

Developing Habitat Models and Monitoring Techniques for Nine Bird Species of Clark County, 2008 - 2013

(2005-GBBO-581-P)

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Project Objectives

- Establish population baselines for nine species: distribution, abundance
- Model habitats for nine species
- Establish monitoring program for landbirds



Nine MSHCP Priority Species

Covered:

Willow Flycatcher

Vermilion Flycatcher

Phainopepla

Summer Tanager

Bell's Vireo

Blue Grosbeak

Evaluation:

Bendire's Thrasher

Le Conte's Thrasher

Gray Vireo



Vermilion Flycatchers at nest (photo by Jen Ballard)

Clark County MSHCP in 2003

- Where are the birds now and how many?
- How can we prevent extirpation (what do they need, how do we know when they decline and why)?
- We want large-scale monitoring, and we want surveillance monitoring
- We are concerned about riparian birds

Clark County MSHCP in 2012

- Manage species locally, not regionally
- Effectiveness monitoring
- Specific management and restoration techniques emphasized
- Different species emphasized



Bendire's Thrasher
(photo by Martin Meyers)

Methods

- ▣ Randomly selected point count transects (stratified by habitat)
 - ▣ New random scatter deployed in 2012 to refine spatial models and ranges
- ▣ Intensive area searches for double-sampling and removal methods for detectability estimation

Methods – cont'd

- ▣ Conceptual models for species completed

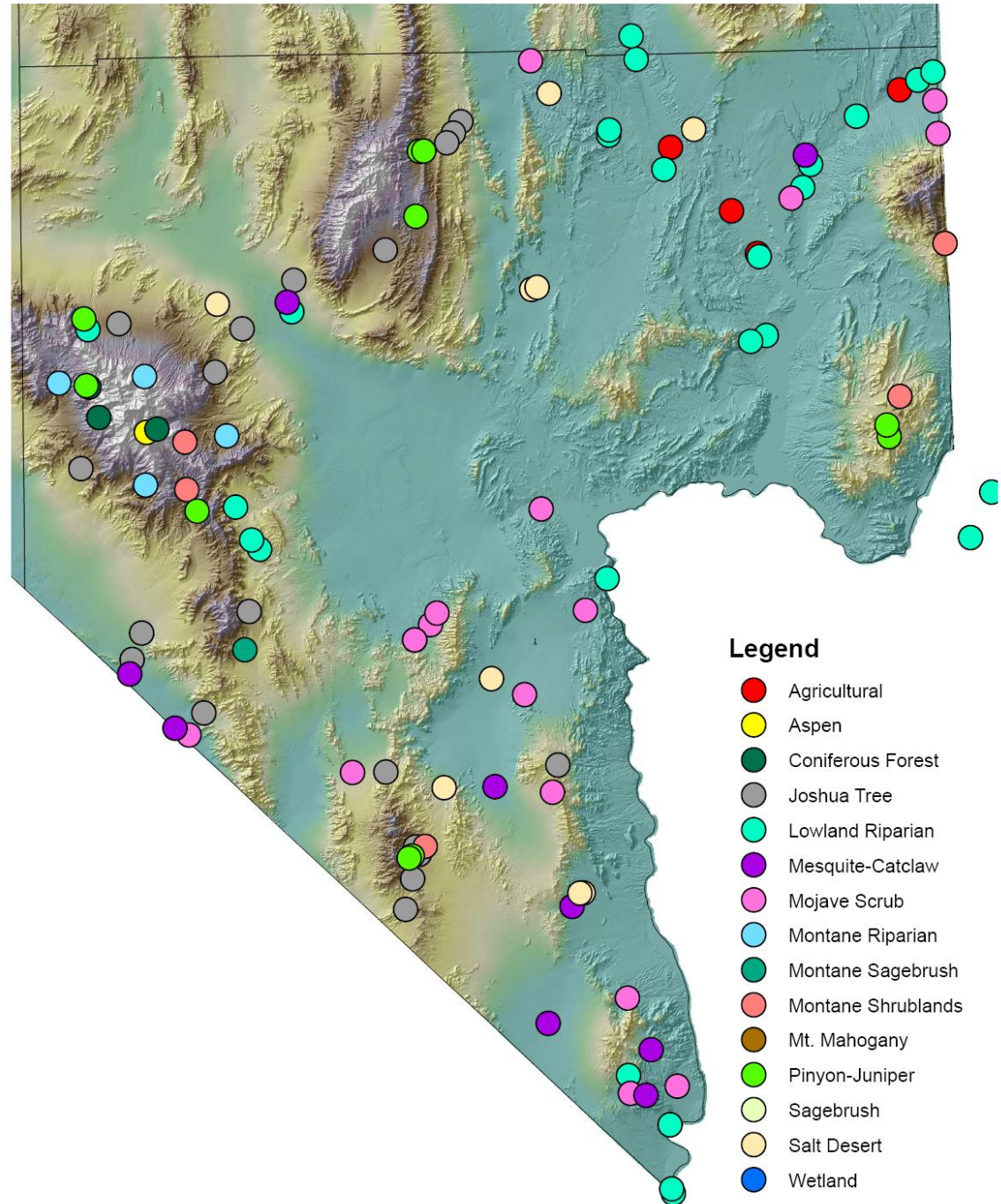
- ▣ Habitat models
 - ▣ Spatial models completed based on new spatial data and regression models
 - ▣ Field habitat assessments will be completed this year to be used in statistical habitat models

Nevada Bird Count Transect Locations Within Clark County, Nevada

Clark County, 2008-12:

194 point count transects
496 surveys

30 area search plots
8-10 visits each



Results

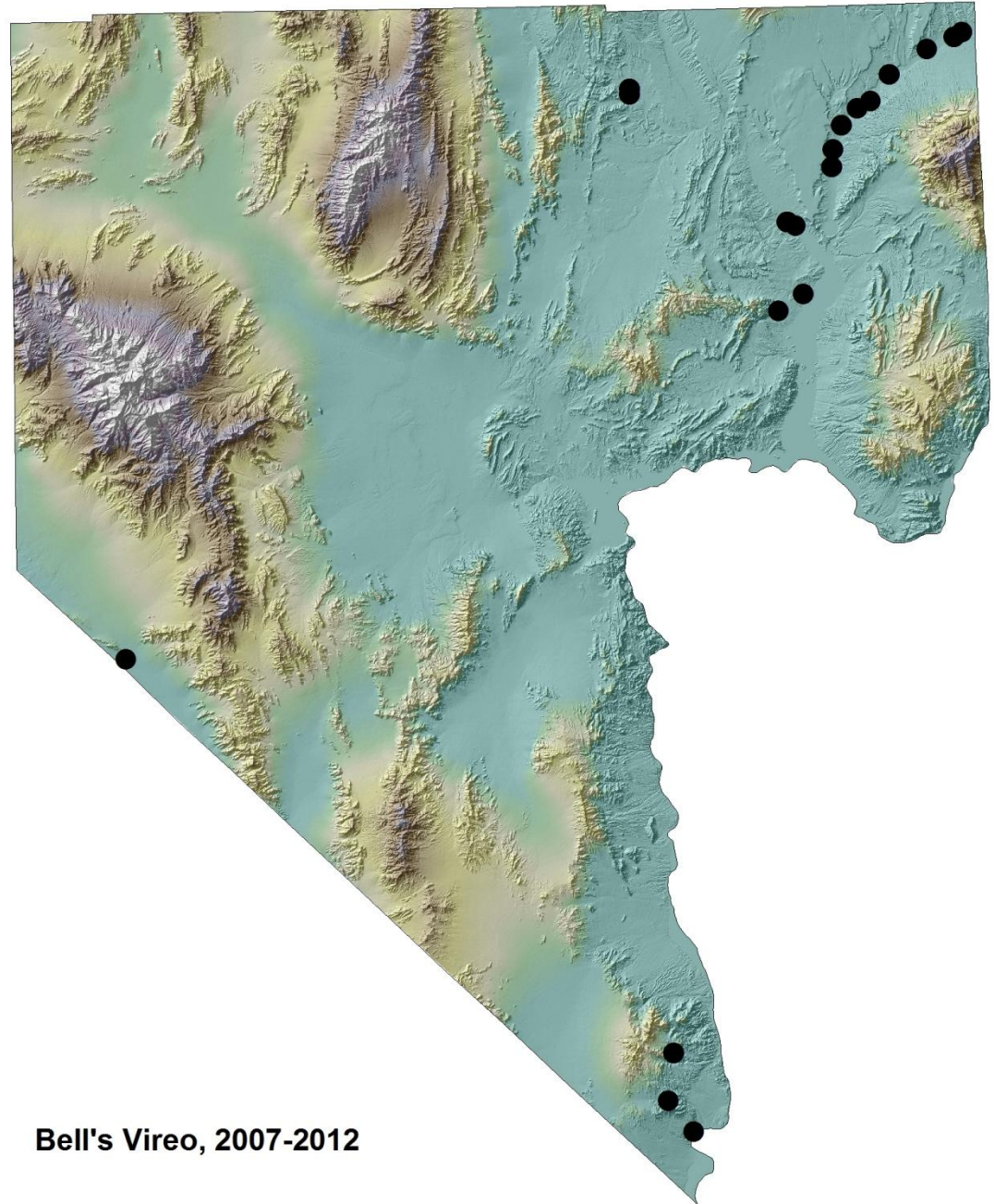
For each species (only some reported here):

- ▣ Actual Distribution
- ▣ Conceptual model
- ▣ Actual habitat use
- ▣ Predictive model using TNC's model of habitat conditions

Bell's Vireo

Clark County Distribution

N = 145

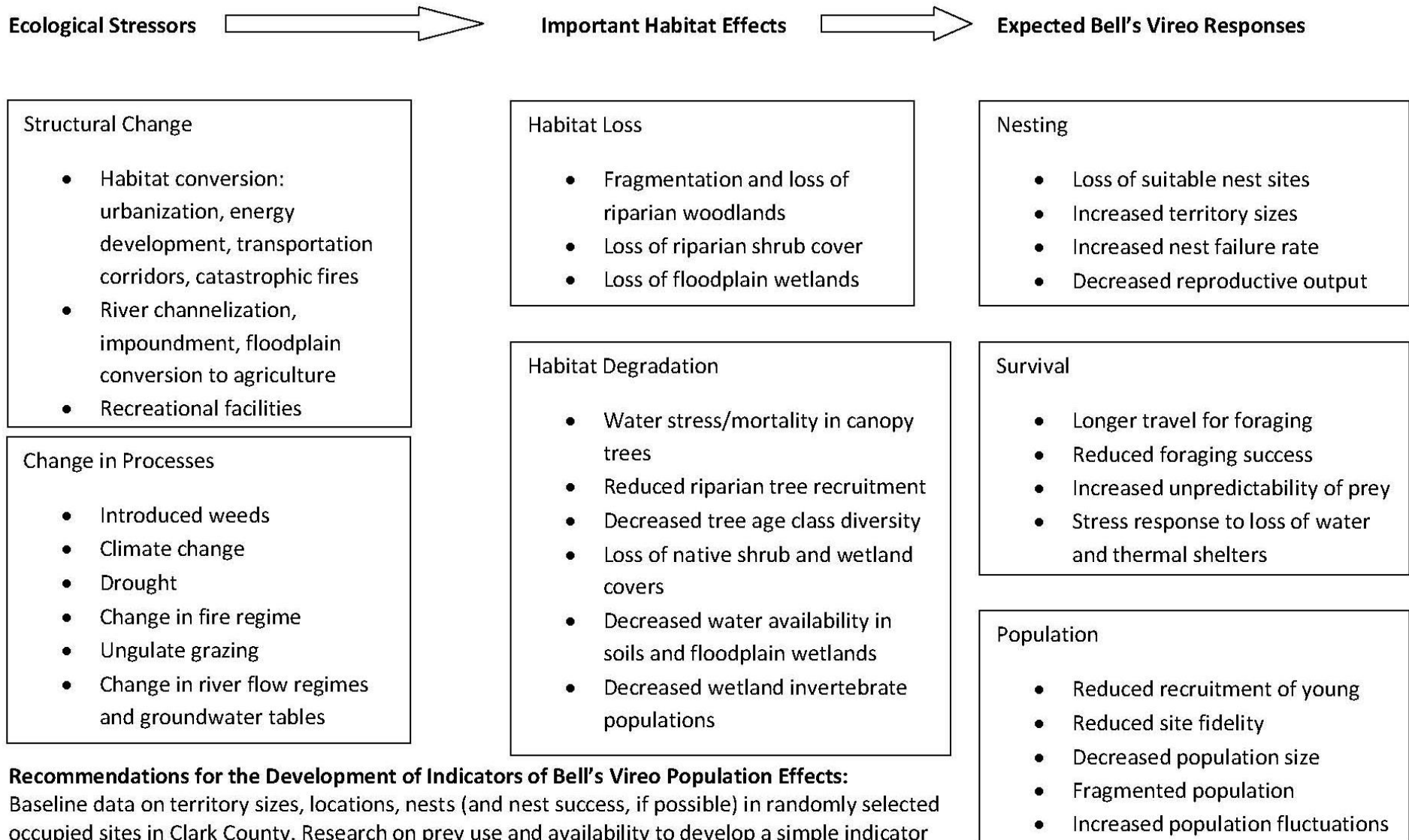


Bell's Vireo, 2007-2012



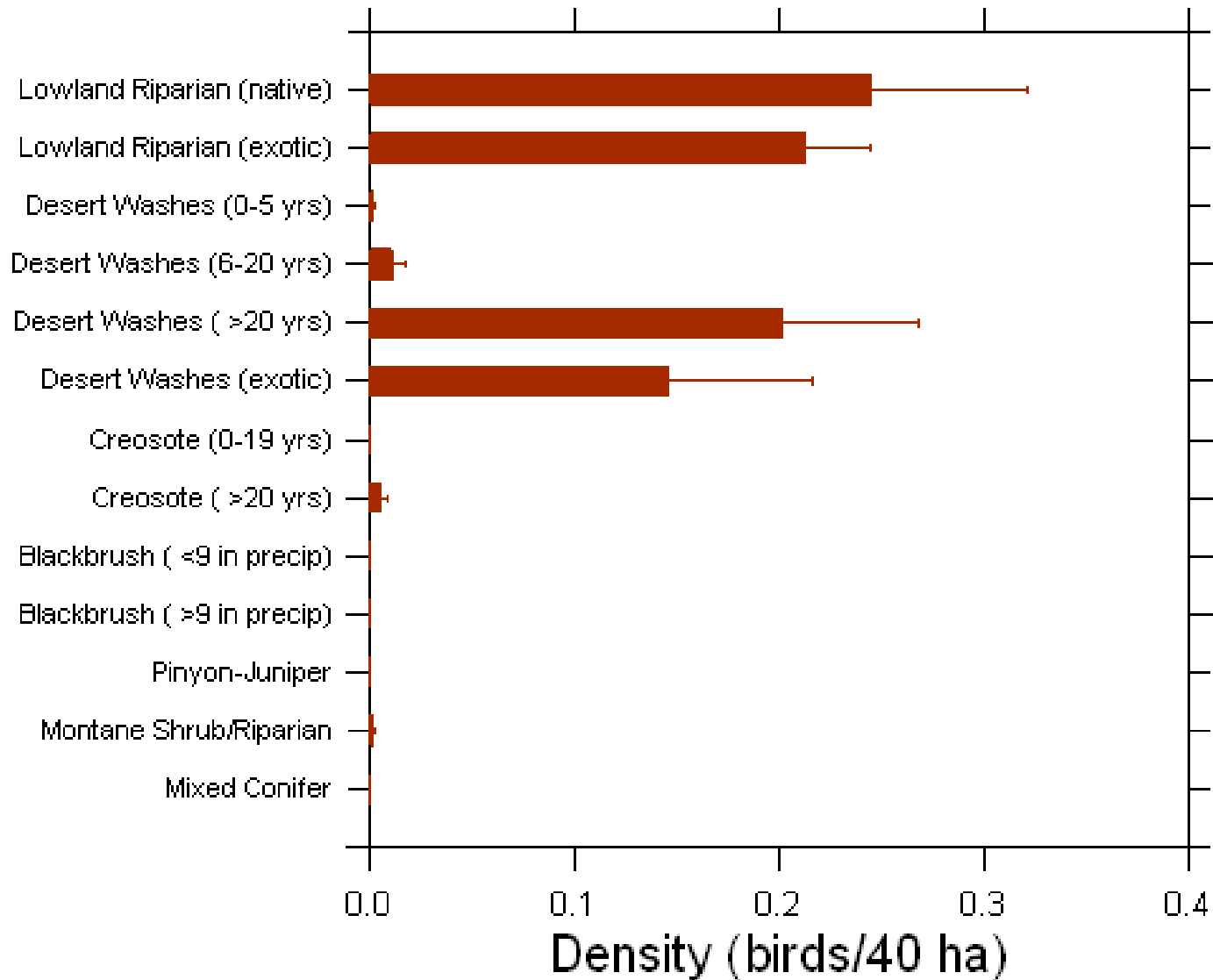
Photo by Martin Meyers

Bell's Vireo Conceptual Model



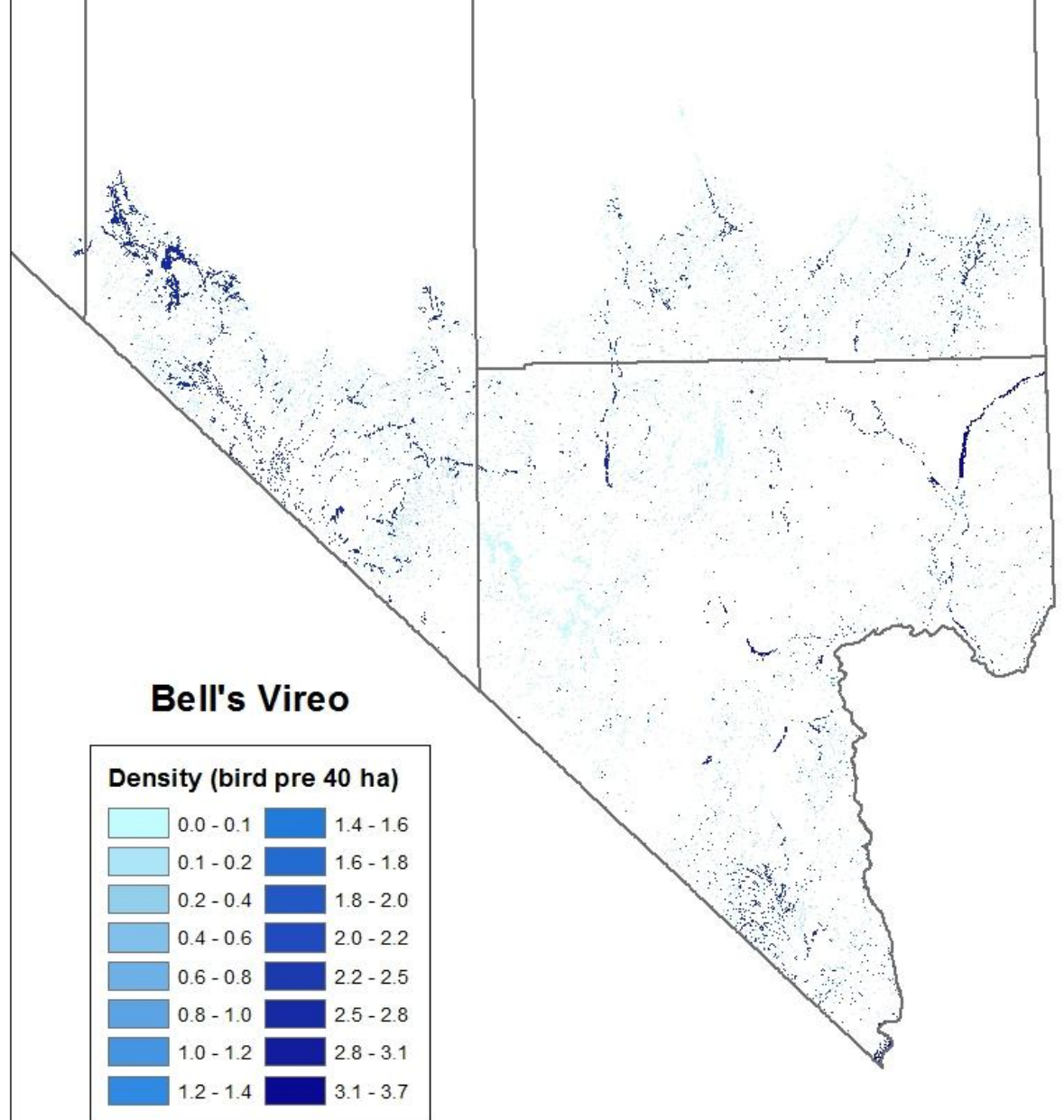
Recommendations for the Development of Indicators of Bell's Vireo Population Effects:
Baseline data on territory sizes, locations, nests (and nest success, if possible) in randomly selected occupied sites in Clark County. Research on prey use and availability to develop a simple indicator prey species monitoring plan. Long-term population monitoring of Bell's Vireos.

Bell's Vireo Actual Habitat Use



Bell's Vireo

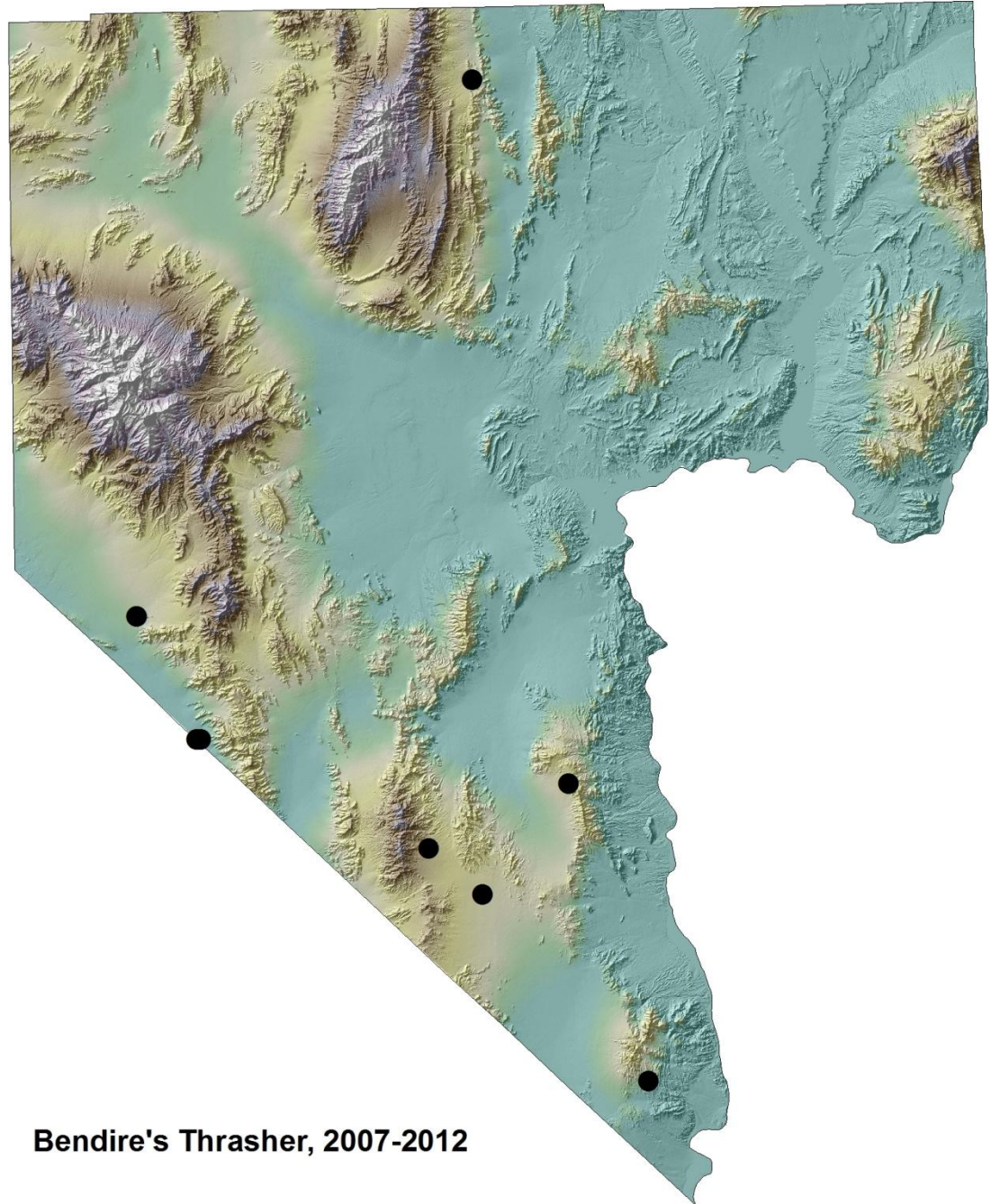
Predicted Density Distribution



Bendire's Thrasher

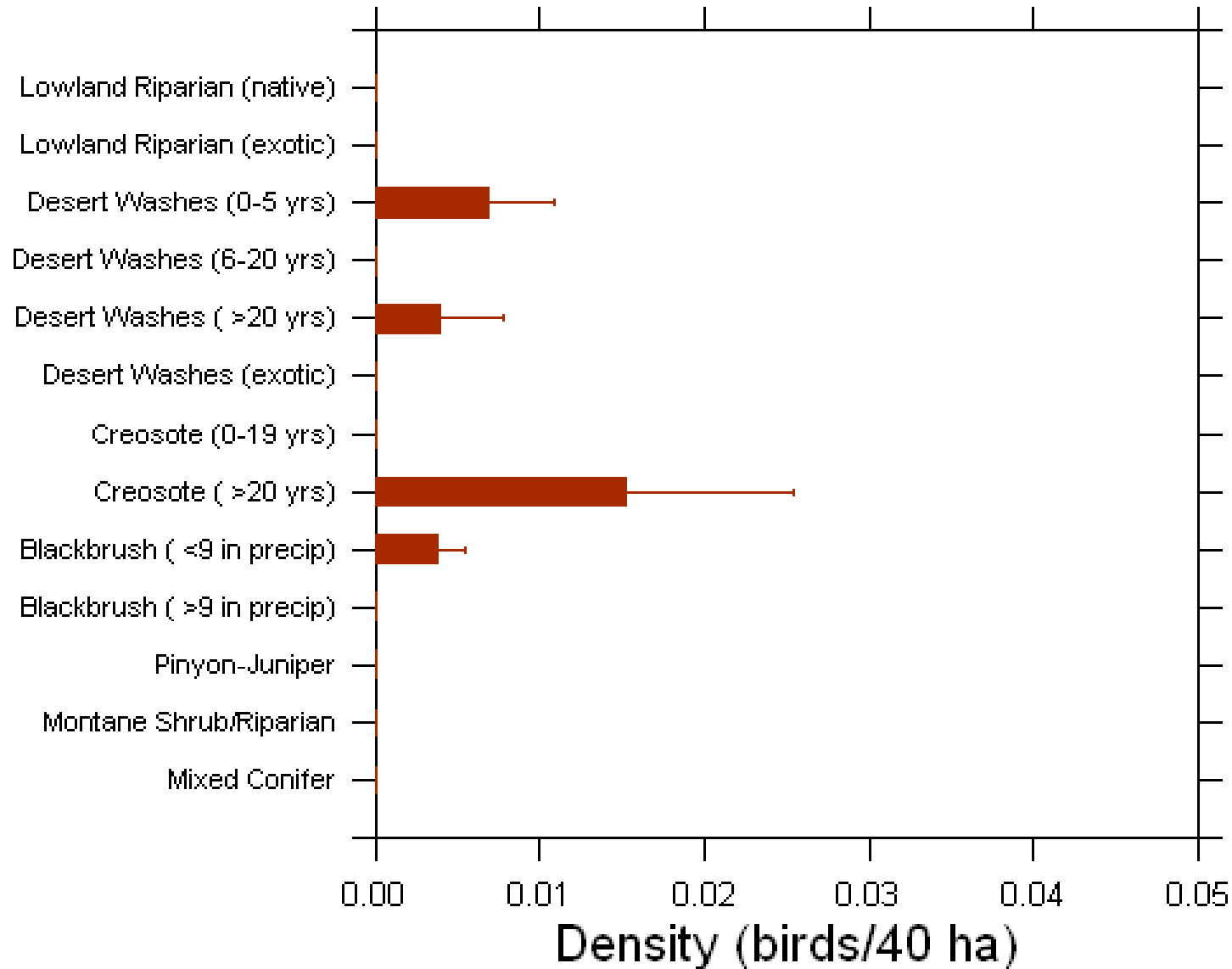
Clark County Distribution

N = 10



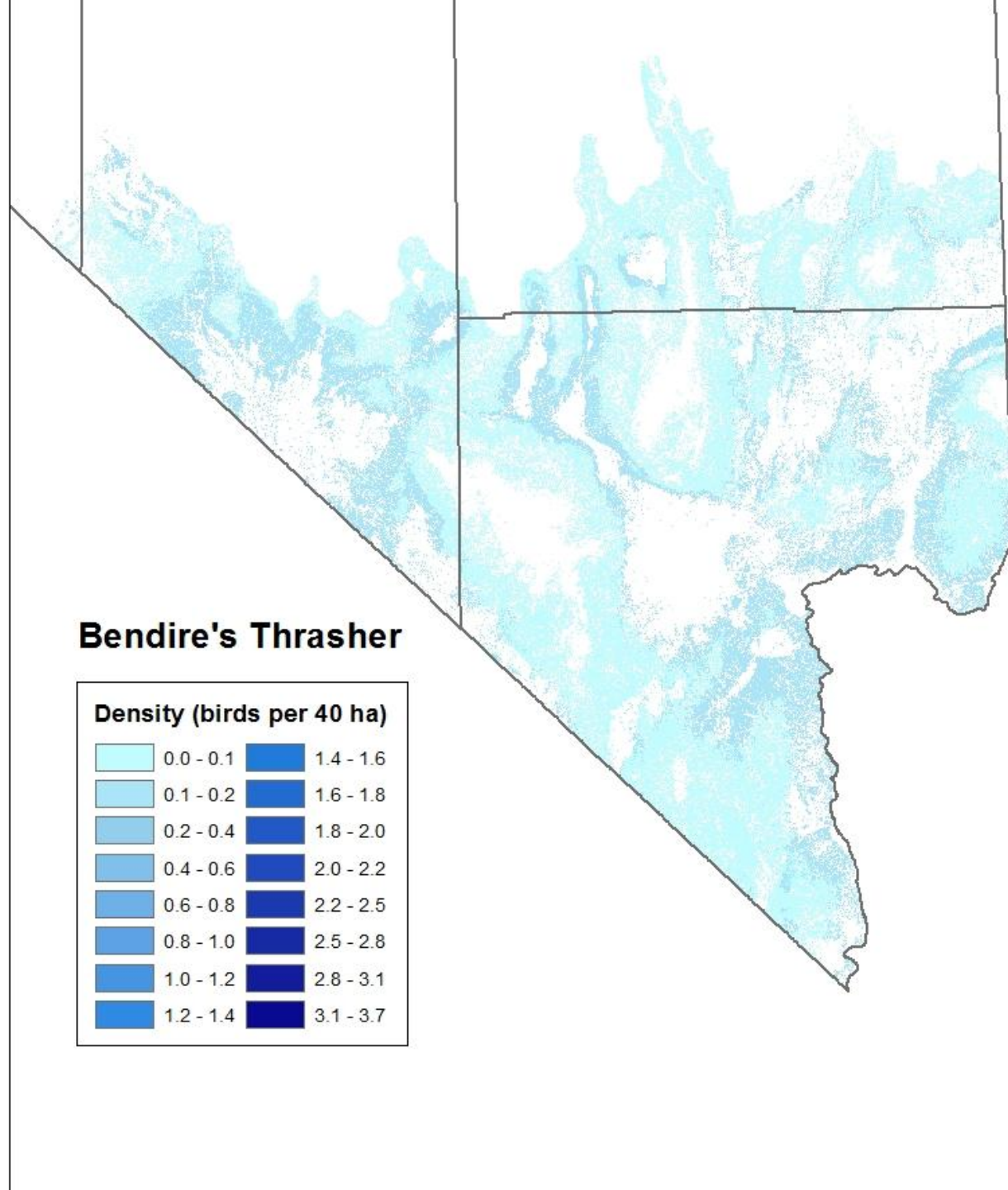
Bendire's Thrasher, 2007-2012

Bendire's Thrasher Actual Habitat Use



Bendire's Thrasher

Predicted Density Distribution



Bendire's Thrasher

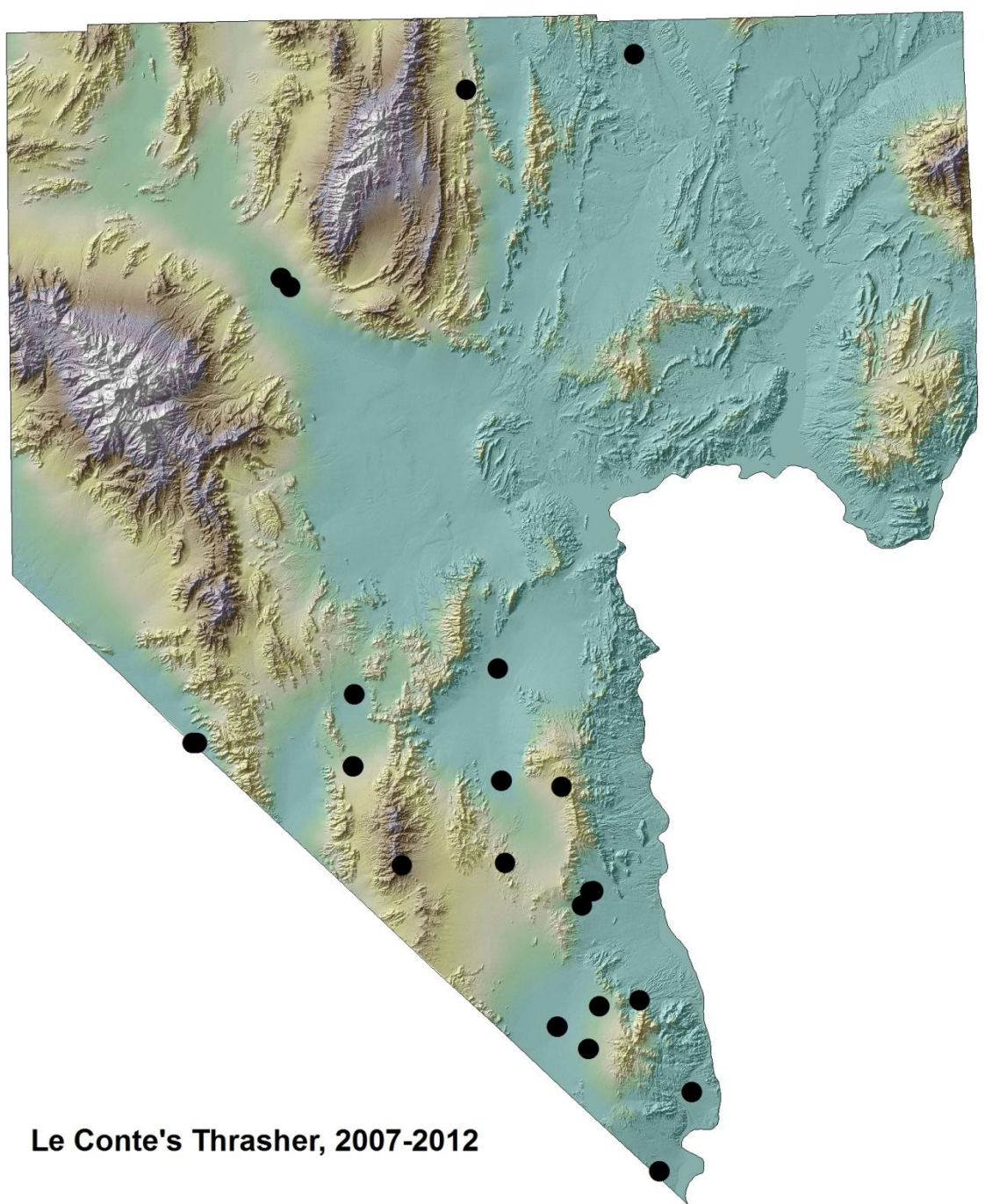
Density (birds per 40 ha)

0.0 - 0.1	1.4 - 1.6
0.1 - 0.2	1.6 - 1.8
0.2 - 0.4	1.8 - 2.0
0.4 - 0.6	2.0 - 2.2
0.6 - 0.8	2.2 - 2.5
0.8 - 1.0	2.5 - 2.8
1.0 - 1.2	2.8 - 3.1
1.2 - 1.4	3.1 - 3.7

Le Conte's Thrasher

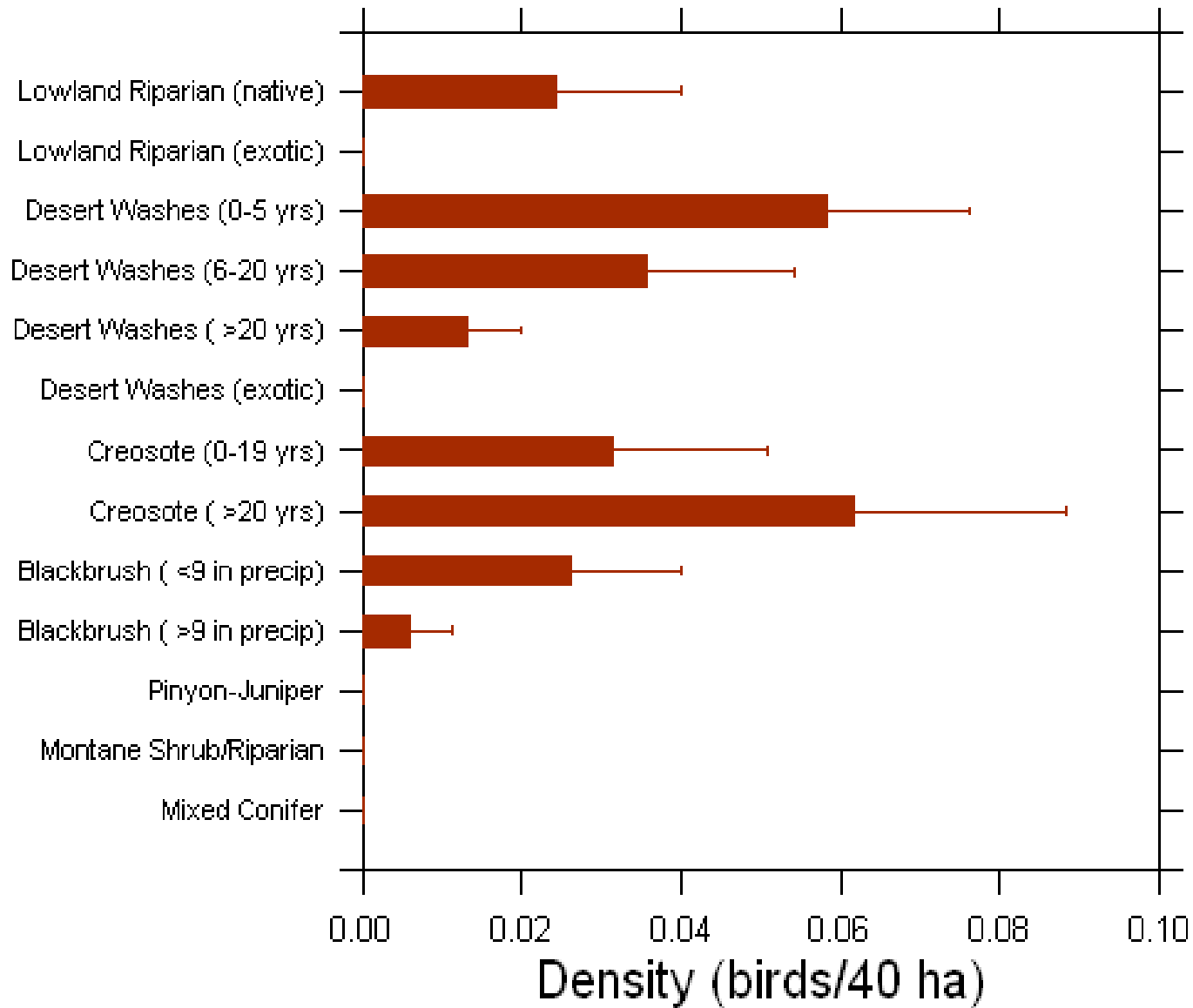
Clark County Distribution

N = 62



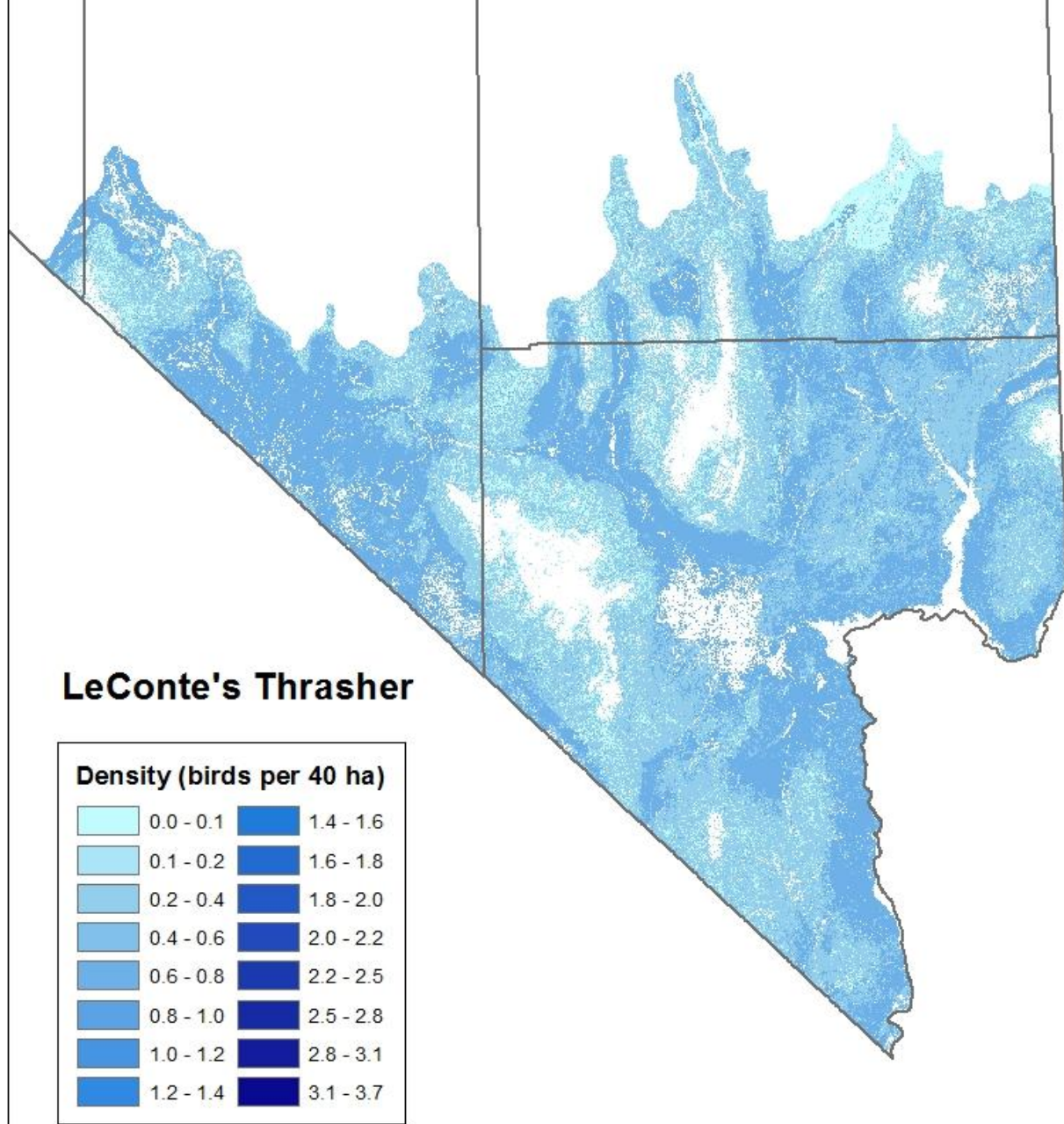
Le Conte's Thrasher, 2007-2012

Le Conte's Thrasher Actual Habitat Use



Le Conte's Thrasher

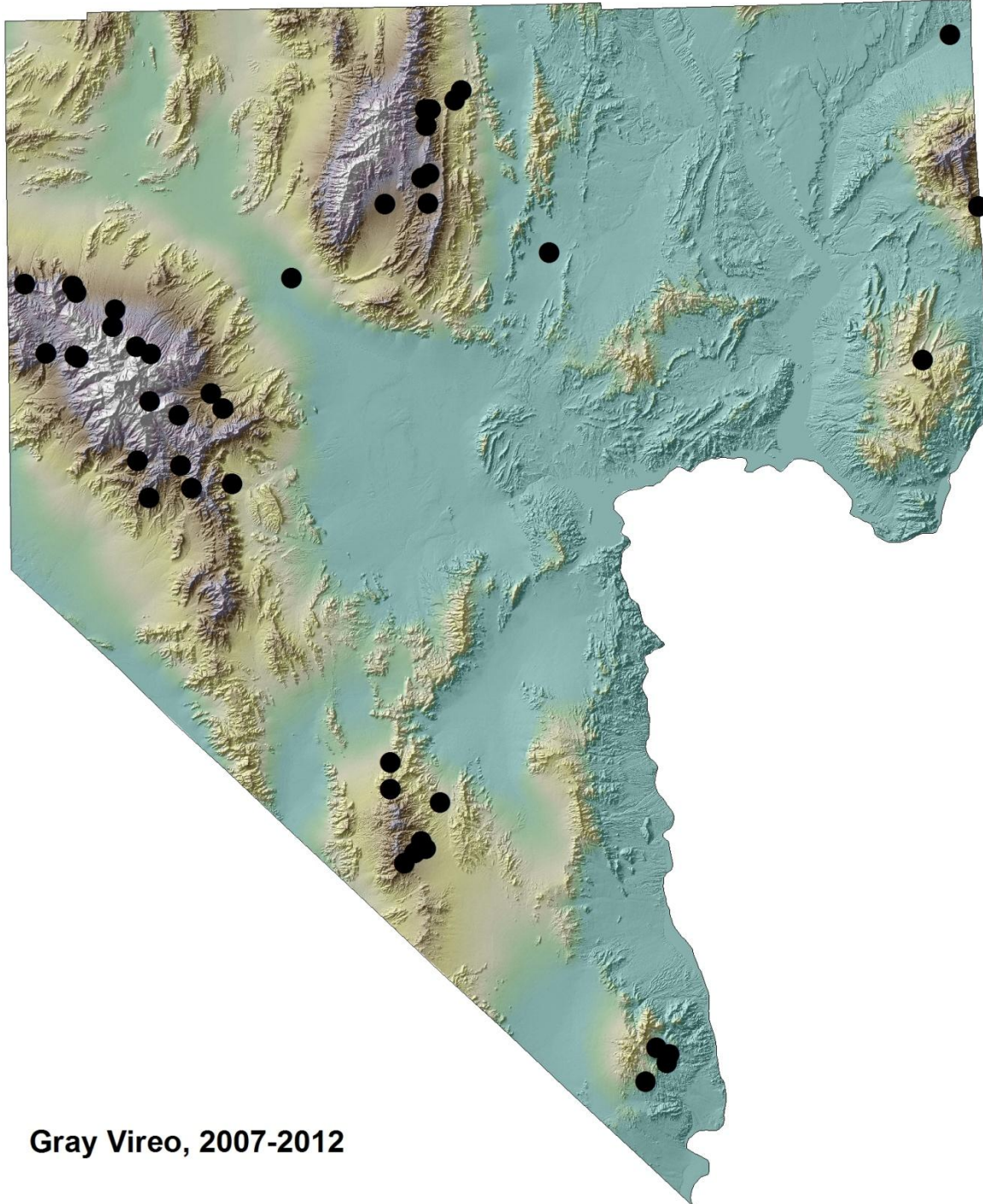
Predicted Density Distribution



Gray Vireo

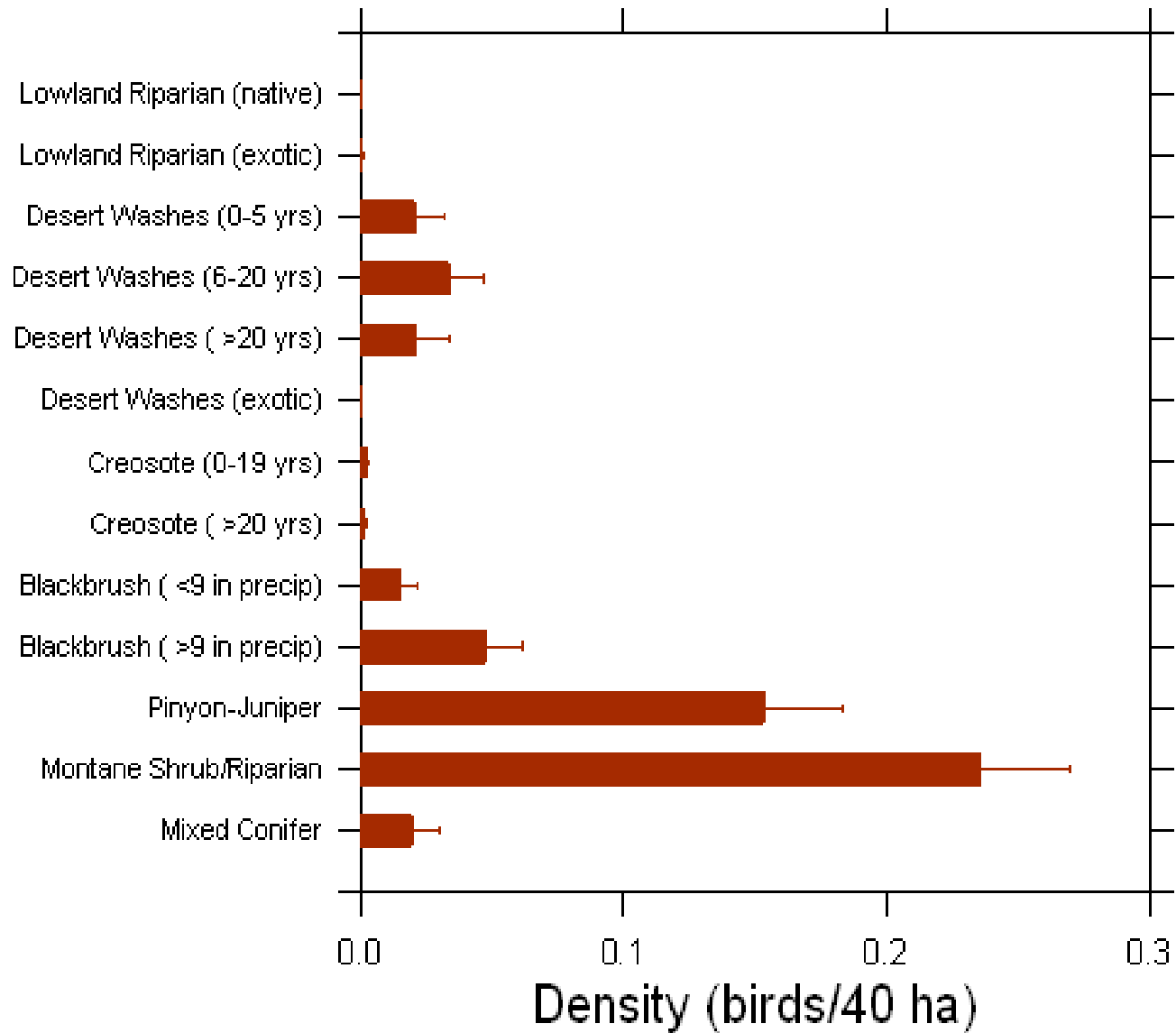
Clark County Distribution

N = 208



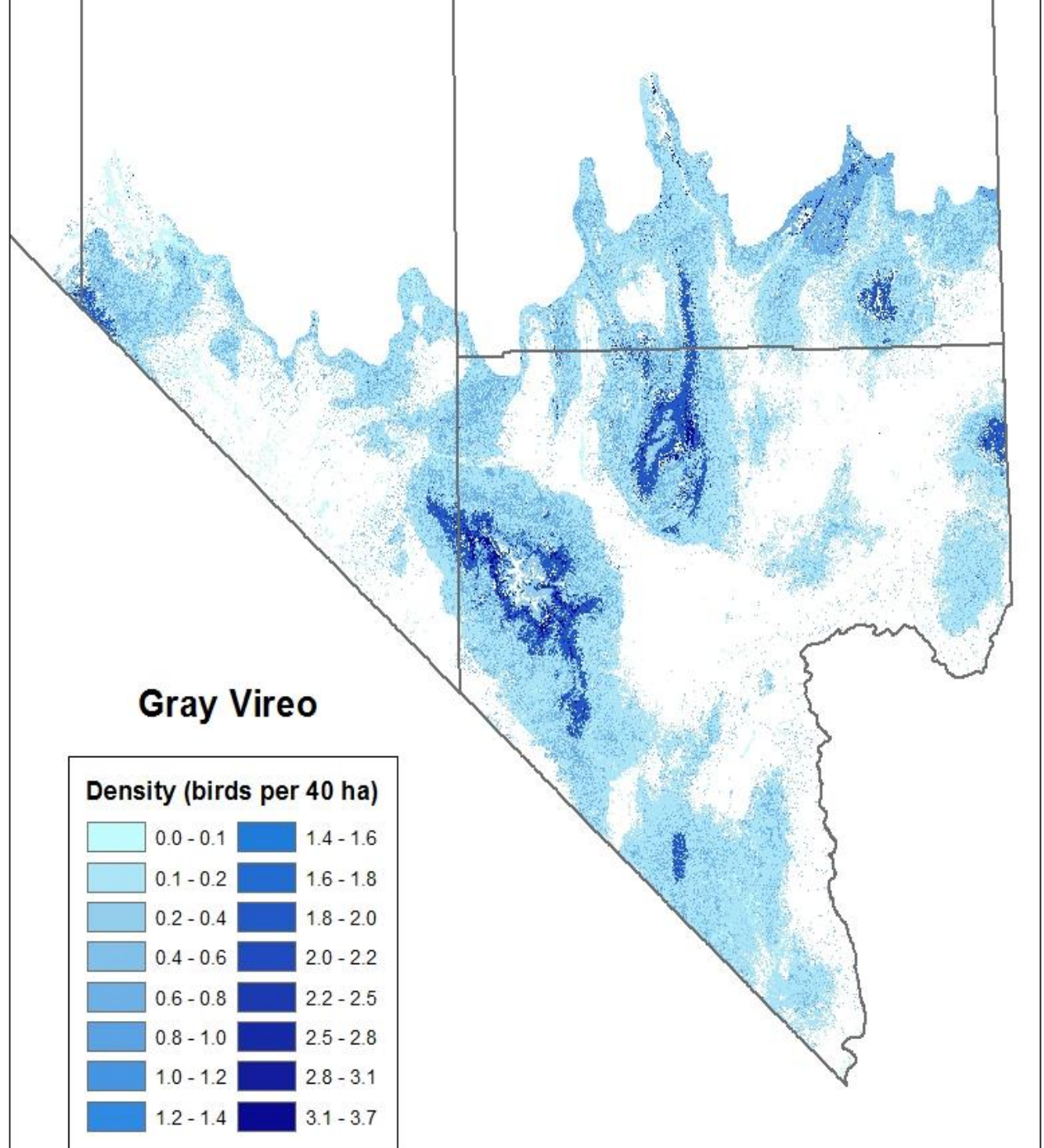
Gray Vireo, 2007-2012

Gray Vireo Actual Habitat Use



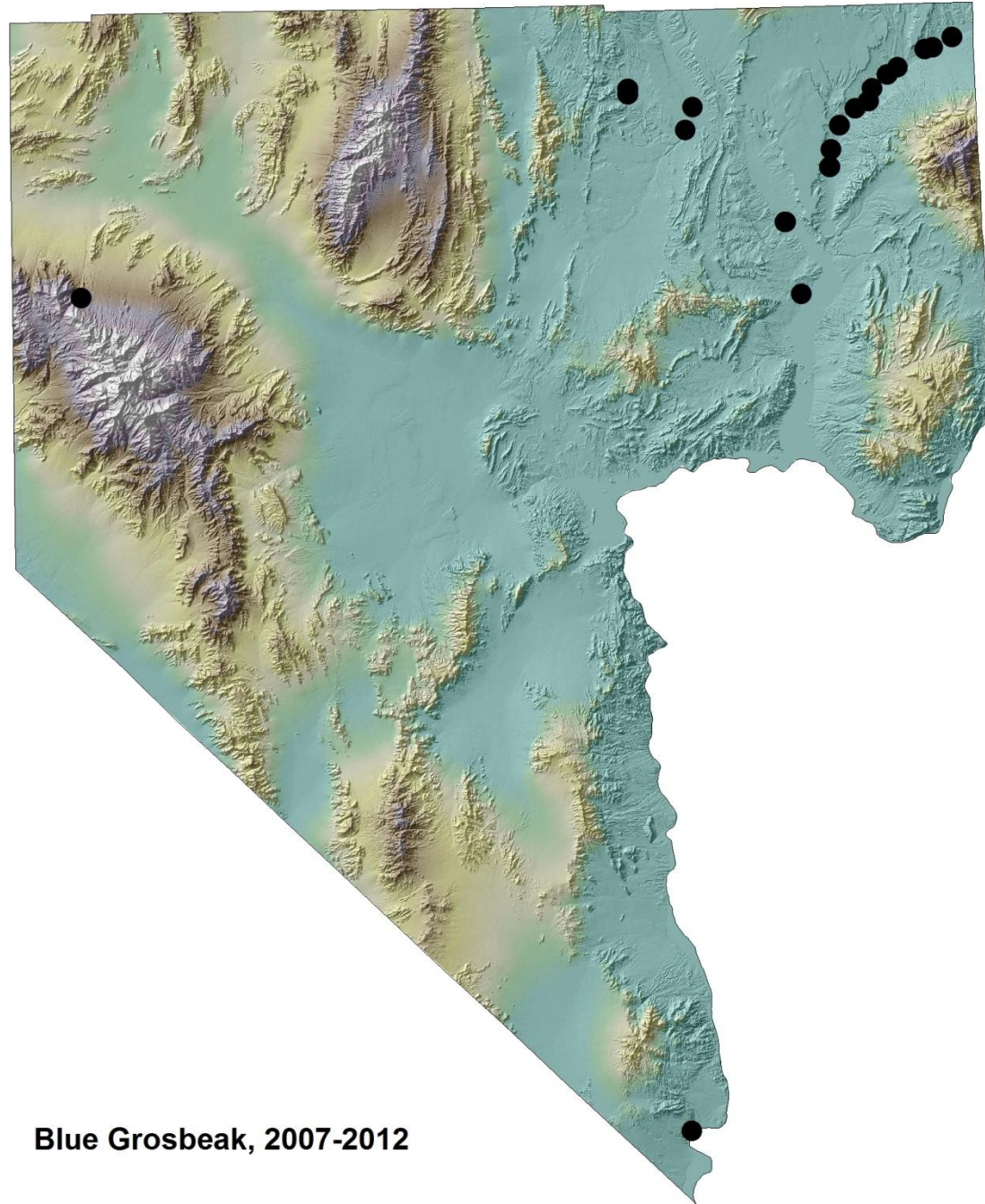
Gray Vireo

Predicted Density Distribution



Blue Grosbeak Distribution

N = 73 (Lowland Riparian)
N = 8 (Agriculture)



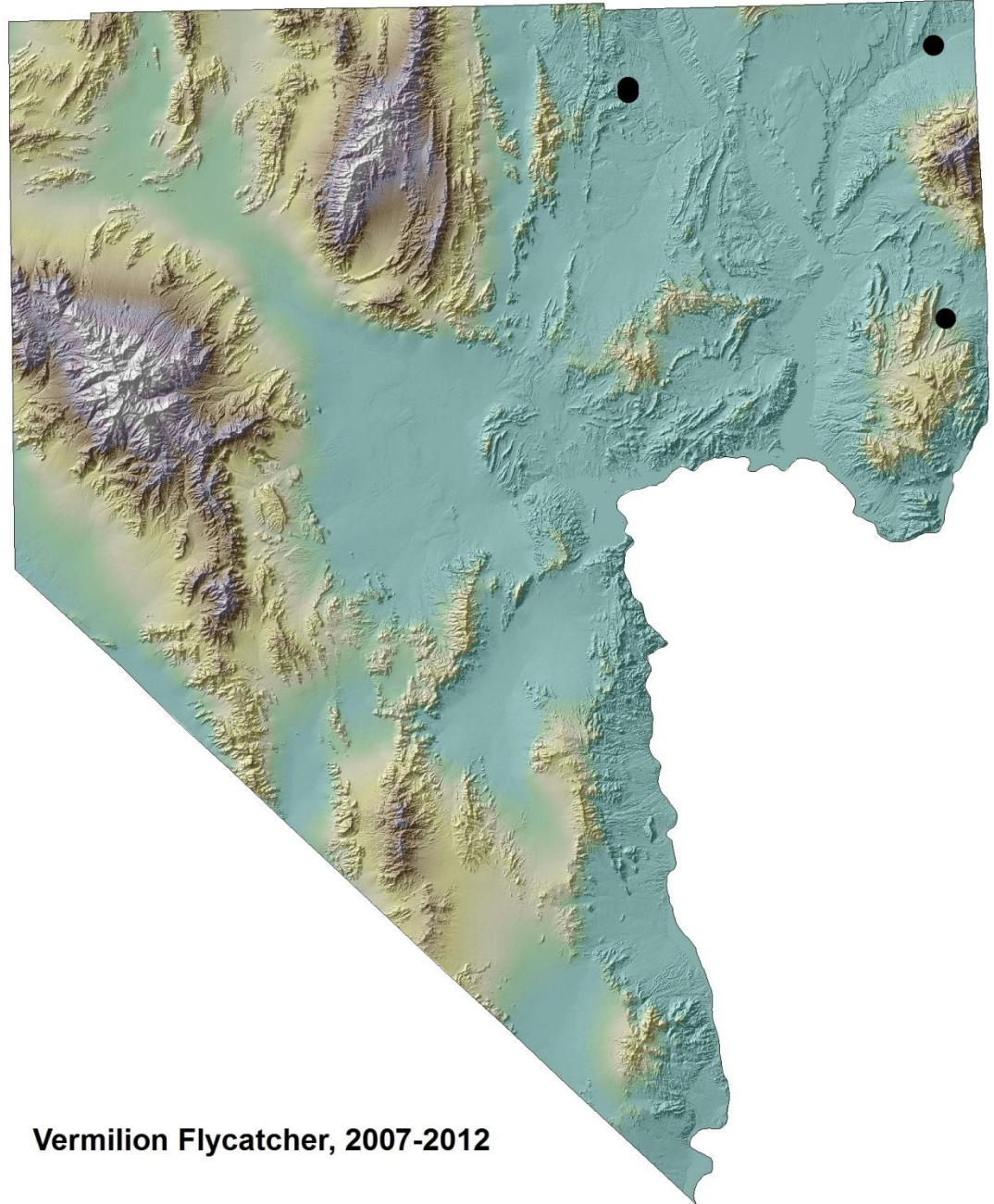
Blue Grosbeak, 2007-2012

Vermilion Flycatcher Distribution

N = 51 (Lowland Riparian)

N = 10 (Agriculture)

N = 1 (Mesquite-Acacia)



Vermilion Flycatcher, 2007-2012

Willow Flycatcher Distribution

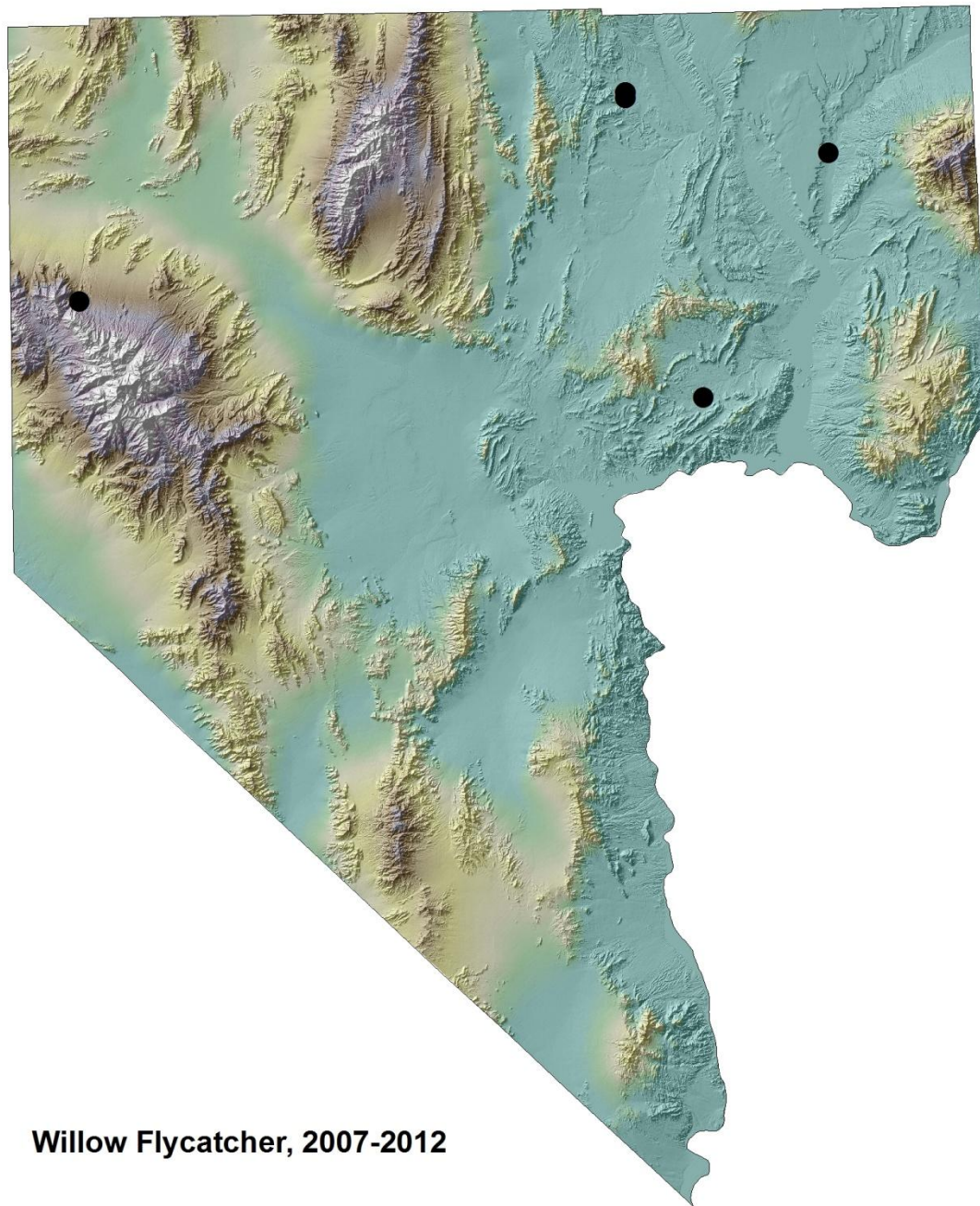
N = 6 (Lowland Riparian)

N = 1 (Mesquite-Acacia)

**Not necessarily Southwestern
WIFL!**



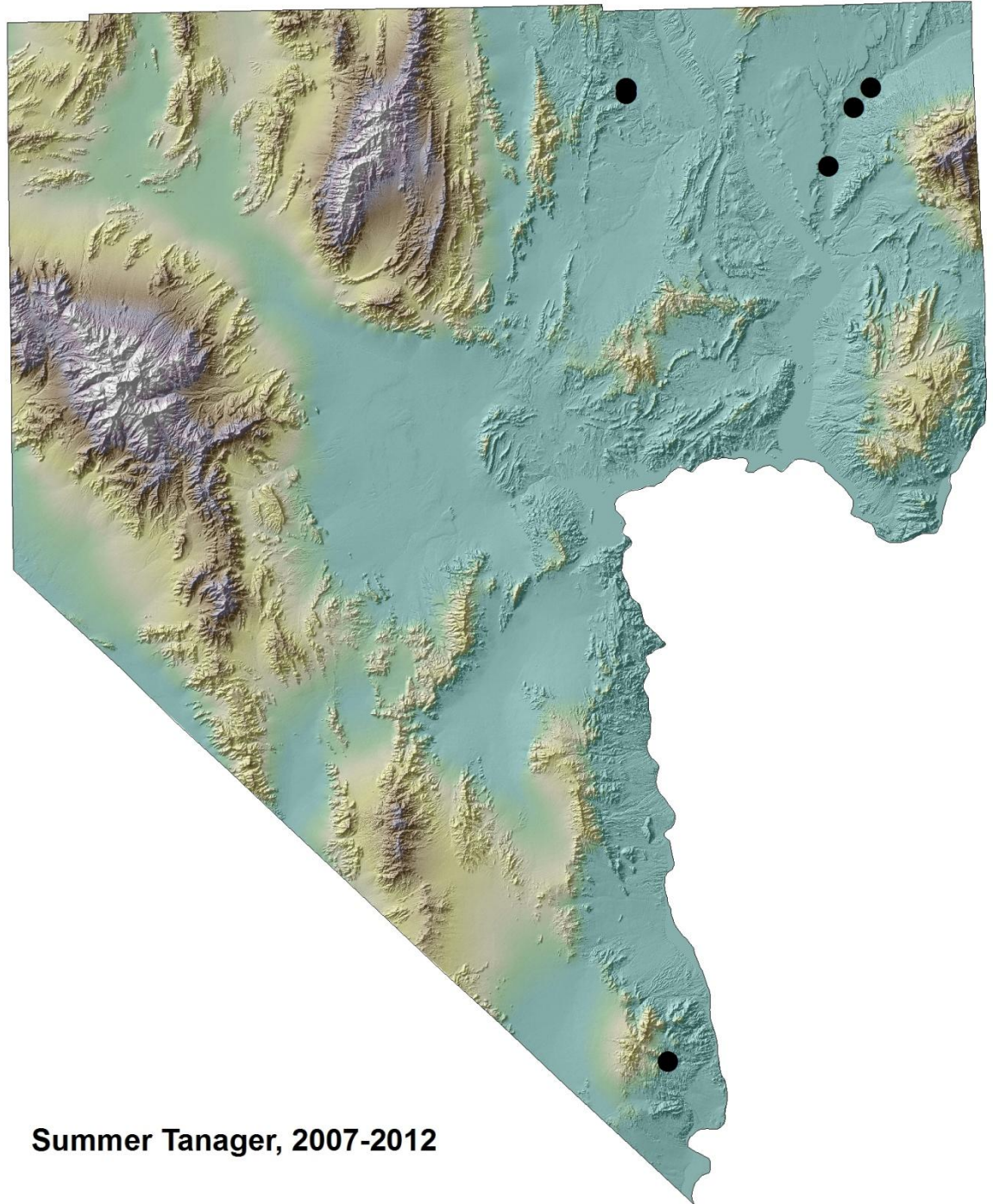
Photo by Martin Meyers



Willow Flycatcher, 2007-2012

Summer Tanager Distribution

N = 18 (Lowland Riparian)

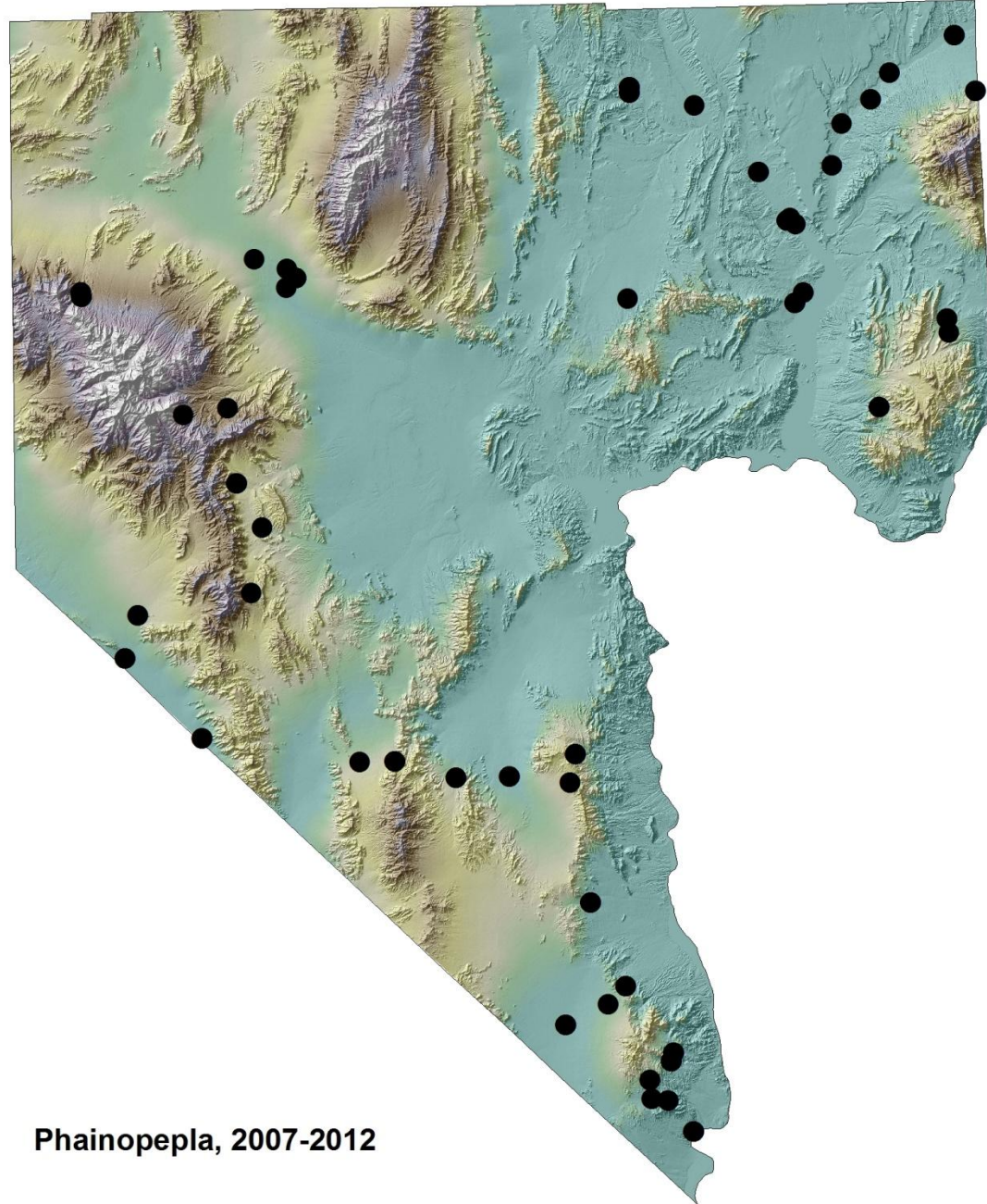


Summer Tanager, 2007-2012

Phainopepla Distribution

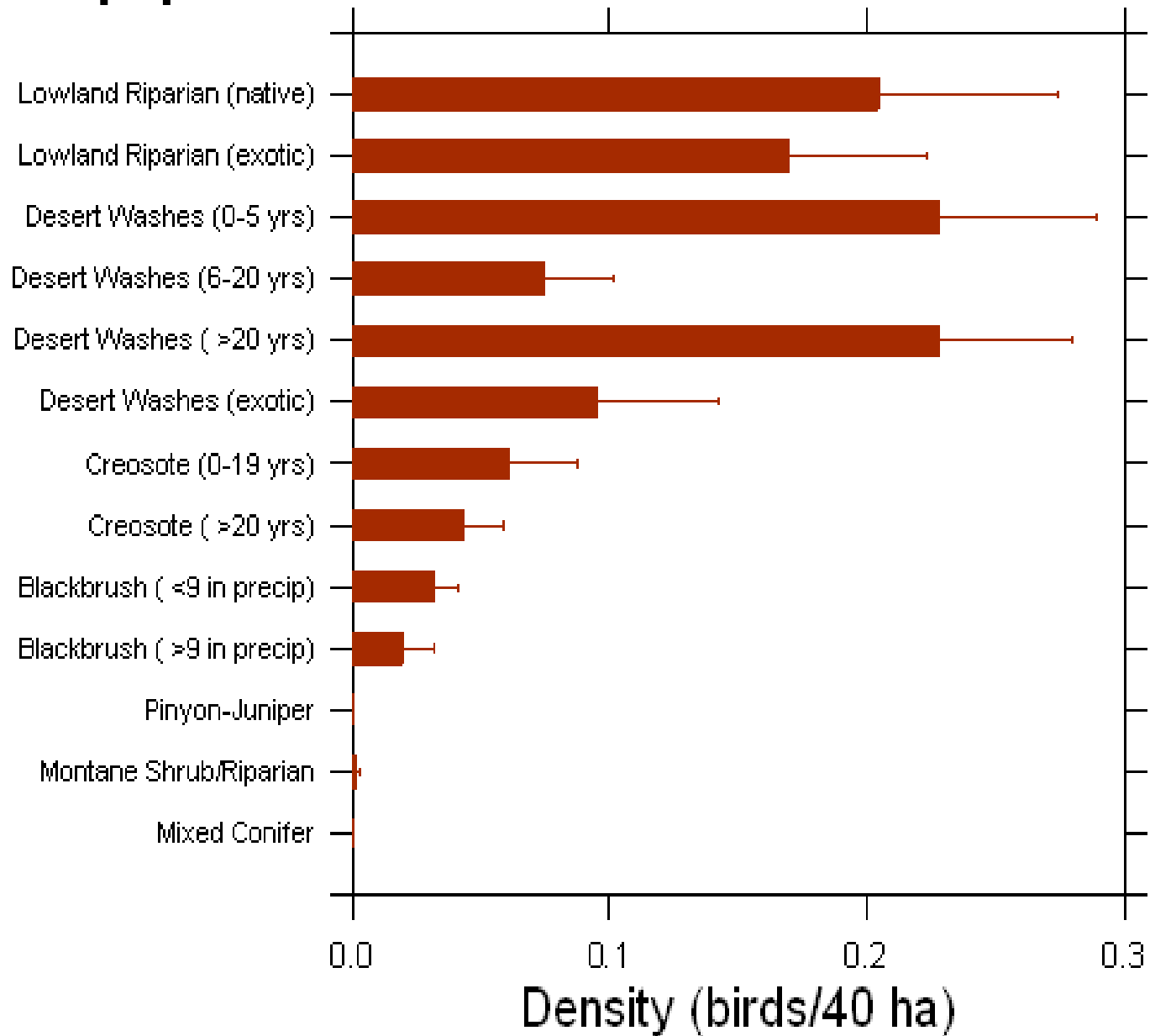


Photo by Scott Page



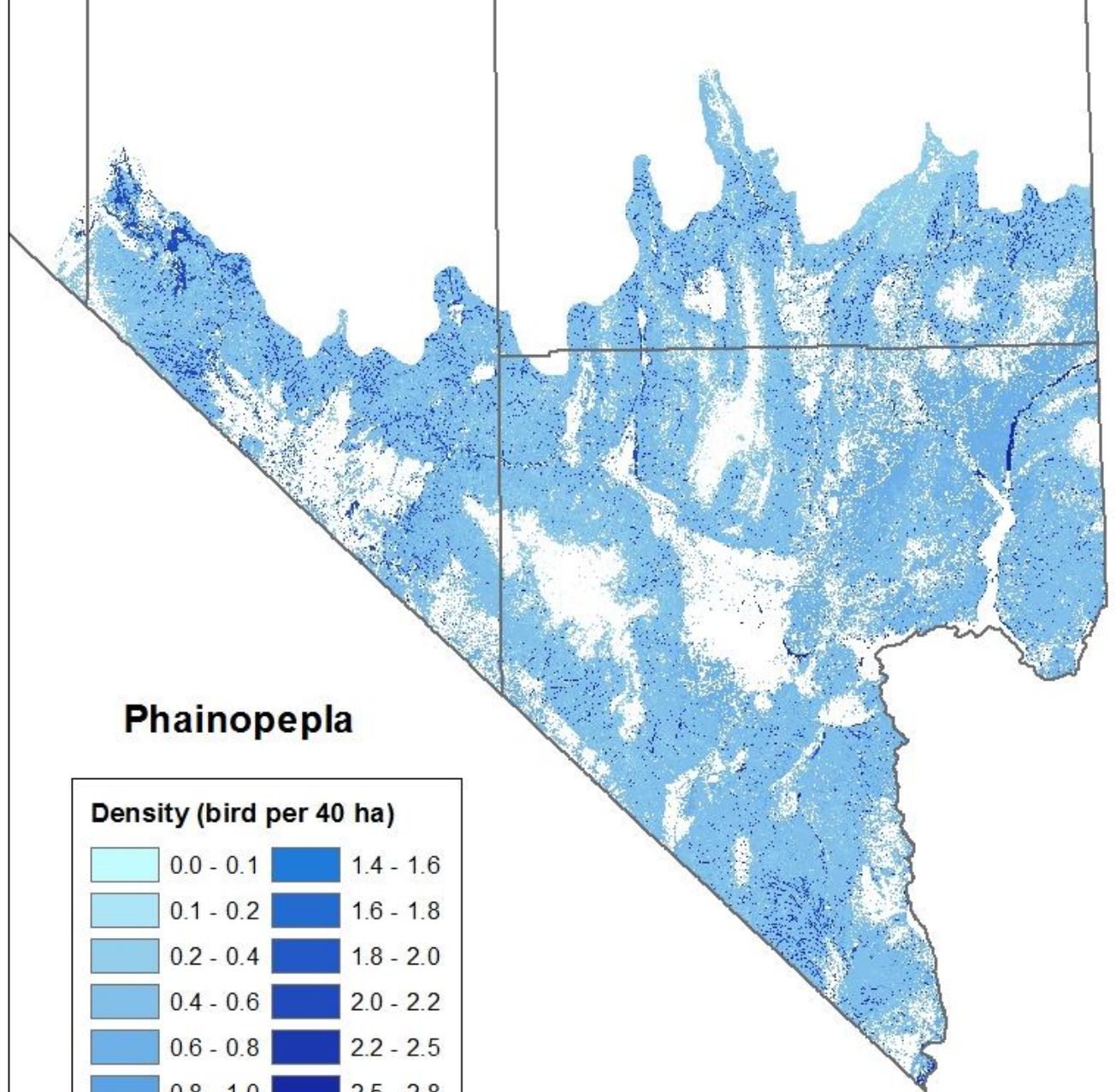
Phainopepla, 2007-2012

Phainopepla Actual Habitat Use



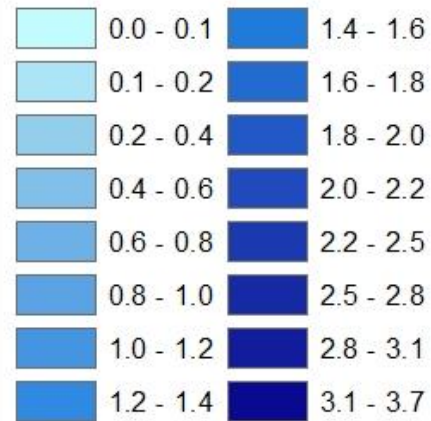
Phainopepla

Predicted Density Distribution



Phainopepla

Density (bird per 40 ha)



Take-Home Messages

- Distributions and predictive models are important for planners! Where to do/not do things on the landscape
- Site-specific habitat models are important for implementers! What to do/not do in a particular location
- Monitoring is important for all partners! Do Clark County land uses have a net impact or benefit on bird populations and bird distributions; does a particular project benefit a priority species

Next Steps

- Statistical habitat models (veg assessment analysis) before the end of year - 2013 final year of project
- Formal population size estimation using double-sampling and removal results (2013)
- Predictive model refinement and model testing using the new random scatter (2013)
- Formalization of monitoring plan (2013)

Acknowledgments

- Clark County Desert Conservation Program
- The Nature Conservancy, Nevada Field Office
- U.S. Fish and Wildlife Service
- National Park Service
- Bureau of Land Management
- U.S. Forest Service
- Bureau of Reclamation
- Southern Nevada Water Authority
- USGS Snake River Field Station
- Nevada Department of Wildlife
- Otis Bay Ecological Consultants
- University of Nevada, Las Vegas
- Many other Nevada Bird Count partners
- GBBO field crews and volunteers
- Ralph Phenix

Questions?

One answer:

**Be careful
when doing
veg work in
Clark
County!**

