

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

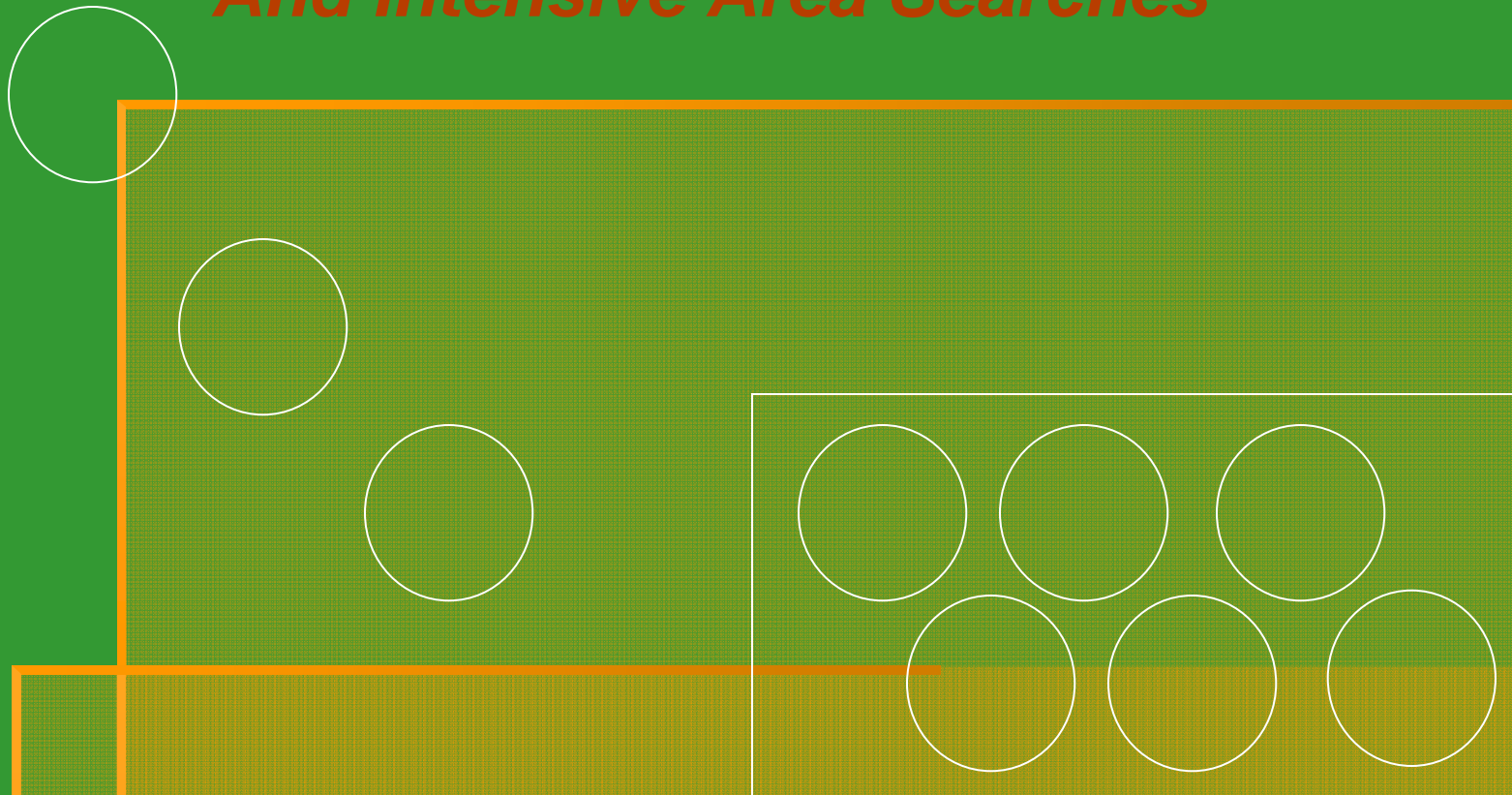
- 10 points per transects
- 10 minute counts (intervals 0-3, 3-5, 5-10)
- At 3 distances (0-50, 50-100, >100), unless DISTANCE is employed

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 (8 sites)

Pinyon-juniper (1 site)

Lowland riparian (4 sites)

Mesquite-acacia (1 site)

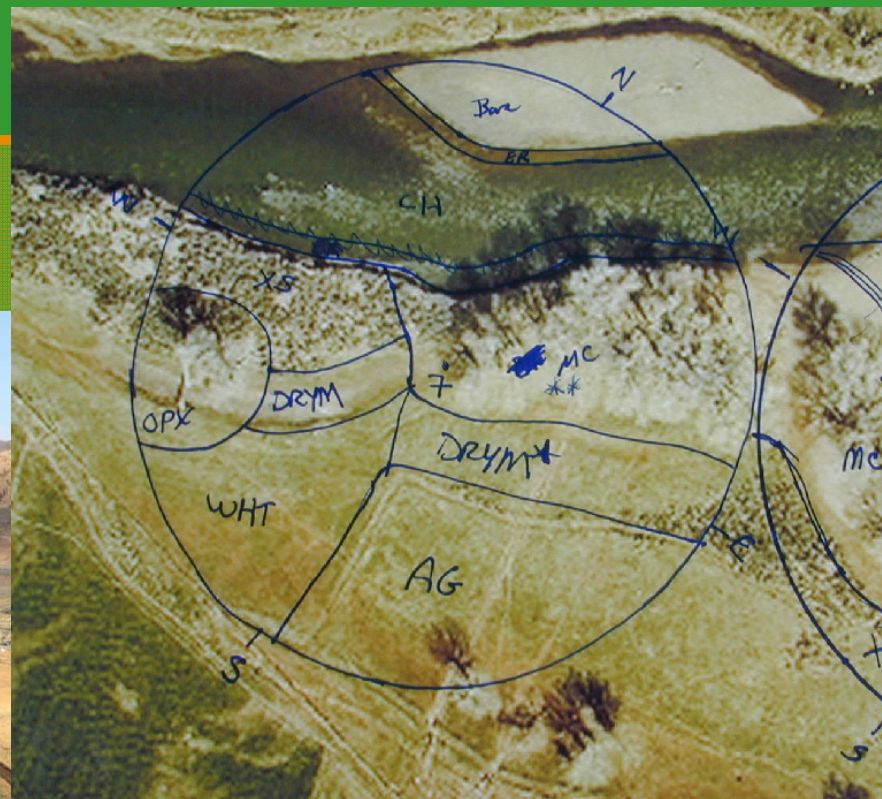
Salt desert scrub (1 site)

Joshua tree (1 site)

Habitat Suitability (Assessments ~30% completed in Clark County)

Stand conditions

Landscape layout

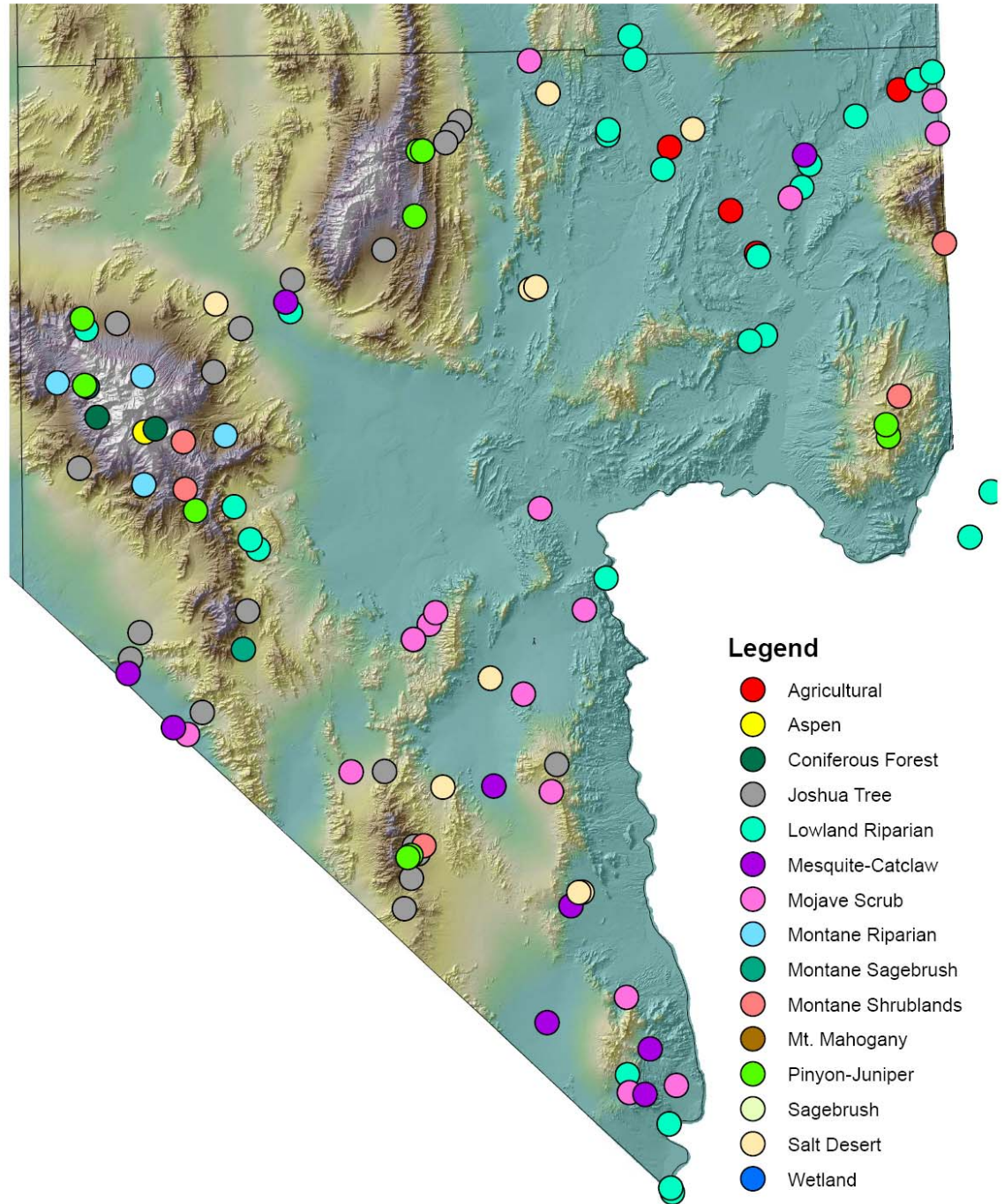


Clark County, 2008/09:

97 point count transects
235 surveys

18 area search plots
8-10 visits each

Nevada Bird Count Transect Locations Within Clark County, Nevada



Habitat Type	# Surveys	# Transects
Agricultural	3	3
Aspen	1	1
Coniferous Forest	5	4
Joshua Tree/Yucca	31	18
Lowland Riparian	29	18
Mojave Desert Scrub	13	9
Mesquite-Acacia	12	13
Montane Riparian	5	4
Montane Shrubland	2	2
Pinyon-Juniper	13	9
Salt Desert Scrub	7	7
TOTAL	121	88

+ 8 area search plots for double-sampling

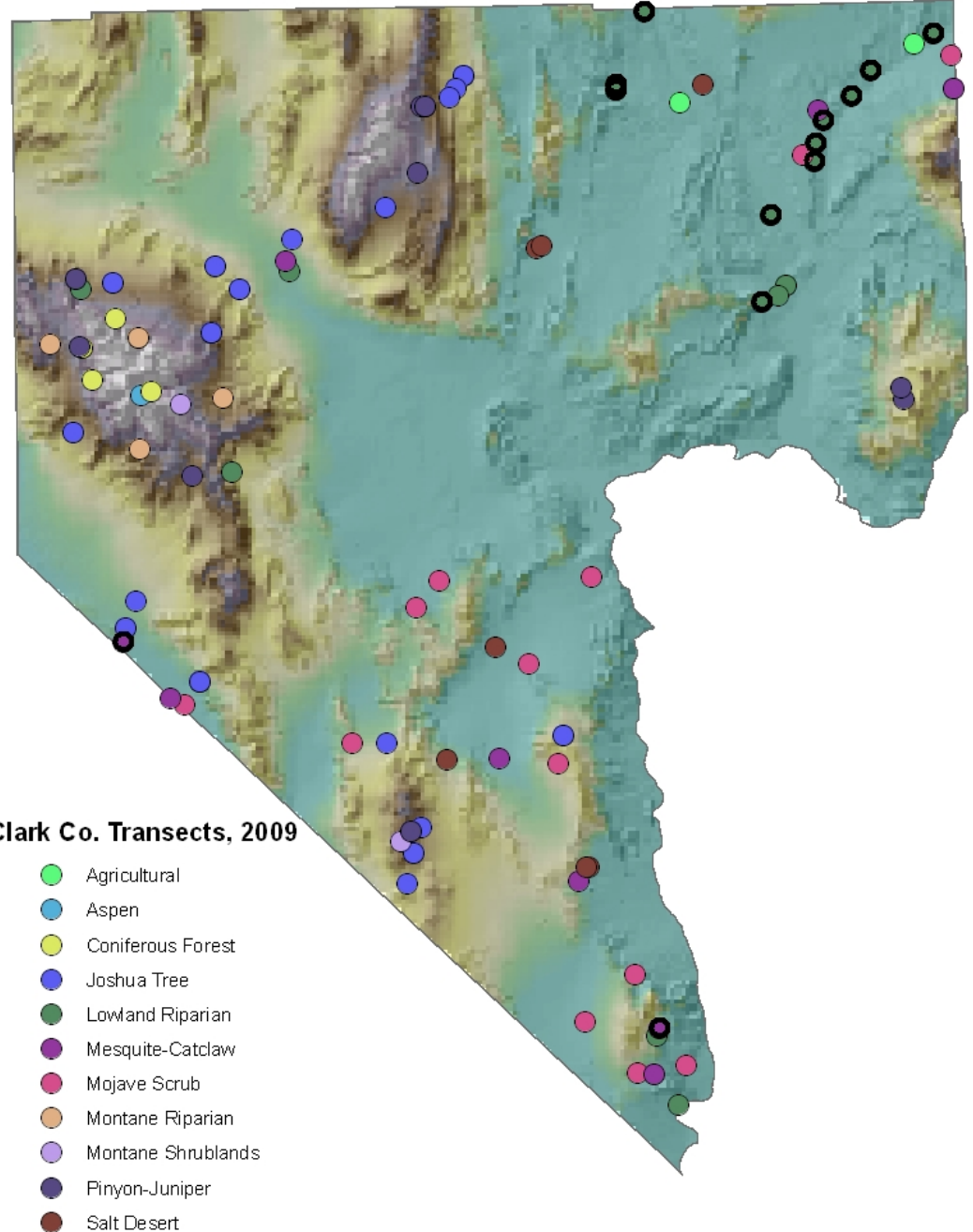
Number of Transects with 2009 Detections

Habitat Type	Bell's Vireo	Blue Grosbeak	Phainopepla	Vermilion Flycatcher	Willow Flycatcher	Summer Tanager
Agricultural	1		1	1		
Aspen						
Coniferous Forest						
Joshua Tree/Yucca			2			
Lowland Riparian	11	9	13	7	2	2
Mojave Desert Scrub			1			
Mesquite-Acacia	2		5			
Montane Riparian						
Montane Shrubland						
Pinyon-Juniper						
Salt Desert Scrub						
TOTAL	14 (52)	9 (32)	22 (152)	8 (12)	2 (5)	2 (2)

Bell's Vireo:

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

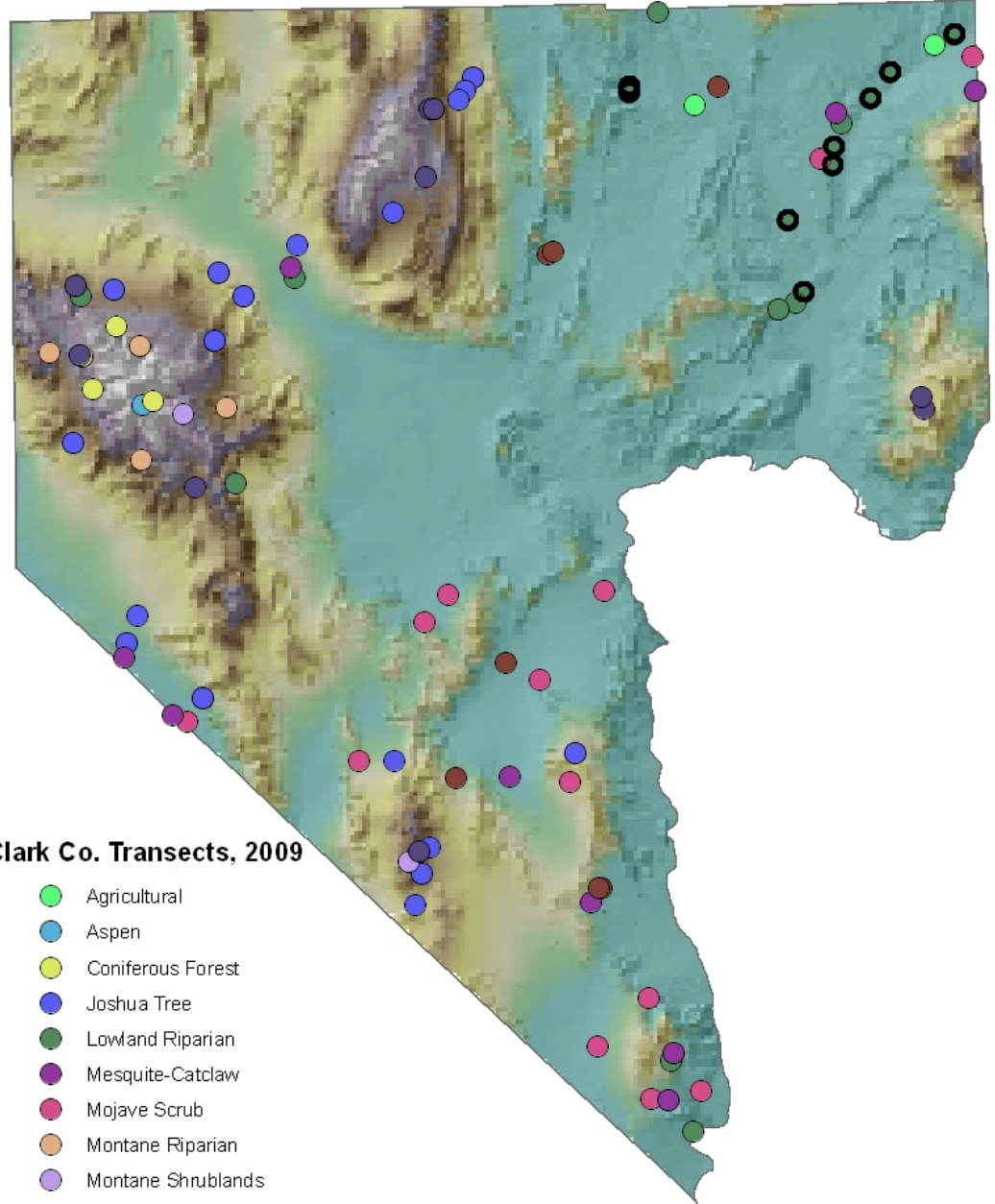
Bell's Vireo



Blue Grosbeak:

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

Blue Grosbeak



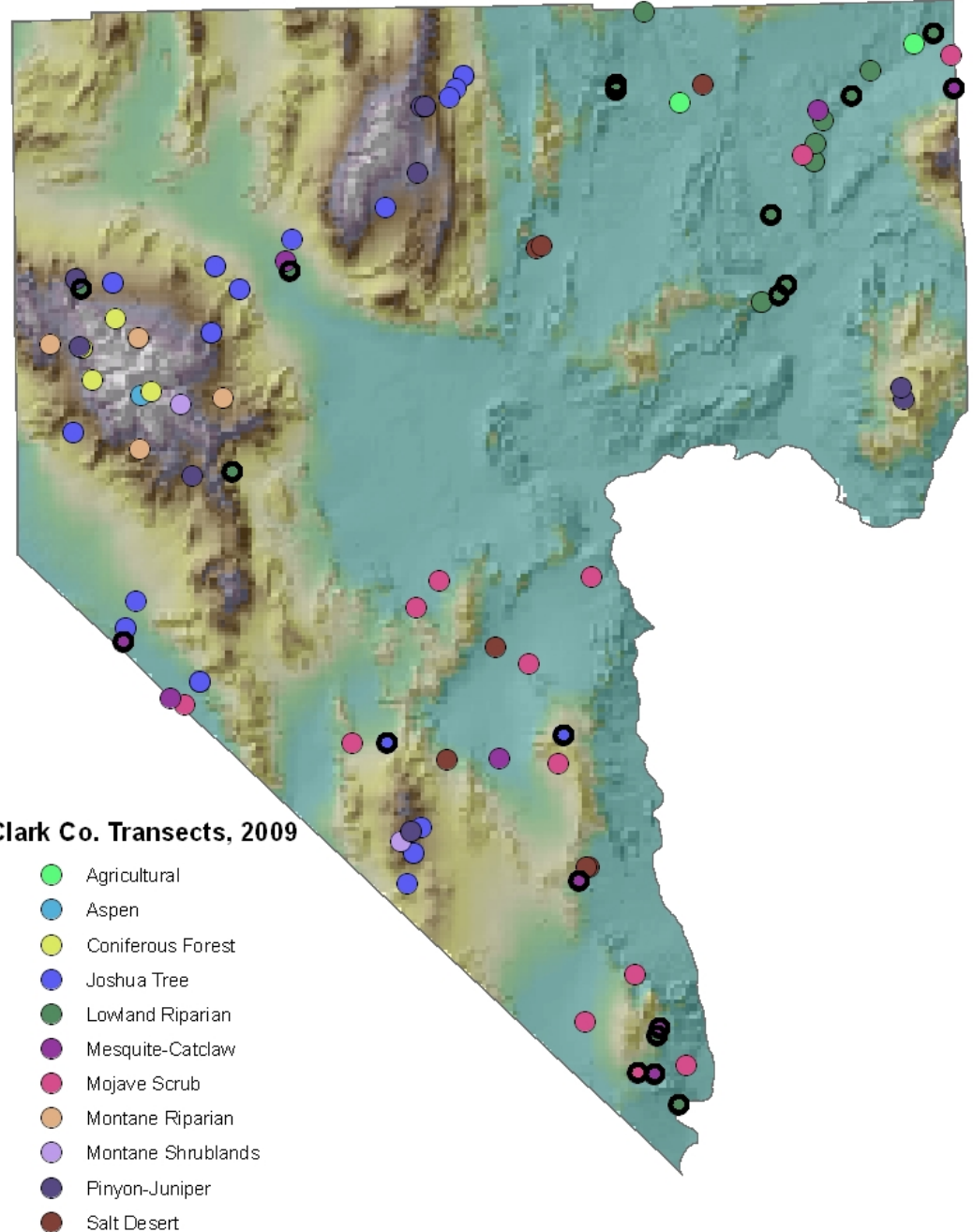
Clark Co. Transects, 2009

- Agricultural
- Aspen
- Coniferous Forest
- Joshua Tree
- Lowland Riparian
- Mesquite-Catclaw
- Mojave Scrub
- Montane Riparian
- Montane Shrublands
- Pinyon-Juniper
- Salt Desert

Phainopepla:

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

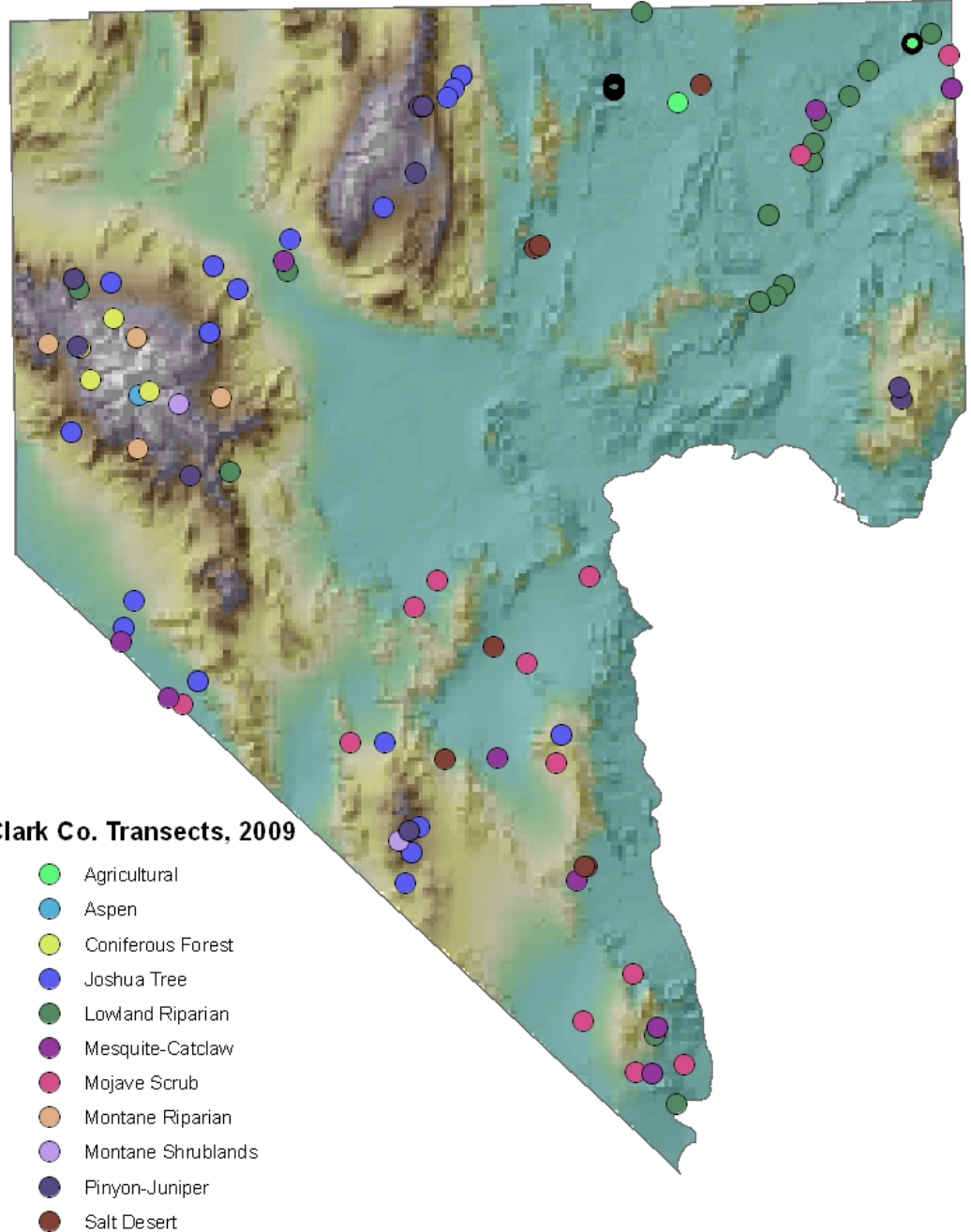
Phainopepla



Vermilion Flycatcher:

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

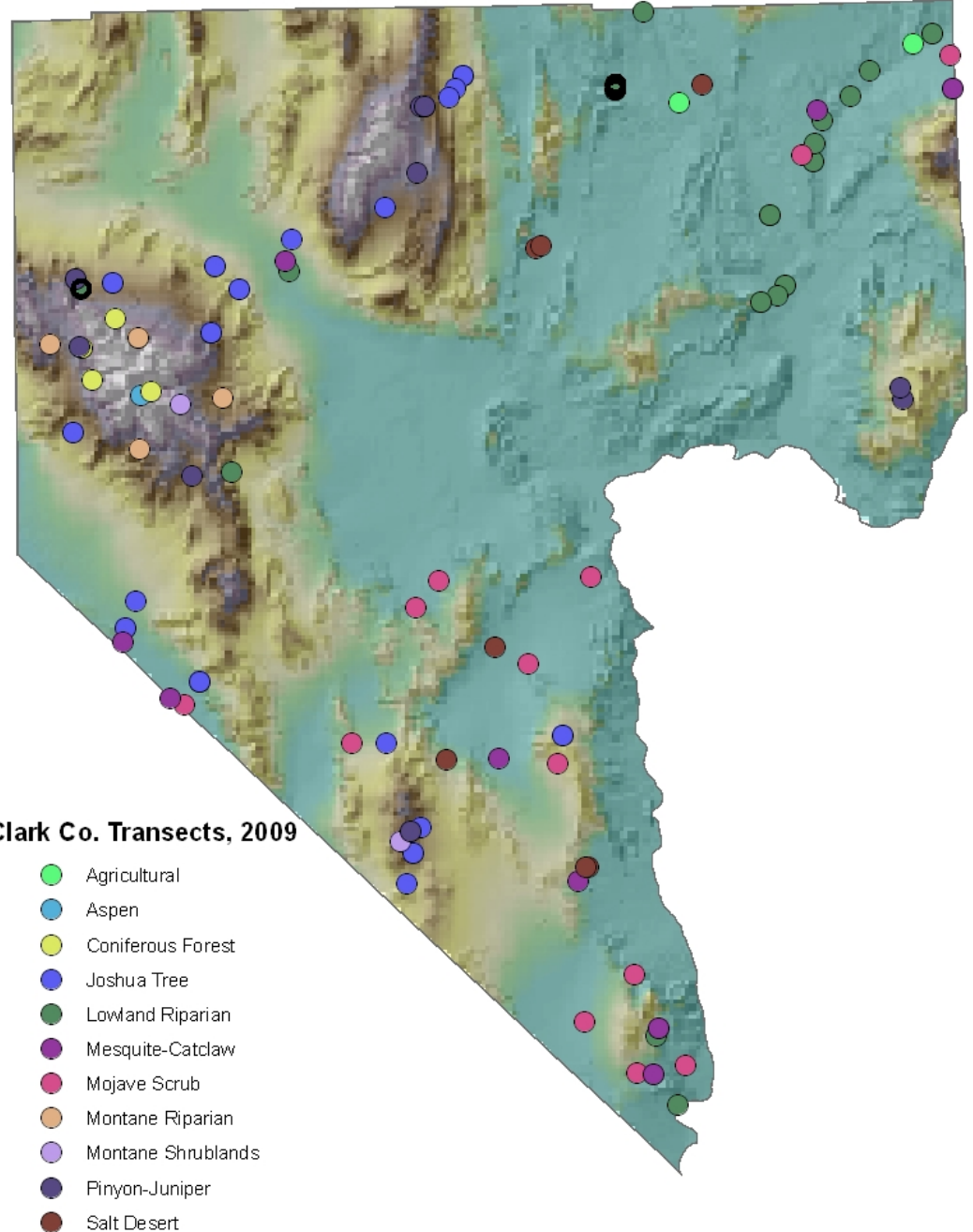
Vermilion Flycatcher



Willow Flycatcher:

- Riparian shrublands
- Rare throughout the region
- Saturated soils

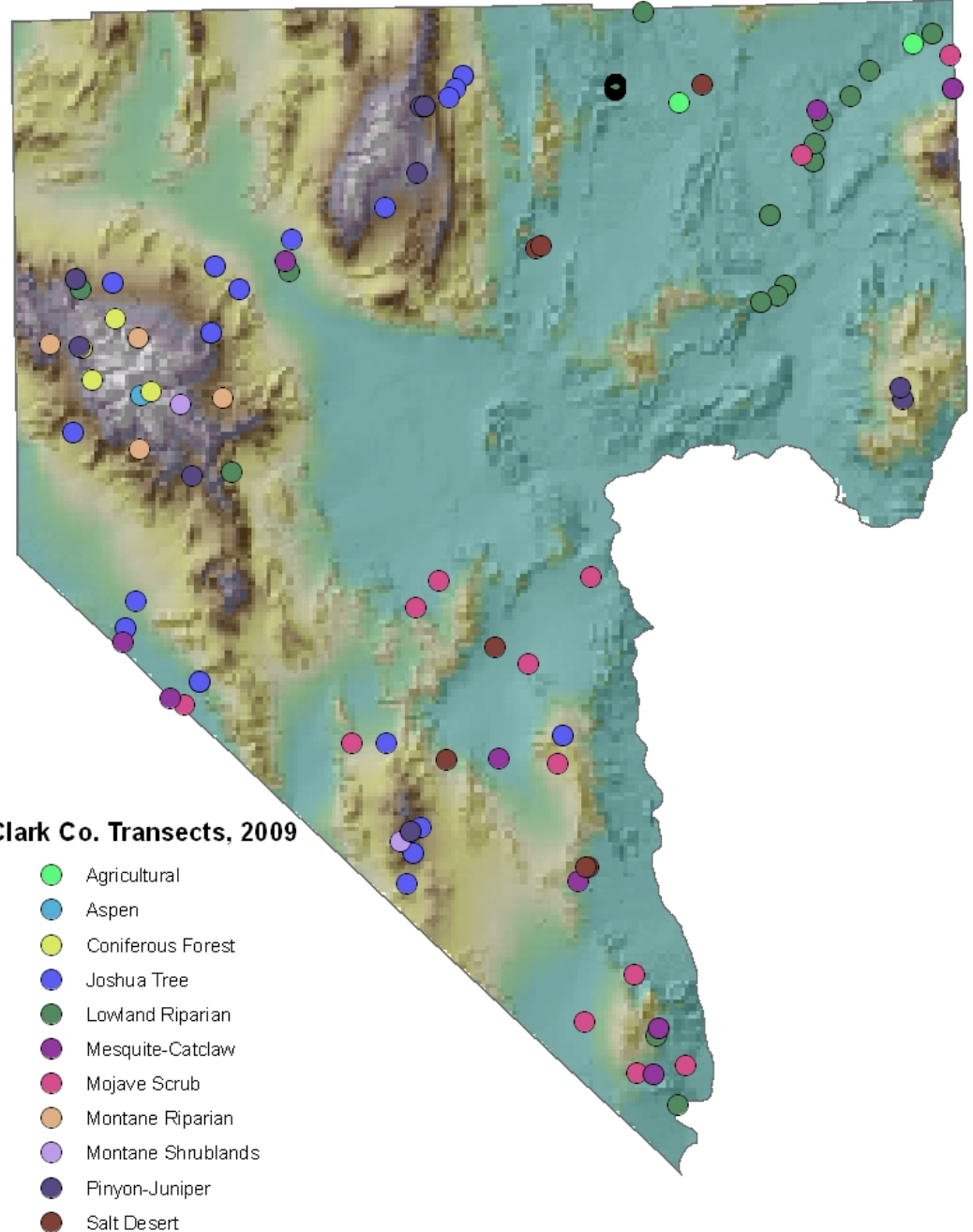
Willow Flycatcher



Summer Tanager:

- Lowland Riparian
- Rare throughout the region
- Mature canopy “specialist”

Summer Tanager



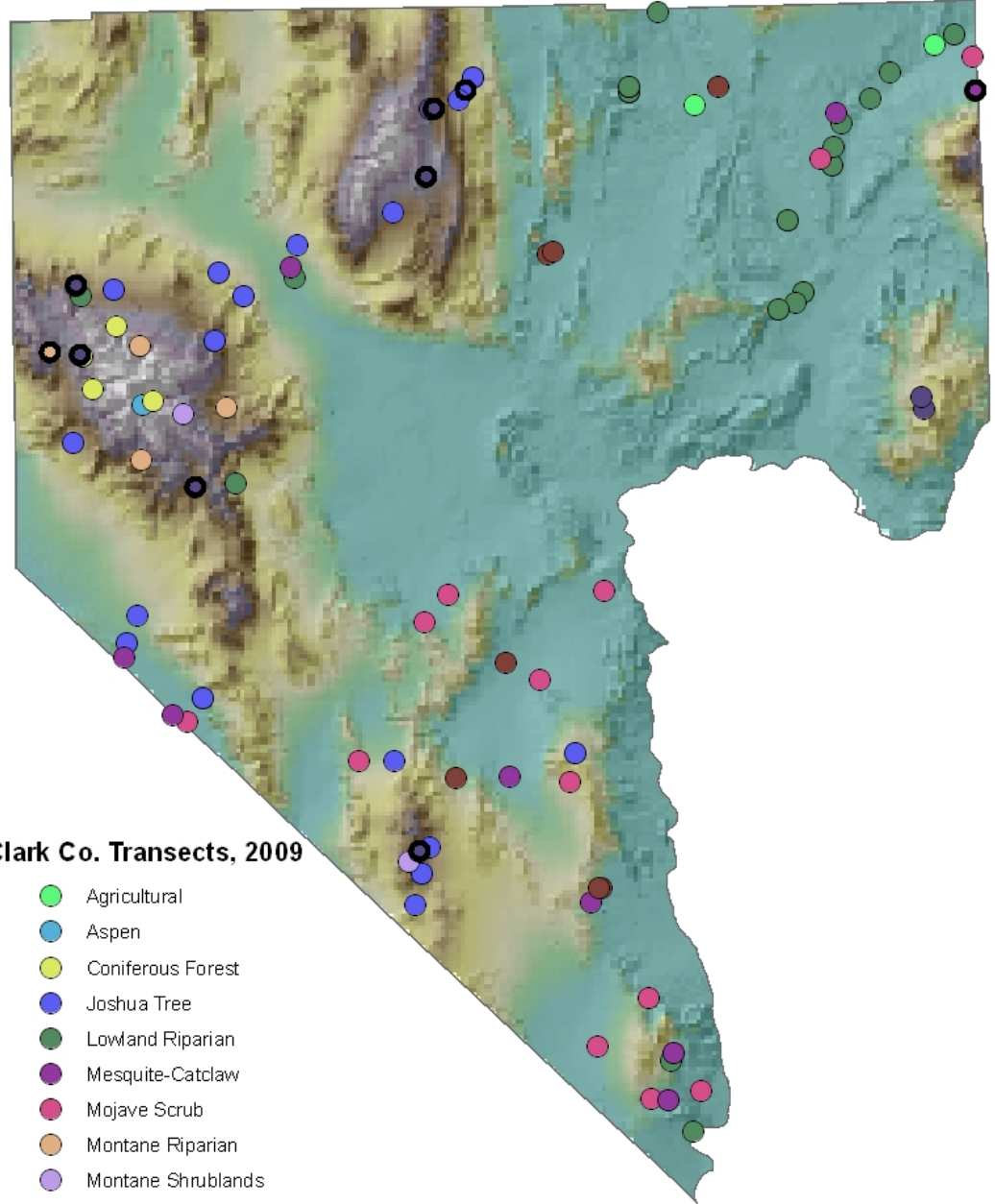
Number of Transects with 2009 Detections

Habitat Type	Bendire's Thrasher	Le Conte's Thrasher	Gray Vireo
Agricultural			
Aspen			
Coniferous Forest			
Joshua Tree/Yucca			1
Lowland Riparian			
Mojave Desert Scrub	1	2	
Mesquite-Acacia		3	1
Montane Riparian			1
Montane Shrubland			
Pinyon-Juniper			6
Salt Desert Scrub			
TOTAL	1 (2)	5 (15)	9 (46)

Gray Vireo:

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

Gray Vireo



Clark Co. Transects, 2009

- Agricultural
- Aspen
- Coniferous Forest
- Joshua Tree
- Lowland Riparian
- Mesquite-Catclaw
- Mojave Scrub
- Montane Riparian
- Montane Shrublands
- Pinyon-Juniper
- Salt Desert

Challenges in Clark County

- Priority species use restricted habitats
- Habitats of priority species are often altered
- Priority species are uncommon or rare



Next Steps

- Continue habitat assessments (fall 2009)
- 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 system
- Many other Nevada Bird Count partners
- GBBO field crews and volunteers