

General Landbird Monitoring in Clark County 2008 - 2013

With Focus on Nine Priority Species (2005-GBBO-581-P)

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Scope of GBBO Landbird Monitoring

- Regional
- Includes all birds – more effective for small diurnal landbirds than other groups
- Standardized methods
- Can be scaled up and down

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

Nevada Bird Count Methods



- Extensive coverage in randomly selected point count transects (stratified by habitat)
- Intensive area searches on a randomly selected subset of sites, for double-sampling
- Habitat and landscape assessments in relation to bird presence

Point Count Method

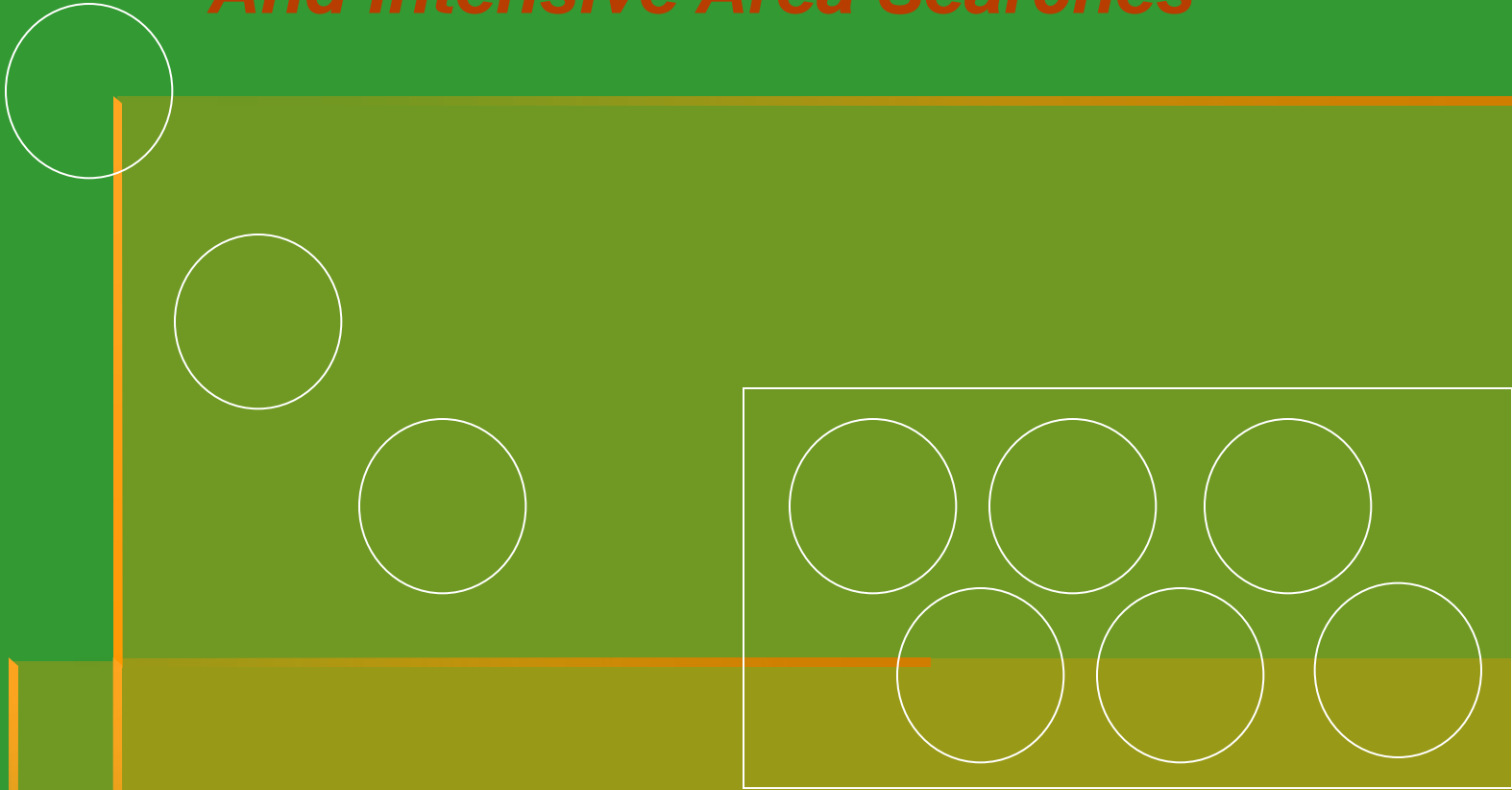
- 10 points per transects
- 10 minute counts (intervals 0-3, 3-5, 5-10)
- At 3 distances (0-50, 50-100, >100), unless DISTANCE is employed

Advantages

- Comparable across habitats
- Random sampling
- Removal methods possible



Double-Sampling Using Point Counts And Intensive Area Searches



To correct for detectability biases of rapid surveys (e.g., season, observer, vocalizations, behaviors)

Distribution of Area Search Effort (4 sites)

Pinyon-juniper (1 site)

Lowland riparian (1 sites)

Salt desert scrub (1 site)

Joshua tree (1 site)

Habitat Suitability (Assessments ~70% completed in Clark County)

Stand conditions

Landscape layout

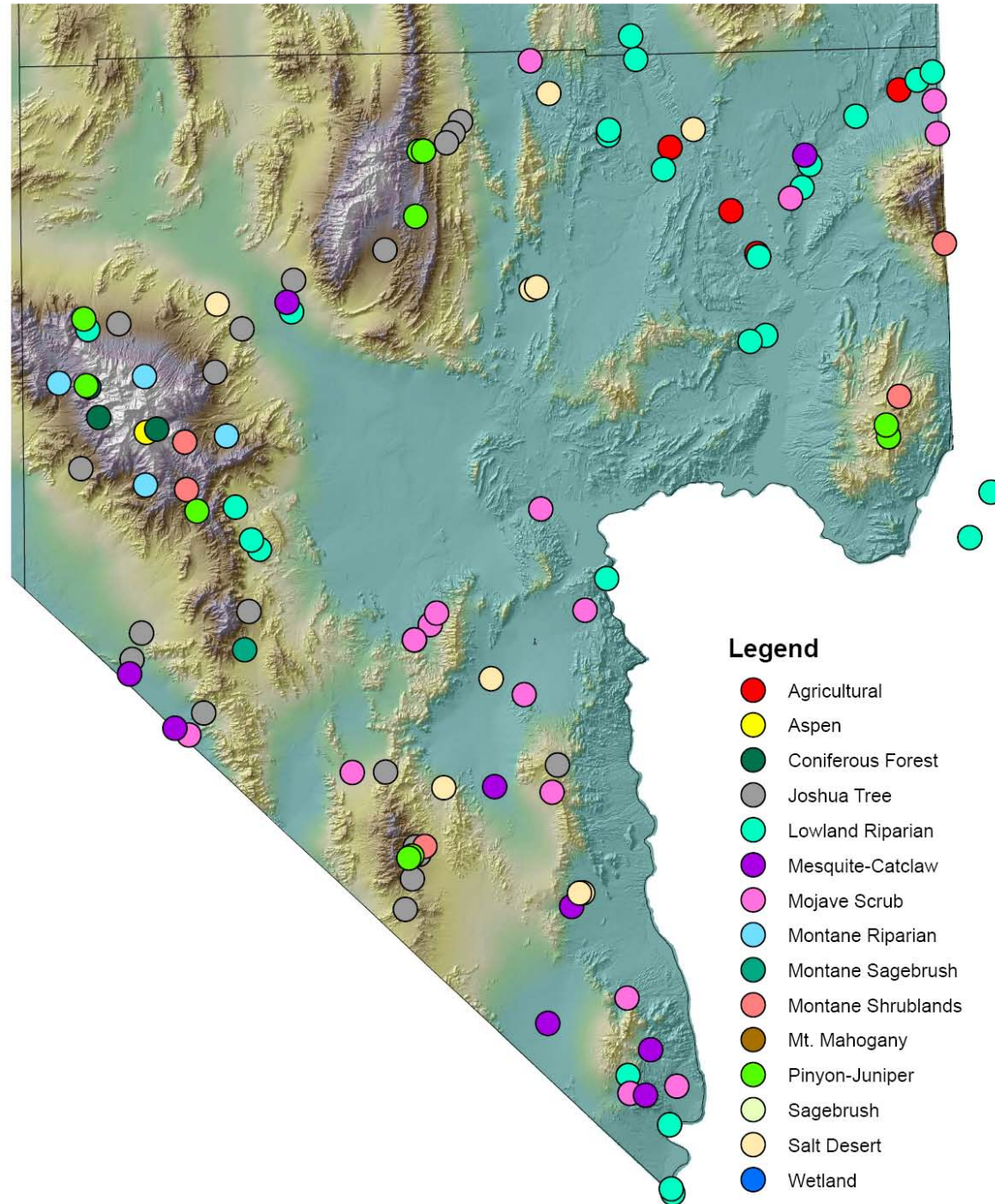


Nevada Bird Count Transect Locations Within Clark County, Nevada

Clark County, 2008-10:

97 point count transects
325 surveys

22 area search plots
8-10 visits each



Habitat Type	# Surveys 2010	# Transects 2010
Agricultural	4	3
Aspen	1	1
Coniferous Forest	3	3
Joshua Tree/Yucca	19	17
Lowland Riparian	20	17
Mojave Desert Scrub	9	9
Mesquite-Acacia	11	9
Montane Riparian	3	3
Montane Shrubland	4	4
Pinyon-Juniper	8	8
Salt Desert Scrub	8	8
TOTAL	90	82

+ 4 area search plots for double-sampling

Number of Transects with 2010 Detections

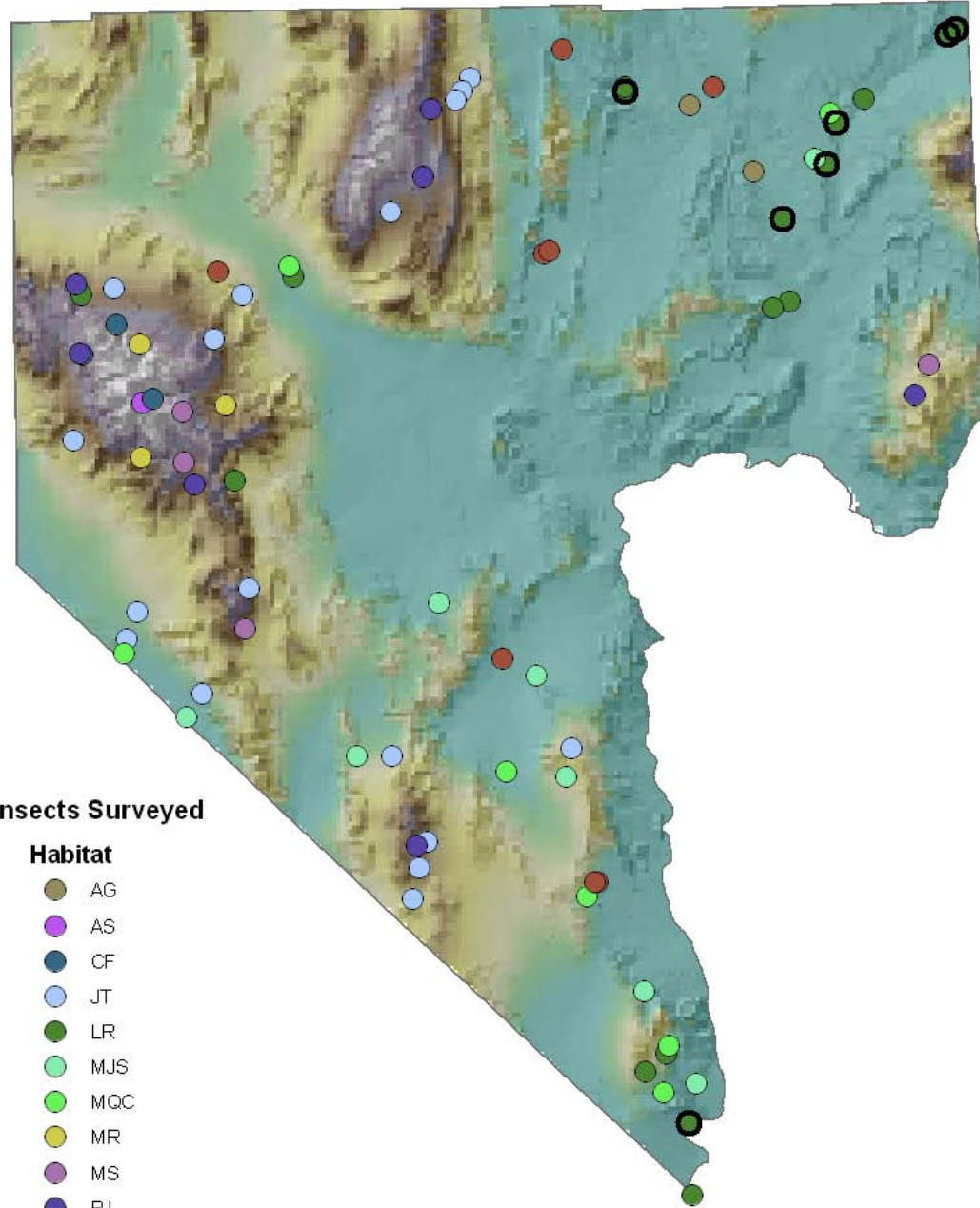
Habitat Type	Bell's Vireo	Blue Grosbeak	Phainopepla	Vermilion Flycatcher	Willow Flycatcher	Summer Tanager
Agricultural						
Aspen						
Coniferous Forest						
Joshua Tree/Yucca			14			
Lowland Riparian	24	2	30	3		
Mojave Desert Scrub						
Mesquite-Acacia			16			
Montane Riparian						
Montane Shrubland						
Pinyon-Juniper			8			
Salt Desert Scrub						
TOTAL	24 (31)	2 (3)	68 (80)	3 (5)	0	0

Bell's Vireo:

- Lowland riparian
- Mesquite-acacia
- Moderately rare
- At N edge of its range



Bell's Vireo, 2010



Transects Surveyed

Habitat

- AG
- AS
- CF
- JT
- LR
- MJS
- MQC
- MR
- MS
- PJ
- SD

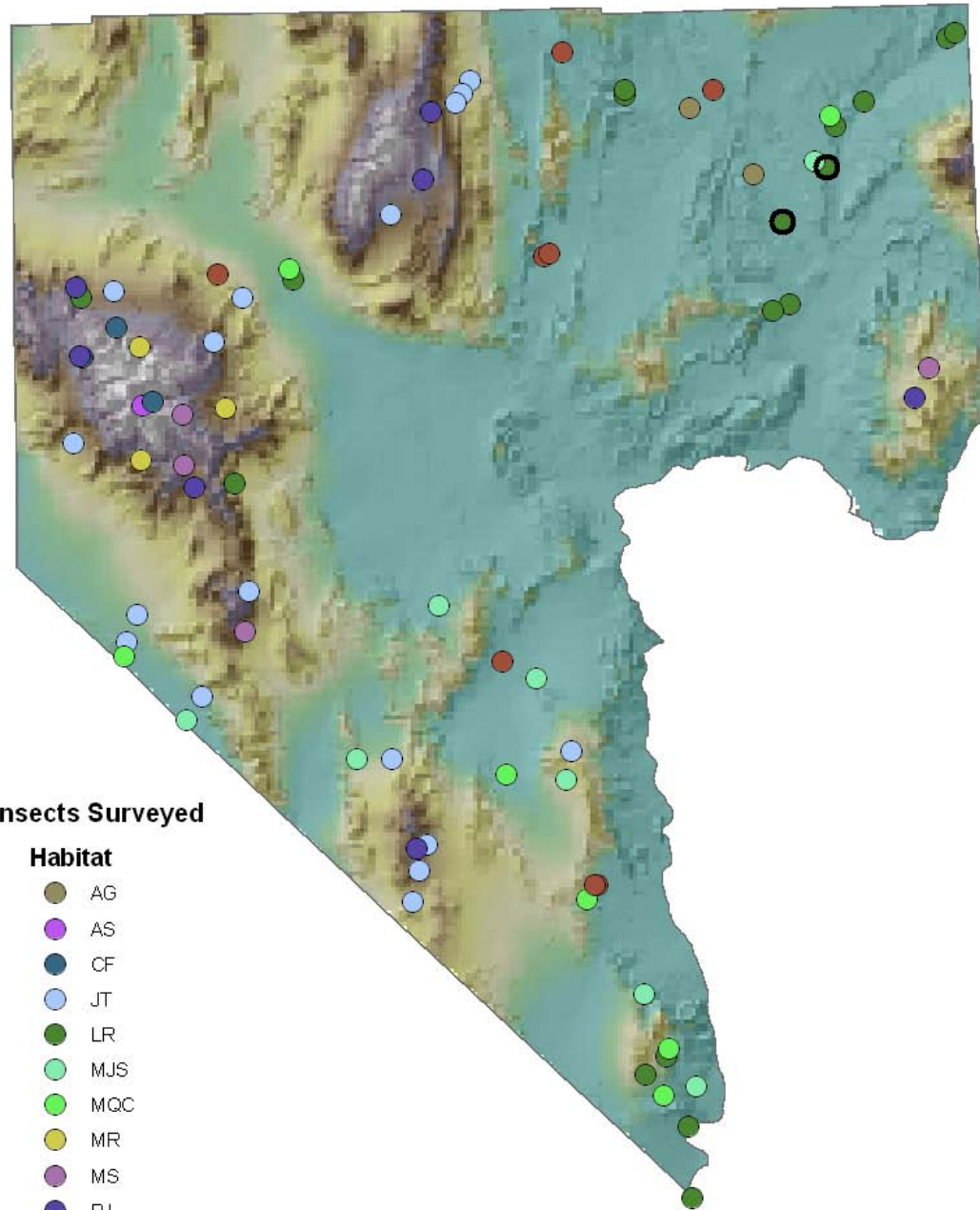
Blue Grosbeak:

- Lowland riparian
- Moderately rare
- Scarce north of Clark County

Blue Grosbeak, 2010

Transects Surveyed

- Habitat**
- AG
 - AS
 - CF
 - JT
 - LR
 - MJS
 - MQC
 - MR
 - MS
 - PJ
 - SD

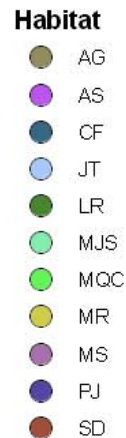


Phainopepla:

- Lowland Riparian
- Mesquite-Acacia
- Moderately rare, near northern edge of its range

Phainopepla, 2010

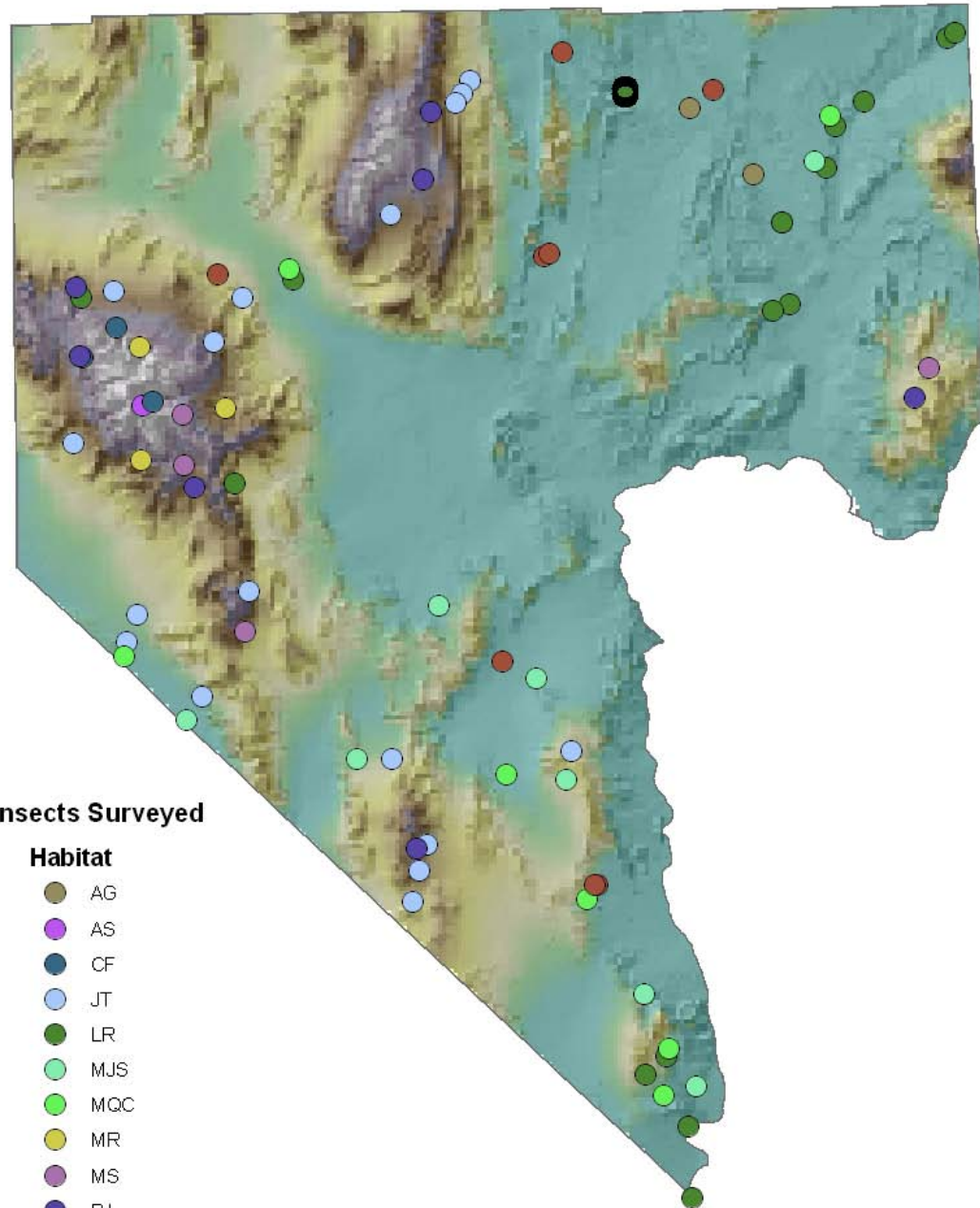
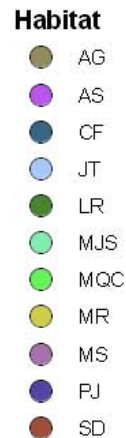
Transects Surveyed



Vermilion Flycatcher:

- Riparian edge
- Rare throughout the region
- Open “parkland” species

Transects Surveyed



Number of Transects with 2010 Detections

Habitat Type	Bendire's Thrasher	Le Conte's Thrasher	Gray Vireo
Agricultural			
Aspen			
Coniferous Forest			6
Joshua Tree/Yucca			
Lowland Riparian			3
Mojave Desert Scrub		1	
Mesquite-Acacia		1	2
Montane Riparian			7
Montane Shrubland			1
Pinyon-Juniper			13
Salt Desert Scrub			
TOTAL	0	2 (4)	32 (45)

Gray Vireo:

-Pinyon-Juniper
-Moderately
common, incl.
north of Clark
County

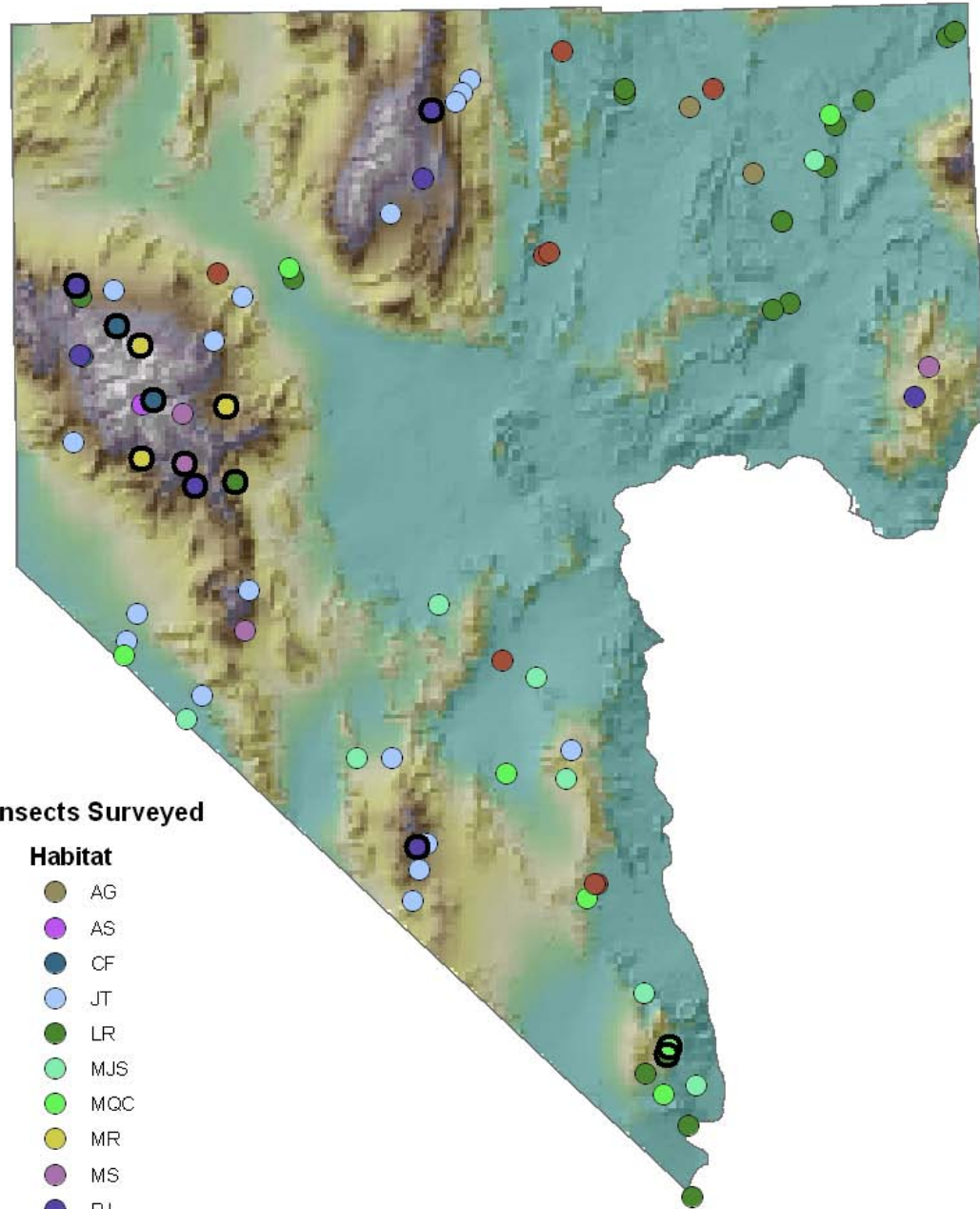


Gray Vireo, 2010

Transects Surveyed

Habitat

- AG
- AS
- CF
- JT
- LR
- MJS
- MQC
- MR
- MS
- PJ
- SD



Next Steps

- Re-assess sampling plan (fall 2010)
- Preliminary habitat suitability models
- Population size estimation, continue to remove biases

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