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

<table>
<thead>
<tr>
<th>Species</th>
<th>Day 1</th>
<th>Day 2</th>
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</thead>
<tbody>
<tr>
<td>Western yellow bat</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>California leaf-nosed bat</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Pallid bat</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Big brown bat</td>
<td>0</td>
<td>33</td>
</tr>
<tr>
<td>Yuma myotis</td>
<td>0</td>
<td>1</td>
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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

<table>
<thead>
<tr>
<th>Species</th>
<th>July</th>
<th>October</th>
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</thead>
<tbody>
<tr>
<td>California leaf-nosed bat</td>
<td>1</td>
<td>13</td>
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<tr>
<td>Hoary bat</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Pallid bat</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Big Brown Bat</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Yuma Myotis</td>
<td>1</td>
<td>0</td>
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</table>

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

<table>
<thead>
<tr>
<th>Species</th>
<th>Night 1</th>
<th>Night 2</th>
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<tbody>
<tr>
<td>Western yellow bat</td>
<td>4</td>
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<tr>
<td>California leaf-nosed bat</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Pallid bat</td>
<td>3</td>
<td>1</td>
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<tr>
<td>Mexican free-tailed bat</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Yuma Myotis</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>California Myotis</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Cave Myotis</td>
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<td>5</td>
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<tr>
<td>Myotis spp. (possible Arizona Myotis)</td>
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<td>5</td>
</tr>
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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

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• Cibola NWR
• ‘Ahakhav Tribal Preserve (CRIT)
• BLM