Least Bell’s Vireo: Life History and Status Overview

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Least Bell’s Vireo
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Southwestern Willow Flycatcher
Breeding Range

Least Bell’s Vireo

Southwestern Willow Flycatcher

California Population at time of Listing:

300 territories (1986)
70 territories (1995)

> 90% habitat lost
Wintering Range: LBVI
LBVI Banded in Baja and Seen in U.S.
LBVI Banded in U.S. and Seen in Baja
Wintering Range: SWFL
Breeding Ecology

**LBVI**
- Arrives mid-March – early April
- Nests April – July
- Re-nests multiple times
- Monogamous

**SWFL**
- Arrives mid-May
- Nests May – August
- Re-nests multiple times
- Facultatively polygynous
Breeding Ecology

- Open-cup nests
- Nest height ~ 1m (LBVI), ~ 1-2m, up to 12m (SWFL)
- Place nests in a variety of native and non-native plants*
- Rely on nest concealment for protection
Breeding Ecology

- Open-cup nests
- Nest height ~ 1m (LBVI), ~ 1-2m, up to 12m (SWFL)
- Place nests in a variety of native and non-native plants
- Rely on nest concealment for protection
Foraging

**LBVI**
- Insectivorous
- Foliage gleaning

**SWFL**
- Insectivorous
- Hawking, gleaning

Scarlett Howell
Recent Population Trends
Habitat Loss and Degradation

- *Arundo donax* (Giant Reed)
- *Tamarix sp.* (Saltcedar)
Brown-headed Cowbird Parasitism
Recovery Oriented Management

1. Reduce cowbird parasitism
2. Increase availability of suitable nesting habitat
   - Habitat protection
   - Habitat creation
   - Habitat restoration
Habitat Creation
Habitat Creation
Habitat Restoration
LBVI Response to Restoration

Average Number Territories per ha

Removal Sites
Reference Sites

* First Year after Giant Reed Removal

Year

Cowbird Control

Cowbird Trapping

- 1 Apr – 15 Jul

Nest monitoring/manipulation

- BHCO eggs removed/replaced
- “rescued” nests
Cowbird Control Reduces Parasitism

<table>
<thead>
<tr>
<th>Species</th>
<th>Site</th>
<th>Pre-control</th>
<th>Post-control</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>LBVI</td>
<td>SDO</td>
<td>57 (2)</td>
<td>11 (10)</td>
<td>0.001</td>
</tr>
<tr>
<td>PEN</td>
<td></td>
<td>47 (2)</td>
<td>4 (15)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>SLR</td>
<td></td>
<td>63 (2)</td>
<td>32 (9)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>SWFL</td>
<td>KERN</td>
<td>63 (3)</td>
<td>23 (12)</td>
<td>0.001</td>
</tr>
</tbody>
</table>
### Cowbird Control Increases Productivity

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<thead>
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<th>Site</th>
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<th>P</th>
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</thead>
<tbody>
<tr>
<td>LBVI</td>
<td>SDO</td>
<td>0.9 (2)</td>
<td>2.9 (10)</td>
<td>0.01</td>
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<tr>
<td>PEN</td>
<td></td>
<td>1.4 (2)</td>
<td>2.7 (15)</td>
<td>0.003</td>
</tr>
<tr>
<td>SLR</td>
<td></td>
<td>0.6 (2)</td>
<td>1.9 (9)</td>
<td>0.002</td>
</tr>
<tr>
<td>SWFL</td>
<td>KERN</td>
<td>0.8 (3)</td>
<td>1.6 (12)</td>
<td>0.01</td>
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</table>
LBVI Response to Cowbird Control

![Graph showing the number of territories over time, with years from 1981 to 2004 and number of territories ranging from 0 to 150 for the left graph, and from 0 to 1200 for the right graph. The graphs illustrate the response to cowbird control initiatives marked by the initiation and ending years.]

[Graph image]
LBVI Population Growth

<table>
<thead>
<tr>
<th>Year</th>
<th>Males</th>
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</thead>
<tbody>
<tr>
<td>1986</td>
<td>300</td>
</tr>
<tr>
<td>2010</td>
<td>3,000 – 3,500</td>
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</tbody>
</table>

A. Schmierer

USGS
LBVI Range Expansion

The bar chart above illustrates the population size of SWFL across different sites from 1999 to 2016. Each bar represents the number of birds at a specific site for each year, with colors distinguishing between different years. The sites include Kern, Pendleton, Mojave, Prado, Santa Clara, and SLR-lower. The x-axis represents the sites, and the y-axis represents the number of birds. The chart shows a variation in the population size across the years and sites.
SWFL Population

1995 2010

70 males << 70 males

What is limiting this species??

[Image of bird]
Cowbird Control:

- is effective in reducing parasitism and increasing annual productivity in LBVI and SWFL
- produces population increases in LBVI but not SWFL
- is effective only as long as suitable habitat is available
The Future:
From Crisis Management to Sustainability
LBVI Productivity 2006-2017

**Lower San Luis Rey**

- **Completed Nests per Pair**
- **Fledglings per Pair**
- **Percent Pairs Fledging ≥1 Young**

**Pendleton**

- **Completed Nests per Pair**
- **Fledglings per Pair**
- **Percent Pairs Fledging ≥1 Young**

[Graphs showing productivity metrics for Lower San Luis Rey and Pendleton over the years 2006-2017]
Drought
WATER
Acknowledgements

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U.S. Army Corps of Engineers

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Thank-you!