

Yakima River Fall Chinook Supplementation 2007-08

Melinda Davis
Yakama Nation, YKFP



Objectives

To supplement and enhance the two 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 1999-2008

| Released | LWH | PROsub | PROyear | 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 |

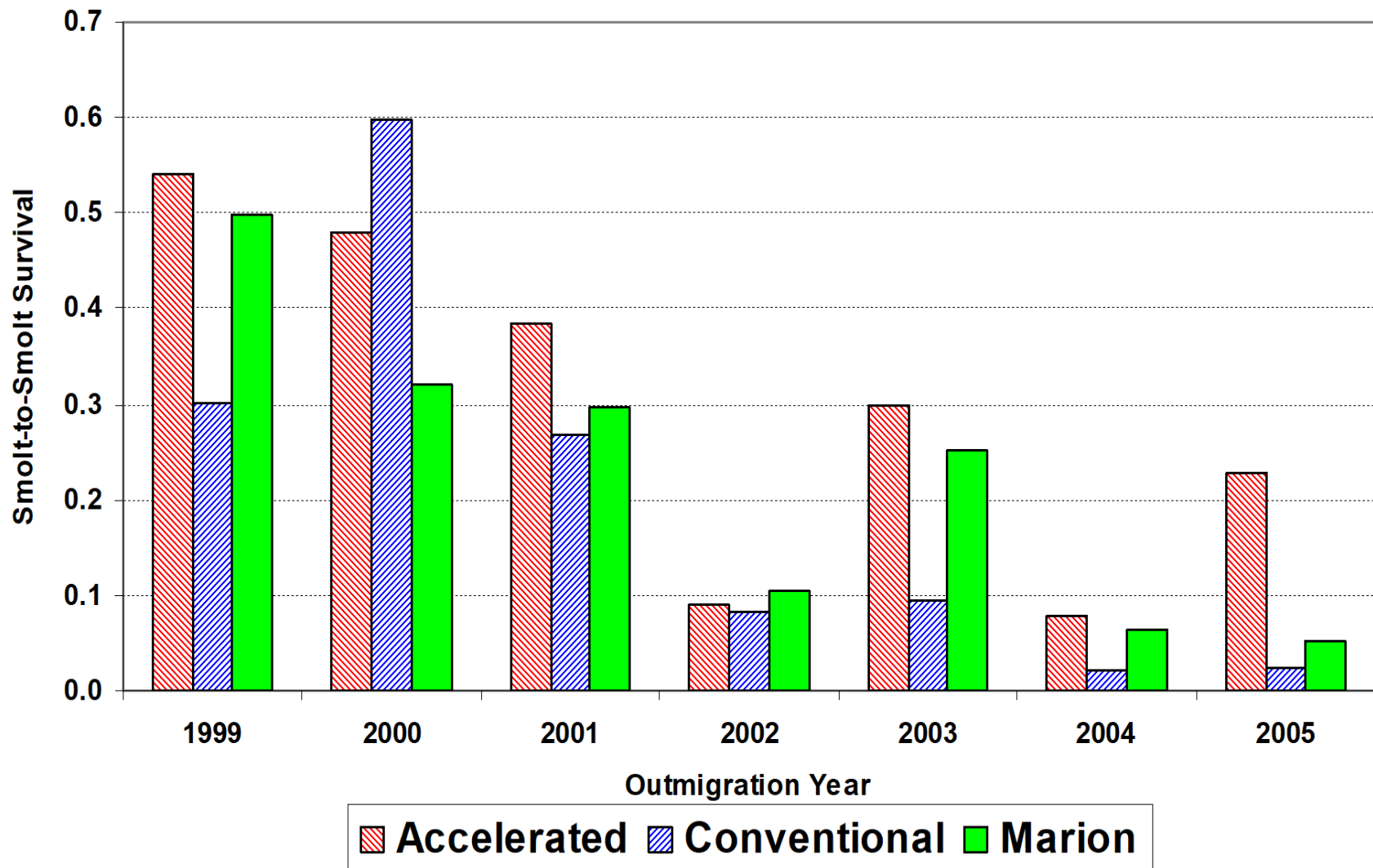
Stock Range

In-Basin 105,000 to 600,000
 Out-Basin 800,000 to 1.7 million
 Marion 2,000 to 52,223

Rearing Methods (in-basin)

- 1998-2004 Two types of rearing strategies
 - Accelerated vs. Conventional (ProsserH).
- Both groups monitored via PIT tags.
- Marion Drain conventionally reared; however, warmer water created conditions similar to Accelerated conditions at Prosser.

Fall Chinook Survival to McNary Dam



* Brood-years 1998-2004, respectively.

** Main-Stem-Yakima Stock under Accelerated Rearing, Main-Stem-Yakima Stock under Conventional Rearing, and Marion Drain Stock

In-Basin smolt-smolt survival to McN

- BY2005 27.4%
- BY2006 40.7%
- BY2007 *00.0%

*preliminary

Stiles Pond (Naches)

| BY | N | #PITS | RELEASE | SURVIVAL to McN |
|------|---------|--------|-----------|--------------------|
| 2007 | 72,296 | 10,007 | 5/15/08 | <i>*pending</i> |
| 2006 | 75,000 | 9970 | 5/10/2007 | 29% |
| 2005 | 118,835 | 19901 | 5/10/2006 | 15.2% |
| 2004 | 38,890 | 4,198 | 4/19/2005 | 2.8% |

Billy's Pond

new in 2007, located on the Yakima River in Union Gap, ~RM 110

| Release | PITs | Survival McN |
|---------|-------|--------------|
| 5/10/07 | 5,000 | 10.9% |
| 5/14/08 | 5,008 | *4% |

*tentative as of 6/10/08

Next Phase of Treatments

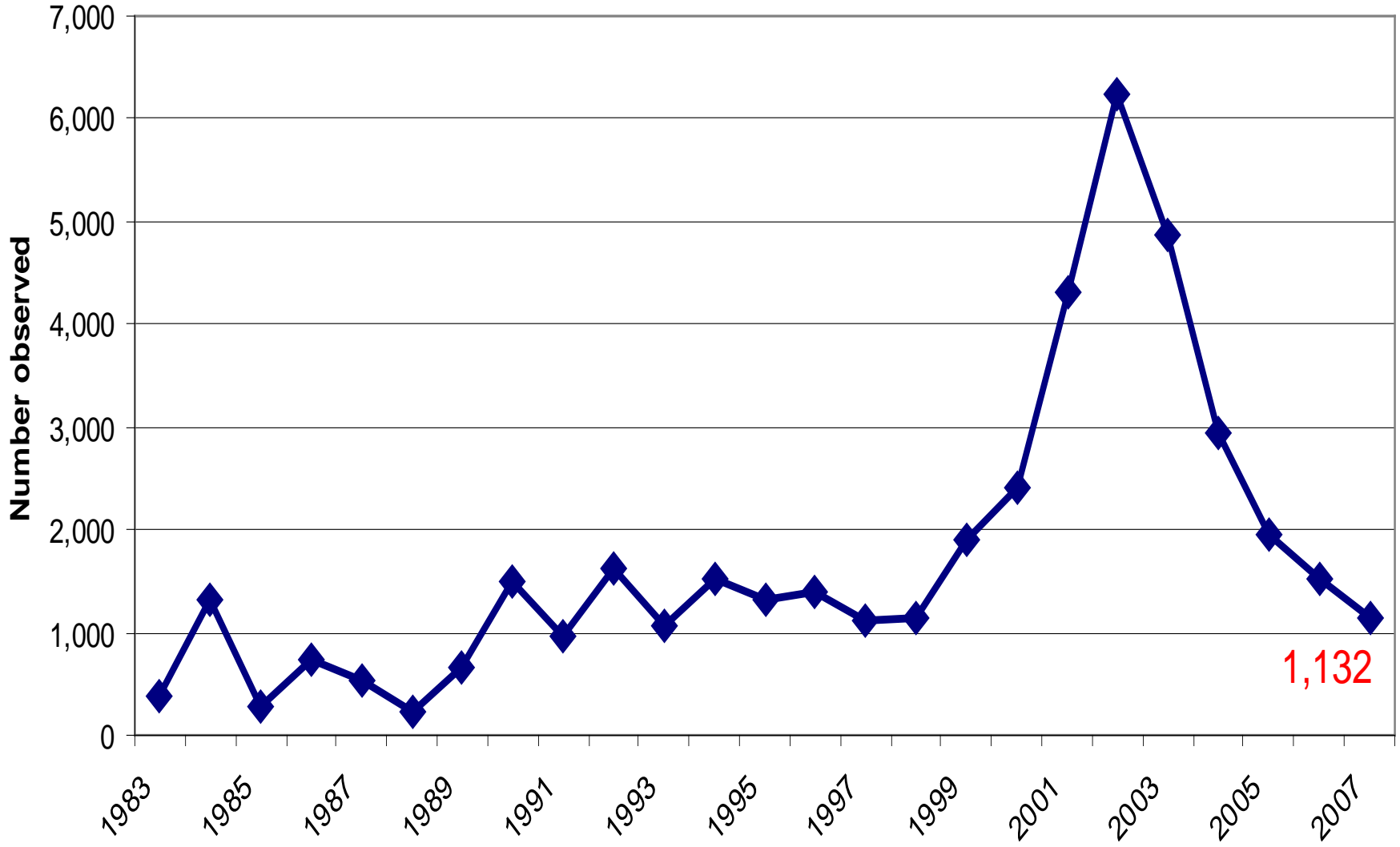
BY2007

- In-Basin, Yakima-mainstem stock
Yearling vs. Subyearling releases (10k ea)
- Out-of-Basin, Little White Salmon stock
Accelerated vs. Conventional (10k ea)

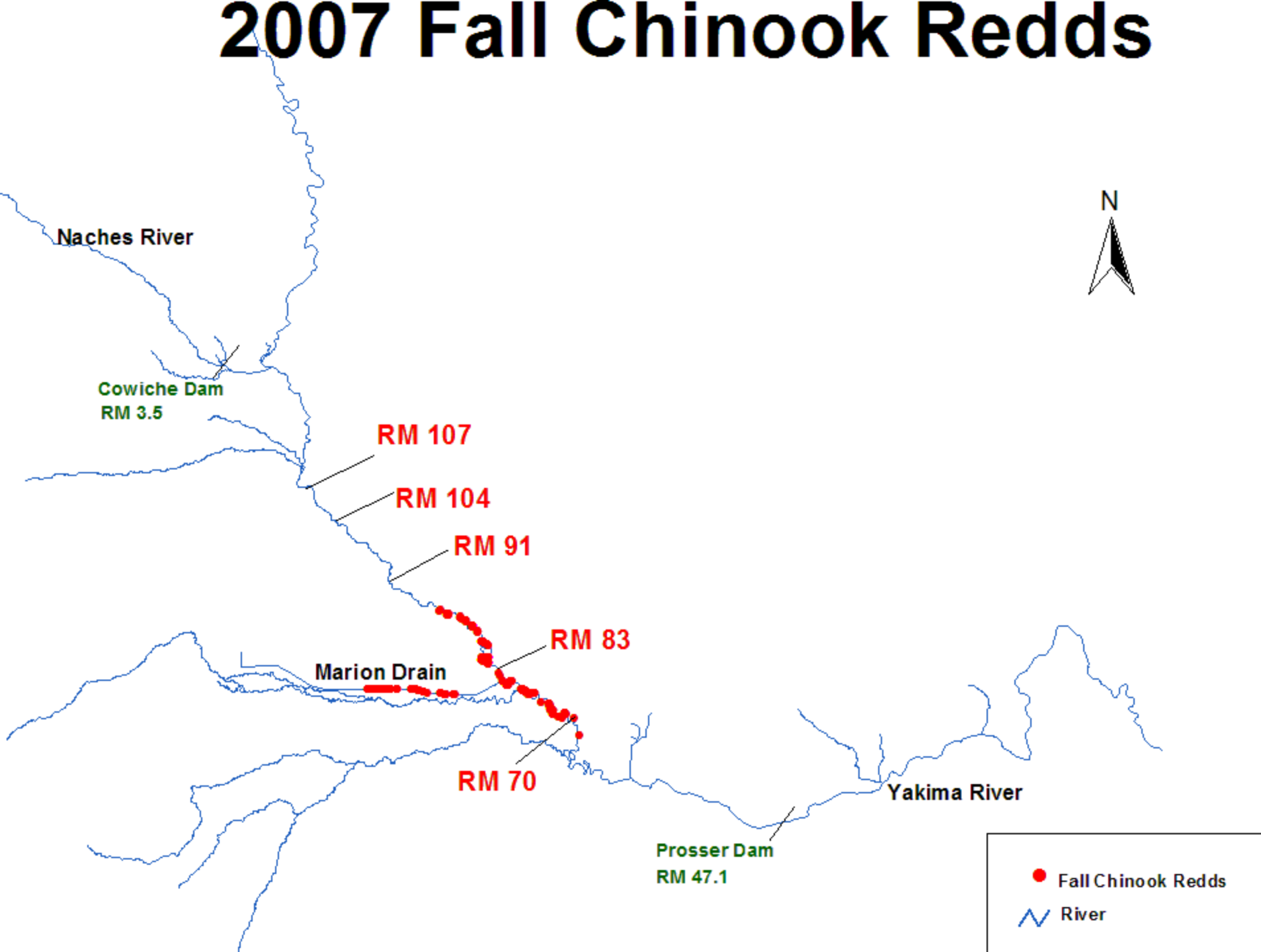
2007 Fall Chinook Returns



Fall Chinook above Prosser Dam



2007 Fall Chinook Redds



2007 Redd Surveys above Prosser

Prosser Dam

Over- 321 Redds

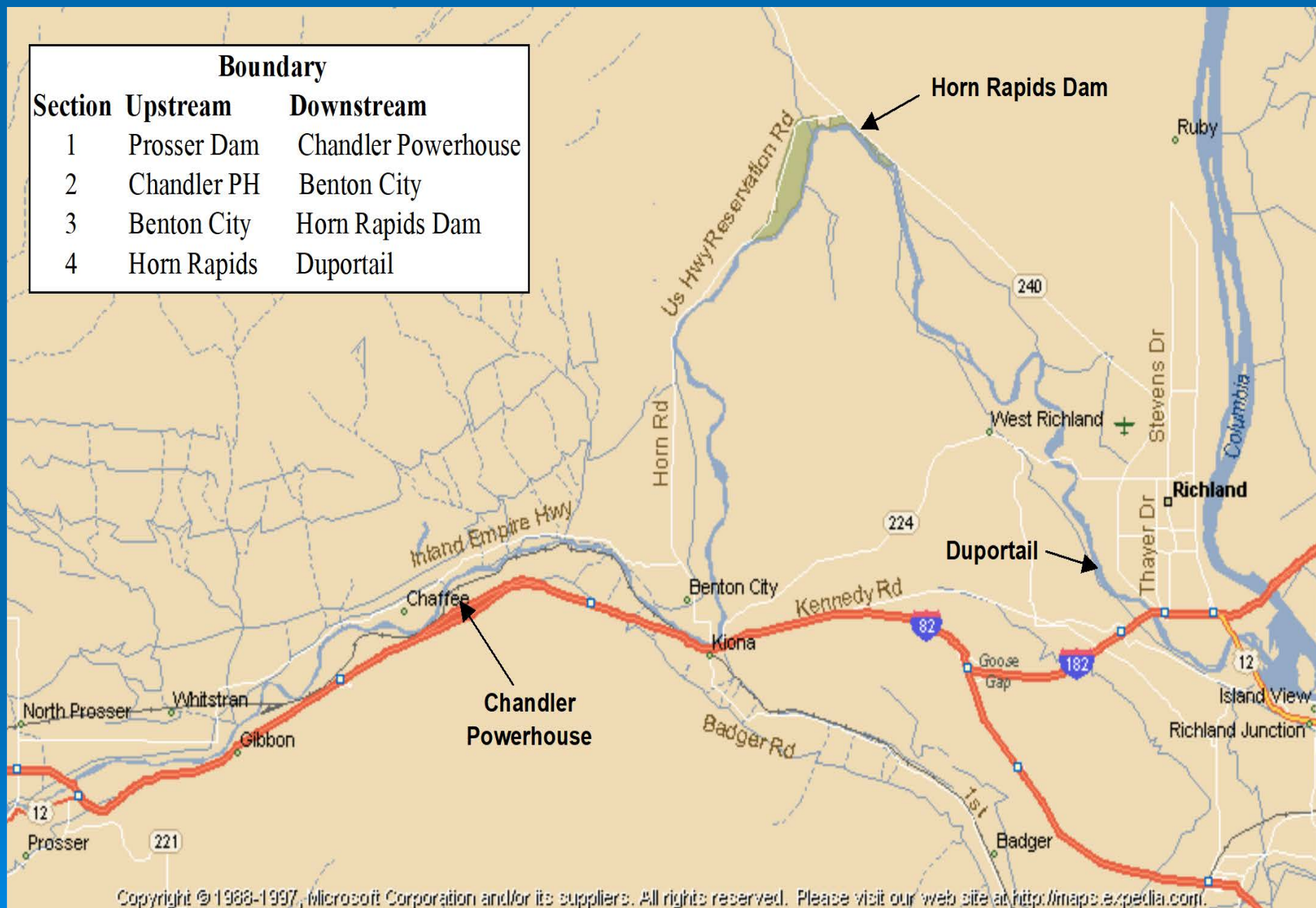
55.1% Emerald Rd to Granger (RM70-83)

44.9% Granger to Zillah (RM83-91)

0% Zillah to SSD (RM91-104)

0% Union Gap (RM107-117)

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



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(WDFW, Hoffarth 2008)

2007 Redd Counts below Prosser

Escapement to Yakima R

Yakima R. below Prosser- 41 Redds

70.7% (29) Prosser Dam to Chandler Powerhouse

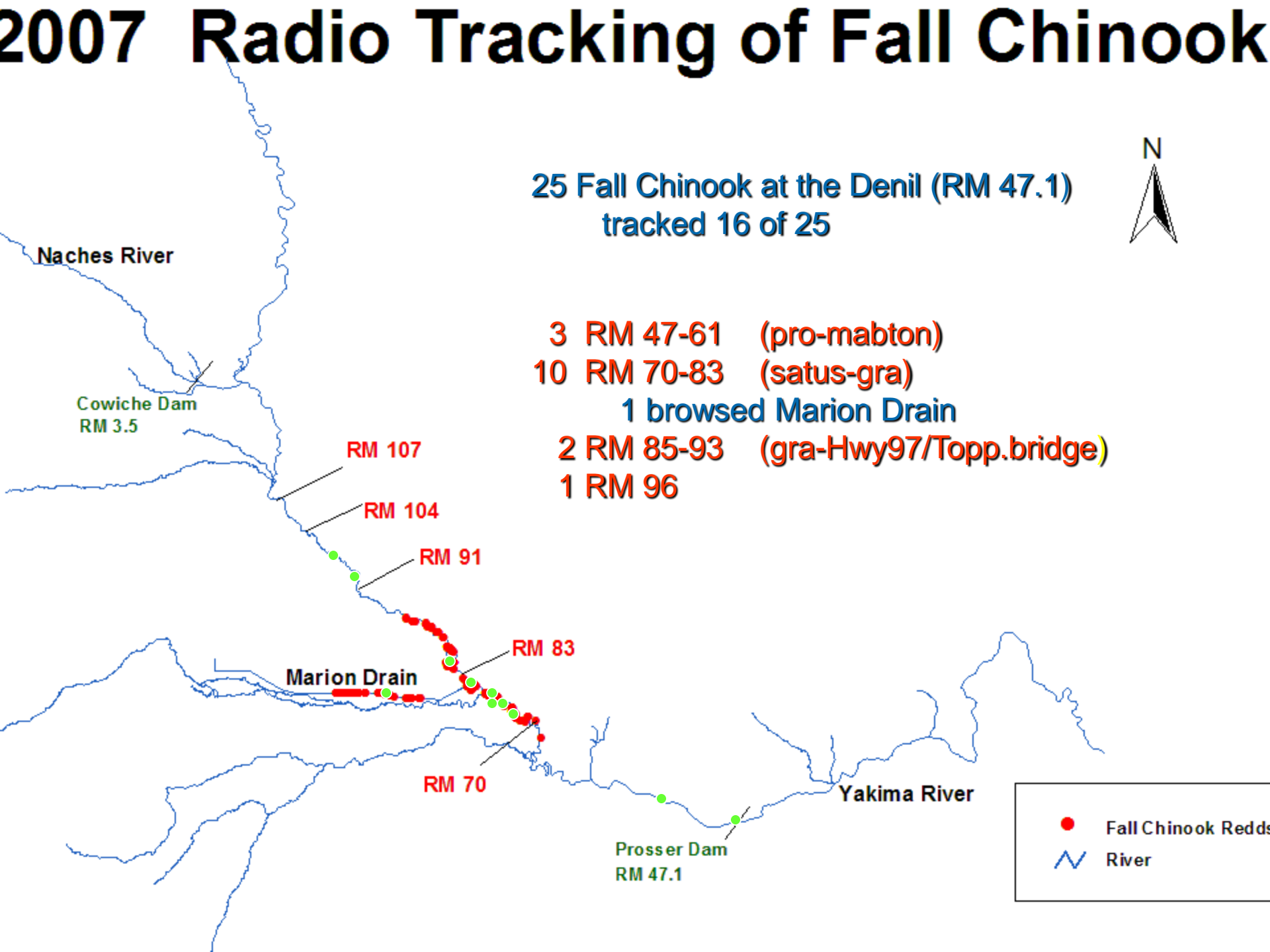
7.3% (3) Chandler Power House to Benton City

2.4% (1) Benton to Horn Rapids

19.5% (8) Horn Rapids to Mouth

**Due to periods of high turbidity and the presence of aquatic vegetation redd visibility*

2007 Radio Tracking of Fall Chinook



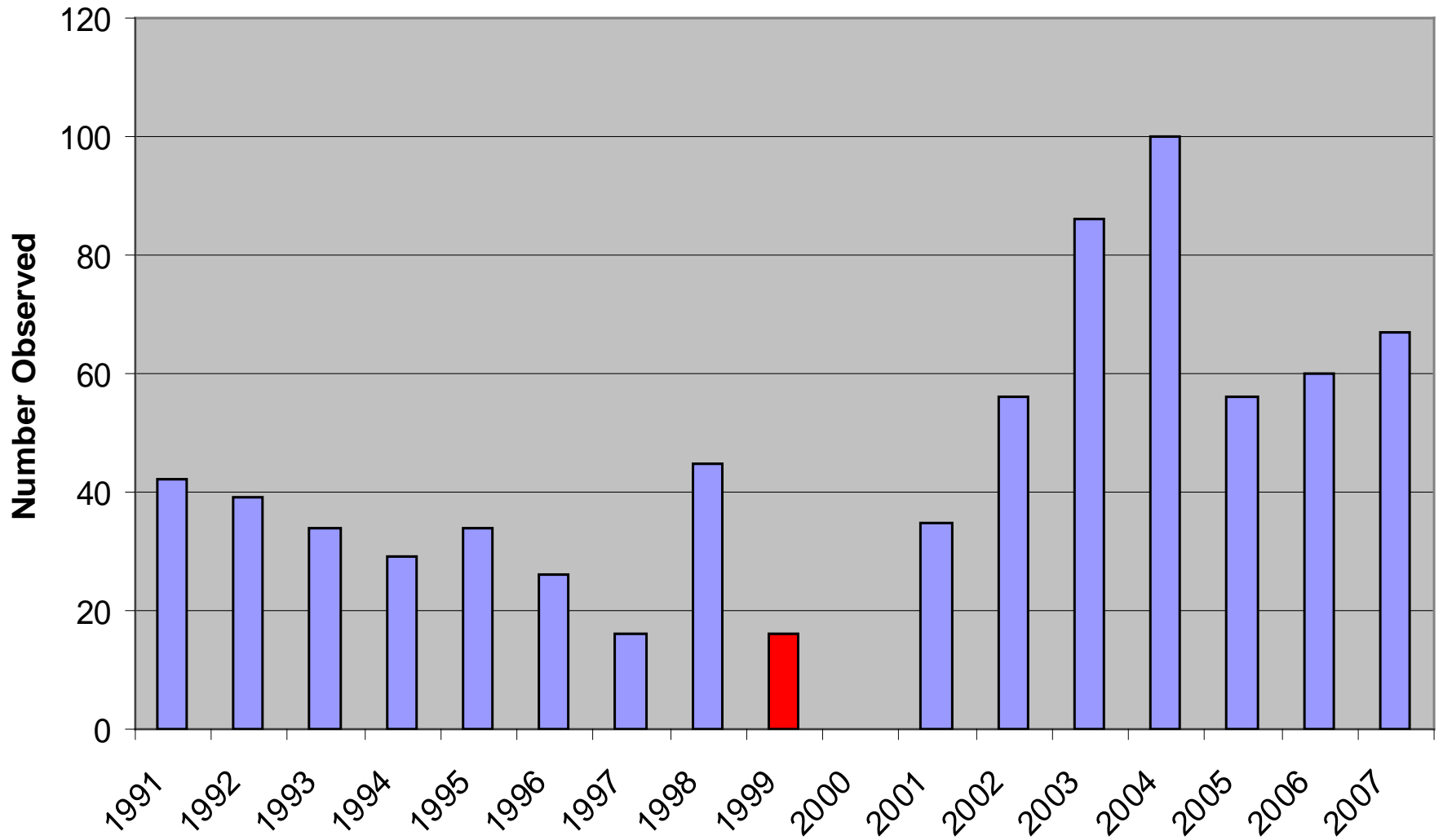


▪ Marion Drain- 67 Redds

68.7% above Hwy 97

31.3% below Hwy 97

Marion Drain Fall Chinook Redds



***No Surveys conducted in 2000**

2007-08 Plans on-going

- Acclimate Fall Chinook at the Prosser and Marion Drain Hatcheries
- Acclimate at Stiles and Billy's Pond
- In-basin Yearling vs. Subyearling releases
- Out-basin Accelerated vs. Conventional
- Beach Seine Fall Chinook, target WILD
- Redd Surveys
- Radio Tag Returning Adults at the Prosser Denil

2007-2008 New

To initiate investigation of the feasibility of establishing an early-run fall Chinook (summer) in the Yakima River.

Which Stock?

There are two stocks that return to the Mid-Columbia to spawn; the Wells Hatchery “integrated” Stock and the Wenatchee Stock.

-The Wenatchee River stock is geographically the closest to the Yakima River and would seem to be the most likely candidate.

However, the Wells stock “juveniles” have much less BKD than the Wenatchee stock (Gutenberger, 2006). Based on this information, and the recommendations from our fish health pathologists (USFWS), the Wells Hatchery stock is the preferred source for the experiment.

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