

Lower Colorado River Multi-Species Conservation Program



Balancing Resource Use and Conservation

Habitat Use and Movements of Bonytail and Razorback Sucker in Lake Mohave

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Sonic Telemetry Update



Objectives

- Bonytail - Assess dispersal, movement patterns, habitat use, and survival
 - Identify appropriate locations for future stockings
 - Evaluate augmentation value for this species in Lake Mohave
- Razorback - Monitor movement/movement patterns of individual fish
 - Evaluate spawning site/lake zone fidelity and habitat use/preference (translocation)
 - Use data to sample additional areas of the lake

Methods



Bonytail 2015

- 19 bonytail (377-422 mm TL) were obtained from the Lake Mead hatchery and implanted with 9 month acoustic transmitters (IBT-96-9-I, Sonotronics, Inc.)
- Stocked at Arrowhead Cove (RM 3.5), on 10/7/15 with a cohort of ~400 bonytail

Bonytail 2016

- 20 bonytail (382-435 mm TL) were obtained from the Lake Mead hatchery and implanted with 9 month acoustic transmitters (IBT-96-9-I, Sonotronics, Inc.)
- 10 stocked at Gold Cove (RM 24), 10 at Katherine Powerline Cove (RM 5.5), with cohorts of ~250 bonytail on 4/26/16

Razorback 2015

- 19 razorback (515-635 mm TL) were captured from Lake Mohave and implanted with 3 year acoustic transmitters (CT-05-36-I)
- Nine fish were stocked at Willow Beach (RM 52) and 10 were stocked at Katherine Landing (RM 2) on 3/10/15



Methods



Acoustic Telemetry

- Towable and directional hydrophone used for active tracking
- 26 SURs deployed for passive tracking



LAKE MOHAVE SUR LOCATIONS - AS OF DECEMBER 9, 2015

#	Physical Location / Attachment Point	~River Mile	Reservoir Side / State	SUR ID	UTM
1	Across from Mile Marker 61 / Tamarisk	61	AZ	10695	11S 3983676
2	Black Bar / Tamarisk	56.5	AZ	10696	11S 0706885 3977535
3	Point Across from WB Hatchery Buoy Line / Tamarisk	52.75	NV	10697	11S 0710760 3972487
4	Kayak Cove / Arrow weed	52.75	AZ	10698	11S 0710657 3972669
5	S of Monkey Hole / Tamarisk on cliffside	47.75	NV	10699	11S 0708054 3967887
6	Chalk Cliffs / Tamarisk below Nav. Light	43	AZ	10700	11S 0708418 3959212
7	Chalk Cliffs / Tamarisk by No Ski Sign (approach from South)	43	NV	10701	11S 0708306 3959386
8	N. of Liberty Cove - Tamarisk on cobble beach	38.5	AZ	10702	11S 0708637 3953259
9	Small Cove N. of the Powerlines - Tamarisk on N. point	34.5	AZ	10703	11S 0709354 3940787
10	N. of Opal Cove / Tamarisk on shoreline	29.25	NV	10704	11S 0711716 3940976
11	Owl Point Cove / Tamarisk on S. point	29	AZ	10705	11S 0711786 3940390
12	Yuma Cove / Tamarisk on spawning beach	24	AZ	10820	11S 0712684 3933611
13	S. Point Klondike Cove / Tamarisk on small rock island	23.5	NV	10706	11S 0710699 3932844
14	Painted Canyon / Tamarisk below Nav. Light	23.5	AZ	10707	11S 0710895 3932656
15	Tequila Cove / Tamarisk on spawning area point	21	NV	10708	11S 0710589 3928267
16	South Haystack Cove / Rock on N. point	11.75	AZ	10709	11S 0717779 3915896
17	Clam Cove / Tamarisk on N. point of cove	11.75	NV	10710	11S 0716891 3915578
18	White Rock Wash Cove / Rock on N. point	9.75	NV	10711	11S 0717636 3913085
19	Katherine Powerline Cove / Rock on S. point	5.5	AZ	10712	11S 0719376 3906054
20	N. Point Rams Head Cove / Tamarisk on cliffside	5.5	NV	10623	11S 0718823 3906044
21	Shoreline N. of Cholla Cove / Tamarisk on cliffside	4	NV	10774	11S 0719294 3904174
22	Forked Coves / Tamarisk on small point	3.25	AZ	10792	11S 0720189 3902921
23	Newberry Cove / Rock on island N of cove	3.25	NV	10713	11S 0719279 3902908
24	N. Point Katherine Landing Entrance / Tamarisk on cliffside	2	AZ	10790	11S 0720270 3900726
25	N. of Paiute Cove / Tamarisk on cliffside	2	NV	10791	11S 0719849 3900611
26	Ski Pass Cove / Tamarisk on S. point of large island	0.75	AZ	10714	11S 0720583 3898839

Results



2015 Bonytail Contacts

- 3,799 passive and 38 active contacts
- 2 bonytail not contacted since the week of release
- 4 not contacted after 2 months
- 6 suspected mortalities, and 3 with unknown status
- 4 fish were active for 9+ months

Distribution

- Bonytail remained close to their stocking location for ~ 3 months post release
- Contacts via SUR or manual tracking were greatly reduced from January through March
- Increased activity was observed in late spring and Summer
- SUR contacts generally occurred from 4 pm – 7 am throughout the study period

2016 Bonytail Contacts

- 3,827 passive and 29 active contacts
- 7 active fish through November (6 months), 2 unknown, 5 potential mortalities, 6 confirmed mortalities

Results



Razorback Sucker Contacts

- 360,019 passive and 242 active contacts (through October 2016)
- 16 of 19 razorback regularly contacted via passive or active tracking
- 2 fish have an unknown status
- 1 confirmed mortality

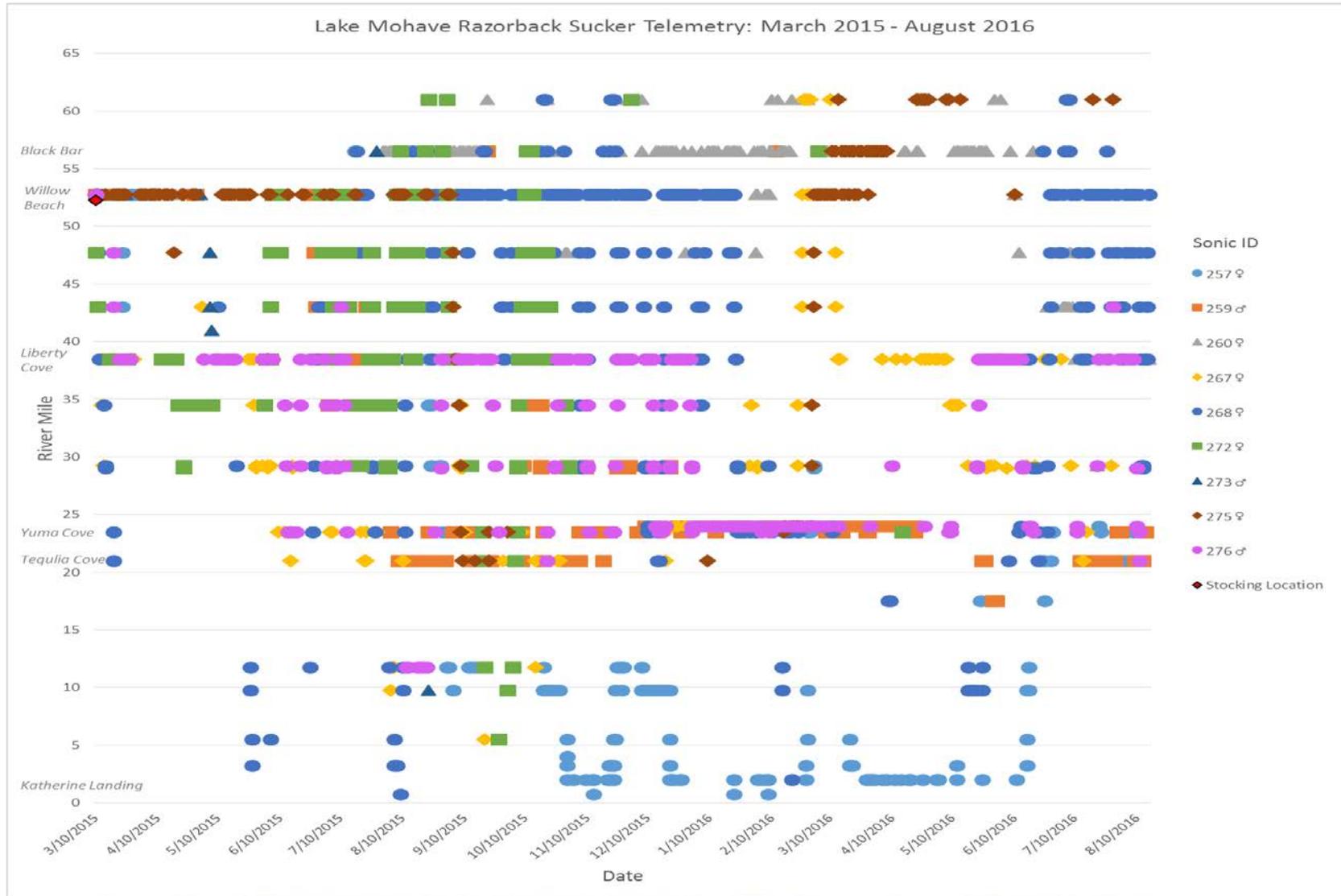
Distribution

- Razorback dispersed widely throughout the lake 3-6 months post stocking
- All razorback have been contacted at Liberty Cove (RM 38.5) regardless of stocking location
- Late spring and Summer active contacts indicate razorback were using mid-channel habitat. Fall contacts show a shift inshore
- The majority of these fish have been re-contacted at their capture locations, however, they appear to be widely distributed throughout the year and frequently transition to different zones of the lake

Results



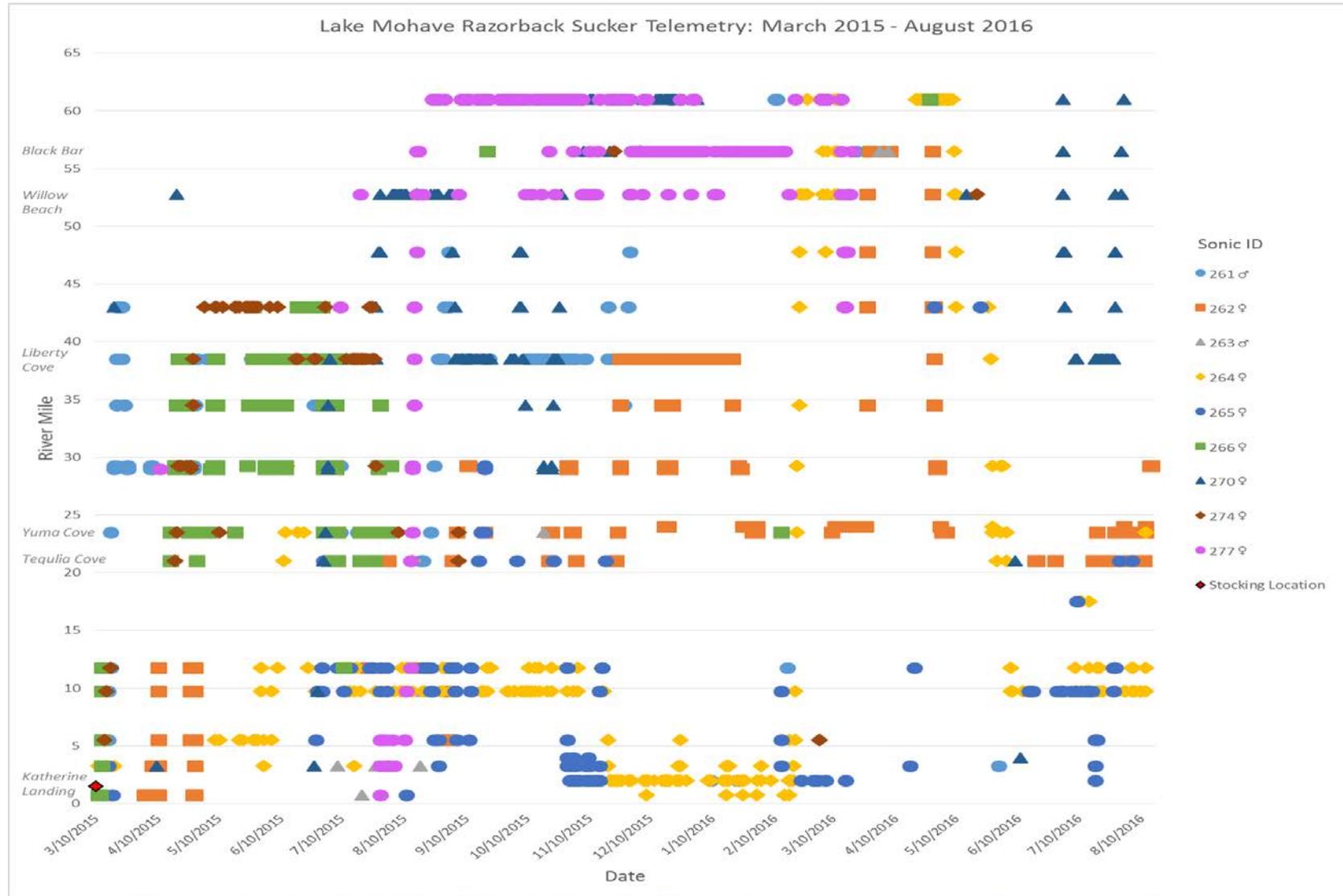
Razorback Distribution



Results



Razorback Distribution



Results



Summary

Bonytail

- Remained close to their stocking location for ~ 90 days post release
- Prove difficult to locate from trip to trip
- Increased activity observed in late spring and Summer for both groups
- Passive contacts have generally occurred from 4 pm – 7 am
- Four 2015 bonytail were contacted for the expected duration of their tags (9 month survival)

Razorback

- Razorback dispersed widely 3-6 months post release
- Use of mid-channel habitat has been observed in late spring and summer, while shallower inshore habitat seems to be preferred in fall
- Translocation likely affected the behavior of these fish, however several are now being frequently contacted at/near their original capture location
- A few fish were routinely observed in the lower lake before, during, and after the spawning season

Bonytail

- Fish released in 2016 will continue to be monitored monthly
- An additional 20 sonic tagged bonytail will be released in January
- Ten radio tagged bonytail will also be released in February

Razorback

- Razorback released in 2015 will continued to be monitored
- An additional 15 hatchery reared razorbacks will be sonic tagged and released in January
- Habitat use, movements, and site fidelity (if observed) will be compared to those of translocated razorback
- Remote PIT scanning will be used to monitor the lower lake in an effort to contact additional fish

Questions



Acknowledgements

- Brandon Senger, Eric Laux, Chris Burg - NDOW
- Rick Wydoski - USBR
- LCR MSCP Fisheries Staff