

DEVELOPING HABITAT MODELS AND MONITORING TECHNIQUES FOR NINE BIRD SPECIES OF CLARK COUNTY, 2008 - 2013

(2005-GBBO-581)

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Scope of GBBO Landbird Monitoring

- ▣ Regional
- ▣ Includes all birds
- ▣ Standardized methods



Goals in Regional Monitoring

- ▣ Determine population size
- ▣ Detect major population changes
 - 80% power to detect a 50% change in 20 years, for most species
 - Significance level of 0.10 (two-tailed)
 - Incorporating removal of biases (detection ratios)
- ▣ Determine habitat suitability criteria for priority 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



Bell's Vireo
(photo by Martin Meyers)

Nevada Bird Count Methods

- ▣ Randomly selected point count transects (stratified by habitat)
- ▣ Intensive area searches for double-sampling
- ▣ Habitat and landscape assessments

Point Count Method

- ▣ 10 points per transects
- ▣ 10 minute counts (intervals 0-3, 3-5, 5-10)
- ▣ At 3 distances (0-50, 50-100, >100), unless DISTANCE is employed



Bendire's Thrasher
(photo by Martin Meyers)

Distribution of Clark County Point Count Transects

Habitat Type	# Surveys 2011	# Transects 2011
Agricultural	3	3
Aspen	0	0
Coniferous Forest	5	5
Joshua Tree/Yucca	18	18
Lowland Riparian	15	11
Mojave Desert Scrub	14	14
Mesquite-Acacia	10	8
Montane Riparian	2	2
Montane Shrubland	5	5
Pinyon-Juniper	10	10
Salt Desert Scrub	8	8
TOTAL	90	84

Habitat Suitability (Field Measurements ~80% Completed in Clark County)

Landscape layout (through
remote sensing and field data)

Stand structure and
floristics (field data)



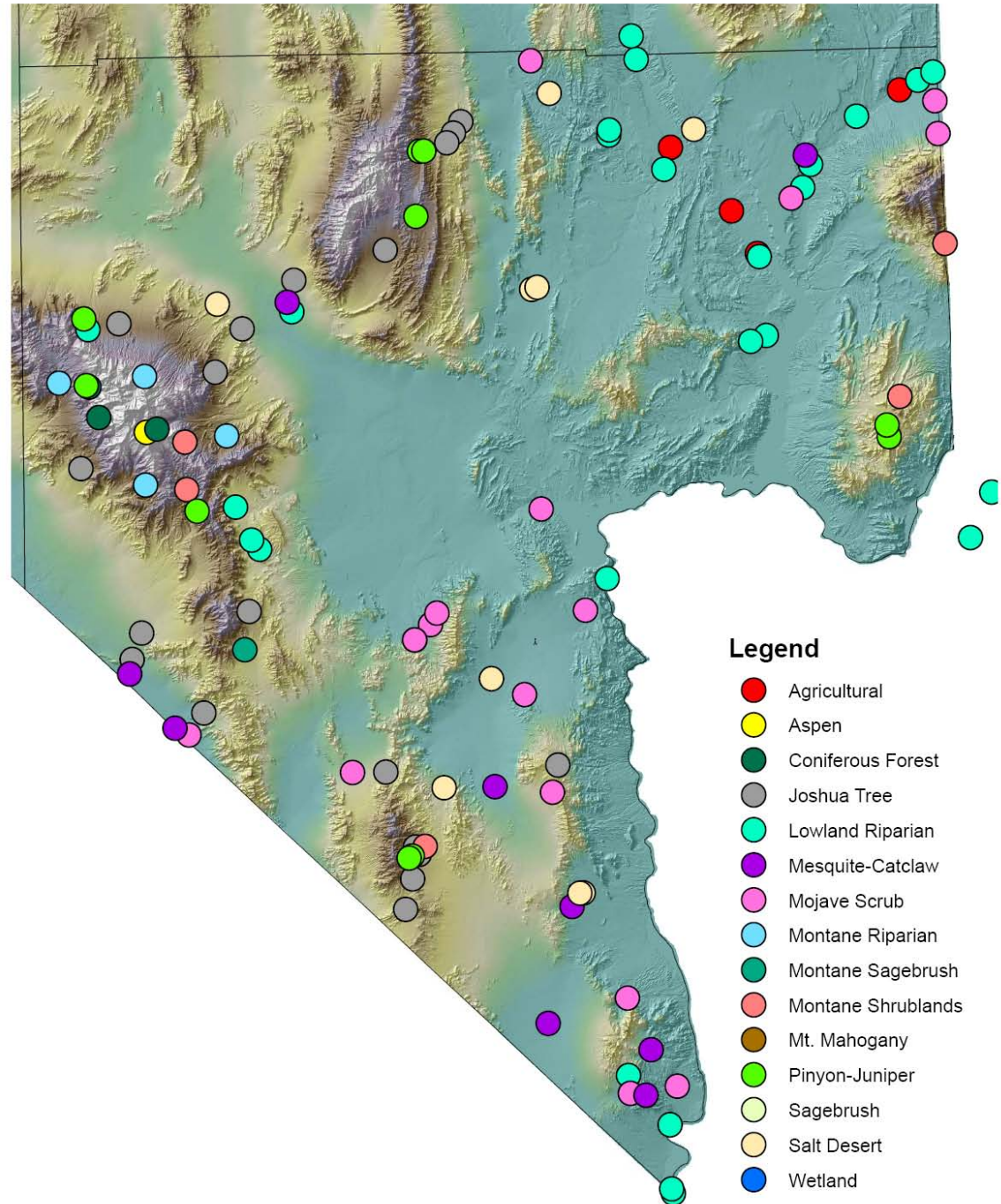
Mojave Lowland Riparian and Mojave Desert Scrub
(photos by Elisabeth Ammon)

Nevada Bird Count Transect Locations Within Clark County, Nevada

Clark County, 2008-11:

121 point count transects
422 surveys

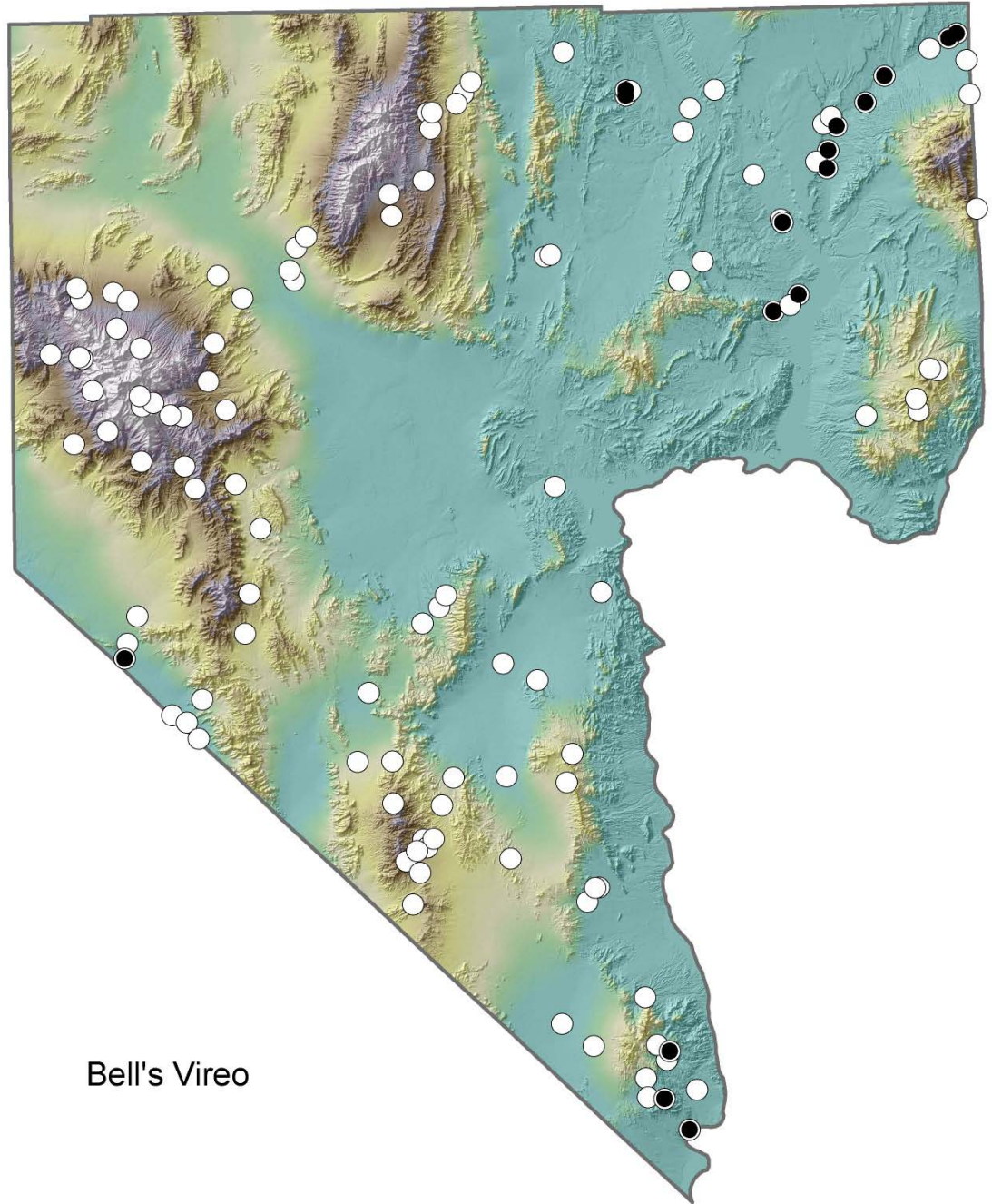
24 area search plots
8-10 visits each



Number of Detections (2008-2011)

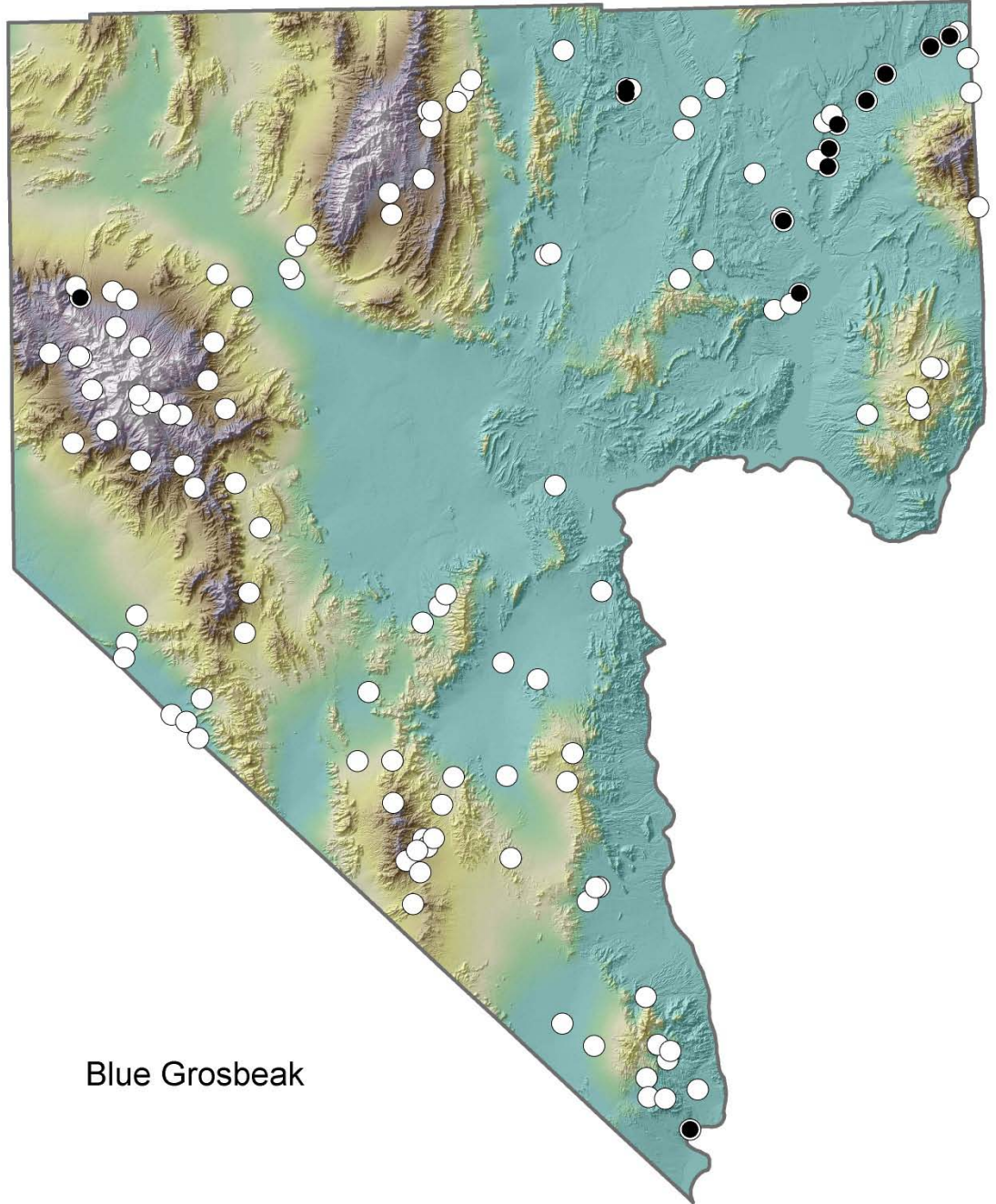
Habitat Type	Bell's Vireo	Blue Grosbeak	Phainopepla	Vermilion Flycatcher	Willow Flycatcher	Summer Tanager
Agricultural	5	8	27	10		
Aspen						
Coniferous Forest						
Joshua Tree/Yucca			67			
Lowland Riparian	133	63	398	51	6	16
Mojave Desert Scrub						
Mesquite-Acacia	4		186	1		
Montane Riparian						
Montane Shrubland						
Pinyon-Juniper			8			
Salt Desert Scrub						
TOTAL	142	71	703	62	6	16

Bell's Vireo Distribution



Bell's Vireo

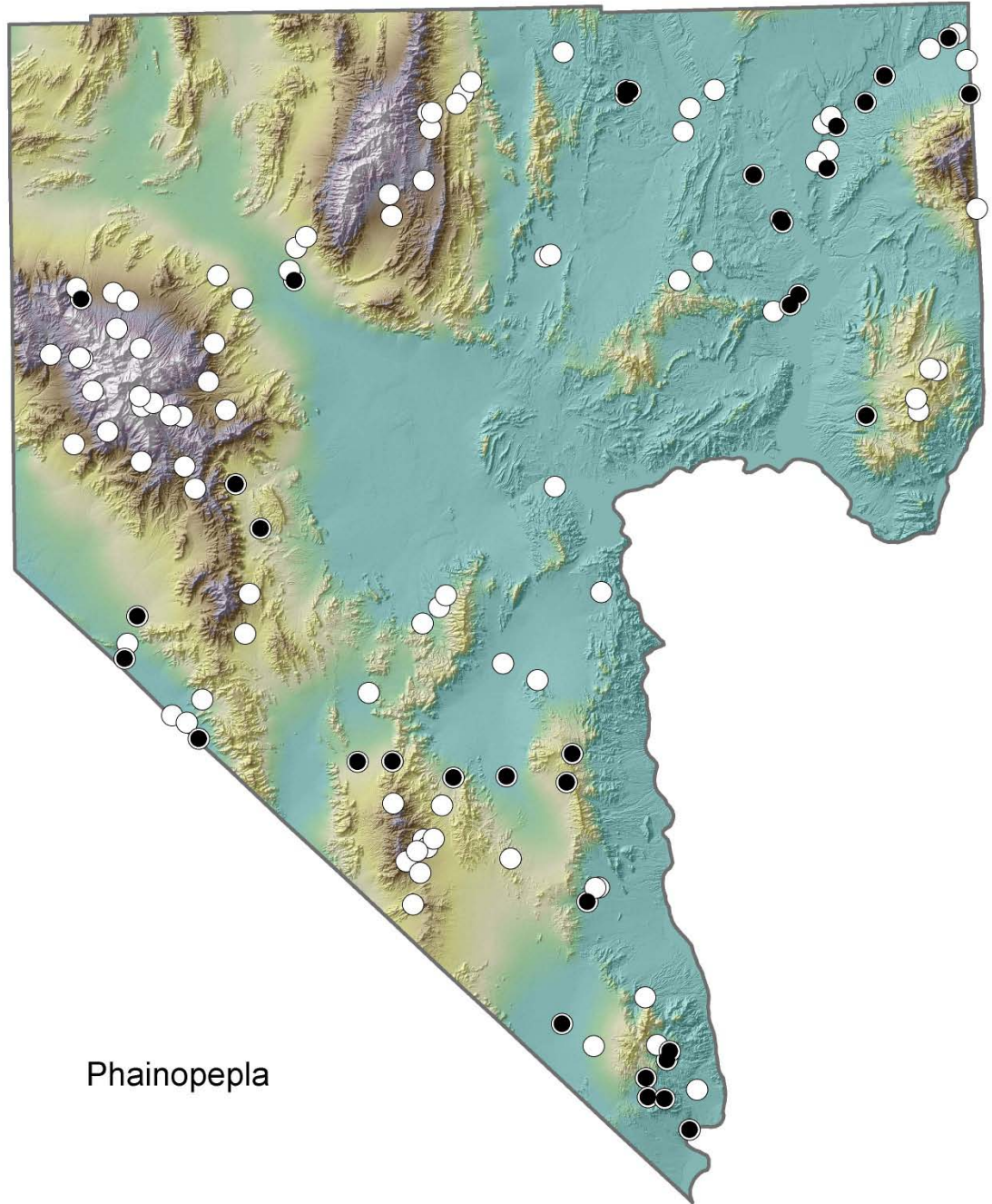
Blue Grosbeak Distribution



Phainopepla Distribution

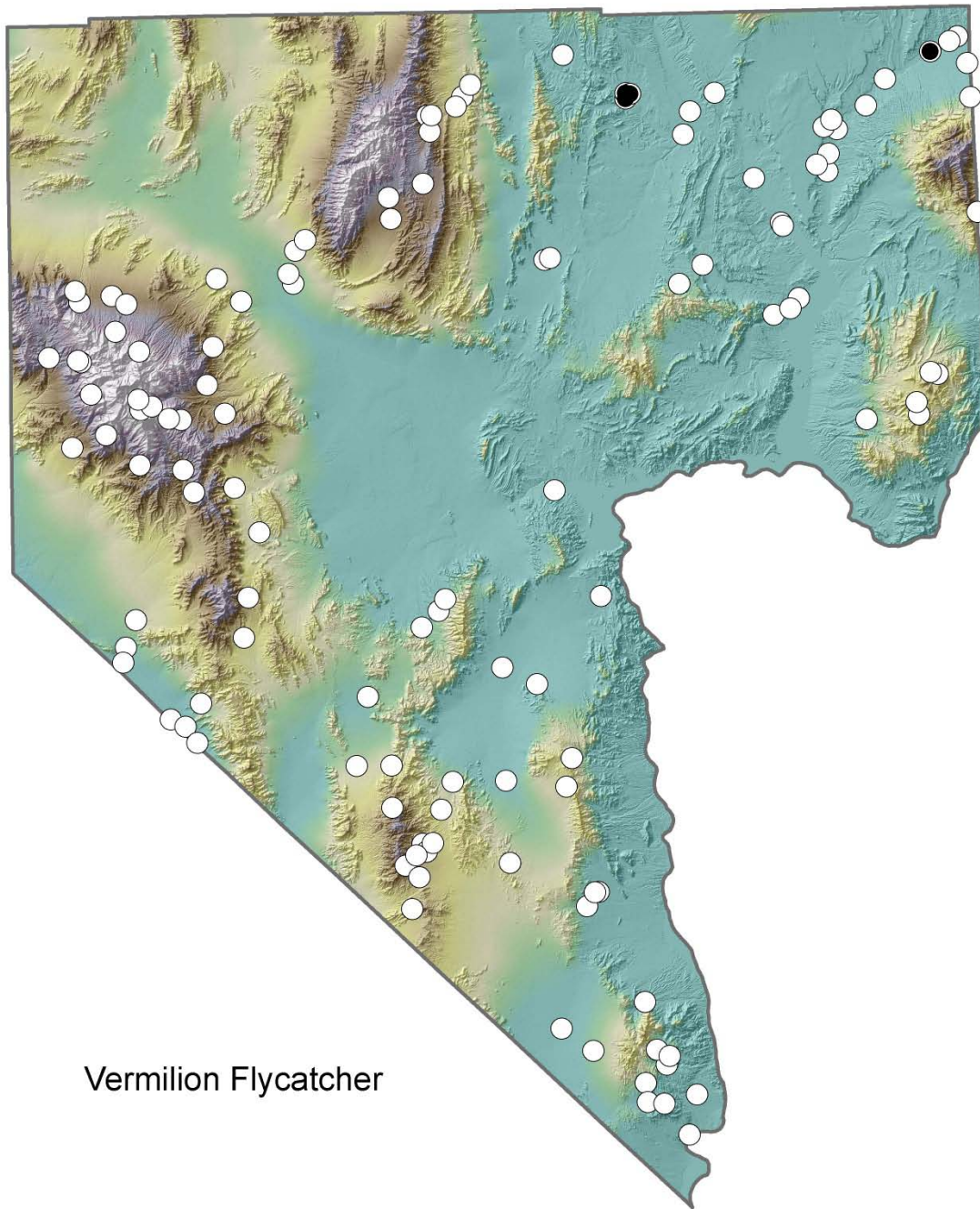


Photo by Scott Page



Phainopepla

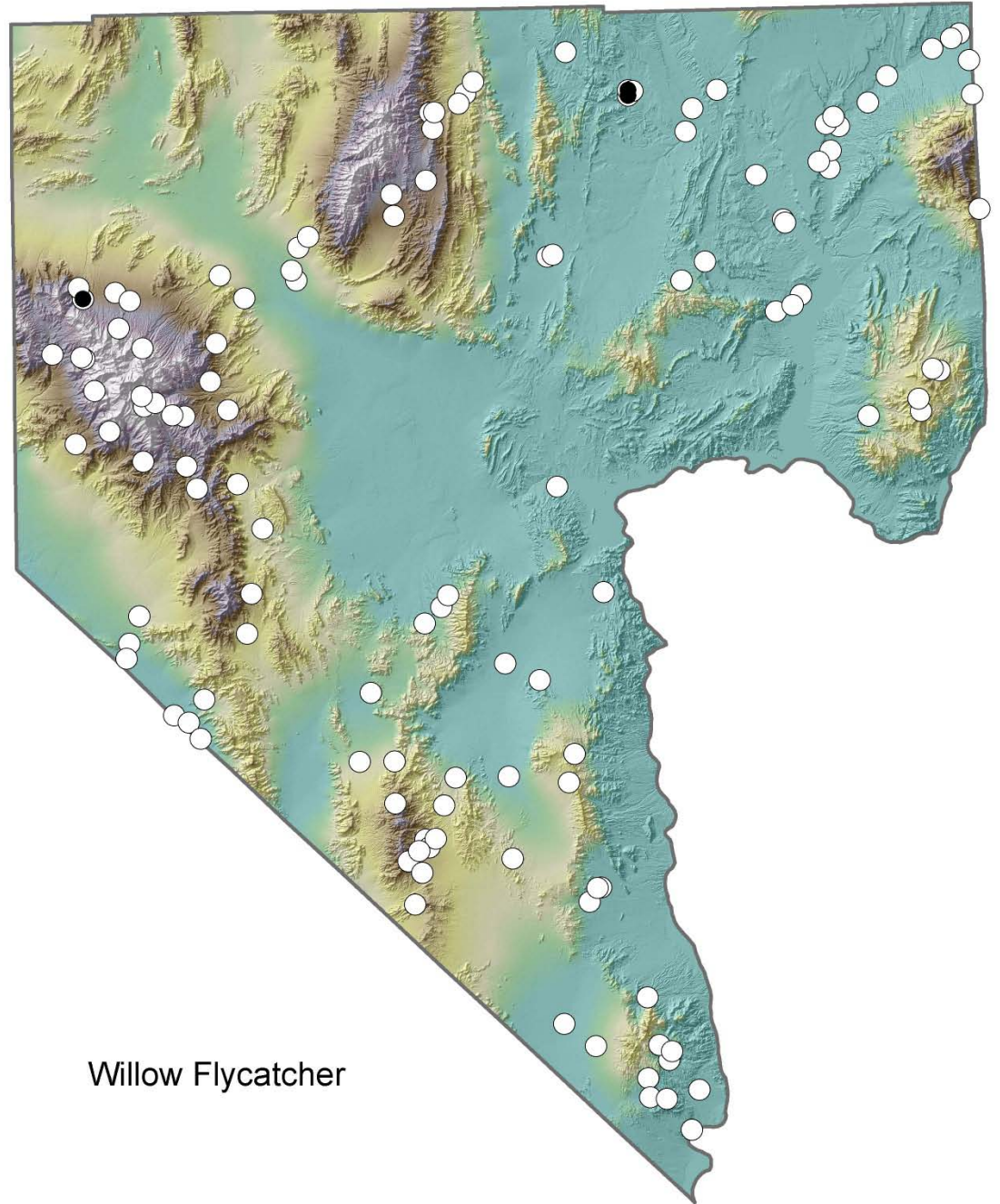
Vermilion Flycatcher Distribution



Willow Flycatcher Distribution

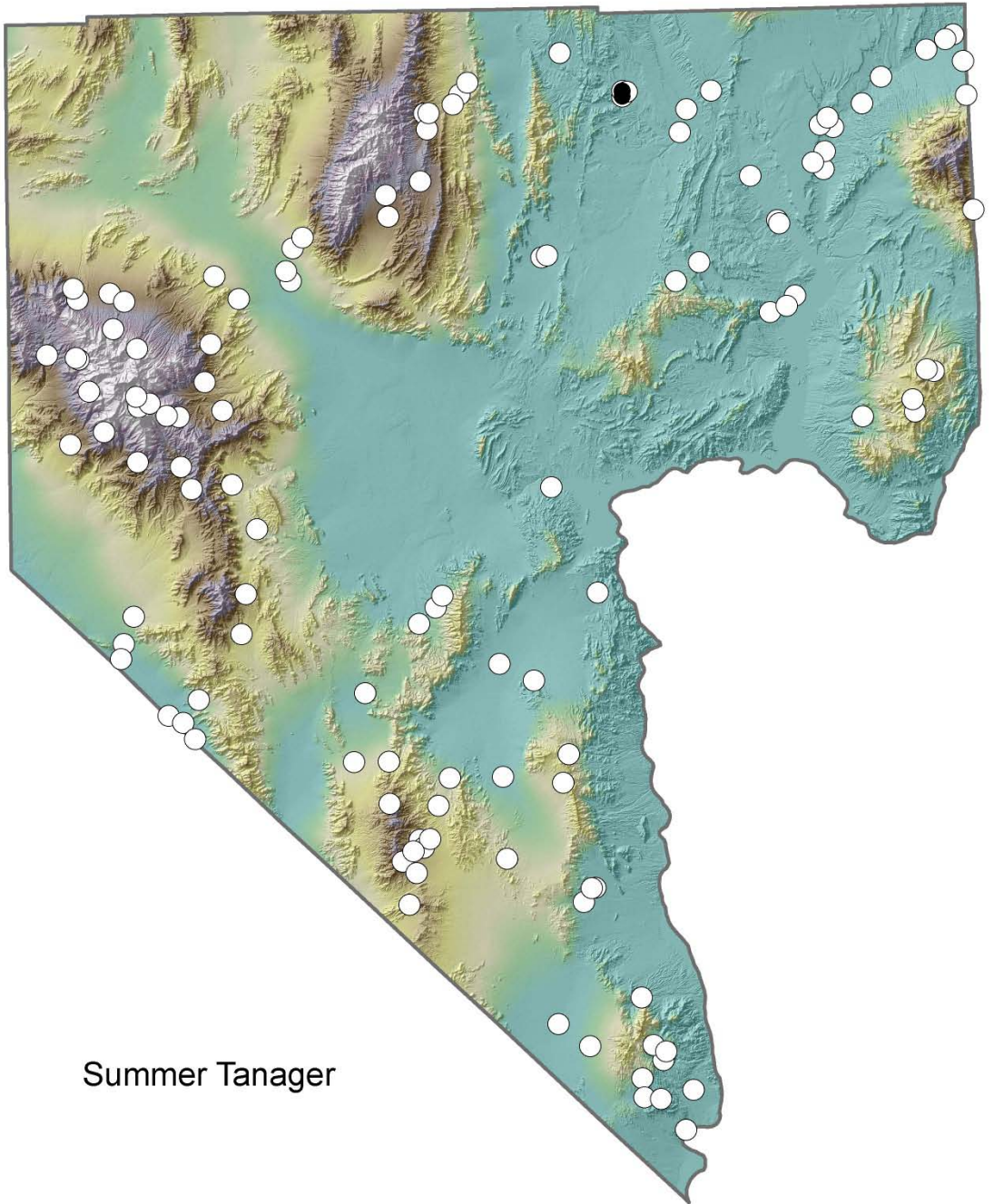


Photo by Martin Meyers



Willow Flycatcher

Summer Tanager Distribution

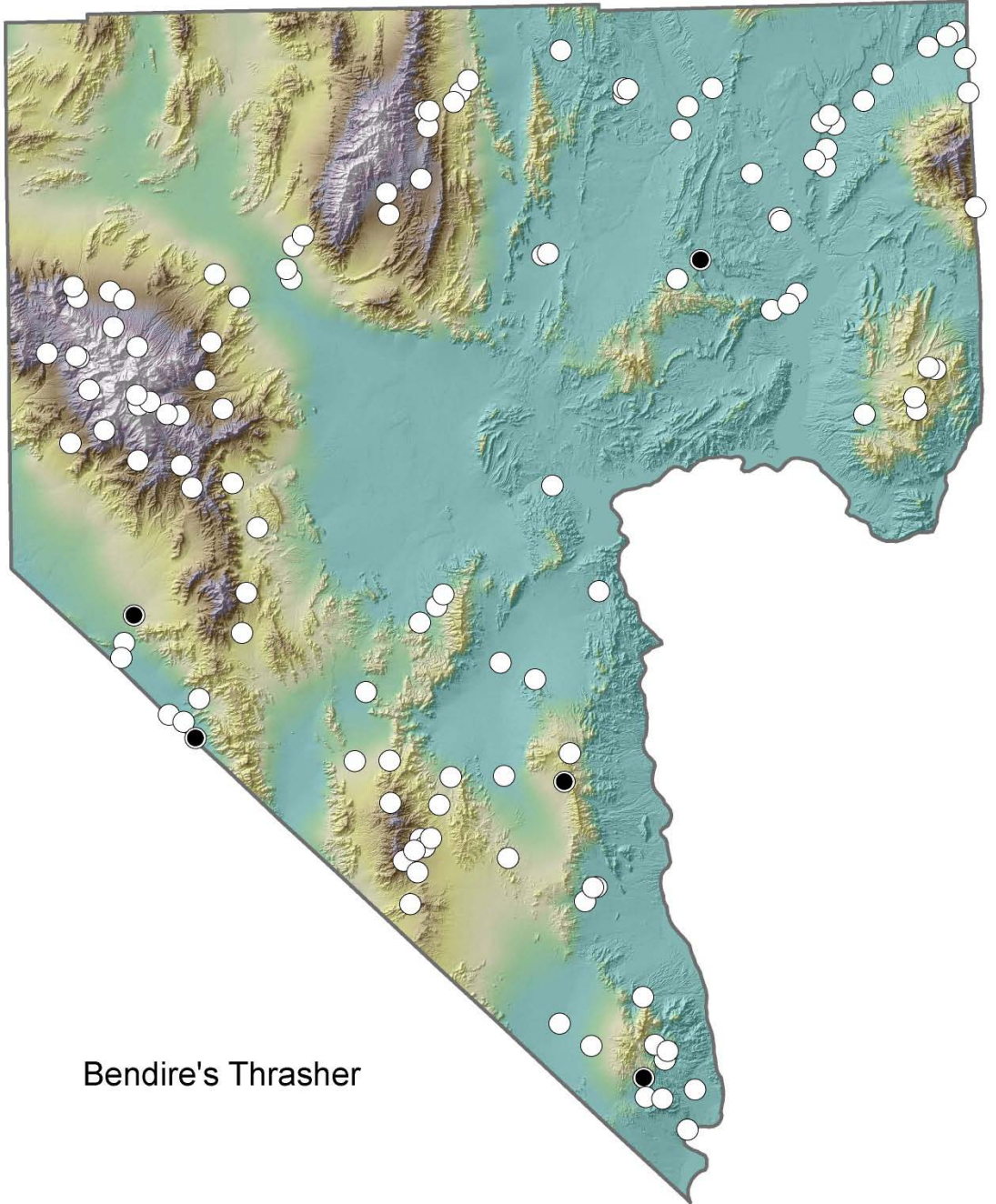


Summer Tanager

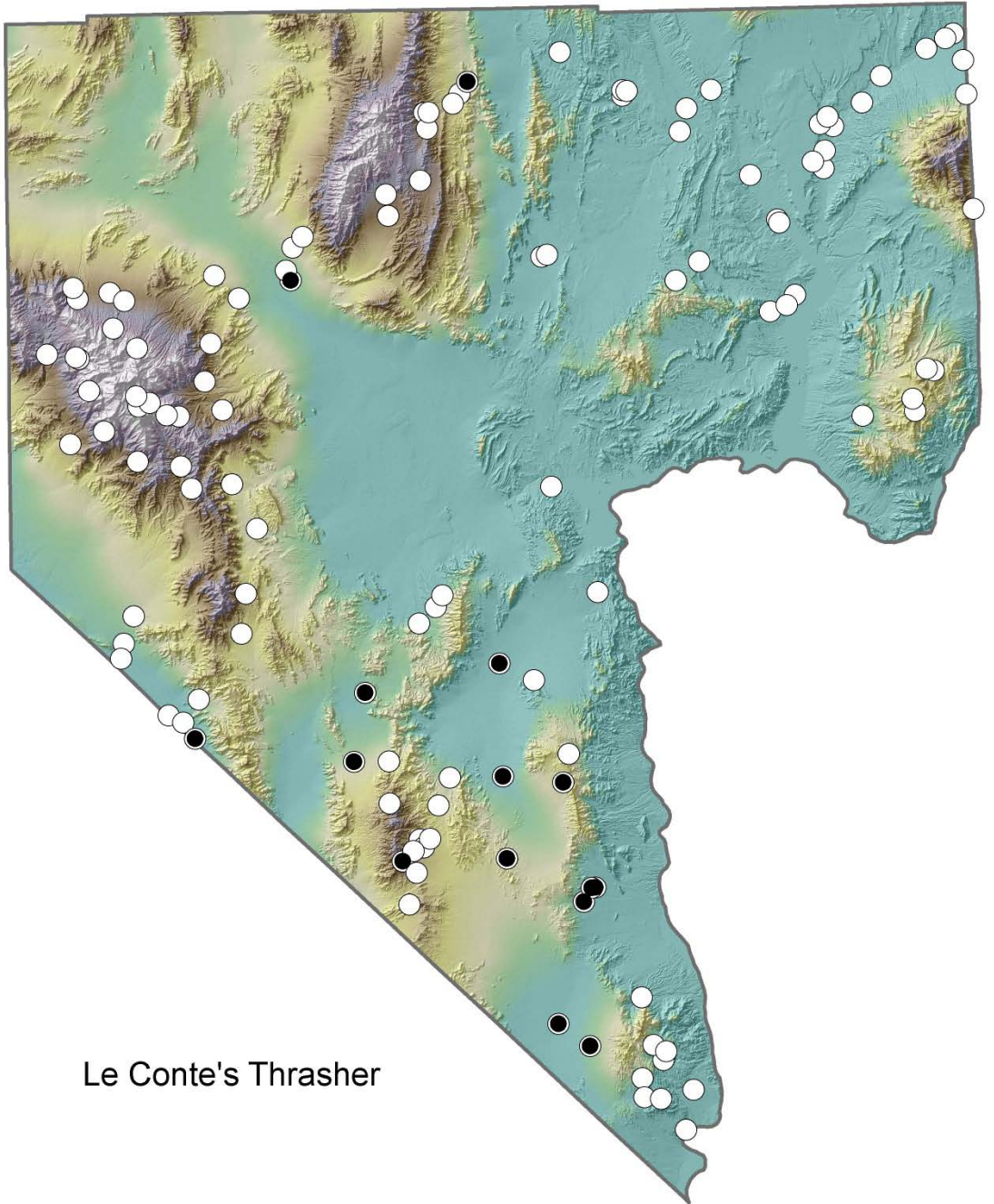
Number of Detections (2008-2011)

Habitat Type	Bendire's Thrasher	Le Conte's Thrasher	Gray Vireo
Agricultural			
Aspen			
Coniferous Forest			12
Joshua Tree/Yucca	2	1	12
Lowland Riparian	1	1	3
Mojave Desert Scrub	3	18	
Mesquite-Acacia	2	25	2
Montane Riparian			25
Montane Shrubland		1	13
Pinyon-Juniper			122
Salt Desert Scrub		4	1
TOTAL	8	50	190

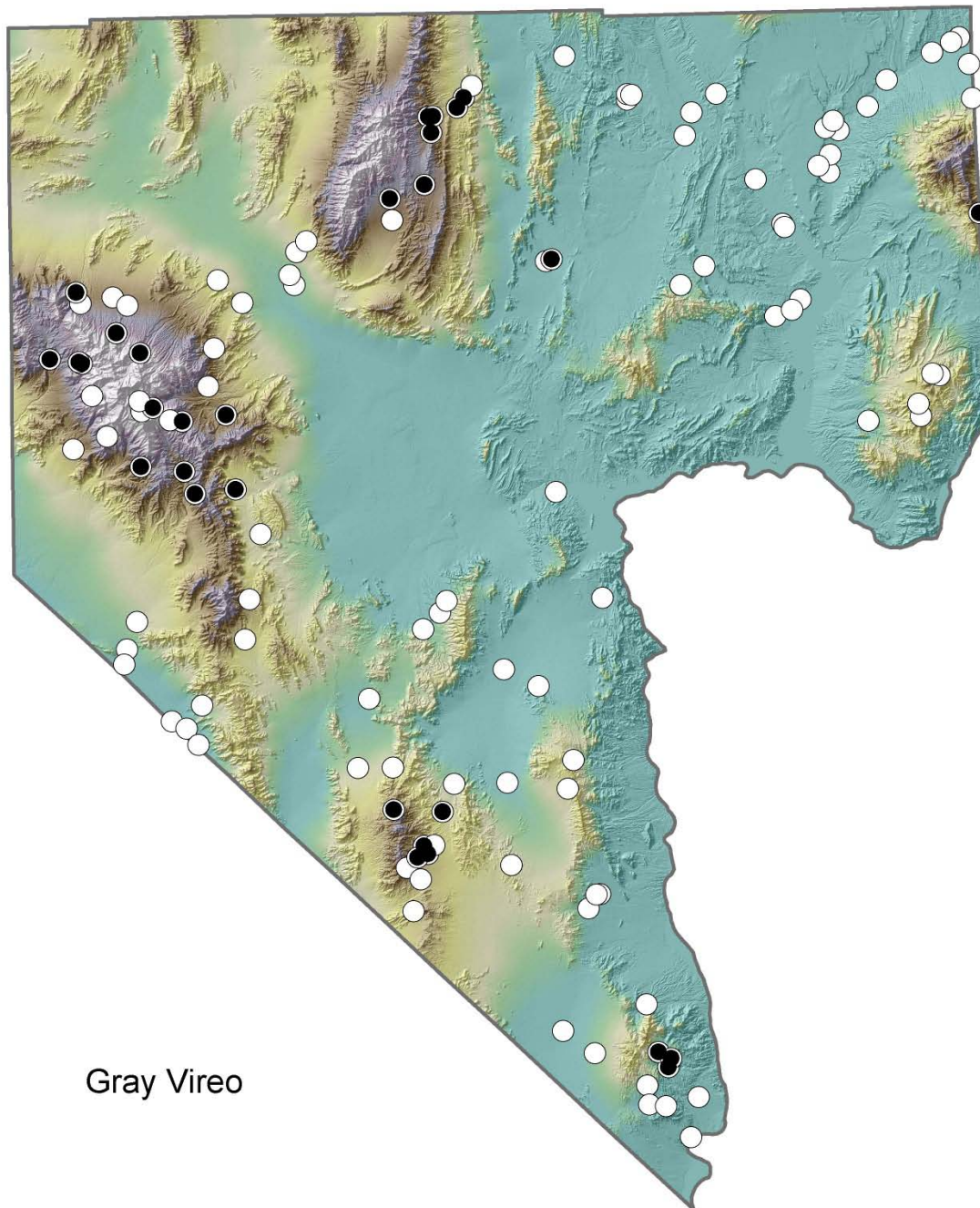
Bendire's Thrasher Distribution



Le Conte's Thrasher Distribution

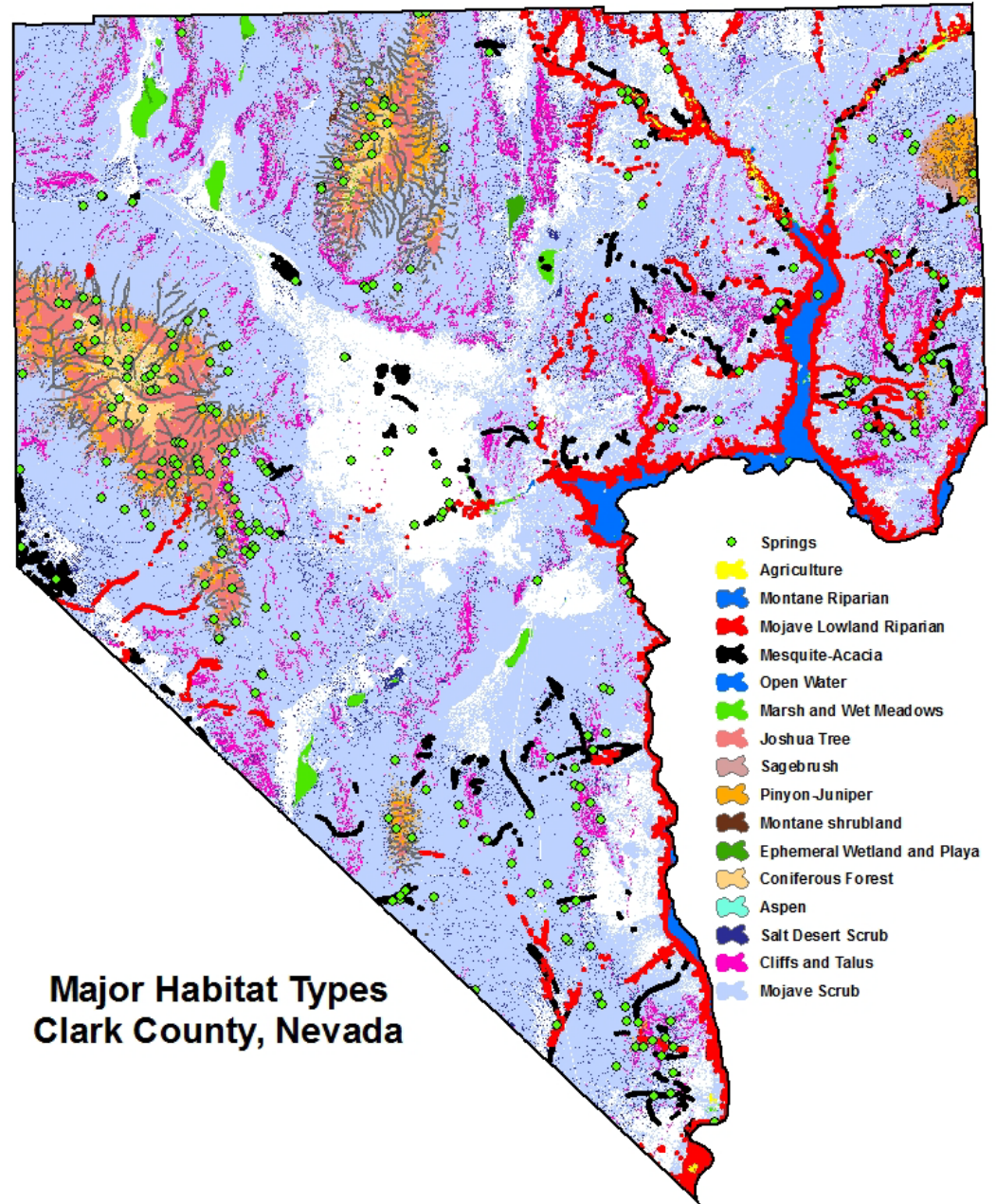


Gray Vireo Distribution



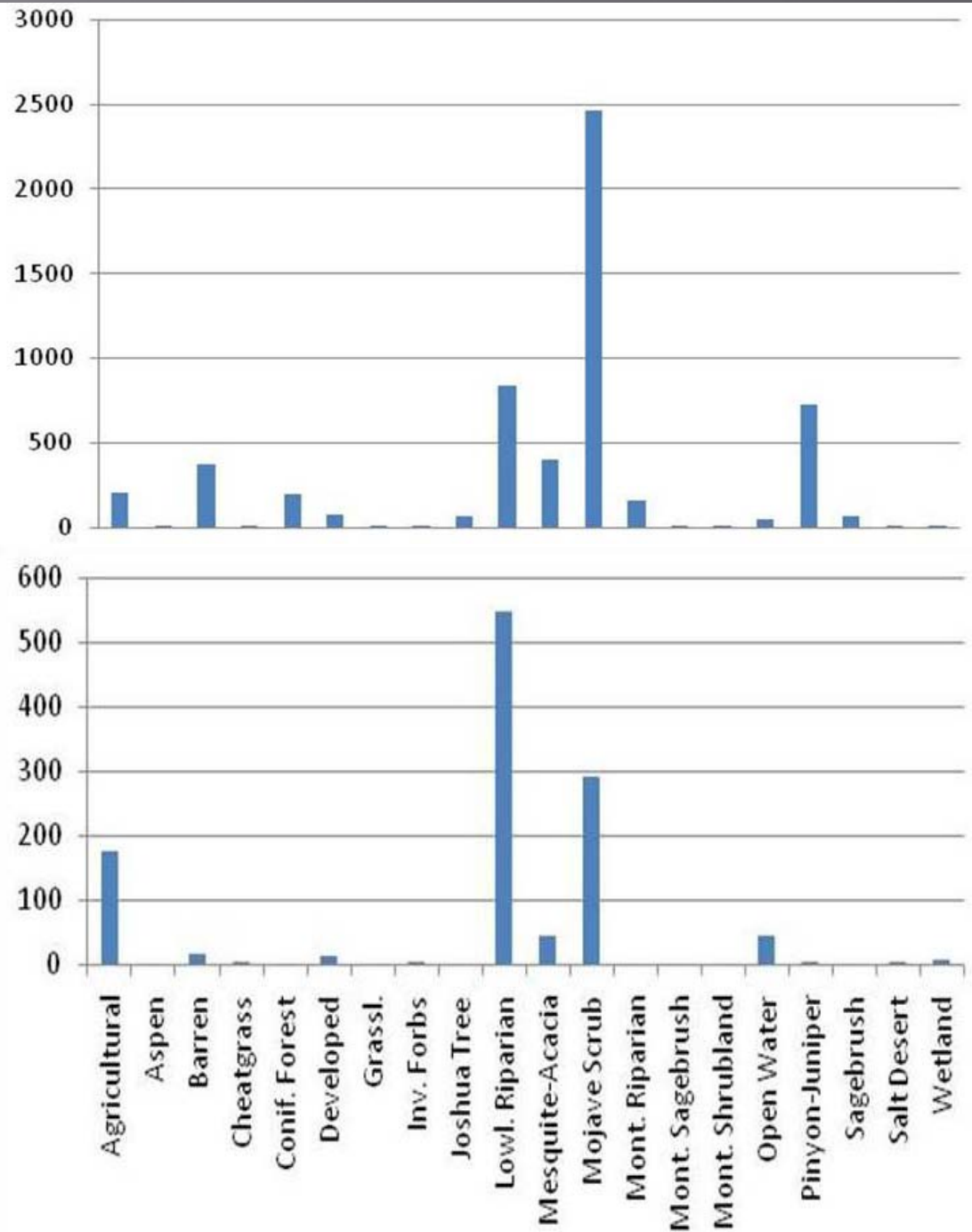
Gray Vireo

New Map
Products:
Wildlife
Habitat
Map



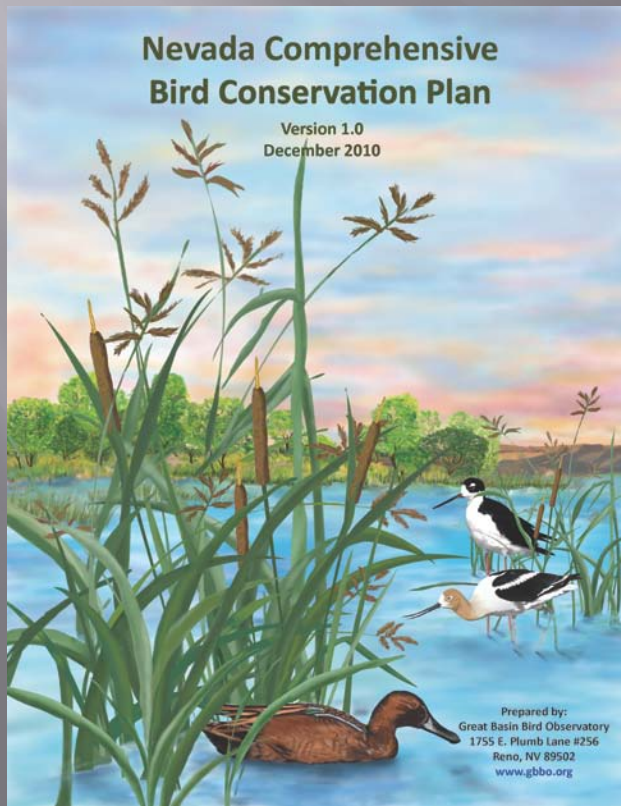
**Major Habitat Types
Clark County, Nevada**

Landscape
Use
Of
Blue
Grosbeak
(n = 13)

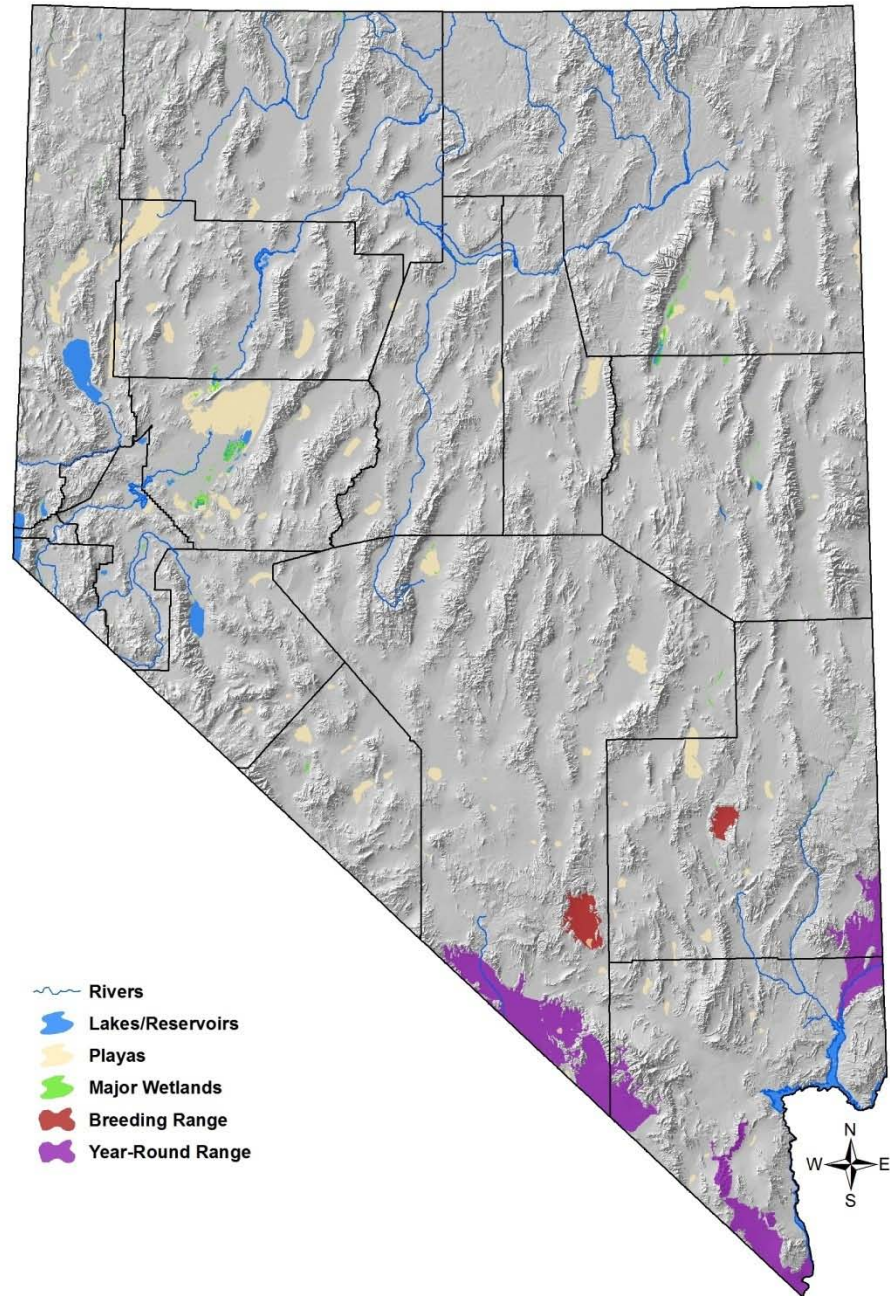


New Approaches to Range Mapping, Data Analyses, and Conservation Planning

(for more info:
www.gbbo.org
Select Bird Conservation Plan)



Bendire's Thrasher



Next Steps

- ▣ Revise conceptual models for nine species
- ▣ Statistical habitat suitability modeling
- ▣ Population size estimation through detectability analyses

Acknowledgments

- ▣ Clark County Desert Conservation Program
- ▣ 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