

# Factors Affecting Gunnison Sage- grouse (*Centrocercus minimus*) Conservation in San Juan County, Utah



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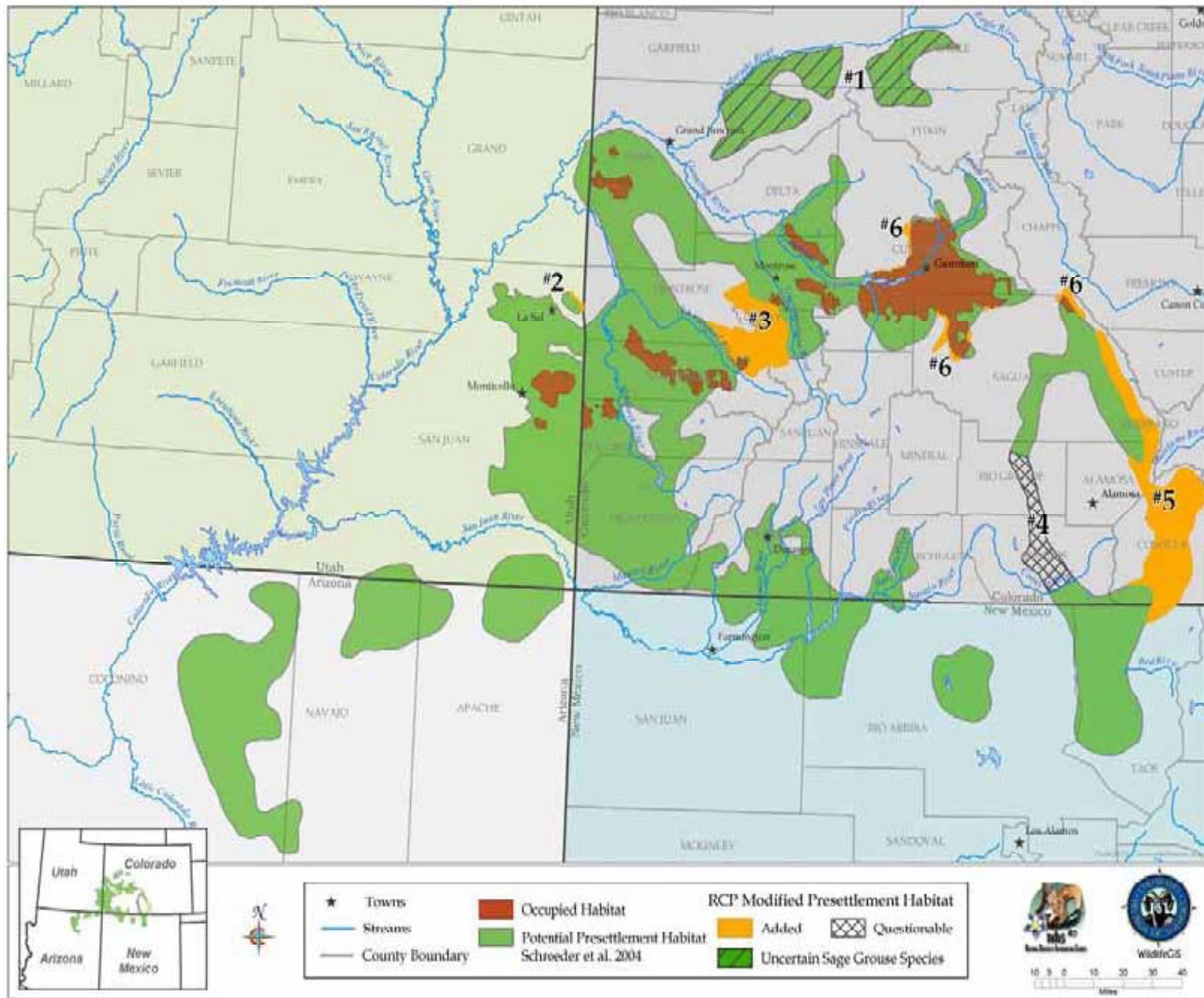
# Gunnison vs. Greater Sage-grouse

- Separated from Greater in 2000.
- Smaller: shorter tarsus, culmen and carpal measurements.
- Male mass 400 grams less than male Greater.
- Shorter retrices, more distinct barring.
- Considerably larger and thicker filoplumes.

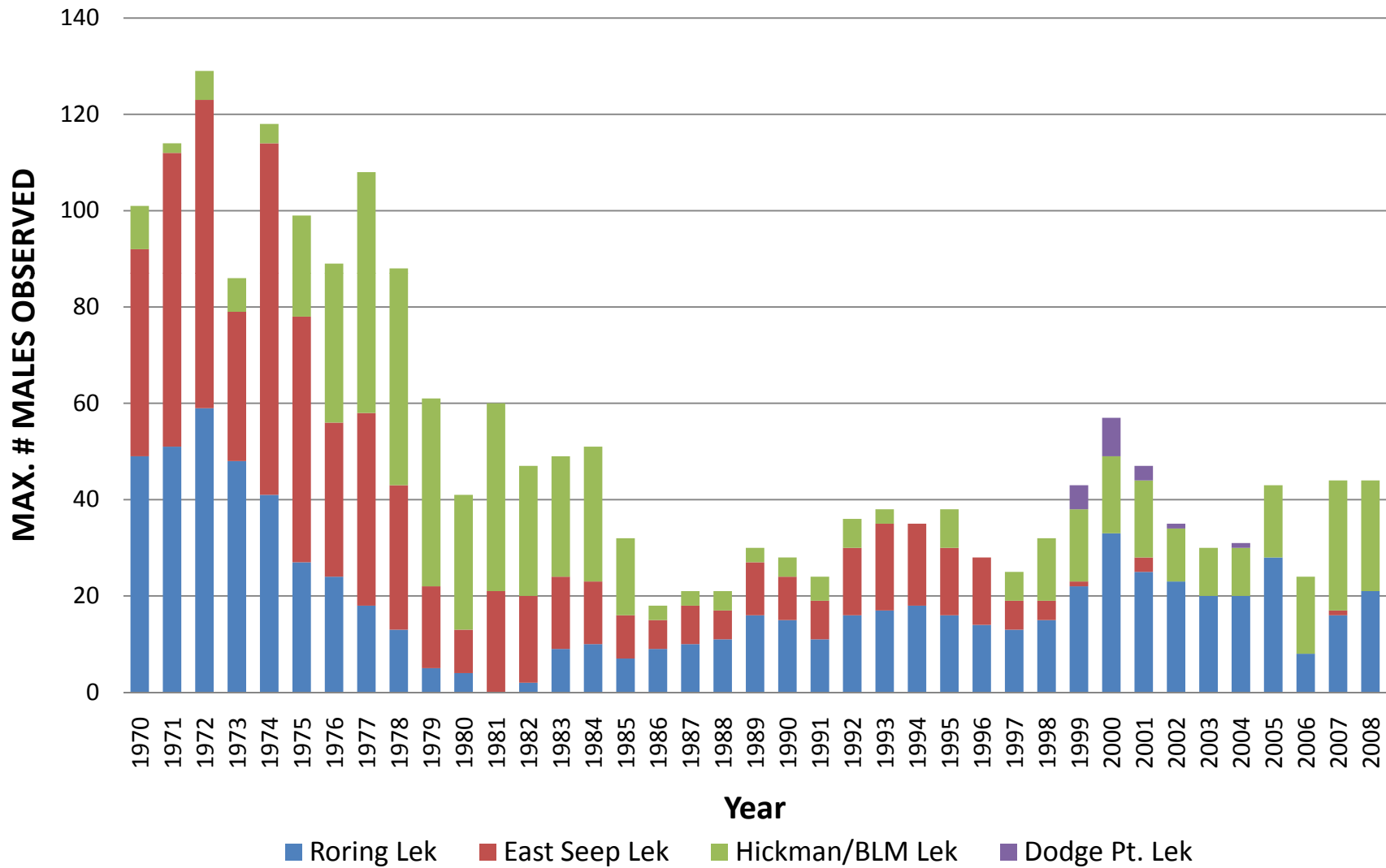


- Differ in strutting displays.

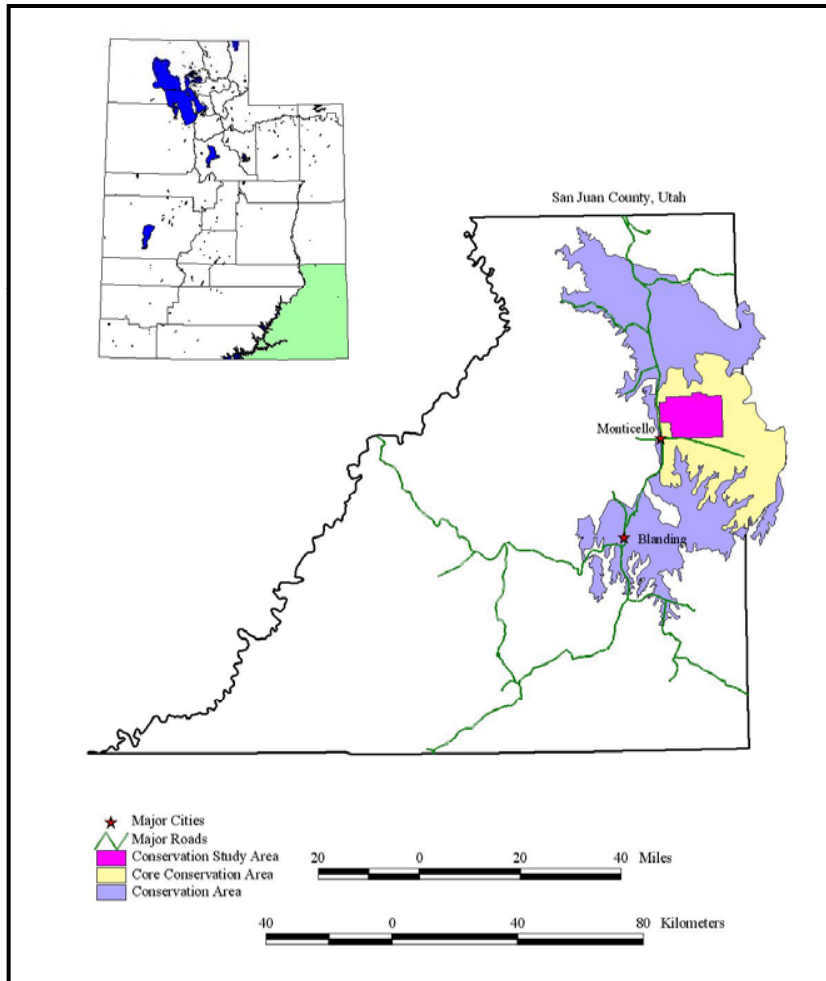
# Distribution



## Gunnison Sage-grouse Lek Counts San Juan County, Utah



# Conservation Efforts



- 1997: Gunnison Sage-grouse Priority Conservation Area.
- Conservation Study Area: contains year-round range (98% privately owned).
- Agriculture fields, grazed rangelands, fallow agriculture fields, CRP, sagebrush, pinyon-juniper and oak woodlands.

# Conservation Efforts

- SWOG formed in 1996 and published a local conservation plan in 2000.
- Rangewide Conservation Plan published in 2005.
- Identify and rank threats.
- Propose conservation strategies.





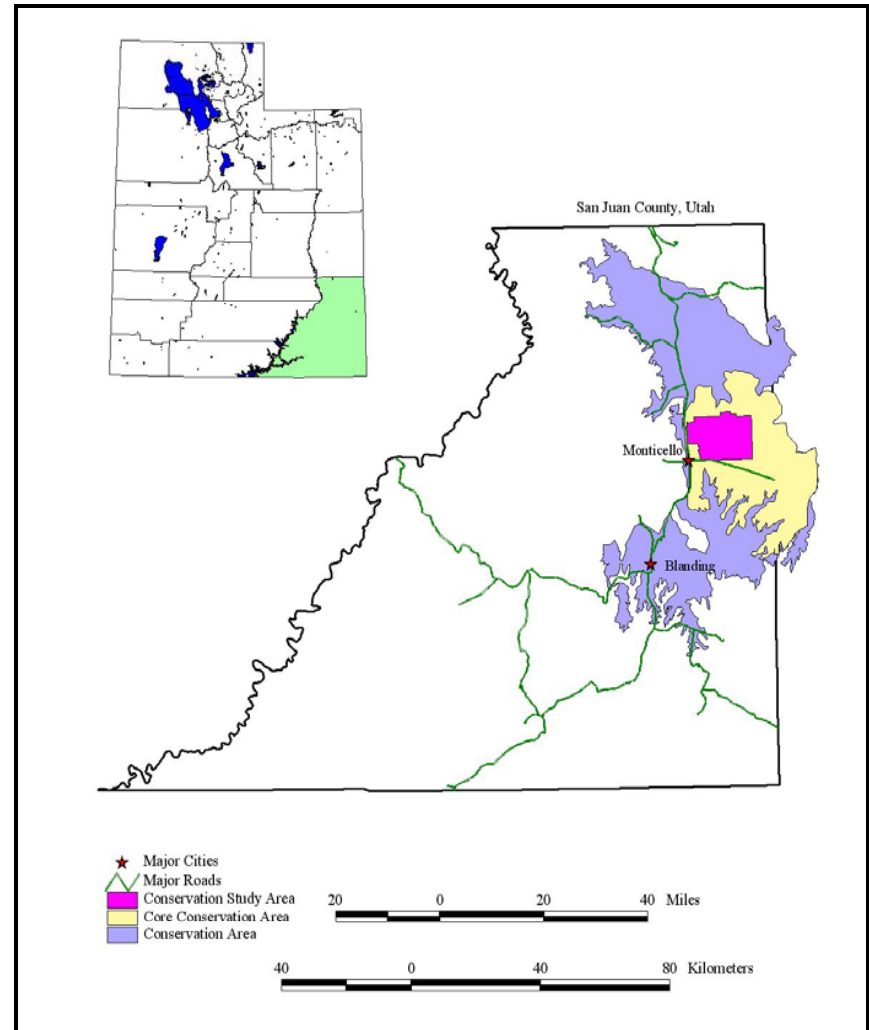
# Habitat Assessment

- Assessment of vegetation conditions of sagebrush habitats in Gunnison Sage-grouse Conservation Area.
- Determine if conditions meet criteria stated in Rangewide Plan.
- Assist managers in developing and prioritizing habitat restoration projects.



# Methods

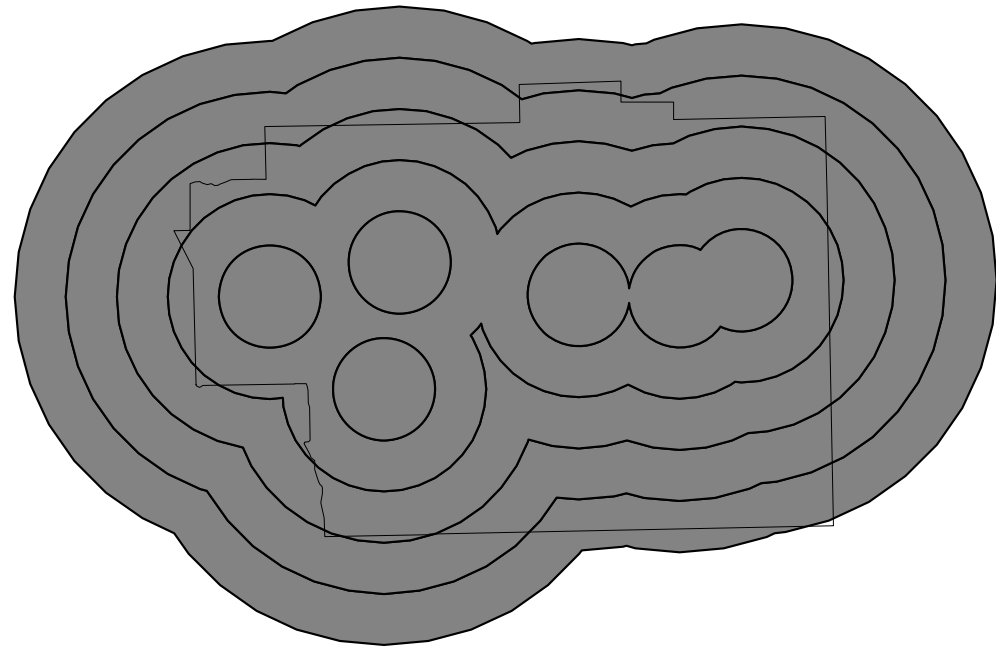
- **Occupied habitat:** areas located within the CSA.
- **Unoccupied habitat:** areas that were historically inhabited or were near an area currently or historically inhabited by sage-grouse (CA and CCA).





# Methods

- Plotted historic and current lek sites (CSA).
- Buffered in 1,500m increments.
- Extended buffer to include unoccupied habitat (CCA).
- Total buffer 7,500m.



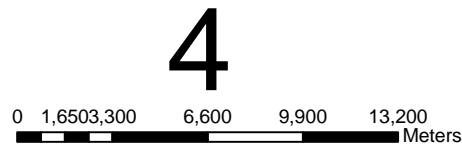
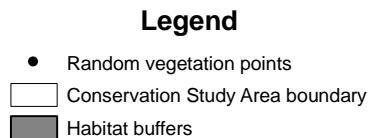
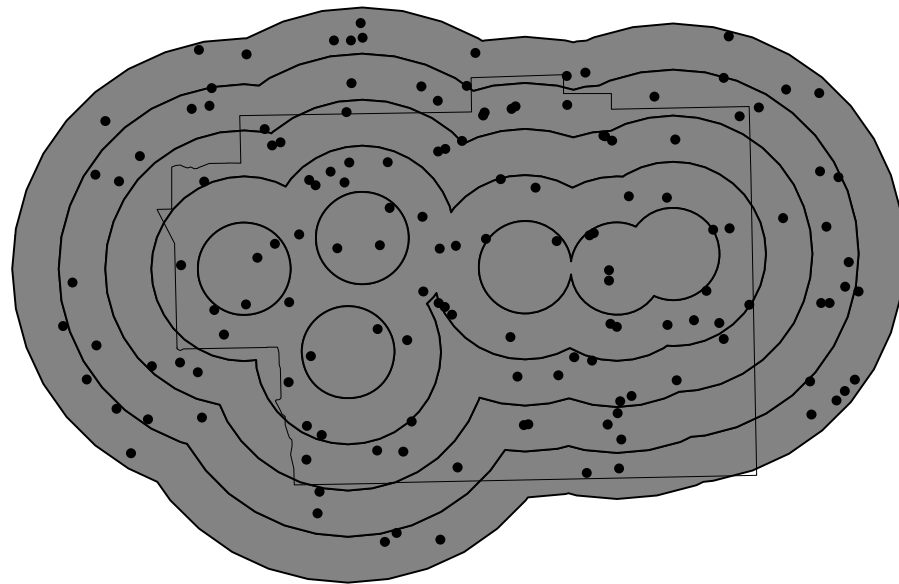
## Legend

- Conservation Study Area boundary
- Habitat buffers

4

0 1,650 3,300 6,600 9,900 13,200 Meters

# Methods



- 1,000 points.
- Selected 150.
- Eliminated 6 points not in sagebrush (144, map).
- Field visit: eliminated 51 points (93).
  - 39 unoccupied.
  - 54 occupied.
- All breeding, summer/fall, and winter habitats in CSA.

# Methods



- Gunnison Sage-grouse Rangeland Steering Committee Structural Vegetation Collection Guidelines:
  - Two 30-m transects.
  - Daubenmire method.
  - Percent cover and height of grasses, forbs, and shrubs.

# Results – Occupied and Unoccupied Breeding Habitat

Habitat	Percent Cover			Height (cm)		
	P-grass	Forbs	Sagebrush	P-grass	Forbs	Sagebrush
Occupied	17 (3.2)	3 (1.4)	17 (3.6)	23 (4.4)	3 (0.9)	51 (4.2)
Unoccupied	18 (3.8)	6 (1.6)	17 (4.4)	15 (2.3)	4 (0.7)	46 (4.6)
<u>RCP</u>						
Breeding	10-30	5-15	15-25	10-15	5-10	25-50

# Results – Occupied and Unoccupied Summer/Fall Habitats

Habitat	Percent Cover			Height (cm)		
	P-grass	Forbs	Sagebrush	P-grass	Forbs	Sagebrush
Occupied	17 (3.2)	3 (1.4)	17 (3.6)	23 (4.4)	3 (0.9)	51 (4.2)
Unoccupied	18 (3.8)	6 (1.6)	17 (4.4)	15 (2.3)	4 (0.7)	46 (4.6)
<u>RCP</u>						
Summer/Fall	10-25	5-15	5-15	10-15	3-10	20-40

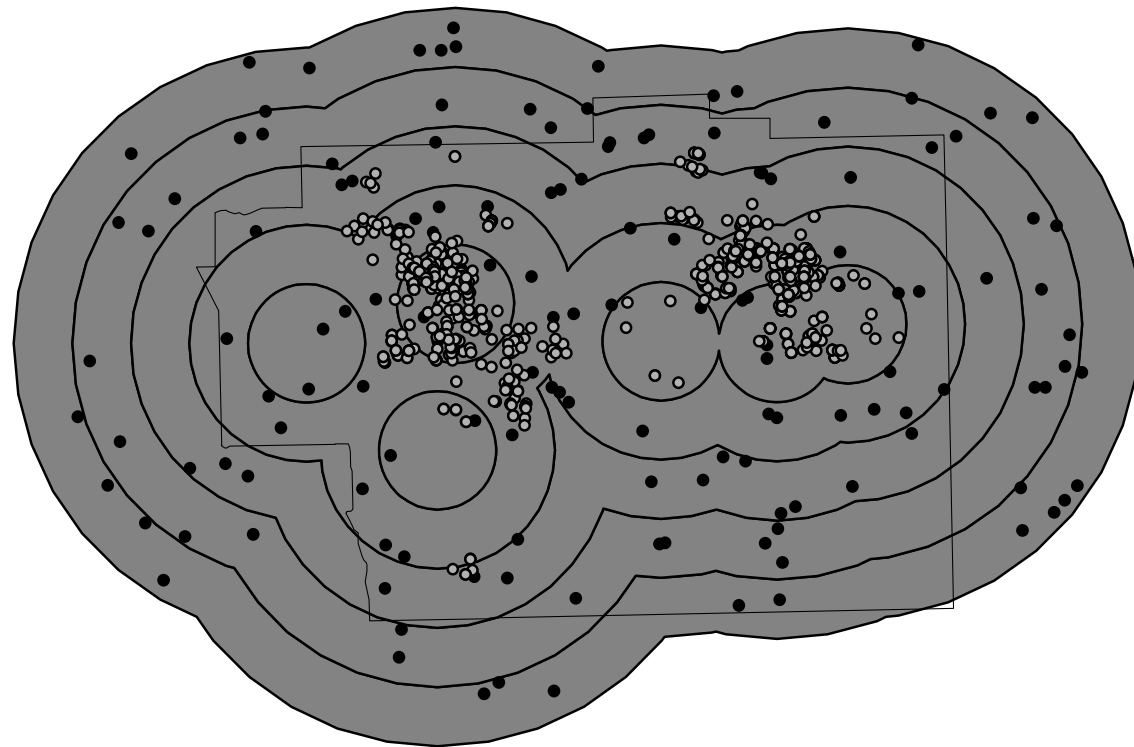
# Results – Occupied and Unoccupied Winter Habitats

Habitat	Percent Cover			Height (cm)		
	P-grass	Forbs	Sagebrush	P-grass	Forbs	Sagebrush
Occupied			17 (3.6)			51 (4.2)
Unoccupied			17 (4.4)			46 (4.6)
<u>RCP</u>						
Winter			30-40			40-55



# Discussion

- Confined to CSA.
- Bird locations within CSA.
- CA: Mosaic of sagebrush patches within pinyon-juniper/oak.



## Legend

- Gunnison sage-grouse locations
- Random vegetation points
- Conservation Study Area boundary
- Habitat buffers

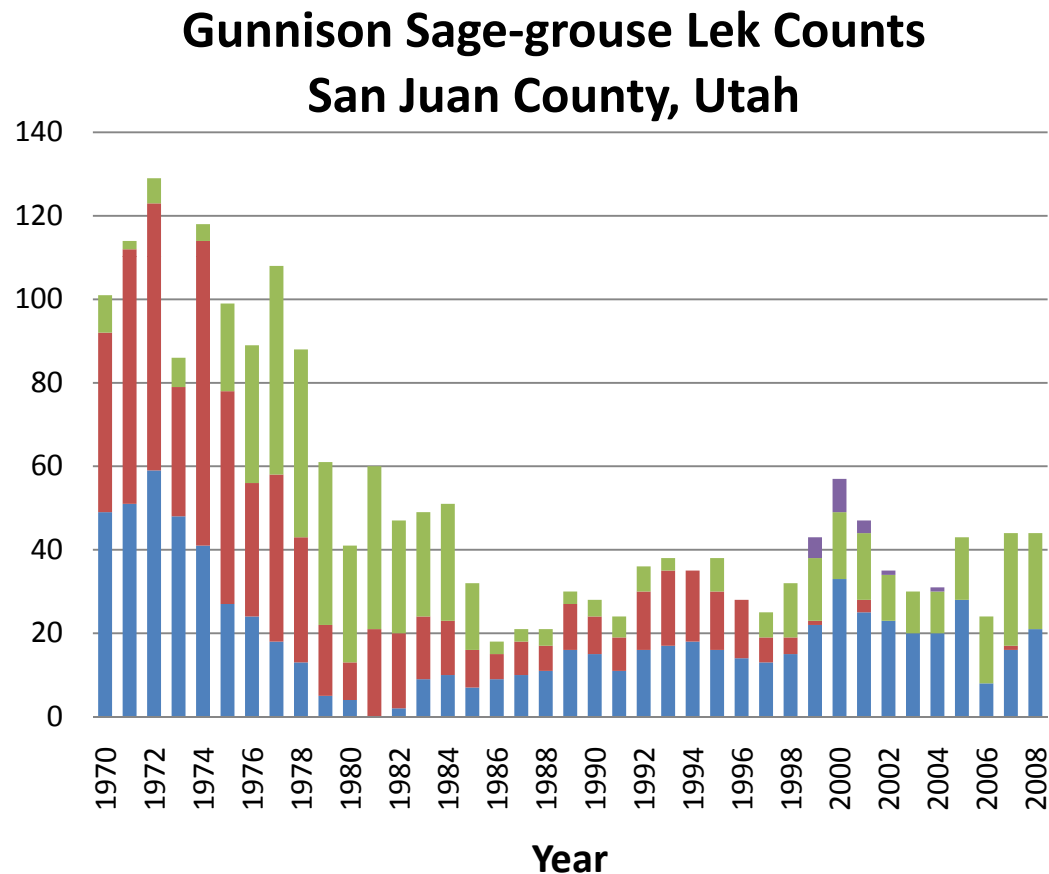
0 1,650 3,300 6,600 9,900 13,200 Meters

# Discussion – Crested Wheatgrass



- Dominate perennial grass.
- Invaded all sagebrush areas.

# Discussion - CRP



- Held steady since initial drop after advent of CRP.
- Permanent cover.
- Re-establish areas of sagebrush and native grasses and forbs.
  - Corridors between sagebrush areas.
- Restoration of areas outside CSA.

# Acknowledgements

- Advisor: Dr. Terry Messmer.
- Committee:
  - Dr. Eugene Schupp, Dr. Chris Call, Dr. Fred Provenza, Dr. Tim Graham
- Funders:
  - BLM and NRCS
  - Endangered Species Mitigation Fund
  - PacifiCorp
  - Jack H. Berryman Institute
- Todd Black (and family)
- Tammy Wallace (BLM)
- Guy Wallace (UDWR)
- Canyon Country Youth Corp.
- Monticello/Dove Creek LWG
- Private Landowners
- Family and friends
- My dog Jake



