

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

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Background

- One of the largest remaining populations of razorback sucker is in Lake Mohave
- Monitored for more than 30 years, augmented by stocking for 20
- Two types of monitoring:
 - Remote PIT-scanning
 - Routine Monitoring



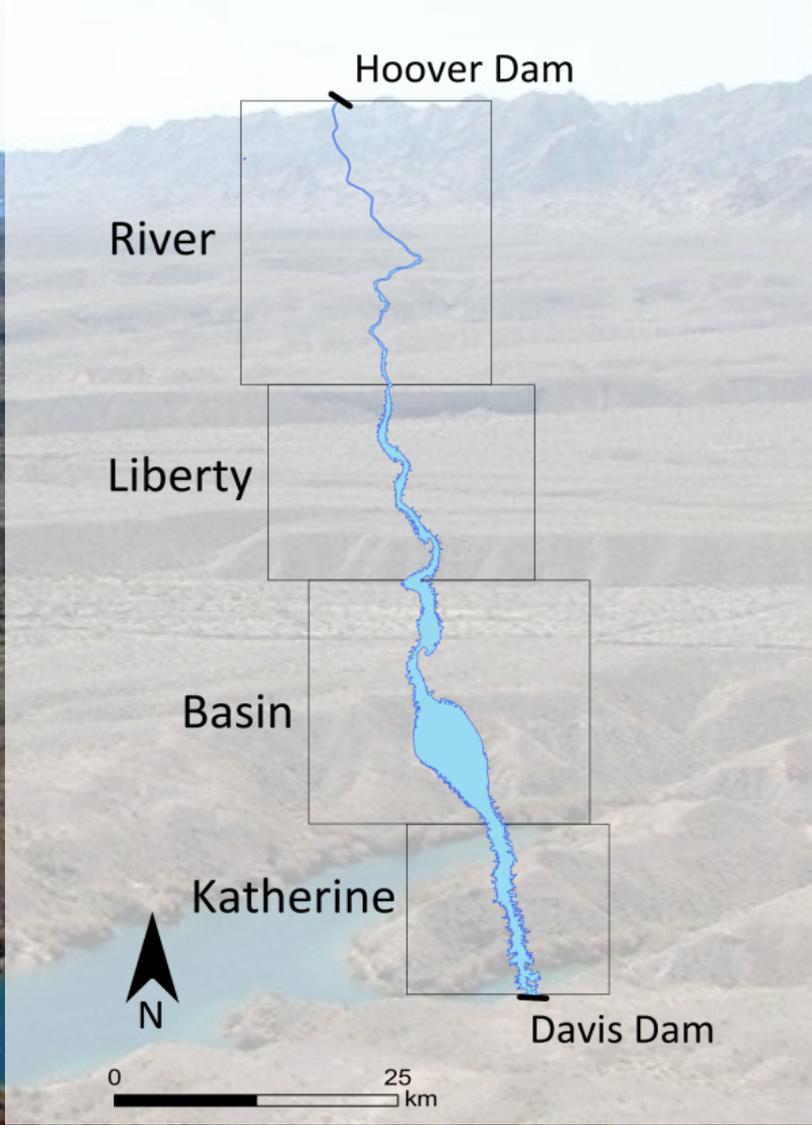


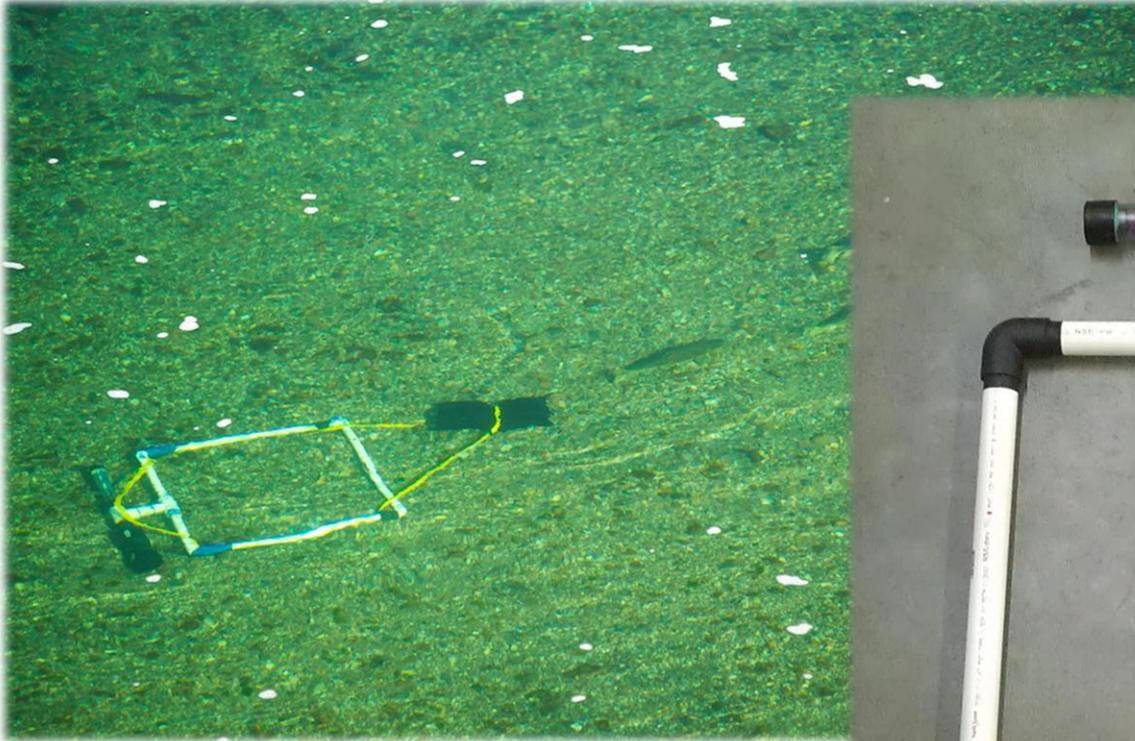
Photo by Jason Schooley



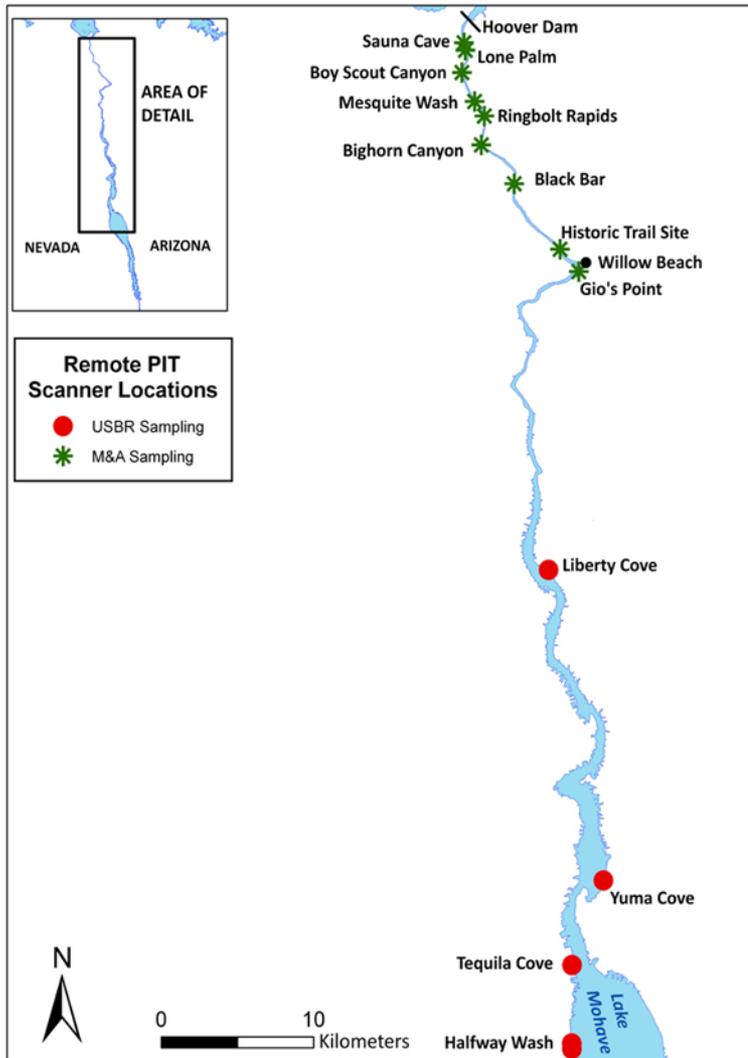
Shore-based PIT-scanning units



Submersible PIT-scanning units



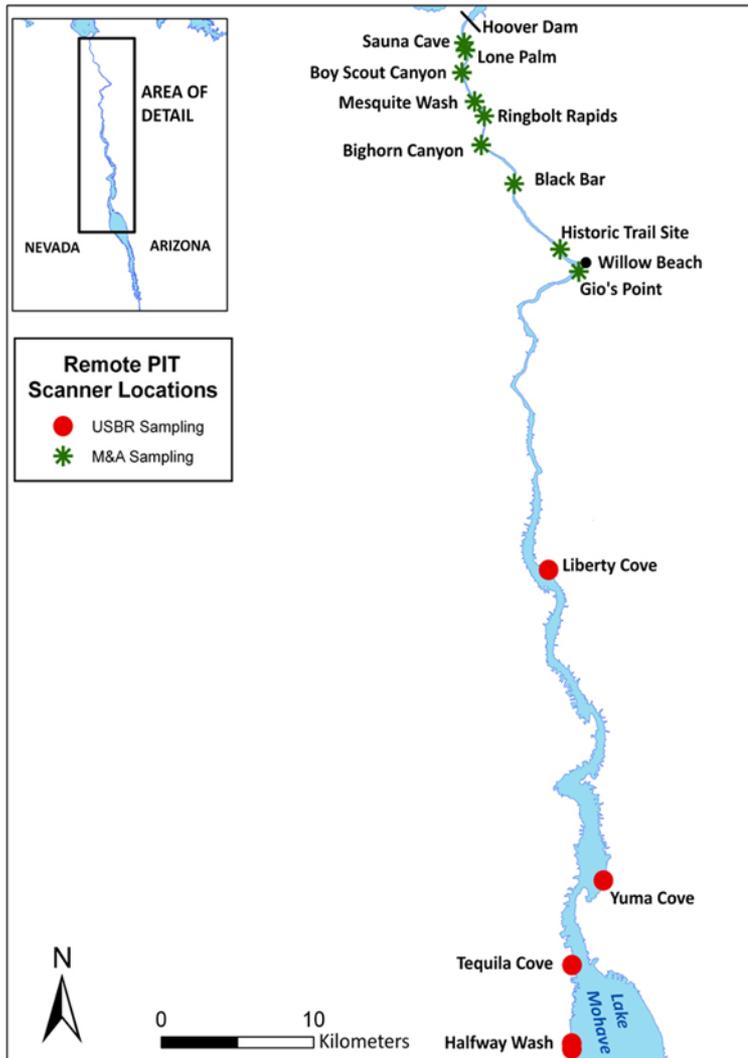
River Scanning



- M&A – 2 person field crew
- 5 fixed sampling stations
 - Sauna Cave, Boy Scout Canyon, Ringbolt Rapids, Black Bar, Gio's Point
- Scanners deployed 1 week per month
 - Jan 2013 – Sept 2013



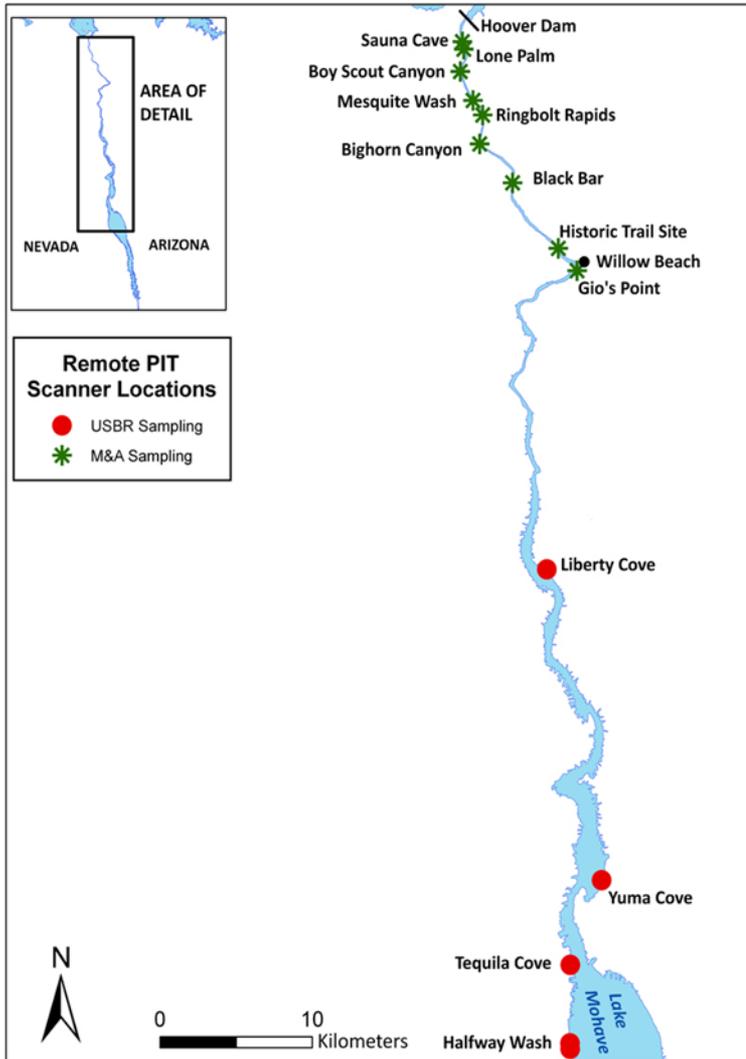
River Scanning



- 3,842 total scan hours
 - ✦ 3,298 h with submersible units
 - ✦ 544 h with shore-based units
- 12,900 total PIT tag contacts
- 1,680 unique razorback sucker
 - ✦ 1,669 repatriates
 - ✦ 8 wild
 - ✦ 3 of unknown origin



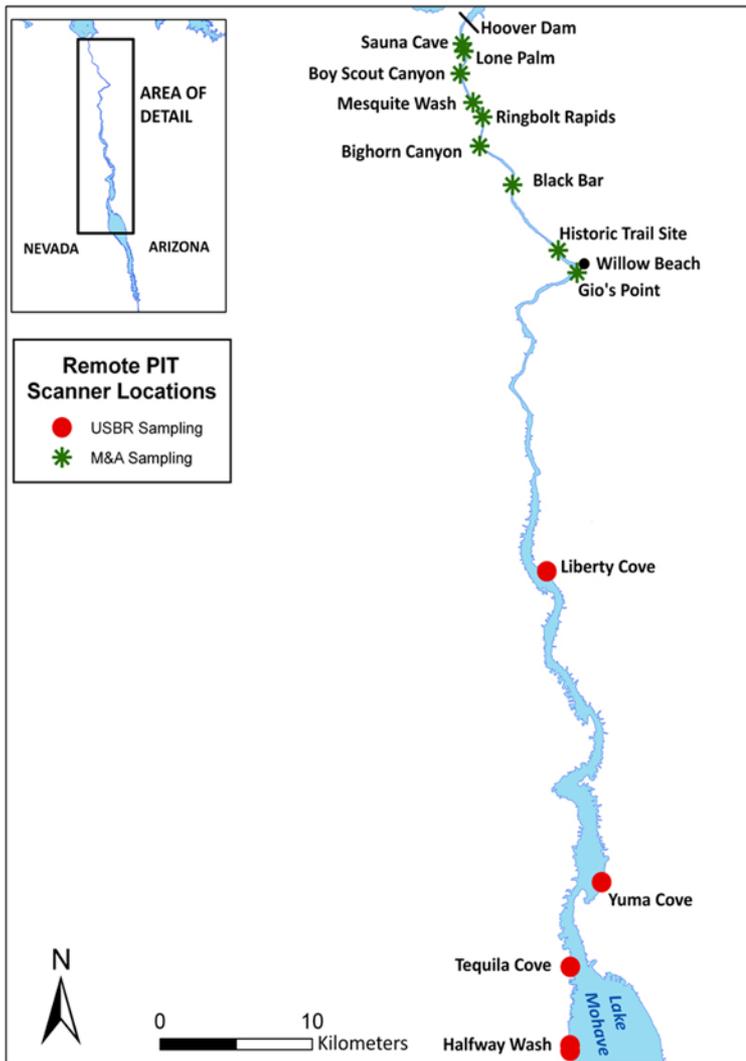
Liberty Scanning



- BOR – 1+ person field crew
 - 1 successful Destron scanner deployment
- }
- 39 total scan hours
 - 97 total PIT tag contacts
 - 15 unique razorback sucker
 - ✦ All repatriates



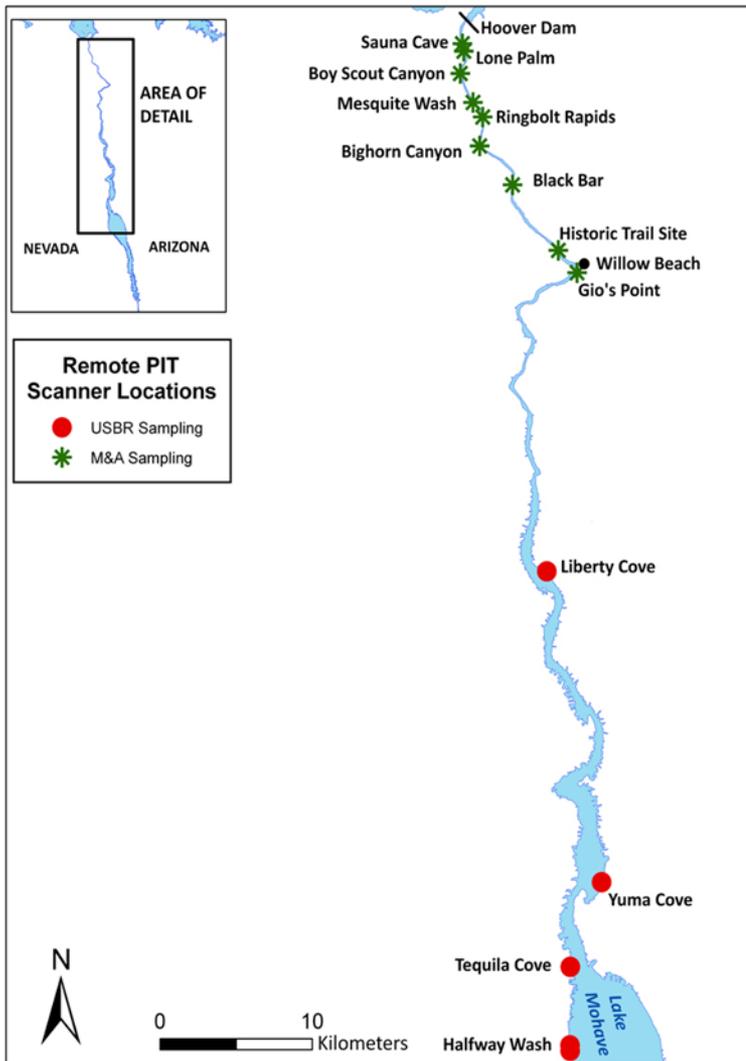
Basin Scanning



- BOR – 1+ person field crew
- 2 scanning locations
 - Yuma Cove and Tequila Cove
- Shore-based units continuously scanned
 - November 2012 – May 2013



Basin Scanning



- 7,412 total scan hours
 - ✦ 7,301 h with shore-based units
 - ✦ 111 h w Destron scanners
- 462,337 total PIT tag contacts
- 1,581 unique razorback sucker
 - ✦ 1,572 repatriates
 - ✦ 3 wild
 - ✦ 6 of unknown origin



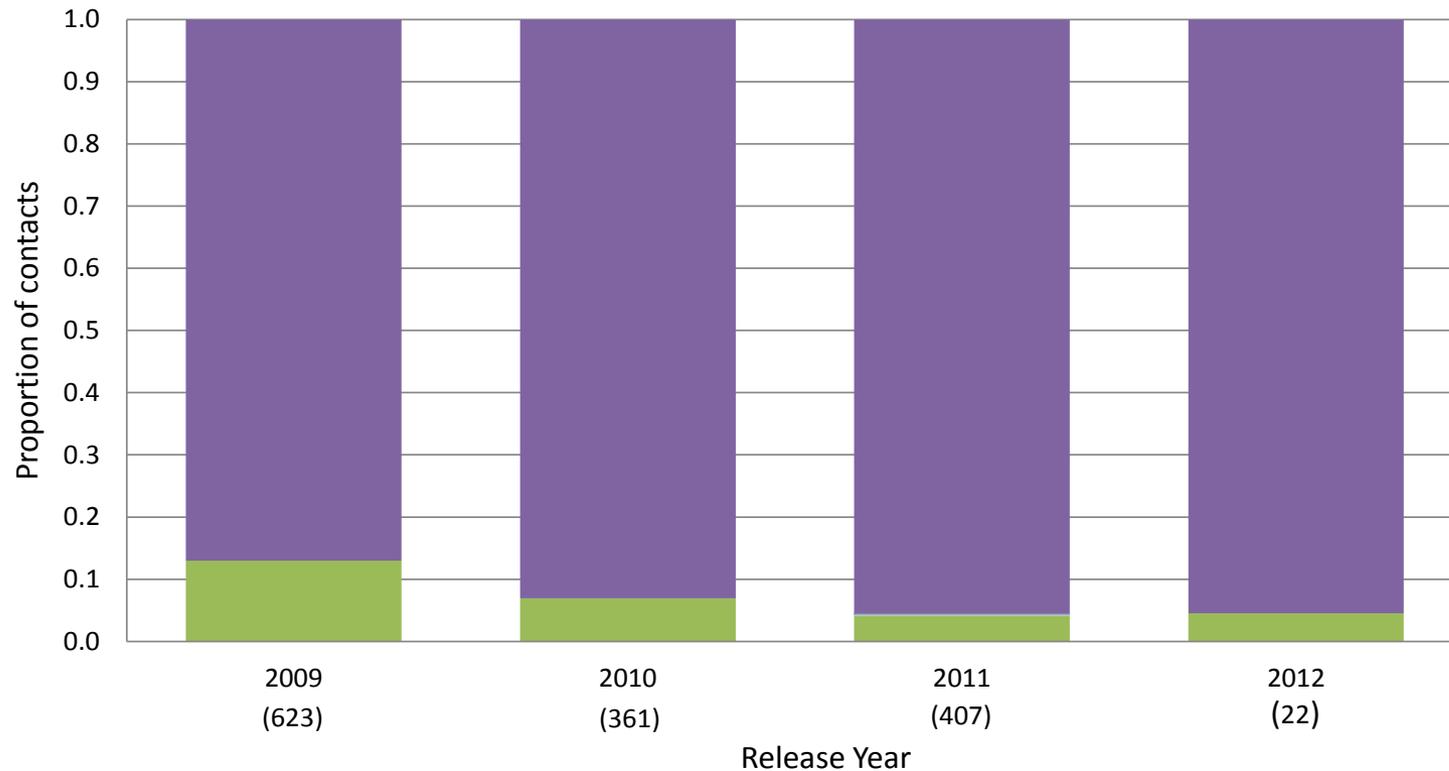
Methods Comparison

- PIT-scanning
 - Sampling season from November 2012 – September 2013
 - 210 PIT-scanner deployments
 - 3,216 razorback sucker
- 2013 March Round-up
 - Netting efforts by USBR, FWS, NDOW, NPS, M&A
 - 89 trammel net nights
 - 214 razorback sucker



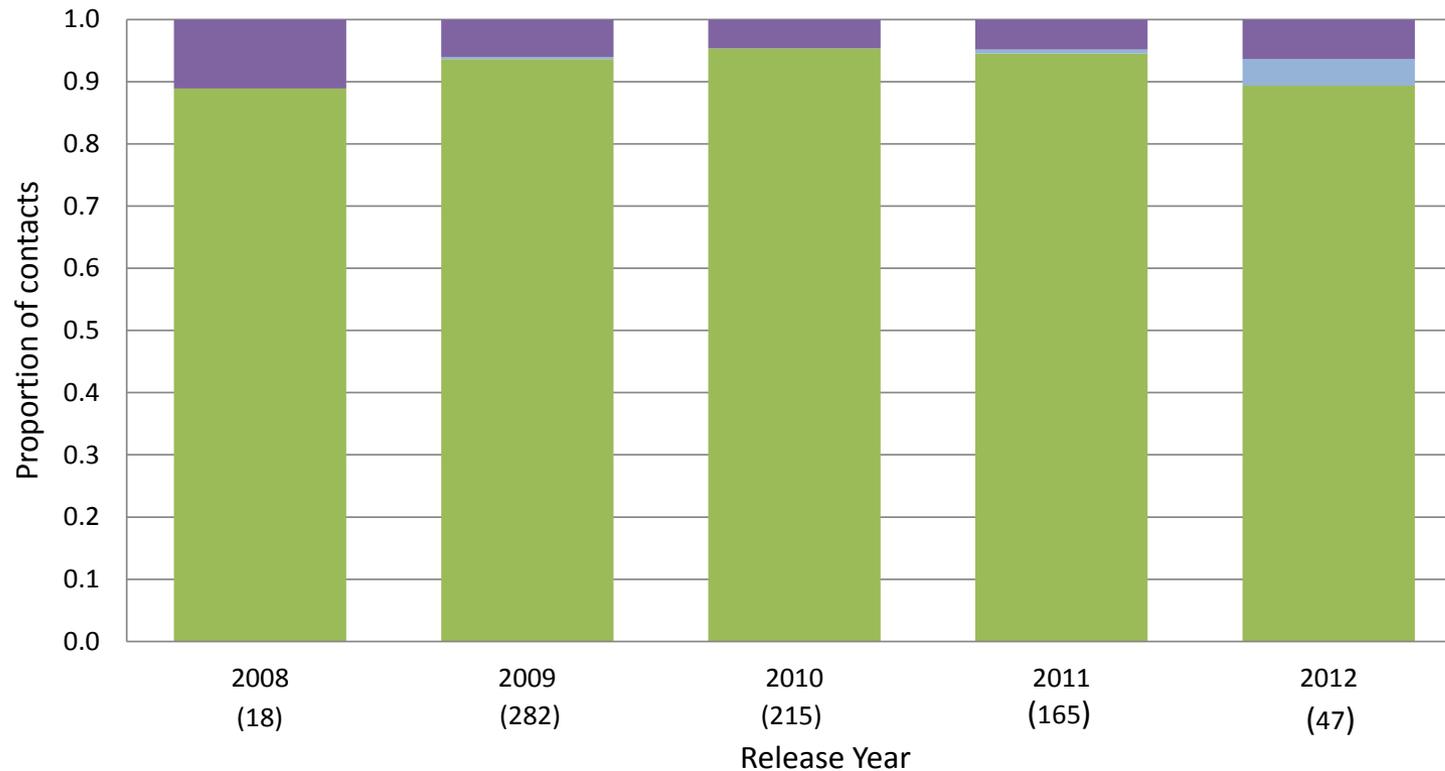
Post-stocking Dispersal

- Little directional movement
- Fish released in River zone generally remained there



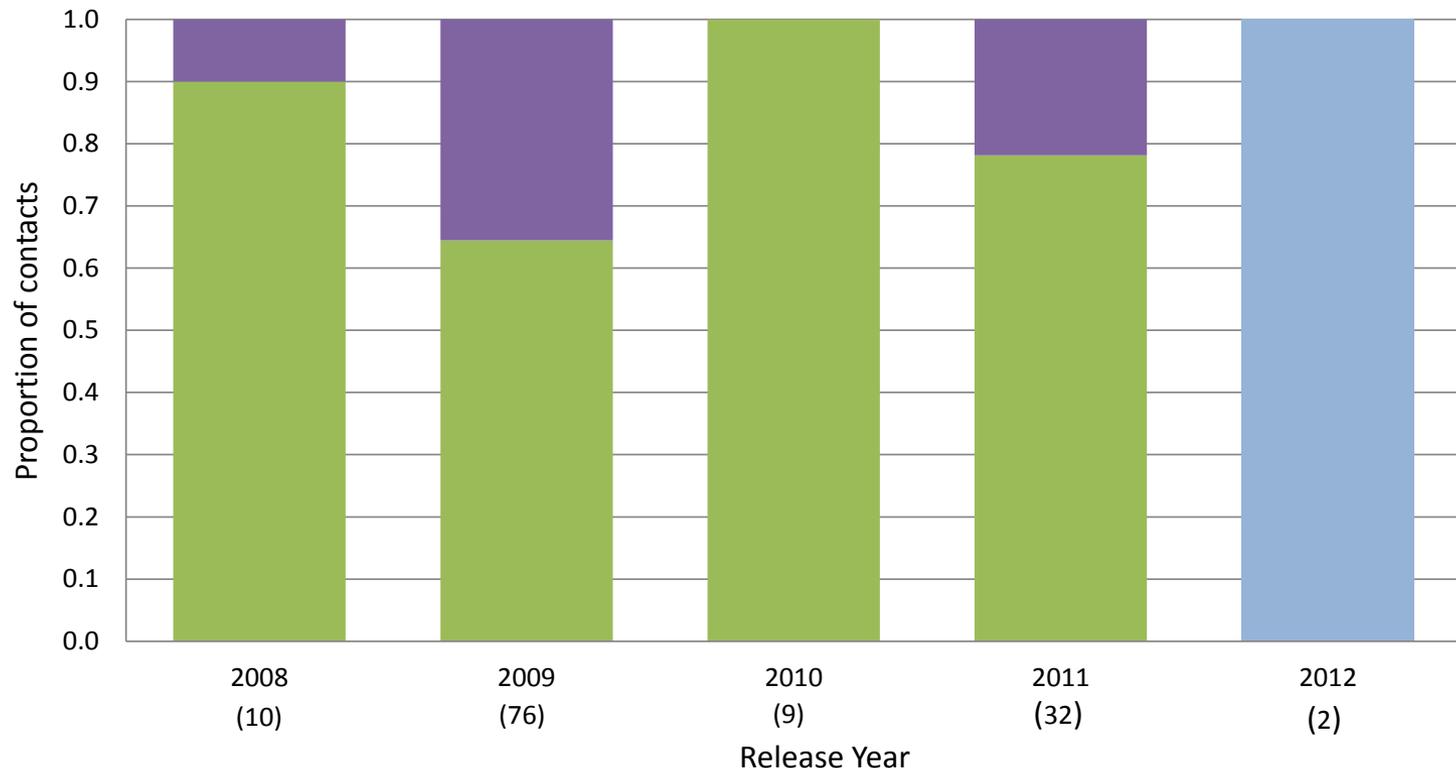
Post-stocking Dispersal

- Little directional movement
- Fish released in Basin zone generally remained there



Post-stocking Dispersal

- Fish released in Liberty zone generally moved up or downstream from stocking location
- Few fish released in Liberty were contacted in 2013



Post-stocking Dispersal

- Razorback sucker that were contacted by remote PIT-scanning in 2012 that were contacted again in 2013

	2013		
2012	River	Liberty	Basin
River	1063	0	39
Liberty	0	1	2
Basin	12	0	479
	1075	1	520



Population Estimates

- Based on 2012 and 2013 PIT-scanning
 - Tagged repatriate population – 3,588 (3,259 to 3,950)
 - River subpopulation – 2,188 (1,908 to 2,509)
 - Liberty subpopulation – 55 (17 to 100)
 - Basin subpopulation – 1,598 (1,390 to 1,836)
- Based on 2012 and 2013 March round-ups
 - Tagged repatriate population – 1,854 (941 to 3,782)



Discussion

- PIT-scanning is an effective method for monitoring razorback sucker in Lake Mohave
- Movement of razorback sucker between zones is minimal
- Population estimates based on round-up data may not accurately represent the entire reservoir population
- Remote PIT-scanning does not replace routine monitoring



Thanks to our partners for their support

- USBR



- USFWS



- NPS



- NDOW



- AZGFD



- Cross Country Consulting, LLC