

Habitat Restoration to Benefit Southwestern Willow Flycatchers: What do we Know, and is it Enough?

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Southwestern Willow Flycatcher

A Management Enigma

SWFL co-occur with LBVI in southern California, but have not responded to management

LBVI:	<u>1986</u> 300	<u>Present</u> ~ 3,500
SWFL:	<u>1995</u> 70	<u>Present</u> <<70

SWFL and LBVI Life Histories

Similarities:

- Territorial breeders
- High site fidelity
- Open-cup nests
- Cowbird hosts



Differences:



- Breeding seasons staggered
- Foraging:
 - LBVI: foliage glean
 - SWFL: hover & glean
- Mating system:
 - LBVI: serially monogamous
 - SWFL: facultatively polygynous
- **Habitat Differences?????**

SWFL Habitat Requirements

- Dense, multi-layered canopy; willow-dominated



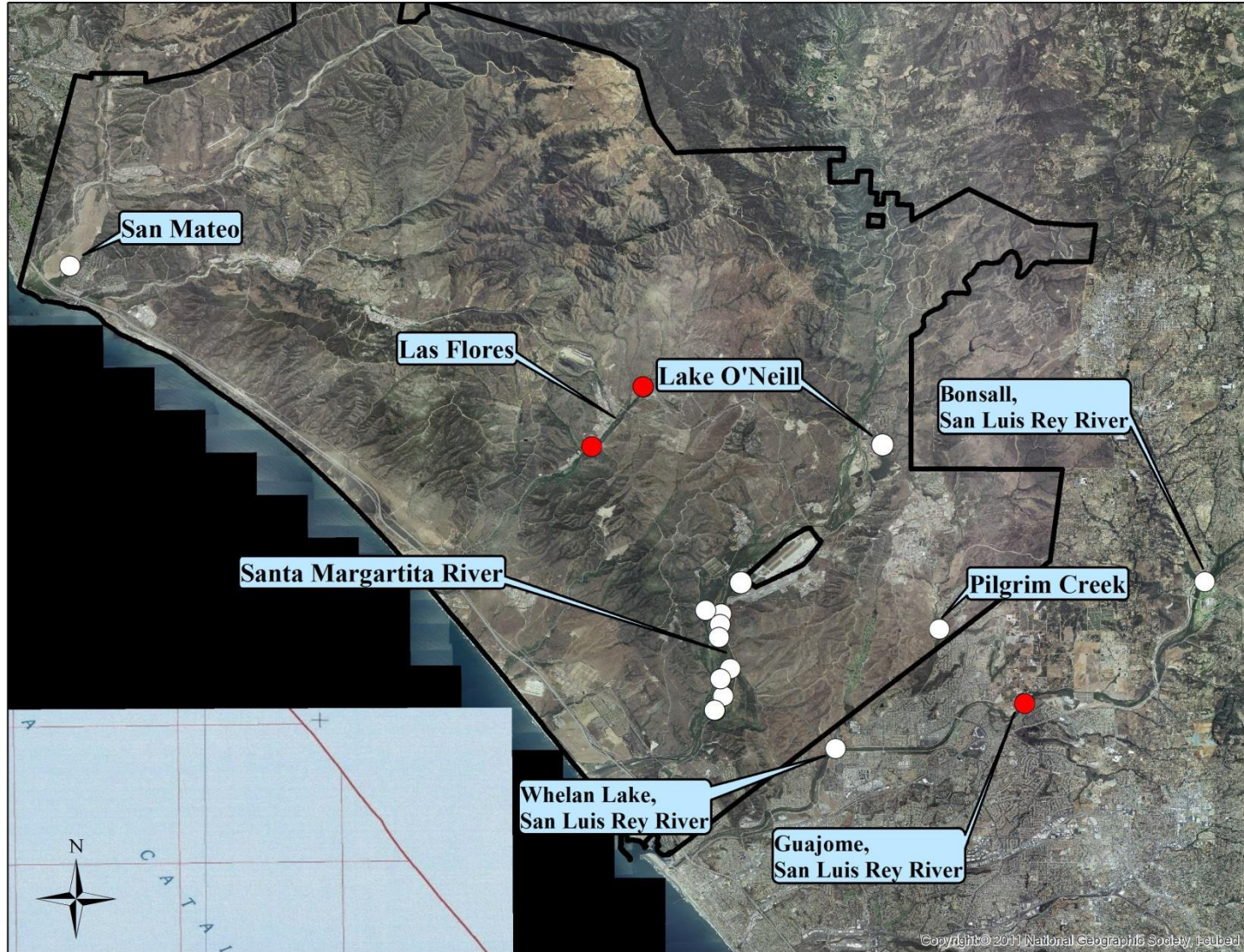
SWFL Habitat Requirements

- Dense, multi-layered canopy; willow-dominated
- Association with surface water (?)



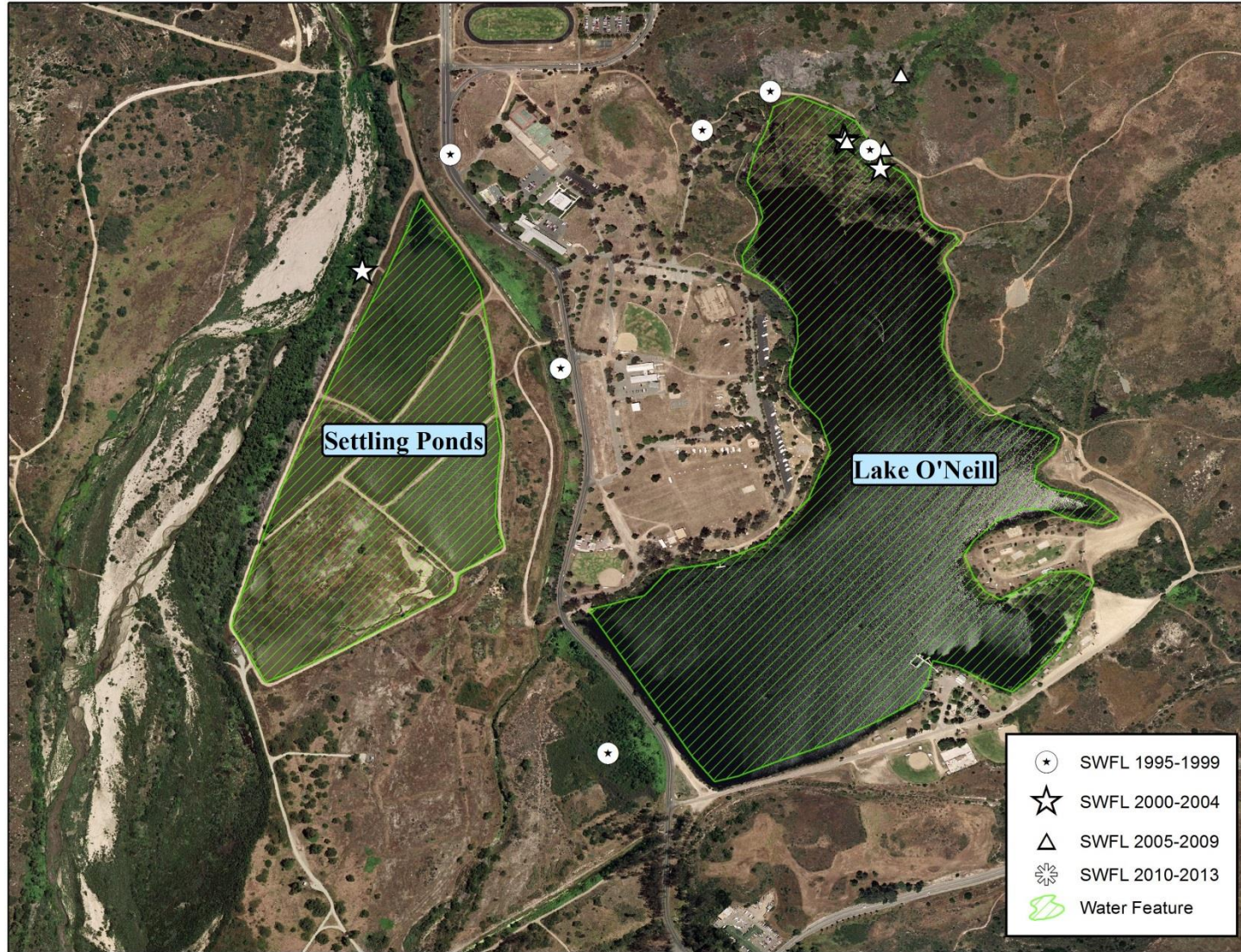
Landscape Scale

SWFL Occurrences in NE San Diego County



Aerial Date: 2012

SWFL Occurrences at MCB Camp Pendleton

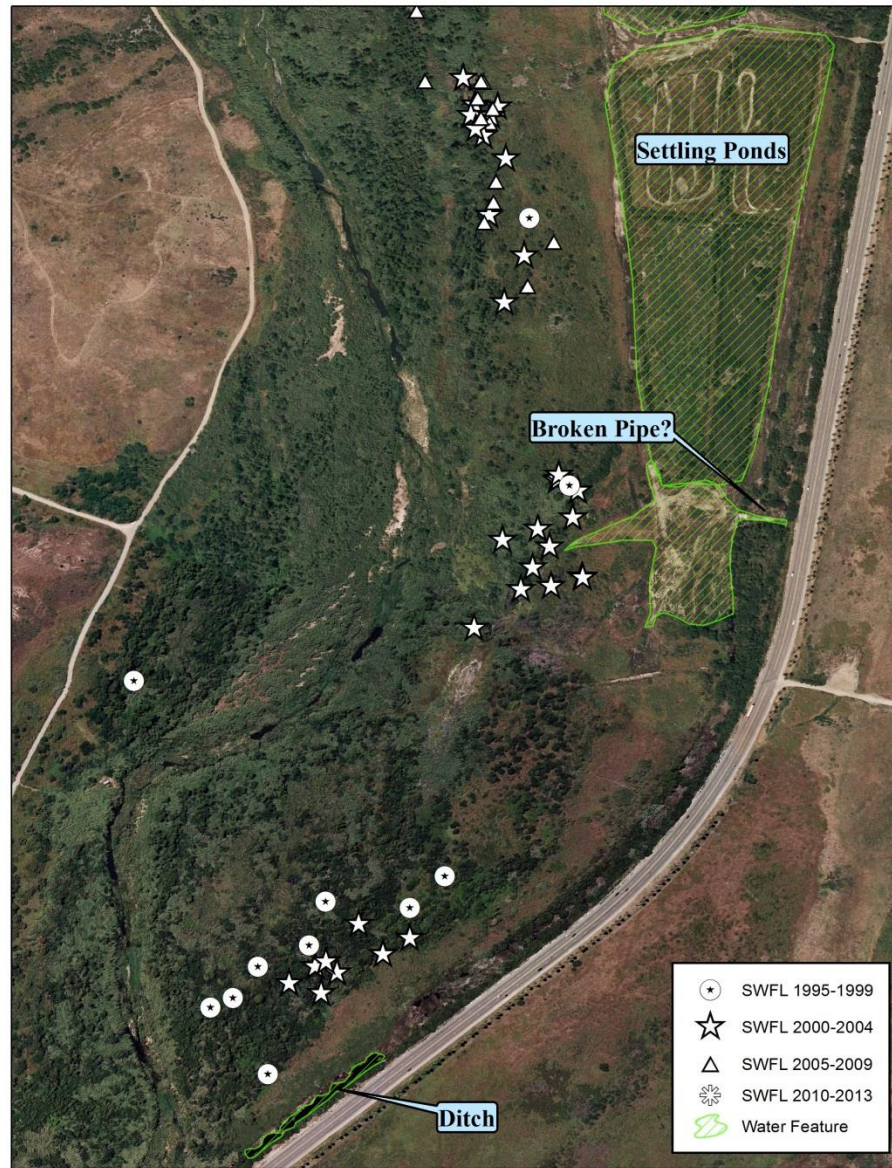


Aerial Date: 2003

SWFL Occurrences at MCB Camp Pendleton

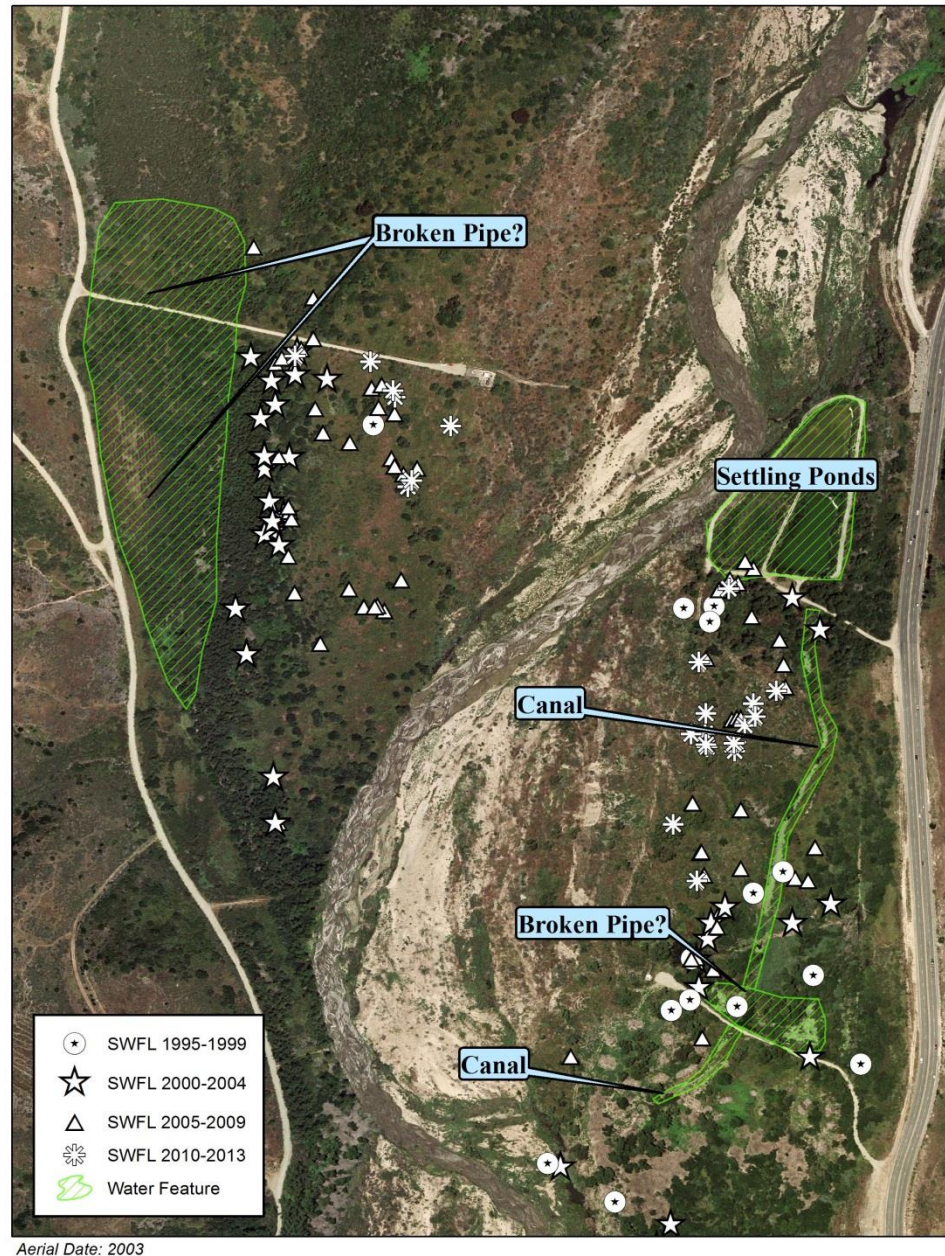


SWFL Occurrences at MCB Camp Pendleton

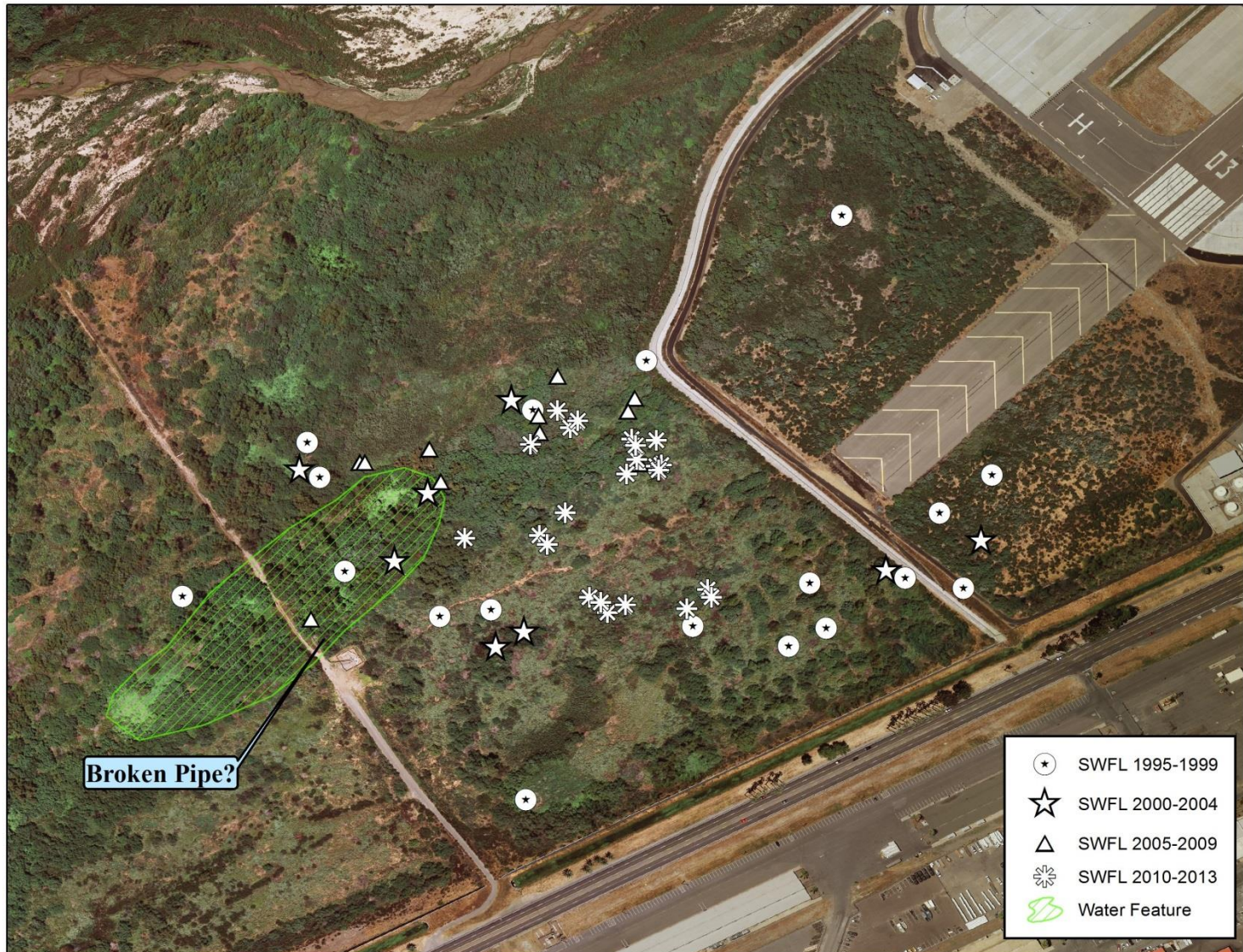


Aerial Date: 2003

SWFL Occurrences at MCB Camp Pendleton



SWFL Occurrences at MCB Camp Pendleton



Aerial Date: 2009

SWFL Occurrences at MCB Camp Pendleton



Aerial Date: 2007

SWFL Occurrences at MCB Camp Pendleton



Aerial Date: 2012

SWFL Occurrences at San Luis Rey River



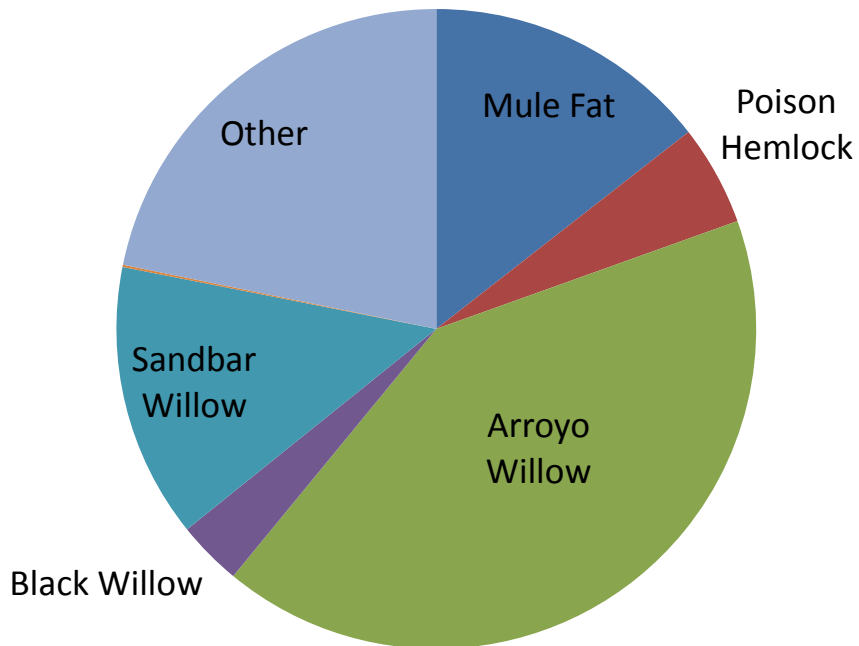
Aerial Date: 2012

Local Scale

SWFL Nest Placement

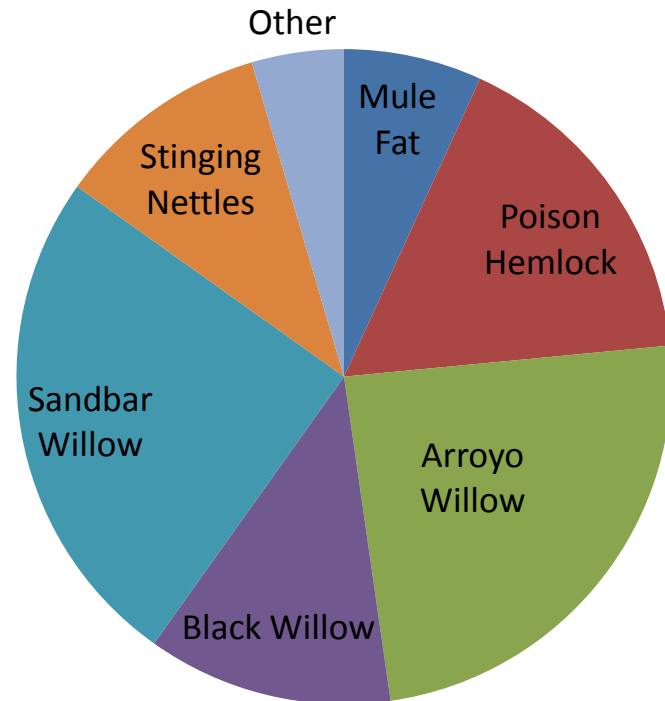
MCB Camp Pendleton 2005-2013

LBVI



N = 886 nests

SWFL

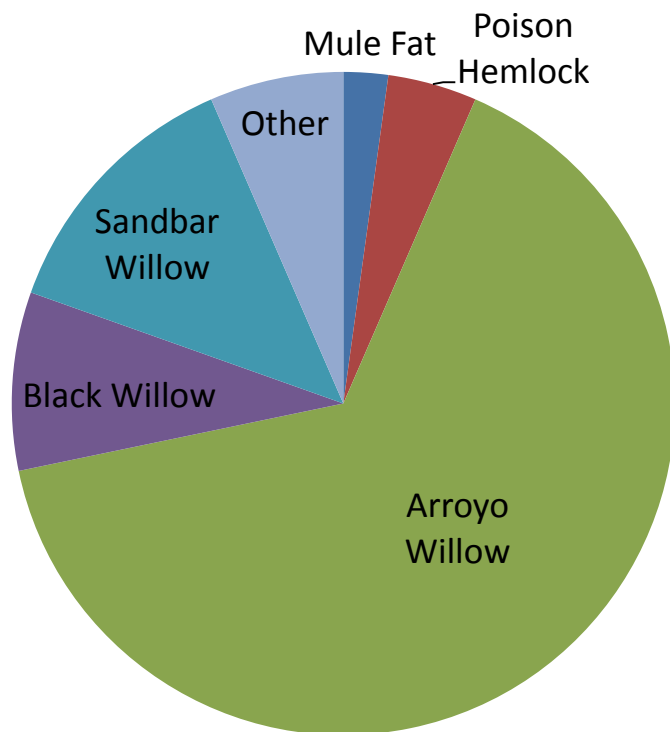


N = 132 nests

SWFL Nest Placement

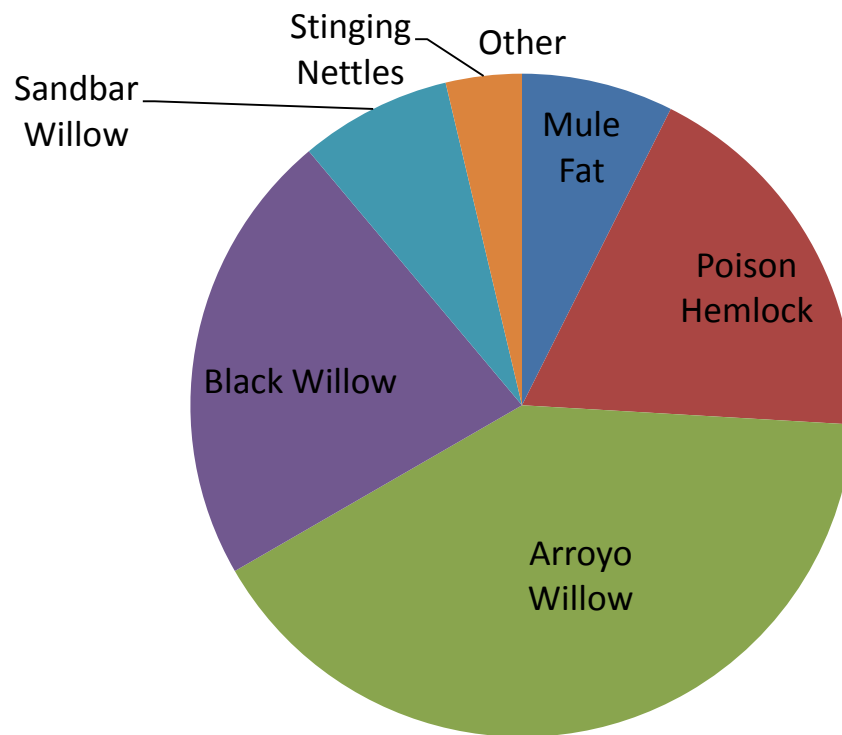
ES Site 2005-2013

LBVI



N = 45 nests

SWFL



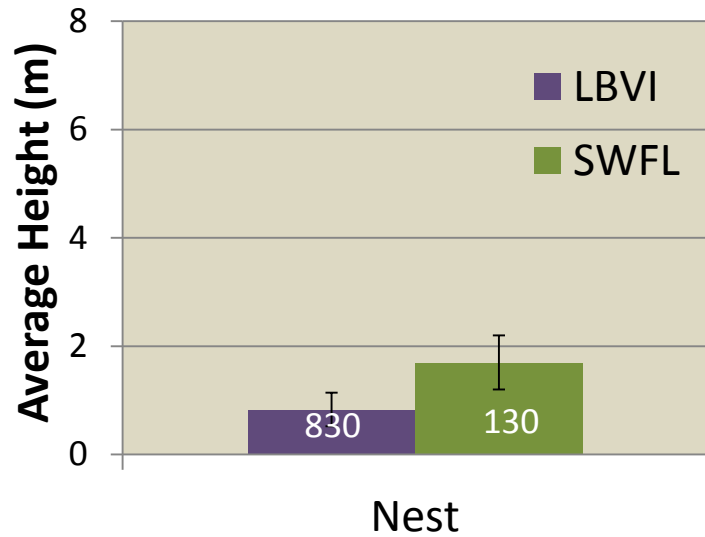
N = 26 nests



Photos by Scarlett Howell

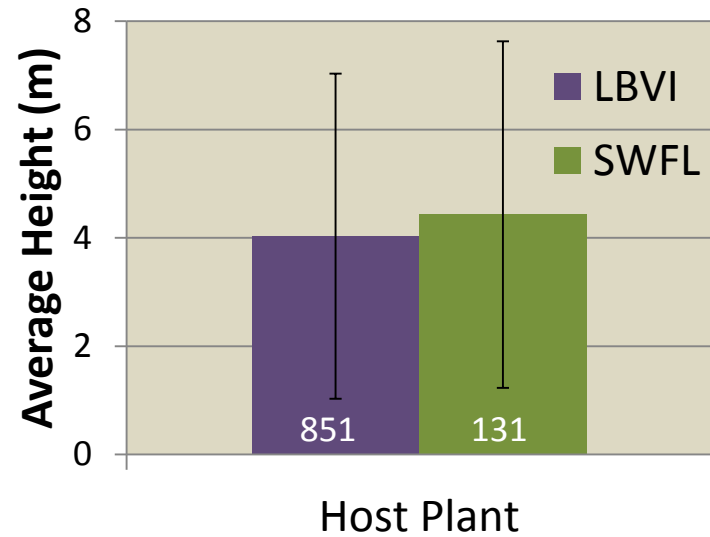
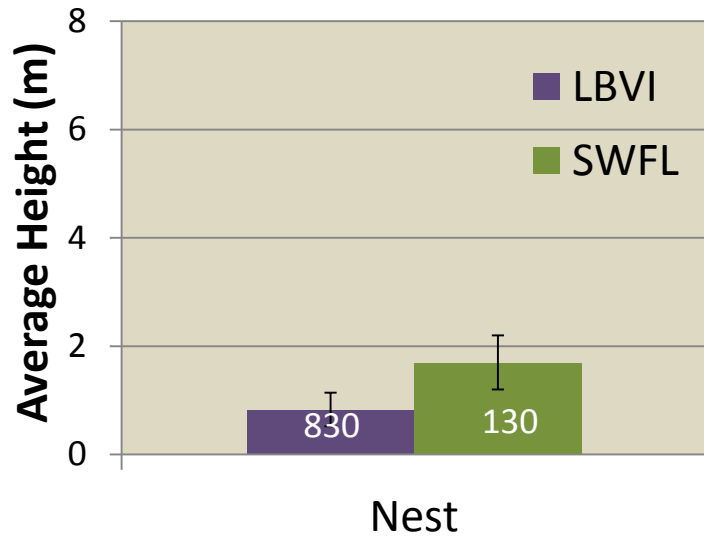
SWFL Nest Height

MCB Camp Pendleton 2005-2013



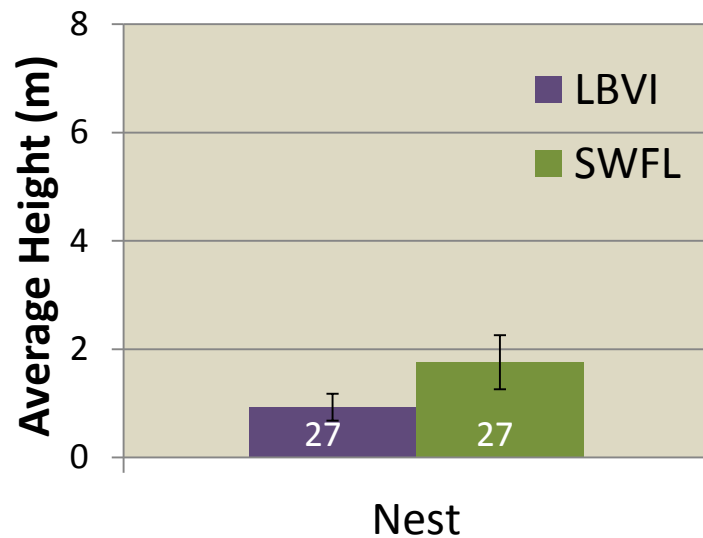
SWFL Nest Height

MCB Camp Pendleton 2005-2013



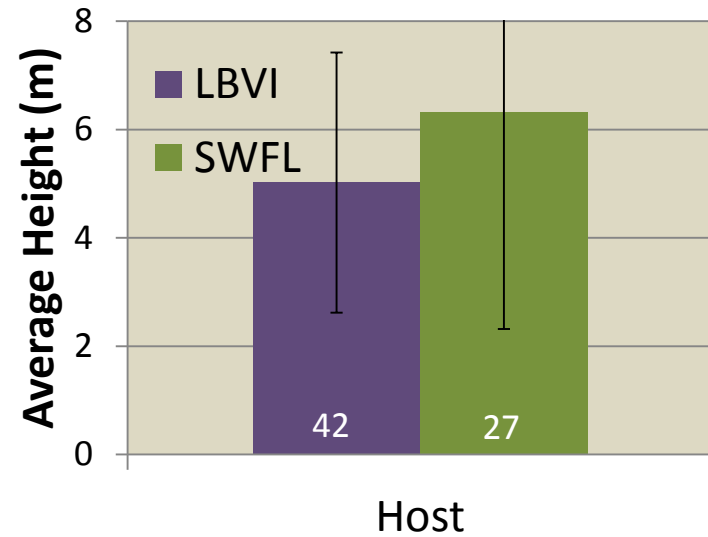
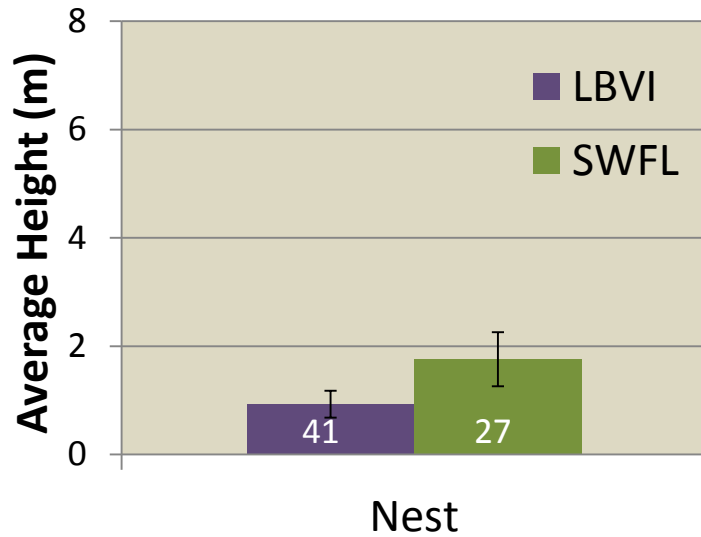
SWFL Nest Height

ES Site 2005-2013



SWFL Nest Height

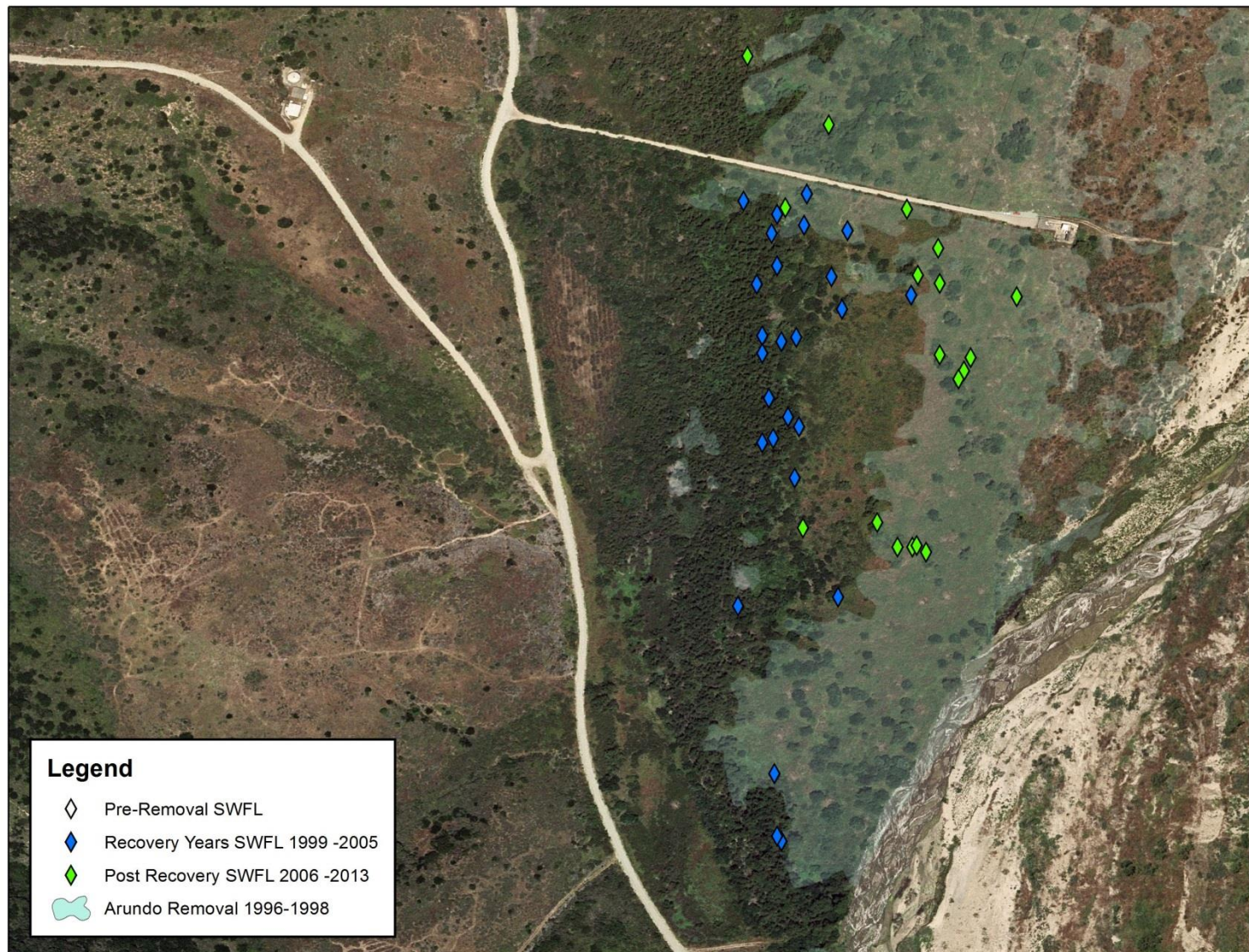
ES Site 2005-2013



SWFL Response to Restoration



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An Inconvenient Truth

Flycatchers Nest in Exotic Species that are the Targets of Eradication

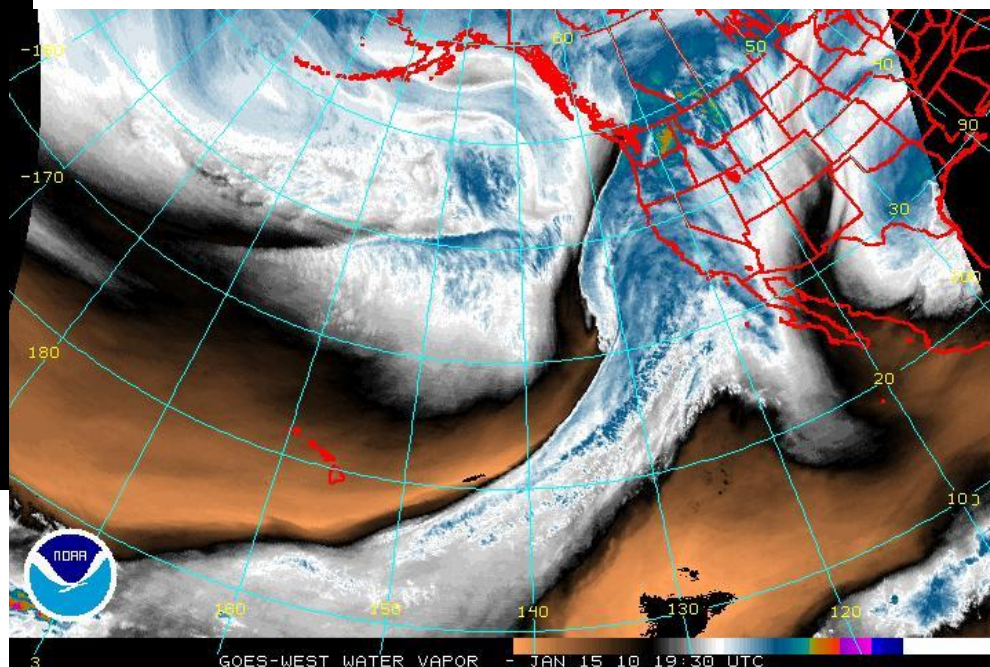
- Tamarisk
- Poison hemlock
- Pepperweed



Restoration projects should consider short-term effects on SWFL nesting habitat

The Future

The Future



Global Climate Change

Climate Change Projections

Predict that distributions of coastal species will move inland and upwards to higher elevations

Research Need:

Improve our understanding of SWFL habitat associations in higher elevation populations (like Lake Henshaw population)

Summary: Guidelines for Restoration

- Create and/or take advantage of opportunities to site restoration near water bodies

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- Recognize that SWFLs nest in exotic species and consider this when implementing eradication programs
- Seek opportunities to protect and restore habitat inland at higher elevations
- Consider use of song broadcast experiments to attract SWFLs to restored habitats

Acknowledgements

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