

Greater Sage-Grouse

(*Centrocercus urophasianus*)



Background

- North America's largest grouse species
- Sagebrush obligate
- Umbrella species
- Current range
- Current status (“warranted but precluded”)



What is a lek?



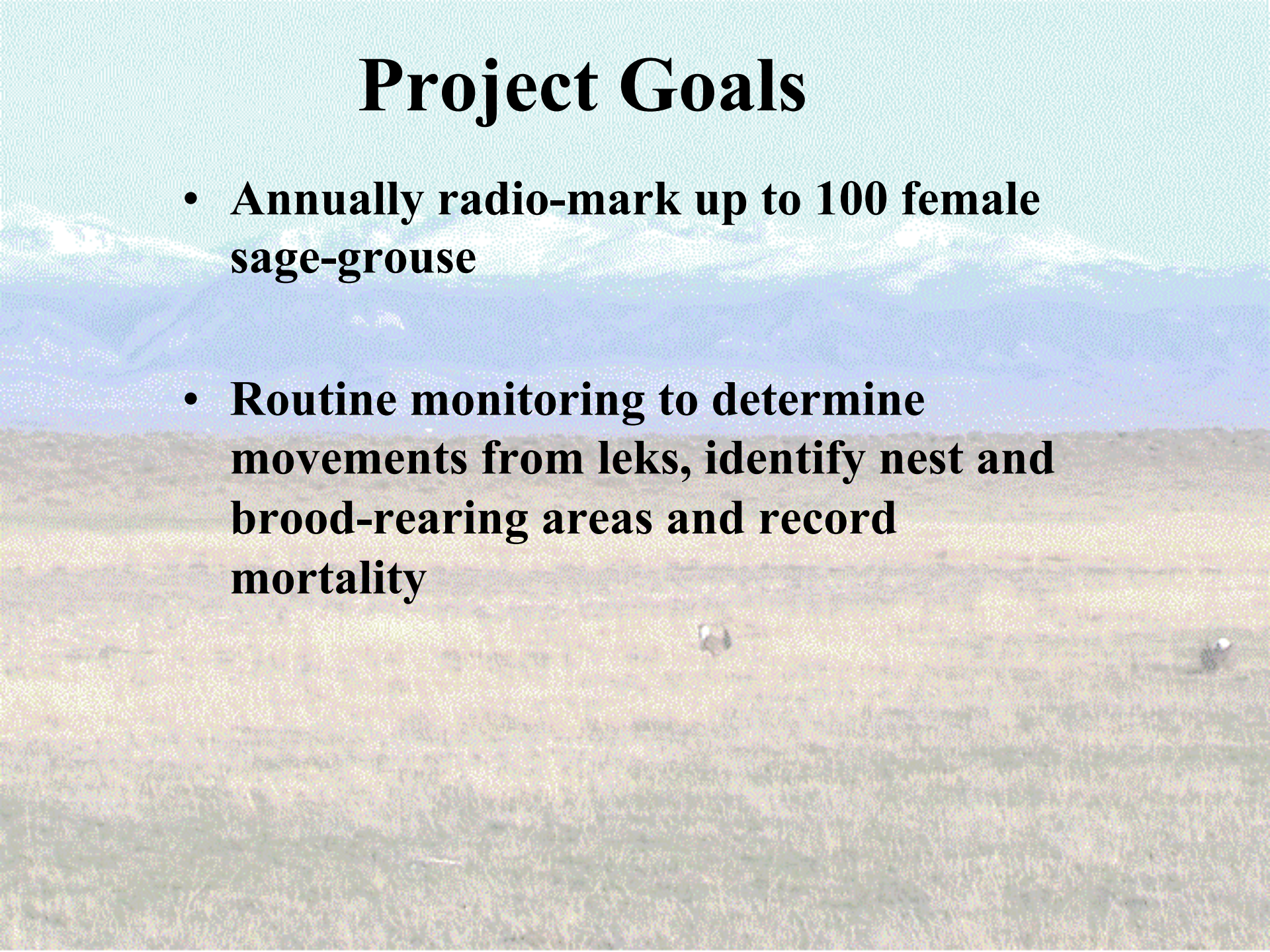
Greater Sage-Grouse Monitoring Project for the Powder River Basin



**Big Horn Environmental Consultants
Sheridan, Wyoming**

Project Goals

- **Annually radio-mark up to 100 female sage-grouse**
- **Routine monitoring to determine movements from leks, identify nest and brood-rearing areas and record mortality**



Project Goals

- **Frequent monitoring during WNV season**
- **Gather pertinent information including; nest fate, brood success, hen survival, etc**

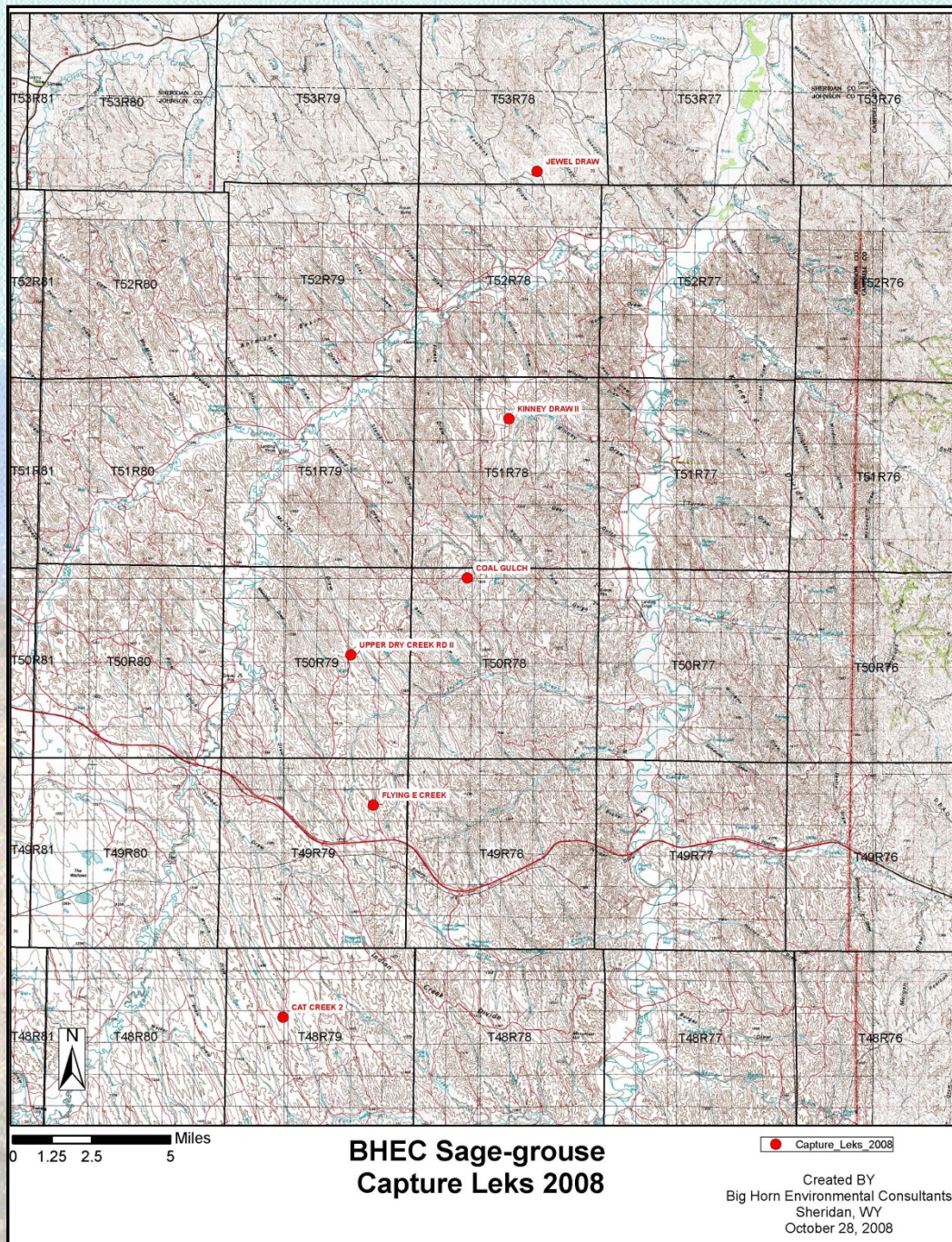
Project Goals

- **Assess response of sage-grouse to reduction of CBNG infrastructure**
 - **Power lines**
 - **Reservoirs**
 - **Human Visitations**
 - **Acres Disturbed**

Sage-Grouse Capture Season

- Sage-grouse breeding area=lek
- Capture hens from 6 different leks





Trapping Methods



Rocket-Net



**CODA
Netlauncher**

Handling and Processing

- **Attach 21.6g neck mounted transmitters**
- **Individually numbered leg bands**
- **Age by primary shape, color and wear**
- **Obtain blood and feather samples for genetics, serum separated to test for WNV antibodies**



Nesting Season

- **Locate hen on nest by triangulation**
- **2 consecutive visits confirms nest**
- **Monitor every 2-6 days**
- **Successful nest is ≥ 1 hatched egg**



Brood Rearing Season

- **Locate by triangulating collared hen**
- **Monitored every 3-6 d until 35 d post-hatch**
- **Brood counts at 35 d**
- **Successful broods ≥ 1 chick**



West Nile virus (WNV)

- First detected in SAGR in PRB in 2003
- *Cx. tarsalis*
- Spring precip. and warm weather



Adult Mosquito Sampling



- **Sample for adult mosquitoes with the direction of Dr. Johnson of MSU-Bozeman**
- **Samples are submitted to Dr. Johnson's lab for ID**

Winter Monitoring



- **Winter habitat use**
- **Flock size**
- **Flock composition**
- **Seasonal migrations**

Sage-Grouse Mortalities



- **Predation**
- **Bacteria**
- **Vehicle collision**
- **Power line collision**
- **Fence collision**
- **WNv**
- **Undetermined cause**

Predation

- **Relationship between sage-grouse and lagomorph population cycles.**
 - **Tularemia outbreak causing predators to switch from rabbits to other prey sources (“Prey Switching”).**
- **Anthropogenic influences on predators.**
 - **Roads, structures, culverts, power lines, stock ponds.**
- **Water availability influencing “new comer predators”.**

Range Conditions

- **Grazing**
- **Grasshoppers**
- **Drought**

