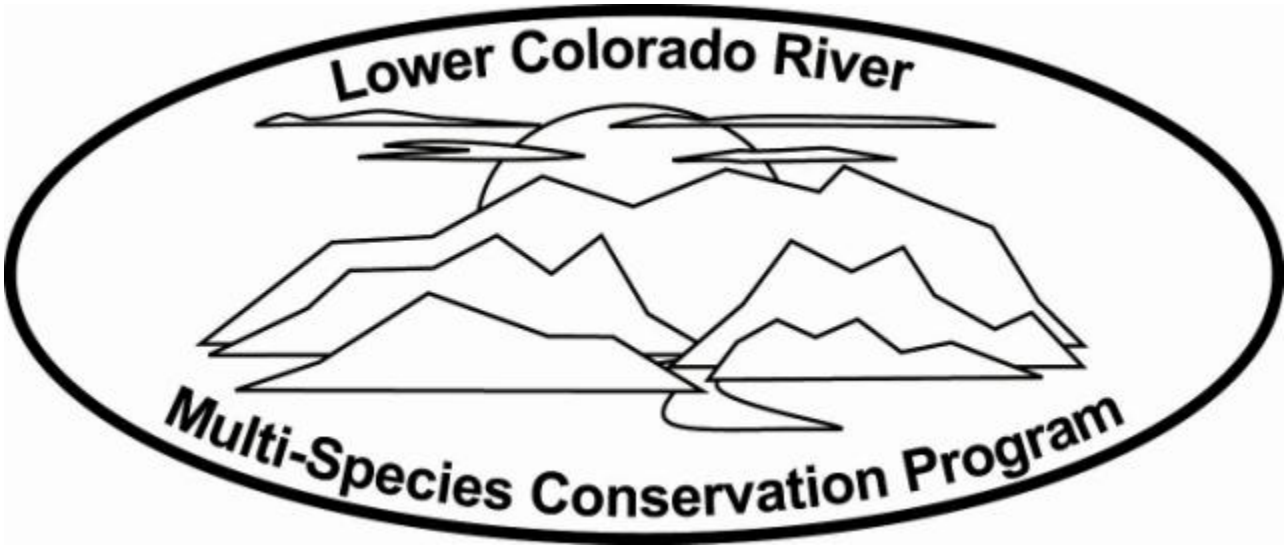
Use of remote PIT scanners to monitor razorback sucker in Lake Mohave

JAMIE WISENALL, BRIAN KESNER, CAROL PACEY, AND PAUL MARSH

MARSH & ASSOCIATES, LLC

Colorado River Aquatic Biologist Meeting
January 4 – 5, 2017
Laughlin, NV

Funding for this project has been provided by the Lower Colorado River Multi-Species Conservation Program.

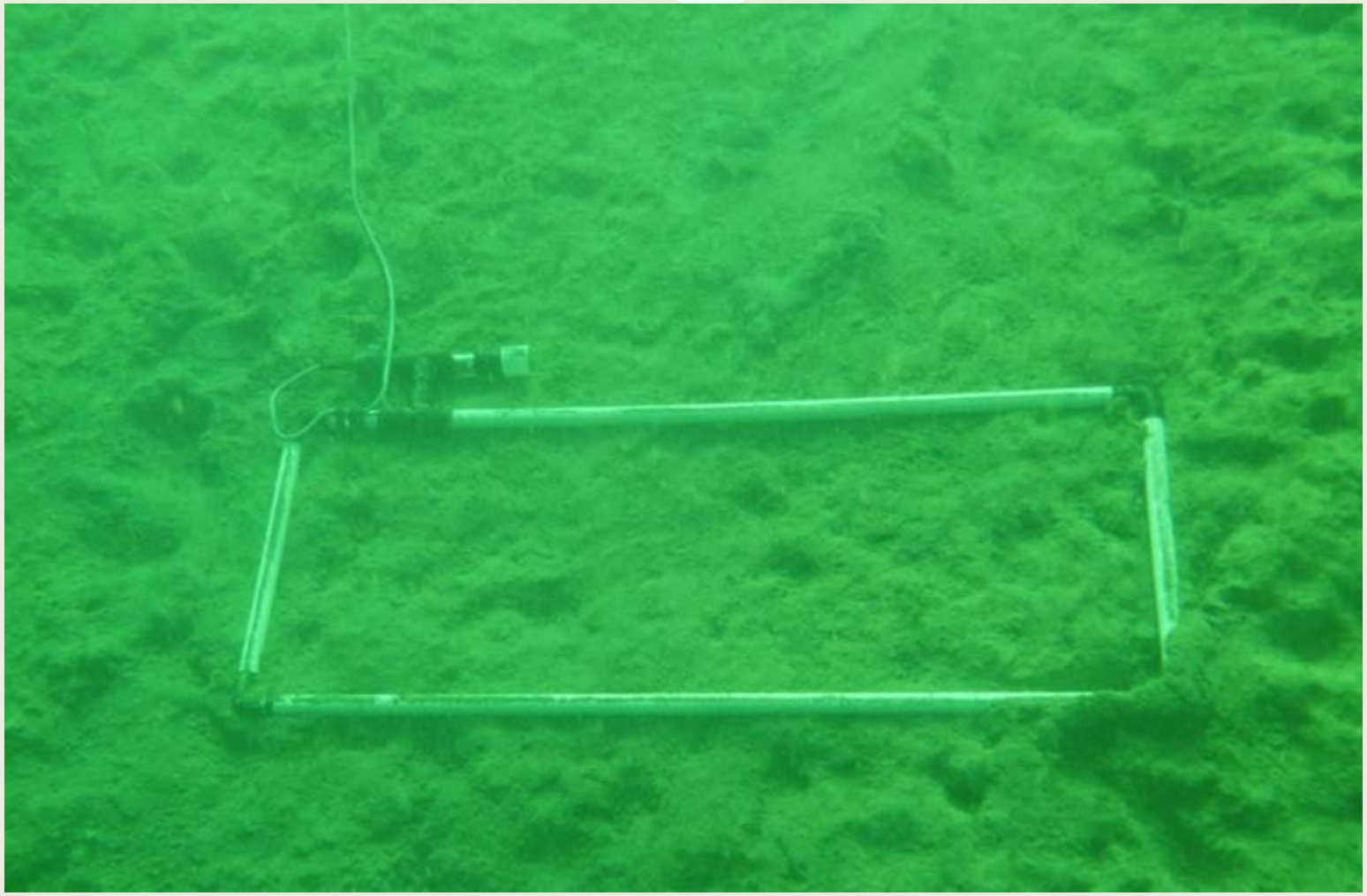


Background

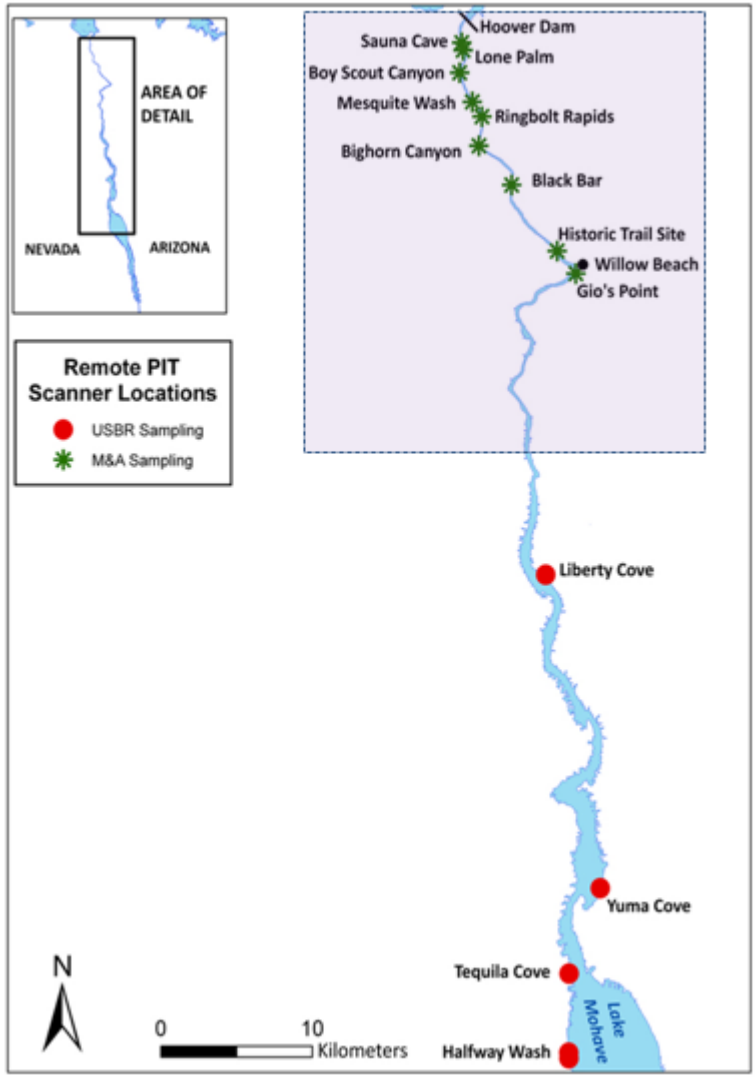
- Razorback Sucker
  - Long lived (>40 years)
  - Federally listed in 1991
  - Over 200,000 repatriated to Mohave
  - Remote and routine monitoring to track populations
- Lake Mohave
  - LCR MSCP Reach 2
  - Between Hoover and Davis Dams
  - Most genetically diverse population of razorback sucker

Methods

Shore Based Units

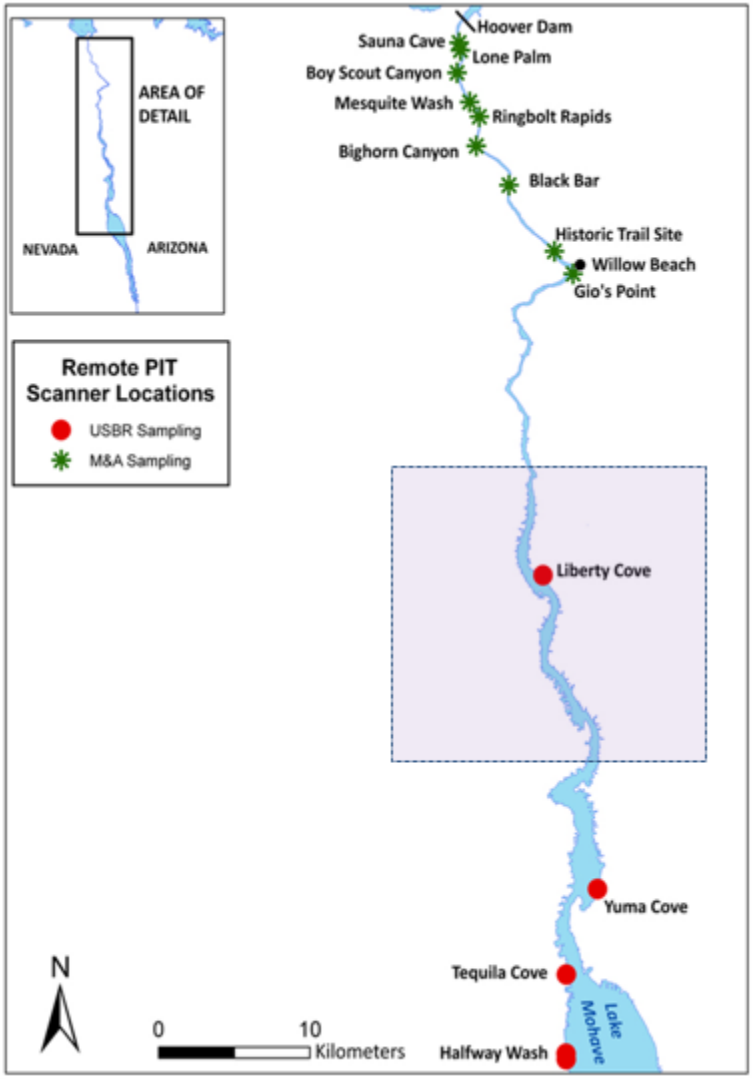


River Scanning



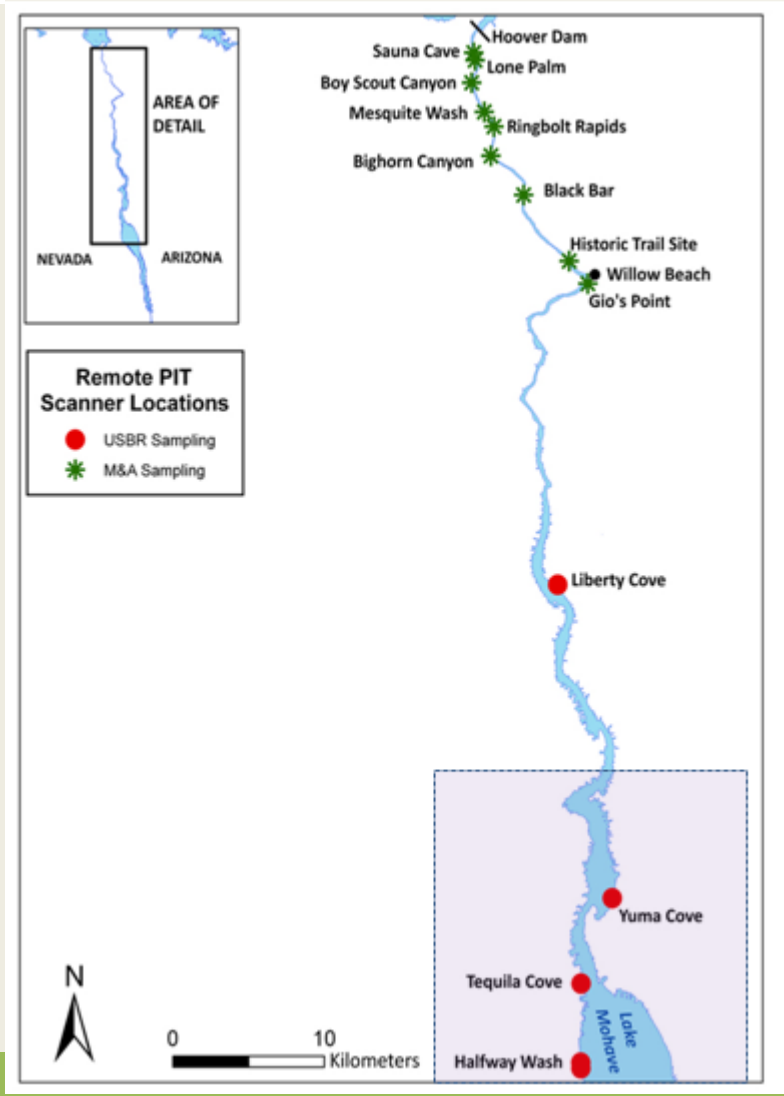
- Submersible units deployed 1 week per month
- 5 fixed sampling stations
  - Gio's Point
  - Black Bar
  - Ringbolt Rapids
  - Boy Scout Canyon
  - Sauna Cave
- Shore based unit
  - Boy Scout Canyon
  - January - June

Liberty Scanning



- Submersible units during spawning season
- Liberty and Elizabeth J Coves
- Future effort:
  - M&A and BOR to scan entire Liberty zone in 2016/2017

Basin Scanning

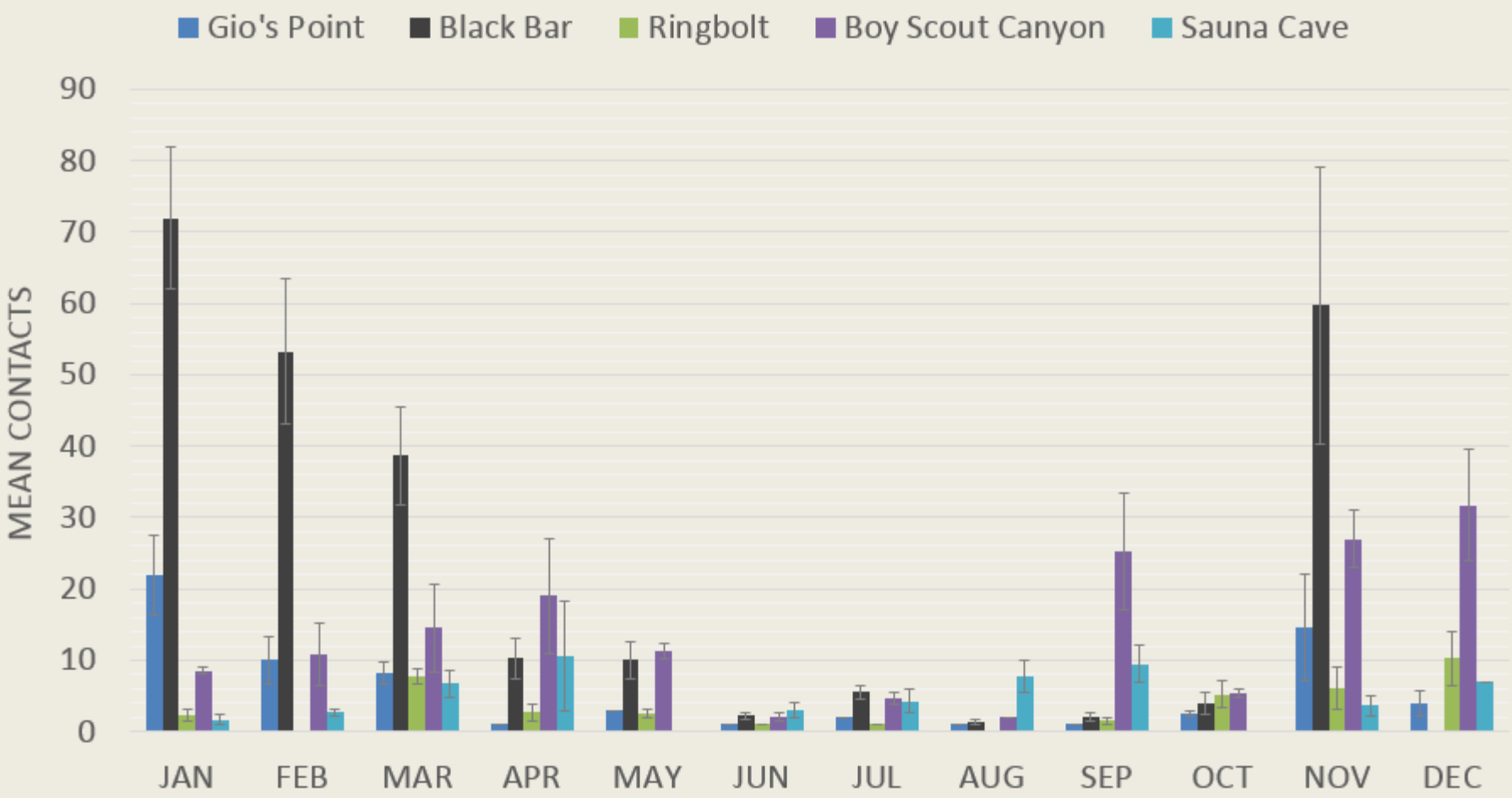


- Submersible units deployed throughout Basin
- Scanning during March roundup
  - Scanners adjacent to nets
  - Carp Cove, Halfway Wash, Tequila Cove, Yuma Cove, Owl Point
- Shore based units
  - Yuma and Tequila Coves
  - Half Way Wash
  - November 2015 – May 2016

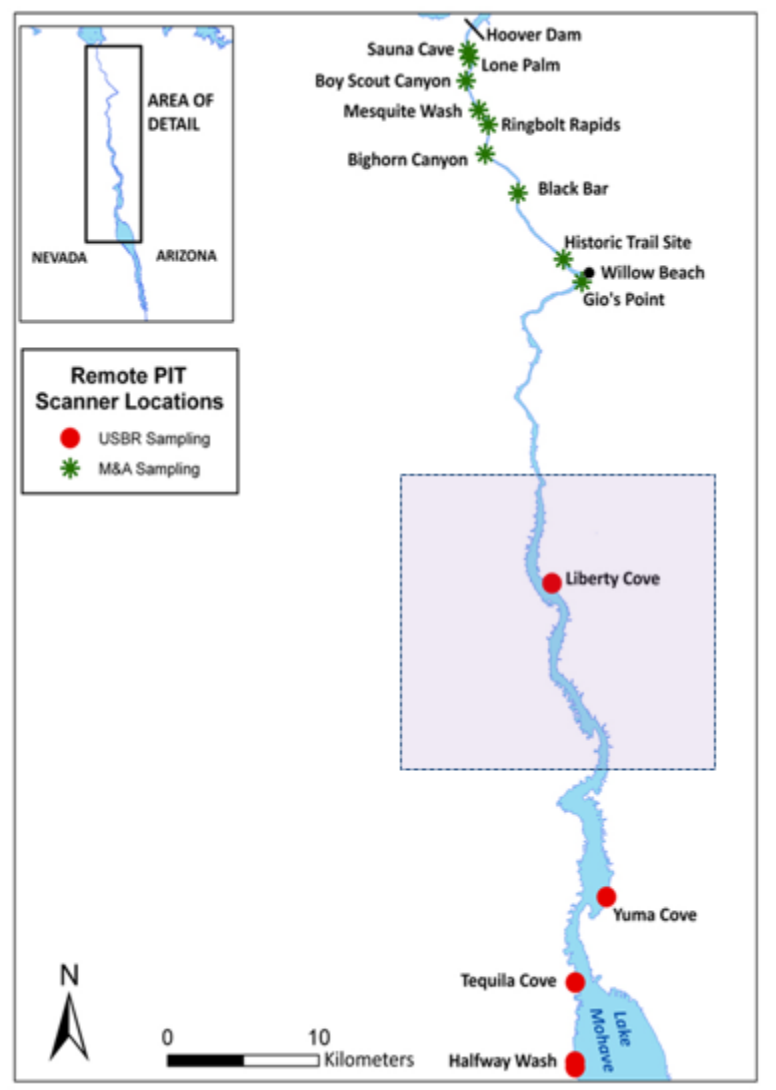
River Scanning

- 7,370 total scan hours
  - Submersible units – 6,424 h
  - Shore based unit – 946 h
- 10,862 total PIT tag contacts
- 1,544 unique razorback sucker
  - 1,524 with marking history
  - 1,515 repatriates
  - 7 wild
  - 2 unknown

Fixed Station Sampling



Liberty Scanning



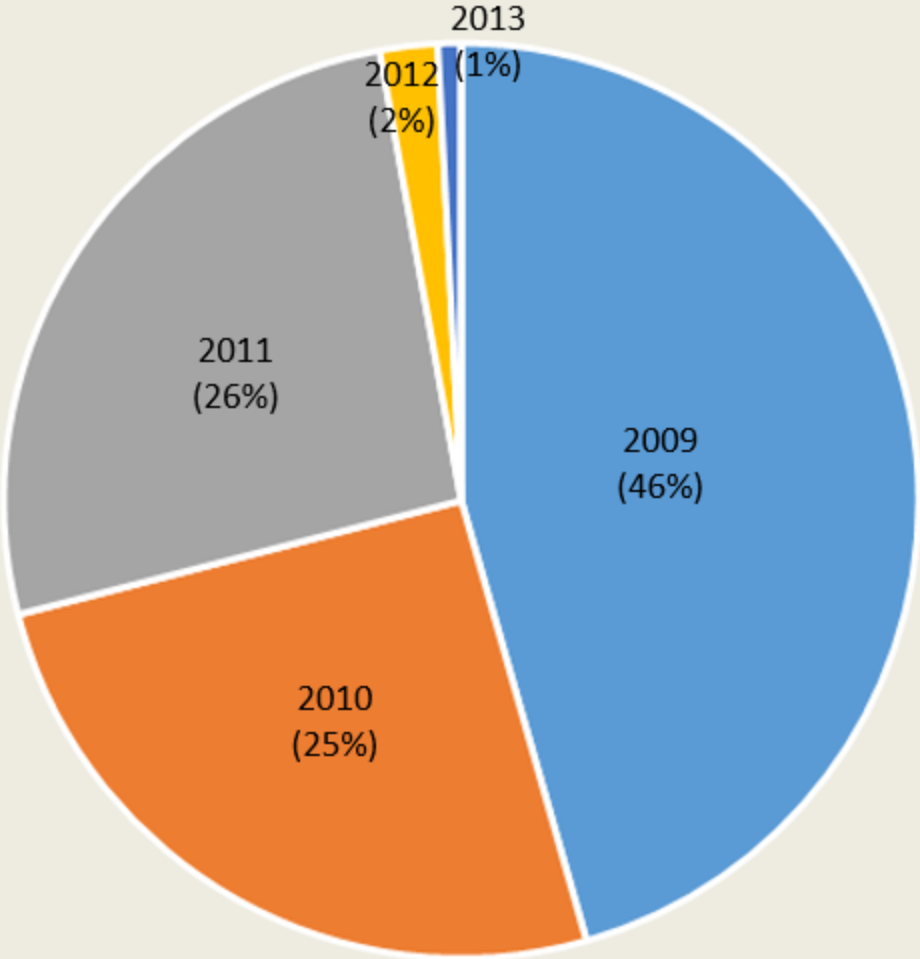
- 915 total scan hours
  - All submersible units
- 8 total PIT tag contacts
- 7 unique razorback sucker
  - 7 with marking history
  - 6 repatriates
  - 1 unknown

Basin Scanning

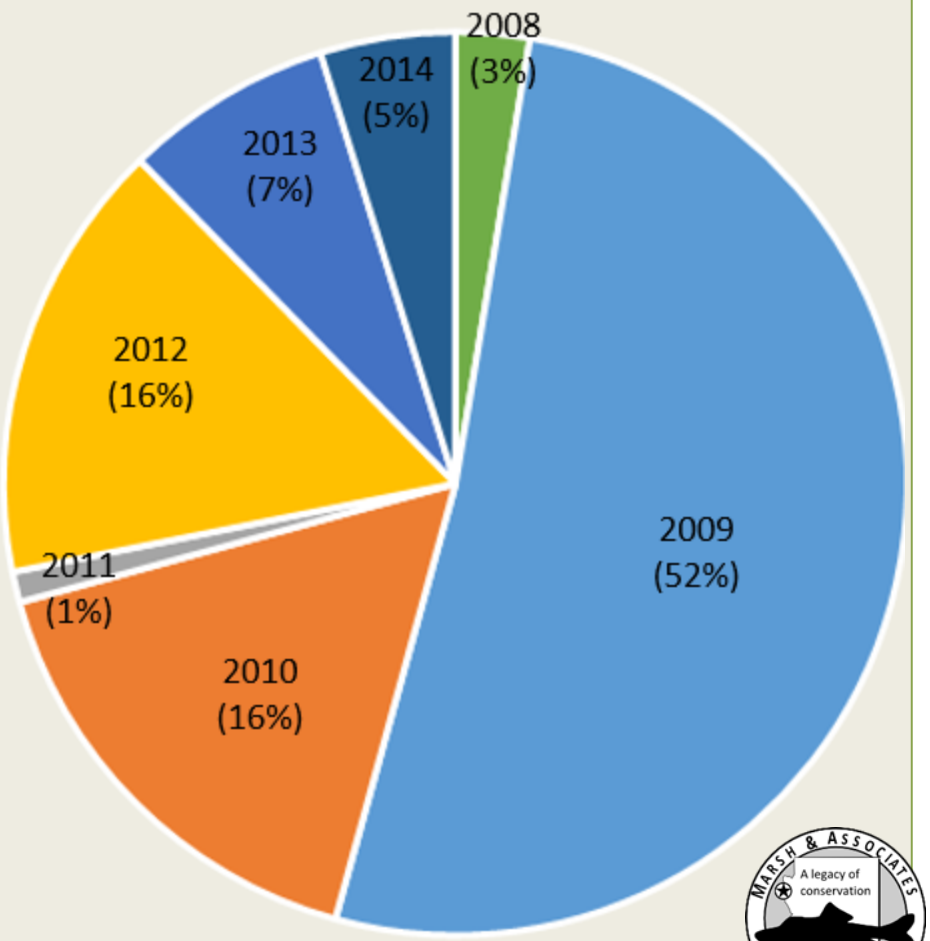
- 29,762 total scan hours
  - Submersible units – 20,345 h
  - Shore based units – 9,417 h
- 219,796 total contacts
- 1,859 unique razorback sucker
  - 1,760 with marking history
  - 1,750 repatriates
  - 3 wild
  - 7 unknown

Cohort Analysis

2016 contact rates for cohorts released in River



2016 contact rates for cohorts released in Basin



Population Estimates

- Based on 2015 and 2016 PIT scanning
- Highest estimates since scanning was initiated!
  - Tagged repatriate population – 3,656 (3,418 to 3,912)
    - River subpopulation – 2,158 (1,960 to 2,377)
    - Basin subpopulation – 1,947 (1,761to 2,151)

- Based on 2015 and 2016 March roundup data
  - Tagged repatriate population – 1,707 (603 to 3,897)

Conclusions

- Lake-wide population estimate based on PIT scanning data highest since scanning began
- Recent cohorts not contributing to population, should be closely monitored
- NFWG commitment to increased larval collection upstream of Willow Beach

Thanks to our partners for their support

Cross Country Consulting, LLC