



Lower Colorado River Multi-Species Conservation Program

Balancing Resource Use and Conservation

Preliminary Results and Future Activities for a Capture Effort of Bats at Habitat Creation Sites along the LCR

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Background

- Most mist-netting occurs at water sources
- Netting bats along the LCR has been minimal (Pat Brown per. comm.)
- The LCR MSCP is continually creating habitat that is assumed to give bats both foraging and roosting opportunities
- Habitat use by bats is difficult to sample
- Acoustic sampling has limitations

Acoustic Sampling Limitations

- Does not give a complete species list
- Does not estimate abundance
- Does not give information on age, sex, or reproductive status of bats

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Capture Limitations

- Does not equally sample all species
- Capture rates can be low

Benefits of Using Both Techniques

- Captures can confirm presence of species recorded acoustically
- Captures of species not recorded acoustically
- When captured bats are released, voucher acoustic calls can be recorded
- Placement of nets and/or detectors can be refined

Preliminary Goals

- Discover if netting bats would aid acoustic project
- Determine if LCR MSCP covered species can be captured
- Determine overall bat use of habitat creation sites
- Determine feasibility of a capture program

What We Did

- 3 sites in July
- 1 site in September
- 3 sites in October

Pratt Restoration Demo Site

- 12 acre (4.9 ha) site planted with cottonwood and willow trees in 1999



Number and Locations of Nets at Pratt

Day 1

- 6 nets and 2 harp traps inside corridor

Day 2

- 4 nets and 1 harp trap inside corridor
- 3 nets along road in Z-formation



Results - Pratt

July

- 2 sampling nights
- 42 total captures
- 5 species
- 2 LCR MSCP covered species
- Neither covered species was recorded acoustically

Species	Day 1	Day 2
Western yellow bat	1	0
California leaf-nosed bat	1	1
Pallid bat	3	2
Big brown bat	0	33
Yuma myotis	0	1



Lesson learned from Pratt

- High nets are good!
- Of the 37 bats captured the second night, only 6 bats were not captured in the high net
- Of those 6, four were captured in the low nets that were used as part of the Z-formation with the high net

Number and Location of Nets at Pratt

October

- Three 12-m long nets stacked (triple)
- One Harp trap
- Two 6-m long nets in parallel
- All nets inside corridor



Results - Pratt

October

- 1 sampling night
- 3 captures
- 1 species
- 1 LCR MSCP covered species



California leaf-nosed bat

Beal Lake Riparian Restoration Area

- 108 acre (44 ha) area planted with cottonwood, willow, and mesquite trees from 2003-2005



Number and Location of Nets at Beal

July

- One 12-m net set on top of small dike at Beal ditch
- One harp trap set in small corridor
- Two 6-m nets set in parallel in same corridor
- One 12-m net set in wider corridor

October

- One 12-m long triple high set up across road bordered by cottonwood trees

Results - Beal

July

- 4 Yuma Myotis
- 3 of 4 captured on top of dike



October

- 1 Pallid Bat



Cibola NWR Nature Trail

- 23 acres (9 ha) of cottonwood, willow, and mesquite planted in 1999



Number and Location of Nets at Cibola

July

- One harp trap set up in narrow corridor
- One 12-m net set on edge of habitat
- Two 12-m nets set in V-formation at bend in trail
- One 6-m net set at start of trail, another across a side trail

October

- Three 6-m nets set up as triple stack across trail
- One 12-m net set on edge of habitat
- One 12-m net set at start of trail

Results - Cibola

July

- 1 sampling night
- 4 captures
- 3 species
- 1 LCR MSCP covered species

October

- 1 sampling night
- 15 captures
- 3 species
- 1 LCR MSCP covered species
- 1 indicator species

Results - Cibola

Species	July	October
California leaf-nosed bat	1	13
Hoary bat	0	1
Pallid bat	0	1
Big Brown Bat	2	0
Yuma Myotis	1	0



Hoary bat

Hoary Bat Roost Found

March 15, 2007



'Ahakhav Tribal Preserve

- 150 acres (61 ha) of cottonwood, willow, and mesquite trees
- Planting started in 2001 and is ongoing



Number and Location of Nets at 'Ahakhav

Sample night 1

- One harp trap
- One 6-m long triple
- One 12-m long quad
- Two 6-m nets set across irrigation ditch
- One 6-m net set in small corridor

Sample night 2

- One 12-m long triple set up where quad was at previous sample site

Results – ‘Ahakhav

September

- 2 sampling nights
- 26 captures
- 7 species (possibly 8)
- 2 LCR MSCP covered species
- 24 of the 26 captures were in either the triple or quad high nets

Species	Night 1	Night 2
Western yellow bat	4	0
California leaf-nosed bat	1	0
Pallid bat	3	1
Mexican free-tailed bat	1	0
Yuma Myotis	3	1
California Myotis	1	0
Cave Myotis	1	5
Myotis spp. (possible Arizona Myotis)	0	5

Noteworthy captures



Western Yellow bat



Noteworthy captures



Mexican Free-tailed Bat



Cave Myotis

Summary of Results

- 4 sites sampled for a total of 9 nights
- A total of 95 bats captured
- A total of 9, possibly 10 species captured
- 2 sites (Pratt & 'Ahakhav) had 2 LCR MSCP covered species
- 1 site (Cibola) had 1 LCR MSCP covered species and 1 indicator species

Preliminary Goals

- Discover if netting bats would aid acoustic project
- Determine if LCR MSCP covered species can be captured
- Determine overall bat use of habitat creation sites
- Determine feasibility of a capture program

Future Activities

Goals for 2008:

- Determine use of habitat creation sites by LCR MSCP species
- Obtain voucher acoustic calls of released bats
- Determine reproductive status and seasonal use of habitat by bats
- Determine if net placement and capture success can be used to help design future habitat creation areas (i.e. creating corridors)

What we plan to do in 2008

- Continue to monitor same sites as 2007
- Choose 1-2 exploratory sites
- Conduct 4-5 monitoring trips and net 4 sites during each trip
- Trips will occur from April – September

Acknowledgements

- Theresa Olson, Susan Broderick, Joe Kahl, Christopher Dodge, Lin Piest, Bea Vizcarra, Ty Benally, James Aliberti, Juliette Gutierrez, Jen Cleland, Pat Brown and Bob Berry
- AZGFD
- Havasu NWR
- Cibola NWR
- 'Ahakhav Tribal Preserve (CRIT)
- BLM