

# MRRP ANNUAL PERFORMANCE ASSESSMENT & METRICS 2010

**March 9, 2011**

**Missouri River Natural  
Resource Conference**

**Brad Thompson  
Chief Environmental Resources  
And MRRP Plan Formulation Section**



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**US Army Corps of Engineers  
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# *Performance Assessment*

- Evaluated each BiOp item:
  - ▶ 3 Mitigation items
  - ▶ 69 RPA Elements
  - ▶ 21 RPMs : 14 CRs (15 in 2008)
  - ▶ Yellowstone Intake CR amended to RPA element per USFWS letter dated 23 OCT 2009
- Program has numerous measurable metrics
- Work has been done on virtually all items
- MRRP behind schedule on several items due to: funding, issue resolution, climate, reservoir capacity, and optimistic time frames.
- Above constraints on MRRP could put current operation of the Missouri River mainstem in jeopardy.



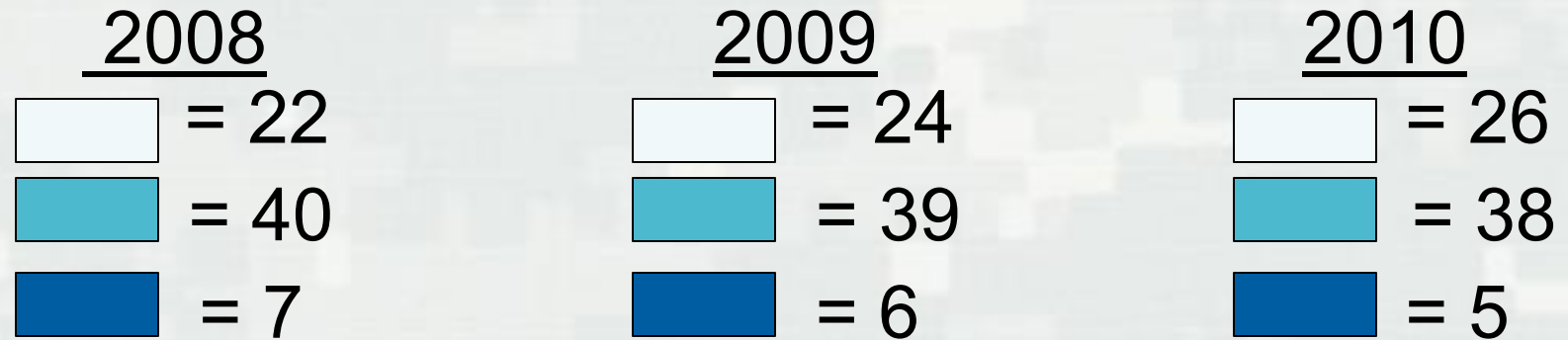
# *2010 Notable Developments*

- High flows impact MRRP implementation
- Innovative approach tested for ESH construction (Geotubes)
- PEIS for ESH public review complete
- Construction initiated on Yellowstone Intake Diversion Dam headworks structure, Aug. 2010
- NAS Sediment Study completed, Sep. 2010
- Shovelnose sturgeon listed due to similarity of appearance, Sep. 2010

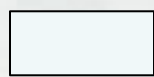
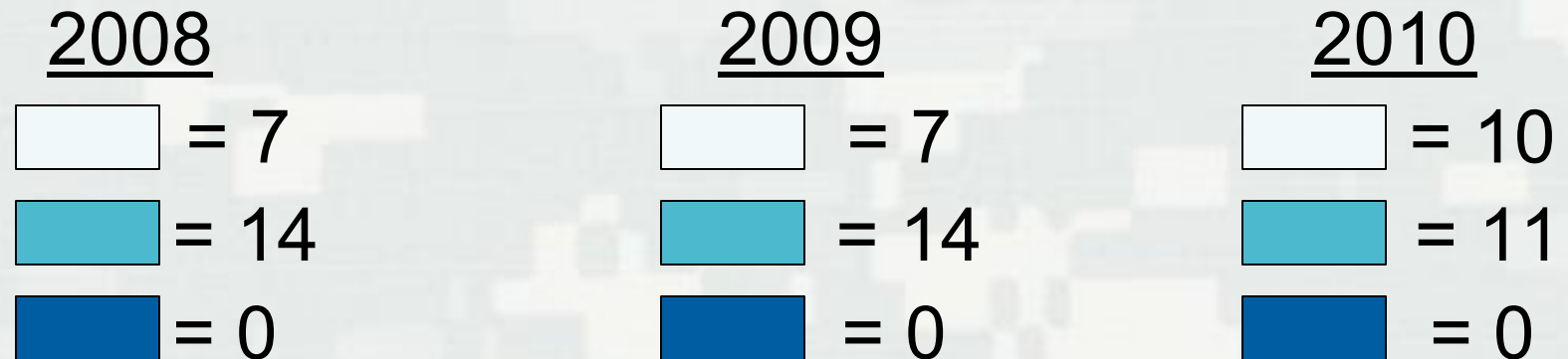


# Performance Assessment

## ▪ RPA Characterization (draft)



## ▪ RPM Characterization (draft)



Metric on target



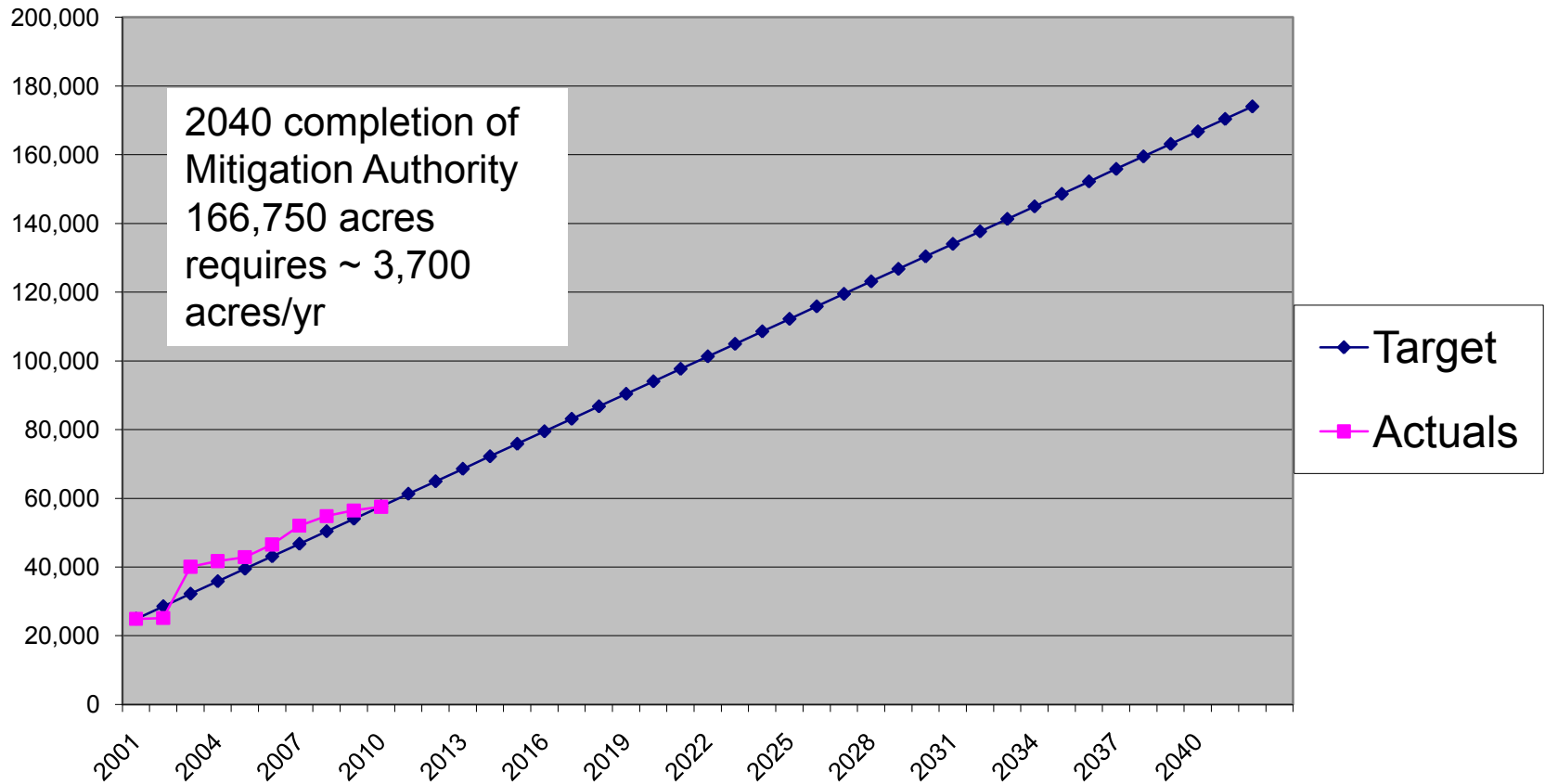
Metric slightly below target



Metric below target



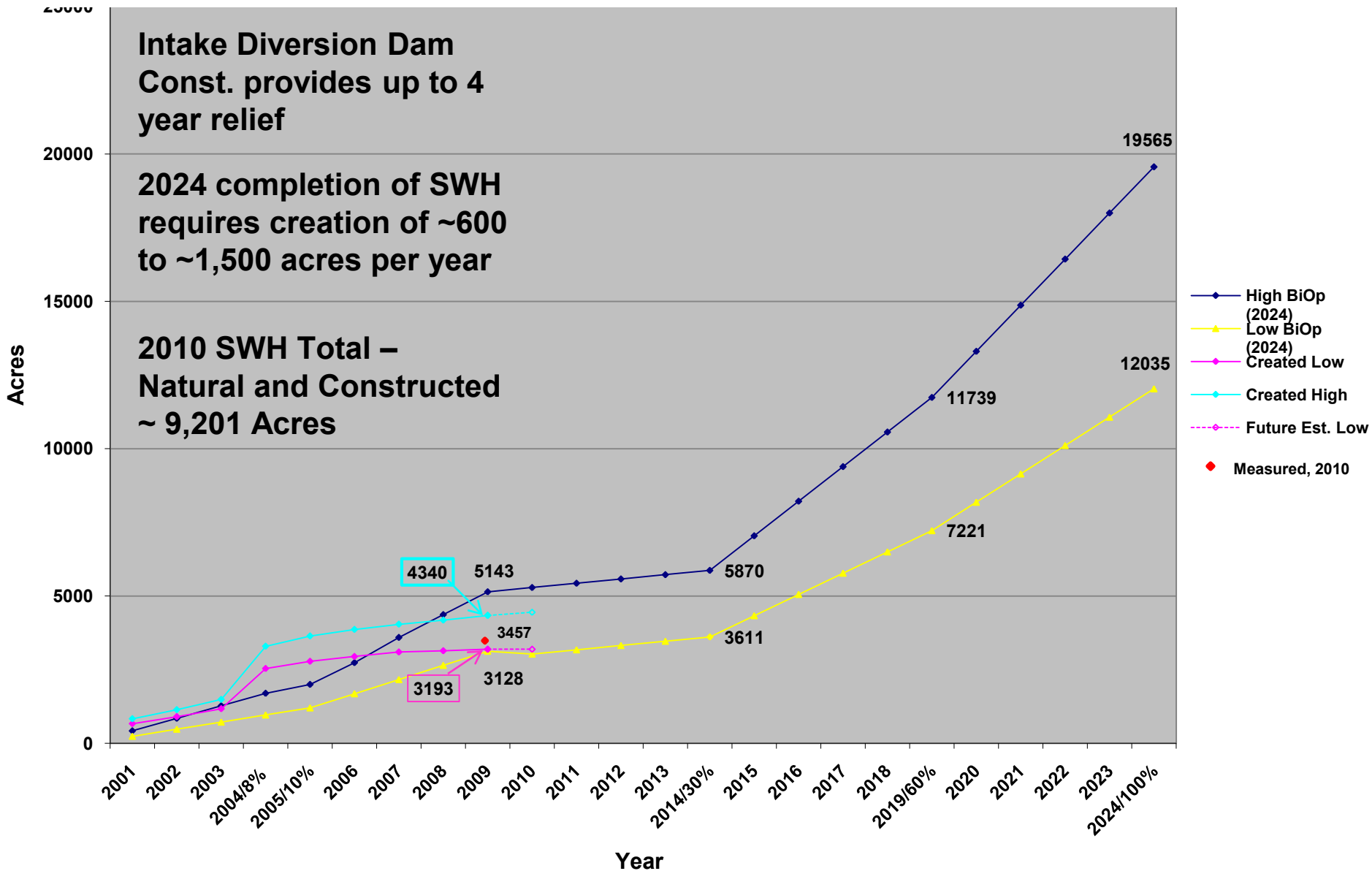
# SWH / Mitigation Land Acquisition (Acres)



\*Does not include 2,392 acre land acquisition at Audubon bend (Missouri River National Recreation River segment)



# SWH Created, RPA IV.A



# *Deroin Chute*

## *River Miles 516.5-520.5*

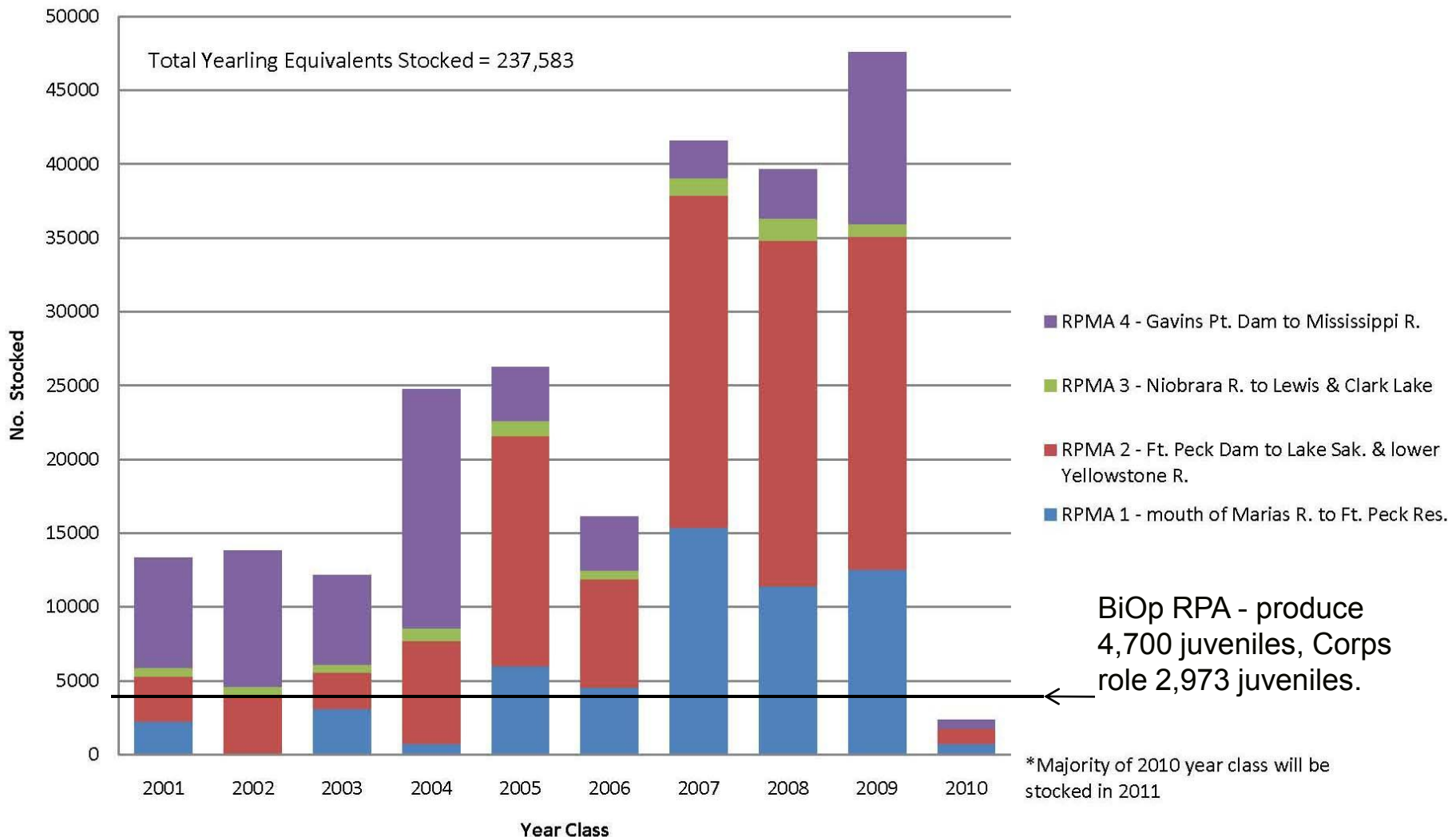


**View of Deroin Chute exit (constructed in 2002)**



# Propagation, RPA IV.A-C

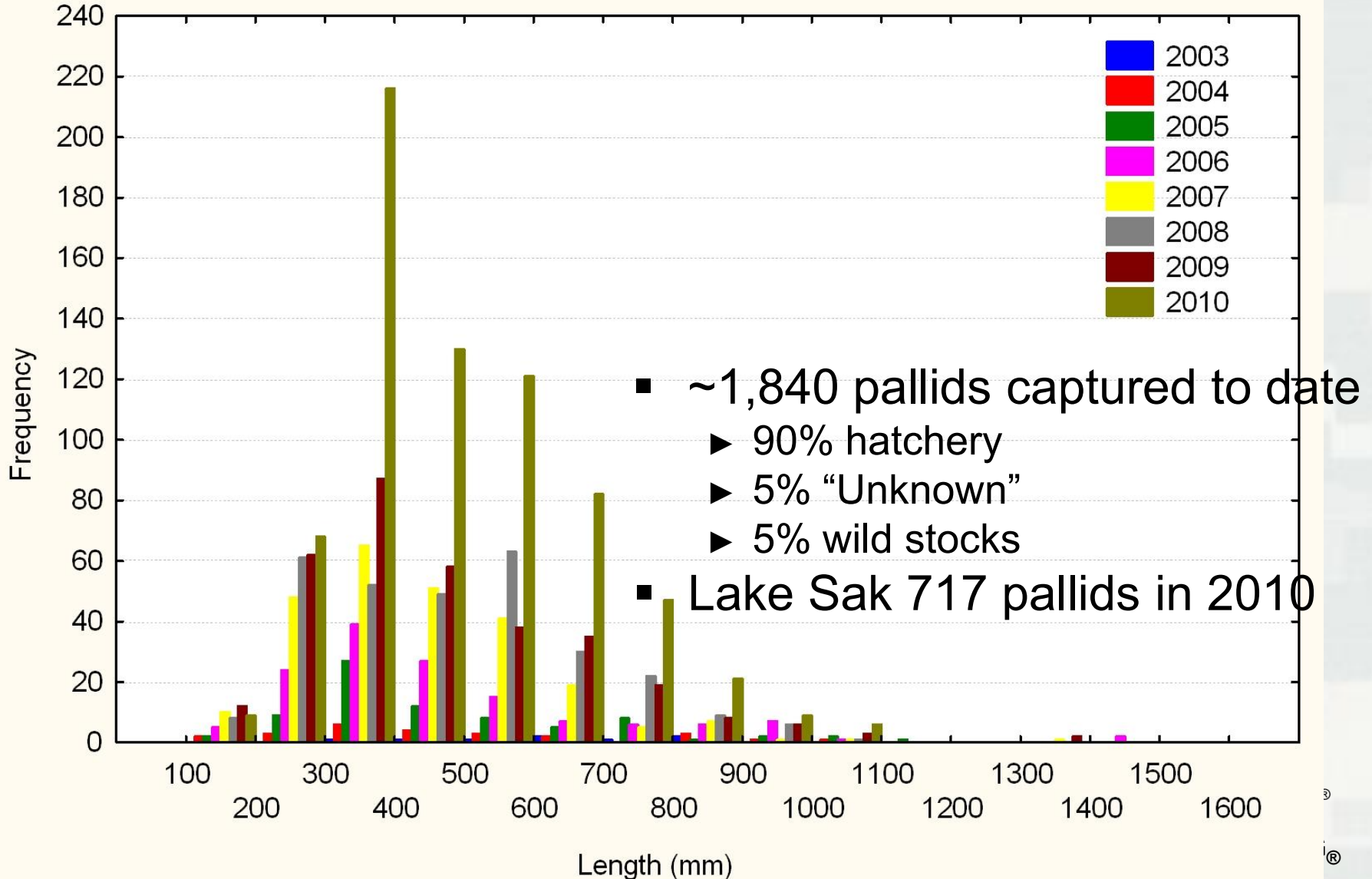
Number of Pallid Sturgeon Stocked (as yearly equivalents) since 2001 in the Missouri River within each Recovery Priority Management Area





# Pallid Population Assessment, RPA V

Pallid Sturgeon Length Frequency Histogram  
PSPAP 2003-2010 Sample Years



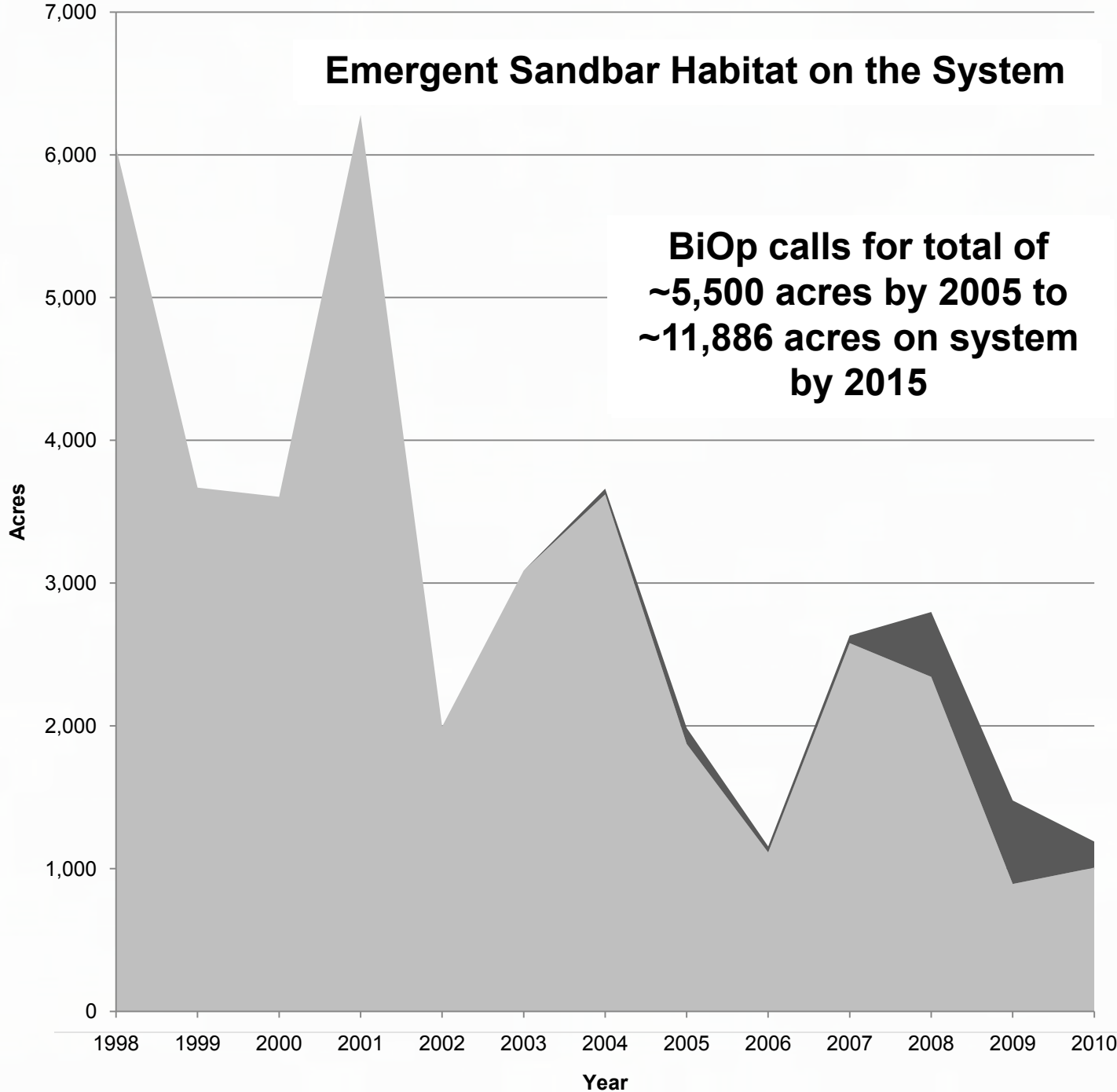
# Emergent Sandbar Habitat, RPA IV B

- PEIS tentative selected plan = adaptive management implementation framework
  - ▶ Focus on attaining biological metrics vs. set number of acres
    - Construction ceiling disclosed is alt. 3.5 = 4,370 acres
  - ▶ IEPR, ATR, and Public Review complete
  - ▶ Final PEIS & Record of Decision (ROD): Summer 2011
- MRRIC recommended pursuing off-channel / reservoir pilot projects
- Reservoir Habitat Study initiated in 2010, RPA IV B.2
- ESH projects initiated in additional reaches
- High flows, erosion rates, predators, vegetation succession are all ongoing issues



# Emergent Sandbar Habitat on the System

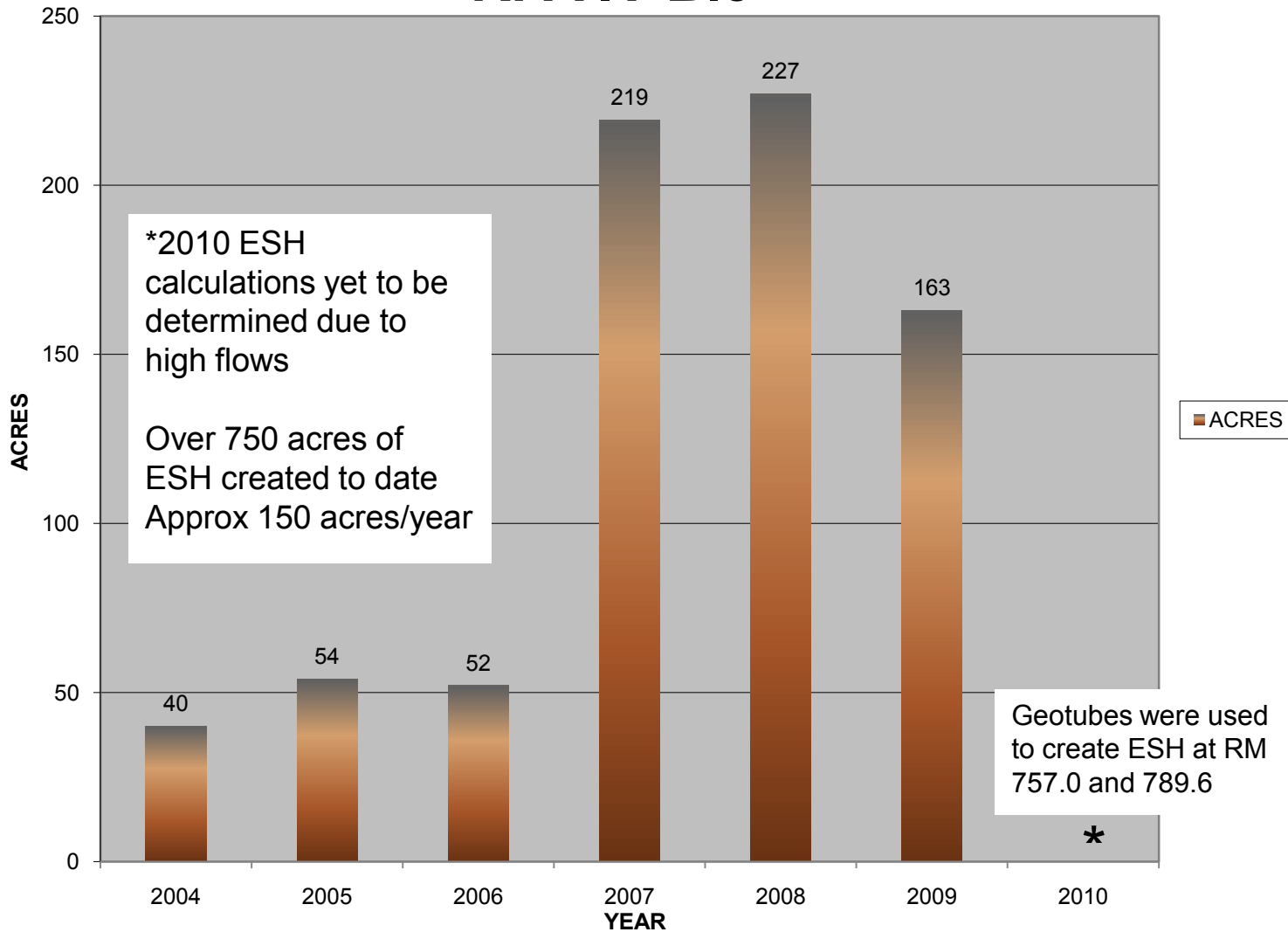
**BiOp calls for total of  
~5,500 acres by 2005 to  
~11,886 acres on system  
by 2015**



- Constructed Sandbars
- Natural Sandbars



# Acres of ESH Constructed by Year, RPA IV B.3



Note: Other FY10 construction included RM 759 & 842

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# Overview – PEIS costs by Alternative (all riverine reaches)- RPA IV B.3

	Alt. 1	Alt. 2	Alt. 3	Alt. 3.5	Alt. 4	Alt. 5	Existing Program	No Pgm
Goal	11,886	5,502	6,754	4,370	1,985	1,315	883	0
Annual Work	4,802	1,786	2,140	1,182	347	164	150	0
Total Annual Cost** in \$Mil	\$197.1	\$73.3	\$87.8	\$48.6	\$14.3	\$6.7	\$6.1	\$0.0

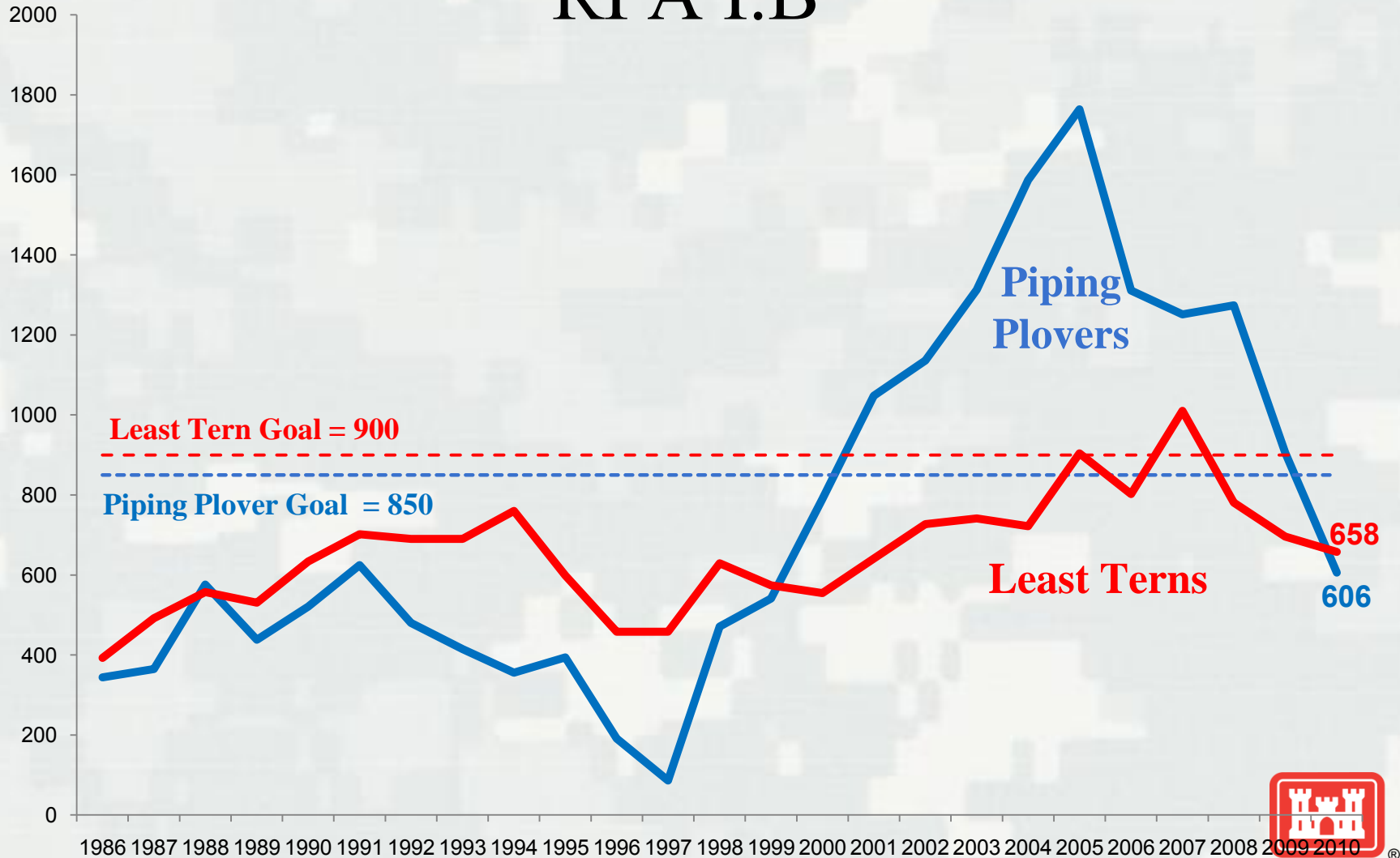
**\*\* Total Annual Cost includes construction cost, engineering and design, field supervision and admin, program management, planning, NEPA compliance and 10% contingency**





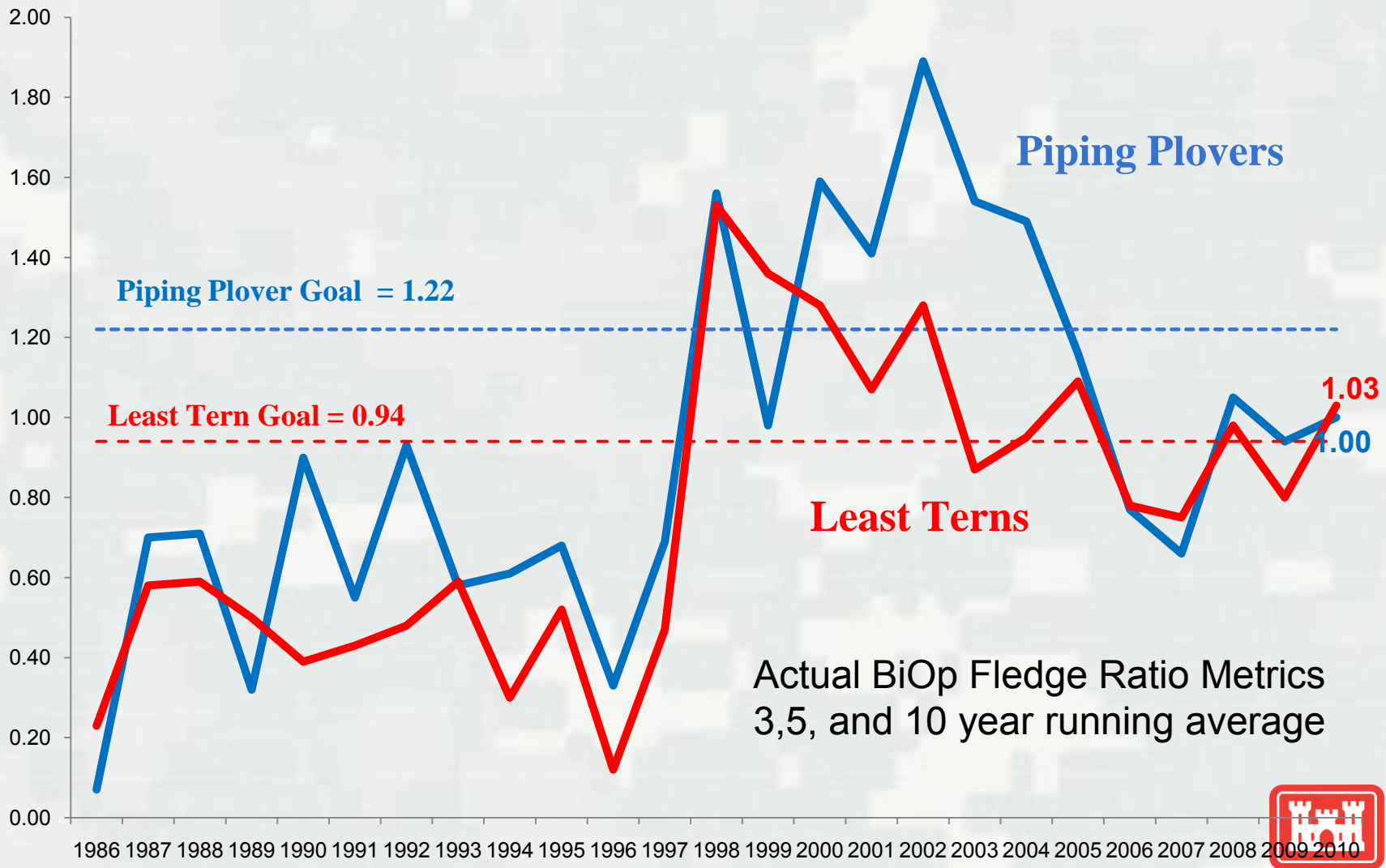
# Missouri River Adult Census 1986 – 2010

## RPA I.B

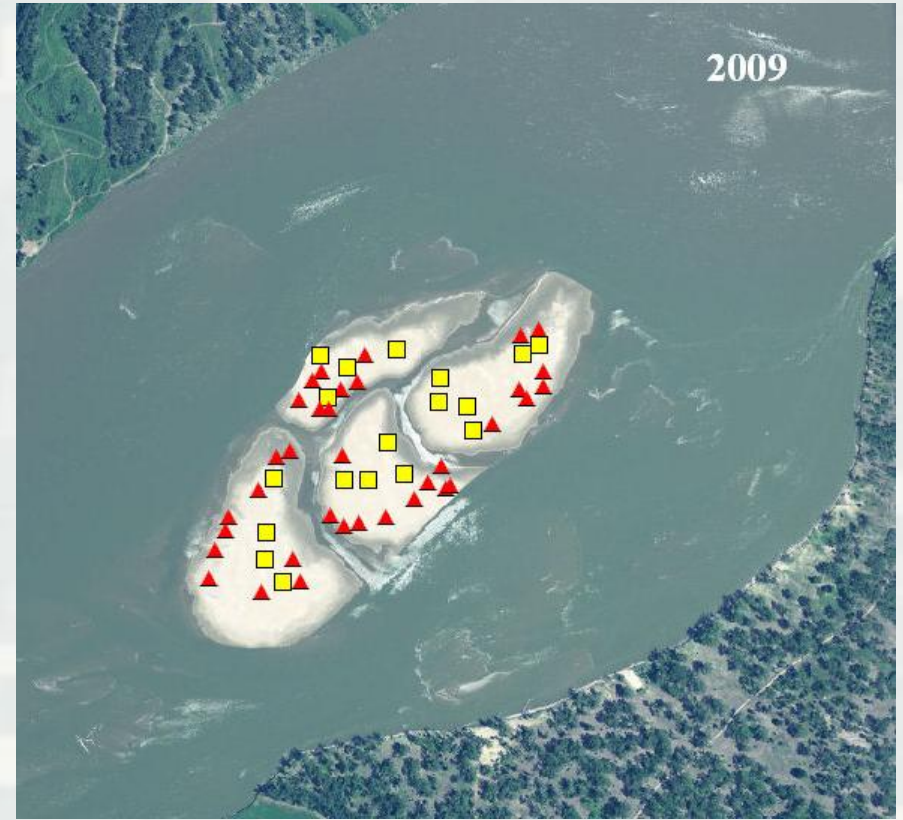
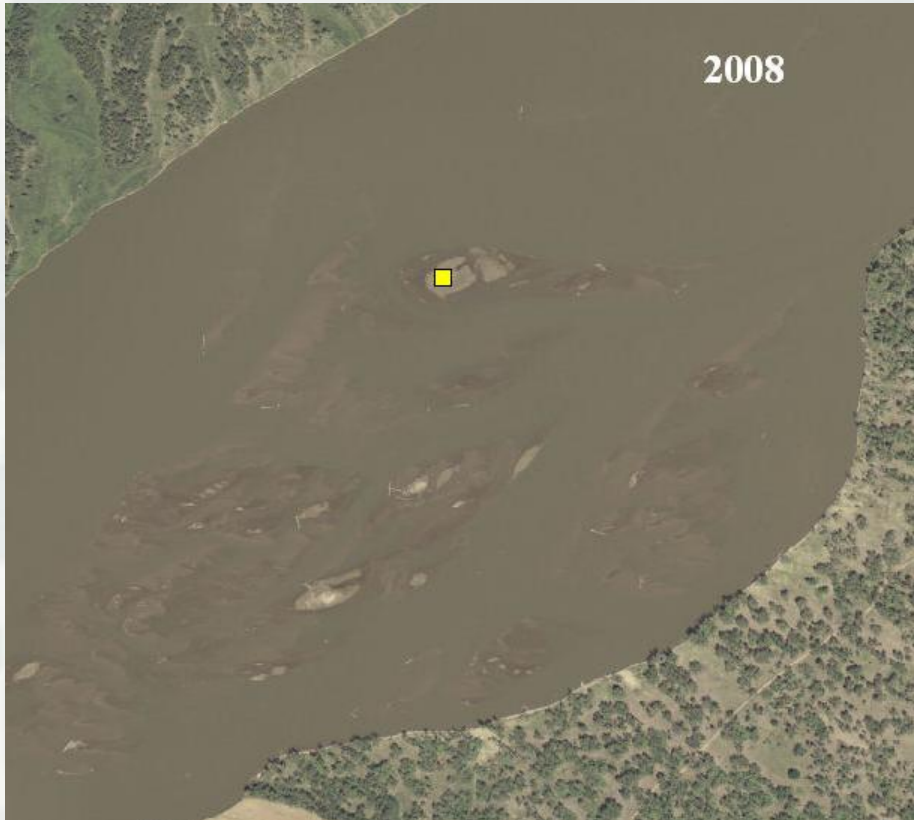


# Missouri River Fledge Ratios 1986 -2010

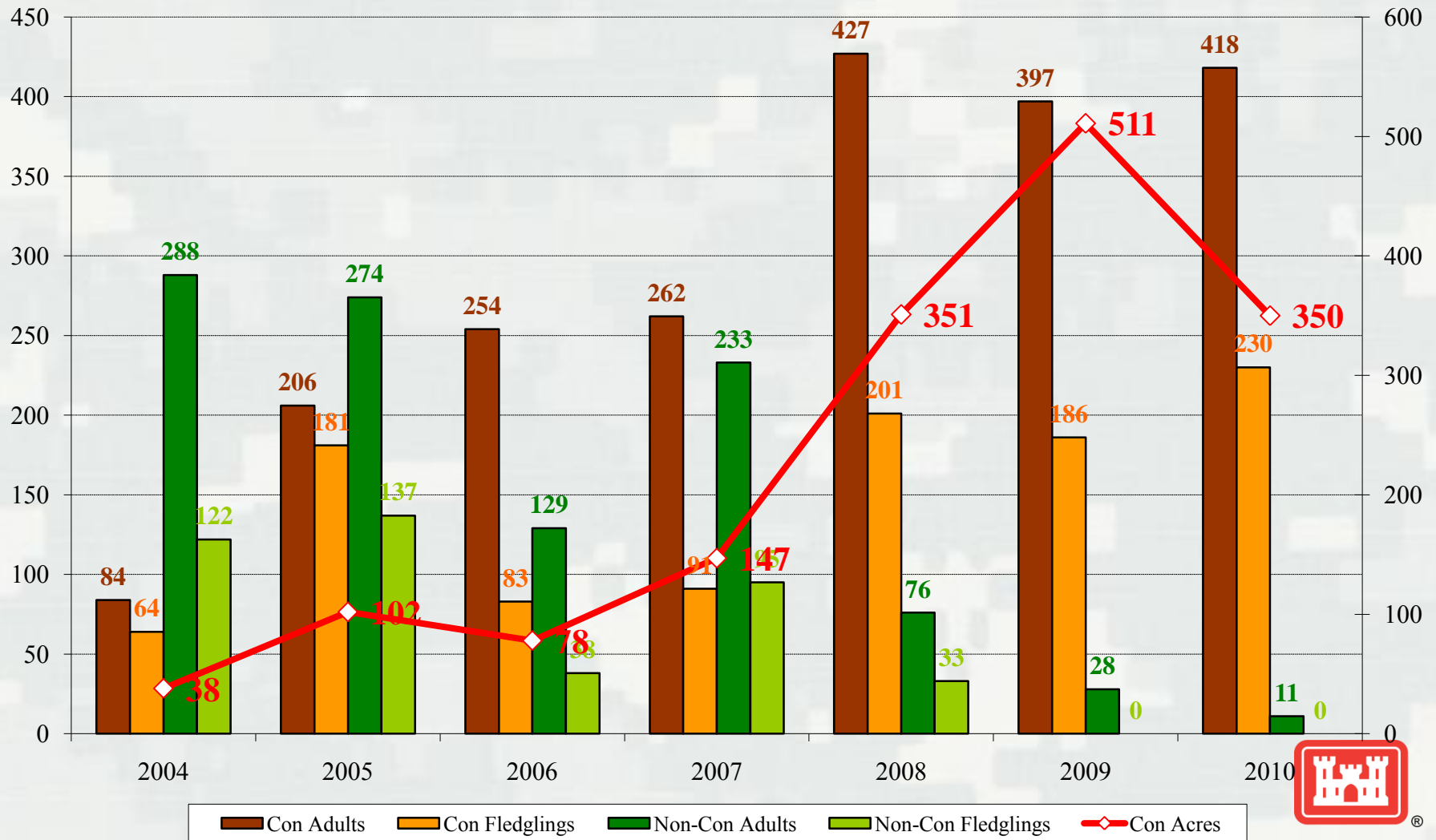
## RPA I.B



# Bird Usage Before and After ESH Construction

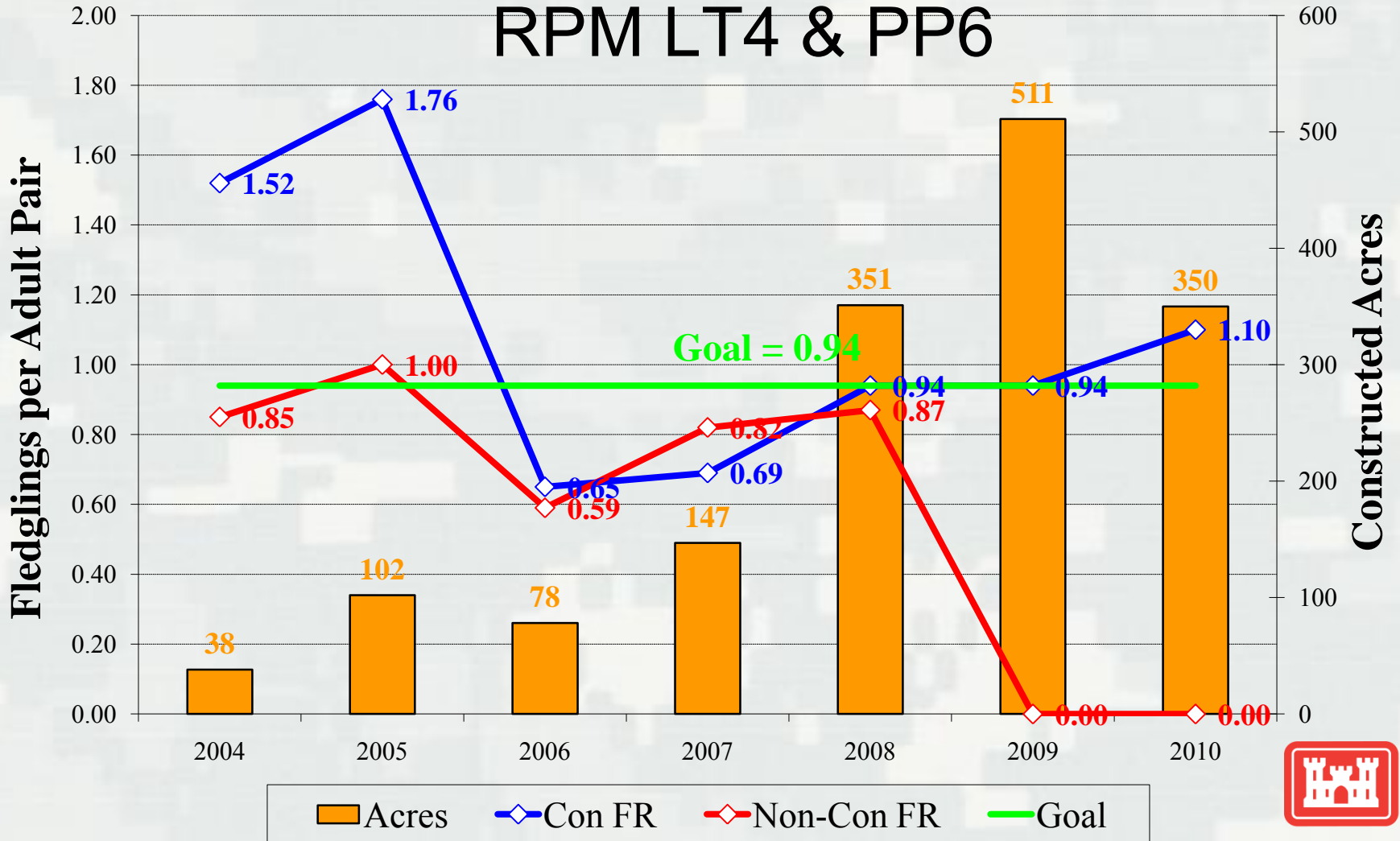


# Least Tern Constructed vs. Non-Constructed 2004 – 2010, RPM LT4 & PP6



# Least Tern Fledge Ratios Constructed vs. Non-Constructed

## RPM LT4 & PP6



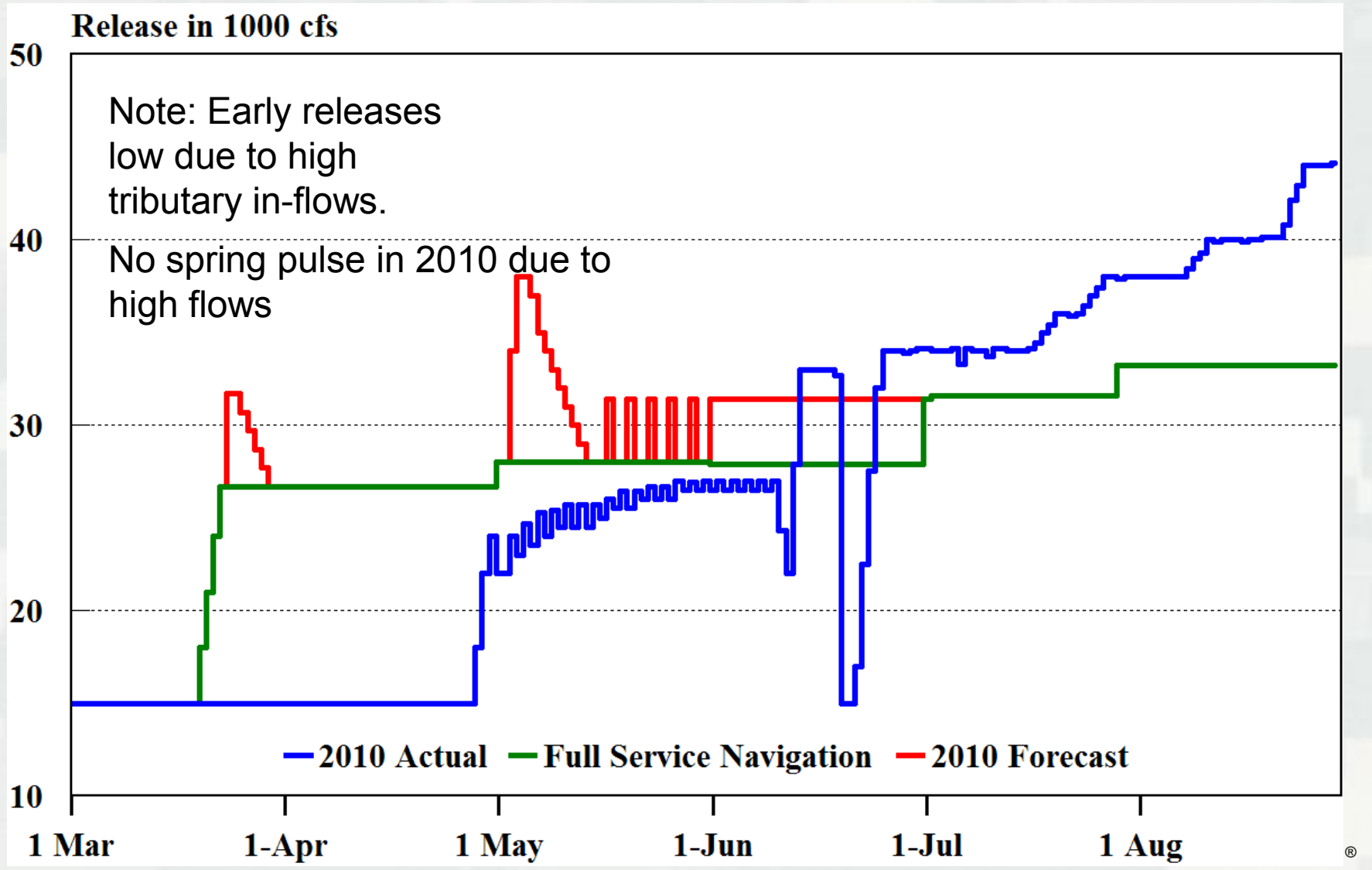


# Spring Pulse, RPA VII.A

- Independent Science Advisory Panel initiated, RPA VI.1.d
- Spring pulse conducted May 2006, March 2008 and May 2009
- March & May 2010 pulses eliminated due to high downstream flows in excess of downstream flow limits
- 2010 monitoring to examine effects of high flows on native fish, drainage from riparian lands & GW levels
  - ▶ Report expected Spring 2011
- March & May 2011 pulses planned under all runoff scenarios (2011 AOP), downstream flows permitting
- Releases adjusted when birds begin nesting activities



# Gavins Point Releases 2010 (Mar. – Aug.)



# *Integrated Science Program (ISP)*

*RPA, RPMs, CRs – 41 total*

- Developed General Science Questions and Key Findings – draft available on the web at:  
[http://www.moriverrecovery.org/mrrp/MRRP\\_PUB\\_DEV.download\\_documentation?p\\_file=6801](http://www.moriverrecovery.org/mrrp/MRRP_PUB_DEV.download_documentation?p_file=6801).
  - ▶ Focuses on pallid, plover, tern, bald eagle, cottonwoods and mitigation
- Sixty project information sheets (PInS) available on web  
<http://www.moriverrecovery.org/mrrp/f?p=136:158:562310437308694::NO:>
- “Eye on Science” newsletters
- Ensure findings get to habitat teams
- Efforts ongoing to evaluate approach to monitoring (USGS & PNNL)
- Continue efforts to prioritize based on critical research questions RPM LT4 & PP6 RPM LT4 & PP6



# *Adaptive Management (AM)*

- Integration of Science with implementation
- Working with MRRIC to establish formal interaction strategy for the MRRP AM process
- Specific Products
  - ▶ Formalizing AM Process Framework to be integrated into the planning, implementation and mon. of MRRP
  - ▶ Completed Draft ESH AM Strategy as part of PEIS
  - ▶ Annual ESH AM Report to implement ESH AM Strategy completed, Feb 2011
  - ▶ SWH AM Plan under development
    - Multi-agency SWH PDT established
  - ▶ Site Specific Monitoring and AM Plans



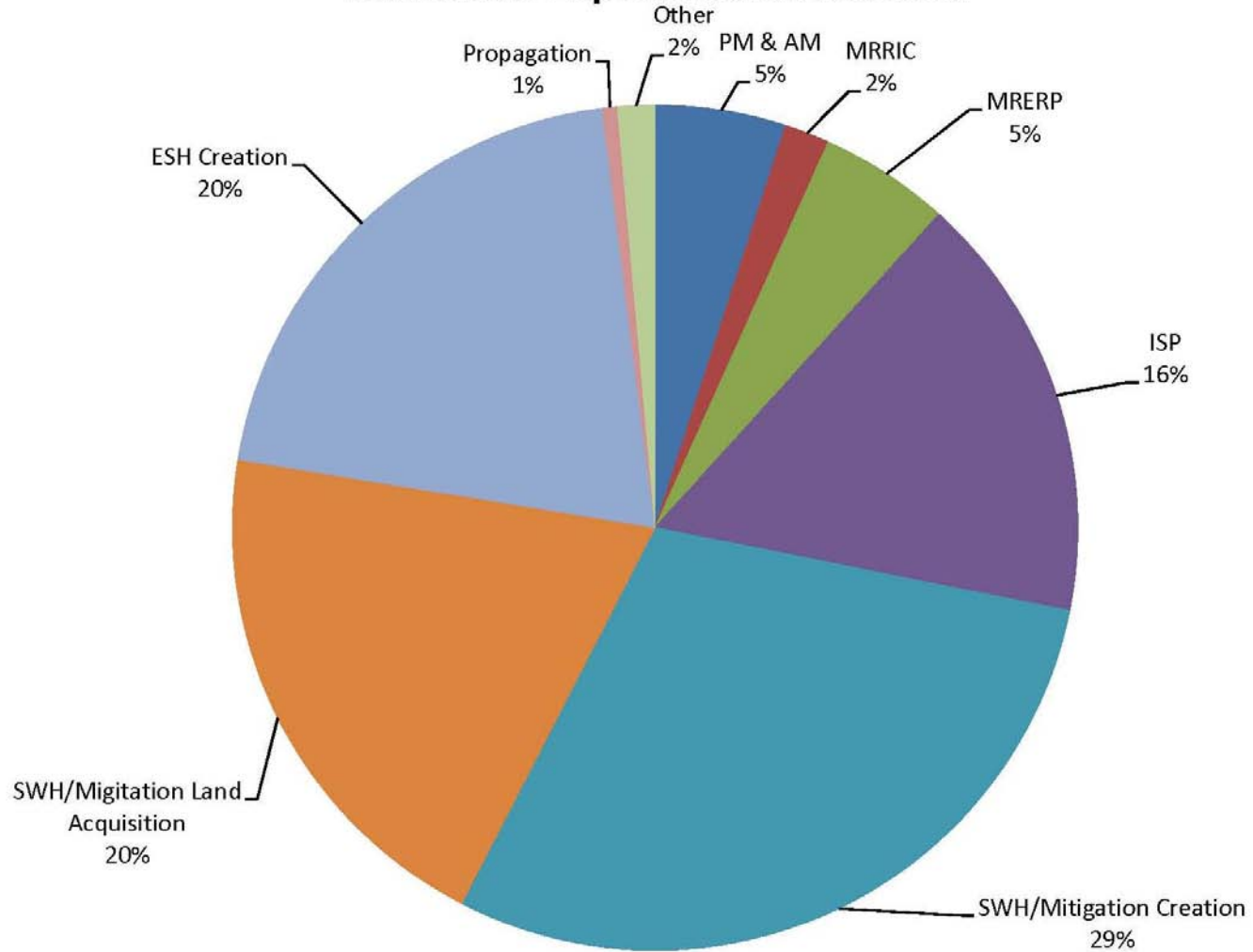
# Approximate Historic Work Plan & Estimated Needs

	~Historic Avg	Minimum Need	Full Need
<b>PM &amp; AM</b>	\$3,498,000	\$3,500,000	\$5,000,000
<b>MRRIC (Stakeholder Committee)</b>	\$1,200,000	\$1,200,000	\$1,600,000
<b>MRERP (Long Term Study)</b>	\$2,148,600	\$3,500,000	\$4,500,000
<b>ISP</b>	\$15,803,600	\$11,500,000	\$17,000,000
<b>SWH/Mitigation Creation</b>	\$15,410,000	\$20,600,000	\$35,000,000
<b>SWH/Mitigation Land Acquisition</b>	\$12,561,200	\$14,000,000	\$17,500,000
<b>ESH Creation</b>	\$6,814,800	\$14,300,000	\$48,600,000
<b>Propagation</b>	\$311,000	\$400,000	\$400,000
<b>Other</b>	\$0	\$1,000,000	\$1,000,000
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	\$57,747,000	\$70,000,000	\$130,600,000

**Note: Total does not include Yellowstone Intake Diversion Dam  
Project expenditures ~ \$20 M to date**



# Minimum Expenditures Needed



Total = \$70,000,000



# *Conclusions*

- Performance Assessment – currently serving as a report card of MRRP progress.
- USACE, USFWS, MRRIC using Performance Assessment in making recommendations regarding funding needs and allocation of effort.

# *Questions*

