

# Evaluating the Success of Shrubsteppe Habitat Restoration in Utah



Brewer's Sparrow

Janet Sutter  
Utah Division of Wildlife Resources

# Watershed Restoration Initiative

Goal: restore 1 million acres of shrubsteppe and riparian habitat

## Shrubsteppe:

- 13.4% of Utah's landcover
- Range-wide decline in quantity and quality
- Economically important
- 20 CWCS species of conservation need



# Watershed Restoration Initiative

Driving Mechanism:

Utah Partners for Conservation and Development

- 7 state/local agencies
- 7 federal resource management agencies



• Target = Sage-grouse

Mule Deer

# The Shrubsteppe Continuum

## □ Grassland -> shrub/grass -> shrubland

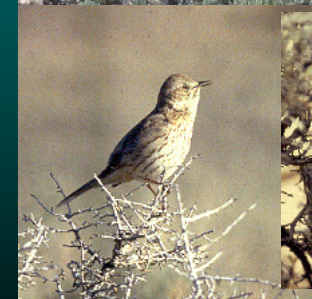
- Naturally a mosaic of various patch sizes spanning the range
- Disturbances can force transition from one state to another



Vesper Sparrow



Brewer's Sparrow



Sage Thrasher



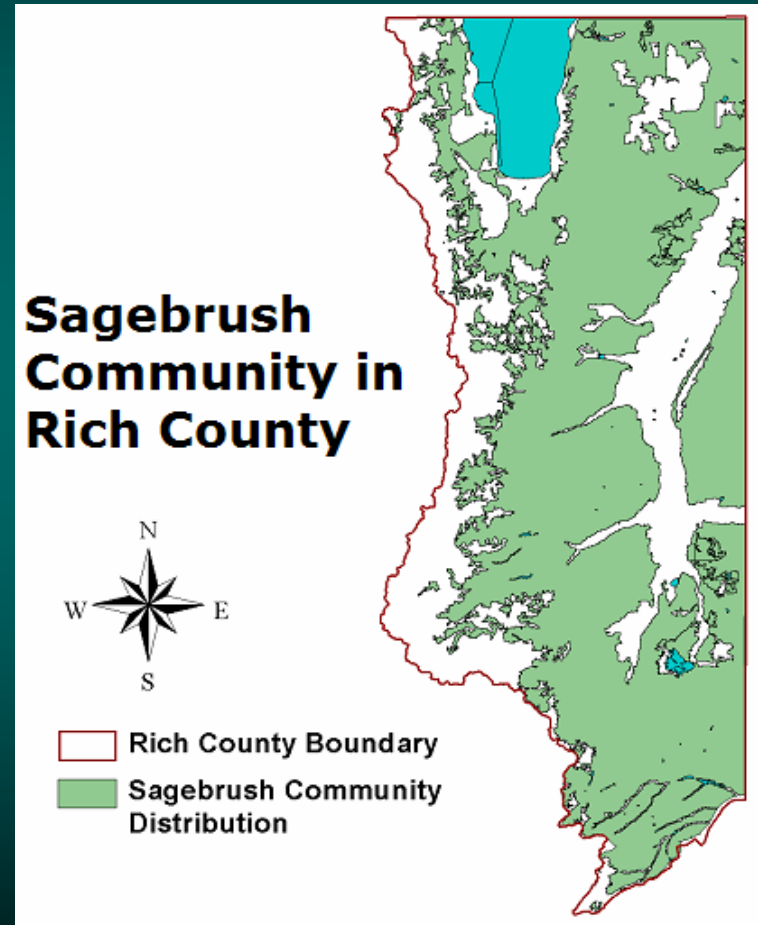
Sage Sparrow

# Rich County Monitoring Project

- Rich Co. Coordinated Resource Management



- Healthy ecosystems
- Sustainable wildlife
- Sustainable agriculture
- Recreation
- Vibrant Community



# Major Research Components

## □ Restoration / Disturbance Ecology

- The role of disturbance in shrubsteppe
- Using disturbance to achieve management objectives



## □ Inventory, Monitoring and Assessment

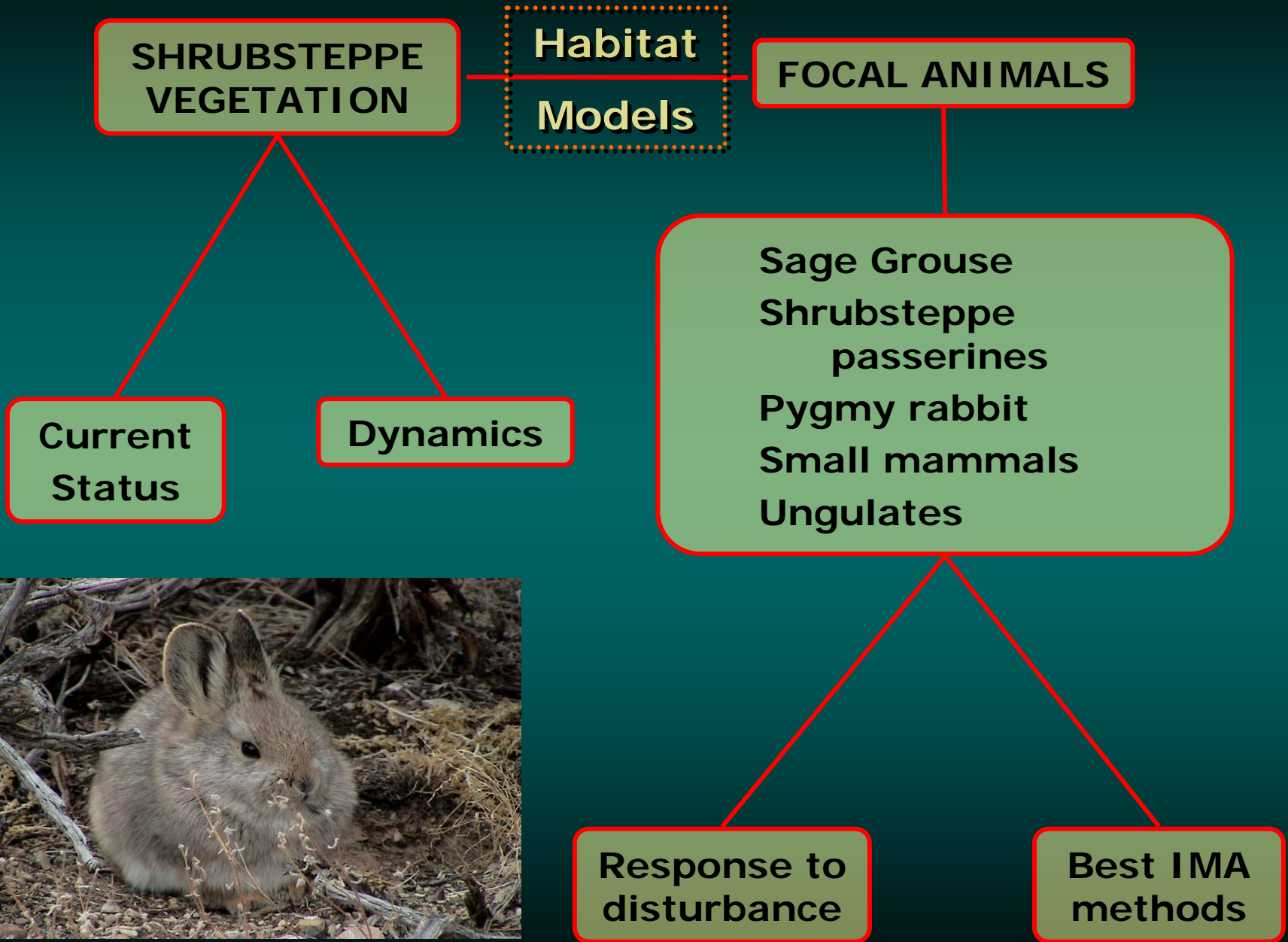
- Evaluation of survey techniques

## □ Adaptive Management Framework

# Three Major Project Objectives

- ❑ Monitor and model vegetation response to habitat change
- ❑ Monitor and model wildlife response to habitat change
  - Focus = shrubsteppe obligates
  - Compare wildlife use on treated & untreated areas
  - Track population trends county-wide
- ❑ Develop “portable” monitoring techniques

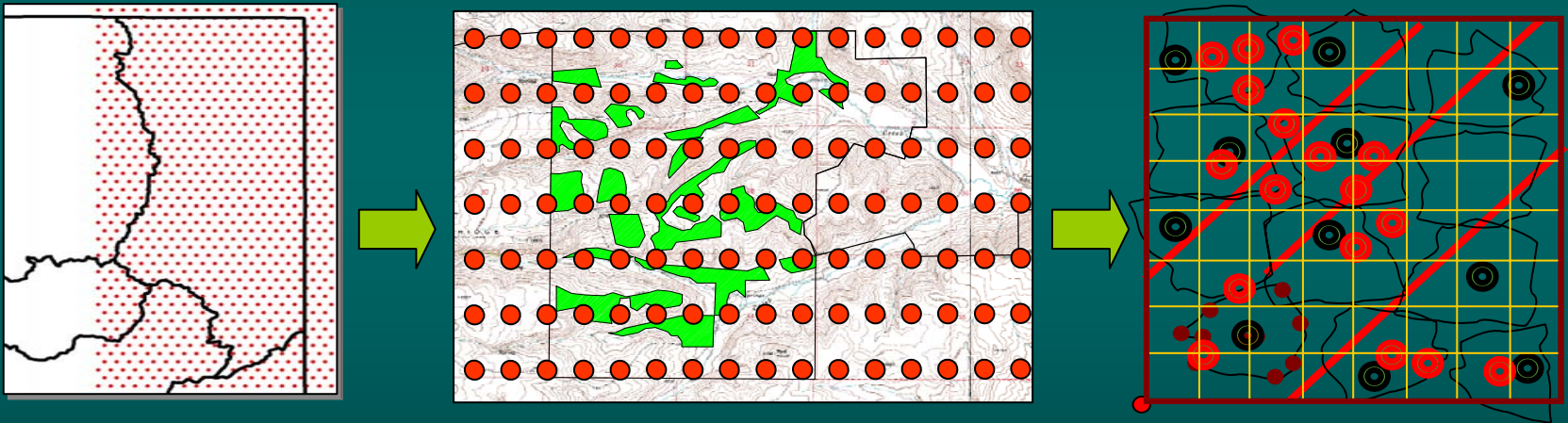




# Focal Species

## □ Inventory, Monitoring and Assessment

- Systematic tessellation (a grid)
- Can be scale-specific

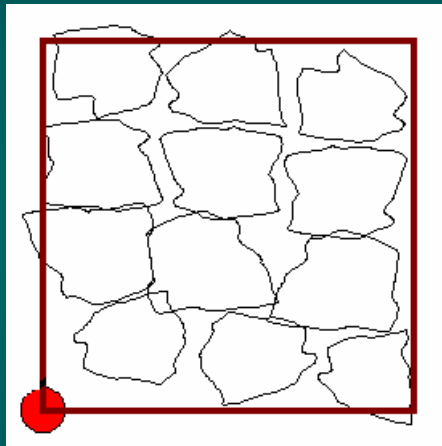


## □ Disturbance

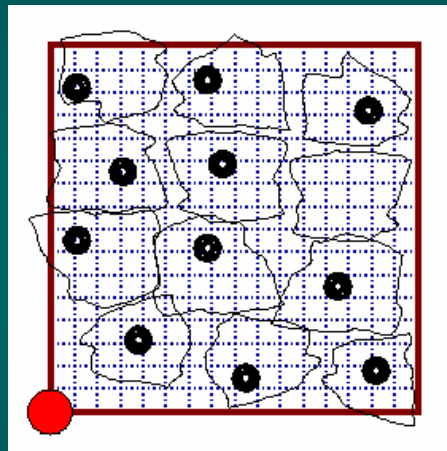
- Before-after-control-impact (BACI) design

# Shrubsteppe-obligate Passerines

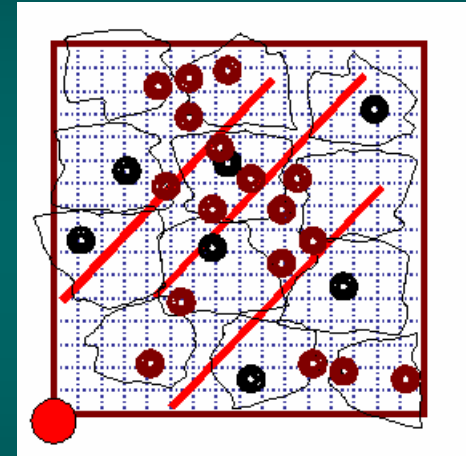
## □ Compare techniques



Spot mapping  
(1.2 terr/ha)



Nest searching  
(1.1 nest/ha)



Line transect (distance)  
( $2.2 \pm 0.4$  birds/ha)  
( $1.2 \pm 0.3$  nests/ha)

# Pygmy Rabbits

- Determine location and extent of pygmy rabbit habitat in Rich County
- Determine distribution
- Develop and test predictive habitat model



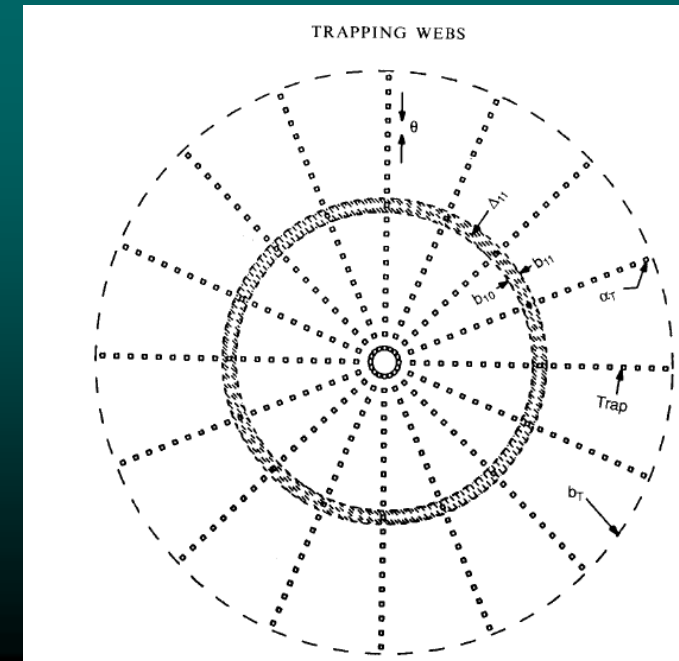
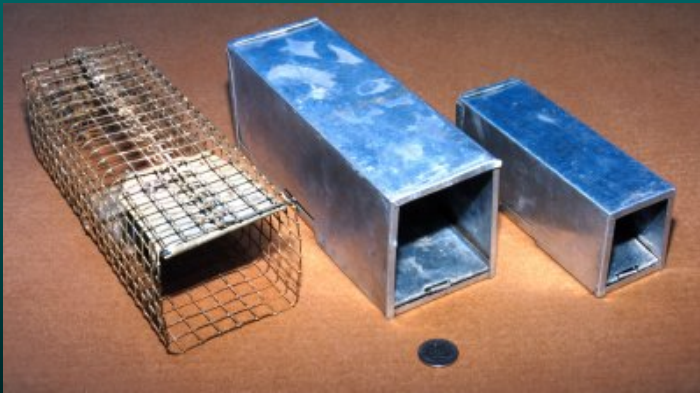
# Shrubsteppe-obligate Small Mammals

- Compare trap types
  - Sherman, pitfall, track tunnels, Longworth.



Sagebrush Vole

- Evaluate trap configuration
  - Webs vs. lines vs. grids



# Sage-grouse

## □ Compare survey methods

- Pellet transects, dog flushing, and radio-telemetry
- Determine habitat use of treated, untreated & historical sites



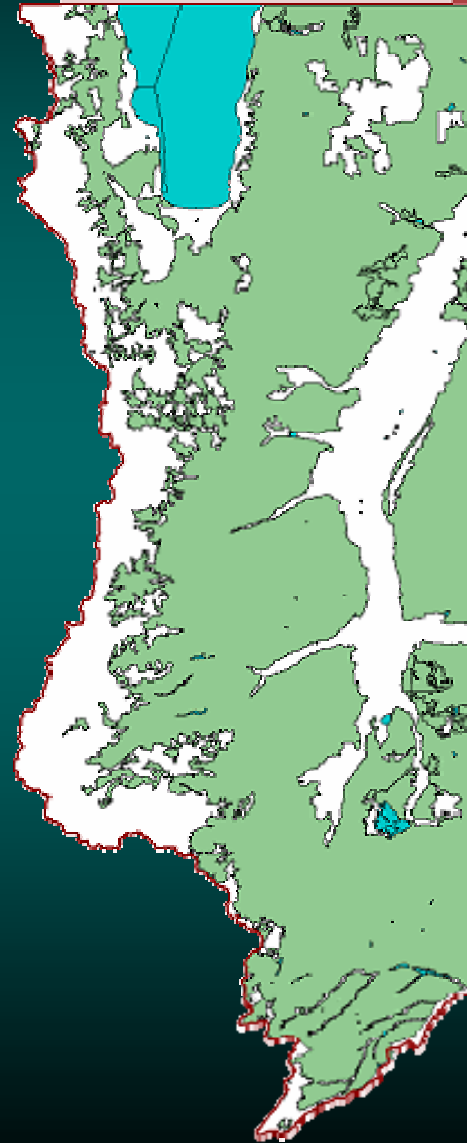
# Expected Monitoring Results

- Habitat use, productivity, & density of shrubsteppe obligates
- Relationship of shrubsteppe plant and animal communities
- Model of shrubsteppe wildlife/habitat associations
  - If you have 40% sage, 40% grass & 20% bare...



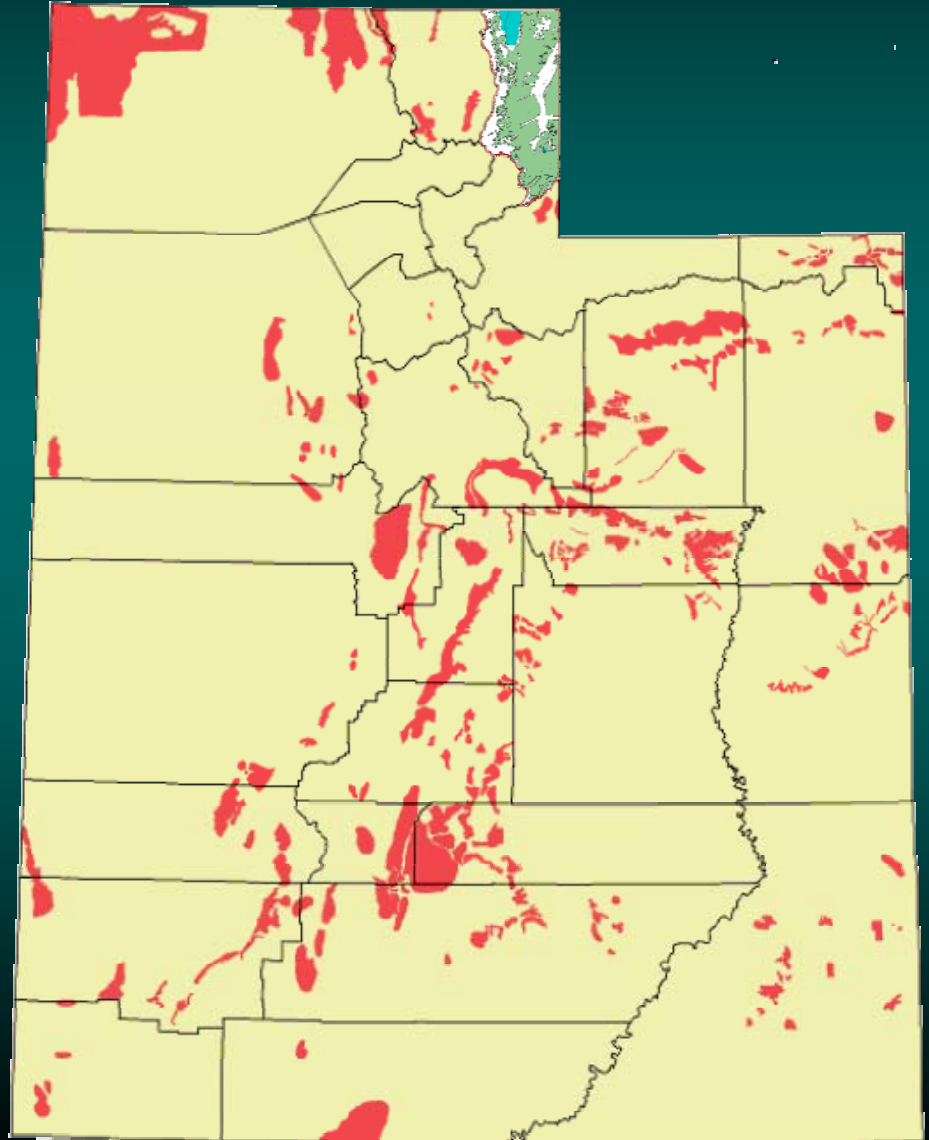
# Exciting Monitoring Results

- Portable and efficient means to monitor shrubsteppe from methodological comparisons of several techniques



# Exciting Monitoring Results

- Portable and efficient means to monitor shrubsteppe from methodological comparisons of several techniques



# Rich County Participants

Utah DNR

Utah State University

NRCS

Intermountain West Joint Venture

USFWS

Private Landowners

BLM

Deseret Land and Livestock

Utah DWR

Trout Unlimited

TNC

Rich County

