Yellow-billed Cuckoo Surveys Lower Colorado River 2017-2019

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with Reclamation & Parametrix, Inc.
Western yellow-billed cuckoo
*Coccyzus americanus*

- Long-distance migrant
- Nest mostly in riparian forest
- Listed as threatened 2014
Objectives/Methods

• Document cuckoo presence in LCR MSCP conservation areas (Halterman et al. 2016)

• Try to confirm breeding, especially at sites with no previous documented breeding

• Search for Cuckoos GPS tagged in 2014/2015, capture 2 attempts
## Breeding Territory Estimation

End of season assessment

<table>
<thead>
<tr>
<th>Code</th>
<th>Confidence Level</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>PO</td>
<td>Possible</td>
<td>Detections in an area 2 surveys</td>
</tr>
<tr>
<td>PR</td>
<td>Probable</td>
<td>Detections in an area at least 3 surveys / breeding evidence</td>
</tr>
<tr>
<td>CO</td>
<td>Confirmed</td>
<td>Proof of breeding e.g. nest, fledgling, copulation</td>
</tr>
</tbody>
</table>

S McNeil/SSRS
Beal Lake Conservation Area 55 ha
Bill Williams River NWR 355 ha
Palo Verde Ecological Reserve 415 ha
Cibola Valley Conservation Area 216 ha
Cibola NWR 243 ha
Laguna Division Conservation Area 437 ha
Survey detections per 20 ha, 2014–2019, by survey area.
Predicted survey detections by site age for sites 20, 50, and 80 ha. 95% predictive intervals are shown by grey shading around each line.

<table>
<thead>
<tr>
<th>Model variable</th>
<th>Estimate</th>
<th>SE</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site Size (ha)</td>
<td>0.100</td>
<td>0.011</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Age</td>
<td>0.121</td>
<td>0.066</td>
<td>0</td>
</tr>
<tr>
<td>Age:size interaction</td>
<td>-0.006</td>
<td>0.002</td>
<td>&lt; 0.00</td>
</tr>
</tbody>
</table>
Expansion of breeding habitat

- CVCA Phase 7 - 29.3 ha  Planted 2015
- CVCA Phase 8 - 44.7 ha  Planted 2016
- CVCA Phase 9 - 31.2 ha  Planted 2017
- CBNWR Middle Hippy Fire - 49.3 ha - Planted 2017
- CBNWR Lower Hippy Fire - 49.6 ha – Planted 2016
- Hunters Hole   18 ha – Planted 2013
Young sites are attracting breeding cuckoos

- 2018 - nests at CVCA 8 and 9
- 2019 - nest at CVCA 8, two at CVCA 7
- 2018 - two nests at Hippy Fire (Cibola NWR)
- 2019 - three nests at Hippy Fire
LCR MSCP cuckoo habitat is ageing (2008-2018)

Figure 17.—Hectares of planted YBCU habitat (open circles) and proportion of habitat < 6 years old (black circles) by year, LCR MSCP sites, 2008 to 2018 (2014-2018 summary report)
Other Results: 2017

- Cibola NWR - oldest YBCU on record resighted: 8+ years

Rocky at Crane Roost June 2017, banded 2010
Photo – Jennifer Tobin, SSRS
Other Results: 2017

• PVER – recaptured 7th GPS-tagged YBCU

Broccolini with GPS tag 2015
Photo – SSRS
Migratory Connectivity & Full Life-cycle Conservation

Breeding

Migration

Wintering

youtu.be/0iioeBYEdQQ

www.worldlandtrust.org
Methods

- **2014-15 PVER:** Capture, attach GPS (>65 g + nesting)
- **2015-17:** Recapture, remove tag, download data
- **Google Earth:** assess land cover, protection status
- **Road trip:** ground truth GPS points, assess habitat, threats

Lotek PinPoint-10 GPS tag, lower-back leg loop harness

Photos: SSRS
Yellow-billed cuckoo migration & wintering

- 2015-17: recaptured 7 of 14 tagged YBCU
- 34 points - 6 birds
  - 12 protected
  - 22 unprotected
  - 22 fall migration
  - 3 winter
  - 9 spring migration
2017 Fall + Spring Migration - Desert Washes, So. AZ

6/26: Sonoran Desert National Monument near Gila Bend

Photos – Diane Tracy, SSRS

8/20: Cabeza Prieta NWR near Ajo
Stopover point 9/17

Nearby hillside - pasture

Photos – Shannon McNeil, SSRS
Fall – Mangroves, Chinandega Nicaragua

Stopover point 10/14

Young mangrove forest
Former shrimp farm - Now protected: Reserva Natural Estero Padre Ramos

José Martín Vallecillo Mendez - Paso Pacífico

Photos – Shannon McNeil, SSRS
Stopover point 10/15 - cattle ranch near León

Photos – Shannon McNeil, SSRS
Fall – Tropical Humid Forest Puntarenas Costa Rica

Stopover pt. 10/22

Down the road

Photos – Shannon McNeil, SSRS
2018 We visited wintering habitat Paraguay, Bolivia and Argentina
Tarija Department, Southern Bolivia
Santiago del Estero, Salta, Argentina

SMcNeil
DRY CHACO FILADELFIA PARAGUAY
2019 -2020 COLLABORATION WITH SMITHSONIAN MIGRATORY BIRD CENTER
“DETERMINING WHEN AND WHERE IN THE ANNUAL CYCLE MORTALITY OCCURS FOR THE YBCU”
Next...

Track more YBCU:
- Motus towers / transmitters
- Satellite tags 2020
- Conservation/collaboration on wintering grounds

Acknowledgments:
Bureau of Reclamation, LCR
MSCP
Parametrix
SSRS