

# WALLOWA STOCK SUMMER STEELHEAD PROGRAM REVIEW

## GRANDE RONDE RIVER

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# WDFW Summer Steelhead Program Goals

| Location            | Original Smolt Goals | Current Smolt Goals | Adult Goal to Project Area | Total Adult Goal |
|---------------------|----------------------|---------------------|----------------------------|------------------|
| Snake River         | 126,000              | 160,000             | 630                        | 1,890            |
| Tucannon            | 175,000              | 0                   | 876                        | 2,628            |
| Walla Walla         | 180,000              | 100,000             | 900                        | 2,700            |
| Touchet             | 150,000              | 85,000              | 750                        | 2,250            |
| <b>Grande Ronde</b> | <b>300,000</b>       | <b>200,000</b>      | <b>1,500</b>               | <b>4,500</b>     |
| TOTALS              | 931,000              | 545,000             | 4,656                      | 13,968           |

**SAR = 0.5%, SAS = 1.5%**

# Steelhead Program Management Objectives

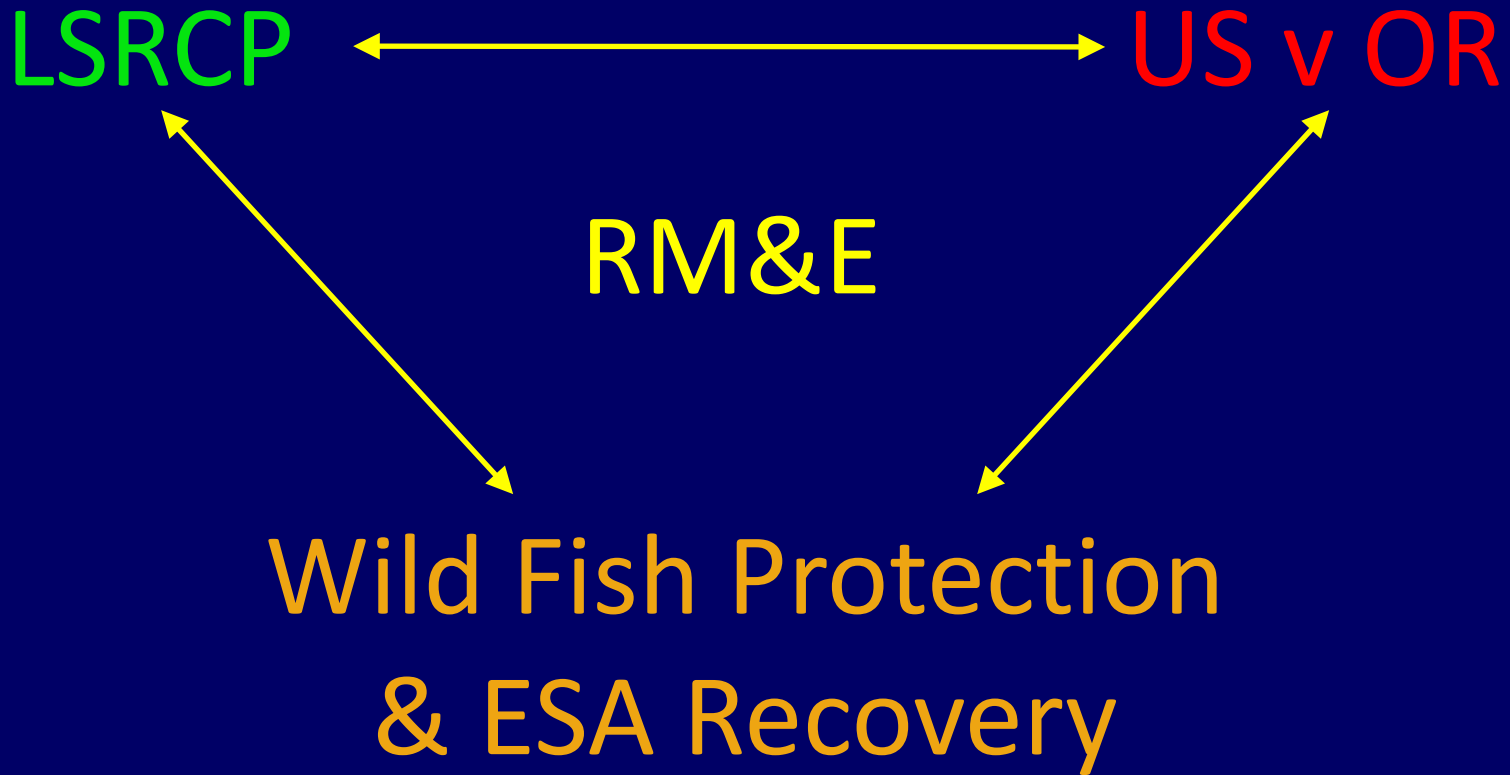
- Establish steelhead broodstock(s) to meet egg needs
- Return adult steelhead to the Columbia, Snake, and tributary rivers which meets LSRCF goals
- Improve or re-establish sport fisheries
- Maintain and enhance natural populations of steelhead and other native salmonids
- Coordinate actions with other basin managers



# Steelhead Program Management Objectives (additional)

- Monitor the status and trends of natural steelhead populations where LSRCF fish might have affects
- Program is compliant with ESA (HGMP's, FMEP's) and WDFW Policies to protect and recover wild stocks

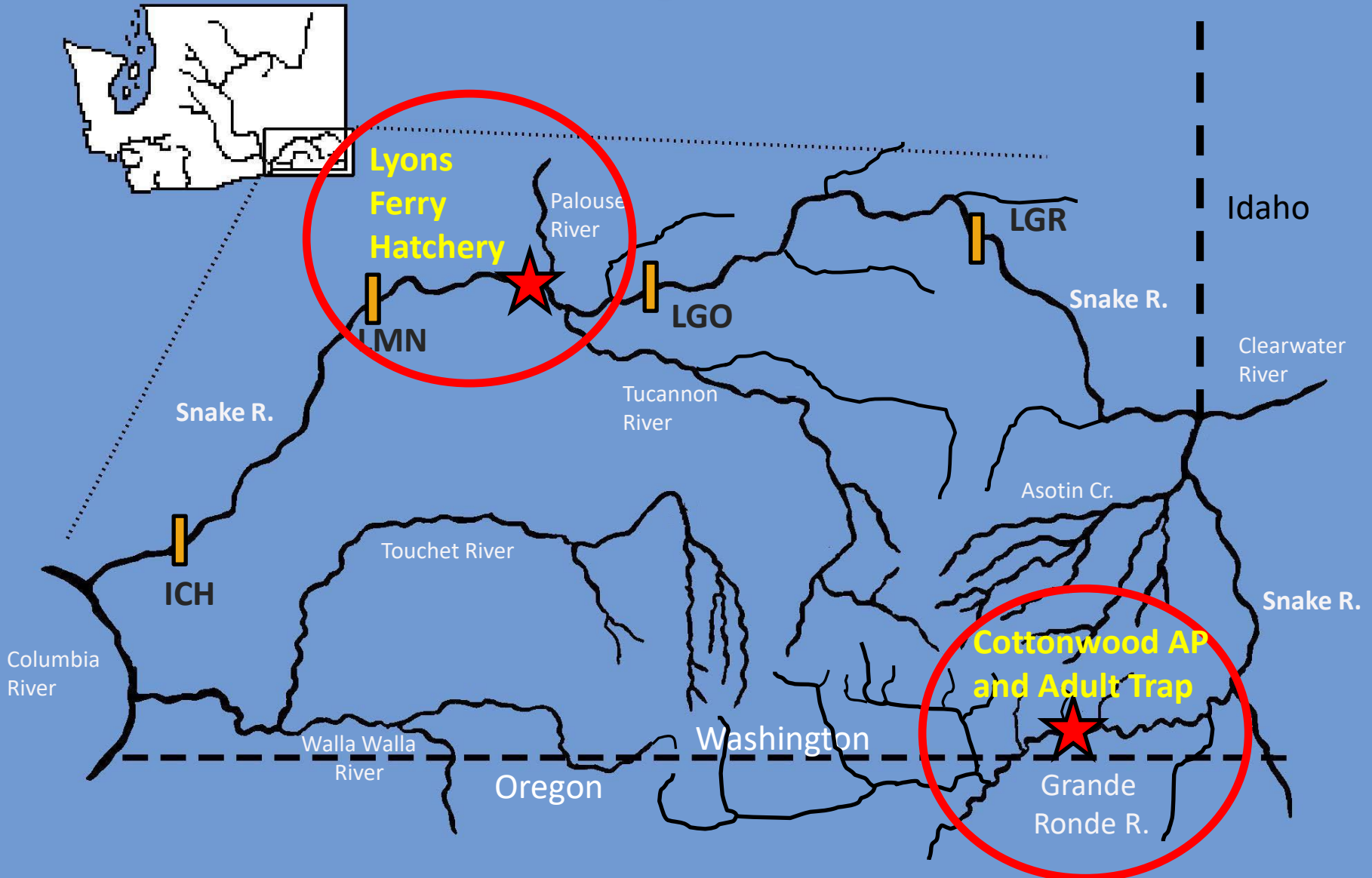
# Steelhead Management Drivers in Southeast Washington



# Presentation Outline

- Hatchery Production
- Adult Returns
- Grande Ronde Fishery
- Data Gaps
- Program Summary
- Hatchery Reform Actions

# WDFW Wallowa Stock Steelhead Program Hatchery Facilities





# Trapping and Spawning



# Broodstock History and Goals

| Source                  | Years          | # of females spawned       |
|-------------------------|----------------|----------------------------|
| Wallowa Hatchery (ODFW) | 1981-1992      | Refer to ODFW presentation |
| Cottonwood Creek        | 1992 - Present | 56-173                     |

Current Goal = 60 Full Spawn or,  
120 Half-Spawn Females



# Cottonwood Creek Adult Trap



Acclimation Pond  
Intake Screen

Adult Holding Area

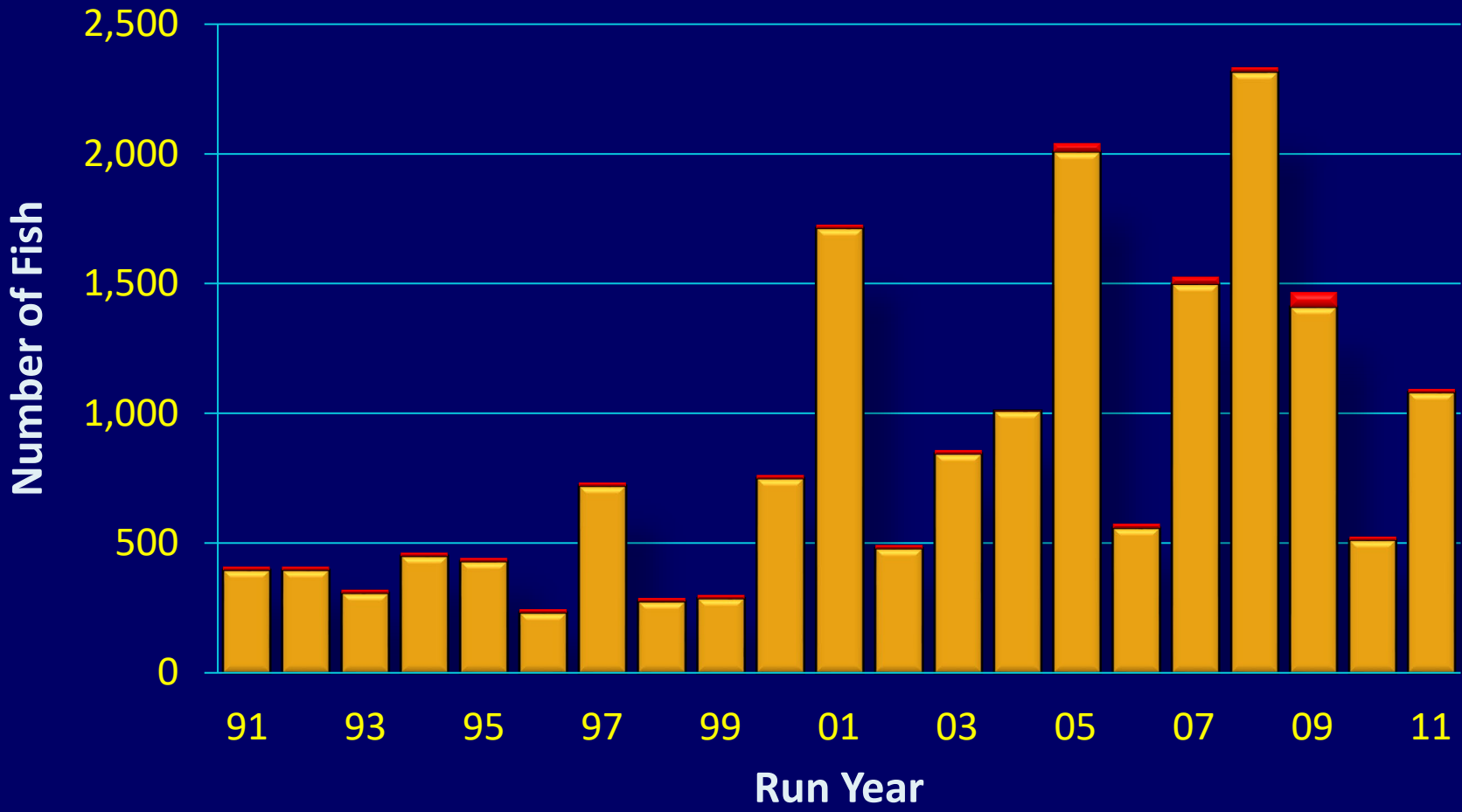
Trap Entrance





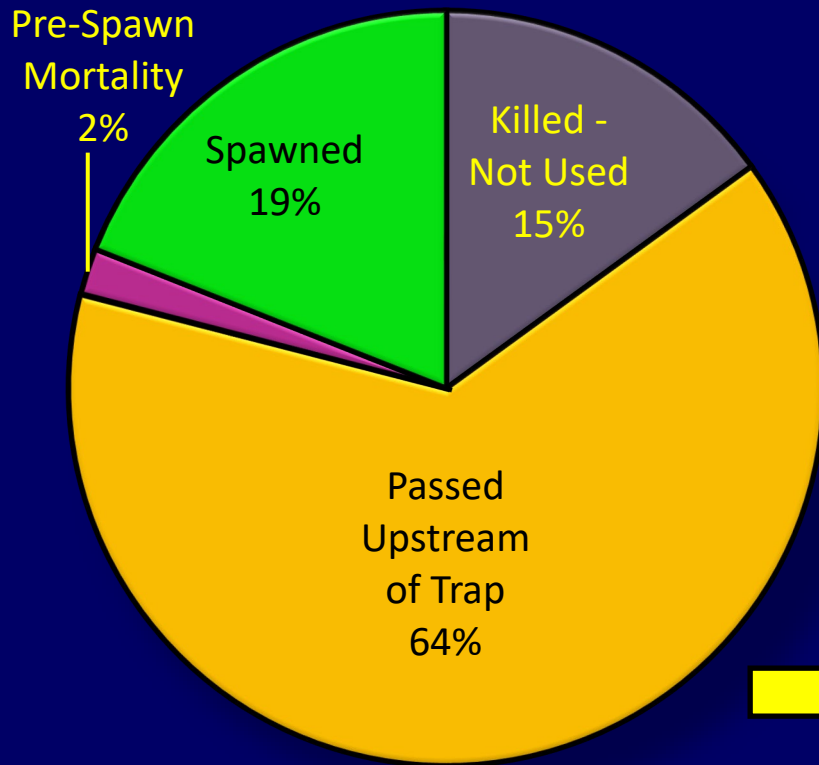
# Cottonwood Cr. Adult Trapping

■ Hatchery ■ Wild

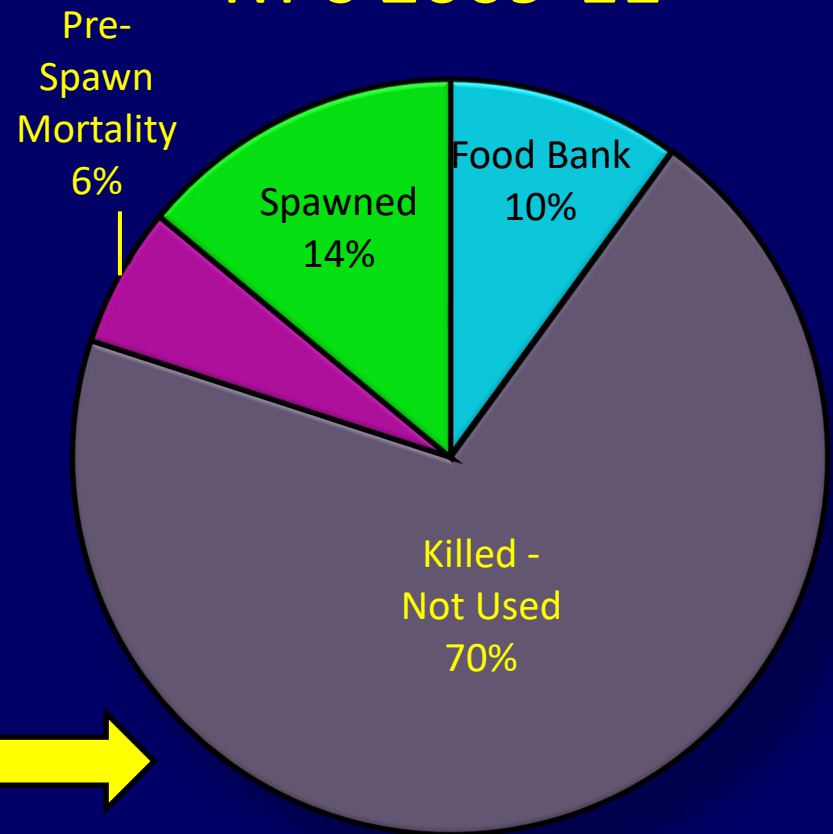


# Disposition of Trapped Adults at Cottonwood Creek

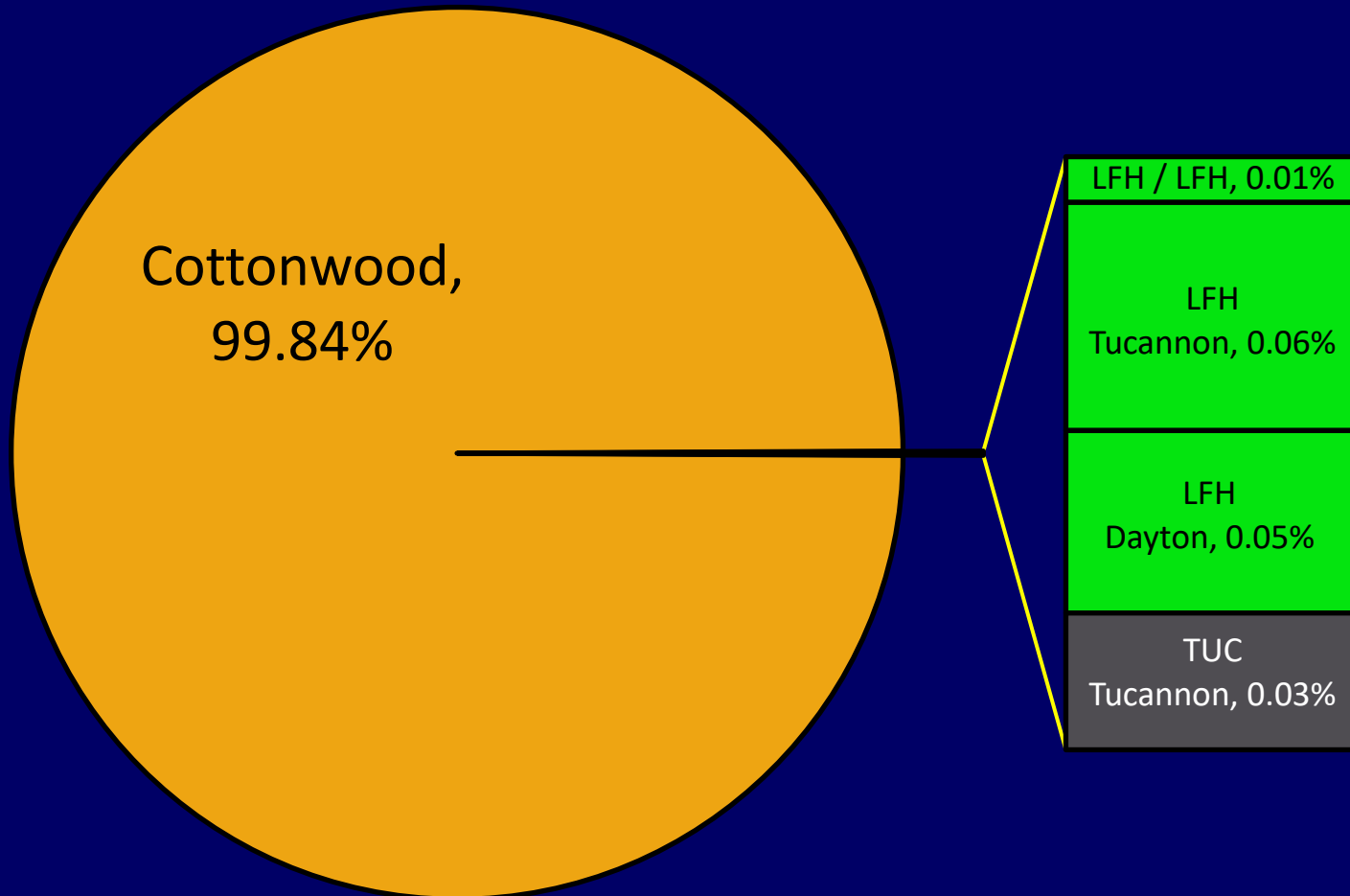
## RY's 1994-2008



## RY's 2009-11



# Coded-Wire Tag Recoveries in Cottonwood Cr.



# Hatchery Rearing

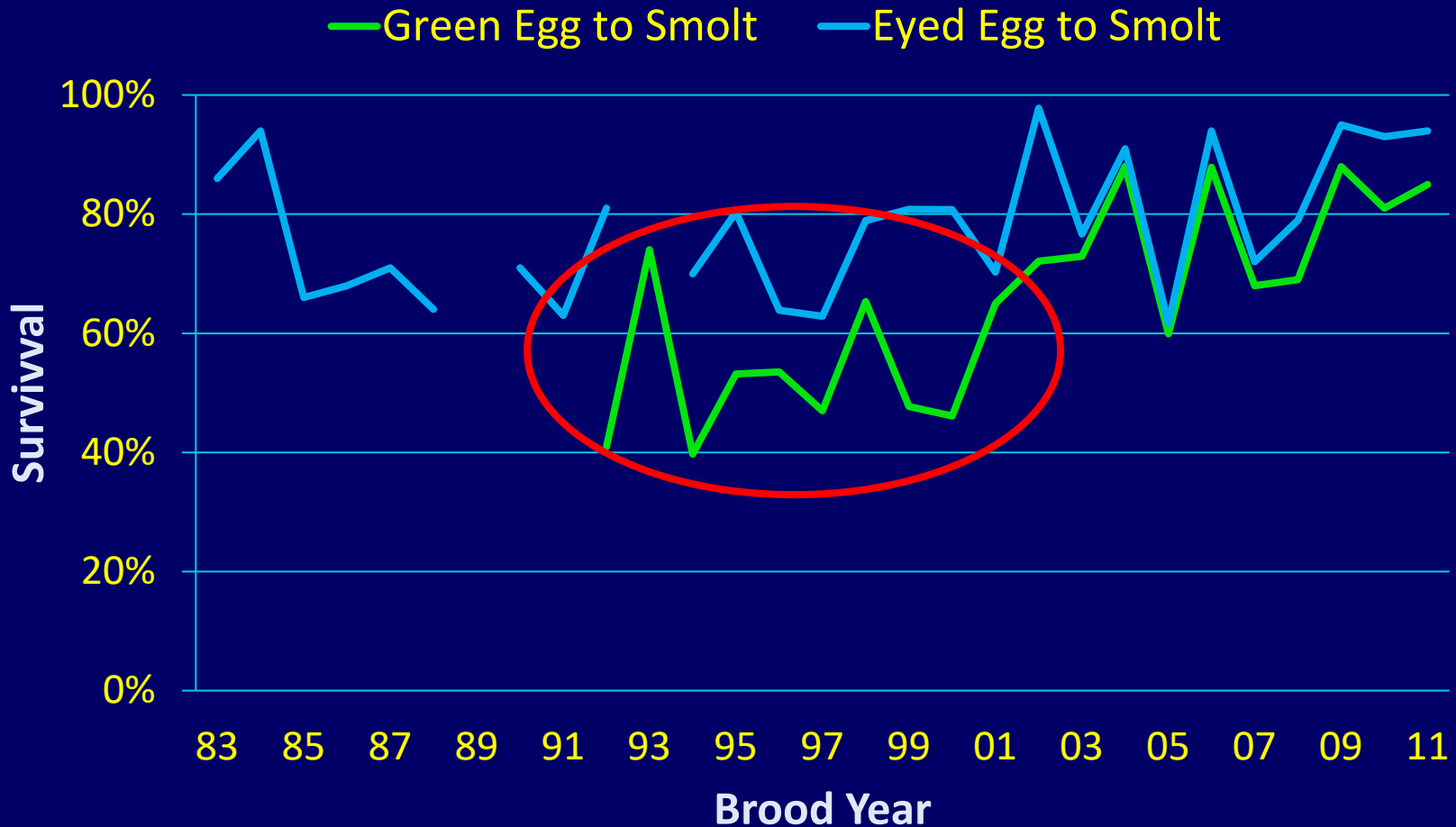




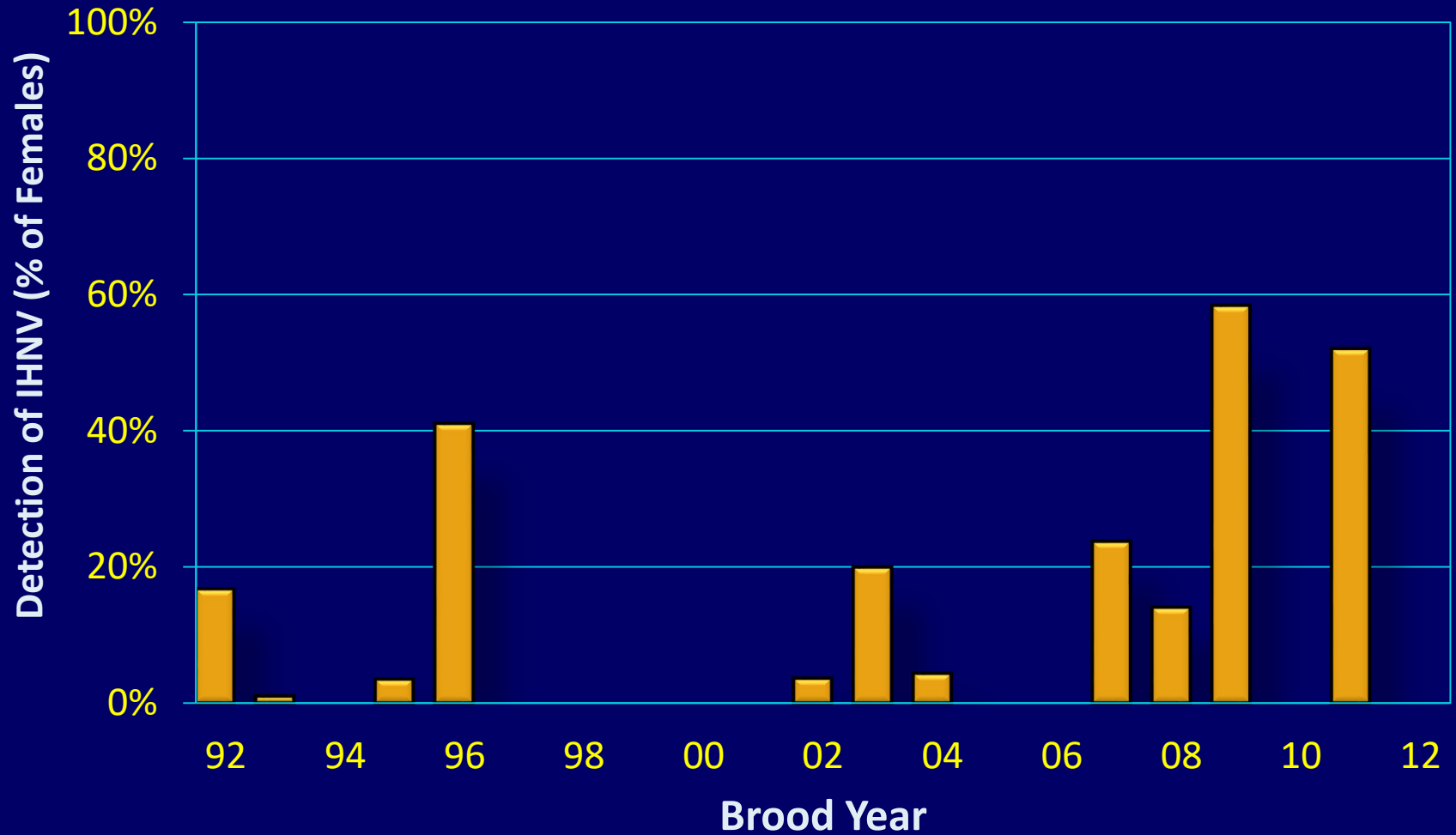
# Lyons Ferry Hatchery



# WDFW Wallowa Stock Egg to Release Survival



# Disease/Pathology



# Marking and Tagging

- 100% AD Fin Clip
- Portion LV Fin Clip + CWT

1984-1986, 1996-Present

Minimum 20,000 Tags

| ■ PIT Tagged    | N           | Purpose                |
|-----------------|-------------|------------------------|
| BY 1998-2000    | 300         | Juvenile Migration     |
| BY 2007-Present | 4,000-6,000 | Adult Returns/Straying |



# Smolt Releases

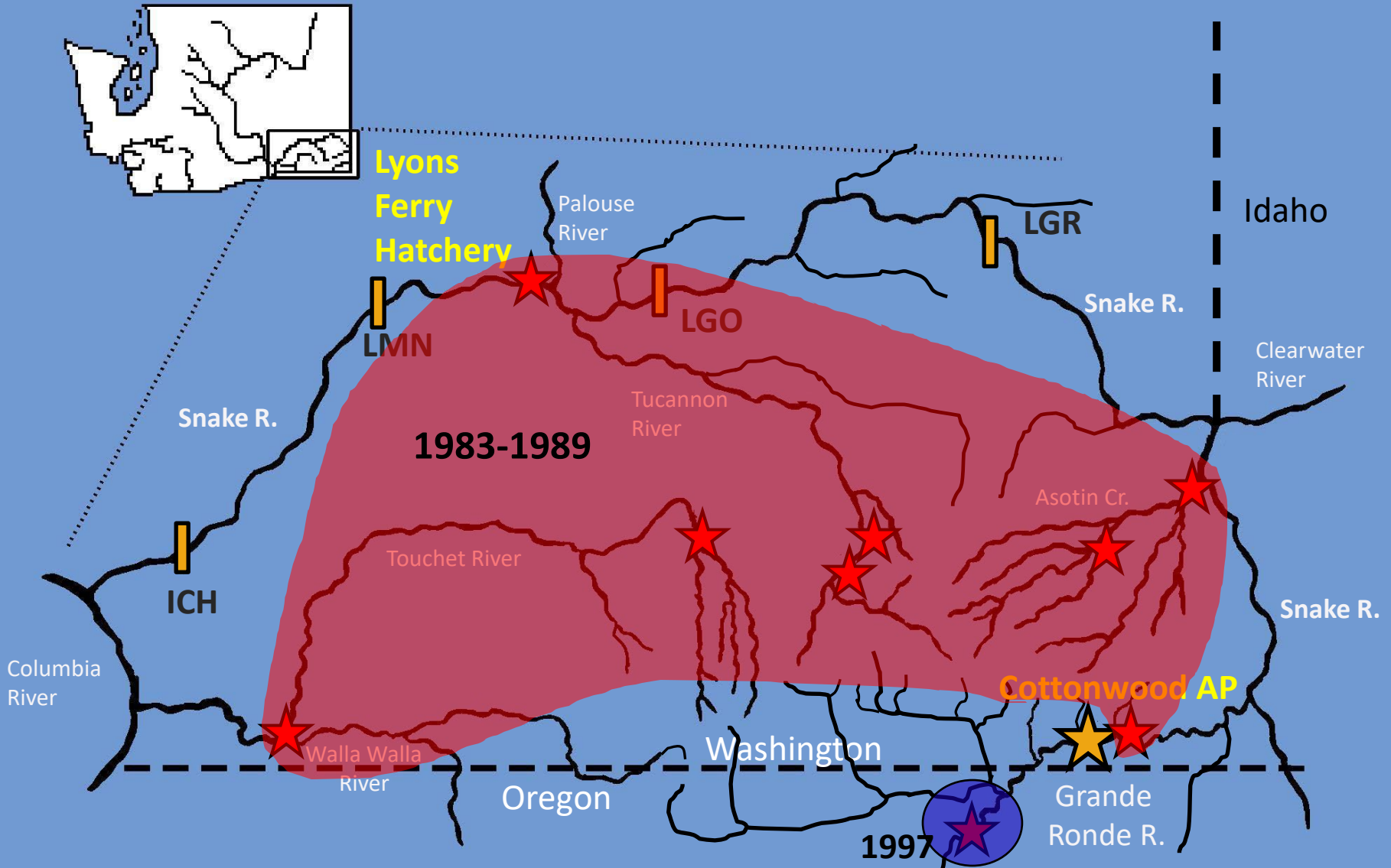


# Release Strategies

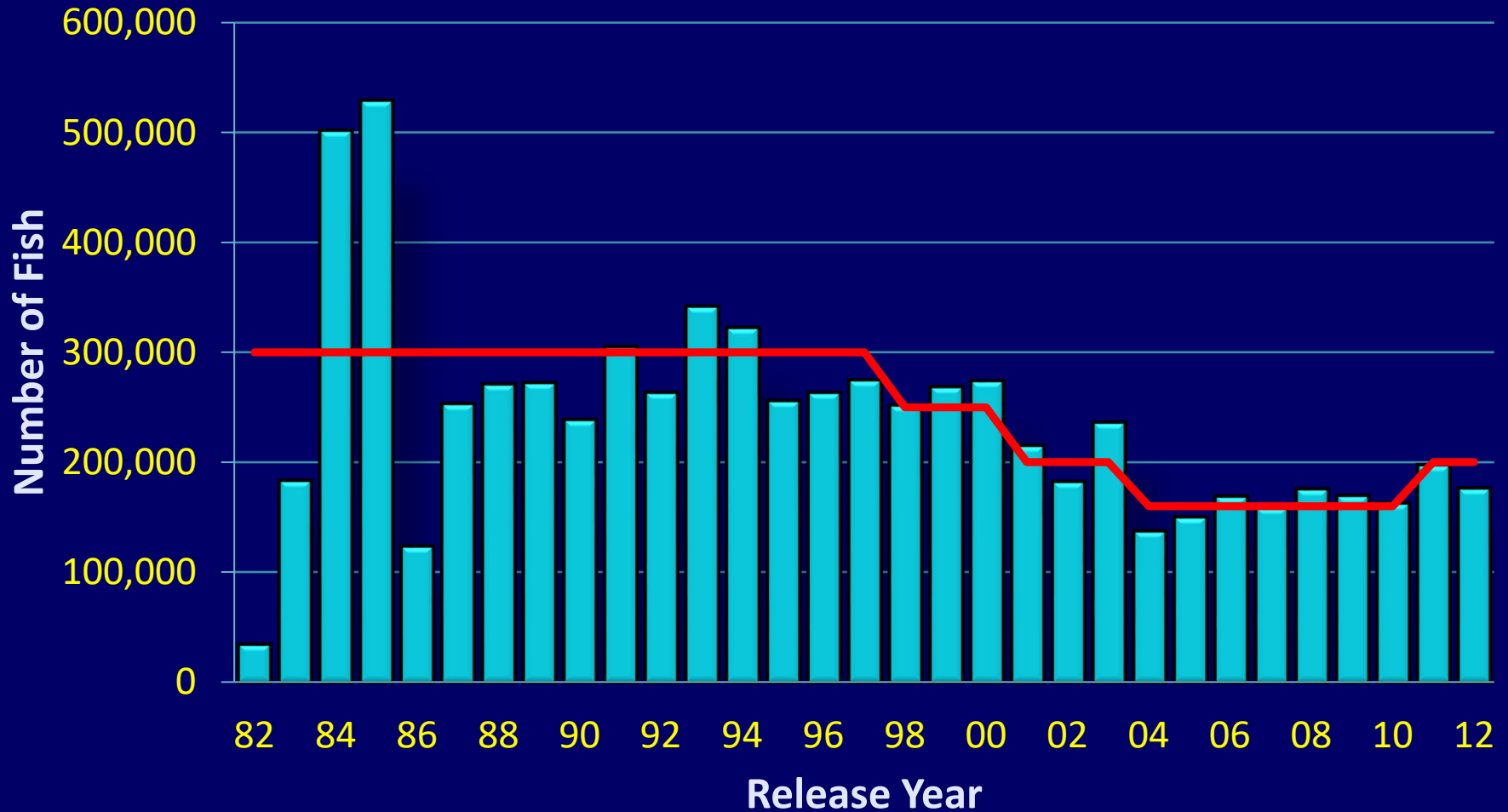




# WDFW Wallowa Stock Release History



# WDFW Wallowa Stock Releases Grande Ronde Basin



# Adult Returns



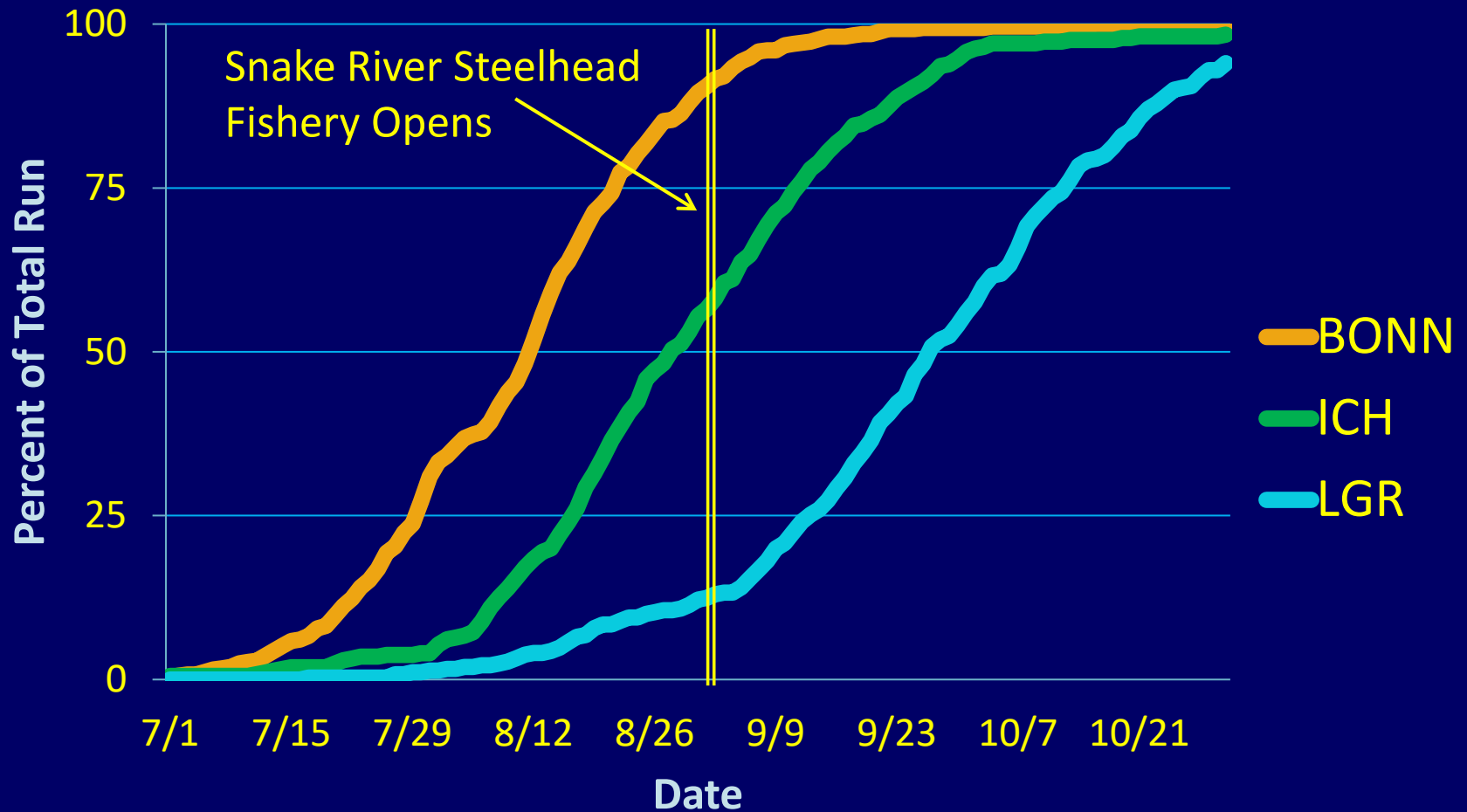
# Mitigation Goals

| Location     | # of Adults |
|--------------|-------------|
| Total        | 4,500       |
| Project Area | 1,500       |

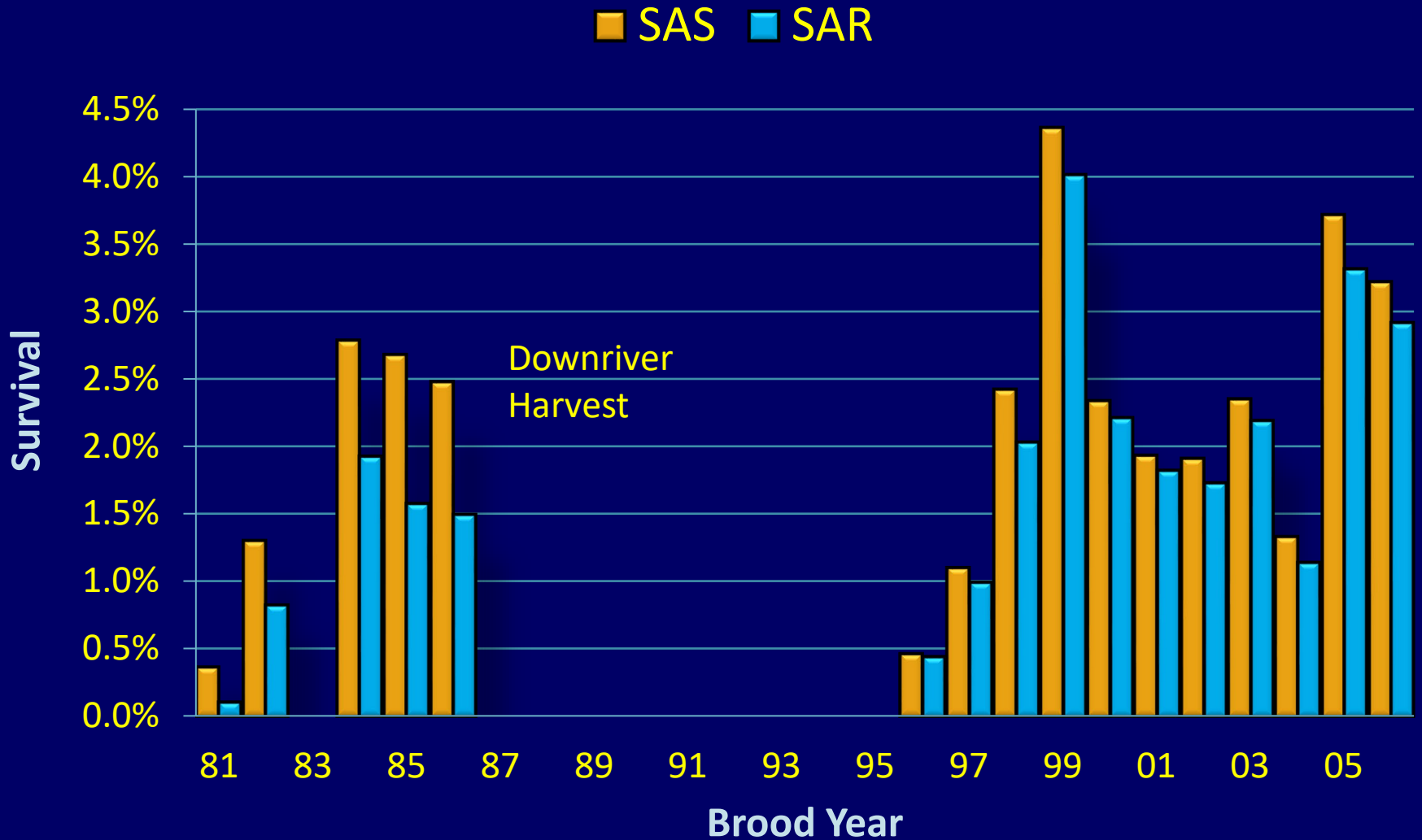
## Project Area

All Areas Within Snake River Basin

# WDFW Wallowa Stock Run Timing at Mainstem Dams



# WDFW Wallowa Stock SAS / SAR Survival





# WDFW Wallowa Stock Total Adult Returns (SAS)

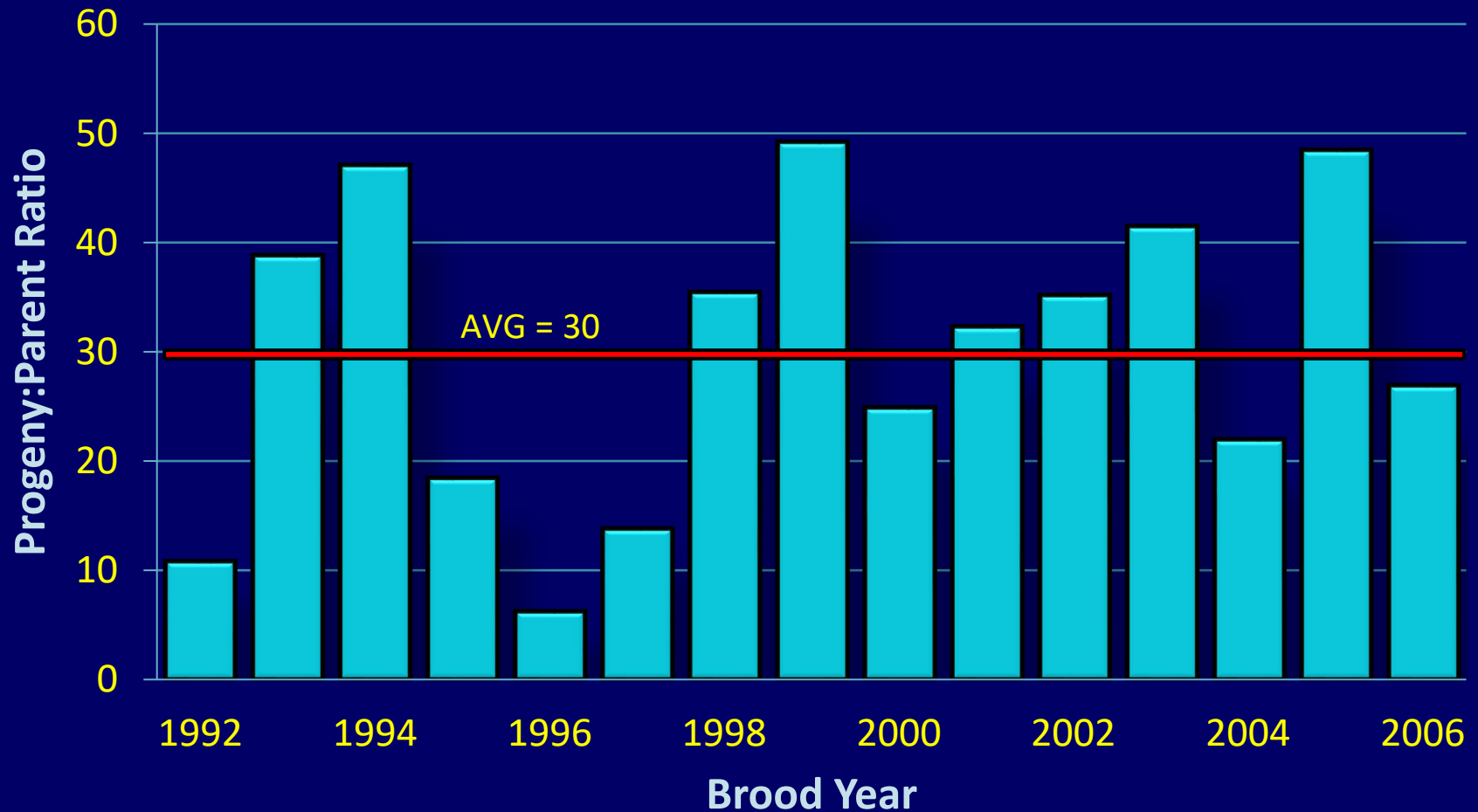


# WDFW Wallowa Stock

## Adult Returns to Project Area (SAR)



# WDFW Wallowa Stock Progeny:Parent Ratio

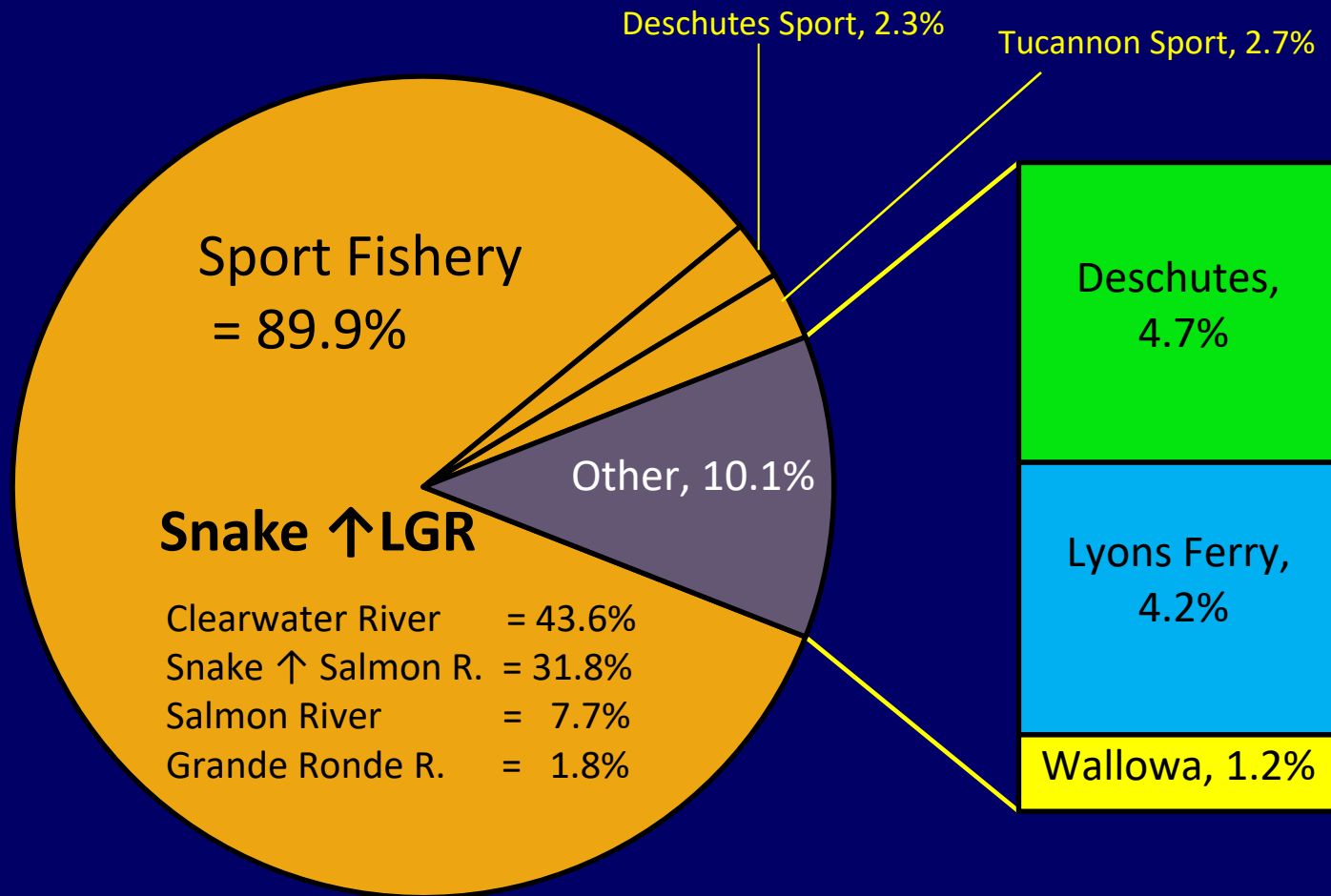


# Percent Harvest and Escapement Wallowa Stock Releases

| Location           | Sub-Area                  | Brood Year |      |      |      |      |      | Mean         |
|--------------------|---------------------------|------------|------|------|------|------|------|--------------|
|                    |                           | 2001       | 2002 | 2003 | 2004 | 2005 | 2006 |              |
| Ocean              |                           | 0.3        | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | <b>0.05%</b> |
| Columbia River     | Sport                     | 2.6        | 7.2  | 2.9  | 4.0  | 6.1  | 5.5  | 4.7          |
|                    | Tribal                    | 2.8        | 2.4  | 3.5  | 9.6  | 4.7  | 3.5  | 4.4          |
|                    | Stray Harvest             | 0.1        | 0.0  | 0.1  | 0.4  | 0.0  | 0.2  | 0.1          |
|                    | Stray Rack                | 0.1        | 0.0  | 0.5  | 0.6  | 0.1  | 0.3  | 0.3          |
|                    |                           |            |      |      |      |      |      | <b>9%</b>    |
| Snake River        | Sport (Below LGD)         | 0.0        | 0.0  | 0.0  | 0.0  | 4.7  | 0.7  | 2.3          |
|                    | Sport (Above LGD)         | 0.0        | 0.0  | 0.0  | 0.0  | 9.4  | 24.9 | 19.7         |
|                    | Tribal                    | 0.0        | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0          |
|                    | Stray Harvest             | 0.0        | 0.0  | 0.0  | 0.0  | 0.3  | 0.5  | 0.6          |
|                    | Stray Harvest (Above LGD) | 0.0        | 4.0  | 1.9  | 3.1  | 8.5  | 2.8  | 3.4          |
|                    | Stray Rack (Below LGD)    | 0.3        | 0.3  | 0.5  | 0.2  | 0.1  | 0.0  | 0.2          |
|                    | Stray Rack (Above LGD)    | 0.0        | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0          |
|                    |                           |            |      |      |      |      |      | <b>26%</b>   |
| Grande Ronde       | Sport Harvest             | 43.3       | 25.0 | 36.8 | 29.1 | 19.8 | 25.3 | 29.9         |
|                    | Stray Harvest             | 2.3        | 1.8  | 1.7  | 3.3  | 0.9  | 0.7  | 1.8          |
|                    | Stray Rack                | 0.0        | 0.2  | 0.1  | 0.0  | 0.0  | 0.0  | 0.1          |
|                    |                           |            |      |      |      |      |      | <b>32%</b>   |
| Escapement to Weir | Cottonwood Creek          | 24.4       | 38.5 | 39.3 | 28.6 | 29.9 | 34.6 | <b>33%</b>   |

**Strays = 4.7%**

# Wallowa Stock Stray Distribution 2001-06 Brood Years

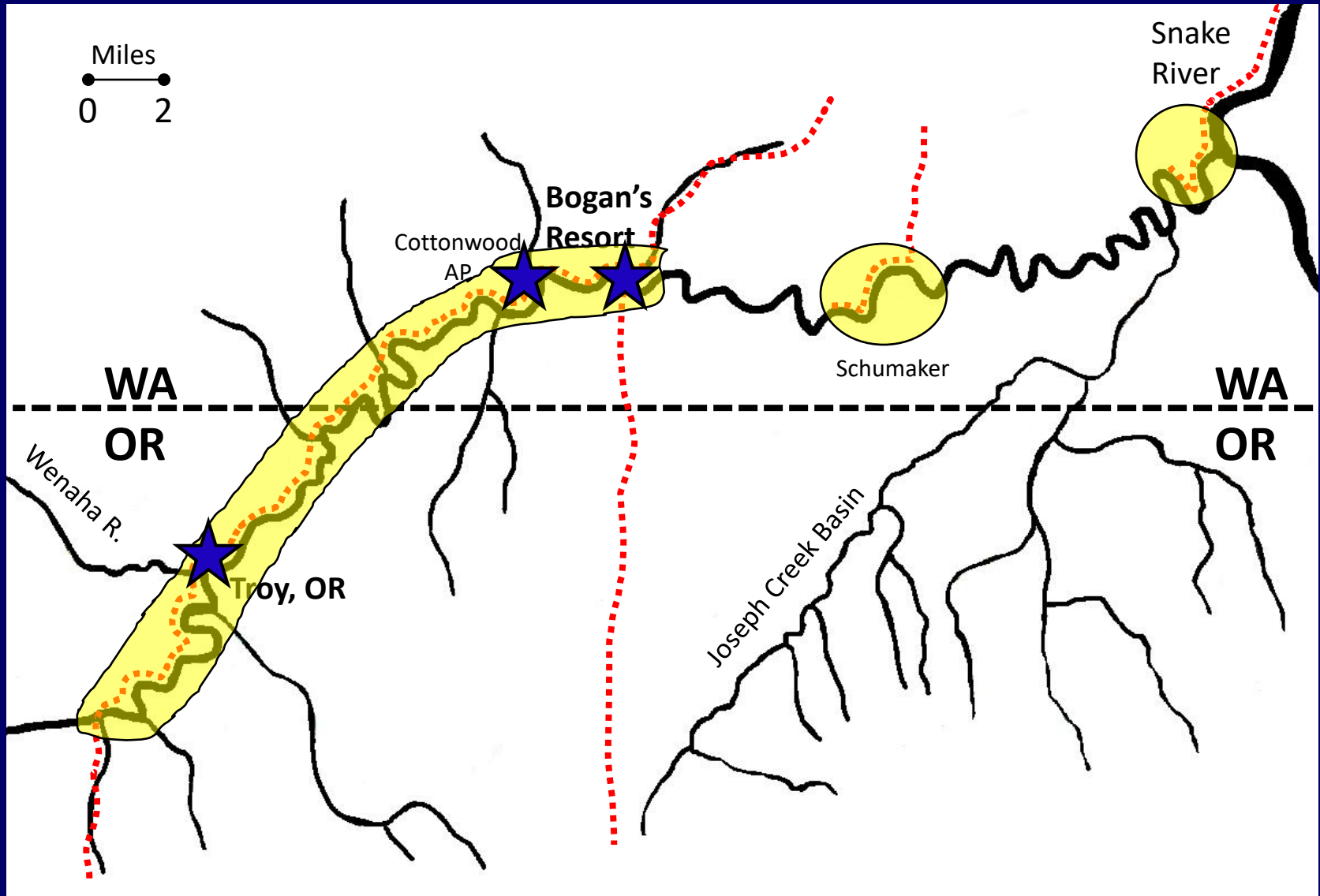


# Grande Ronde Fishery





# Grande Ronde Fishery Locations (WA)



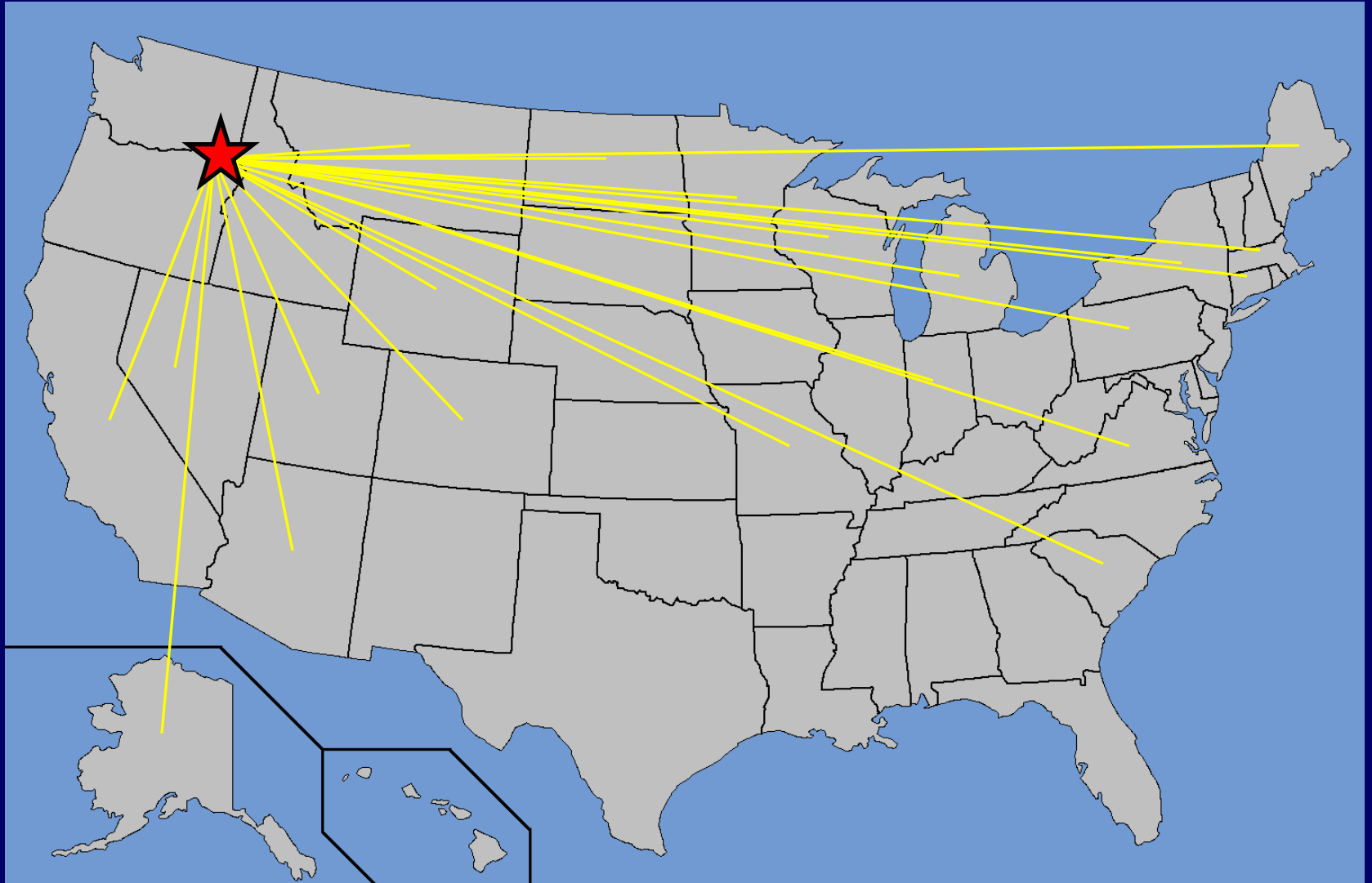
# Fishery Details

- 38 RM, 319 Days Open
- Angler Info from 2010-2012
  - Angler Trips – 95% are 1-5 Days
  - 96% of Anglers are from WA, OR, ID
  - 4% of Anglers are USA wide



# Destination – Grande Ronde

## 2009-2011 Run Years

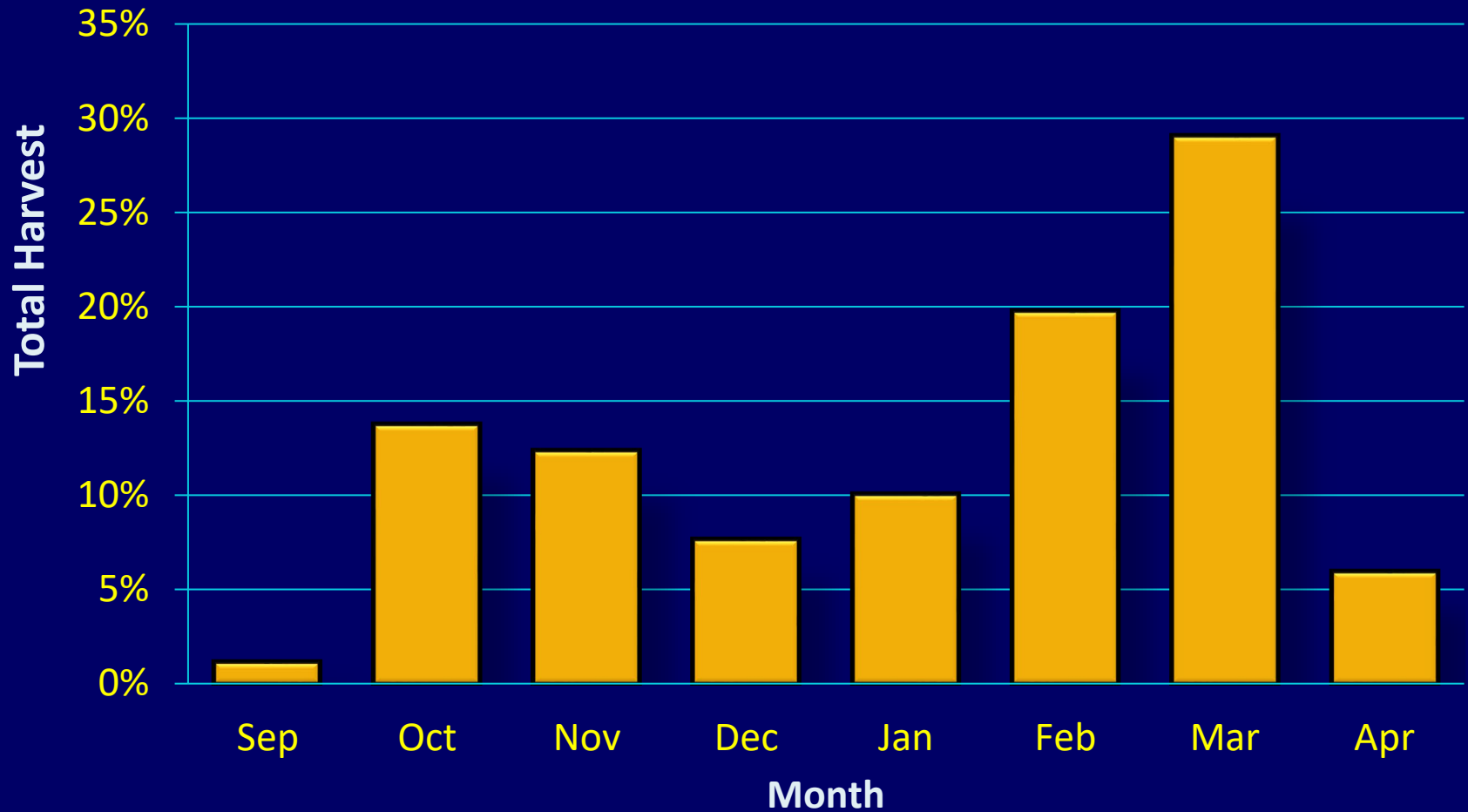


# Fishery Details

- 38 RM, 319 Days Open
- Angler Trips – 95% are 1-5 Days
- 96% of Anglers are WA/OR/ID Origin
- 4% of Anglers are USA wide
- ~\$1,000 Direct Cost per Steelhead Harvested
  - (USFWS 2002, WA Steelhead Plan)
- \$3-8 M/year (RY's 2000-2008 Harvest Est.)

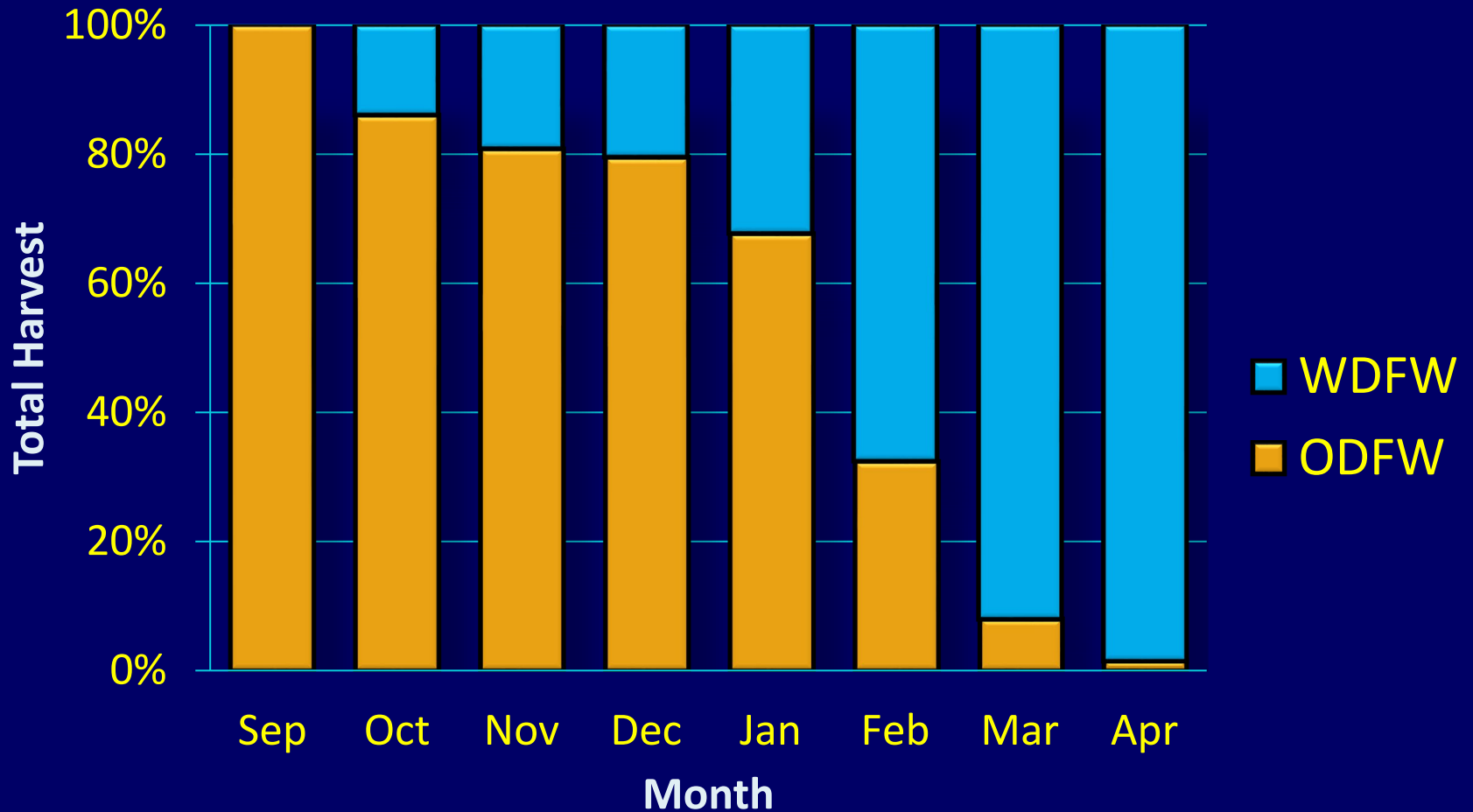
# Fishery Harvest (RY 1985-2010)

## Grande Ronde River in Washington



# Program Contribution (RY 1998-2009)

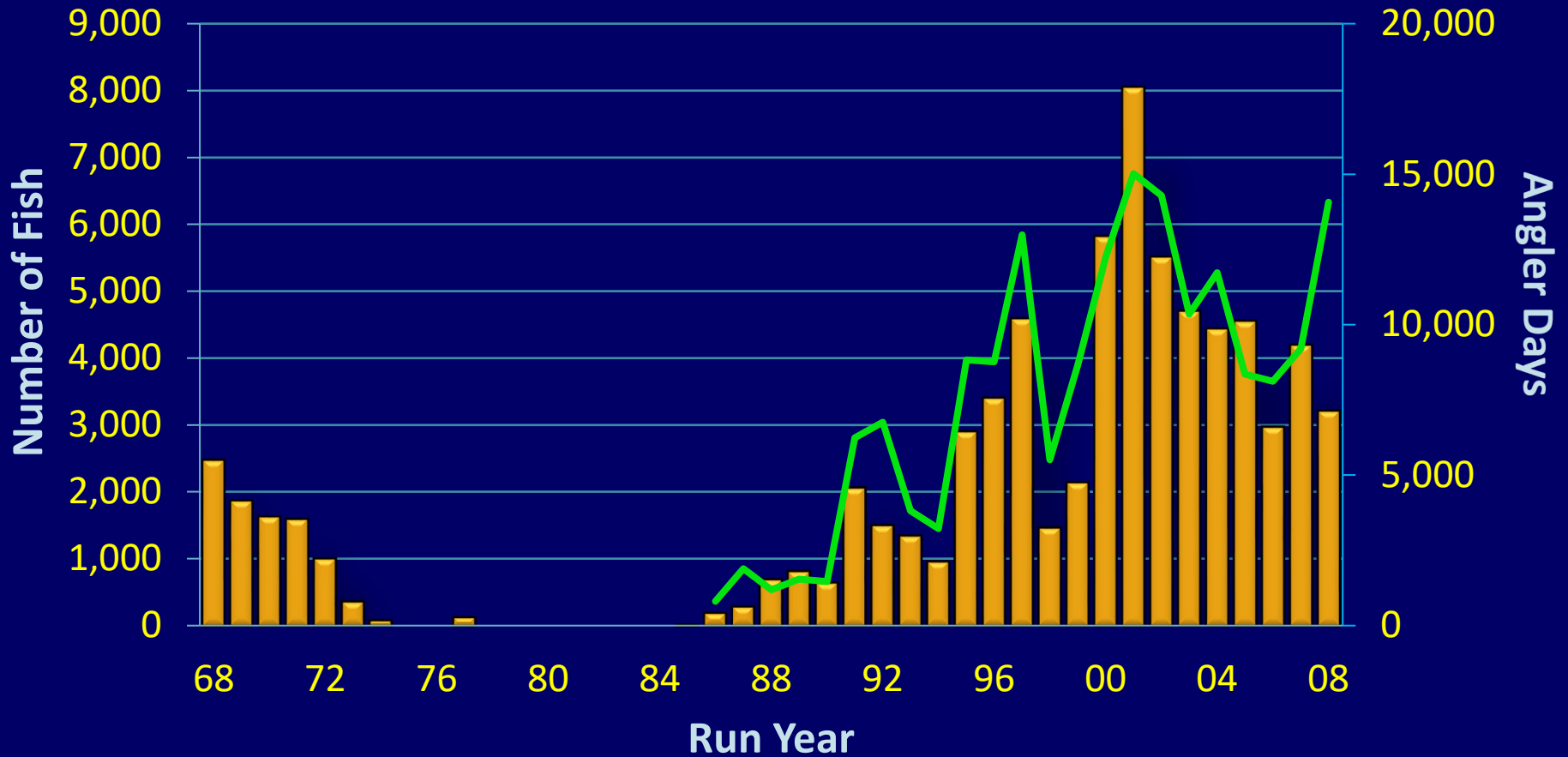
## Bogan's Resort to Oregon Stateline



# Total Harvest

## Washington Portion of Grande Ronde

■ Total Harvest    — Angler Days





# Data Gaps

## Natural Production Monitoring

- Joseph Creek (ODFW)
  - Large wild population, low number of hatchery strays?
- Wenaha Basin
  - Wilderness Area, Remote, Difficult Access
  - Unknown presence of hatchery fish
- Local Tributaries near Cottonwood
  - Small, maybe < 50 adults/year
  - High % of hatchery strays (Rattlesnake Cr, Menatchee Cr)

# Local Straying



Menatchee Cr. - 2001

9 River Miles Upstream  
of Cottonwood

N = 17, 77% Hatchery



Rattlesnake Cr. - 2000

3 River Miles Downstream  
of Cottonwood

N = 55, 78% Hatchery

# Wild Stock Protections

- Wild SH refuge areas
  - Joseph Creek, Wenaha River Basin, Asotin Creek
  - Most headwater areas
- No Wild SH harvest – selective fisheries since 1984
- Barbless hooks required
- ↑ Daily Bag Limit to 3 (2001)
- Selective gear/closed area regulations – Trout
- ↓ Hatchery smolt releases and locations
- Removal of hatchery steelhead at weirs/traps
  - (Cottonwood, Asotin, Almota, Tucanonn, Dayton, etc.....)

# Program Summary

## Management Objectives – Grande Ronde

- Establish broodstock – YES
- Achieve LSRCP goals (SAR, SAS, Adults) – Partial
- Improve or re-establish sport fisheries – YES
- Coordinate actions with other basin managers – YES
- Compliant with ESA (HGMP's, FMEP's) – YES

# Program Summary

## Management Objectives – Grande Ronde

- Compliant with WDFW Policies to protect and recover wild steelhead stocks – **Partially**
- Maintain and/or enhance natural steelhead populations – **Unknown**
- Monitor the status/trends of natural populations where LSRCF fish might have affects – **NO**



# Hatchery Reform Actions

- Created local broodstock
  - ↑ homing to local area
- ↓ Smolt numbers and release locations
- ↑ Smolt size
  - ↑ survival and emigration success
  - ↓ effects of residualism

# Hatchery Reform Actions (cont)

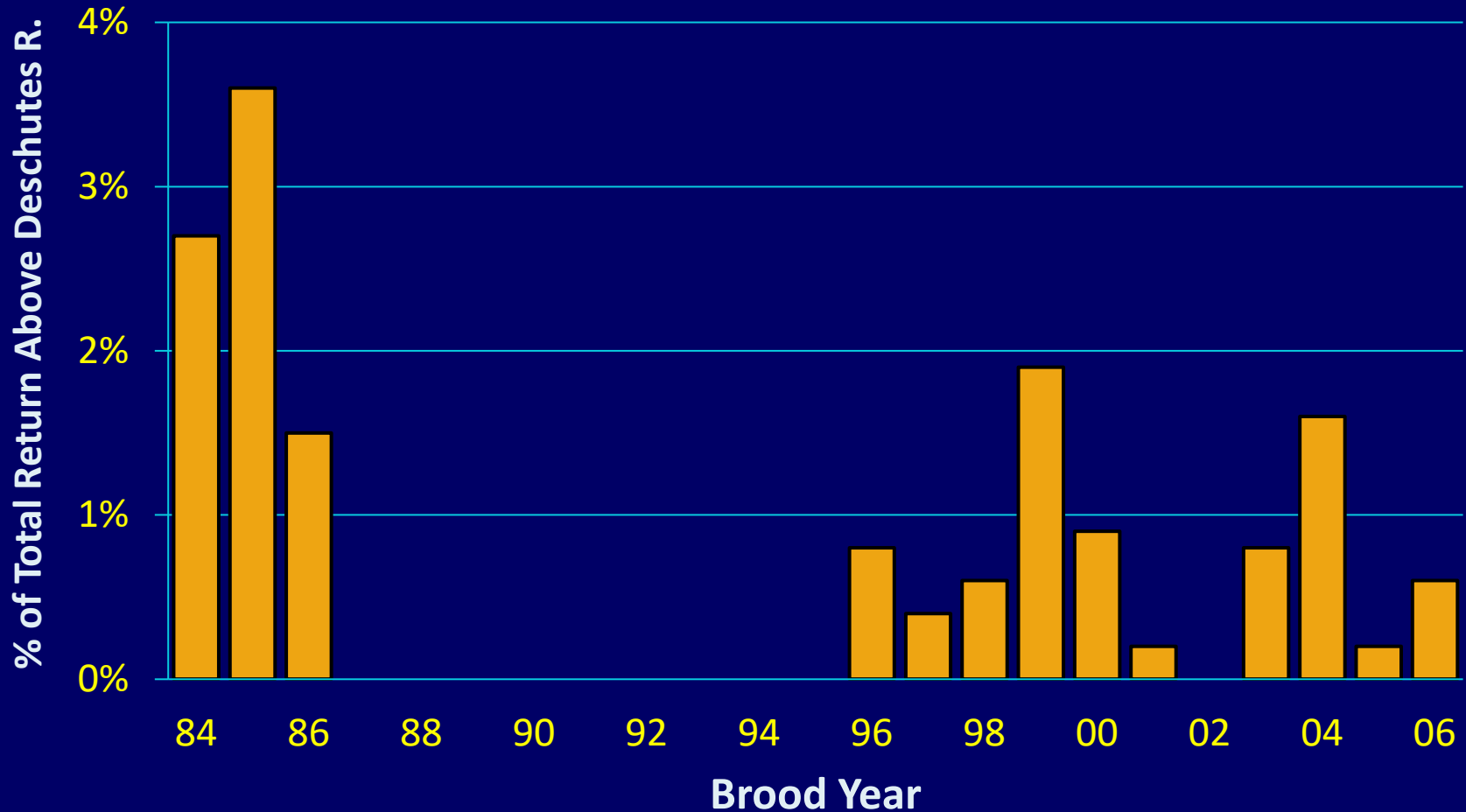
- Removal of excess adults
  - ↓ spawning in other locations
  - ↓ risk of disease transmission to wild fish
- Annually CWT and PIT Tag
  - Determine SAR's, Adult Returns, Straying
- Half spawn females
  - ↑ genetic diversity and fitness

# Questions



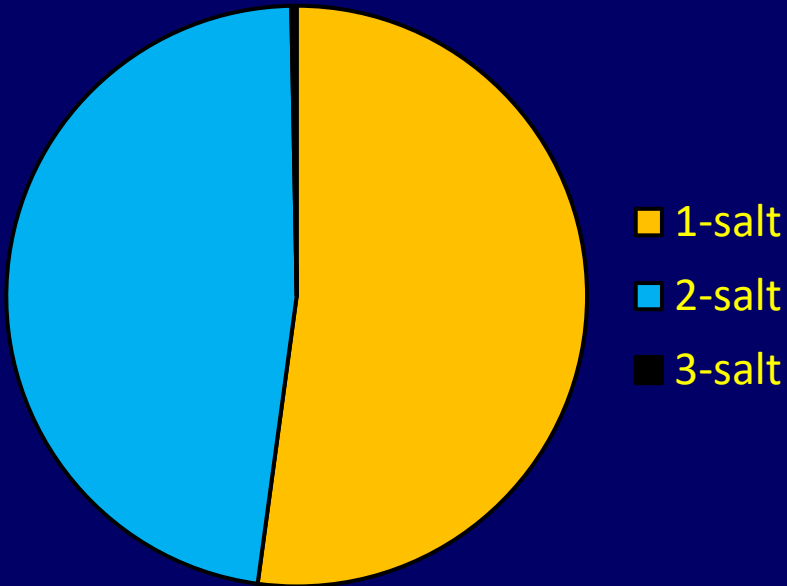
# Deschutes River Strays

(Sport/Rack Recoveries in Deschutes River)



# Wallowa Stock Age Composition

BY 1982-1992



BY 1993-2006

