

# Lower Snake River Compensation Plan

## Program Implementation, Execution and Performance



*Chinook Salmon*  
*Oncorhynchus tshawytscha*

© Joseph R. Tomelleri



## Rod Engle USFWS-LSRCP



U.S. Fish and Wildlife Service

Lower Snake River Compensation Plan Office

CONSERVING  
AMERICA'S  
Fisheries

Conserving America's Fisheries



# LSRCP Program Goals and Harvest Objectives

| Species               | Project Area Goals    | Coastwide Harvest Objectives | Total Adults (Goals + Objectives) |
|-----------------------|-----------------------|------------------------------|-----------------------------------|
| Fall Chinook          | 18,300                | 73,200                       | 91,500                            |
| Spring/Summer Chinook | 58,700                | 234,800                      | 293,500                           |
| Steelhead             | 55,100                | 110,200                      | 165,300                           |
| Rainbow Trout         | 86,000 pounds stocked |                              |                                   |



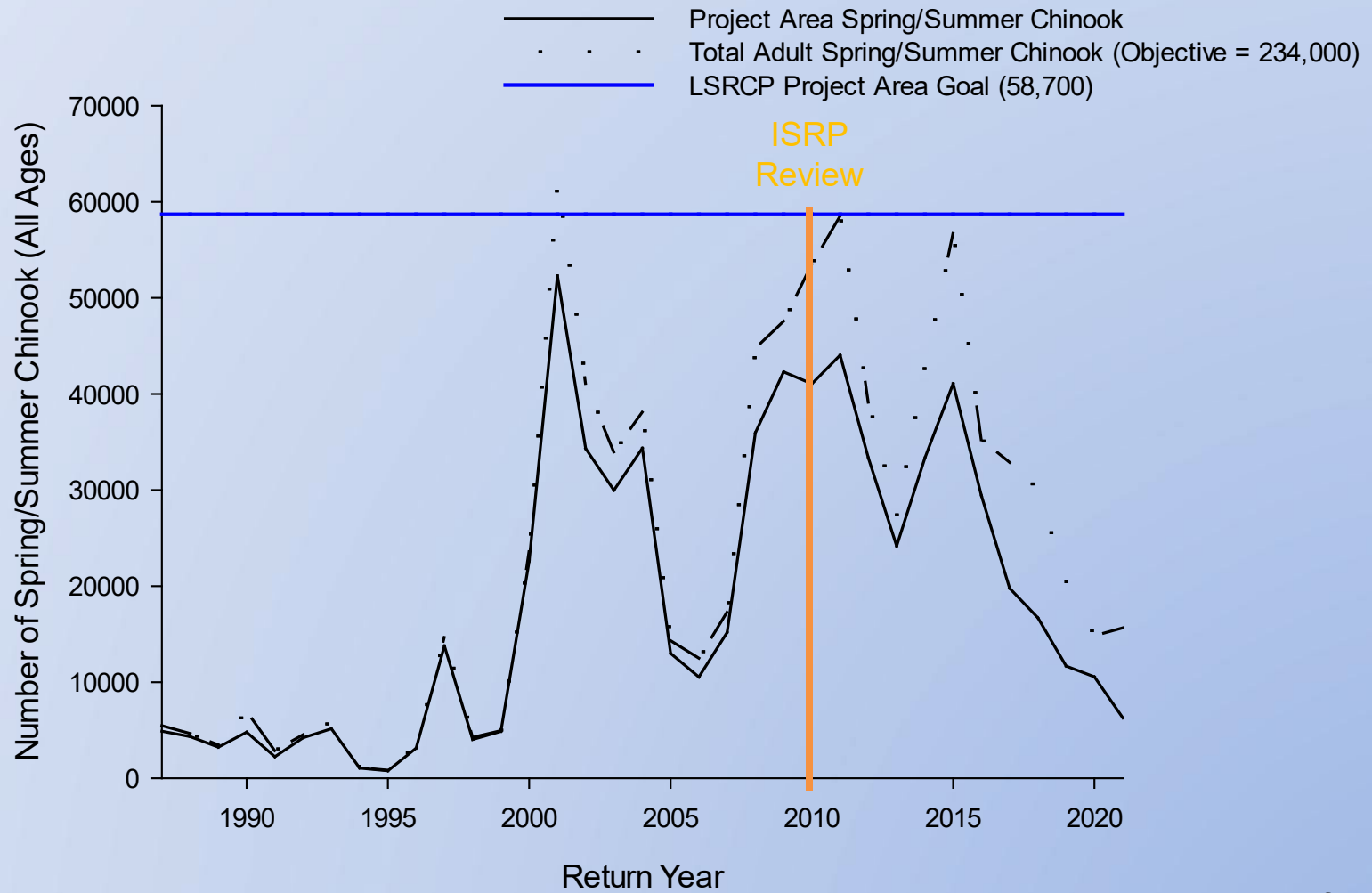
U.S. Fish and Wildlife Service

Lower Snake River Compensation Plan Office

Conserving America's Fisheries



# Project Area and Total Adult Spring/Summer Chinook Return Years 1987-2021



Reporting not complete for 2021



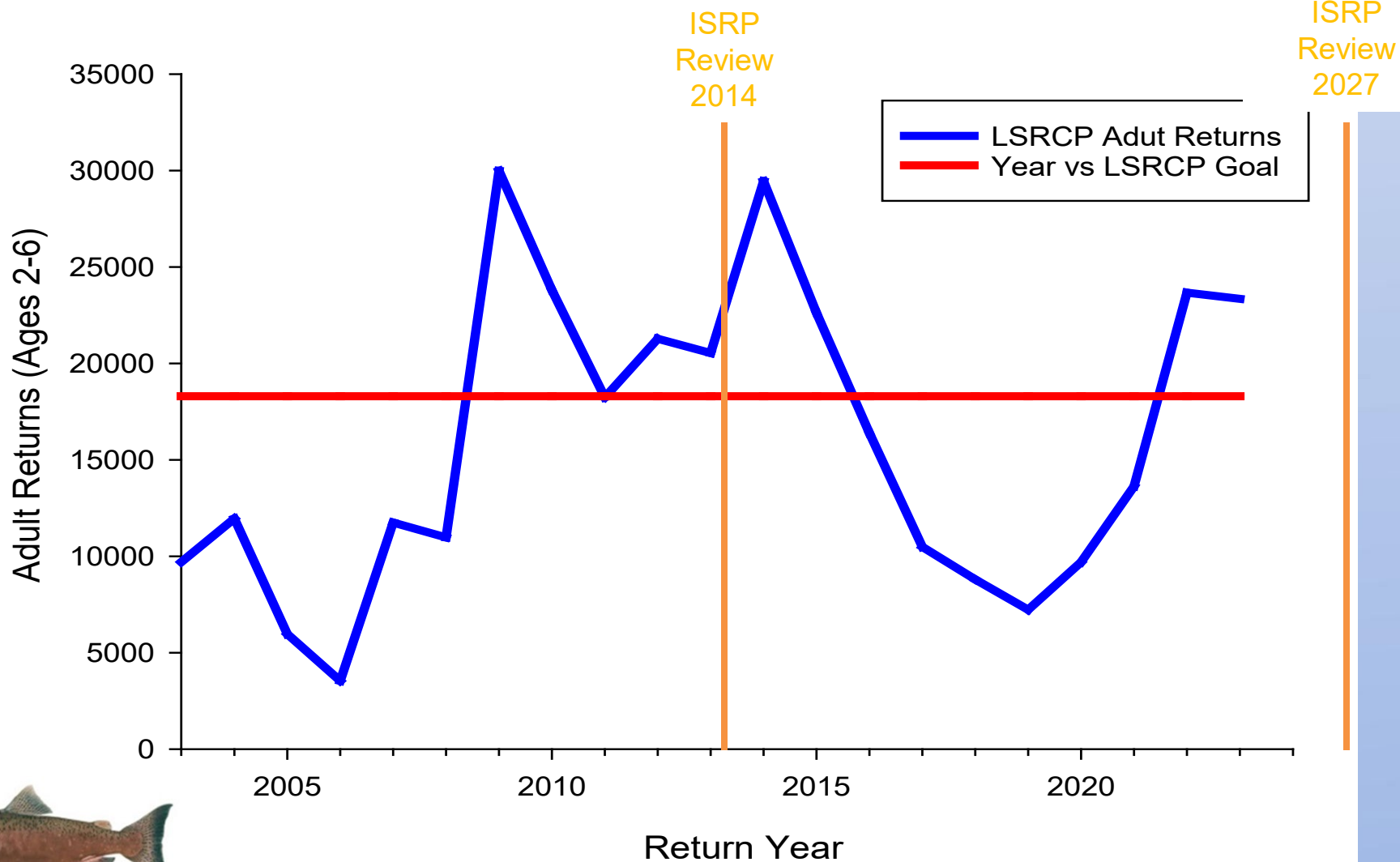
U.S. Fish and Wildlife Service

Lower Snake River Compensation Plan Office

Conserving America's Fisheries



# LSRCP Fall Chinook Salmon Returns



Data Summary by Bill Young - NPT



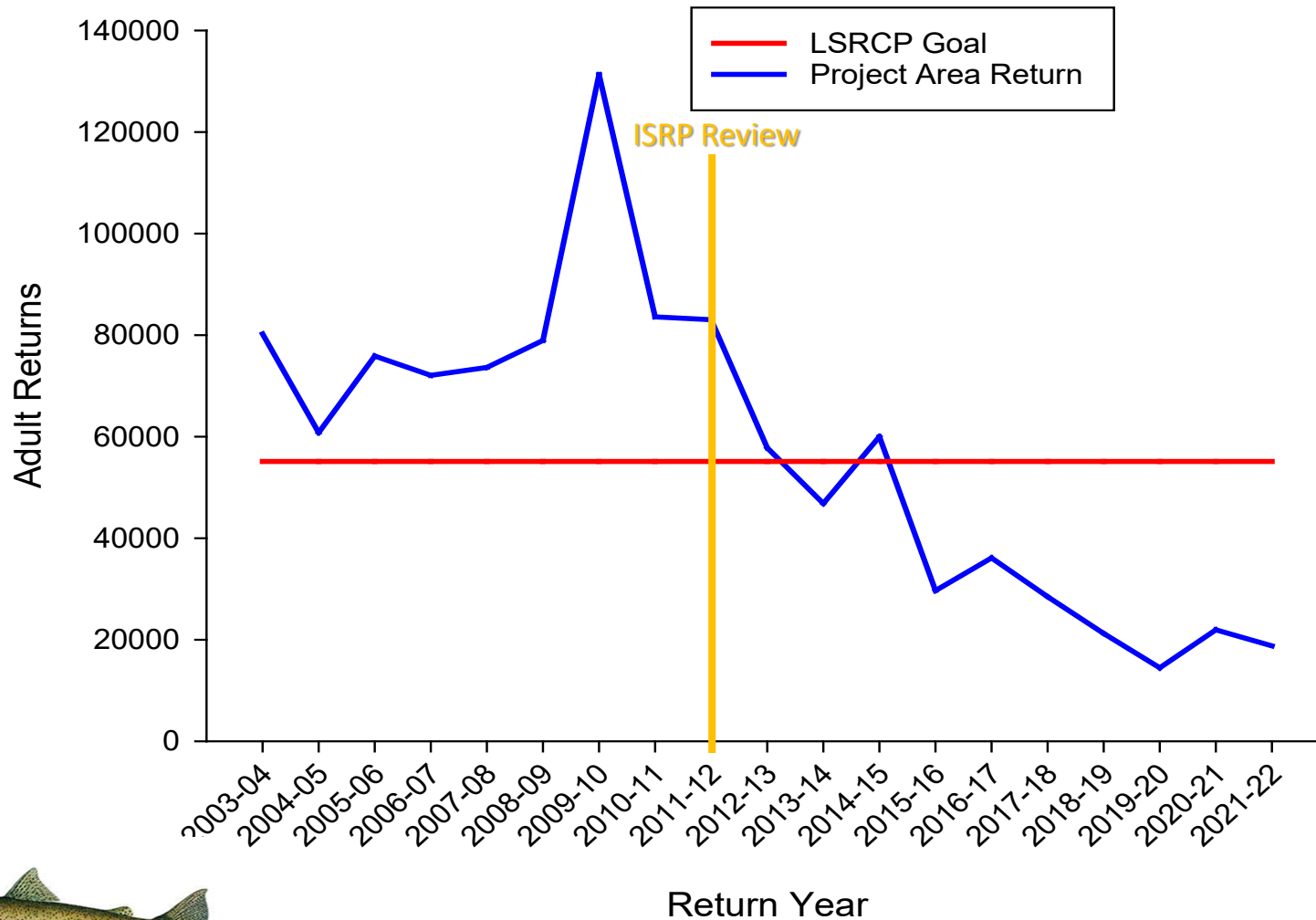
U.S. Fish and Wildlife Service

Lower Snake River Compensation Plan Office

Conserving America's Fisheries



# LSRCP Steelhead Adult Returns



Let's talk about steelhead!



U.S. Fish and Wildlife Service

Lower Snake River Compensation Plan Office



Conserving America's Fisheries



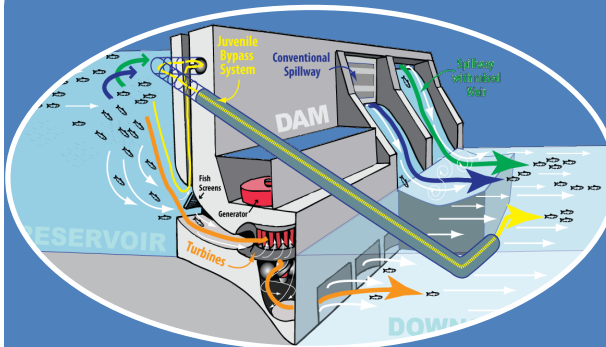


# History



## Escapement

- Adult Estimates Pre-Dams
- Steelhead = 114,800



## Hydrosystem Loss

- Construction/Operations
- 48% loss
- Project Area goals



## Harvest/Habitat Loss

- Habitat
- Harvest (sport and commercial)
  - 2:1 Steelhead

**Steelhead Total Adults = 55,100 + 110,200 = 165,300**



U.S. Fish and Wildlife Service

Lower Snake River Compensation Plan Office

Conserving America's Fisheries



# LSRCP Program Goals

Table 3. Commercial Landings and Sport Fishing Use, With and Without Compensation<sup>1/</sup> in Columbia River System and Pacific Ocean (Anadromous Species) and in Lower Snake River Project Area (Resident Species)

| Areas and Species                       | Commercial Fisheries |            |             |                      |           |             |            |           |             | Sport Fisheries <sup>4/</sup> |                      |                   |
|-----------------------------------------|----------------------|------------|-------------|----------------------|-----------|-------------|------------|-----------|-------------|-------------------------------|----------------------|-------------------|
|                                         | With Compensation    |            |             | Without Compensation |           |             | Difference |           |             | W/Comp.<br>Ang.days           | WO/Comp.<br>Ang.days | Diff.<br>Ang.days |
|                                         | Escapement           | Landings   |             | Escapement           | Landings  |             | Escapement | Landings  |             |                               |                      |                   |
| Columbia R. System, Ocean               |                      |            |             |                      |           |             |            |           |             |                               |                      |                   |
| Fall chinook <sup>2/</sup>              | 66,300               | 3,381,000  | \$1,893,000 | 31,900               | 1,627,000 | \$911,000   | 34,400     | 1,754,000 | \$982,000   | 332,000                       | 160,000              | 172,000           |
| Spring and summer chinook <sup>2/</sup> | 122,200              | 6,232,000  | 3,490,000   | 63,500               | 3,238,000 | 1,813,000   | 58,700     | 2,994,000 | 1,677,000   | 611,000                       | 318,000              | 293,000           |
| Steelhead <sup>3/</sup>                 | 114,800              | 692,000    | 208,000     | 59,700               | 360,000   | 108,000     | 55,100     | 332,000   | 100,000     | 763,000                       | 397,000              | 366,000           |
| Totals                                  | 303,300              | 10,305,000 | \$5,591,000 | 155,100              | 5,225,000 | \$2,832,000 | 148,200    | 5,080,000 | \$2,759,000 | 1,706,000                     | 875,000              | 831,000           |
| L. Snake Project Area                   |                      |            |             |                      |           |             |            |           |             |                               |                      |                   |
| Resident                                |                      |            |             |                      |           |             | 36,588     |           |             | 250,000                       | 205,000              | 45,000            |

<sup>1/</sup>

Insofar as possible "with compensation" is intended to reflect the preproject condition.

<sup>2/</sup>

Calculations based on catch to escapement ratio of 4:1 (commercial catch 3:1 and sport catch 1:1) average weight per fish of 17 lbs.; and

<sup>3/</sup>

commercial value of \$0.56 per pound.

<sup>4/</sup>

Calculations based on catch to escapement ratio of 2:1 (commercial catch 0.67:1 and sport catch 1.33:1); average weight per fish of 9 lbs. and commercial value of \$0.30 per pound.

<sup>5/</sup>

Angler-days for anadromous fish are based on catch to escapement ratios (footnotes 2 and 3) and an estimated 5 days of effort per fish (the value of an angler-day for anadromous fish is \$6.00).

Angler-days for resident fish are based on creel studies of Washington Department of Game and the ratio of 3 reservoir angler-days to 2 stream angler-days.

NMFS and USFWS 1973 – Appendix A of COE Special Report 1975.



U.S. Fish and Wildlife Service

Lower Snake River Compensation Plan Office

Conserving America's Fisheries



Table 1. Computation of Lower Snake River Compensation Measures from COE (1975) and modified from Herrig (1990) to include trout. Year, or years, of maximum counts at McNary Dam between 1954-67 are provided in parentheses. Trout mitigation was specific to the State of Washington for lost fishing opportunity due to inundation from the projects. A higher percent passage (68%) for fall Chinook salmon was observed during the passage period but was discounted by the fisheries agencies (Herrig 1990).

|                                                        | Fall Chinook<br>Salmon<br>(1958) | Spring-Summer<br>Chinook Salmon<br>(1957) | Steelhead Trout<br>(1962-63) | Trout                                                            |
|--------------------------------------------------------|----------------------------------|-------------------------------------------|------------------------------|------------------------------------------------------------------|
| McNary Dam Count                                       | 97,500                           | 222,100                                   | 172,600                      |                                                                  |
| Ice Harbor Dam<br>Maximum Percent<br>Passage (1962-67) | 33.5%                            | 55%                                       | 66.5%                        |                                                                  |
| Estimated Snake River<br>Pre-Project Run               | 32,663                           | 122,200                                   | 114,800                      |                                                                  |
| Lower Snake River<br>Compensation Goals                | 18,300                           | 58,700                                    | 55,100                       | 86,000 pounds<br>into local waters<br>(WA-79,800, ID-<br>6,200). |



U.S. Fish and Wildlife Service

Lower Snake River Compensation Plan Office



Conserving America's Fisheries





Table 2. Distribution of salmon and steelhead requiring hatchery compensation by the Columbia Basin Fisheries Technical Committee's Lower Snake Hatchery Subcommittee in 1974 (WDFW 1974). Values were derived by multiplying 48% loss rate to estimated run escapements developed within the U.S. Army COE Special Report (COE 1975) except for fall Chinook salmon. Rounding errors with the LSRCP goals were acknowledged by the subcommittee.

| Area                             | Fall Chinook salmon | Spring-Summer Chinook salmon | Steelhead     |
|----------------------------------|---------------------|------------------------------|---------------|
| Snake River                      |                     |                              |               |
| Below Lewiston                   | 5,000               |                              |               |
| Lewiston to China Gardens        | 3,580               |                              | 2,208         |
| China Gardens to Pleasant Valley | 1,689               |                              |               |
| Pleasant Valley to Hells Canyon  | 4,459               |                              |               |
| Hells Canyon Dam Fish Facilities | 3,648               | 1,200                        | 2,736         |
| Tucannon River                   |                     | 1,152                        | 1,632         |
| Clearwater River                 | 68                  | 288                          | 20,736        |
| Asotin Creek                     |                     |                              | 816           |
| Grande Ronde River               |                     | 5,856                        | 7,632         |
| Salmon River                     |                     | 46,656                       | 16,896        |
| Imnaha River                     | 68                  | 3,216                        | 1,920         |
| Small Tributaries                |                     | 288                          | 528           |
| <b>Totals</b>                    | <b>18,512</b>       | <b>58,656</b>                | <b>55,104</b> |



U.S. Fish and Wildlife Service

Lower Snake River Compensation Plan Office



Conserving America's Fisheries



Table 3. Allocation of compensation (adults) by State as suggested by Columbia Basin Fisheries Technical Committee (reproduced from WDFW 1974). This allocation was not to be used as a specific indicator of release sites.

| Area or Basin           | Washington            |                     |              | Oregon                |               | Idaho                 |               |
|-------------------------|-----------------------|---------------------|--------------|-----------------------|---------------|-----------------------|---------------|
|                         | Spring Chinook salmon | Fall Chinook salmon | Steelhead    | Spring Chinook salmon | Steelhead     | Spring-Summer Chinook | Steelhead     |
| Snake River             |                       |                     |              |                       |               |                       |               |
| Below Lewiston          |                       | 5,000               |              |                       |               |                       |               |
| Lewiston – Hells Canyon |                       | 9,728               | 2,208        |                       |               |                       |               |
| Hells Canyon Dam        |                       | 3,648               |              |                       | 1,368         | 1,200                 | 1,368         |
| Tucannon River          | 1,152                 |                     | 1,632        |                       |               |                       |               |
| Clearwater River        |                       | 68                  |              |                       |               | 288                   | 20,736        |
| Asotin Creek            |                       |                     | 816          |                       |               |                       |               |
| Grande Ronde River      |                       |                     |              | 5,856                 | 7,632         |                       |               |
| Salmon River            |                       |                     |              |                       |               | 46,656                | 16,896        |
| Imnaha River            |                       | 68                  |              | 3,216                 | 1,920         |                       |               |
| Small Tributaries       |                       |                     |              |                       | 264           | 288                   | 264           |
| <b>Totals</b>           | <b>1,152</b>          | <b>18,512</b>       | <b>4,656</b> | <b>9,072</b>          | <b>11,184</b> | <b>48,432</b>         | <b>39,264</b> |



U.S. Fish and Wildlife Service

Lower Snake River Compensation Plan Office

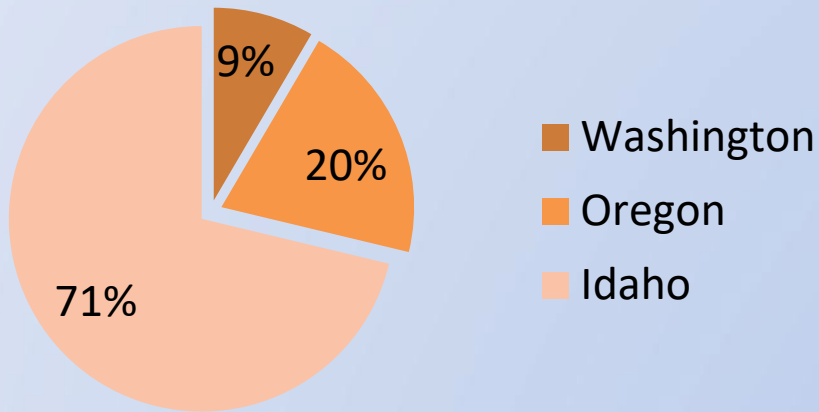


Conserving America's Fisheries



# “...in place, in kind...”

Steelhead  
55,100



- Hatchery programs originally sized and implemented with a 0.5 SAR (Project Area)
  - In-kind.
- Programs placed in specific locations
  - In-place
- Inception of program, meet SAR of 0.5.... meet 55,100.



U.S. Fish and Wildlife Service

Lower Snake River Compensation Plan Office

Conserving America's Fisheries

Conserving America's Fisheries



# “...in place, in kind...”

In terms of achieving goals, we have two constants to consider:

- The adult goals are firm -- but do they all need to be hatchery-reared fish? What part should supplementation play in returning adults.
- We have a fixed amount of hatchery rearing space authorized for construction, how flexible can/should we be in reallocating the space among the species and runs?

Ultimately, the question is will the flexibility we do have in the program allow us to achieve our goals of replacing the lost fish and fisheries?

Herrig 1991.



U.S. Fish and Wildlife Service

Lower Snake River Compensation Plan Office



Conserving America's Fisheries



# LSRCP Changes to Meet Goals

- 0.5 SAR is not the standard for every LSRCP program.
  - Performance has differed over 40+ years (stock, release sites, program type).
  - Production has been added and also reduced in that time related to performance toward the LSRCP goals
- 55,100 to LSRCP project area remains the primary goal... and coastwide harvest objective of 110,200 is secondary.
  - Non-project area harvest is secondary goal for several reasons....
- In place mitigation has evolved since program inception



U.S. Fish and Wildlife Service

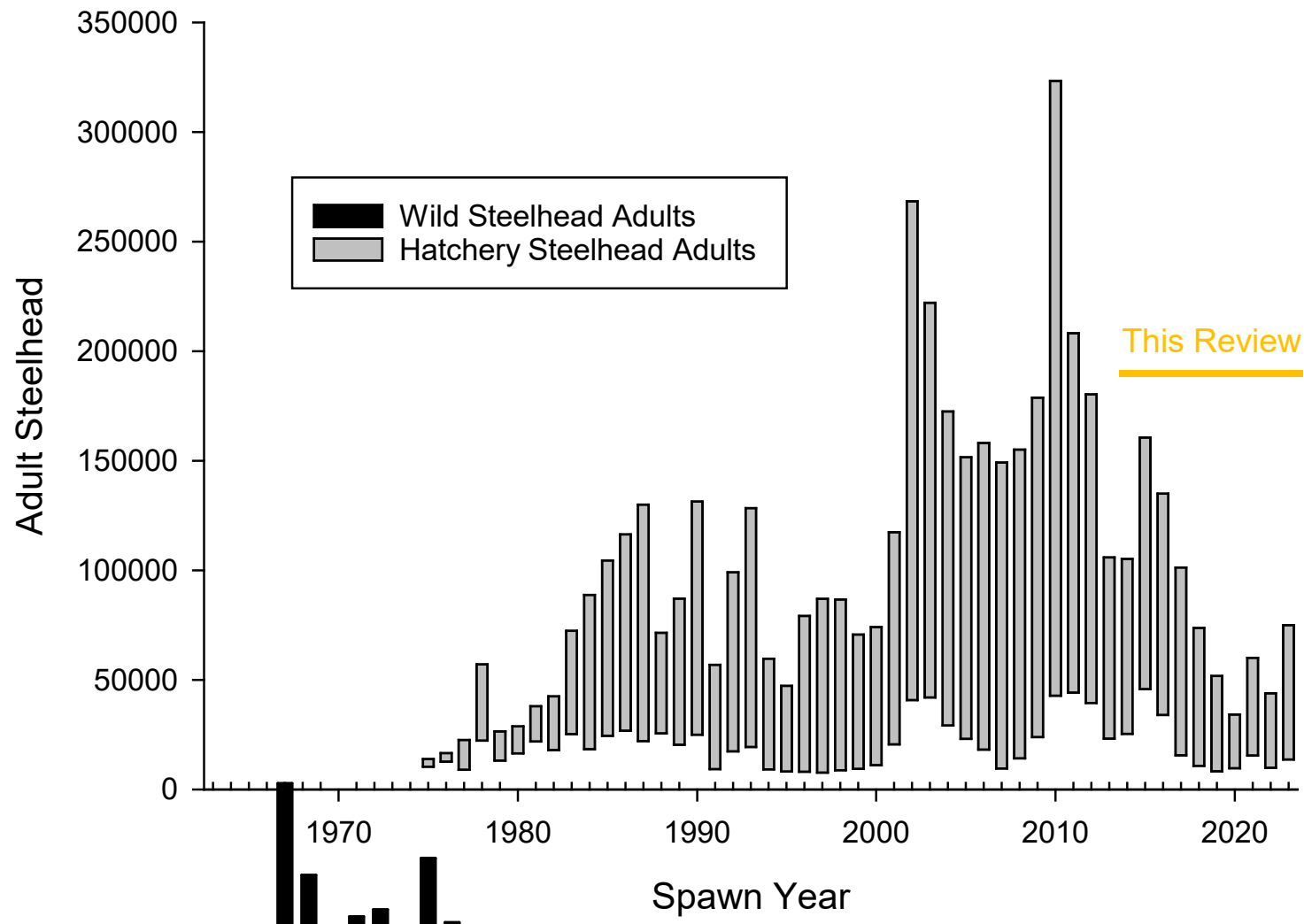
Lower Snake River Compensation Plan Office



Conserving America's Fisheries



# Origin of Snake River Steelhead by Spawn Year 1963-2023



Data Summary by Brian Leth - IDFG



U.S. Fish and Wildlife Service

Lower Snake River Compensation Plan Office



Conserving America's Fisheries





Table 11. Steelhead project area goal distributed by basin or area for the Lower Snake River Compensation Plan Program. Associated targets for smolt-to-adult recovery (SAR), coastwide harvest, total adults produced (includes jacks) and smolt-to-adult survival (SAS) are also provided. Distribution of the adult goal for B-Steelhead in the Salmon Basin will be determined in 2020. The historical SAR of 0.50% used to size the LSRCP program to achieve 55,100 steelhead (WDFW 1974) has changed over time. The Clearwater Basin SAR reflects a higher rate of survival due to limited rearing space for LSRCP steelhead (Warren 2018).

| Basin/Area                              | Steelhead Type | Distribution of the Project Area Goal | SAR (%) | Coastwide Harvest Objectives (2:1) | Total Adults Produced | SAS (%) |
|-----------------------------------------|----------------|---------------------------------------|---------|------------------------------------|-----------------------|---------|
| Clearwater (Idaho)                      | B-Steelhead    | 14,000                                | 1.66    | 28,000                             | 42,000                | 4.98    |
| Salmon (Idaho, Hagerman NFH Production) | A-Steelhead    | 13,600                                | 0.94    | 27,200                             | 40,800                | 2.82    |
| Salmon (Idaho, Magic Valley Production) | A-Steelhead    | 11,660                                | 0.73    | 23,320                             | 34,980                | 2.19    |
|                                         | B-Steelhead    | TBD                                   |         |                                    |                       |         |
| Grande Ronde (Oregon)                   | A-Steelhead    | 9,184                                 | 0.68    | 18,368                             | 27,552                | 2.04    |
| Imnaha (Oregon)                         | A-Steelhead    | 2,000                                 | 0.61    | 4,000                              | 6,000                 | 1.83    |
| SE Washington                           | A-Steelhead    | 4,656                                 | 0.79    | 9,312                              | 13,968                | 2.37    |
| Totals                                  |                | 55,100                                |         | 110,200                            | 165,300               |         |

Table 11 from USFWS 2020 – FY18 LSRCP Report



U.S. Fish and Wildlife Service

Lower Snake River Compensation Plan Office



Conserving America's Fisheries



# Noteworthy Changes Since Last Review (2014)

- Clearwater Basin
  - CWT on unmarked/untagged steelhead produced by LSRCP
  - No production changes.
  - Age structure and size of B's initiated operational changes.
- Salmon River basin
  - CWT on unmarked/untagged steelhead produced by LSRCP.
  - Consolidation of releases for Sawtooth Fish Hatchery production.
  - A/B stock and production changes.
- NE Oregon
  - No production changes.
  - Fall brood evaluation results.
  - Reciprocal study evaluation and results, early transfer/acclimation evaluation.
- SE Washington
  - Decreased releases of LFH/Wallowa stock with ESA consultation.
  - Dynamic programs with multiple changes.
  - Reciprocal study evaluation and results.



U.S. Fish and Wildlife Service

Lower Snake River Compensation Plan Office



Conserving America's Fisheries



Table 4. LSRCP Program in-place, in-kind distribution of project area steelhead goal of 55,100 adults.

| LSRCP Basin/Location | Facility              | Location/Stock                           | Current Production | Adult Goal    |
|----------------------|-----------------------|------------------------------------------|--------------------|---------------|
| Salmon River         | Hagerman NFH          | Sawtooth Weir - A                        | 1,410,000          | 13,100        |
|                      | Hagerman NFH          | PRAS Evaluation Sawtooth Weir - A        | 90,000             |               |
|                      | Hagerman NFH          | East Fork Salmon - A                     | 60,000             |               |
|                      |                       | <i>Sub Total</i>                         | <i>1,560,000</i>   | <i>13,600</i> |
| Salmon River         | Magic Valley FH       | Sawtooth Weir - A                        | 279,000            | 4,200         |
|                      | Magic Valley FH       | Little Salmon River - A                  | 403,000            |               |
|                      | Magic Valley FH       | Pahsimeroi Weir USR - B                  | 434,000            |               |
|                      | Magic Valley FH       | Yankee Fork - USR - B                    | 434,000            | 7,400         |
|                      |                       | <i>Sub Total</i>                         | <i>1,550,000</i>   | <i>11,600</i> |
| Clearwater River     | Clearwater FH         | Meadow Creek - SF CLW B                  | 501,000            | 14,000        |
|                      |                       | Red House Hole - SF CLW B                | 219,000            |               |
|                      |                       | Newsome Creek - SF CLW B                 | 123,000            |               |
|                      |                       | <i>Sub Total</i>                         | <i>843,000</i>     | <i>14,000</i> |
| Northeast Oregon     | Wallowa FH/Irrigon FH | Wallowa FH Early Acclimation - Wallowa A | 400,000            | 9,184         |
|                      | Wallowa FH/Irrigon FH | Wallowa FH Late Acclimation - Wallowa A  | 160,000            |               |
|                      | Wallowa FH/Irrigon FH | Big Canyon - Wallowa A                   | 240,000            |               |
|                      | Irrigon FH/Wallowa FH | Little Sheep - Imnaha A                  | 215,000            | 2,000         |
|                      |                       | <i>Sub Total</i>                         | <i>1,015,000</i>   | <i>11,184</i> |
| Southeast Washington | Lyons Ferry FH        | Touchet/Dayton Pond - Touchet Endemic A  | 50,000             | 398           |
|                      | Lyons Ferry FH        | Tucannon/Curl Lake - Tucannon A          | 100,000            | 1194          |
|                      | Lyons Ferry FH        | Tucannon/Tucannon FH - Tucannon A        | 50,000             |               |
|                      | Lyons Ferry FH        | Grande Ronde/Cottonwood AF - Wallowa A   | 225,000            | 3064          |
|                      | Lyons Ferry FH        | Touchet/Dayton Pond - Wallowa A          | 100,000            |               |
|                      | Lyons Ferry FH        | Snake River/Lyons Ferry FH - Wallowa A   | 60,000             |               |
|                      |                       | <i>Sub Total</i>                         | <i>585,000</i>     | <i>4,656</i>  |
|                      |                       | <b>Grand Total</b>                       | <b>5,553,000</b>   | <b>55,040</b> |



U.S. Fish and Wildlife Service

Lower Snake River Compensation Plan Office



Conserving America's Fisheries



# LSRCP Performance Table Data

- Provided with agenda (BY07-20)
  - Additional to ISRP a LSRCP historical table (BY95-2020)
  - Report card, compare and contrast programs.
  - Changes to programs to reflect stock/management changes
    - East Fork Program Transfer to Shoshone-Bannock Tribes
    - Magic Valley A/B Steelhead Performance
    - SE Washington Programmatic Changes
  - Variable temperatures and density index
  - Goal achievement highly variable.



U.S. Fish and Wildlife Service

Lower Snake River Compensation Plan Office



Conserving America's Fisheries



| LSRCP Program Performance |                       |                                          |                    |               |               |
|---------------------------|-----------------------|------------------------------------------|--------------------|---------------|---------------|
| LSRCP Basin/Location      | Facility              | Location/Stock                           | Current Production | Adult Goal    | BY07-20 SAR   |
| Salmon River              | Hagerman NFH          | Sawtooth Weir - A                        | 1,410,000          | 13,100        | 0.95%         |
|                           | Hagerman NFH          | PRAS Evaluation Sawtooth Weir - A        | 90,000             |               |               |
|                           | Hagerman NFH          | East Fork Salmon - A                     | 60,000             | 500           | 0.54%         |
|                           |                       | <i>Sub Total</i>                         | <i>1,560,000</i>   | <i>13,600</i> | <i>14,574</i> |
| Salmon River              | Magic Valley FH       | Sawtooth Weir - A                        | 279,000            | 4,200         | 1.18%         |
|                           | Magic Valley FH       | Little Salmon River - A                  | 403,000            |               |               |
|                           | Magic Valley FH       | Pahsimeroi Weir USR - B                  | 434,000            | 7,400         | 0.33%         |
|                           | Magic Valley FH       | Yankee Fork - USR - B                    | 434,000            |               |               |
|                           |                       | <i>Sub Total</i>                         | <i>1,550,000</i>   | <i>11,600</i> | <i>10,912</i> |
| Clearwater River          | Clearwater FH         | Meadow Creek - SF CLW B                  | 501,000            | 14,000        | 0.94%         |
|                           |                       | Red House Hole - SF CLW B                | 219,000            |               |               |
|                           |                       | Newsome Creek - SF CLW B                 | 123,000            |               |               |
|                           |                       | <i>Sub Total</i>                         | <i>843,000</i>     | <i>14,000</i> | <i>7,924</i>  |
| Northeast Oregon          | Wallowa FH/Irrigon FH | Wallowa FH Early Acclimation - Wallowa A | 400,000            | 9,184         | 0.94%         |
|                           | Wallowa FH/Irrigon FH | Wallowa FH Late Acclimation - Wallowa A  | 160,000            |               |               |
|                           | Wallowa FH/Irrigon FH | Big Canyon - Wallowa A                   | 240,000            | 2,000         | 1.05%         |
|                           | Irrigon FH/Wallowa FH | Little Sheep - Imnaha A                  | 215,000            |               |               |
|                           |                       | <i>Sub Total</i>                         | <i>1,015,000</i>   | <i>11,184</i> | <i>9,778</i>  |
| Southeast Washington      | Lyons Ferry FH        | Touchet/Dayton Pond - Touchet Endemic A  | 50,000             | 398           | 0.39%         |
|                           | Lyons Ferry FH        | Tucannon/Curl Lake - Tucannon A          | 100,000            | 1194          | 0.66%         |
|                           | Lyons Ferry FH        | Tucannon/Tucannon FH - Tucannon A        | 50,000             |               |               |
|                           | Lyons Ferry FH        | Grande Ronde/Cottonwood AF - Wallowa A   | 225,000            | 3064          | 1.58%         |
|                           | Lyons Ferry FH        | Touchet/Dayton Pond - Wallowa A          | 100,000            |               |               |
|                           | Lyons Ferry FH        | Snake River/Lyons Ferry FH - Wallowa A   | 60,000             |               |               |
|                           |                       | <i>Sub Total</i>                         | <i>585,000</i>     | <i>4,656</i>  | <i>7,268</i>  |
|                           |                       | <b>Grand Total</b>                       | <b>5,553,000</b>   | <b>55,040</b> | <b>50,456</b> |



U.S. Fish and Wildlife Service

Lower Snake River Compensation Plan Office



Conserving America's Fisheries



# Recent Problem

- Decline of steelhead coastwide
- Decline of A/B steelhead performance for USFWS -LSRCP Mitigation Program.
- Unsustainability of B-steelhead hatchery programs in Upper Salmon River.
  - *“Status quo won’t produce more adults, steelhead won’t fix themselves.”*



U.S. Fish and Wildlife Service

Lower Snake River Compensation Plan Office



Conserving America's Fisheries





# What's happened with steelhead?

- Ocean prey and surface temperature changes, ocean warming, blob.
- Population declines coastwide and in-basin.
- Declines in adult size/age (environment, fisheries)
- Rapidly decreasing abundance and fisheries (2015)

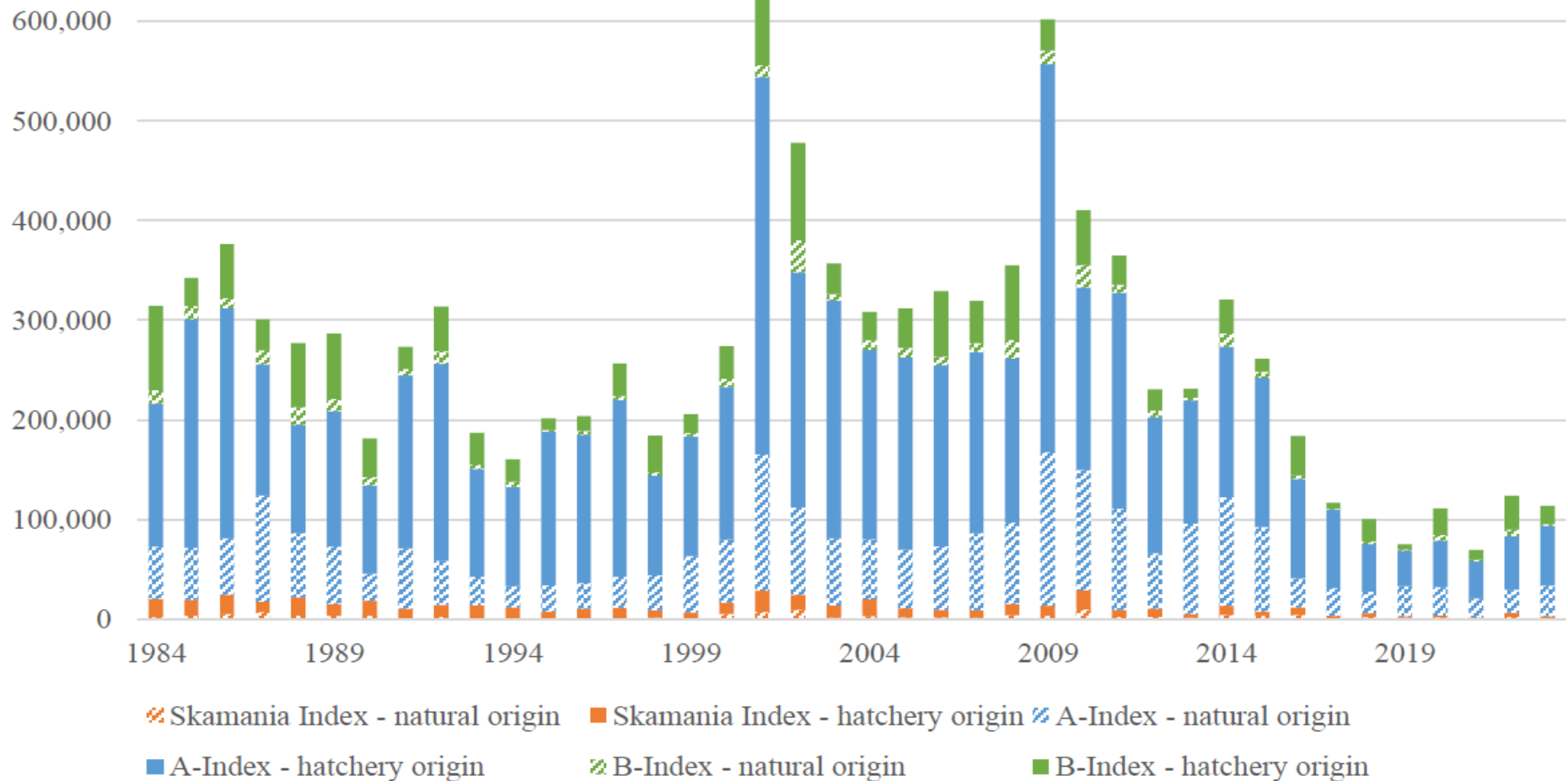


U.S. Fish and Wildlife Service  
Lower Snake River Compensation Plan Office

Conserving America's Fisheries



# Steelhead – Bonneville Dam



*Minimum upriver summer steelhead run at Bonneville Dam –ODFW/WDFW 2024 Joint Staff Report*



U.S. Fish and Wildlife Service

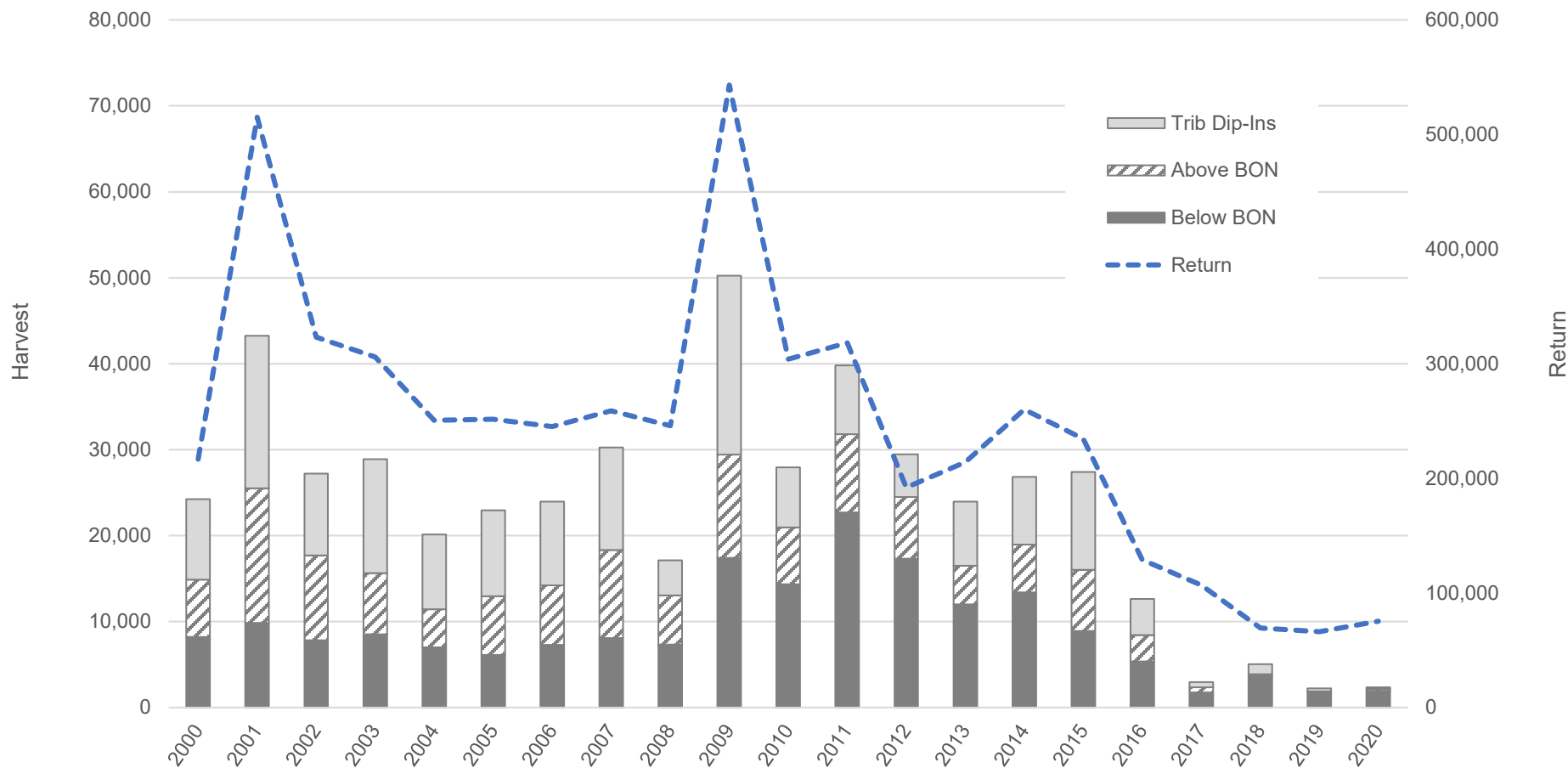
Lower Snake River Compensation Plan Office

Conserving America's Fisheries

Conserving America's Fisheries



# Annual Return of A-Index Summer Steelhead and Harvest in Columbia River Non-Treaty Fisheries, 2000-2020\*



\*Harvest includes kept catch plus release mortalities.

Thanks Tucker Jones – ODFW (Joint Staff Report Data)



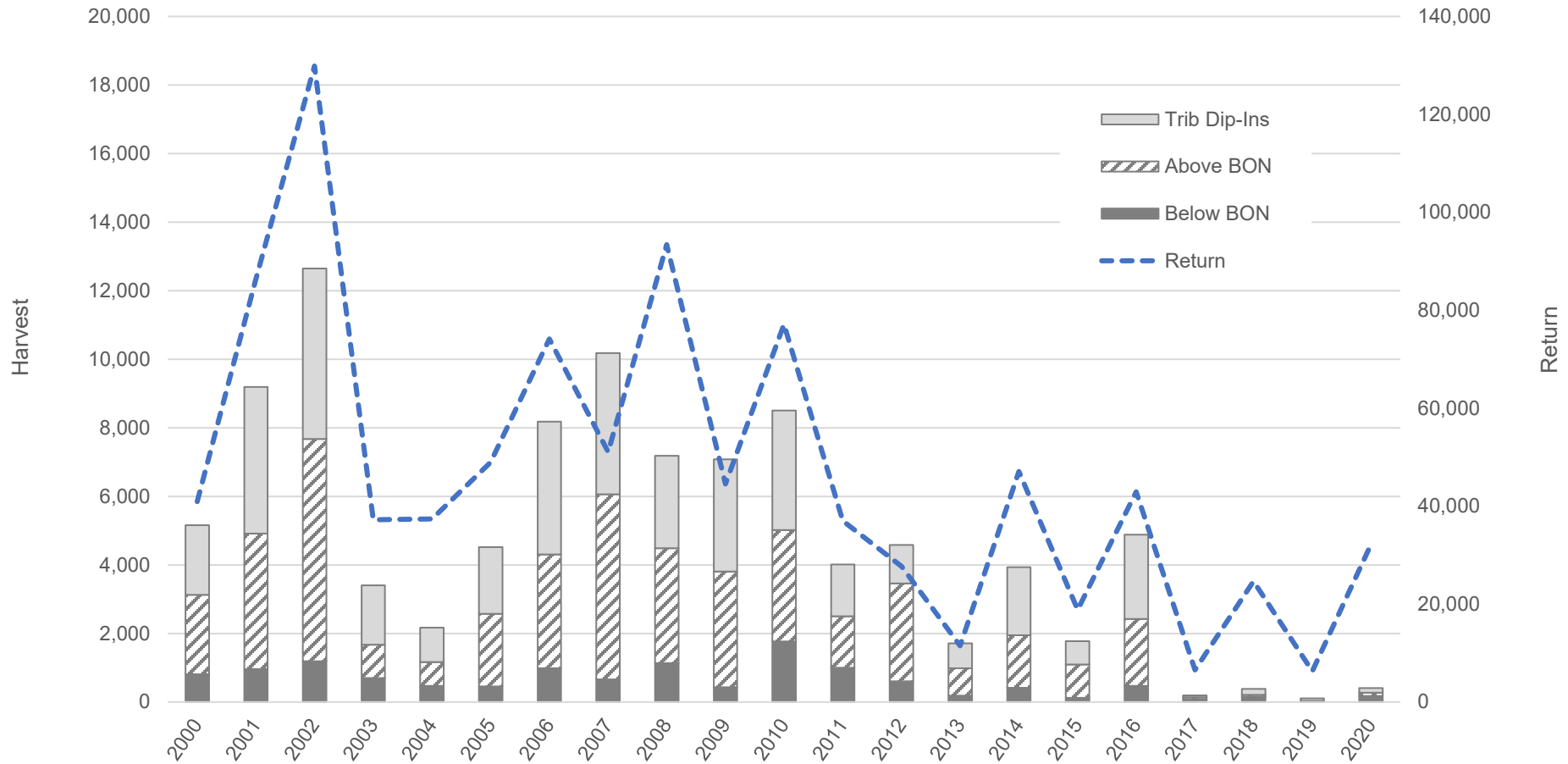
**U.S. Fish and Wildlife Service**  
**Lower Snake River Compensation Plan Office**



**Conserving America's Fisheries**



# Annual Return of B-Index Summer Steelhead and Harvest in Columbia River Non-Treaty Fisheries, 2000-2020\*



\*Harvest includes kept catch plus release mortalities.

Thanks Tucker Jones – ODFW (Joint Staff Report Data)



**U.S. Fish and Wildlife Service**  
**Lower Snake River Compensation Plan Office**



**Conserving America's Fisheries**



**Table A3. Fall Management Period Chinook Harvest Rate Schedule.**

| Expected<br>URB<br>River<br>Mouth<br>Run Size | Expected<br>River<br>Mouth<br>Snake<br>River<br>Natural<br>Origin<br>Run Size <sup>1</sup> | Treaty<br>Total<br>Harvest<br>Rate | Non-<br>Treaty<br>Harvest<br>Rate | Total<br>Harvest<br>Rate | Expected<br>Escapement<br>of Snake R.<br>Natural<br>Origin Past<br>Fisheries |
|-----------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------------|-----------------------------------|--------------------------|------------------------------------------------------------------------------|
| < 60,000                                      | < 1,000                                                                                    | 20%                                | 1.50%                             | 21.50%                   | 784                                                                          |
| 60,000                                        | 1,000                                                                                      | 23%                                | 4%                                | 27.00%                   | 730                                                                          |
| 120,000                                       | 2,000                                                                                      | 23%                                | 8.25%                             | 31.25%                   | 1,375                                                                        |
| > 200,000                                     | 5,000                                                                                      | 25%                                | 8.25%                             | 33.25%                   | 3,338                                                                        |
|                                               | 6,000                                                                                      | 27%                                | 11%                               | 38.00%                   | 3,720                                                                        |
|                                               | 8,000                                                                                      | 30%                                | 15%                               | 45.00%                   | 4,400                                                                        |

**Footnotes for Table A3**

1. If the Snake River natural fall Chinook forecast is less than the level corresponding to an aggregate URB run size, the allowable mortality rate will be based on the Snake River natural fall Chinook run size
2. Treaty Fisheries include: Zone 6 ceremonial, subsistence, and commercial fisheries from August 1-December 31.
3. Non-Treaty Fisheries include: commercial and recreational fisheries in Zones 1-5 and mainstem recreational fisheries from Bonneville Dam upstream to the confluence of the Snake River and commercial and recreation SAFE (Selective Areas Fisheries Evaluation) fisheries from August 1-December 31.
4. The Treaty Tribes and the States of Oregon and Washington may agree to a fishery for the Treaty Tribes below Bonneville Dam not to exceed the harvest rates provided for in this Agreement.
5. Fishery impacts in Hanford sport fisheries count in calculations of the percent of harvestable surplus achieved.
6. When expected river-mouth run sizes of naturally produced Snake River Fall Chinook equal or exceed 6,000, the States reserve the option to allocate some proportion of the non-treaty harvest rate to supplement fall Chinook directed fisheries in the Snake River.

**Table A4. Fall Management Period Steelhead Harvest Rate Schedule.**

| Forecast<br>Bonneville<br>Total B<br>Steelhead Run<br>Size | River Mouth<br>URB Run<br>Size | Treaty Total<br>B Harvest<br>Rate | Non-<br>Treaty<br>Natural<br>Origin B<br>Harvest<br>Rate | Total<br>Harvest<br>Rate |
|------------------------------------------------------------|--------------------------------|-----------------------------------|----------------------------------------------------------|--------------------------|
| < 20,000                                                   | Any                            | 13%                               | 2.0%                                                     | 15.0%                    |
| 20,000                                                     | Any                            | 15%                               | 2.0%                                                     | 17.0%                    |
| 35,000                                                     | > 200,000                      | 20%                               | 2.0%                                                     | 22.0%                    |

B Run Steelhead are defined as steelhead measuring  $\geq 78$  cm

**Footnotes for Table A4**

This harvest rate schedule applies to fall season fisheries only. These fisheries include all mainstem fisheries below the mouth of the Snake River from August 1 through October 31 and for mainstem fisheries from The Dalles Dam to the mouth of the Snake River from November 1 through December 31. Also included are fall season treaty fisheries in Drano Lake and tributary mouth sport fisheries in Zone 6 that impact Snake River steelhead.

US v Oregon 2018-2027 Management Agreement – Tables A3, A4.



U.S. Fish and Wildlife Service

Lower Snake River Compensation Plan Office

Conserving America's Fisheries



# 2023 Treaty Harvest

| Fall Season        | Total Catch | Limit   | Allowed Harvest Rate | Actual Harvest Rate |
|--------------------|-------------|---------|----------------------|---------------------|
| URB Fall Chinook   | 62,630      | 101,697 | 30.0%                | 18.5%               |
| Snake Fall Chinook | 2,310       | --      | 30.0%                | 18.7%               |
| Total Fall Chinook | 154,630     | --      |                      |                     |
| B-Index Steelhead  | 2,226       | 2,573   | 13.0%                | 11.2%               |
| Total Steelhead    | 8,311       | --      |                      |                     |
| Coho               | 17,778      | --      |                      |                     |



U.S. Fish and Wildlife Service

Lower Snake River Compensation Plan Office

Conserving America's Fisheries





# A and B Steelhead Stock Survival Upper Salmon River

| Brood Year | B<br>MV-DNFH | B<br>MV-USAL<br>Localized | Localized B-<br>Advantage |
|------------|--------------|---------------------------|---------------------------|
| 2010       | 0.12%        | 0.44%                     | 3.5                       |
| 2011       | 0.42%        | 0.53%                     | 1.3                       |
| 2012       | 0.17%        | 0.65%                     | 3.9                       |
| 2013       | 0.49%        | 0.65%                     | 1.3                       |
| 2014       | 0.00%        | 0.03%                     | 8.8                       |
| 2015       | 0.18%        | 0.27%                     | 1.5                       |
| 2016       | 0.13%        | 0.11%                     | 0.8                       |
| Average    | 0.22%        | 0.38%                     | <b>1.8</b>                |

DNFH B vs. USAL B Localized  
in Salmon Basin

| Brood<br>Year | A<br>Average<br>(Saw-Pah-<br>Oxb) | B<br>Average<br>(DWOR-<br>USAL) | Surv<br>Advan.<br>(A/B) |
|---------------|-----------------------------------|---------------------------------|-------------------------|
| 2010          | 0.84%                             | 0.28%                           | 3.0                     |
| 2011          | 1.51%                             | 0.47%                           | 3.2                     |
| 2012          | 1.21%                             | 0.41%                           | 3.0                     |
| 2013          | 1.33%                             | 0.57%                           | 2.3                     |
| 2014          | 0.19%                             | 0.02%                           | 10.9                    |
| 2015          | 0.81%                             | 0.22%                           | 3.6                     |
| 2016          | 0.32%                             | 0.12%                           | 2.7                     |
| Average       | 0.89%                             | 0.30%                           | <b>3.0</b>              |

Combined A vs Combined B  
in Salmon Basin

B. Leth - IDFG Survival Data



U.S. Fish and Wildlife Service

Lower Snake River Compensation Plan Office



Conserving America's Fisheries



# Local Brood for B-Steelhead in Upper Salmon (USAL)

| BY   | DWOR Smolts Released | USAL Smolts Released | Total Smolts Released | % of Releases using USAL |
|------|----------------------|----------------------|-----------------------|--------------------------|
| 2010 | 811,341              | 91,525               | 902,866               | 10%                      |
| 2011 | 869,566              | 98,655               | 968,221               | 10%                      |
| 2012 | 950,313              | 112,571              | 1,062,884             | 11%                      |
| 2013 | 138,195              | 931,522              | 1,069,717             | 87%                      |
| 2014 | 284,070              | 416,580              | 700,650               | 59%                      |
| 2015 | 499,090              | 524,000              | 1,023,090             | 51%                      |
| 2016 | 93,240               | 999,200              | 1,092,440             | 91%                      |
| 2017 | 390,290              | 352,290              | 742,580               | 47%                      |
| 2018 | 939,230              | 143,130              | 1,082,360             | 13%                      |
| 2019 | 155,190              | 756,770              | 911,960               | 83%                      |
| 2020 | 404,290              | 591,880              | 996,170               | 59%                      |

| Number of Smolts Released at PFH |           |           |                          |
|----------------------------------|-----------|-----------|--------------------------|
| Dwor                             | USAL      | Total     | % of Releases using USAL |
| 30,303                           | 91,525    | 121,828   | 75%                      |
| 88,704                           | 98,655    | 187,359   | 53%                      |
| 75,786                           | 112,571   | 188,357   | 60%                      |
| 138,195                          |           | 138,195   | 0%                       |
| 94,647                           | 94,313    | 188,960   | 50%                      |
| 93,600                           | 155,000   | 248,600   | 62%                      |
| 93,240                           | 155,660   | 248,900   | 63%                      |
| 93,690                           | 156,340   | 250,030   | 63%                      |
| 106,080                          | 143,130   | 249,210   | 57%                      |
| 91,620                           | 247,610   | 339,230   | 73%                      |
| 93,670                           | 249,330   | 343,000   | 73%                      |
|                                  |           |           |                          |
| 999,535                          | 1,504,134 | 2,503,669 | 60%                      |



U.S. Fish and Wildlife Service

Lower Snake River Compensation Plan Office



Conserving America's Fisheries



# Upper Salmon A/B Discussions

- **People** – USFWS-LSRCP, Shoshone Bannock Tribes (co-man), Idaho Fish and Game (co-man), NOAA-Fisheries, Nez Perce Tribe (co-man).
- **Problem** – Declines in steelhead returns, in particular returns to Upper Salmon River and “B” stock steelhead.
- **Issues** – Stock used (A or B), adult returns, harvest/fishing, mitigation goals, cultural loss, marking/tagging.
- **Positions**
  - USFWS-LSRCP – Explore replacement of B-stock with A-stock in upper Salmon basin... better for survival/mitigation, ESA impacts, and will be the future (climate change).
  - IDFG – Maintain B stock production for Policy consideration, open to some change.
  - SBT – Maintain B stock production in Yankee Fork (tribal significance and traditional/historical fishing opportunity).
  - NPT – Stop backfilling of the Upper Salmon B-program with stock from our program in the Clearwater basin.
- **Variables affecting the conflict** – Inter-tribal conflict, climate change, ocean conditions, F&G commissioners, traditional fishing culture and LSRCP performance.



U.S. Fish and Wildlife Service

Lower Snake River Compensation Plan Office



Conserving America's Fisheries



# A/B Discussions - Interests

- Common Interests - having a hatchery mitigation program and fish to harvest.
- **SBT** traditional fishing opportunity, off-reservation opportunity, Yankee Fork weir, egg box production.
- **IDFG** fishing opportunity, commissioners (authority), broodstock collection.
- **USFWS-LSRCP** mitigation goals, performance, ESA benefits/permitting, costs, infrastructure.
- **NPT** don't want to keep providing B-stock to backfill broodstock shortfalls in USAL.
- **NOAA-Fisheries** – ESA impacts, permitting, ESA take



U.S. Fish and Wildlife Service

Lower Snake River Compensation Plan Office



Conserving America's Fisheries



Abundance or Size?

Abundance > Size - Three more times the A steelhead, more opportunity and conversion than what was done in the past and will be in the future.

Size > Abundance - Conversions (38% from SBT report) show about 2,152 adults with As vs. 919 adults for Bs catch locally with trout > A program in YF

Abundance > Size, if the 620,000 YF program was.....

| Scenario    | SAR to LGD | Adults back to LGD | Adult Conversion to YF (39%) | 1 Ocean Returns in YF | 2 Ocean Returns in YF | 620,000 | YF Program Release Size |
|-------------|------------|--------------------|------------------------------|-----------------------|-----------------------|---------|-------------------------|
| SawA        | 0.89%      | 5,518              | 2,152                        | 1,595                 | 557                   |         |                         |
| Pah B USAL  | 0.38%      | 2,356              | 919                          | 196                   | 723                   |         |                         |
| 50/50 B Mix | 0.30%      | 1,860              | 725                          | 155                   | 571                   |         |                         |
| Pah B DNFH  | 0.22%      | 1,364              | 532                          | 113                   | 419                   |         |                         |

From IDFG Data on % age at return

|        | Size > Abundance |           |
|--------|------------------|-----------|
|        | 1 Ocean          | 2/3 Ocean |
| SawA   | 74.10%           | 25.90%    |
| USAL B | 21.30%           | 78.70%    |

1 Ocean difference is 62-58 cm favoring B's.... Or 1.5 inches

2 Ocean difference is 78-68 cm favoring B's.... Or 3.9 inches



| Status Quo Magic Valley Fish Hatchery - Current Production Program                                                 |                        |                          |                |              |           |                |                  |        |
|--------------------------------------------------------------------------------------------------------------------|------------------------|--------------------------|----------------|--------------|-----------|----------------|------------------|--------|
| Option                                                                                                             |                        | Release Site             | Stock Priority | A smolts     | B smolts  | Smolts/Fe male | Project Area SAR | Adults |
| Status Quo                                                                                                         | MVFH                   | Sawtooth Weir            | SawA           | 279,000      |           | 3,929          | 0.89%            | 2,483  |
|                                                                                                                    | MVFH                   | Little Salmon R. - Stink | PahA           | 186,000      |           | 4,133          | 0.97%            | 1,804  |
|                                                                                                                    | MVFH                   | Pahsimeroi Weir 1        | USRB           |              | 248,000   | 4,679          | 0.38%            | 942    |
|                                                                                                                    | MVFH                   | Pahsimeroi Weir 2        | DworB          |              | 93,000    | 4,227          | 0.22%            | 205    |
|                                                                                                                    | MVFH                   | Yankee Fork 1            | USRB/DworB     |              | 527,000   | 4,400          | 0.30%            | 1,581  |
|                                                                                                                    | MVFH                   | Little Salmon R. - Stink | USRB/DworB     |              | 217,000   | 4,400          | 0.30%            | 651    |
|                                                                                                                    | SubTotal               |                          |                | 465,000      | 1,085,000 |                |                  | 7,666  |
|                                                                                                                    |                        |                          |                | Total Smolt: | 1,550,000 |                |                  |        |
|                                                                                                                    |                        | A Brood                  | B Brood        | Total        |           | USAL B %       |                  |        |
|                                                                                                                    | Brood                  | 116                      | 244            | 360          |           | 56%            |                  |        |
| Option 1. Little Salmon B to A, Prioritize USAL B stock for use at Pahsimeroi, increase Pahsimeroi release to 428K | GROUP PREFERRED OPTION |                          |                |              |           |                |                  |        |
|                                                                                                                    |                        | Release Site             | Stock Priority | A smolts     | B smolts  | Smolts/F       | SAR              | Adults |
|                                                                                                                    | MVFH                   | Sawtooth Weir            | SawA           | 279,000      |           | 3,929          | 0.89%            | 2,483  |
|                                                                                                                    | MVFH                   | Little Salmon R. - Stink | PahA           | 186,000      |           | 4,133          | 0.97%            | 1,804  |
|                                                                                                                    | MVFH                   | Pahsimeroi Weir 1        | 1 - USAL B     |              | 248,000   | 4,679          | 0.38%            | 942    |
|                                                                                                                    | MVFH                   | Pahsimeroi Weir 2        | 2 - USAL B     |              | 180,000   | 4,679          | 0.38%            | 684    |
|                                                                                                                    | MVFH                   | Yankee Fork 1            | 3 - USAL B     |              | 440,000   | 4,679          | 0.38%            | 1,672  |
|                                                                                                                    | MVFH                   | Little Salmon R. - Stink | SawA/PahA      | 217,000      | -         | 3,929          | 0.89%            | 1,931  |
|                                                                                                                    | SubTotal               |                          |                | 682,000      | 868,000   |                |                  | 9,517  |
|                                                                                                                    |                        |                          |                | Total Smolt: | 1,550,000 |                |                  |        |
|                                                                                                                    |                        | A Brood                  | B Brood        | Total        |           | USAL B %       |                  |        |
|                                                                                                                    | Brood                  | 171                      | 191            | 363          |           | 100%           |                  |        |



U.S. Fish and Wildlife Service

Lower Snake River Compensation Plan Office



Conserving America's Fisheries



# A/B Discussions - Outcome

1. Discontinuing backfilling of USAL B programs with DNFH B stock (NPT).
2. If future brood shortages occur with the USAL B returns for Yankee Fork, production will be made up with backfilling shortfalls with A stock and releases at existing A stock release sites (ie. Sawtooth weir). These will be coordinated through the Tuesday coordination calls and the AOP process
3. Change - Little Salmon program release of 217,000 B-steelhead to A-steelhead (LSRCP).
4. Shift of 87,000 B-production from Yankee Fork to Pahsimeroi Hatchery (LSRCP, IDFG, SBT).
5. The following will be the prioritization of USAL-B smolt production groups (SBT)
  - 1) 428,000 production at Pahsimeroi Hatchery
  - 2) 440,000 production of USAL B at Yankee Fork.
  - 3) As available and funded, egg box production of USAL B in Yankee Fork.
6. The overall marking of USAL B should remain the same but there will be an increase in the number of coded wire tags from 341,000 to 428,000. Releases at Pahsimeroi Fish Hatchery will be entirely coded wire tagged and unclipped (IDFG/SBT/LSRCP).
7. These changes and actions will be additionally coordinated by LSRCP, IDFG and SBT with NOAA-Fisheries for ESA permitting compliance (LSRCP).



U.S. Fish and Wildlife Service

Lower Snake River Compensation Plan Office



Conserving America's Fisheries





# A/B Summary

- Changes should improve
  - Abundance of A and B steelhead
  - LSRCP performance leading toward improvement in broodstock certainty.
  - Hopefully, all fisheries in time.
- Status quo wouldn't produce more adults, B-steelhead couldn't fix themselves.
- Changes aren't cost prohibitive.
- Adaptive Management – defined by Kingsford et al. 2017
  - *“Adaptive management should include governance, planning, implementation of decisions, and monitoring and evaluation of subsequent outcomes”*



U.S. Fish and Wildlife Service

Lower Snake River Compensation Plan Office



Conserving America's Fisheries



# Overall Summary

- LSRCP Steelhead program performance has declined with declining steelhead populations coastwide.
- Decline in performance affects harvest opportunity both within and downstream of LSRCP project area.
- Stocks and programs perform differently based on location and other factors.
- Presentations this week will illustrate performance toward LSRCP in-place, in-kind goals and highlight...
  - Stock/management decisions
  - Infrastructure connections to performance
  - Science informing decision making, SDM concepts and tools
  - Adaptive management examples within LSRCP program
  - Opportunities for feedback and change.



U.S. Fish and Wildlife Service

Lower Snake River Compensation Plan Office



Conserving America's Fisheries



# Questions?



U.S. Fish and Wildlife Service

Lower Snake River Compensation Plan Office



Conserving America's Fisheries



# Additional Slides



U.S. Fish and Wildlife Service

Lower Snake River Compensation Plan Office



Conserving America's Fisheries



# Production of A/B in Upper Salmon

**Table 1.1. Steelhead Release Goals.**

| Smolt Release Program | Rearing Facility | Release Site                  | Parent Stock | BY 2021 Smolt Release Goal |
|-----------------------|------------------|-------------------------------|--------------|----------------------------|
| LSRCP / IDFG          | HNFH             | Sawtooth Weir                 | SawA         | 1,410,000                  |
|                       | HNFH             | Sawtooth Weir (PRAS Eval)     | SawA         | 90,000                     |
|                       | HNFH             | E. Fork Salmon R. - Upper     | EFNat        | 60,000                     |
|                       | Total            |                               |              | 1,560,000                  |
|                       | MVFH             | Sawtooth Weir                 | SawA         | 279,000                    |
|                       | MVFH             | Little Salmon R. - Stinky Sp. | PahA         | 186,000                    |
|                       | MVFH             | Pahsimeroi Weir <sup>1</sup>  | USRB         | 248,000                    |
|                       | MVFH             | Pahsimeroi Weir               | DworB        | 93,000                     |
|                       | MVFH             | Yankee Fork <sup>1</sup>      | USRB/DworB   | 527,000                    |
|                       | MVFH             | Little Salmon - Stinky Sp.    | USRB/DworB   | 217,000                    |
| Total                 |                  |                               | 1,550,000    |                            |
| IPC / IDFG            | NSFH             | Pahsimeroi Weir               | PahA         | 800,000                    |
|                       | NSFH             | Little Salmon R. - Stinky Sp. | PahA         | 200,000                    |
|                       | NSFH             | Little Salmon R. - Stinky Sp. | OxbA         | 250,000                    |
|                       | NSFH             | Snake R. Hells Canyon         | OxbA         | 550,000                    |
|                       | Total            |                               |              | 1,800,000                  |
| Grand Total           |                  |                               |              | 4,910,000                  |

<sup>1</sup> Release goals for the USRB stock were changed in June of 2019 to shift 96,000 unclipped smolts from the Yankee Fork release group to the Pahsimeroi release group in an effort to increase future adult returns to the weir.

| Egg Box Program | Hatchery Egg Source | Egg Box Site               | Parent Stock            | Egg Box BY2022 Outplant Goals |
|-----------------|---------------------|----------------------------|-------------------------|-------------------------------|
| SBT             | PFH                 | Yankee Fork                | USRB/DworB <sup>1</sup> | 500,000                       |
|                 |                     | Panther Creek <sup>2</sup> | PahA                    | 300,000                       |
|                 |                     | Indian Creek <sup>2</sup>  | PahA                    | 200,000                       |
|                 |                     | Total                      |                         | 1,000,000                     |

<sup>1</sup> If smolt releases for Yankee Fork and Pahsimeroi are met and egg box needs cannot be met with USRB eggs, then DworB eggs will be considered for the SBT egg box program if available

<sup>2</sup> Due to low water in Panther Creek (i.e., Beaver Creek) over the past several years, the SBT proposes to reduce Panther Creek goal to 300k and increase Indian Creek goal to 200k until a more suitable site for egg incubation is found.



U.S. Fish and Wildlife Service

Lower Snake River Compensation Plan Office



Conserving America's Fisheries



# Length of USAL-B (cm)

| Brood Year | <u>USAL</u> |        | <u>DWOR- CFH</u> |        |
|------------|-------------|--------|------------------|--------|
|            | 1-Oc        | 2/3-Oc | 1-Oc             | 2/3-Oc |
| 2014       | 64          | 76     | 66               | 81     |
| 2015       | 61          | 76     | 62               | 82     |
| 2016       | 64          | 79     | 67               | 84     |
| 2017       | 58          | 81     | -                | 80     |
| 2018       | 61          | 79     | 67               | 80     |
| 2019       | 63          | 77     | 64               | 82     |
| 2020       | 64          | 76     | -                | 80     |
| Average    | 62          | 78     | 65               | 81     |

Length cutoff for  
B-steelhead 78 cm



U.S. Fish and Wildlife Service

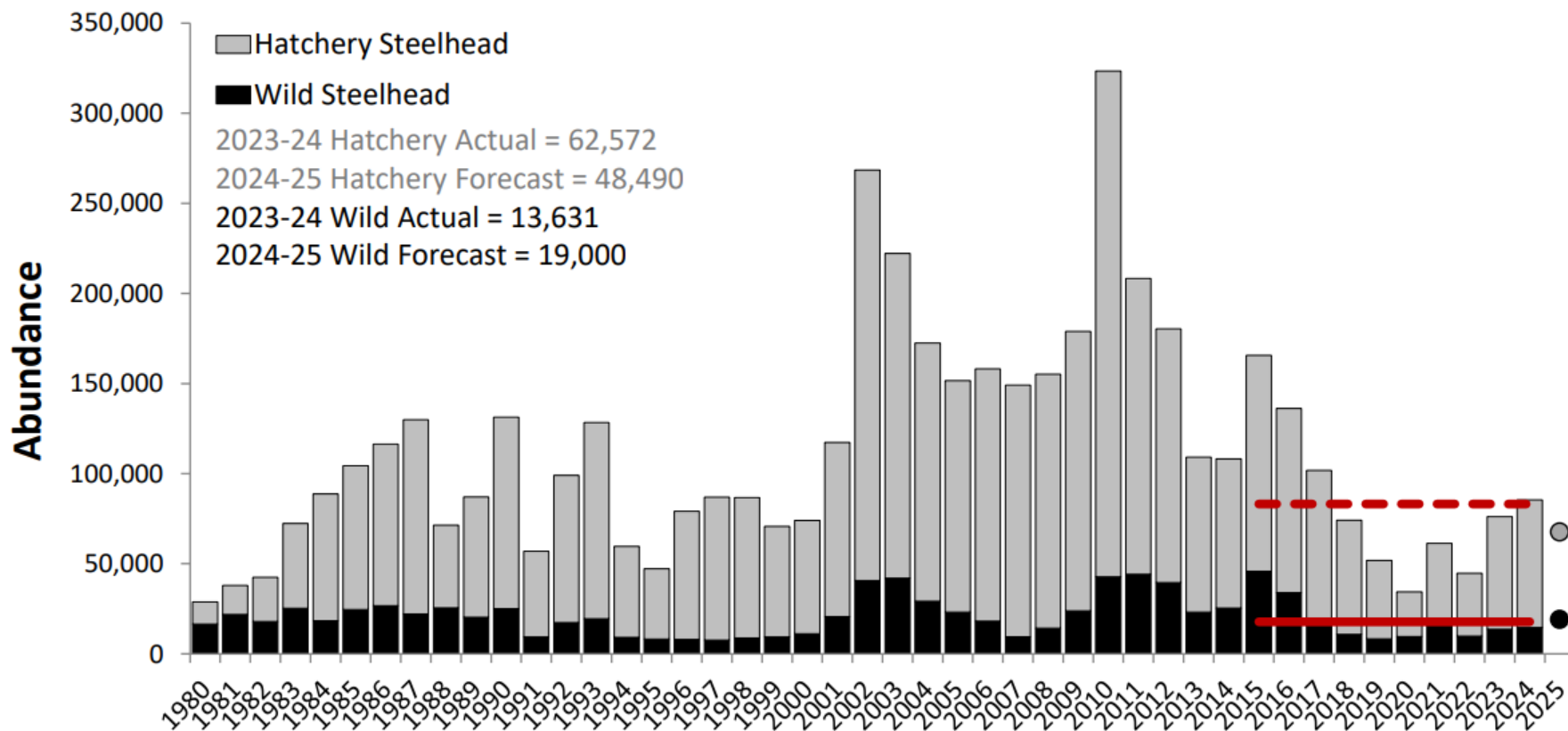
Lower Snake River Compensation Plan Office

CONSERVING  
AMERICA'S  
*Fisheries*

Conserving America's Fisheries



# Snake River steelhead at Lower Granite Dam





# Spring/Summer Chinook Example

|                  |       | LSRCP Total Production           |           |           |           |            |            |
|------------------|-------|----------------------------------|-----------|-----------|-----------|------------|------------|
|                  |       | 6,000,000                        | 7,000,000 | 8,000,000 | 9,000,000 | 10,000,000 | 11,000,000 |
| Project Area SAR | 1.00% | 60,000                           | 70,000    | 80,000    | 90,000    | 100,000    | 110,000    |
|                  | 0.90% | 54,000                           | 63,000    | 72,000    | 81,000    | 90,000     | 99,000     |
|                  | 0.80% | 48,000                           | 56,000    | 64,000    | 72,000    | 80,000     | 88,000     |
|                  | 0.70% | 42,000                           | 49,000    | 56,000    | 63,000    | 70,000     | 77,000     |
|                  | 0.60% | 36,000                           | 42,000    | 48,000    | 54,000    | 60,000     | 66,000     |
|                  | 0.50% | 30,000                           | 35,000    | 40,000    | 45,000    | 50,000     | 55,000     |
|                  | 0.40% | 24,000                           | 28,000    | 32,000    | 36,000    | 40,000     | 44,000     |
|                  | 0.30% | 18,000                           | 21,000    | 24,000    | 27,000    | 30,000     | 33,000     |
|                  | 0.20% | 12,000                           | 14,000    | 16,000    | 18,000    | 20,000     | 22,000     |
|                  | 0.10% | 6,000                            | 7,000     | 8,000     | 9,000     | 10,000     | 11,000     |
|                  |       | Where LSRCP Goal is met (58,700) |           |           |           |            |            |

## Increased Performance

- Low Densities
- Better release sites
- Good homing
- Releases that are ready-to-migrate
- Better in-river survival, hydrosystem survival.
- Smolt programs over parr programs
- Endemic or localized stock

Increasing Costs (\$)

Increased Brood Need (and Reduced Fisheries)

Started program with 6.74 M with expected survival of 0.87% = 58,700

Current program is 10.4 M with measured, mean survival of 0.42% (BY07-16) = 43,783



U.S. Fish and Wildlife Service

Lower Snake River Compensation Plan Office



Conserving America's Fisheries



# Options

- Challenges and considerations with changing the programs.
  - LSRCP in-place, in-kind goals
  - Performance (potential or actual)
  - Type of program
  - Space/Infrastructure/Logistics
  - Funding
  - Policy considerations, U.S. v. Oregon (consensus)
  - ESA
  - Shifting baselines (Climate, Ocean, etc.)



U.S. Fish and Wildlife Service

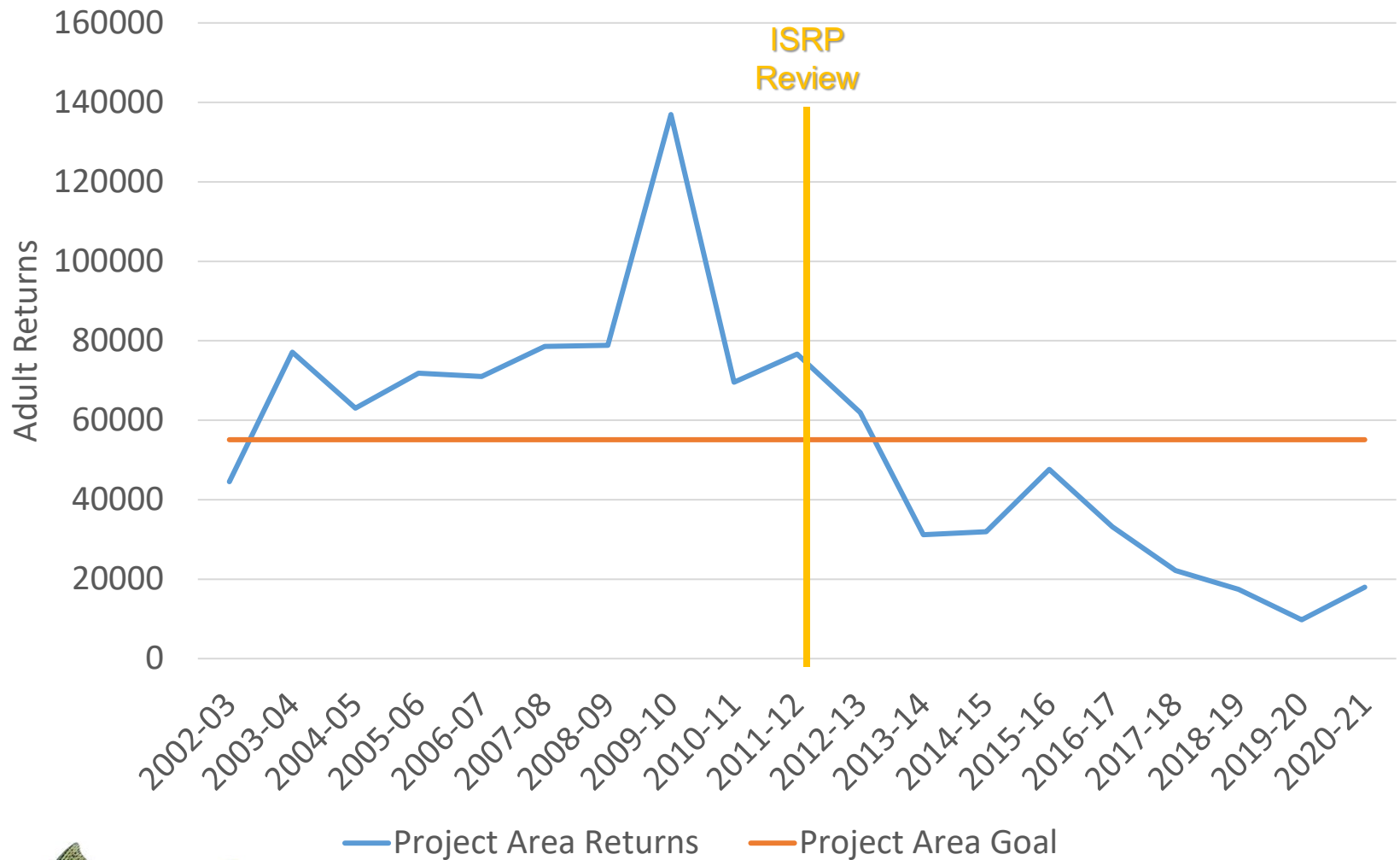
Lower Snake River Compensation Plan Office



Conserving America's Fisheries



## LSRCP Steelhead Returns



Let's talk about steelhead!



U.S. Fish and Wildlife Service

Lower Snake River Compensation Plan Office



Conserving America's Fisheries

