

Yakima River Fall Chinook Supplementation 2008-09

Melinda Davis
Yakama Nation, YKFP



Objectives

To supplement and enhance existing stocks of Yakima River fall Chinook, while preserving the stock characteristics and fitness of targeted stocks and keeping ecological and genetic impacts to not-target species within specified limits.



Yakima River Releases 99-09

| Released | LWH | PROsub | PROyea | Marion | Billys | Stiles | Skov | TOTAL |
|----------|-----------|---------|--------|--------|--------|---------|-------|-----------|
| 1999 | 1,690,000 | 192,000 | | | | | | 1,882,000 |
| 2000 | 1,695,037 | 306,000 | | 16,000 | | | | 2,017,037 |
| 2001 | 1,699,136 | 427,753 | | 12,000 | | | | 2,138,889 |
| 2002 | 1,704,348 | 286,158 | | 4,000 | | | | 1,994,506 |
| 2003 | 1,771,129 | 365,409 | | 18,000 | | | | 2,154,538 |
| 2004 | 1,748,200 | 561,385 | | 52,223 | | | | 2,361,808 |
| 2005 | 1,700,000 | 466,000 | | 41,000 | 75,000 | 38,890 | | 2,320,890 |
| 2006 | 1,683,664 | 130,002 | | 2,000 | | 118,835 | | 1,934,501 |
| 2007 | 1,700,000 | 50,000 | | 15,731 | 5,000 | 75,000 | | 1,845,731 |
| 2008 | 789,993 | 14,069 | 1,833 | 5,253 | 11,308 | 72,296 | 5,417 | 900,169 |
| 2009 | 1,647,275 | 299,574 | 7,516 | 24,245 | | 180,911 | | 2,159,521 |

Yakima stock Rearing Treatments

- BY1998-2004 Two types of rearing strategies were utilized for our Yakima stock.
 - Accelerated vs. Conventional (ProsserH).
 - Monitored via PIT tags.
- BY2006 initiated new additional “yearling” strategy.
 - Monitoring yearling vs subyearling via PIT tags

Results of Release to McN

BY2006 (2008 release, Neeley 2009)

Y: 65.15% S: 49.90% diff: 15.25%

N=1,833

BY2007 (*2009 release)

*based on straight detections so far (Lind, 2009)

Y: 23.90% S: 4.59% diff: 19.31%

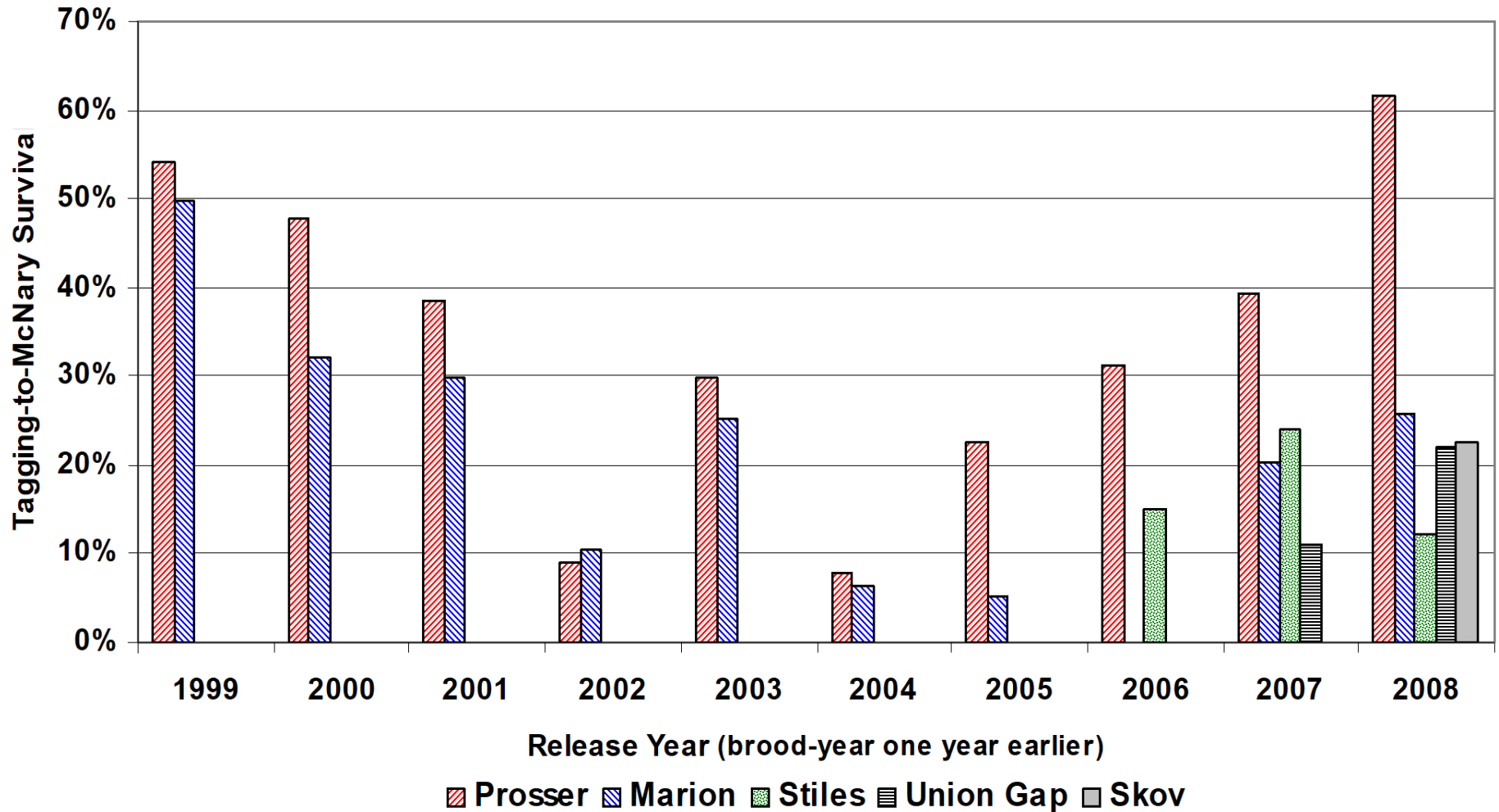
N=7,516

BY2008 N=~20,000 fish on station

Little White Salmon stock Rearing Treatments

- BY2006 The accelerated treatment was implemented on 500k (eyed eggs) out-of-basin fall chinook transferred from LWS.
 - Smolt SI: 33.8%
- BY2007 (only) PIT tagged LWS conv. cohorts
 - Smolt SI: 47.02% Acc vs 36.6% Conv
- BY2008 *data pending*

Historic Tagging-to-McNary Survivals of Fall Chinook in the Yakima Basin (Neeley, 2009)



* Brood-years 1998-2007, respectively.

** Main-Stem-Yakima Stock under Accelerated vs Conventional Rearing (99-05)

Re-Establishing Summer Chinook in the Yakima River

- **Objective:** To initiate investigation of the feasibility of establishing an early-run fall Chinook population in the Yakima River, with the goals being to:
 - Develop a naturally spawning adult population in the Yakima River between Sunnyside Dam and Roza Dam, and in the lower Naches River from the mouth to the Tieton River, and,
 - Increase the number of natural-origin returning summer-run adults in the lower Columbia, Zone 6, and the lower Yakima River contributing to harvest augmentation for both the tribal and sports fishery.

Wells Hatchery



Prosser Hatchery



BY2008 Summers

100% females tested for Virus and BKD

Results: all keepers!

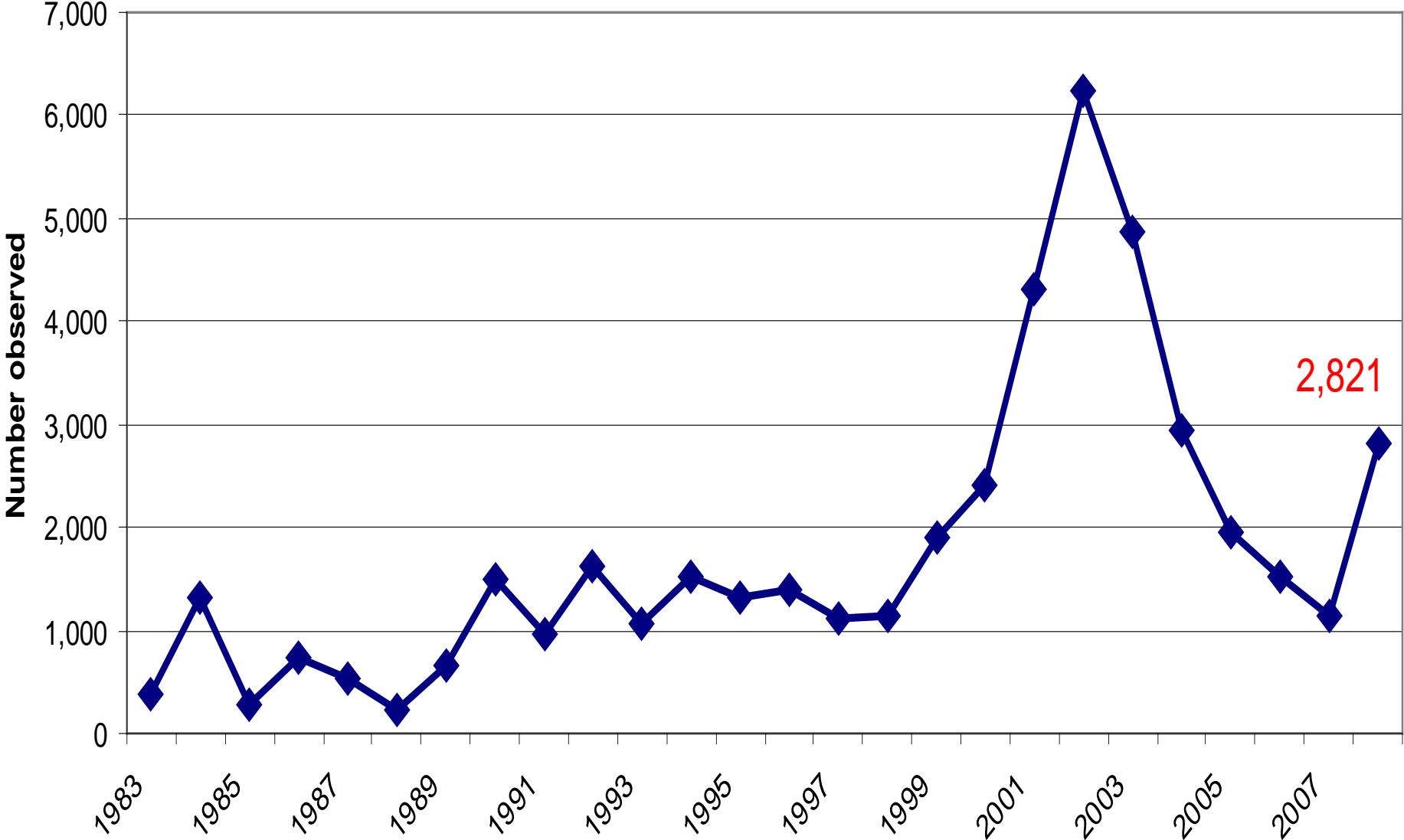
Released ~180,911 from Stiles pond on
6/12/09, lower Naches River.

30,000 PIT, 170,000 CWT only

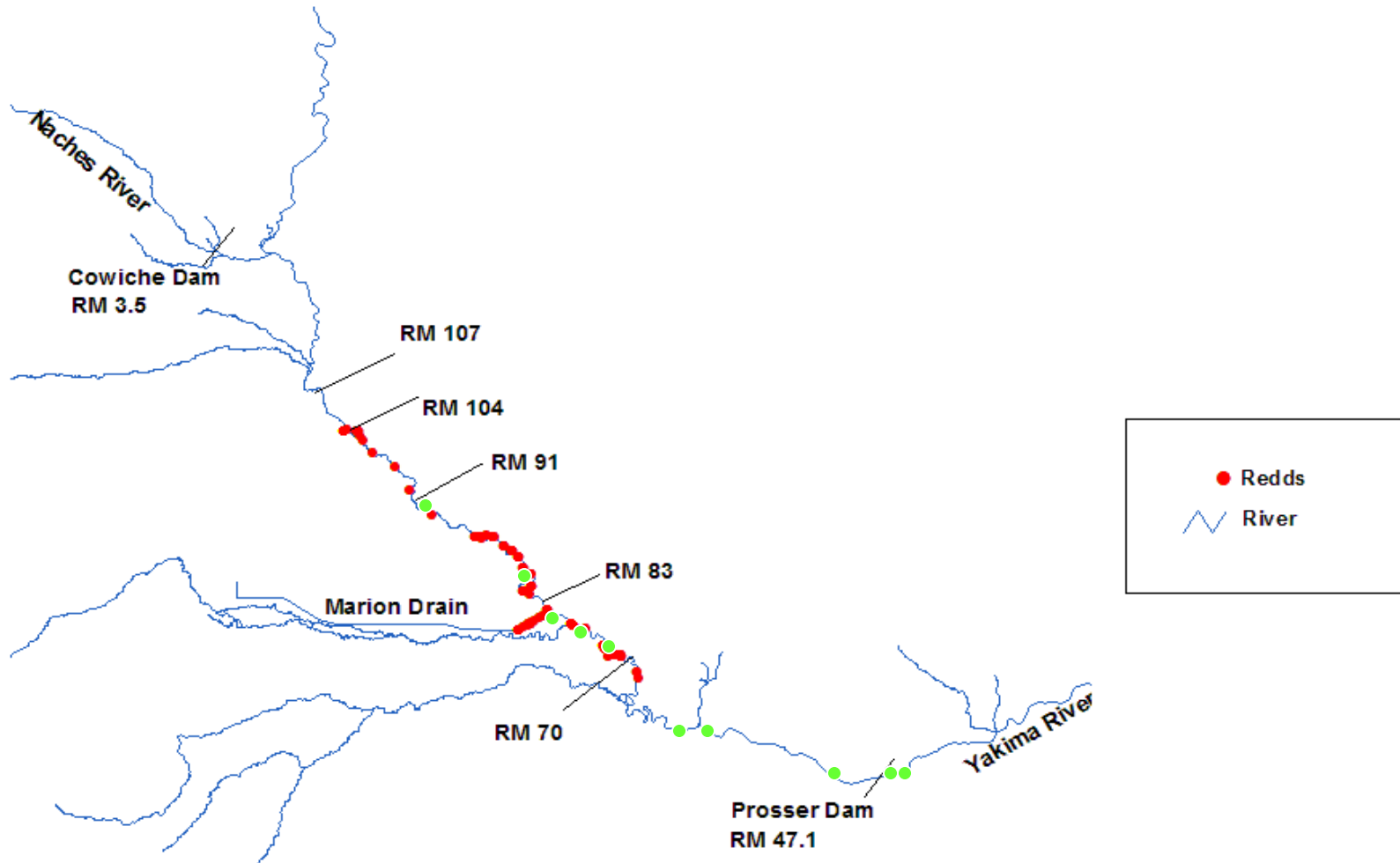
2007 Fall Chinook Returns



Fall Chinook above Prosser Dam



2008 Fall Chinook Redds



2008 Redd Surveys above Prosser

2,822 Adults over Prosser Dam

Yakima River- 201 Redds

46.8% Emerald Rd to Granger (RM70-83)

47.2% Granger to Zillah (RM83-91)

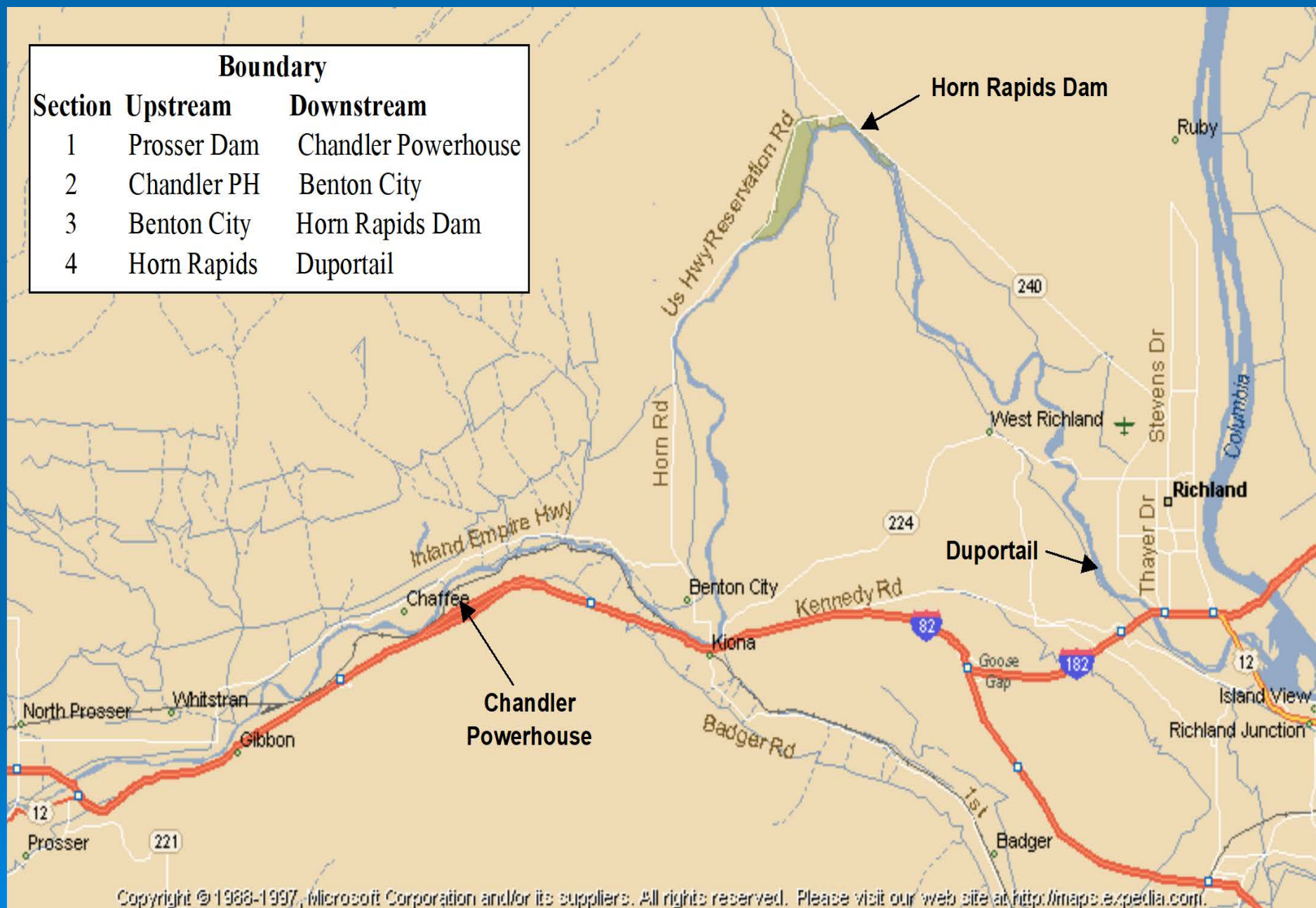
6% Zillah to SSD (RM91-104)

0% Union Gap (RM107-117)

Naches River- 0 Redds

Wapatox Dam to Cowiche Dam

| Boundary | | |
|----------|-------------|---------------------|
| Section | Upstream | Downstream |
| 1 | Prosser Dam | Chandler Powerhouse |
| 2 | Chandler PH | Benton City |
| 3 | Benton City | Horn Rapids Dam |
| 4 | Horn Rapids | Duportail |



Copyright © 1988-1997, Microsoft Corporation and/or its suppliers. All rights reserved. Please visit our web site at <http://maps.expedia.com/>.

(WDFW, Hoffarth 2008)

2008 Redd Counts below Prosser

Yakima R. below Prosser- 42 Redds

95.2% (40) Prosser Dam to Chandler Powerhouse

2.4% (1) Chandler Power House to Benton City

0% (0) Benton to Horn Rapids Dam

2.4% (1) Horn Rapids to Duportail

**Due to periods of high turbidity and the presence of aquatic vegetation redd visibility greatly reduced in recent years.*

(WDFW, Hoffarth 2009)

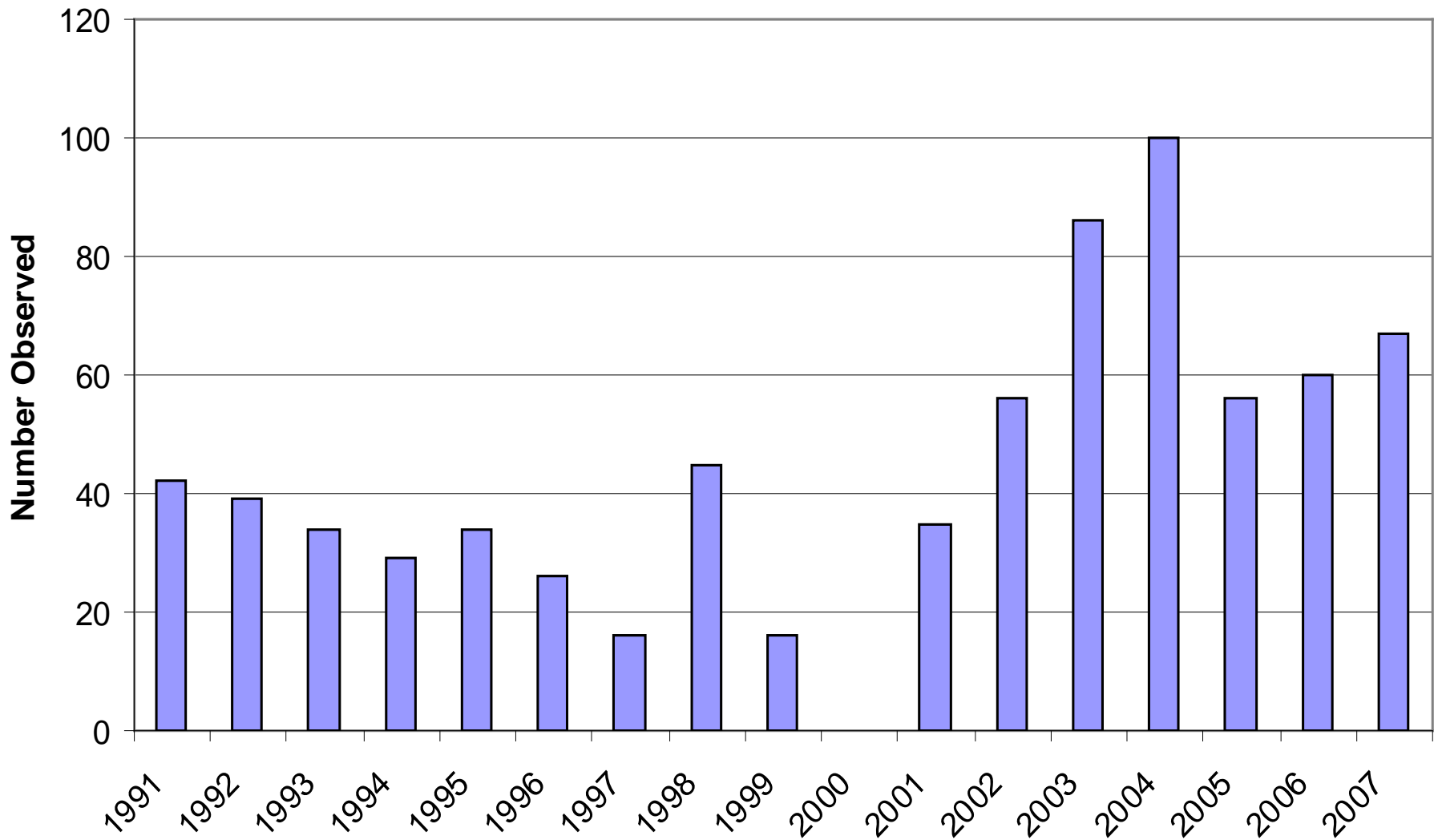


▪ Marion Drain- 46 Redds

17.4% above Hwy 97

82.6% below Hwy 97

Marion Drain Fall Chinook Redds



***No Surveys conducted in 2000**

2008-09 Plans on-going

- Acclimate all Fall Chinook at the Prosser and Marion Drain Hatcheries
- Acclimate off station at Stiles pond only (summer chinook)
- Continue In-basin Yearling vs. Subyearling releases
- Transfer up to 250,000 summer chinook eggs/milt from Wells Hatchery
- Continue out-basin transfer of 500 k Accelerated only
- Beach Seine Fall Chinook (when possible), target WILD
- Redd Surveys
- Radio Tag Returning Adults at the Prosser Denil

Acknowledgements

YN: Andrew Lewis, Denny Nagle, Conan Northwind, Quincy Wallahee, Joe Jay Pinkham III who carried out the daily field activities to make it happen.

Mel Sampson, Dave Fast, Mark Johnston, Todd Newsome, Bill Bosch, Dave Lind, Doug Neeley, Bill Fiander and Ida Sohappy-Ike

Prosser and Marion Drain Hatchery: Joe Blodgett, Sonny Fiander and the Hatchery crews.

Chandler Juvenile Monitoring Facility: Leroy Senator, Wayne Smartlowit, Sey Billy, Morales Ganuelas, Steve Salinas, Sheila Decoteau and Pharamond Johnson

Fall Chinook/Coho Acclimation crew: Nathaniel Pinkham, Markeyta Pinkham, Andrew Castilleja, Sam Shavehead and Emerson Scabbyrobe

BIG THANKS TO EACH OF YOU!

This project is funded by the Bonneville Power Administration and is administered through Patty Smith.