

# MONITORING THE HEALTH OF RIPARIAN BIRD POPULATIONS AT TUMACACORI NATIONAL HISTORICAL PARK

Chris Kirkpatrick, Courtney J. Conway,  
Dominic LaRoche, and Gabrielle Robinson  
School of Natural Resources, Univ. of Arizona













# A Potential Problem?

Since 1997, researchers have monitored bird populations at Park through MAPS program

- Signs of physical abnormalities or disease:
  - lesions around eyes/bills
  - lesions on legs/feet
  - subcutaneous tumors
  - bill deformities



Photo: Larry Norris (NPS)

Virtually no similar problems at a nearby MAPS station

# A Potential Problem?

Possible explanations for observed abnormalities:

- Birds infected with avian pox?
- Birds negatively affected by environmental contaminants?
- Interaction between environmental contaminants and disease?

# Project Objectives

At both Tumacacori NHP and a control site at Cienega Creek:

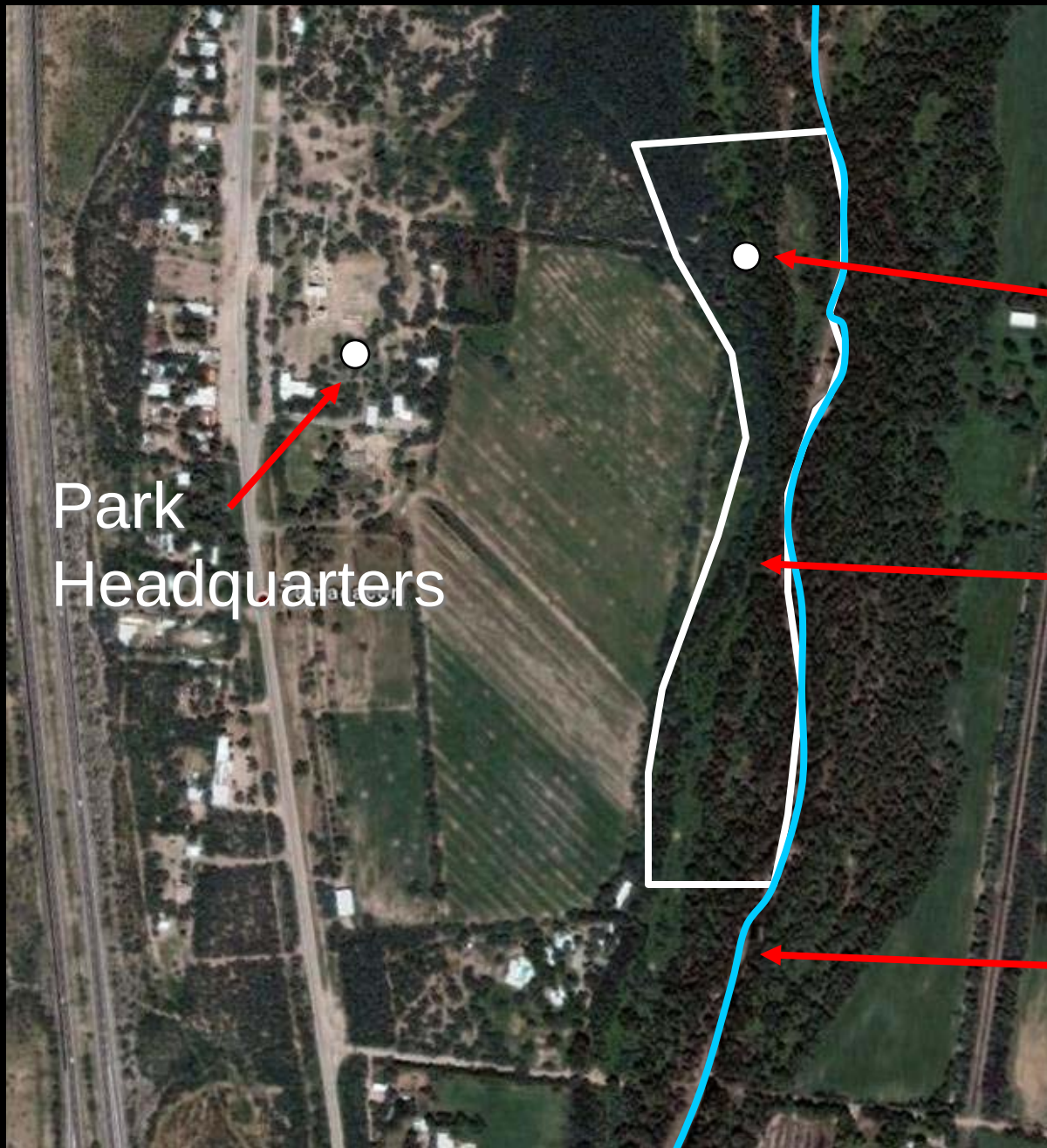
- Quantify prevalence of physical abnormalities or disease in adult and nestling birds
- Measure avian reproductive parameters
- Identify underlying causes of any observed abnormalities or disease

# Study Sites



Cienega  
Creek

Tumacacori  
NHP



# Tuma Site

MAPS station

nest-monitoring plot (~150 x 800 m)

Santa Cruz River

# Nest Monitoring

- Locating and monitoring nest of all riparian bird species at both study sites
- Concentrating efforts on 3 focal species:



# Nest Monitoring

- Measuring reproductive parameters including:

- clutch size
- egg volume
- hatching success
- nestling growth rates



- Conducting physical examinations of nestlings
- Collecting infertile egg and feather samples

# Capturing Adult Birds

Working with MAPS researchers at Tumacacori:

- Conducting physical examinations
- Collecting blood and feather samples
- Collecting skin scrapings from pox-like lesions



# Preliminary Results from 2008



- Located and monitored 271 nests of 39 species including:



- 65 yellow-breasted chat
- 40 Bell's vireo
- 27 Abert's towhee

# Prevalence of Physical Abnormalities or Disease

- Examined >200 nestling birds at our 2 sites
- Found physical abnormalities in only 1 nestling
  - a yellow-breasted chat at Tumacacori



Abnormal



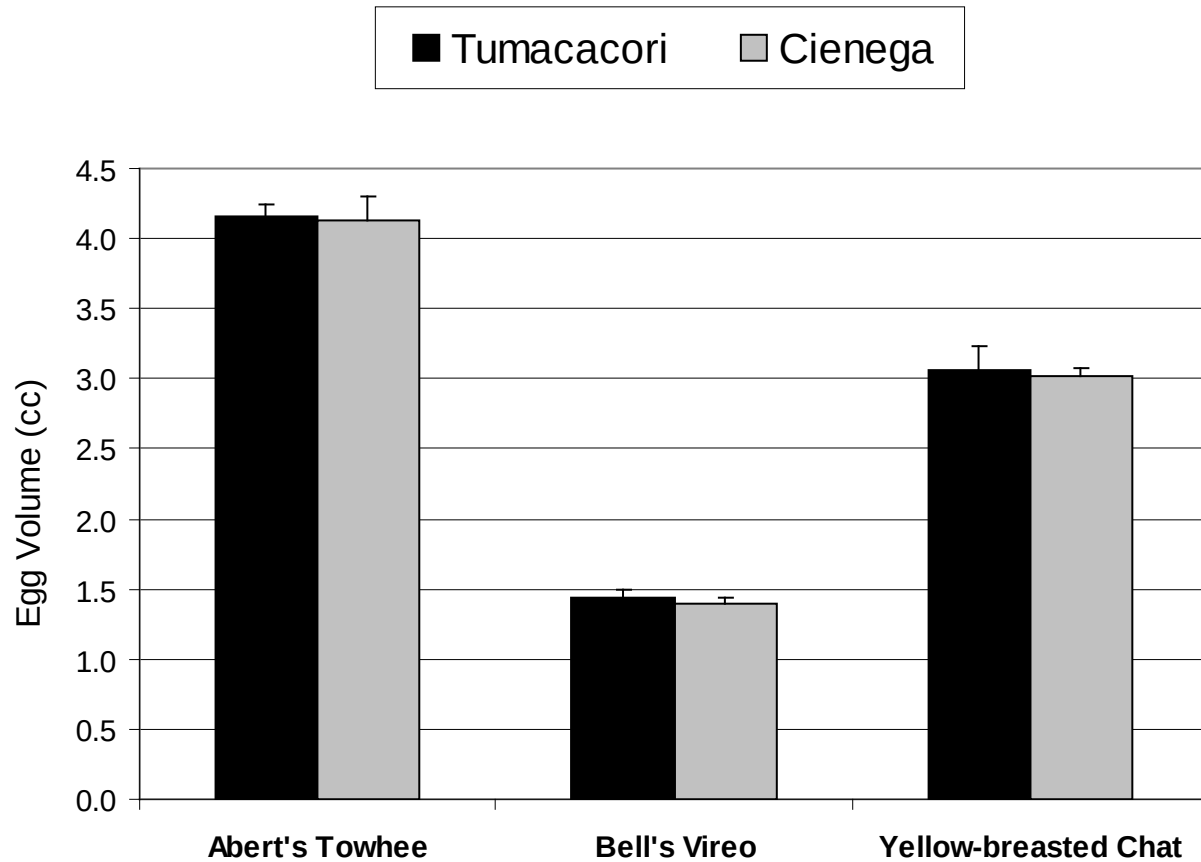
Normal

# Prevalence of Physical Abnormalities or Disease

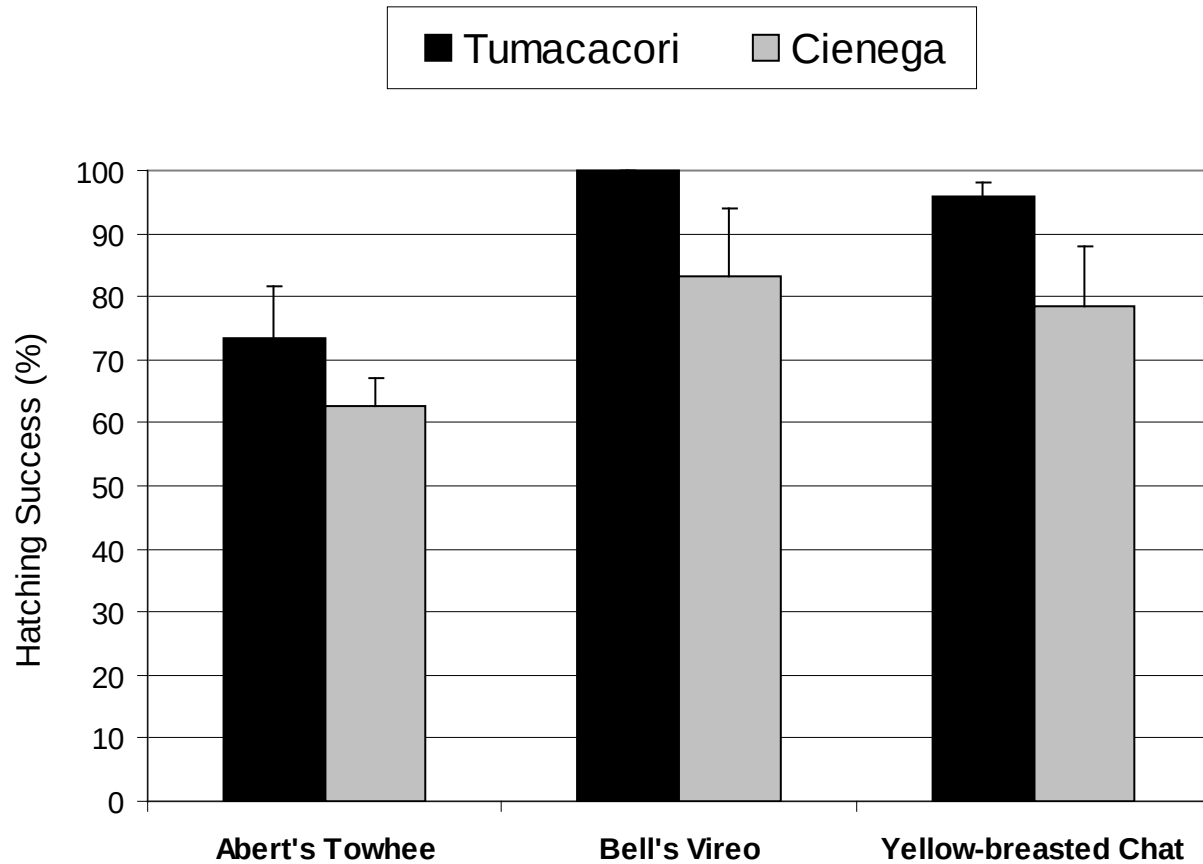
- Examined >100 adult birds and found signs of physical abnormalities or disease in <5% of adults
- Old pox-like lesions on:
  - 1 Bewick's wren
  - 1 Lucy's warbler
  - 2 yellow-breasted chats
- Possible subcutaneous tumors on:
  - 1 yellow-breasted chat



# Egg Volume



# Hatching Success



# Nestling Growth Rate

- Nestling growth rate for yellow-breasted chats was greater at Tumacacori than Cienega Creek



# Summary

- Prevalence of physical abnormalities and signs of disease were low in nestling and adult birds at Tumacacori
- Reproductive parameters at Tumacacori were either equal to or greater than those at our control site at Cienega Creek
- Breeding populations appear to have been healthy at Tumacacori in 2008

# Fieldwork in 2009

- Continue monitoring nests and adult birds at both study sites
- Analyze egg, blood, feather, and skin samples



# Thanks To:

- Field Techs: Ann Johnson, Robert Beatson, Jake Mohlmann, Moez Ali, Jan Wilson, & Art Schaub
- Larry Norris, Wade Leitner, and the entire MAPS banding crew
- Lisa Carrico, Jeremy Moss, and the staff at Tumacacori NHP
- Kerry Baldwin (PAG)