

# **The Greater Sage-grouse: Ecology, ESA Finding, Threats, and Solutions**

**STATE LAND USE PLANNING ADVISORY  
COUNCIL**

**April 13, 2012**



# Ecology of the Sage-grouse



- Largest grouse in North America
- Males much larger than females
- Sagebrush obligate species - Sagebrush is primary food
  - Also eats forbs and insects
- Migratory
- Faithful to breeding display sites (leks)

# Ecology of the Sage-grouse

- Clutch size averages 7.1 eggs
- Likelihood of nesting averages 78.4%
- Re-nesting averages 30%
- Average percent nest success is 52.1%



# The Habitat

- “Landscape Scale” species vast life history needs

## Sage-grouse habitat:

- *Breeding* - lek, nesting
- Summer and Late Brood
- Fall Transitional period
- *Winter* - Diet is exclusively sagebrush
  - Select by snow depth, hardness, topography and vegetation height and cover



# Habitat - The Lek

- A *Lek* is a traditional display area where two or more male sage-grouse have attended in 2 or more of previous 5 yrs
- Occur in relatively open areas
- Range in size from 0.25 to 16 hectare
- Males display early morning and evening hours
  - 2.1 km from the lek to day use
- The period from March - June often represents higher mortality
  - In Idaho, 43% documented deaths occurred during this time frame





# Lek Locations



# Nesting Habitat

- Landscapes usually dominated by sagebrush
- Nest under sagebrush shrubs.
- 70% under big sagebrush, 17% under black sagebrush
- Canopy cover between 15 - 50%.
- Sagebrush height averaged 46.4 cm (18 in)
- Mean distance of nest sites from lek where female was captured 3.4 - 4.6 km in Idaho and 4.0 in Colorado.



# **Summer/Late Brood Rearing Habitat**

- Riparian corridors, wet meadows, irrigated fields, alfalfa pivot
- Movement to higher elevation sites can occur
- Typically July through September
- In Nevada, elevated mortality has been documented during this time frame



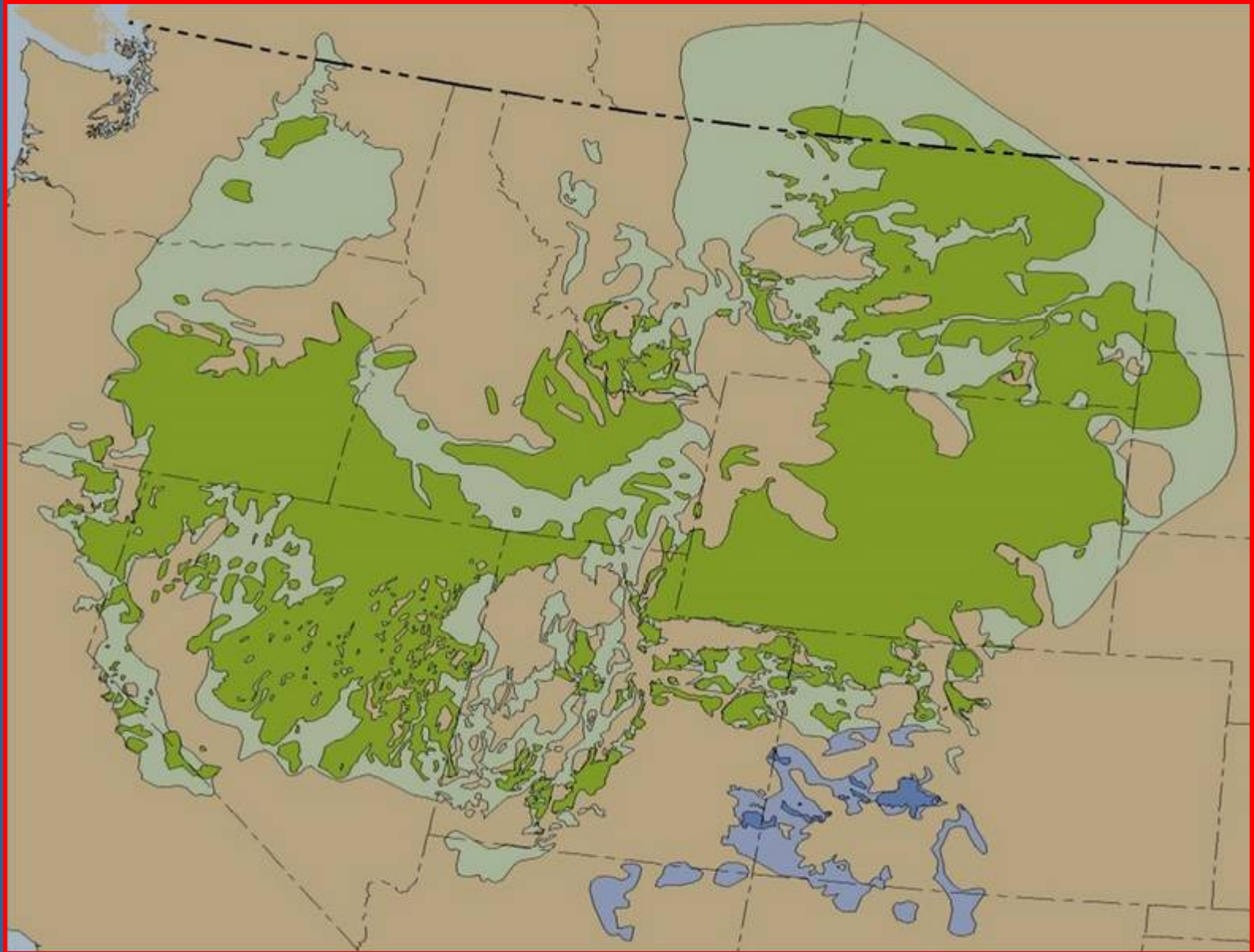


# Winter Habitat

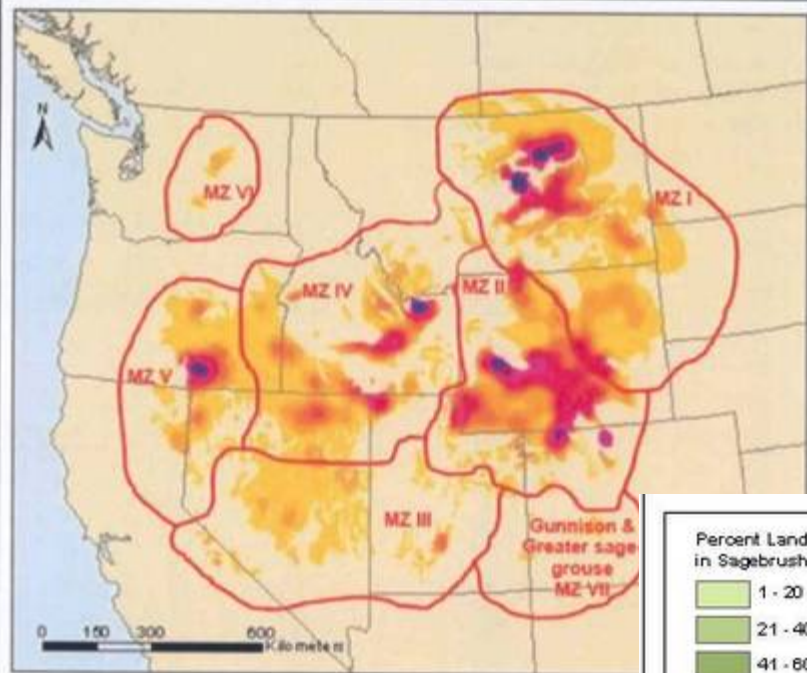
- Often dominated by big sagebrush species
- Canopy cover varies from 6% to 43%
- Wyoming big sagebrush important during the winter
  - Use of mountain big sagebrush, black sagebrush and even low sagebrush has been documented.
- Aspect (south to southwest facing slopes) and use of lower elevation sagebrush habitats help sage-grouse find forage during the winter months.



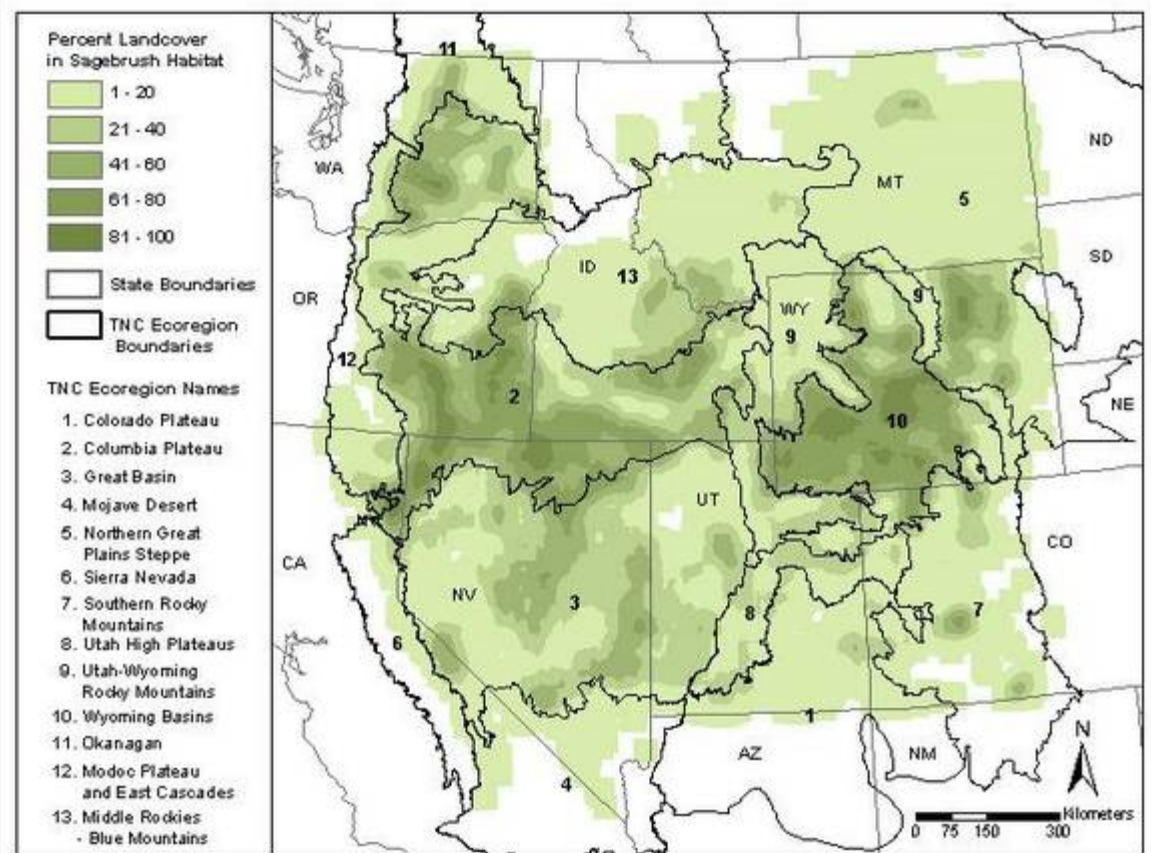
# Distribution (Current vs. Historic)



# Sage-grouse distribution

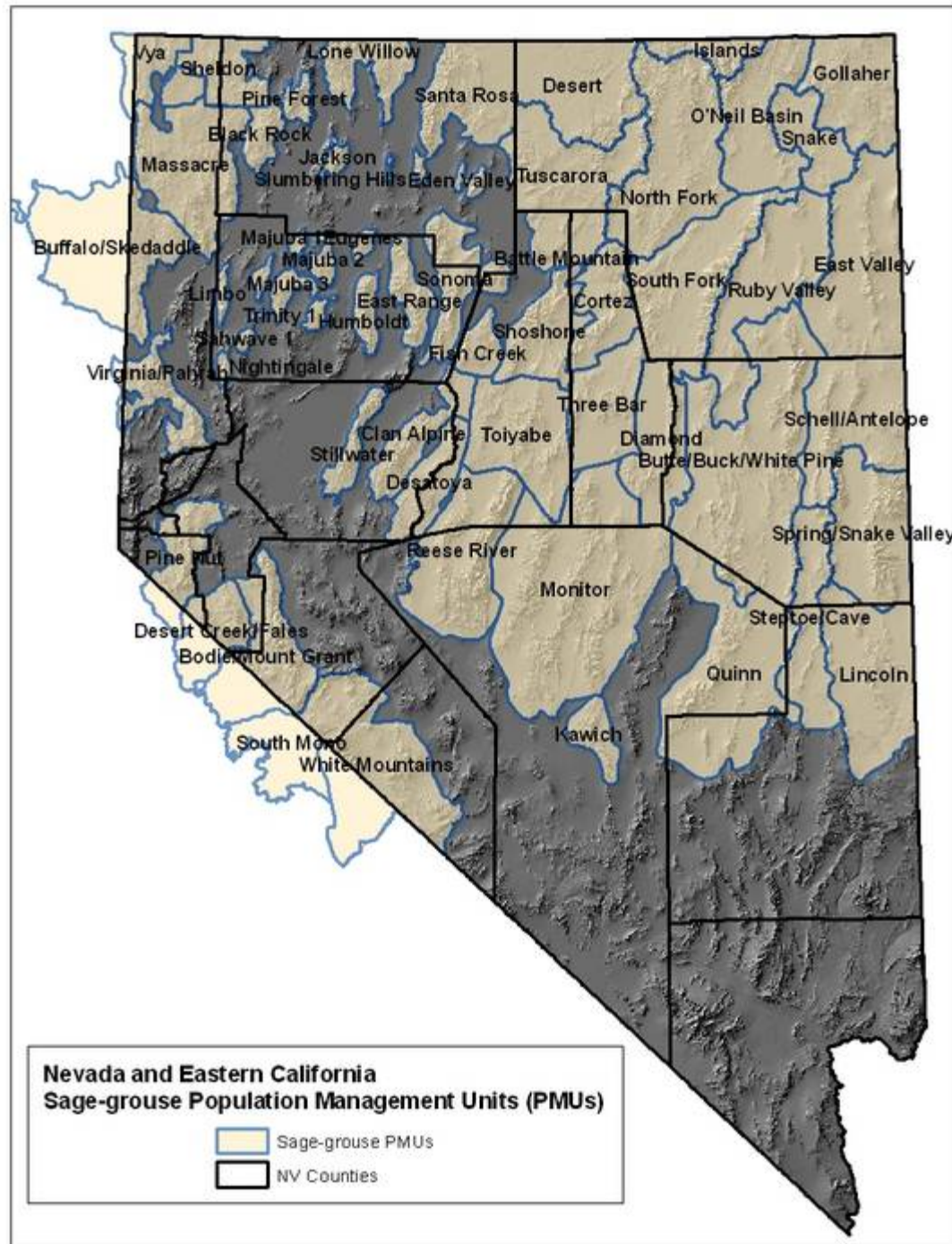


# Sagebrush distribution





# Population Management Units







## Sage-grouse Population Status

- Surveyed 738 leks in Nevada - 405 were active in 2011
- Observed a total of 7,755 male sage-grouse
- 2010 Production = 1.85 chicks per hen and nest success was estimated at 54%.
- 2011 Production = 1.43 chicks per hen and nest success was estimated at 52.4%

# Population of Sage-grouse in Nevada

Nevada Sage-grouse Harvest Information

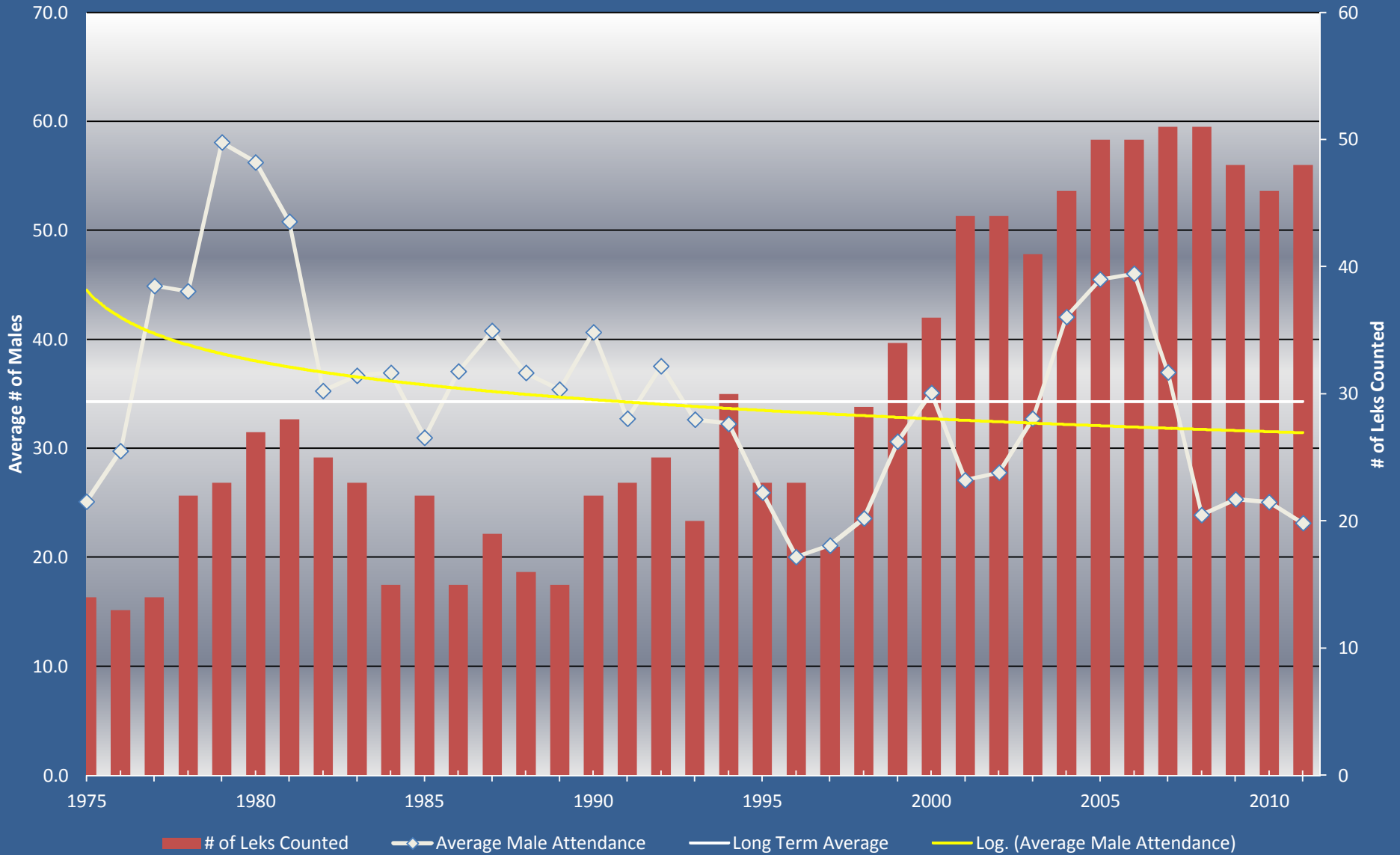


# Annual Harvest in Relation to Fall Population Estimates for Nevada

|                          | 2004        | 2005        | 2006        | 2007        | 2008        | 2009        | 2010        | 2011        |
|--------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Harvest                  | 5,244       | 3176        | 3701        | 4897        | 5775        | 8944        | 7,355       | 6,141       |
| Fall Population Estimate | 146,327     | 155,305     | 115,385     | 107,601     | 139,206     | 140,056     | 141,996     | 168,120     |
| <b>Percentage</b>        | <b>3.6%</b> | <b>2.0%</b> | <b>3.2%</b> | <b>4.6%</b> | <b>4.1%</b> | <b>7.1%</b> | <b>5.2%</b> | <b>3.7%</b> |

WAFWA guidelines recommend less than 10% harvest

# Nevada Sage-grouse Trend Lek Counts Average Male Attendance (1975-2010)





## **U.S. Fish & Wildlife Service Threat Determination on all Endangered Species Act (ESA) Listings**

- Damage to, or destruction of, a species' habitat
- Overutilization of the species for commercial, recreational, scientific, or educational purposes
- Disease or predation
- Inadequacy of existing protection
- Other natural or manmade factors that affect the continued existence of the species.



# ESA Status for Greater Sage-Grouse

- January 2005 - FWS issued 12-month “not warranted” finding
  - Greater listing priority number (LPN) 8
  - Bi-State distinct population segment (DPS) LPN 3
- December 2007 – District Court remanded FWS decision
- March 2010 – FWS Issued “warranted but precluded” finding making the greater sage-grouse a “candidate” for listing
- FY 2013 – Bi-State final listing decision
- FY 2015 – Greater Sage-Grouse final listing decision

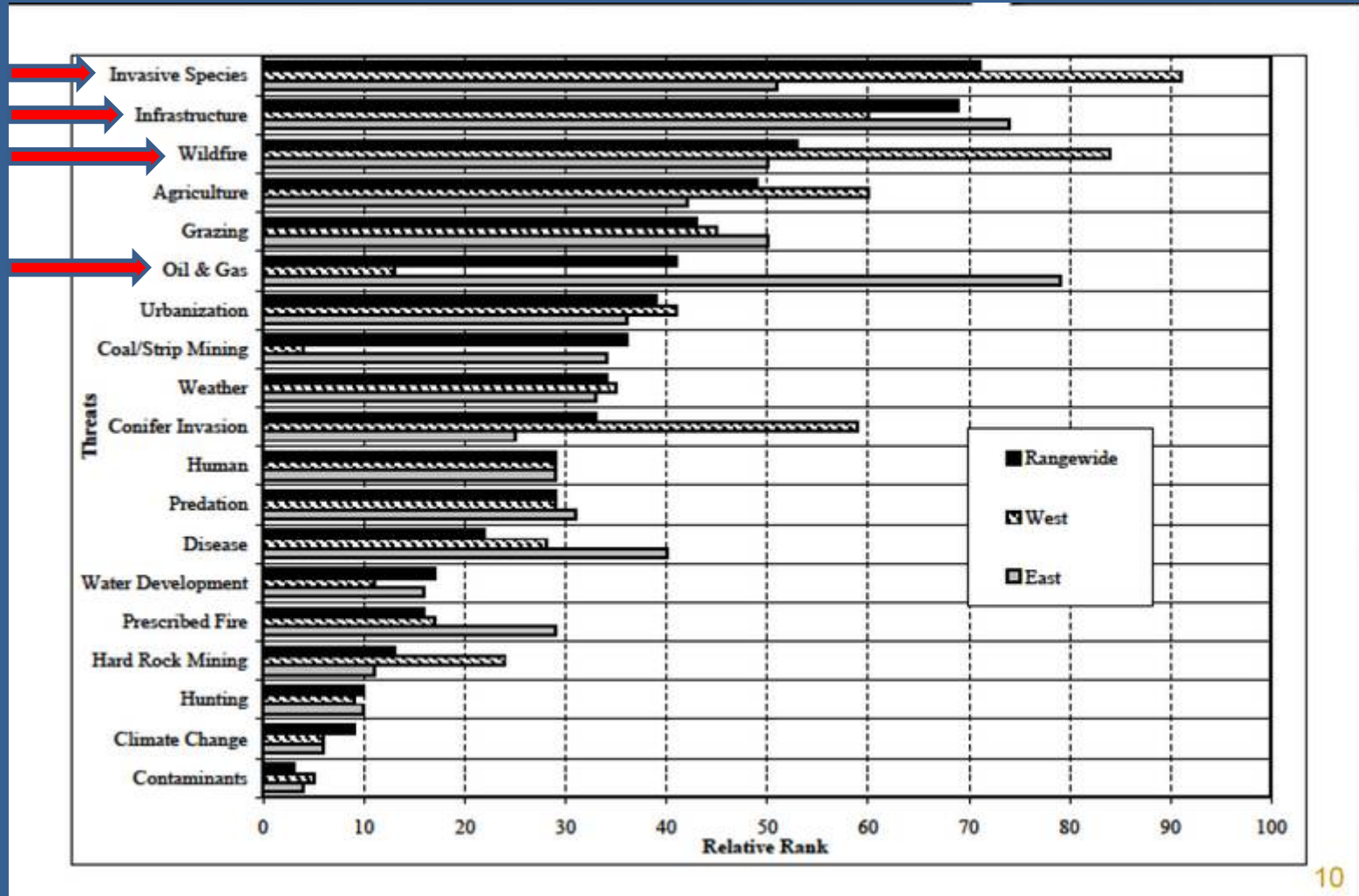


# #1 Threats to Sage-Grouse

FWS considers the 4 red arrows tied for 1st (invasive species, infrastructure, wildfire, and energy development)

Oil and gas includes other types of energy - wind, uranium, and geothermal

Threats vary across the range



# Threats to Sage-Grouse

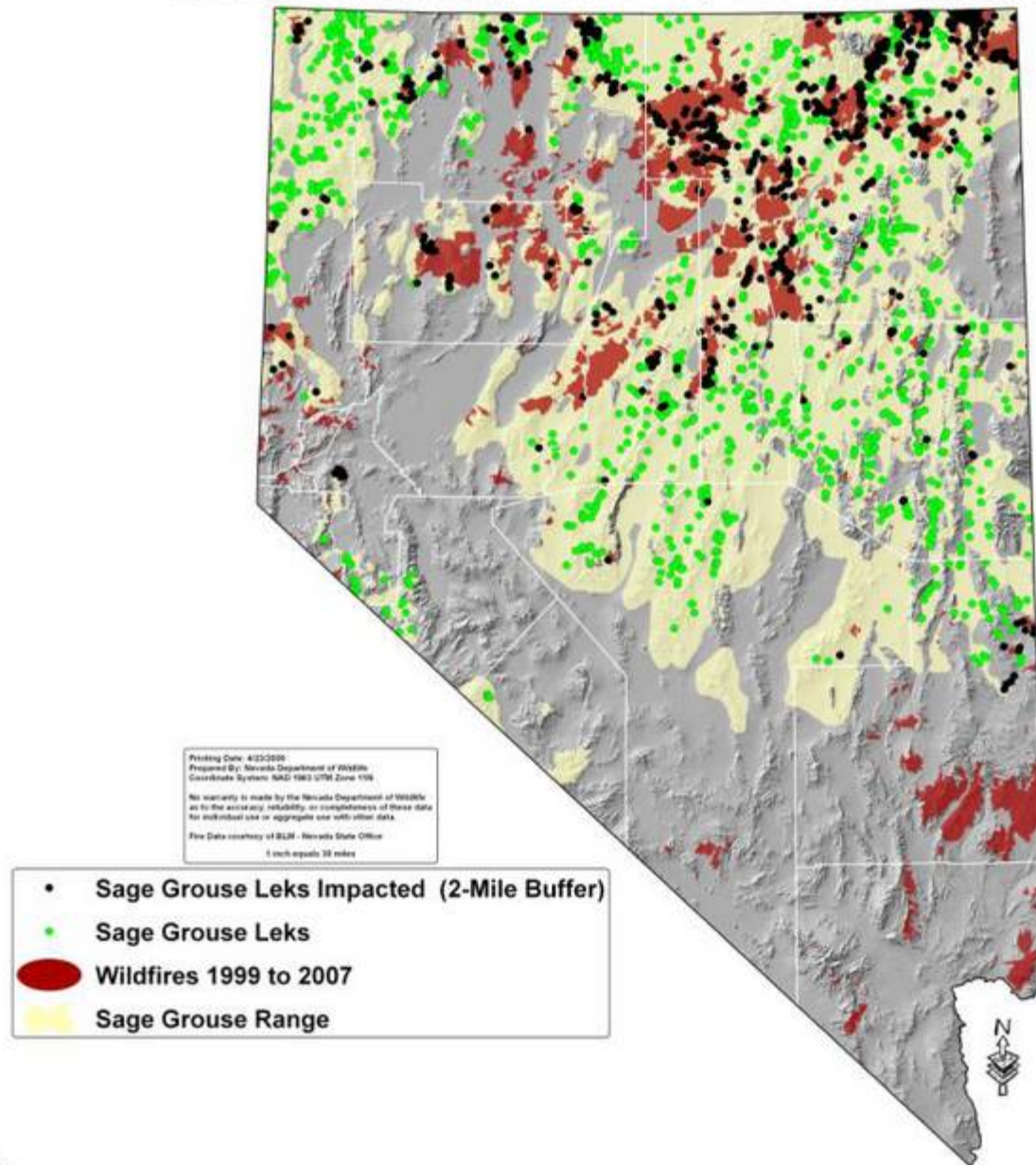
“In Nevada, the major threat to Sage-Grouse is **habitat loss and fragmentation**, and the main cause of that is the **fire-invasive species cycle**, which is **cheat grass** that displaces sage habitat after a fire.”

“Other major threats include encroachment of pinion pine and juniper, land development, lek and nest habitat disturbance, meadow degradation, grazing, and predators.”

*Nevada Fish and Wildlife Office – State Supervisor*

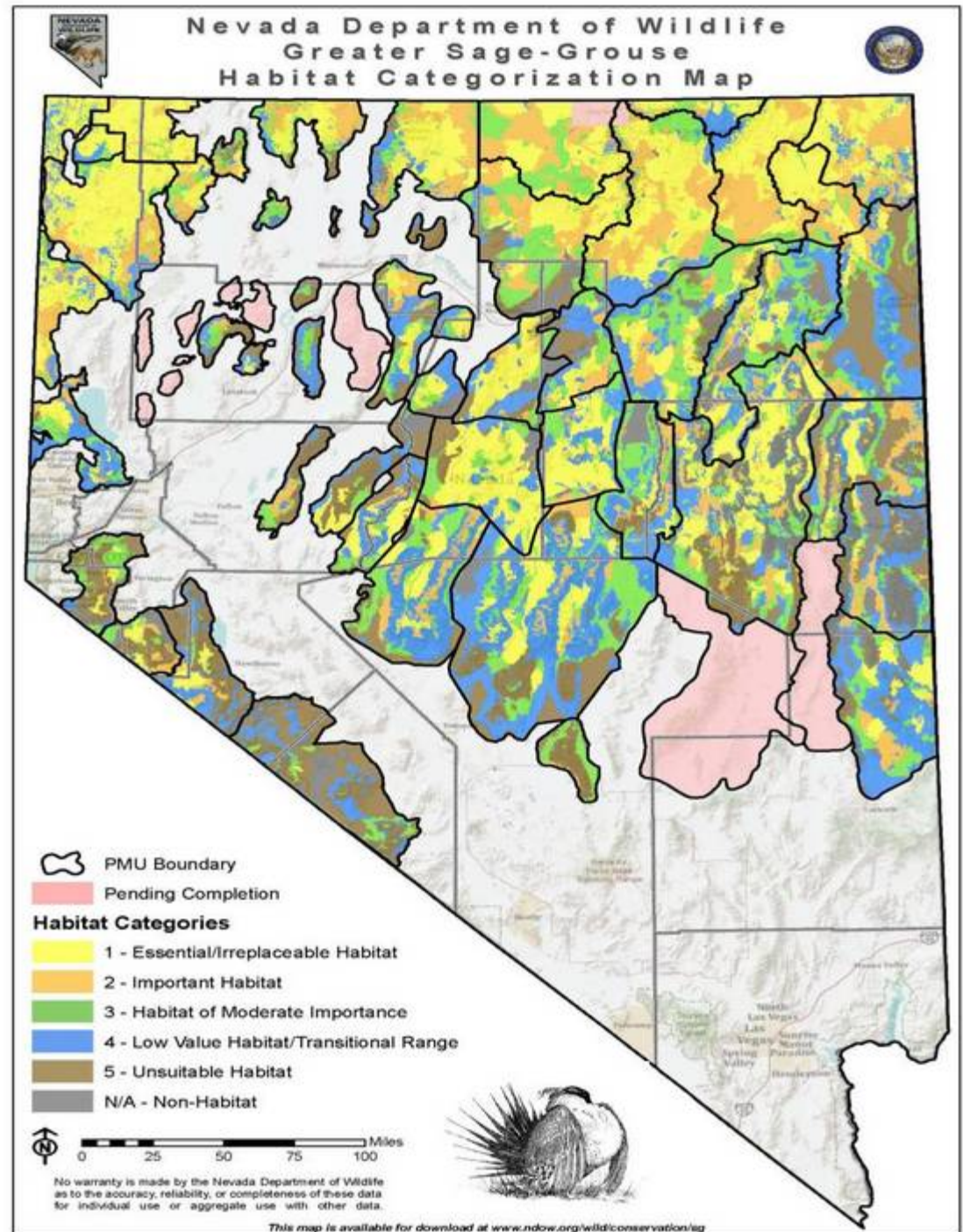


## Effects of Wildfires (1999 to 2007) on Greater Sage-grouse



\*Essential and Irreplaceable  
Habitat is Yellow

\*Important Habitat is Orange



# **BLM Approach for Sage-Grouse**

## **Establishing a Regulatory Mechanism**

- **Planning Approach:**
  - Develop and implement new or revised regulatory mechanisms through land use planning and appropriate policy
  - Establish highly coordinated, multi-level interagency teams that respond to clear national direction
  - Incorporate regulatory mechanisms into RMPs at state/multi-state level
- Sage-grouse located across 10 states (CA, CO, ID, MT, NV, ND, OR, SD, UT, WY) on approximately 50% on BLM surface managed lands and 8% Forest Service land
- Affects 68 BLM planning units of which 28 plans are currently under revision

# BLM Process

- Instructional Memorandum (IM)
  - National Interim Policy addressing habitat management short term
- Notice of Intent to amend land use plans
- Scoping Processes
- Amend the resource management plans (RMP)
  - The Regulatory Mechanisms - Addresses habitat management long term
- Environmental impact statement (EIS) (currently underway)
  - US Forest Service Joining EIS Process
  - Public and agency scoping process
  - Draft FY13, Final FY14
- Records of Decision to be signed (FY14)
- USFWS issues listing dates for 254 species
  - September 2013 for Bi-State
  - September 2015 for Greater







## NDOW Actions for Greater Sage-grouse

### National leadership roles

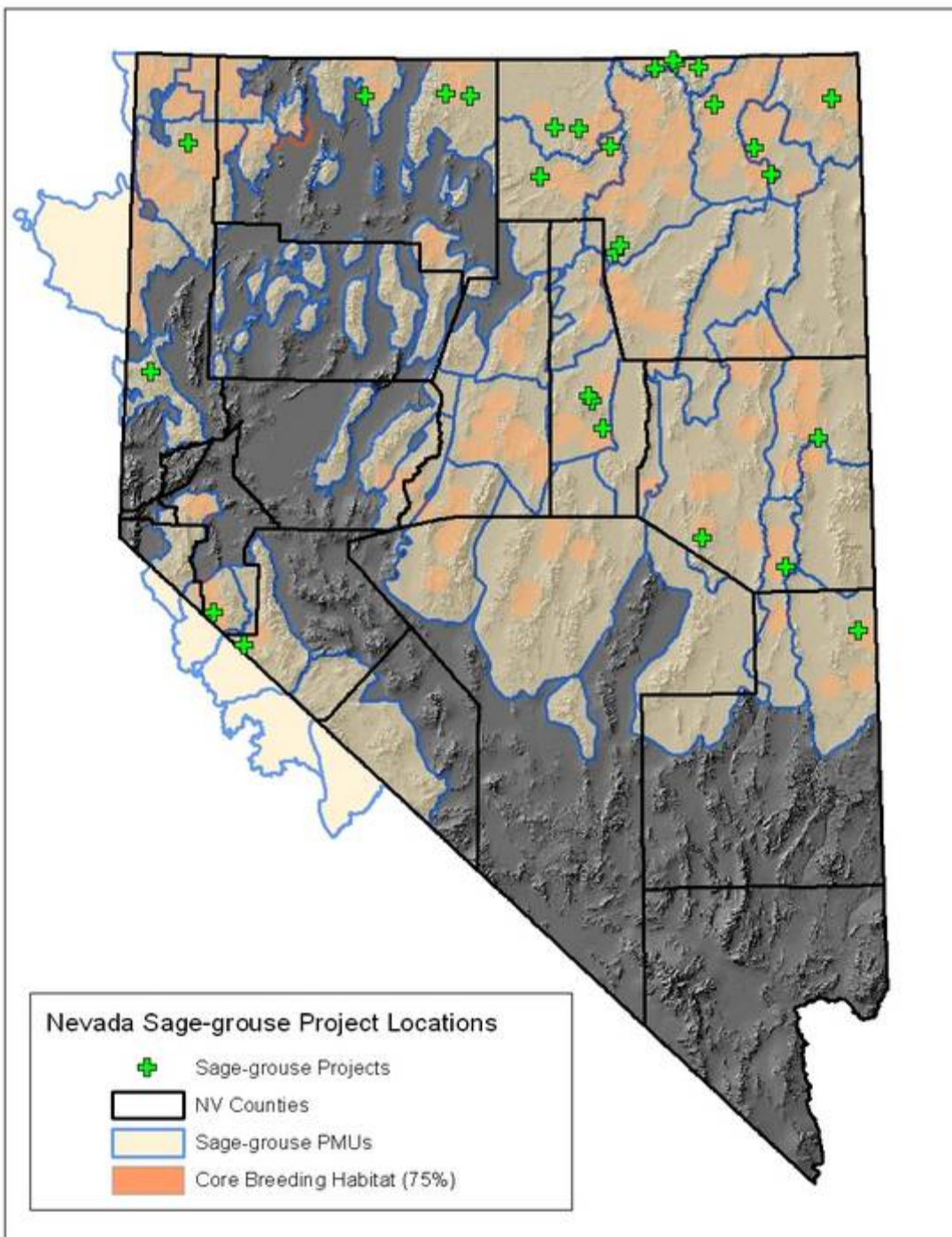
- **Director is** Chairman of National Sage-grouse Executive Oversight Committee WAFWA; Chairman of Bird Conservation Committee/Sage-grouse lead; on National Policy Team
- Staff on National Technical Team, Resource Management Team, and implementation teams.
- Developing Greater Sage-grouse habitat maps with threats overlaid
- Nevada Partners for Conservation and Development
  - On the ground projects
  - Guided by 2004 and updated bi-state action plan
- Local population management unit (PMU) lead
- Lead Governor's Sage-grouse Task Force
- Data Collection and management
- Research





# Conservation Measures

- Since 2001, NDOW involved with >27 sage-grouse specific habitat improvement or restoration projects consisting of;
  - 11 fire restoration projects;
  - 14 brood rearing or nesting habitat projects;
  - 2 habitat protection projects;
  - 2 long term research projects;
- The total acreage treated = 71,348 acres at a cost of \$2.3 million dollars.





# NDOW Actions on Sage-Grouse

- Nevada Partners for Conservation and Development
  - Collaborative, inclusive process
  - Leverage funding
- > 1,000,000 acres at a cost of many millions
  - October 2011 fires ~300,000 acres
  - >\$600,000
- Pinyon-Juniper treatments in Bi-State PMUs

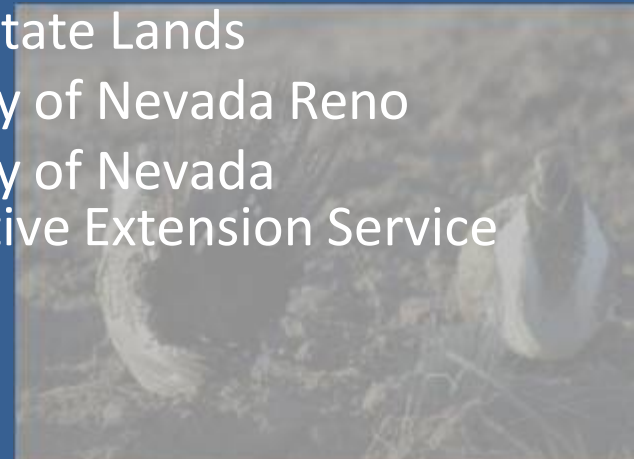




# NPCD Participants

- Agricultural Research Service
- Bureau of Indian Affairs
- Bureau of Land Management
- Natural Resource Conservation Service
- U. S. Fish and Wildlife Service
- U. S. Forest Service
- U.S.F.S. Rocky Mountain Research Station
- Nevada Department of Agriculture
- Nevada Department of Conservation and Natural Resources
- Nevada Department of Wildlife
- Nevada Division of Forestry
- Nevada Historic Preservation Office
- Nevada State Lands
- University of Nevada Reno
- University of Nevada Cooperative Extension Service

*Nevada Association of Counties*  
*Nevada Mining Association*  
*Nevada Cattleman's Association*  
*The Nature Conservancy*  
*Rocky Mountain Elk Foundation*







# NPCD Habitat Projects

- > 1,000,000 acres at a cost of many millions
  - October 2011 fires ~300,000 acres
  - >\$600,000
- Landscape scale projects
  - South Steptoe – 220,000 acres over next 10 years
- Pinyon-Juniper treatments in Bi-State PMUs
- Projects designed to address specific threats
- Projects monitored pre and post treatment
  - Vegetation
  - Sage-grouse

# Pinyon-Juniper Habitat Project

Before PJ removal in 2008



After PJ removal in 2010





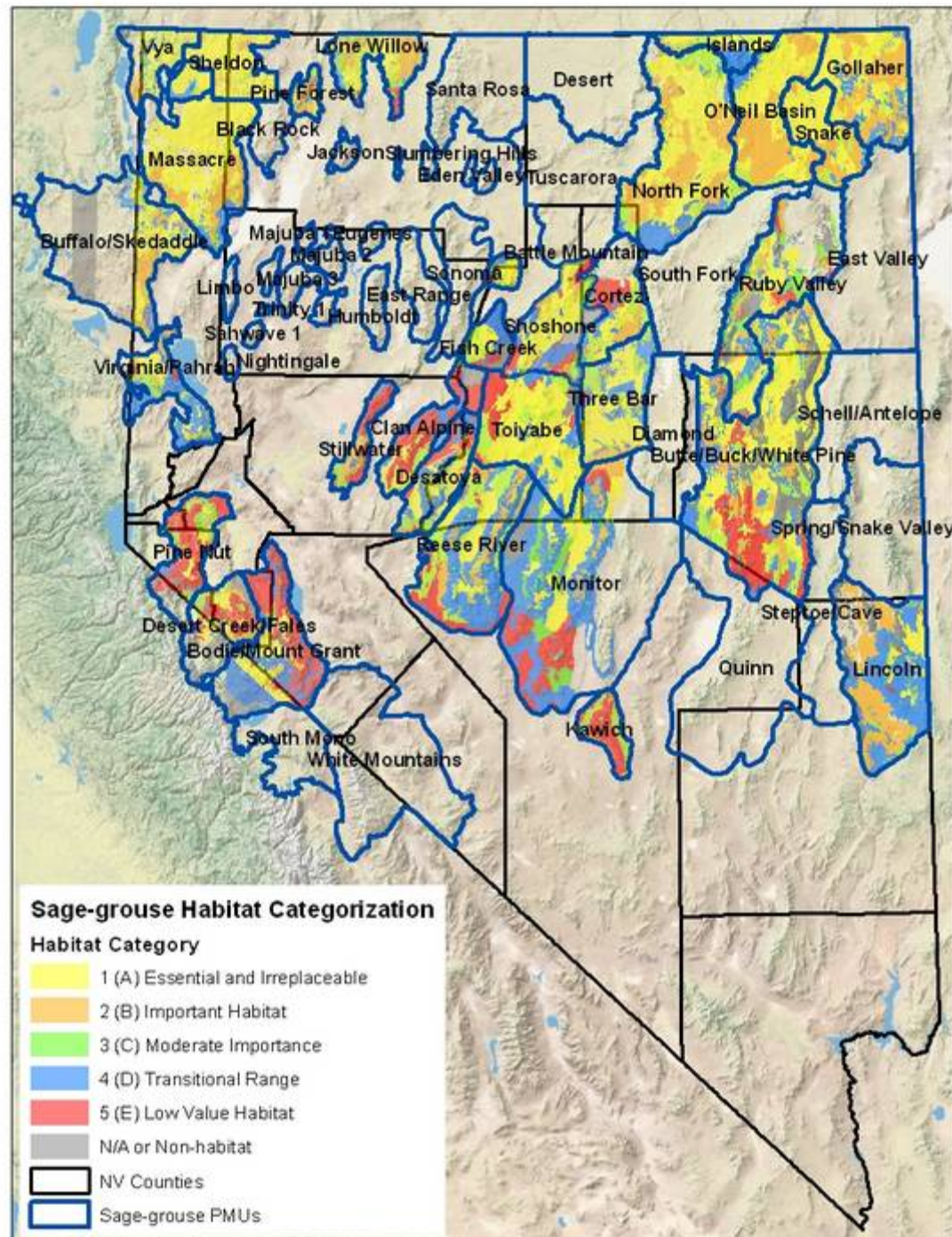
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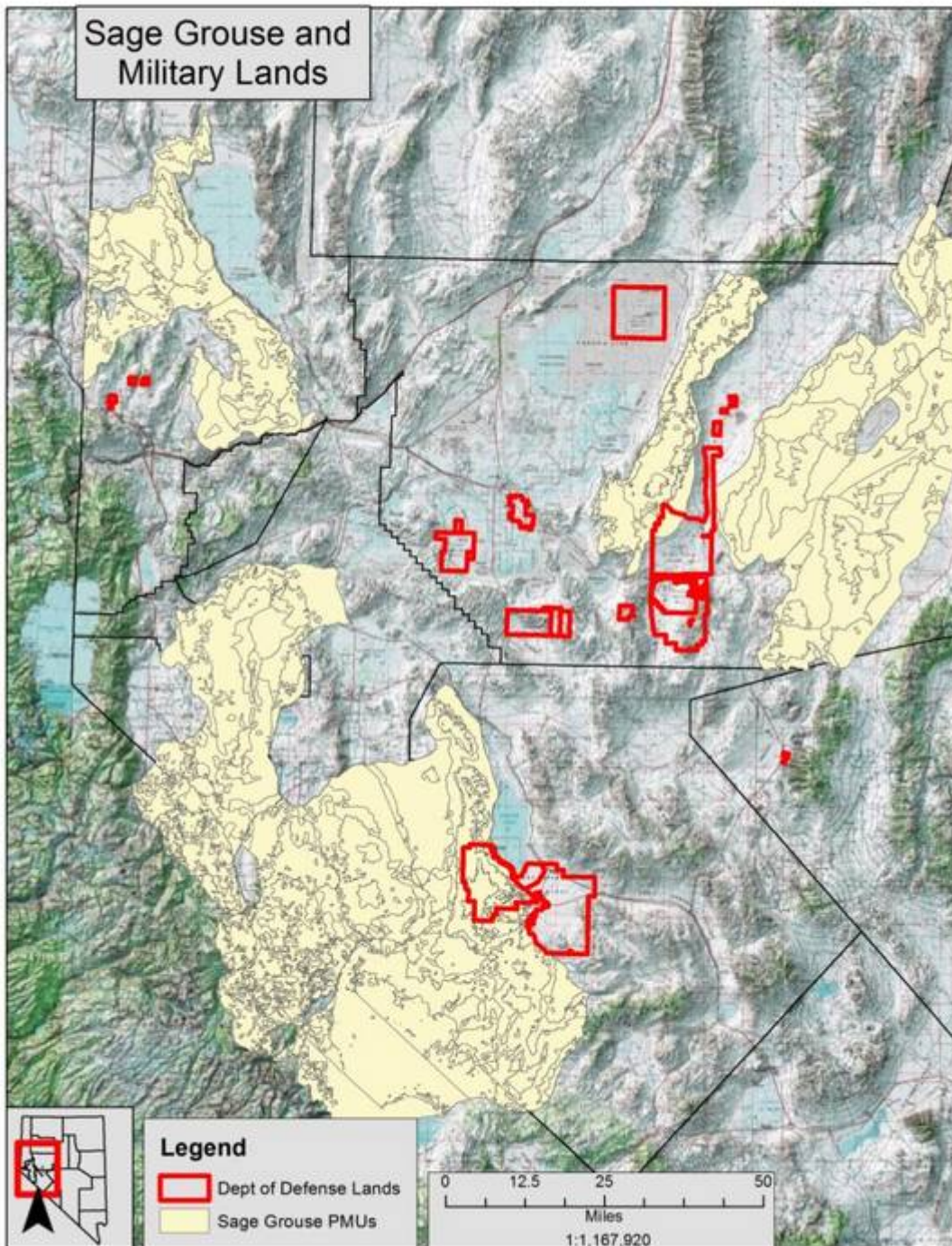


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## Military Lands and Sage-Grouse Habitat

- Hawthorne operations in Mt. Grant Bodie Hills PMU
  - Habitat prioritization proposal
  - PJ Thinning projects
- Sweetwater summit C130 landing practice strip
  - PJ thinning treatments on US Forest Service and private land adjacent to strip
- Fallon Naval Air Station bombing operations