

# Post-stocking survival and movement of telemetered bonytail *Gila elegans* in Lake Havasu



Christine M. Adelsberger, Abraham P. Karam, and Paul C. Marsh

CRAB  
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# Bonytail in Lake Havasu

- Multi-Species Conservation Program (2006)
  - Lower Colorado River
    - 620,000 bonytail to be stocked in 50 years
  - Lake Havasu
    - 4,000 bonytail annually
    - > 300 mm TL
- Goals
  - Post-stocking survival
  - Post-stocking dispersal
  - Areas of refugia within Lake Havasu



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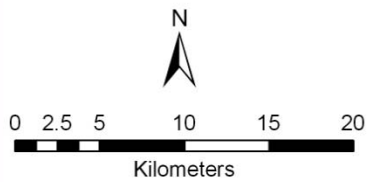


Conclusion Discussion

Nevada

California

Arizona



NTU



# Surgical Procedure

## Dexter/Achii Fish

20 tagged fish



April '10

PT-4 transmitter  
3 month battery life  
27 mm x 9 mm  
4.2 g (in air)

July '10

Tag retention  
3 months  
Both tag types  
No mortality

December '10

IBT-96-6 transmitter  
6 month battery life  
42 mm x 11 mm  
7.8 g (in air)





# Havasu Native Fish Roundup

Conclusion Discussion Results Methods Introduction



- A
- S



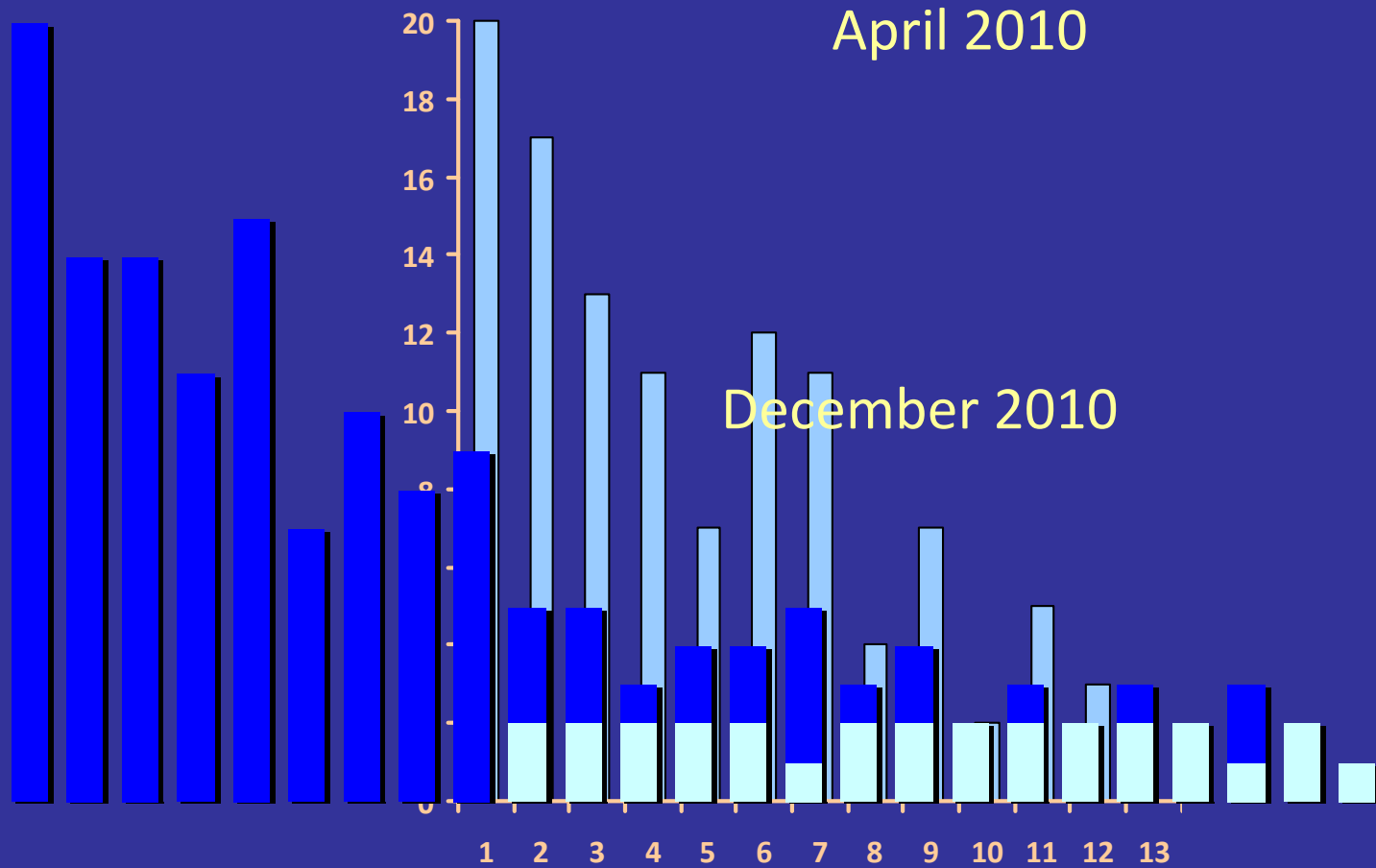
# Unique Contacts Per Week

Study	Mortality	Observed Movement	
		Ave (km)	Max (km)
April 2010	5%	0.6	27.1
December 2010	64%	0.2	29.9



# Unique Contacts Per Week

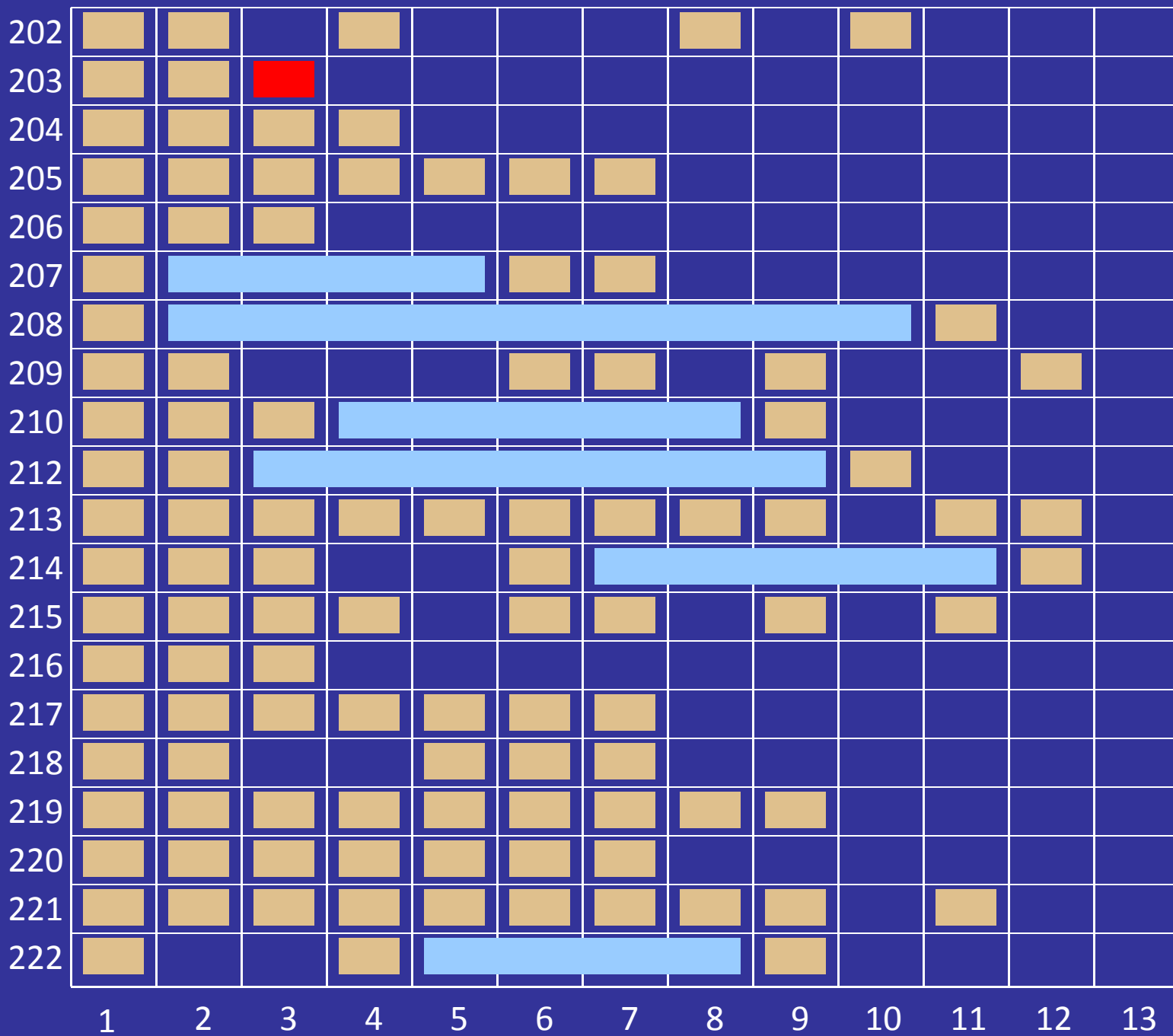
Conclusion Discussion Results Methods Introduction



# April 2010

- 10% contacted for the first 3 weeks, then never again
- Periods of non-contact
  - 4 weeks - 45%
  - 5 weeks - 30%
  - 6 weeks - 20%
  - 7 weeks - 15%
  - 9 weeks - 5%

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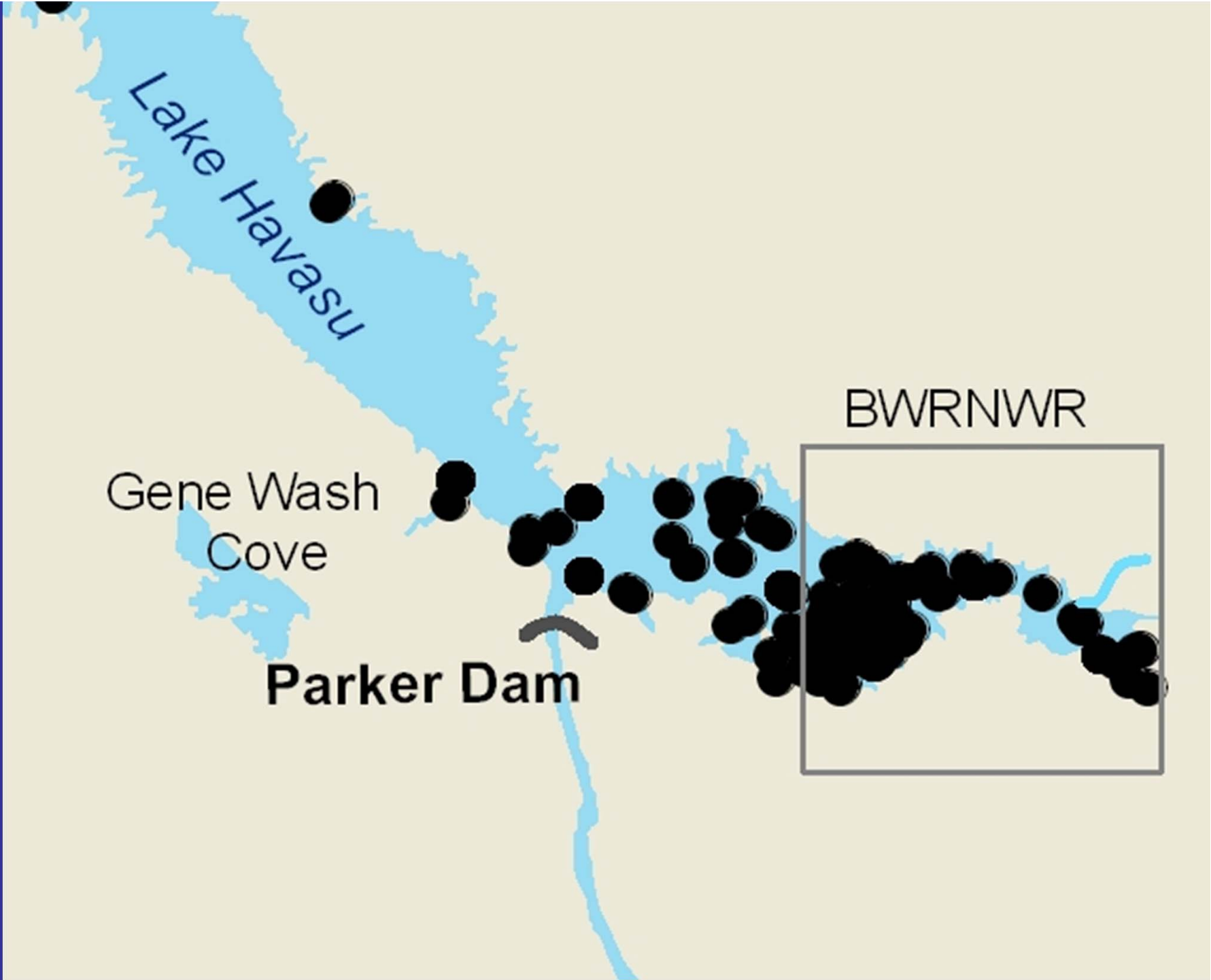


# December 2010

- Periods of non-contact
  - 1 weeks - 40%
  - 2 weeks - 9%
  - 3 weeks - 9%
  - 4 weeks - 4%
  - 5 weeks - 4%
  - 13 weeks - 4%

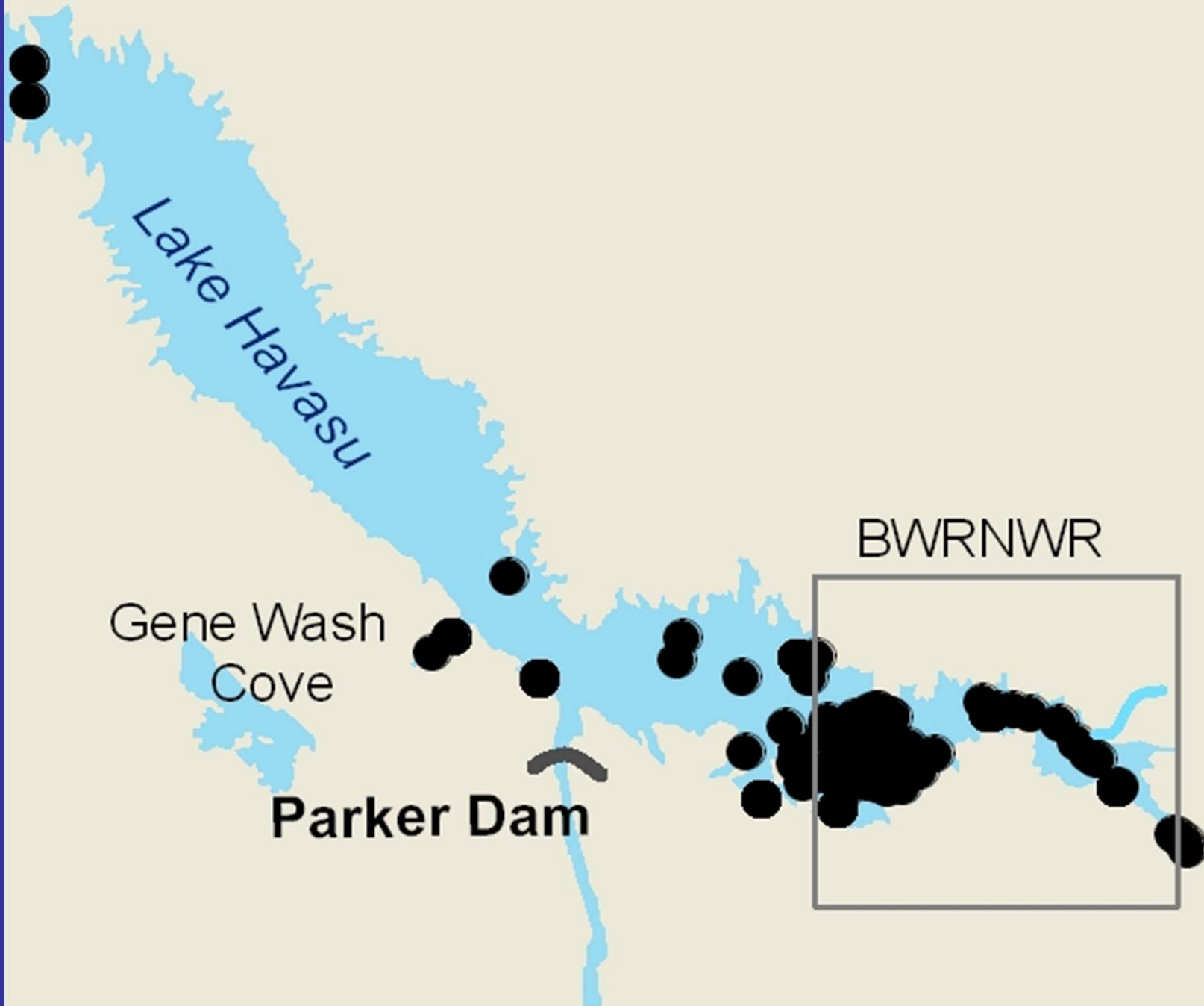












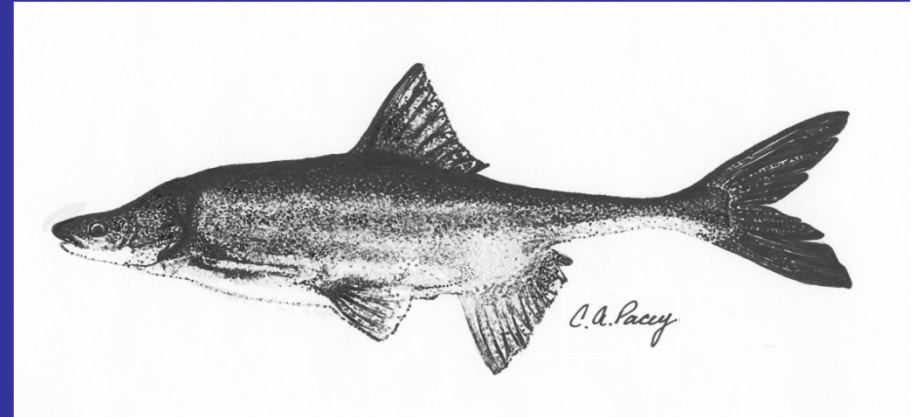
# November 2011

Conclusion Discussion Results Methods Introduction



# November 2011

- November 2011
  - Dual Stocking
    - Exploratory movements
    - Stocking location vs mortality
  - Depth sensing tags
    - Diel movement in water column
    - Turbidity at depth



# Preliminary Results 2011

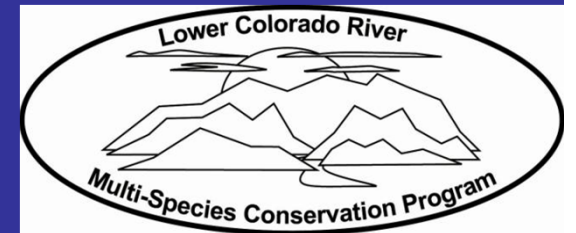
- Depth sensing tags
  - 80% of water column used (29-100%)
  - Diel Depth
    - Day: 81%
    - Crepuscular: 82%
    - Night: 78%

# Preliminary Results 2011

- Cattail Cove
  - Two detected in Bill Williams Refuge
  - Three immobile tags
  - 14 km maximum movement
- Bill Williams River NWR
  - Three immobile tags
  - 7 km maximum movement

# Acknowledgements

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- BLM: Kirk Koch, Doug Adams
- Sonotronics, Inc.: Marlin, Dale, Sue



# Questions?

