



Least Bell's Vireo: Life History and Status Overview

Barbara E. Kus

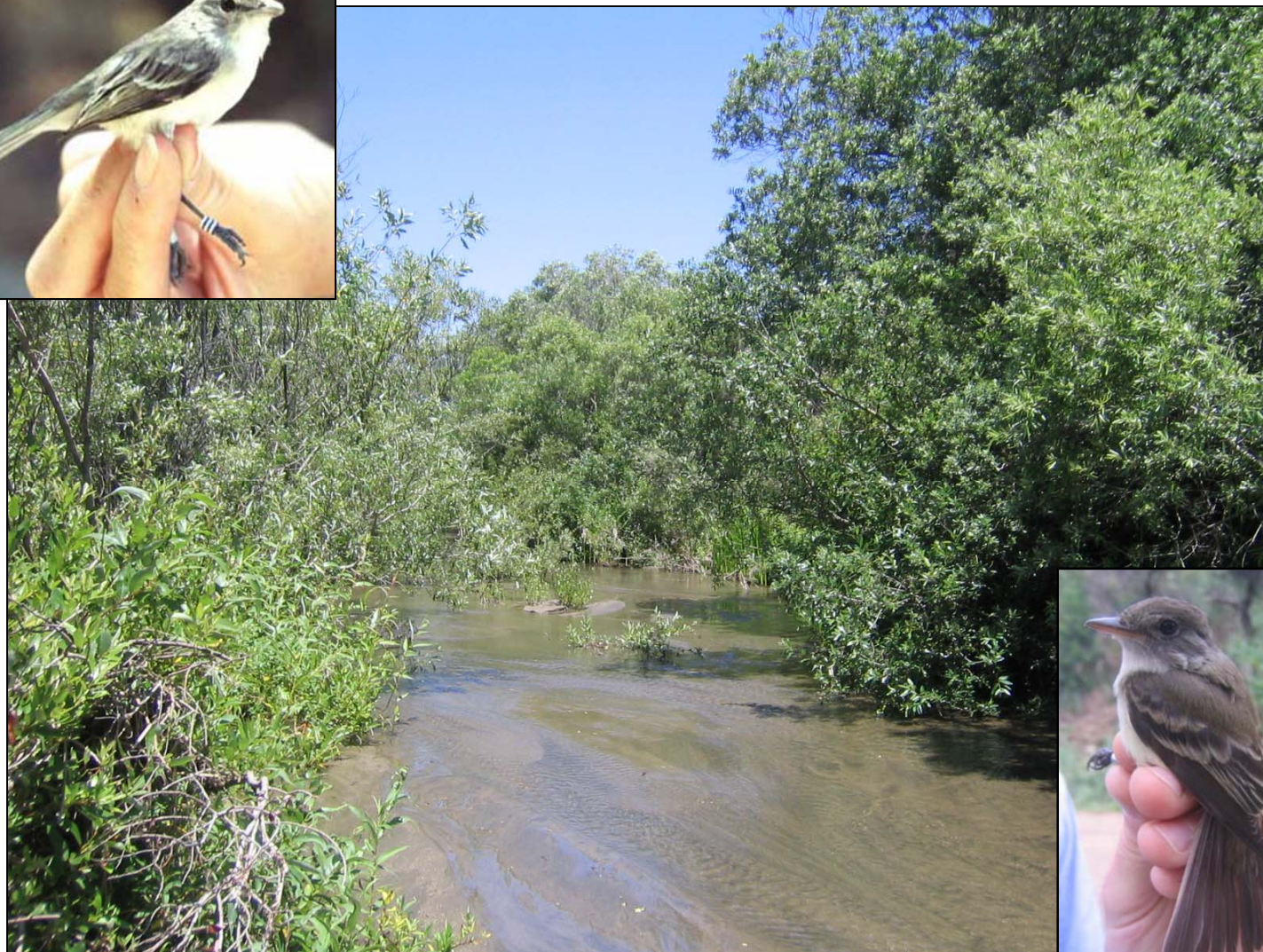
Western Ecological Research Center
San Diego Field Station

U.S. Department of the Interior
U.S. Geological Survey

Least Bell's Vireo

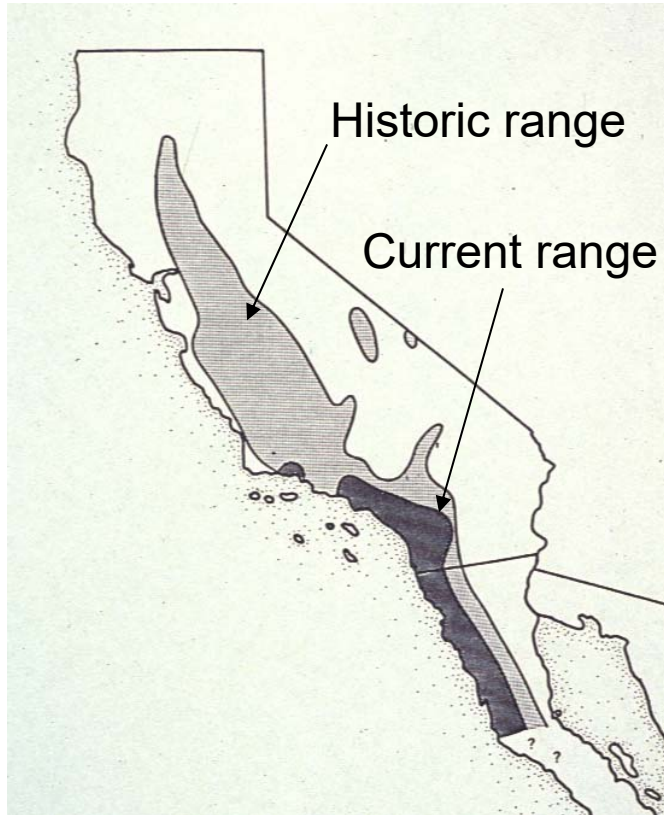


Least Bell's Vireo

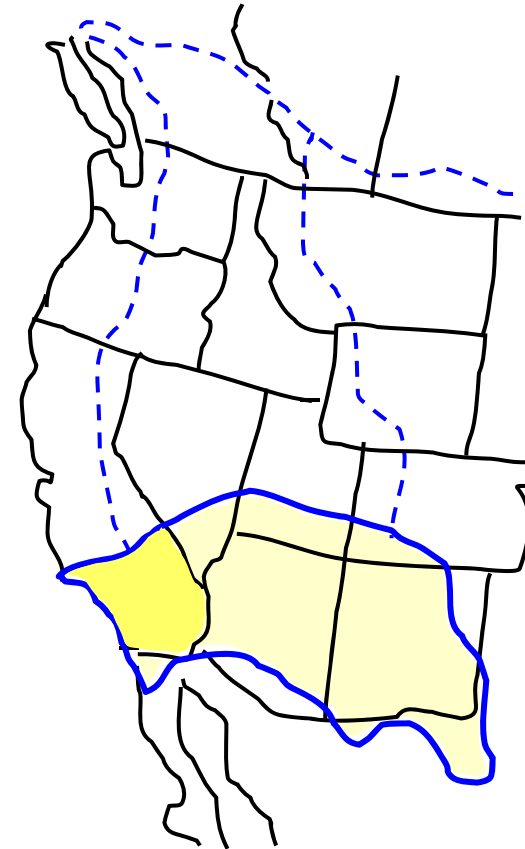


Breeding Range

Least Bell's Vireo



Southwestern Willow Flycatcher



California Population at time of Listing:

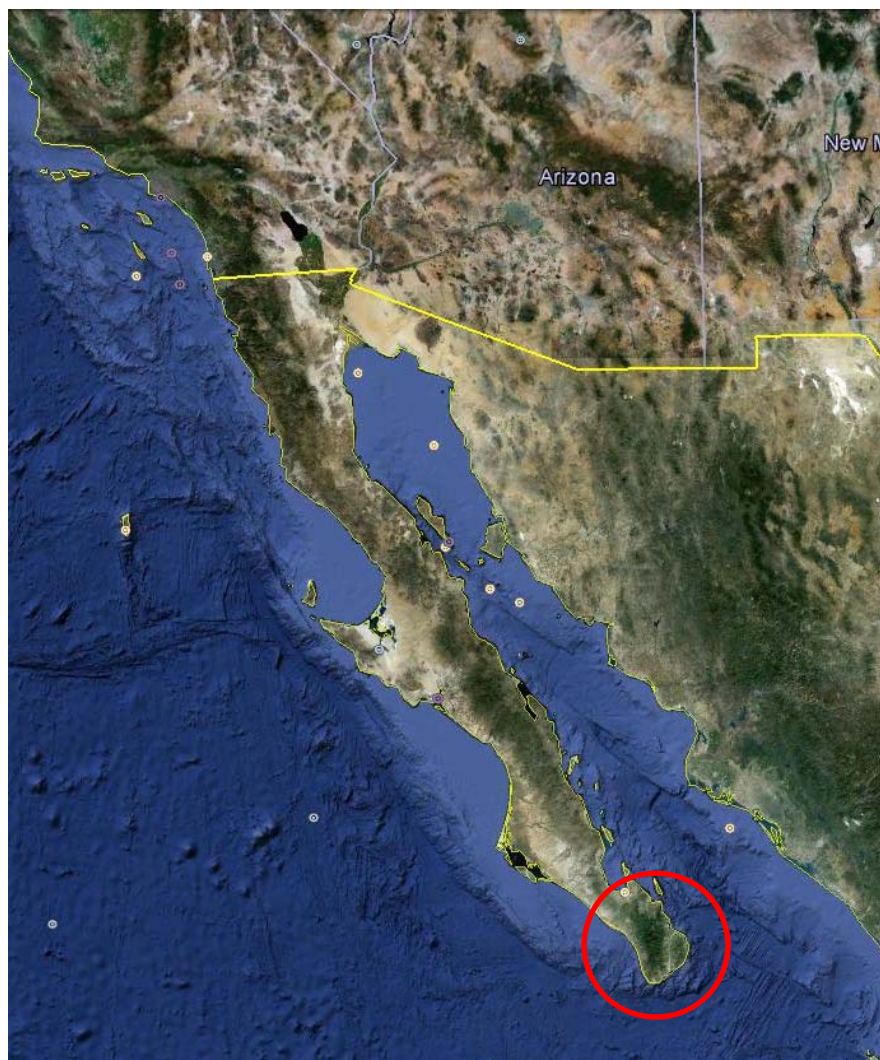
300 territories (1986)

70 territories (1995)

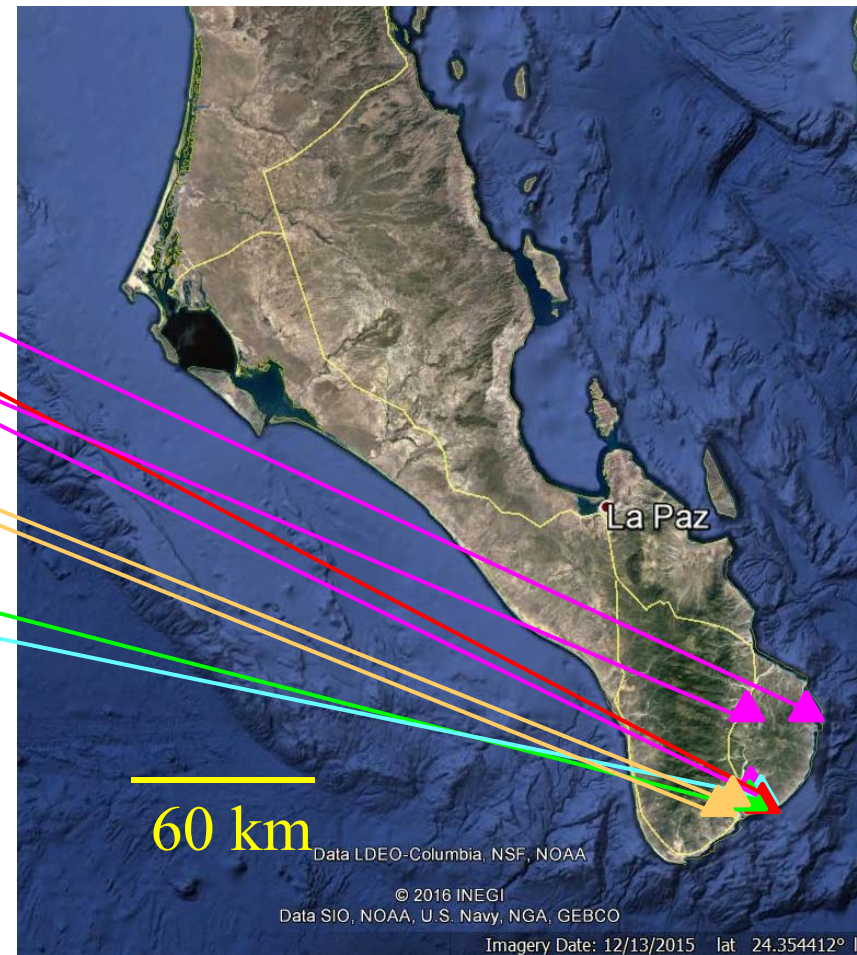
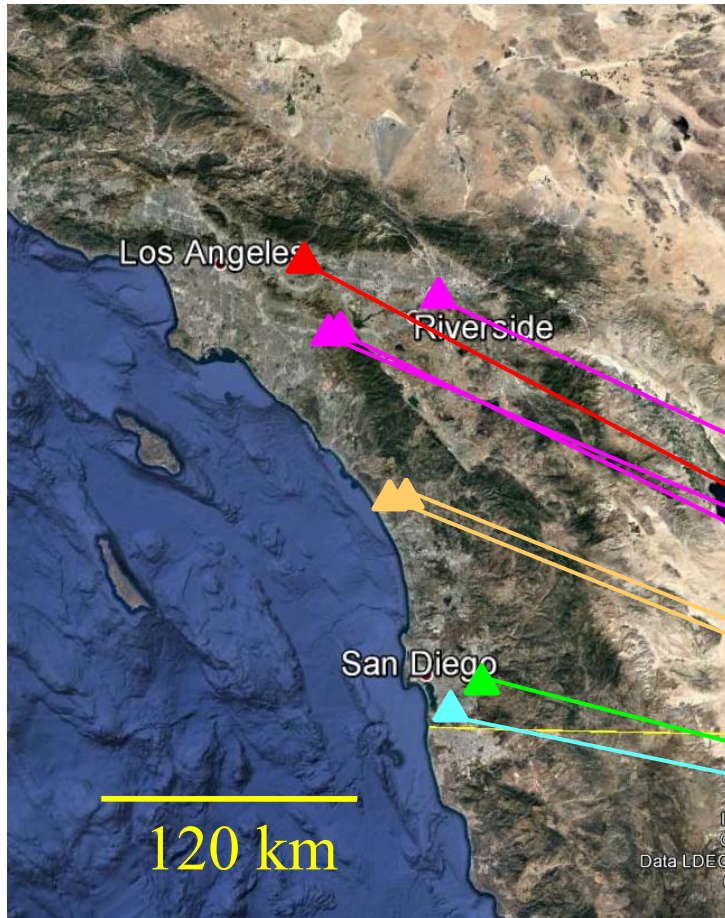


> 90% habitat lost

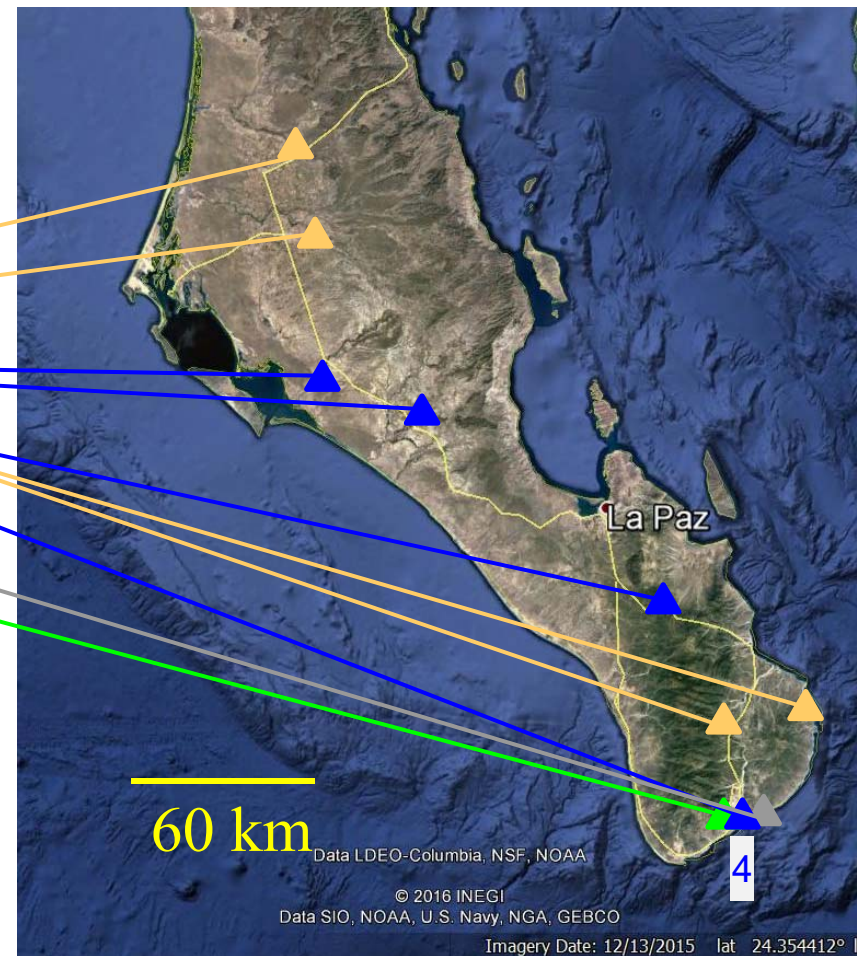
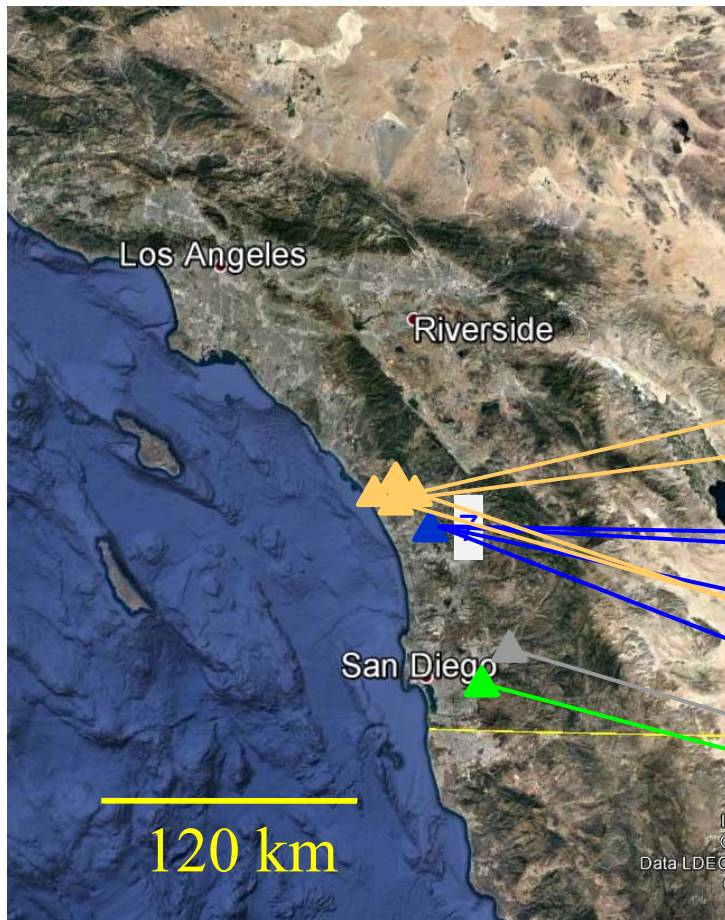
Wintering Range: LBVI



LBVI Banded in Baja and Seen in U.S.



LBVI Banded in U.S. and Seen in Baja



Wintering Range: SWFL



Basemap modified from U.S. Geological Survey and other agency digital data, various scales. Projection Mercator, World Geodetic System 1984 datum.

EXPLANATION

Approximate range distribution of the Willow Flycatcher (*Empidonax traillii*)—Adapted from Unitt (1987), Browning (1993), and Paxton (2008)

- Breeding range, including boundaries of the Willow Flycatcher subspecies
- Wintering range—Question marks reflect uncertainty of the location of the eastern boundary of the winter range

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



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Foraging

LBVI

- Insectivorous
- Foliage gleaning



SWFL

- Insectivorous
- Hawking, gleaning



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



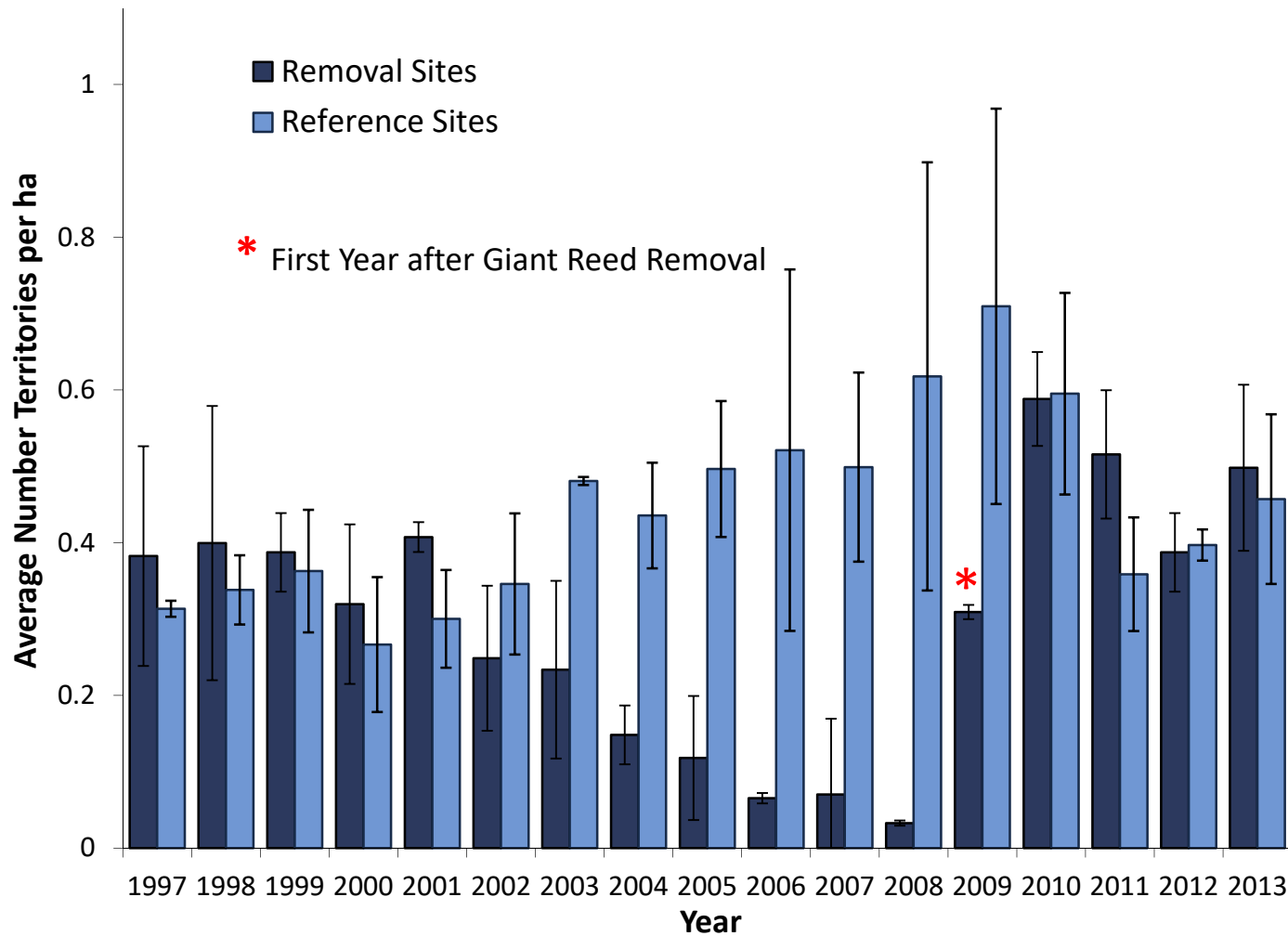
Habitat Creation



Habitat Restoration



LBVI Response to Restoration



Cowbird Control

Cowbird Trapping

- 1 Apr – 15 Jul



Cowbird
egg

Nest monitoring/manipulation

- BHCO eggs removed/replaced
- “rescued” nests



Cowbird Control Reduces Parasitism

Species	Site	% Parasitism		P
		Pre-control	Post-control	
<i>LBVI</i>	SDO	57 (2)	11 (10)	0.001
	PEN	47 (2)	4 (15)	<0.001
	SLR	63 (2)	32 (9)	<0.001
<i>SWFL</i>	KERN	63 (3)	23 (12)	0.001

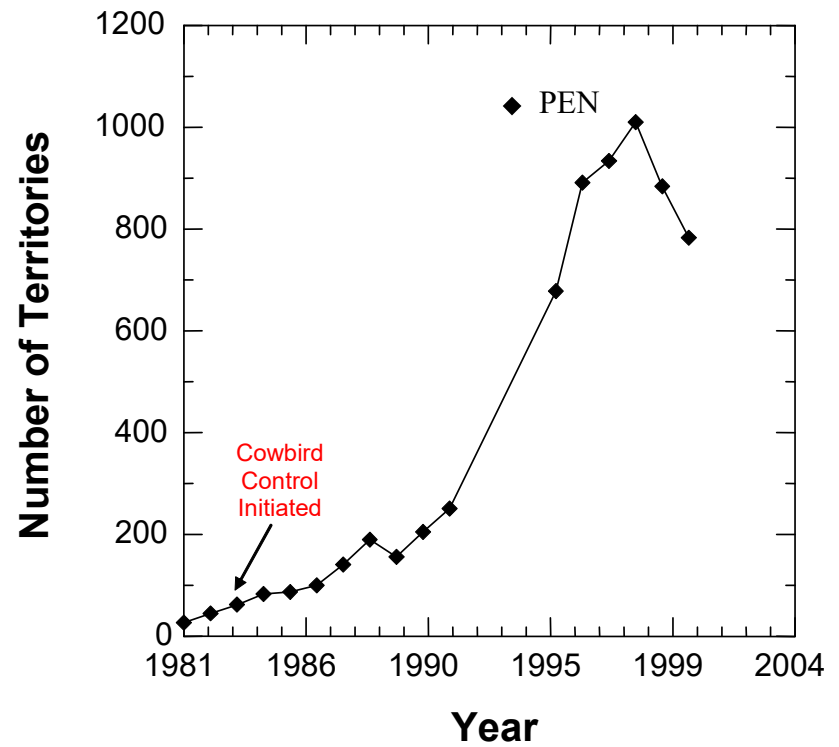
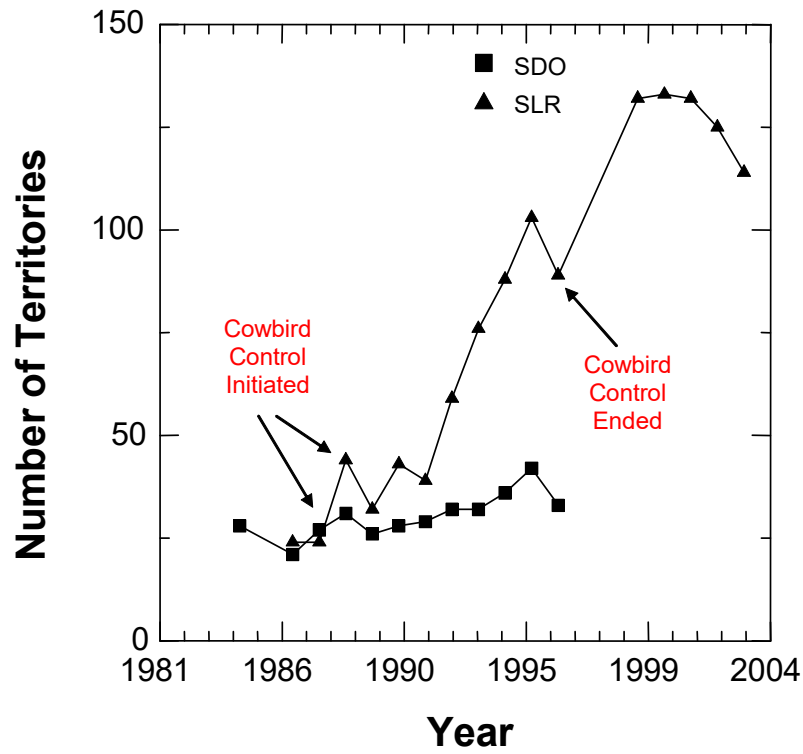


Cowbird Control Increases Productivity

Species	Site	Fledglings per Pair		P
		Pre-control	Post-control	
<i>LBVI</i>	SDO	0.9 (2)	2.9 (10)	0.01
	PEN	1.4 (2)	2.7 (15)	0.003
	SLR	0.6 (2)	1.9 (9)	0.002
<i>SWFL</i>	KERN	0.8 (3)	1.6 (12)	0.01



LBVI Response to Cowbird Control



LBVI Population Growth

1986

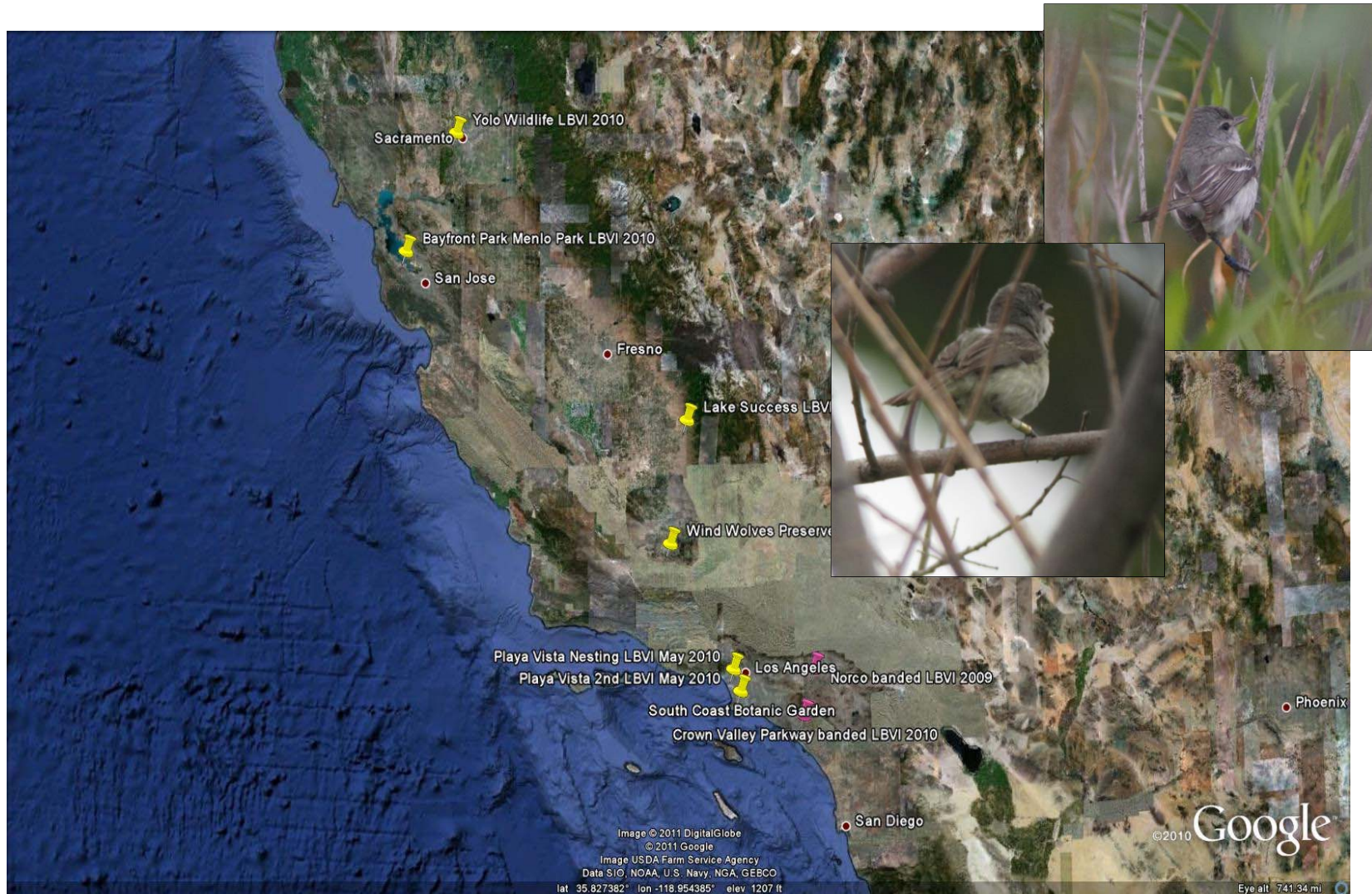
300 males

2010

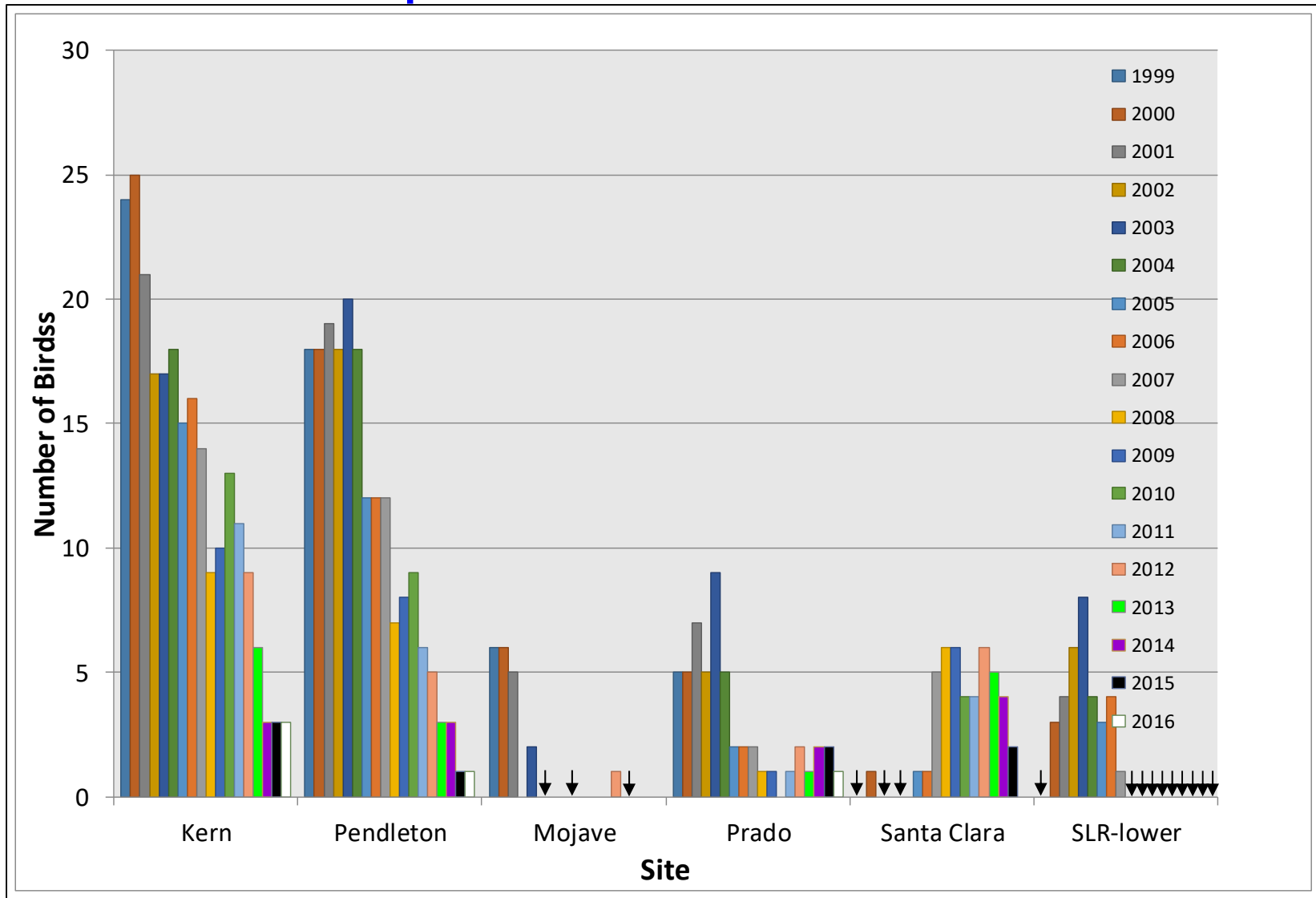
3,000 – 3,500 males



LBVI Range Expansion



SWFL Population Size: 1999-2016



SWFL Population

1995

70 males

2010

<< 70 males

What is limiting this species??



Cowbird Control:

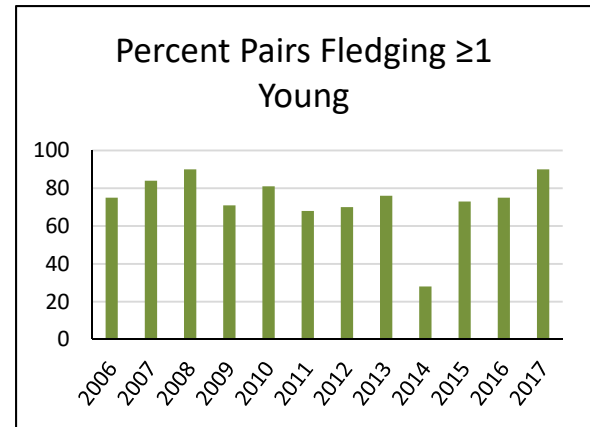
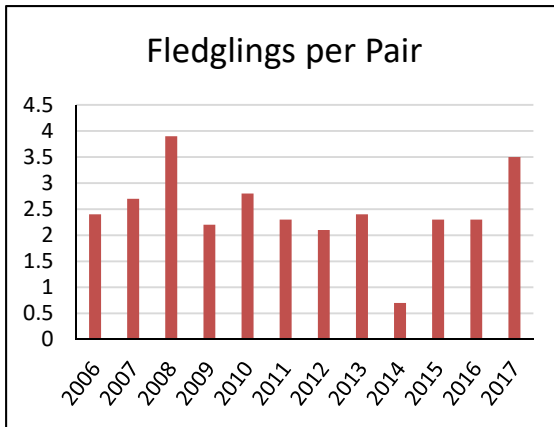
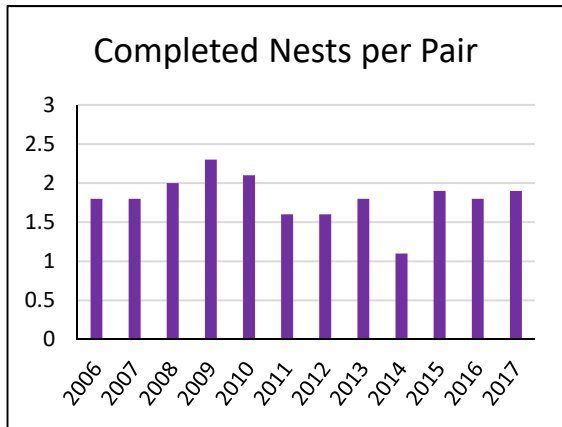
- is effective in reducing parasitism and increasing annual productivity in LBVI and SWFL
- produces population increases in LBVI **but not SWFL**
- is effective only as long as suitable habitat is available



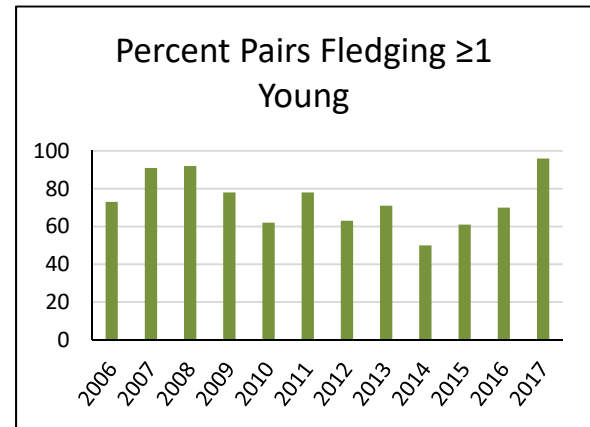
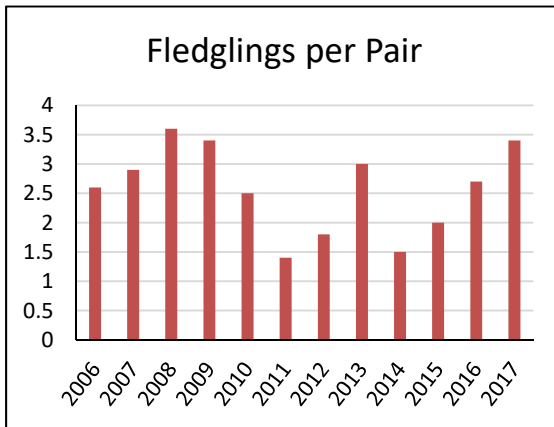
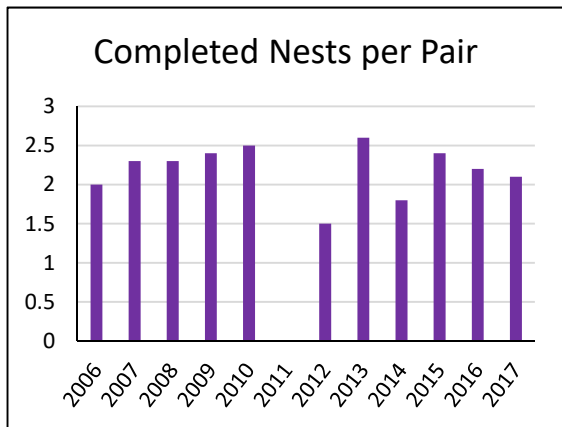
The Future:
From Crisis Management
to Sustainability

LBVI Productivity 2006-2017

Lower San Luis Rey



Pendleton



Drought



Wildfire



WATER

Acknowledgements

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Thank-you!

