchery spawner proportions.

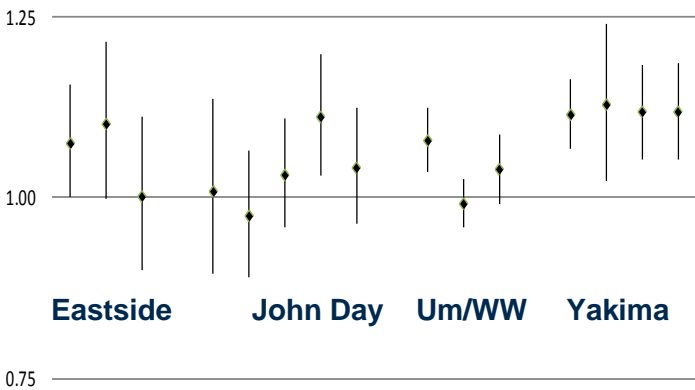
## Anticipated information prior to next 5 yr review

- Reduced uncertainty in population specific estimates of annual natural origin returns for all Upper Columbia populations using genetic/pit tag data generated by recently implemented sampling and tagging efforts.

# Mid-Columbia Steelhead



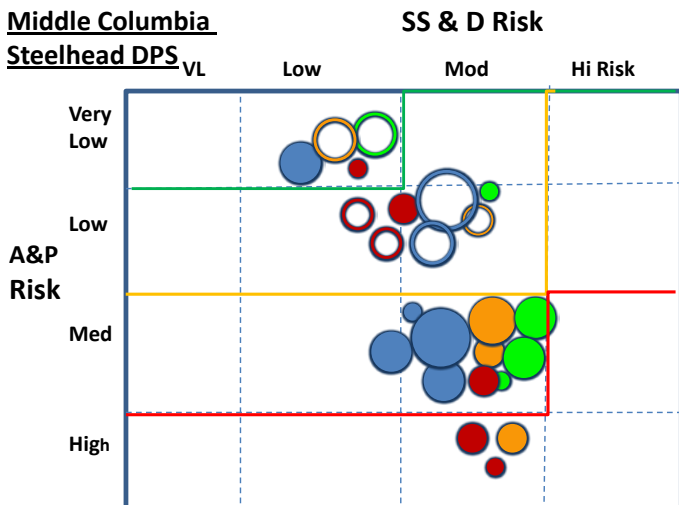
## Trends (1995-2008)



**Recent Trends:** Short term trends generally positive across MPG

- Consistently positive for Yakima MPG populations relative to status at listing
- Avg. natural abundance trends for Fifteen Mile (Eastside MPG), Touchet (UM/WW MPG) and MF John Day slightly below 1.0
- **2010 estimates of natural origin spawners above recent range for several populations**

## Viability (current vs VSP minimum)



**Viability Status:** Three populations met minimum viability criteria

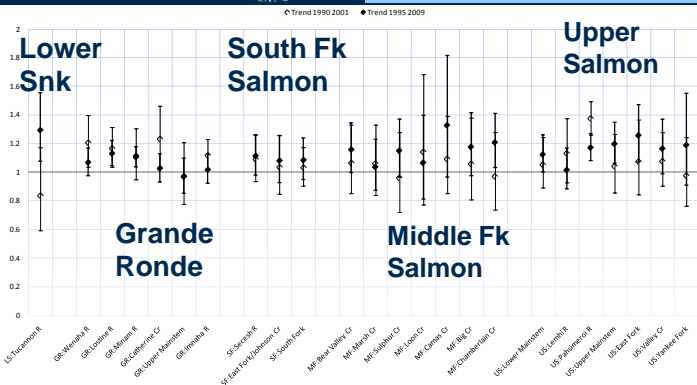
- (NF John Day & Fifteen Mile = HV; E. Deschutes = V)
- Three populations remain rated at High Risk
- Upper Yakima, Westside Deschutes, Rock Creek(?)

## Anticipated information prior to next 5 year reviews

- Direct estimates for Yakima populations (currently extrapolated from aggregate counts at Prosser and Roza)
- Extended data series for Klickitat and Touchet
- Improved SAR series at DPS (and potentially MPG levels)
- Habitat condition indices at population and MPG scale



## Trends (1995-2008)



## Current Trends: Population natural spawning escapement levels relative to prior review:

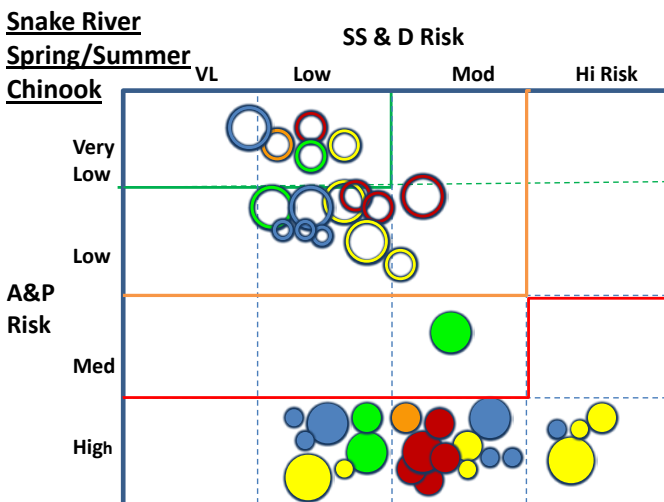
- increased by more than 25% for five populations
- Decreased by more than 25% for 6 populations
- Remained within +/- 25% for 5 populations

Hatchery fractions have substantially increased for 4 out of 6 Grande Ronde and 2 out of 3 South Fork populations

Natural escapements in 2009/2010 at or above high end of the most recent 5 year range for many populations

## Viability (current vs VSP minimum)

## Viability Status: All populations in this ESU remained rated at High Risk against ICTRT viability criteria



- Abundance and productivity combinations remained at high risk for almost all populations
- Diversity risks varied considerably, driven by population specific considerations (e.g., spatial structure ratings for Lemhi, Pahsimeroi, Upper Grande Ronde; genetic diversity impacts and uncertainties regarding sustained high hatchery fractions)

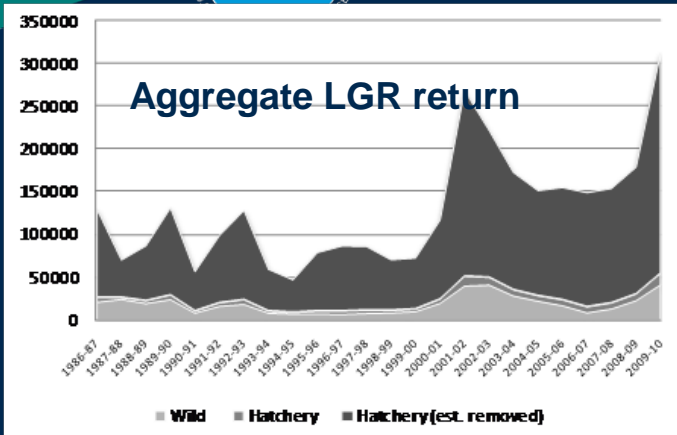
## Anticipated information prior to next 5 yr reviews

- Habitat condition indices at population and MPG scale
- Improved estimates for some populations

## Current Trends:

- Available data limits direct estimates of population status to two populations in the Grande Ronde basin.
- Natural origin abundance and productivity increased for both the Joseph Creek and Upper Grande Ronde

## Trends (1995-2009)

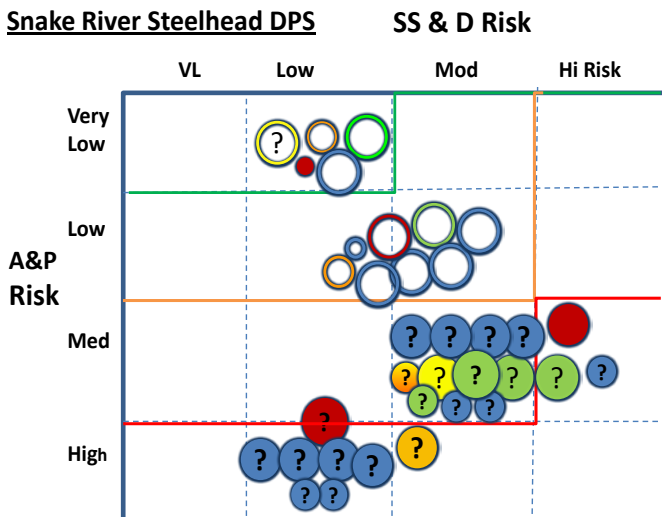


- Aggregate natural returns at Lower Granite increased relative to previous BRT review
  - Subtracting those estimates from aggregate count at Lower Granite Dam indicates many remaining populations likely at higher risk levels

## Viability Status:

- High level of uncertainty regarding most populations in the DPS. Earlier review assigned A&P based by assumed A and B run
- Diversity risks inferred to vary considerably across remaining populations based on juvenile sampling, inferences from habitat conditions, proximity of some populations to major hatchery facilities

## Viability (current vs VSP minimum)



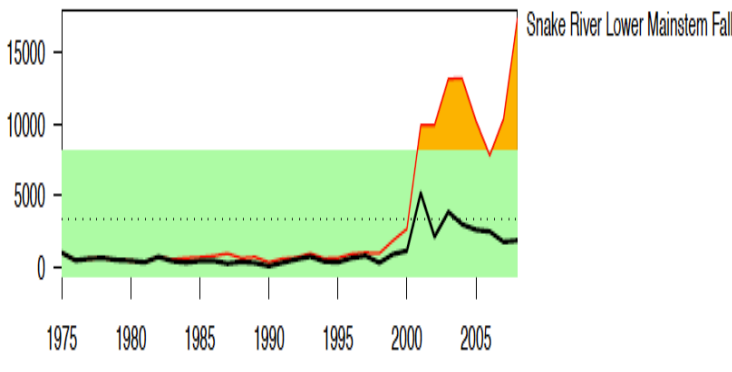
## Anticipated information prior to next 5 yr review

- Direct estimates for many Snake River populations (or groupings) based on genetic mixed stock assessment, directed PIT tag assessment projects.
- Preliminary results indicate Idaho populations may reflect a range of combinations of A and B run timings
- Habitat condition indices at population scale.

# Snake Fall Chinook



## Trends (1995-2009)



- **Recent Trends:** Total and natural origin spawner estimates substantially higher than earlier reviews.
  - High proportion of hatchery origin spawners (average of 78%)
  - 2002-2007 natural origin returns leveling off at or just below TRT minimum abundance threshold (10 yr geometric mean of 3,000)

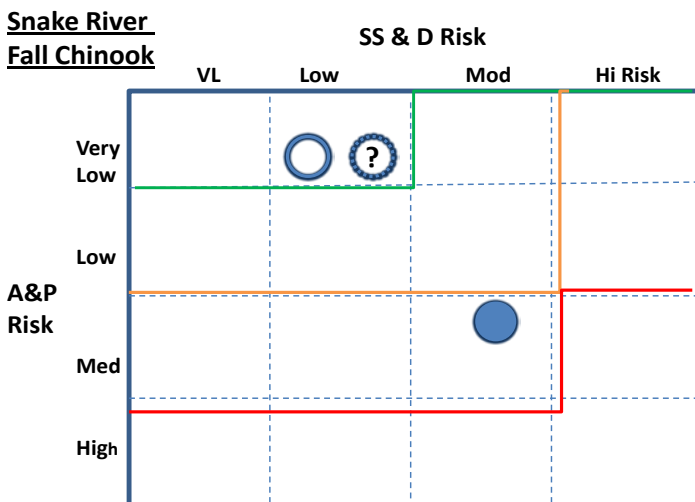
**More recent returns: 2009 and 2010 above the range reported in status review. Potential problem identified in methods applied in 2006-2008.**

- Hatchery proportions remain high.

## Viability Status

- **Overall rating remains at moderate risk.**
  - 10 yr geometric mean natural origin abundance below threshold, uncertainty about productivity at low to moderate escapement levels, long term risk to genetic and life history diversity resulting from very high hatchery fractions.

## Viability (current vs VSP minimum)



**ICTRT recommendation is to target as highly viable given limited number of historical populations, loss of upper populations.**

- **Consideration: Two historical populations above Hells Canyon are extirpated**

## Anticipated information prior to next 5 yr review

- Continued application of 2009 improved run reconstruction methods (including redoing 2006-2008)
- Results from recently implemented studies;(e.g., determine distribution of hatchery returns on spawning grounds)



# Snake River Sockeye

## Current trends:

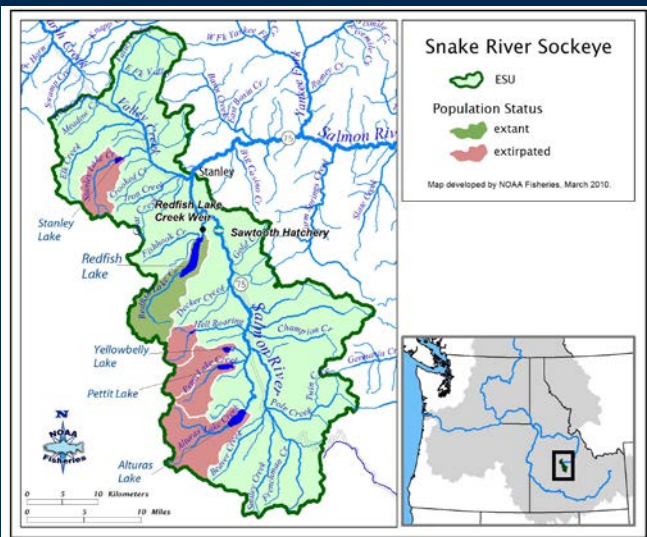
- **Adult returns to the Stanley Basin increased substantially in 2008/2009, returns for 2003-2007 were similar to levels reported in previous reviews.**
- **Current returns are from captive brood juvenile and adult releases carried out through the ongoing evaluation program.**
  - Recent increases in adult returns are providing for expanded experimental outplanting efforts in support of restoring natural production

## Viability Status

- **Natural production of anadromous sockeye remains functionally extirpated. Restoration program is in initial stages of natural reintroductions, focus on evaluating survivals..**

## Anticipated Information prior to next 5 yr review

- Survival to return estimates from juvenile and adult releases
- Improved and extended data series on juvenile production & emigration survival rates
- Initial assessments of potential to support natural production based on empirically observed production and survival rates





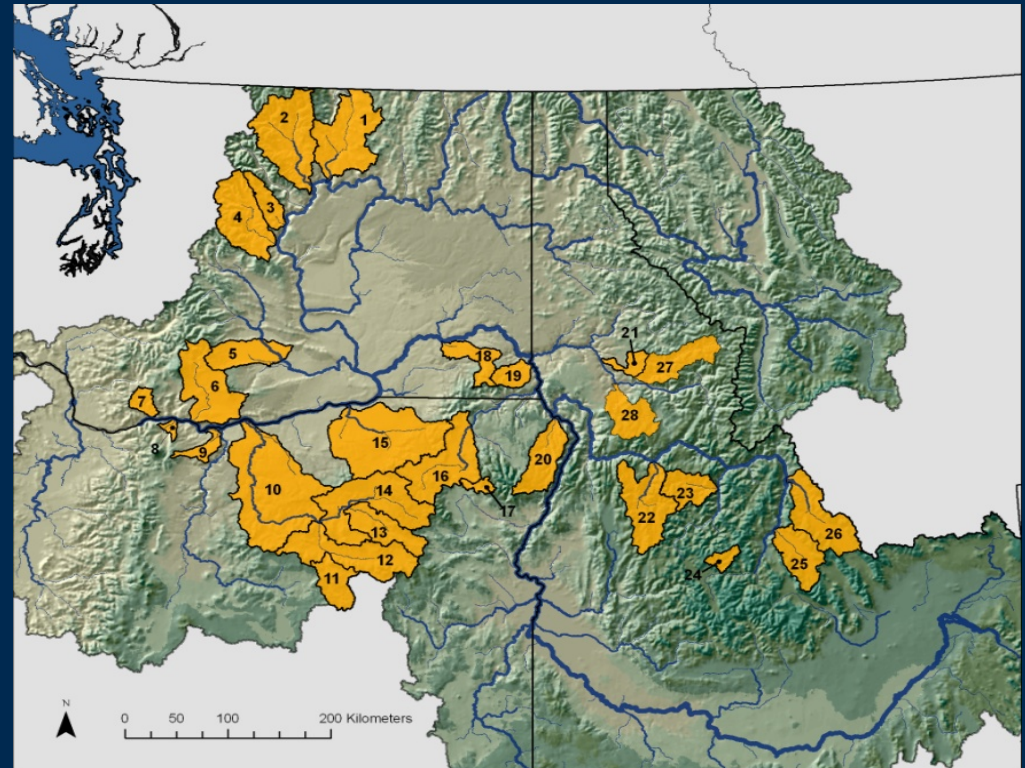
## *Looking to the next 5-year review in 2015*

- We hope to include:
  - New and improved population status and trend data
  - Analyses of implemented projects relative to identified limiting factors and priority actions
  - Evaluation of more specific and quantifiable threats criteria
  - New habitat and other monitoring data to inform a more quantitative evaluation of the ESA listing factors
- Keen interest expressed among our regional partners in collaborating on compilation of data and analyses to inform next five-year reviews
- NOAA would like to coordinate closely with the Council in developing our approach to the next 5-year reviews.



## Improved Habitat Information:

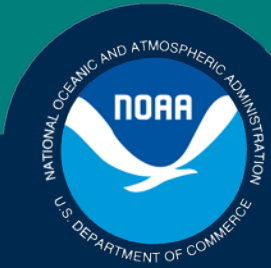
- Considering project effectiveness
  - TetraTech
  - IMWs
  - CHaMP



CHaMP



*Science, Service, Stewardship*



# Questions?

**NOAA  
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SERVICE**

NOAA