

Demography of Southwestern Willow Flycatchers in San Diego County, California

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Scarlett Howell
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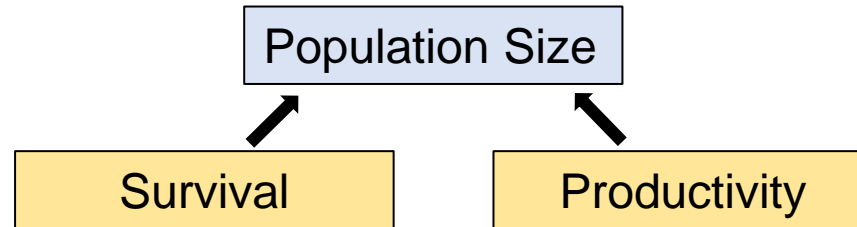
Western Ecological Research Center
San Diego Field Station

Funded by San Diego Association of Governments

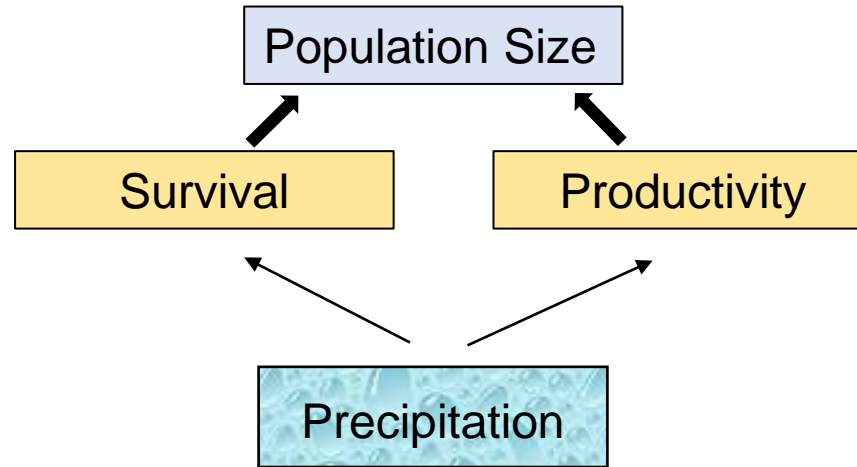
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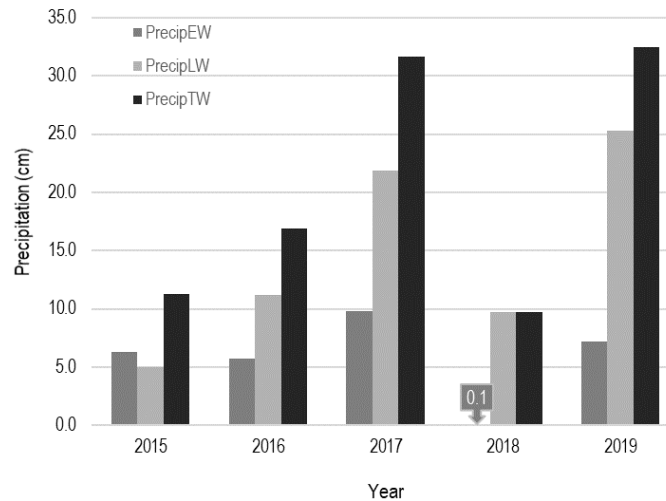
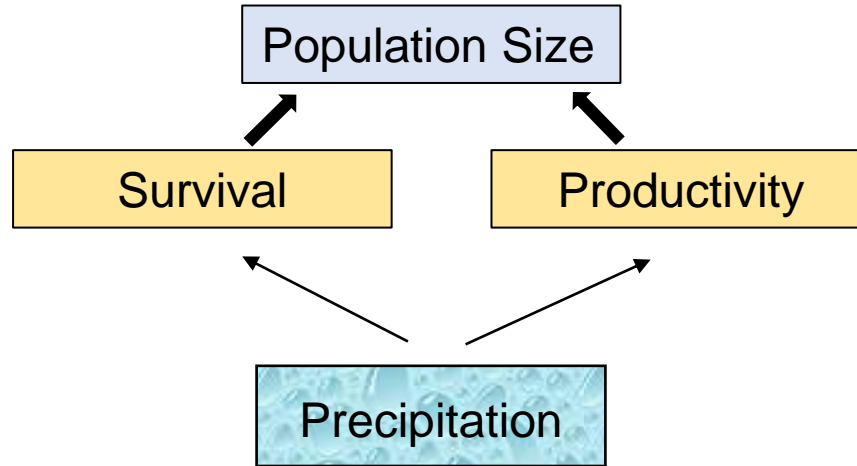
Demographic Study



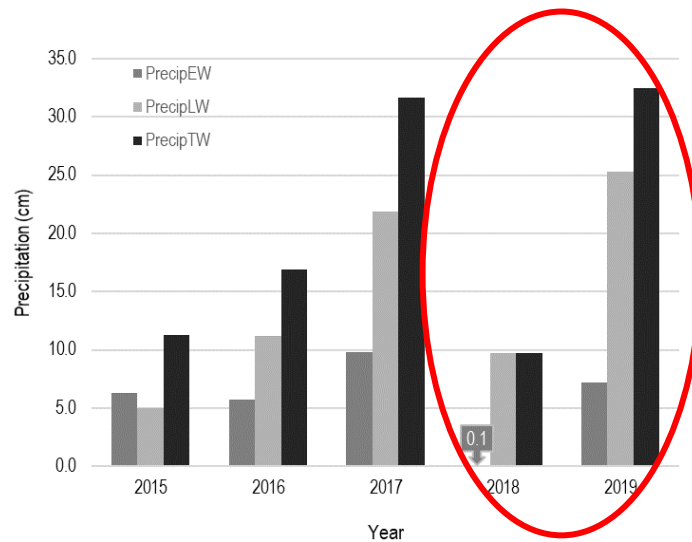
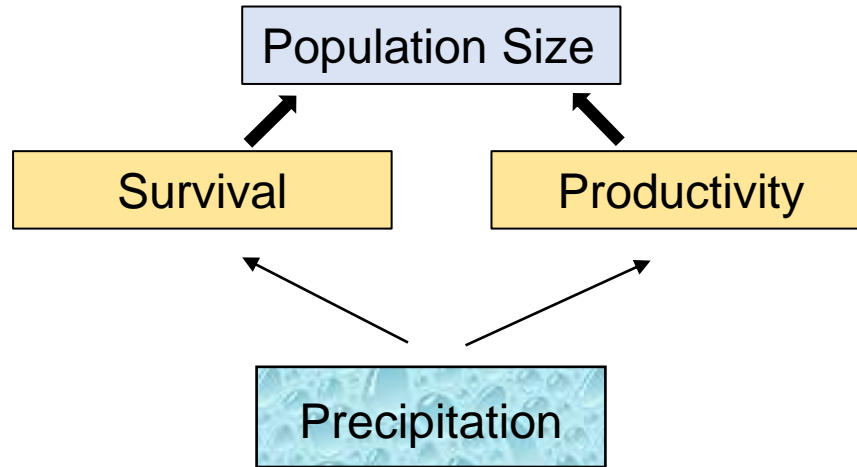
Demographic Study



Demographic Study



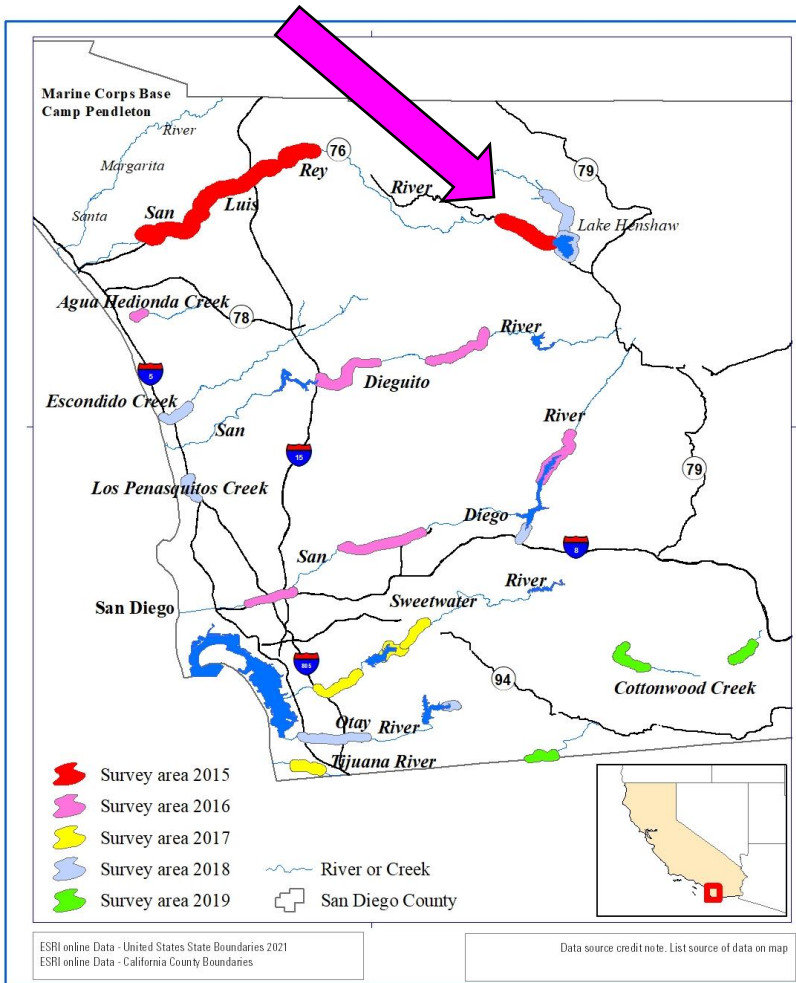
Demographic Study



Study Area

Annual Monitoring 2016-2019:

- Study area encompassed:
 - Vista Irrigation District
 - Cleveland National Forest
 - Rey River Ranch
- 14-27 territories per year (mid-May – August)



Nest Monitoring

Annual Monitoring 2016-2019:

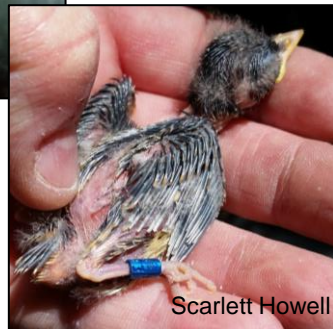


- Study area encompassed:
 - Vista Irrigation District
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- 14-27 territories per year (mid-May – August)
- 18-41 nests per year
 - Nest success (Prop. nests that fledge)
 - Clutch size
 - Parasitism rate (Prop. nests parasitized)
 - Hatch rate (% eggs that hatch)
 - Fledge rate (% nestlings that fledge)
 - **Fledglings per pair**
- Daily nest survival

Monitoring Sites



Scarlett Howell



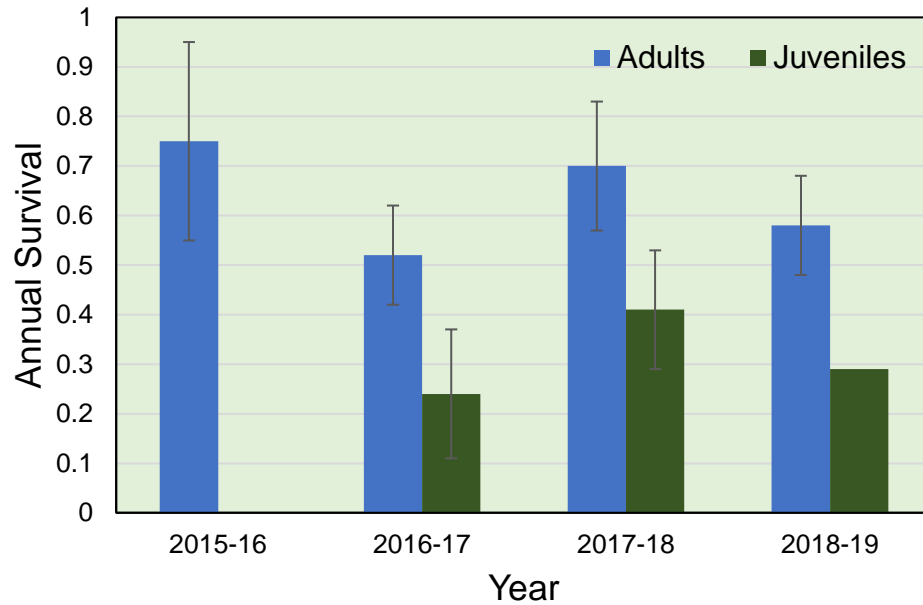
Scarlett Howell

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 - **Fledglings per pair**
- Daily nest survival
- Color banded nestlings and adults
 - Adult survival
 - Juvenile survival

Survival

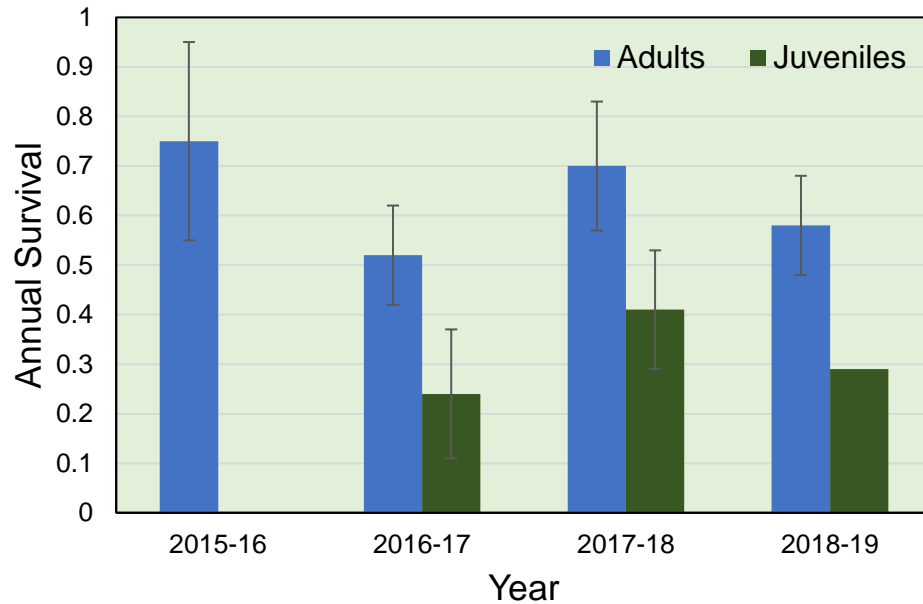
Annual Survival



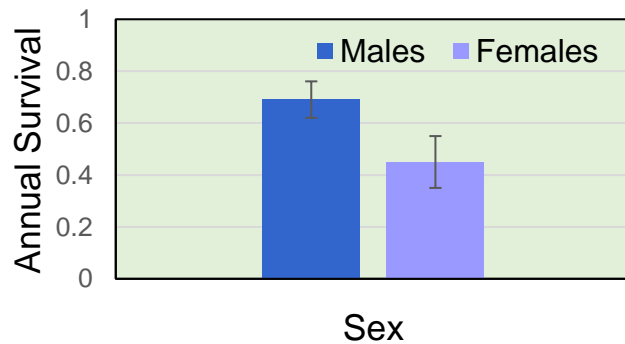
➤ Adults > Juveniles



Annual Survival

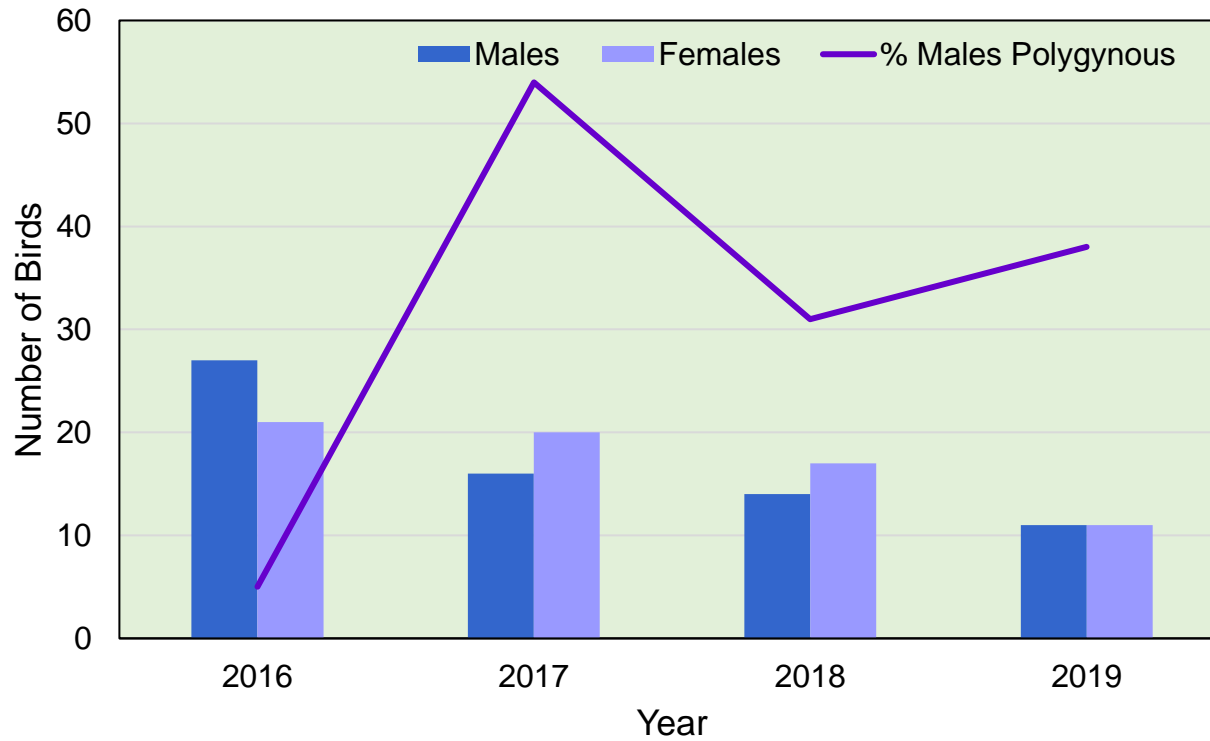


- Adults > Juveniles
- Males > Females (Adults)
- No effect of precipitation

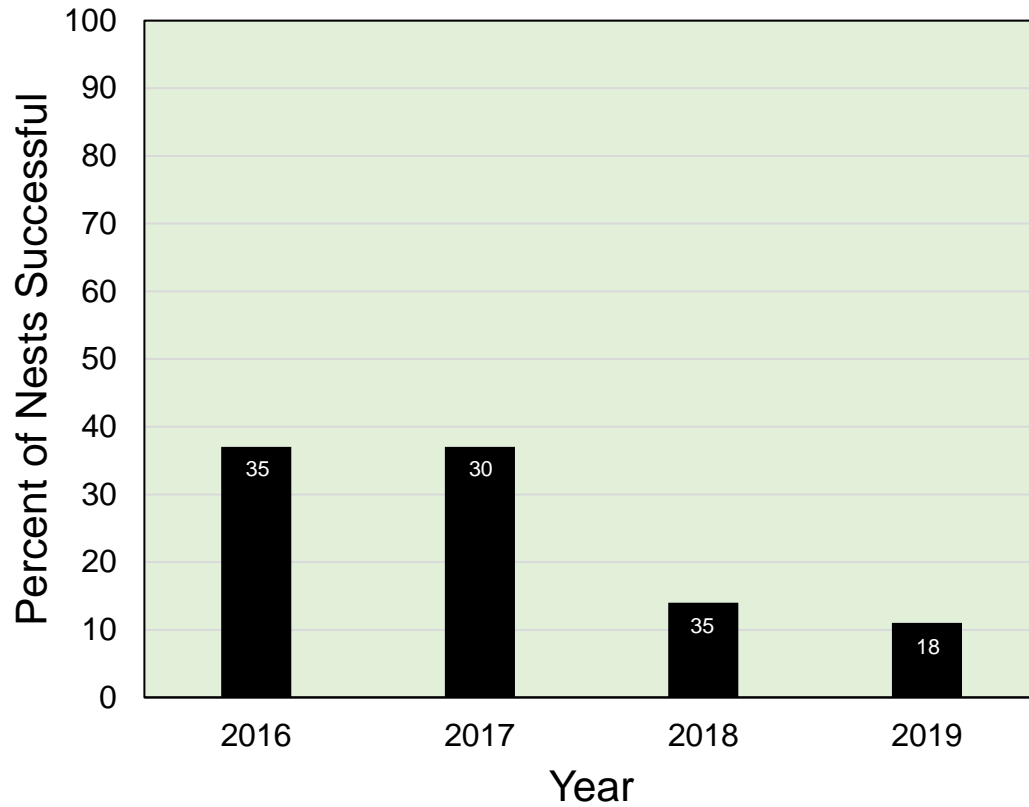


Productivity

Polygyny

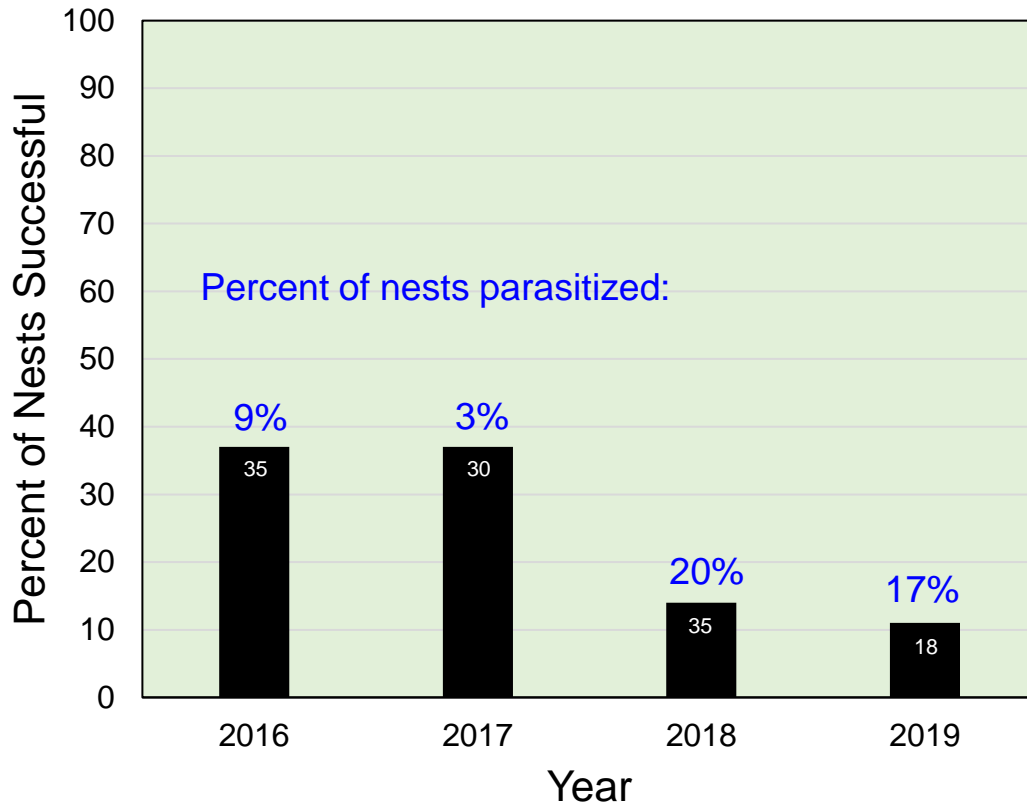


Nest Success



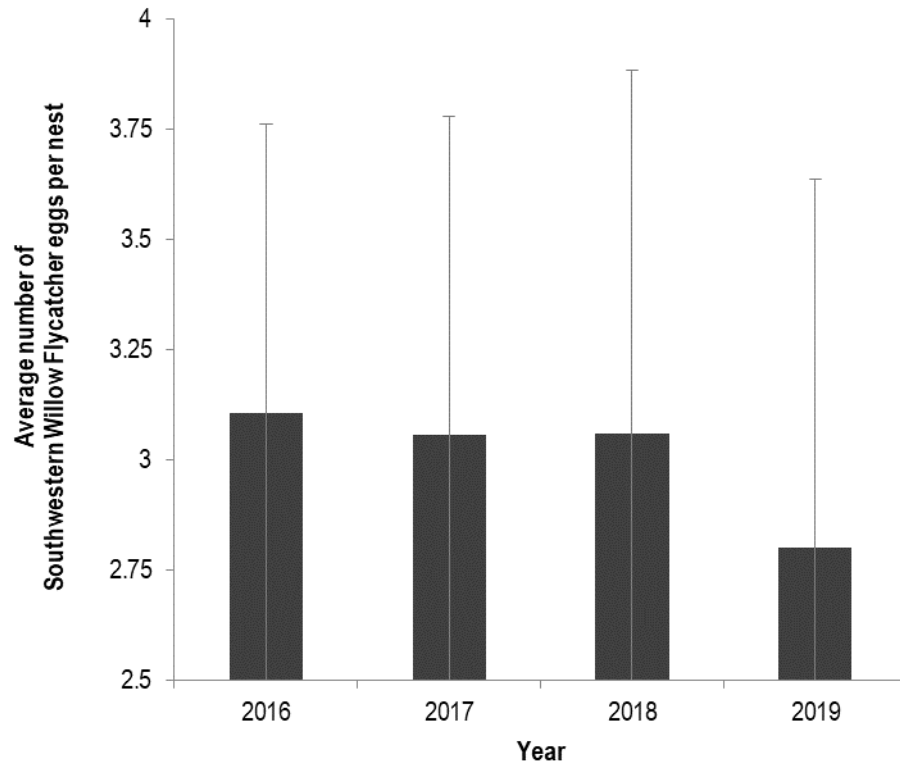
➤ Declined over time:
2016, 2017 > 2018, 2019

Nest Success



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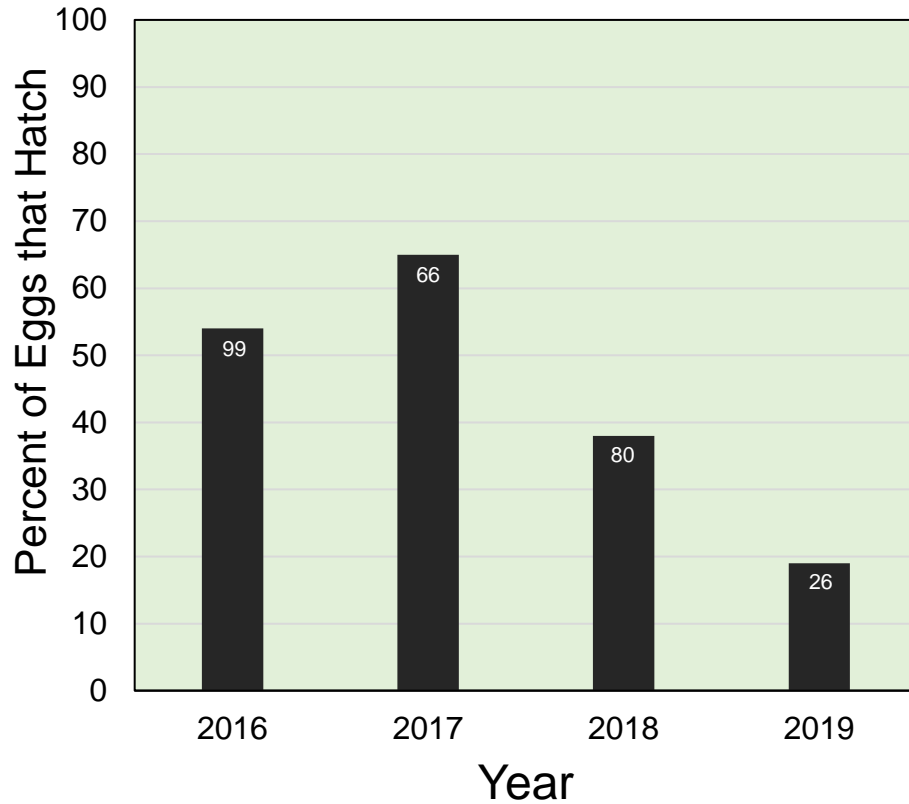
Clutch Size



- Based on full clutches in non-parasitized nests
- No significant difference across years

Hatching Success

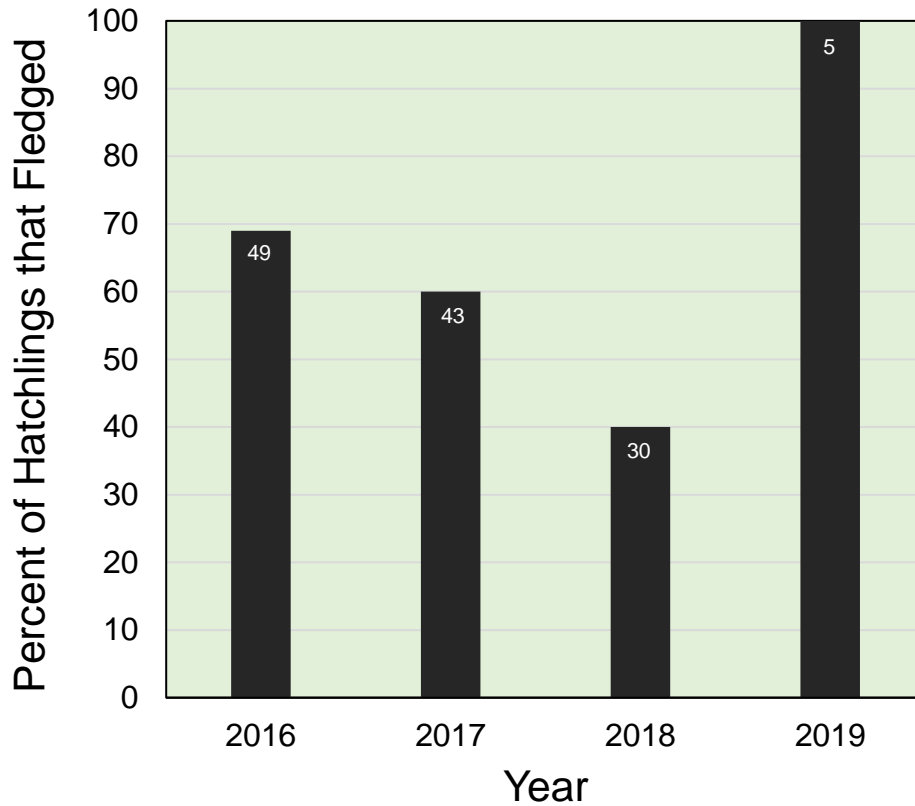
Percent of Eggs that Hatch



➤ Declined over time:
2016, 2017 > 2018, 2019

Fledging Success

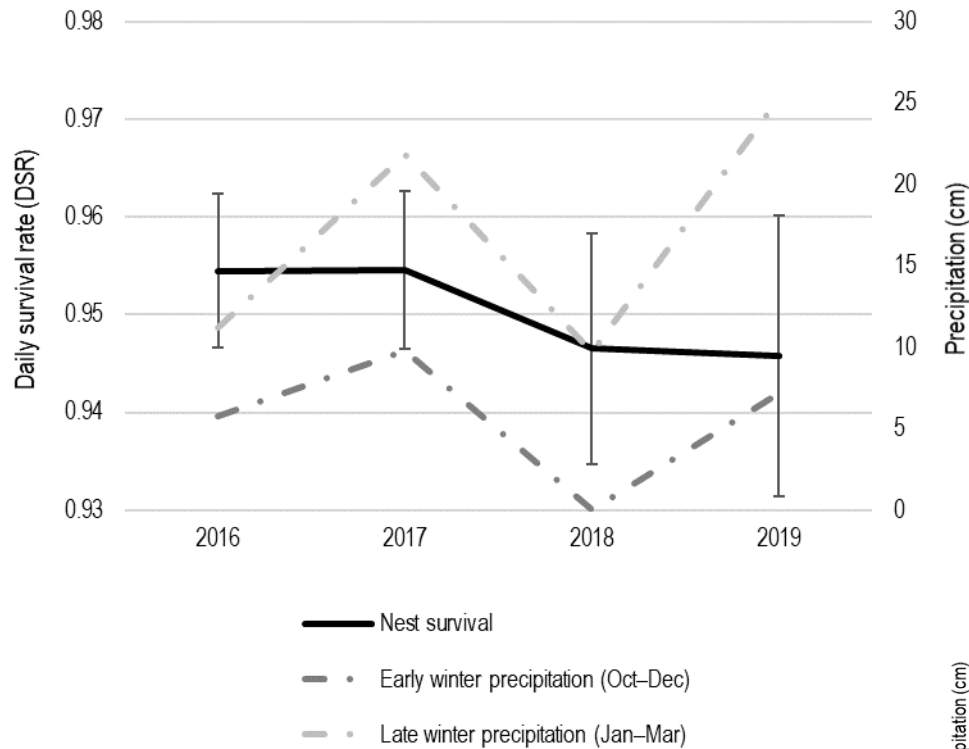
Percent of Hatchlings that Fledge



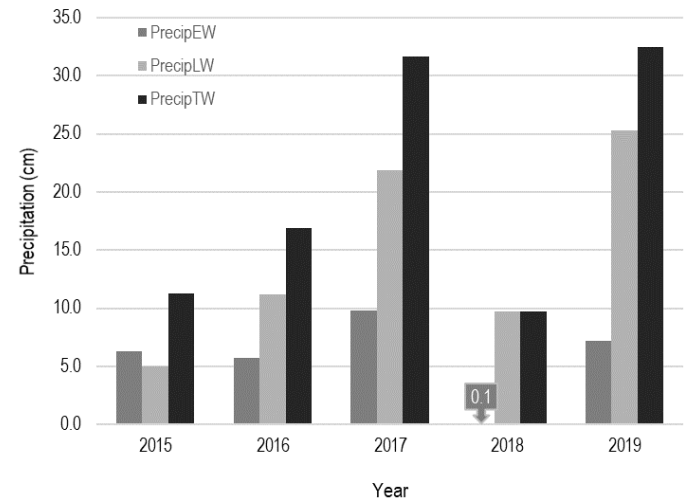
➤ Differed across years:
2018 < 2019

Daily Nest Survival

Probability that a nest will survive from one day to the next

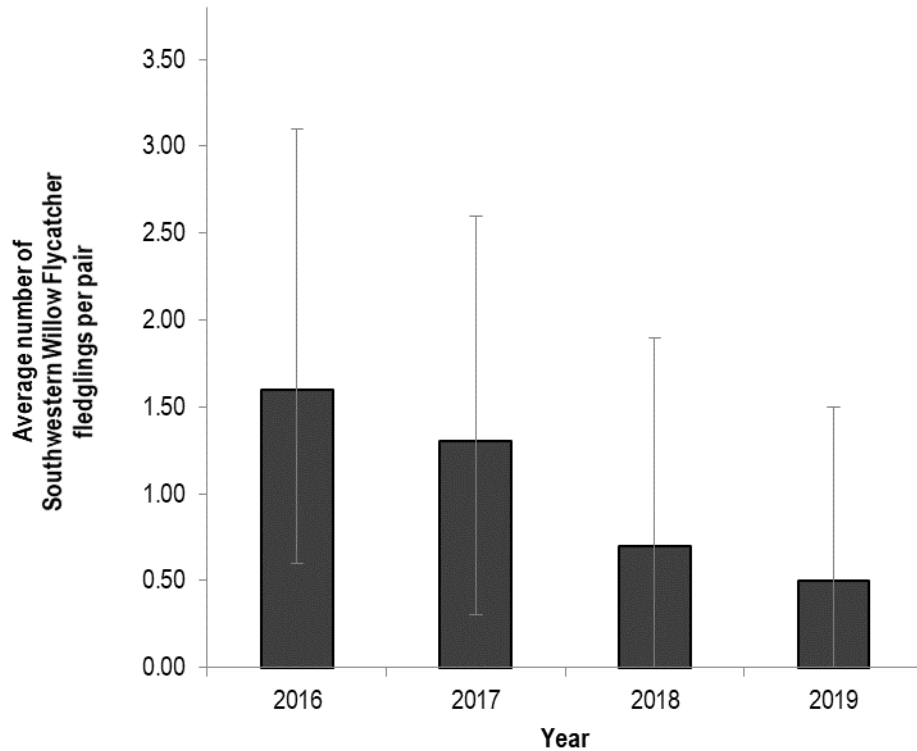


- Year effect:
2016, 2017 > 2018, 2019
- Precipitation effect:
Early winter +
Late winter -



Productivity

Number Fledglings per Pair



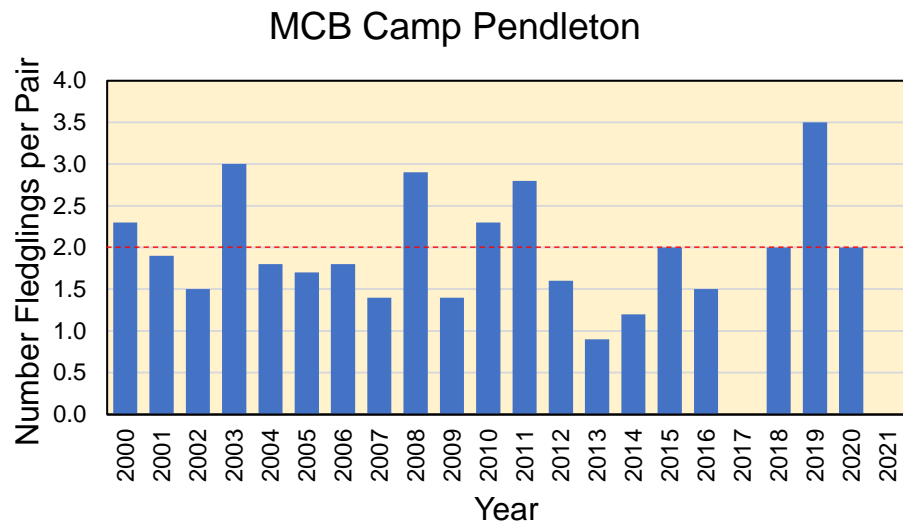
- Productivity declined across years
- Productivity low in all years



Summary

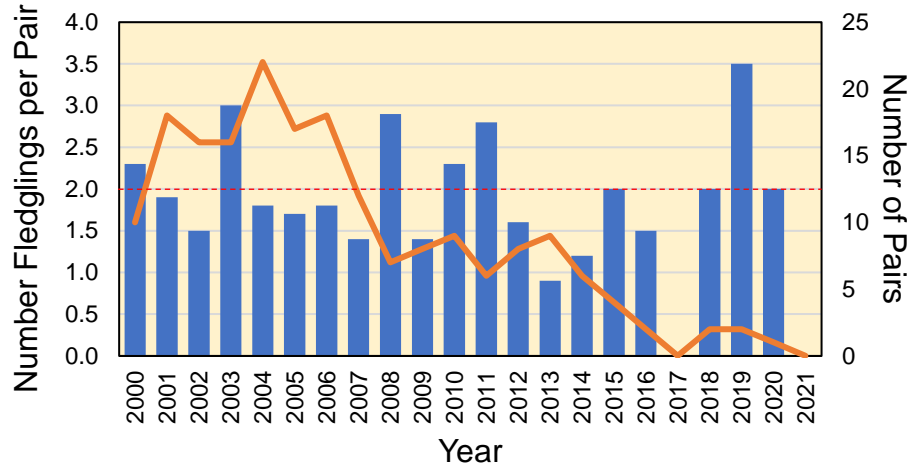
- ❖ Survival
 - Did not differ across years
 - Unrelated to precipitation *on the breeding grounds*
 - Appears to be less susceptible than other demographic parameters to factors promoting population declines.
- ❖ Nest success and productivity
 - Declined over time: 2016 and 2017 versus 2018 and 2019
 - Predation major cause of nest failure; at both egg and nestling stage
- ❖ Precipitation was a predictor of daily nest survival
 - Relationship was complex and largely based on differences in 2018 and 2019
 - Warrants further examination
- ❖ Parasitism increased over the study; approached threshold for management
- ❖ Productivity (# young per pair) not only declined, but was below simple replacement rate for stable population
- ❖ Polygyny slowing population decline
 - All females mated
 - Not all males mated >> reduced genetic diversity of population

Summary

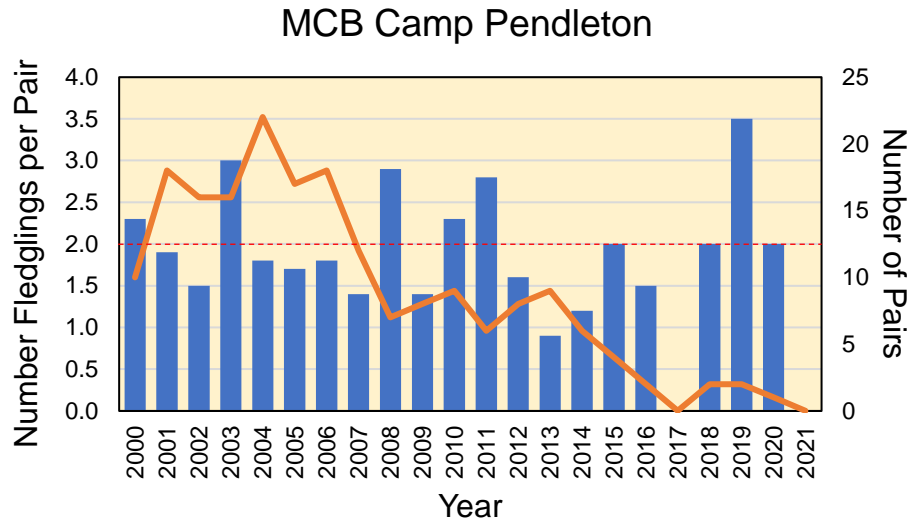


Summary

MCB Camp Pendleton



Summary



Productivity isn't everything, **BUT** it's fundamental.

Focus on managing and improving conditions that influence productivity

- ❖ Cowbird control appears warranted
- ❖ Improve habitat conditions
 - Create/manage wetlands that support SWFL
 - Restore damaged habitat to support SWFL

Acknowledgements

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Field Biologists: Alexandra Houston
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Rachelle McLaughlin
Devin Taylor
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We thank the land managers, property owners, and other stakeholders who facilitated access to the monitoring locations, including: Board of Directors, Richard Larson, and Don Smith, Vista Irrigation District; Jeff Wells and Kirsten Winter, U.S. Forest Service; and Rey River Ranch.

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Thank-you!