Trinity River Fall Chinook Run-Size and Escapement Comparisons

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Presentation Goals

- Review Pre-season Adult Fall Chinook Forecasts and Post-Season Run-size Estimates
- Compare Recent Trinity River Run Size with Other Rivers.
- Natural Production Performance Measures

Definitions

- Run-Size: Annual Estimate of Fall Chinook that Enter the River.

- Escapement: Run-size – Harvest

- Brood Year: Year of Parental Spawning
- Adults: Salmon of Age 3, 4, or 5
- Jacks: Age 2 Salmon

Definitions

- Natural Area Spawners: Fish that Spawn in the River or Tributaries. Includes Hatchery Strays.
- Naturally Produced: Offspring of Natural Area Spawners
  - TRRP production goals
- Total production: Hatchery and Natural Produced Adults Combined

Klamath Basin	Adults		
Sector	Preseason Forecast	Postseason Estimate	Pre / Post
Run Size	119,800	77,700	1.54
Fishery Mortality			
Tribal Harvest	43,600	28,000	1.56
Recreational Harvest	14,100	7,800	1.81
Drop-off Mortality	4,100	2,600	1.58
Total	61,800	38,400	1.61
Escapement			
Hatchery Spawners	17,300	11,100	1.56
Natural Area Spawners	40,700	28,100	1.45
Total	58,000	39,200	1.48

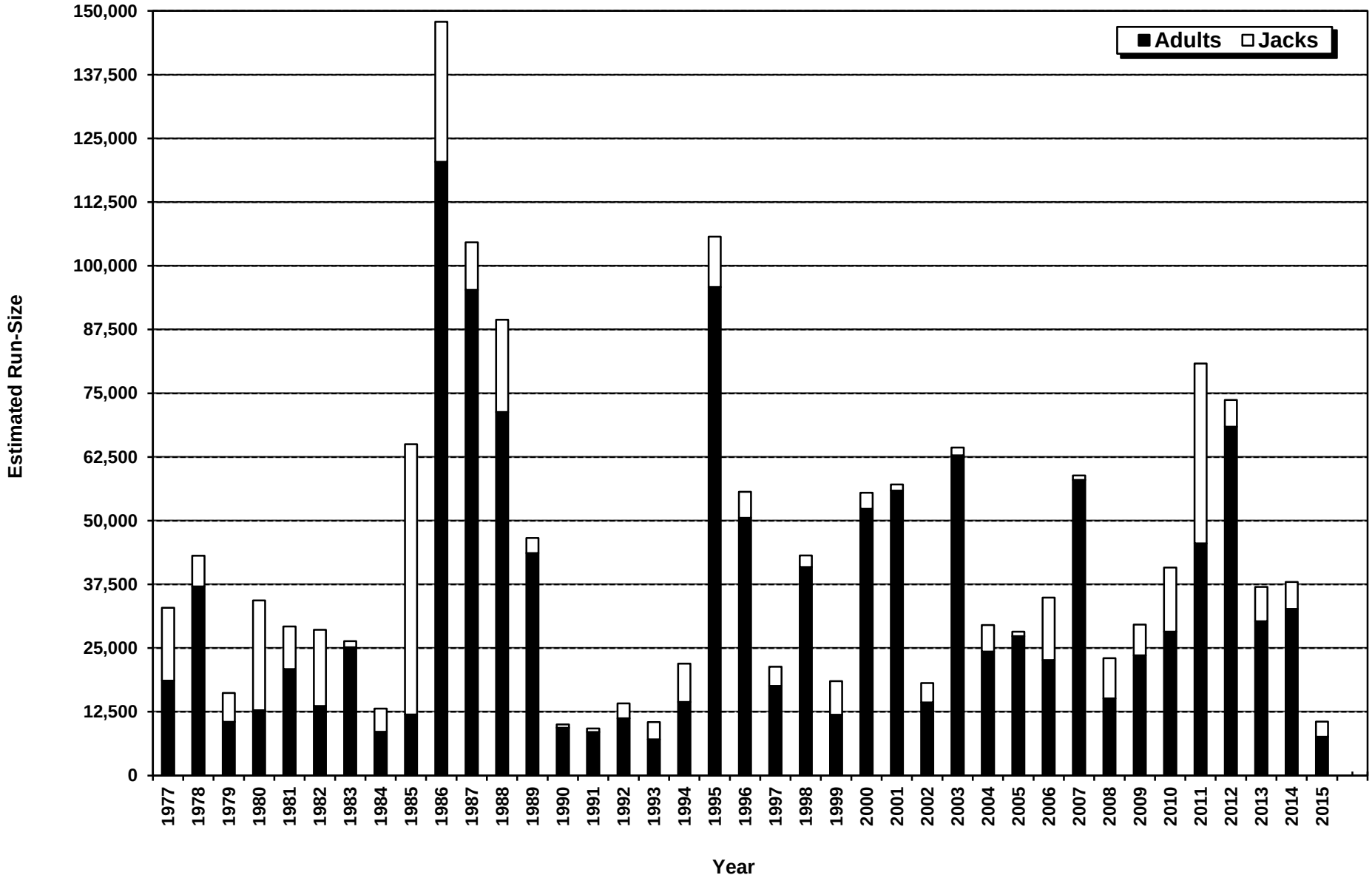
Trinity River Preliminary Run-Size 2015

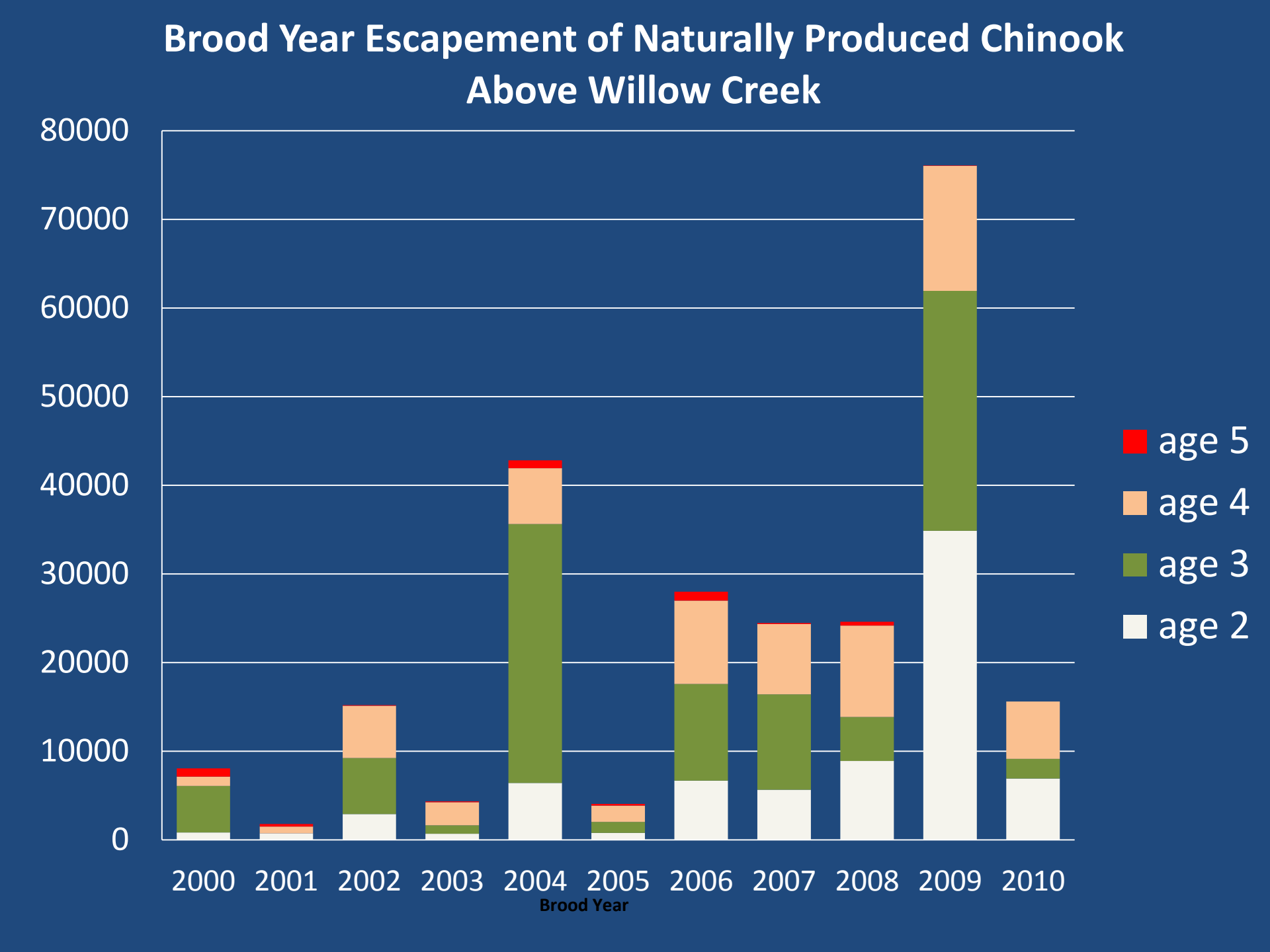
Sector	Adults	Jacks	Total
Above Weitchpec	10,236	3,022	13,258
Above Willow Creek	7,624	2,754	10,377
TRH	3,229	224	3,353

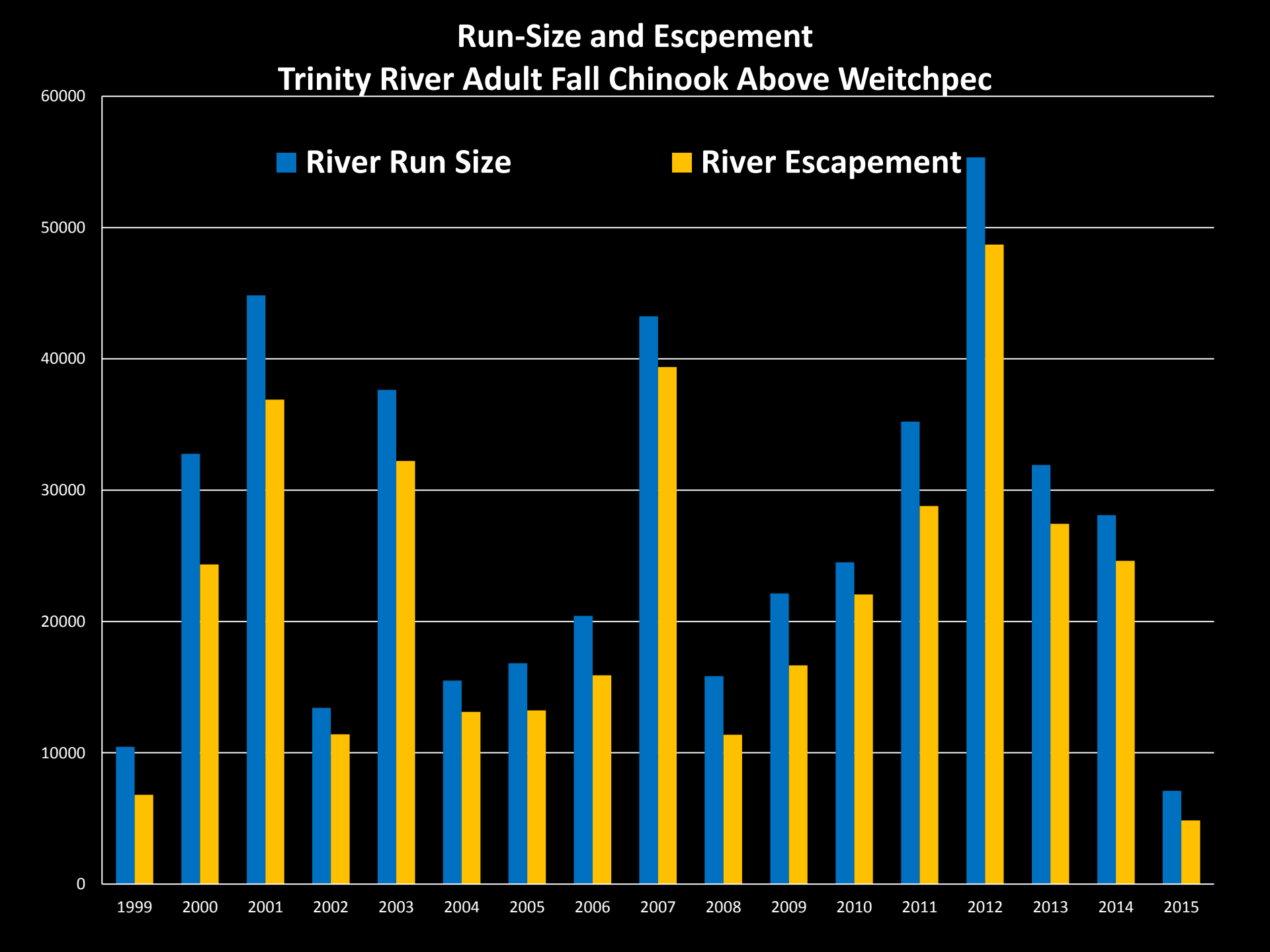
Trinity River Fall Chinook Age Composition 2015

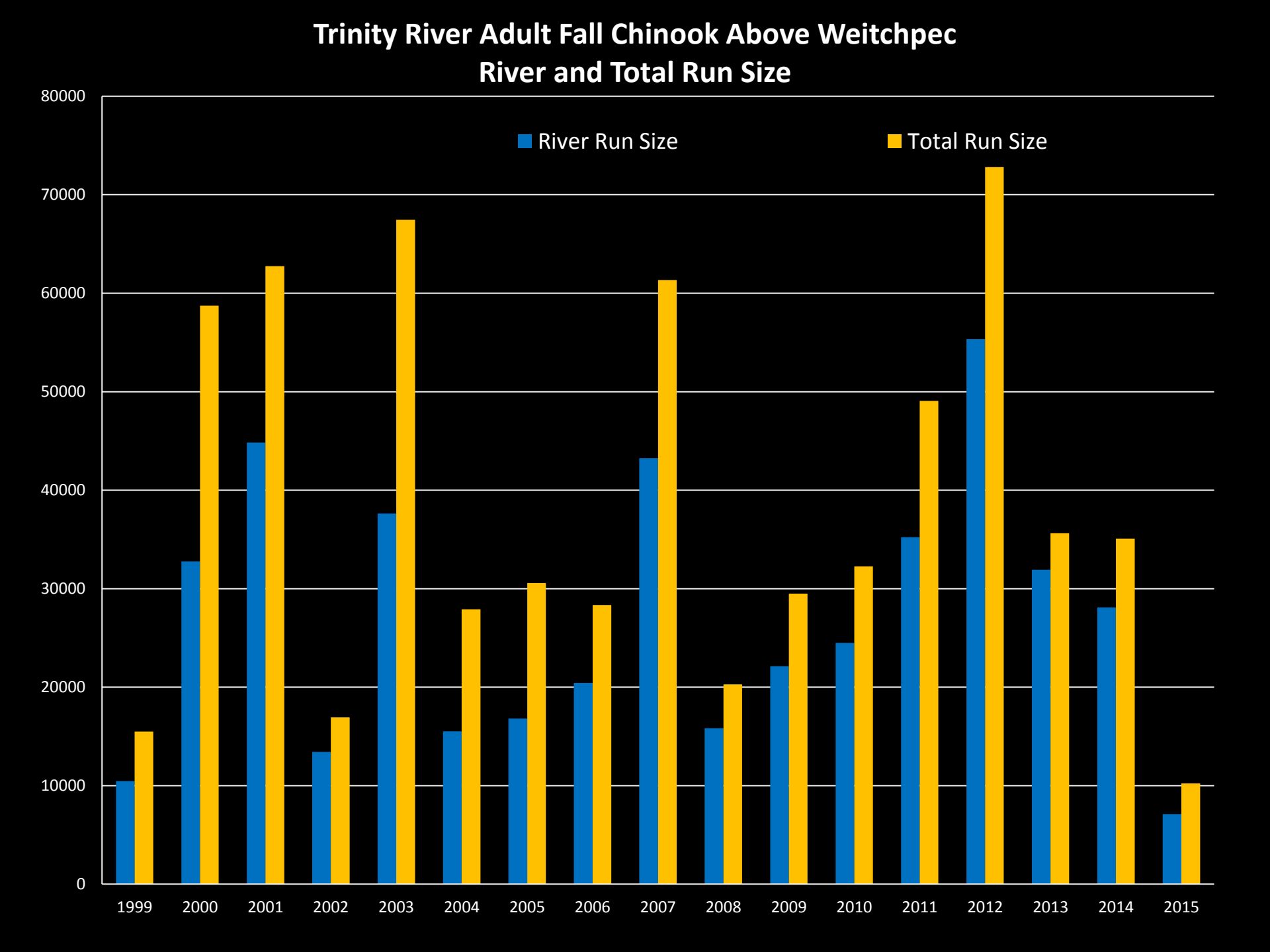
Age	% Natural Areas	% TRH	% WCW
2	36	7	27
3	20	55	32
4	37	37	37
5	6	1	5

Fall Chinook Total Run-Size Trinity River Above Willow Creek 1977-2015




Brood Year Escapement of Naturally Produced Chinook Above Willow Creek
80000
70000
60000
50000
40000
30000
20000
10000
0
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
Brood Year
age 5
age 4
age 3
age 2

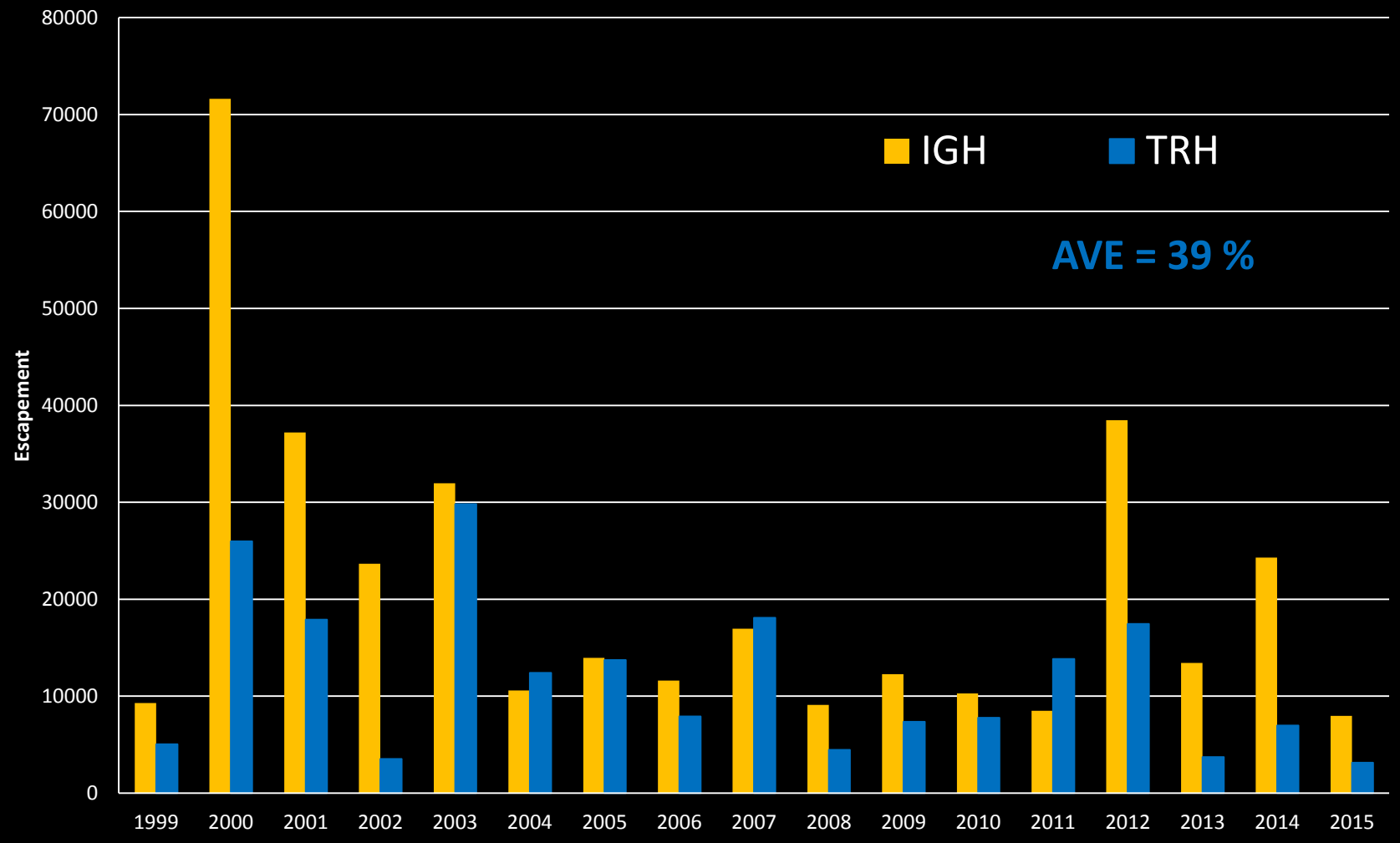

Run-Size and Escpement
Trinity River Adult Fall Chinook Above Weitchpec
River Run Size
River Escapement
60000
50000
40000
30000
20000
10000
0
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015

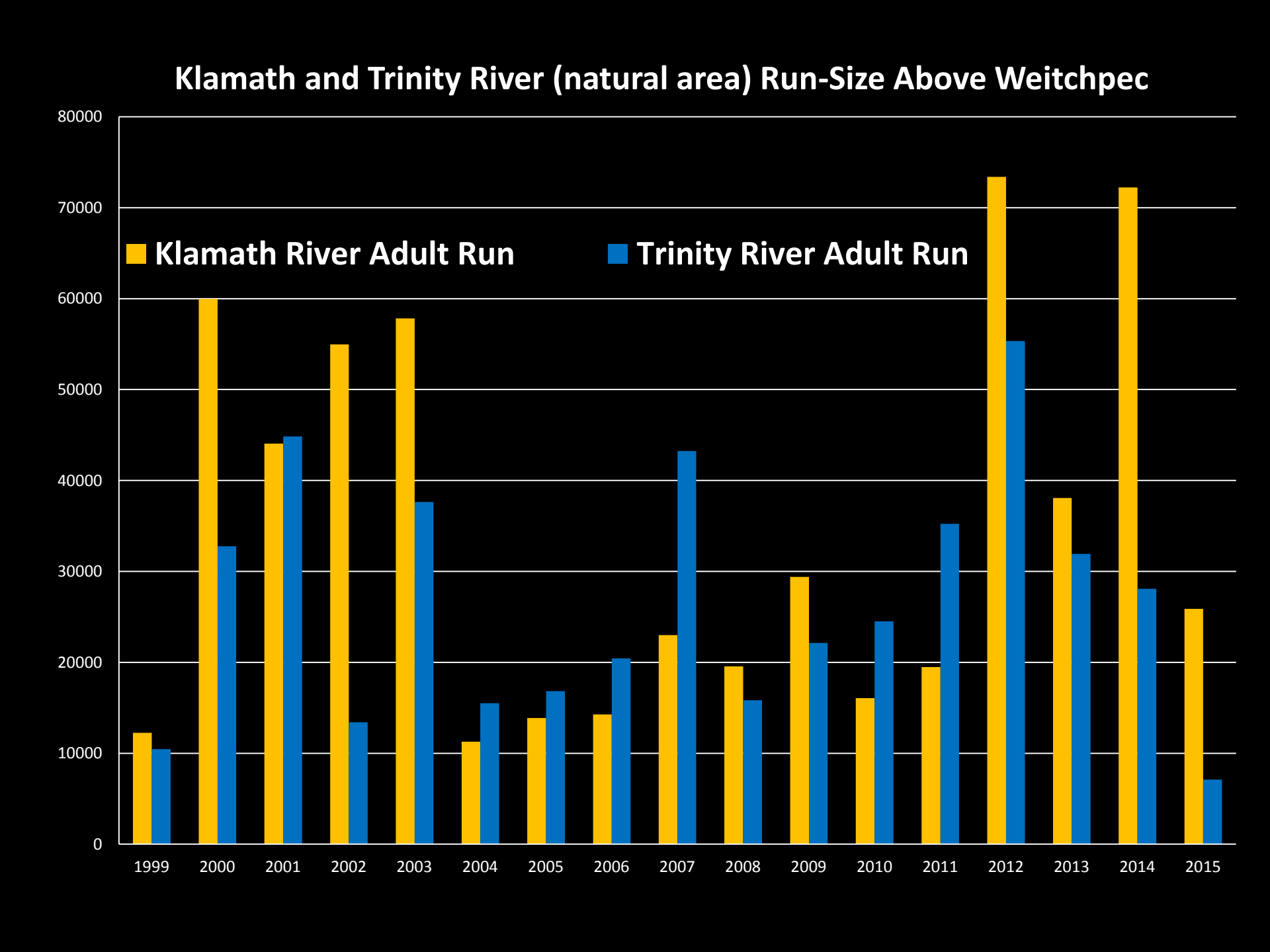

Trinity River Adult Fall Chinook Above Weitchpec River and Total Run Size
River Run Size
Total Run Size
80000
70000
60000
50000
40000
30000
20000
10000
0
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015

River Comparisons

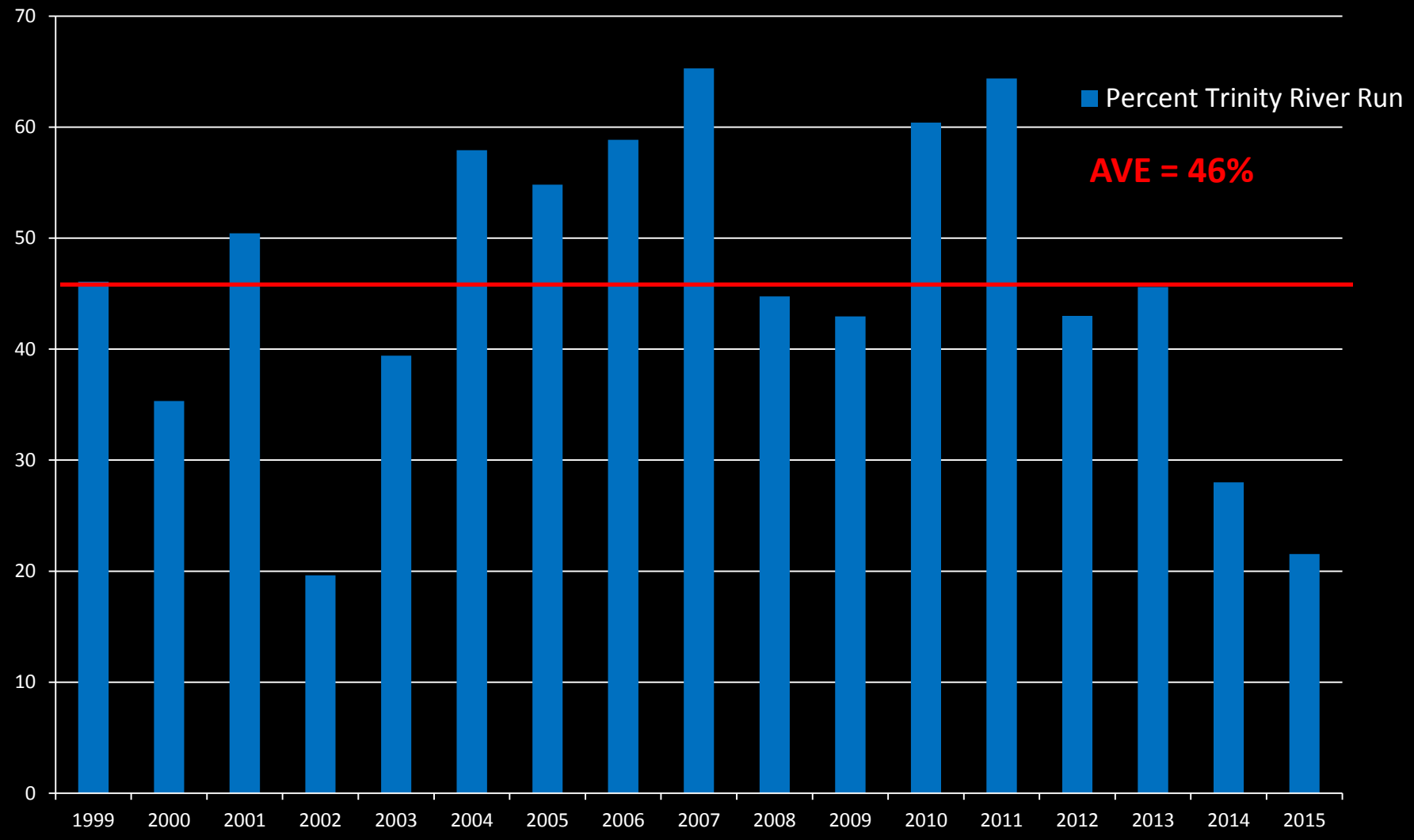
- Geomorphologic Differences
  - Klamath
  - Rogue
  - Sacramento runs above RBDD were about ½ of last year
- Hatcheries
  - Trinity River Hatchery production goal 3 million fall Chinook
  - Iron Gate production goal 6 million fall Chinook
  - Rogue no fall Chinook hatchery production
  - Eel no hatchery production
  - Sacramento many hatcheries

Adult Fall Chinook Hatchery Counts

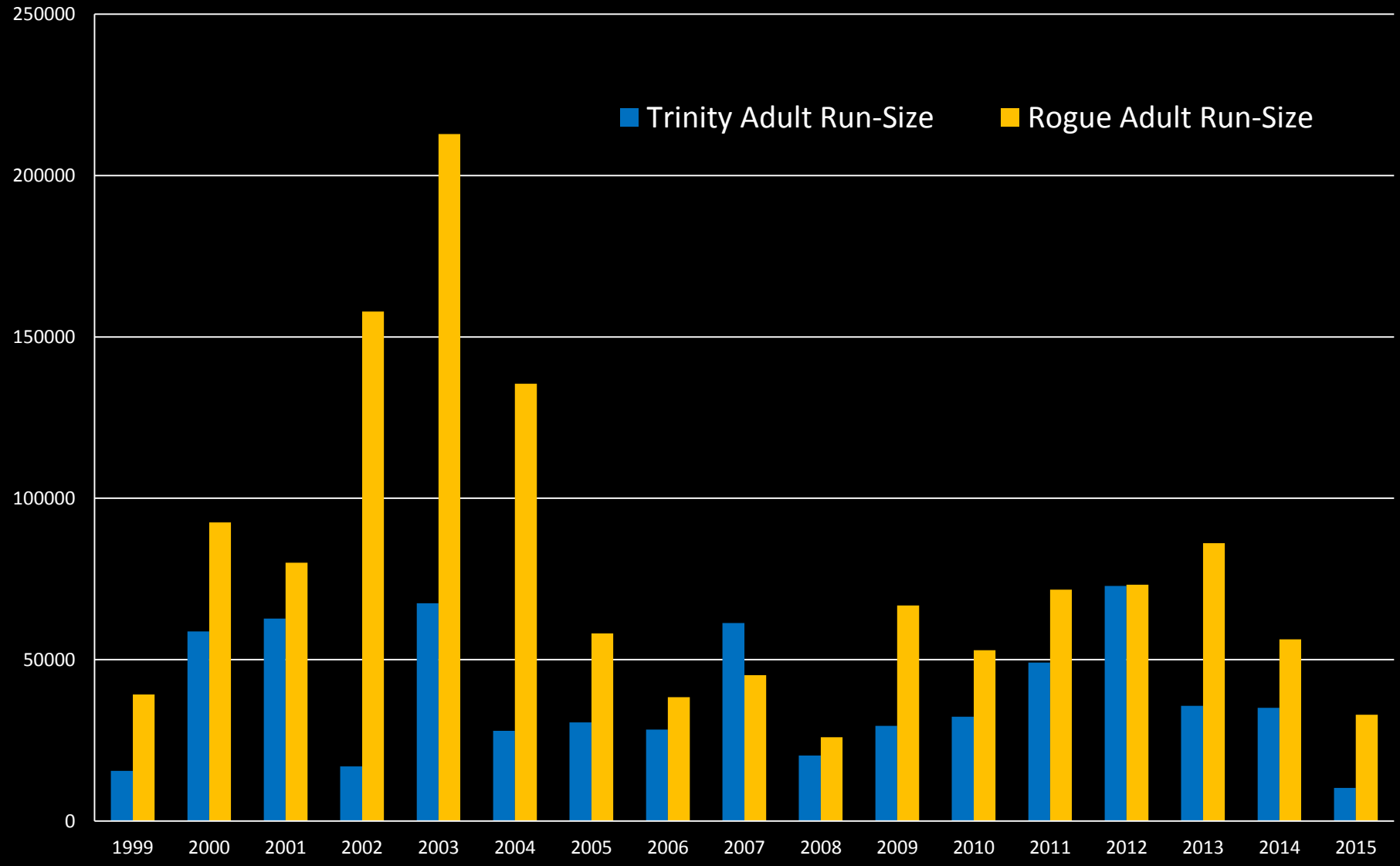



Klamath and Trinity River (natural area) Run-Size Above Weitchpec
Klamath River Adult Run
Trinity River Adult Run
80000
70000
60000
50000
40000
30000
20000
10000
0
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015

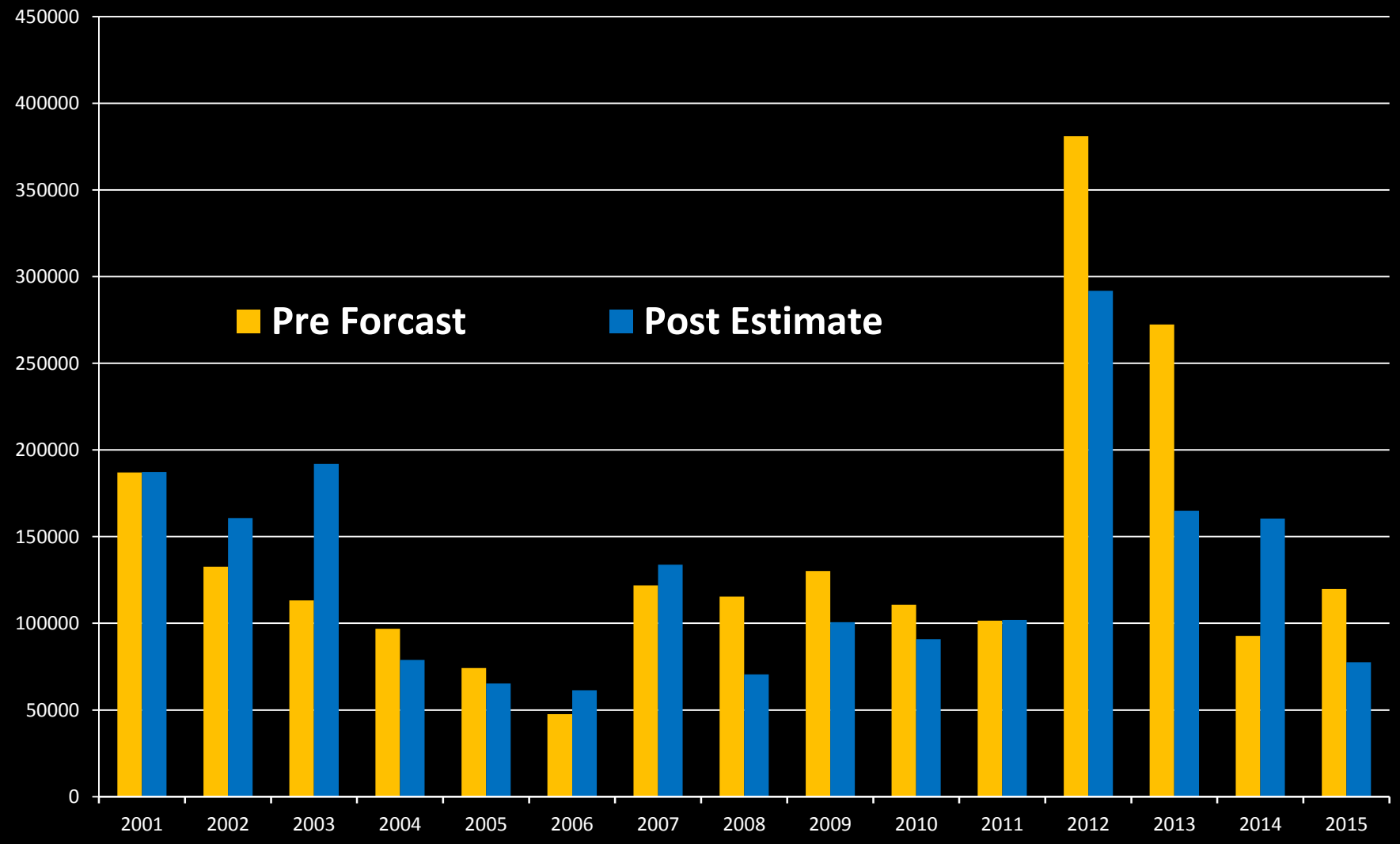
Percent Trinity River Run in Klamath River Basin Above Weitchpec (Adults)



Trinity and Rogue River (natural area) Adult Fall Chinook Run-Size



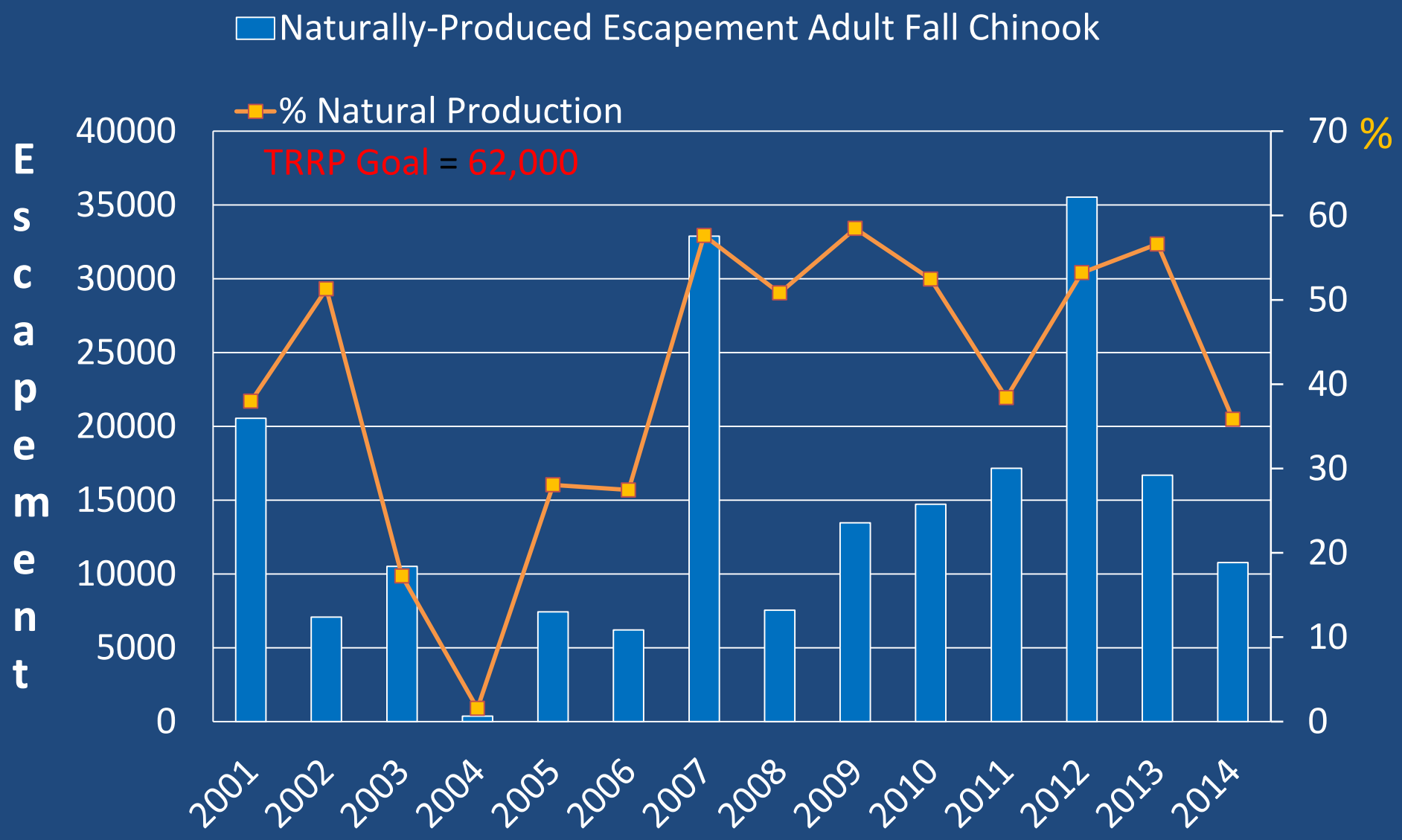
Klamath Basin Adult Fall Chinook Pre-Season Forecast and Post Season Run-Size Estimates



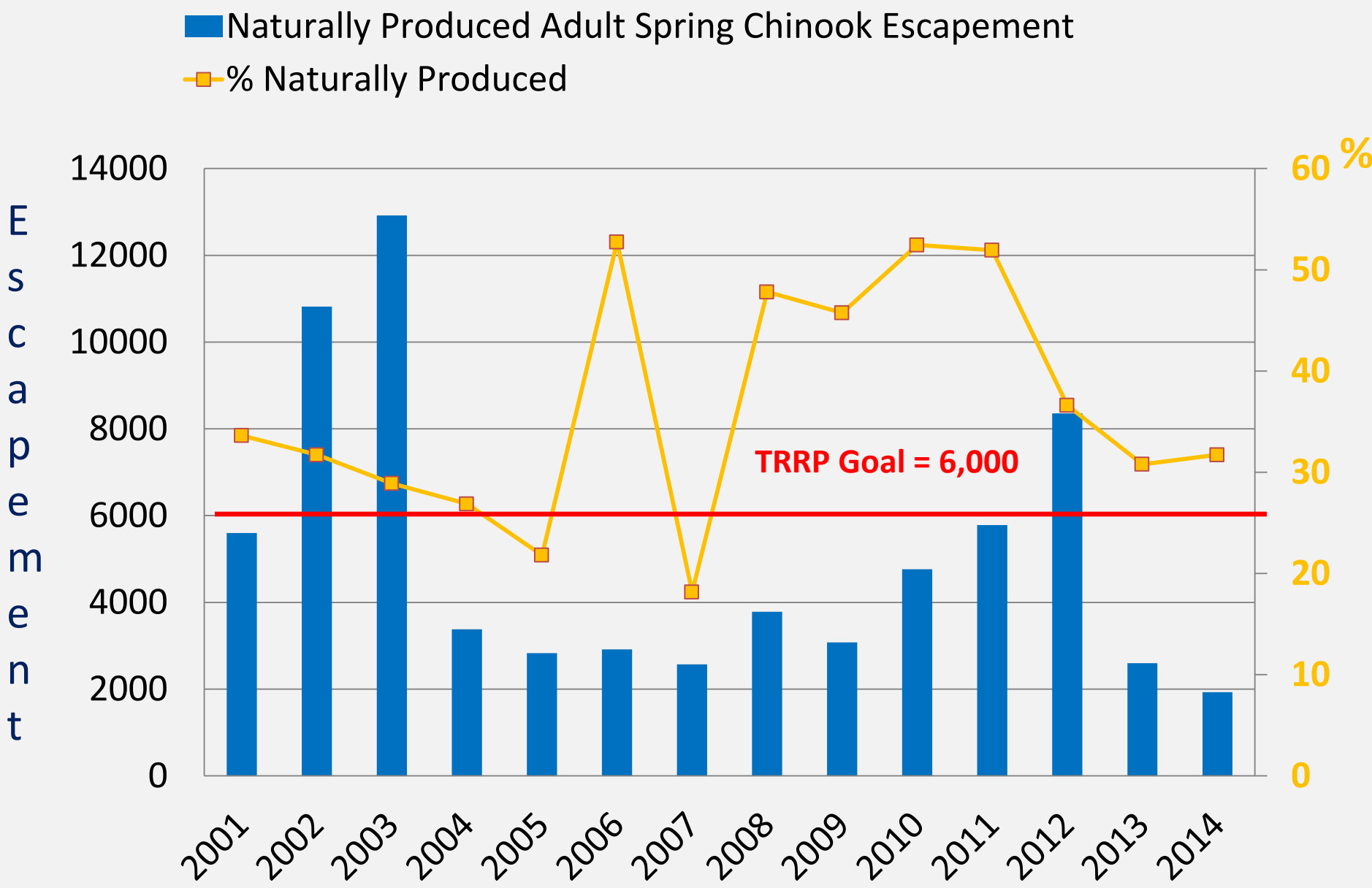
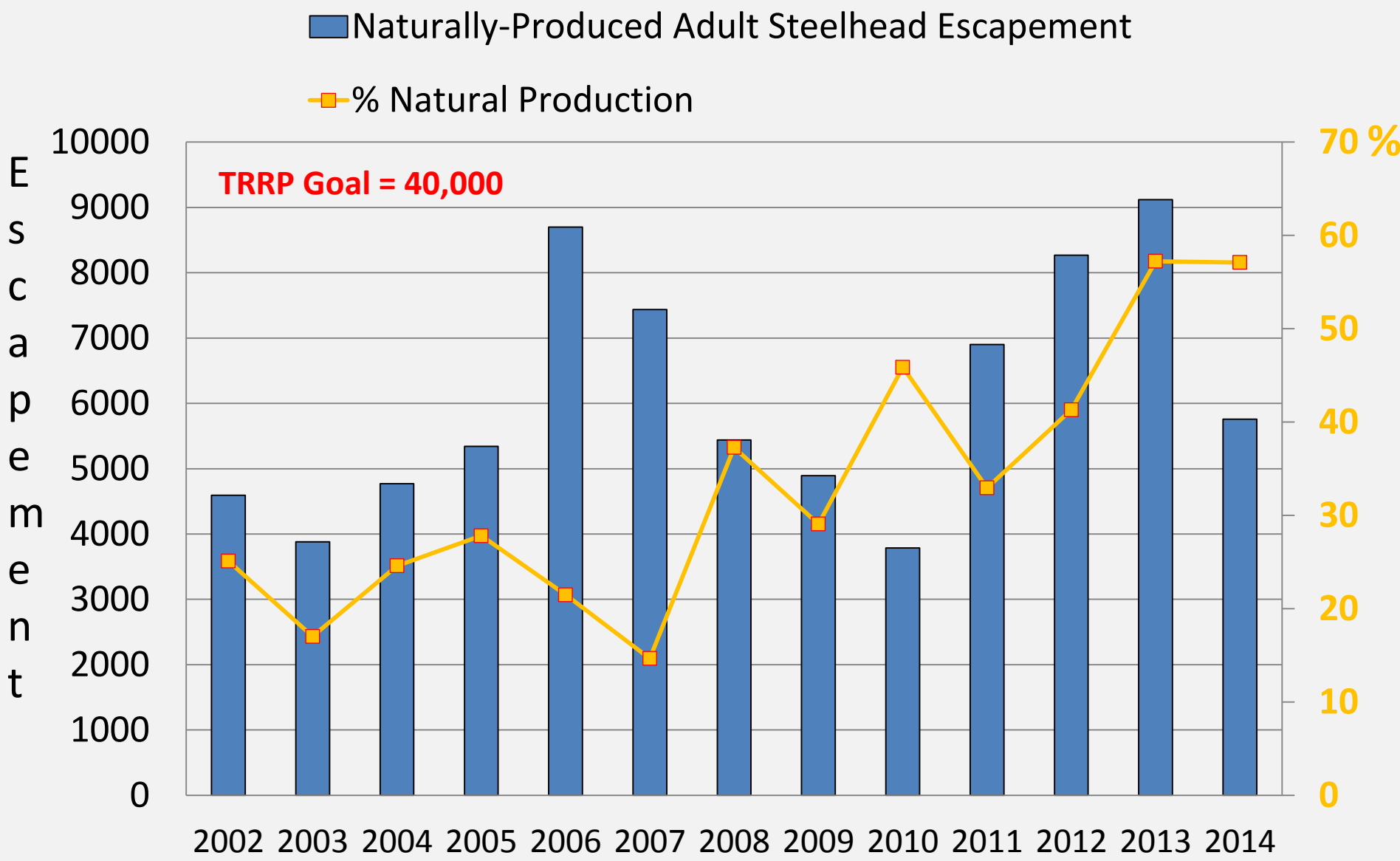
Fish Performance Measures

- **Escapement and Proportion of Natural Origin Salmonids Contributing to Total Escapement**
- **Hypothesis:** If numbers of naturally produced juvenile salmonids increase in response to improved habitat conditions in the Trinity River, escapement to natural areas of the river and proportions of naturally produced salmonid spawners will increase compared to hatchery produced spawners, given constant or reduced hatchery production.

Naturally Produced Fall Chinook



Naturally Produced Spring Chinook



Naturally Produced Steelhead