BLM's Approach to Sage-grouse Restoration in Wyoming

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Land use Planning/Implementation

- **Planning documents**

- **Healthy Land Initiative**

    -Greater Yellowstone Coalition

    -Wyoming Landscape Conservation Initiative

    -Powder River Basin Restoration

- **Thunder Basin Grassland Prairie Ecosystem Assoc.**

- **Population Viability Analysis**

Reclamation vs. Restoration

- **Reclamation** – When the site has been **re-contoured**; is successfully **re-vegetated**; is **free of weeds** and leftover equipment; and is **stable**, the BLM approves a final abandonment notice (FAN) for the site. (BLM)

- **Restoration** – **ecological restoration**, which is the practice of renewing and restoring degraded, damaged, or destroyed ecosystems and habitats in the environment by active human intervention and action (Wikipedia)

- Bureau and Wyoming BLM reclamation standards do not meet habitat requirements for sage grouse

- *The Healthy Lands Initiative integrates reclamation, vegetation treatment, and habitat conservation to restore landscapes to full function*

Wyoming BLM Habitat Endeavors

High Desert District - High Plains District
Wind River/Big Horn Basin District

- **Spring developments**
- **Exclosures built to protect seeps/reservoirs and protect habitats**
- **Marking fences**
- **Inventory habitats & migration routes**
- **Install escape ramps in livestock tanks**
- **Grazing management**
- **Installation of guzzlers**
- **Vegetation Improvement Projects**
  - **-herbicide application**
  - **-prescribed burns**
  - **-mowing**
  - **-seeding (forbs)**
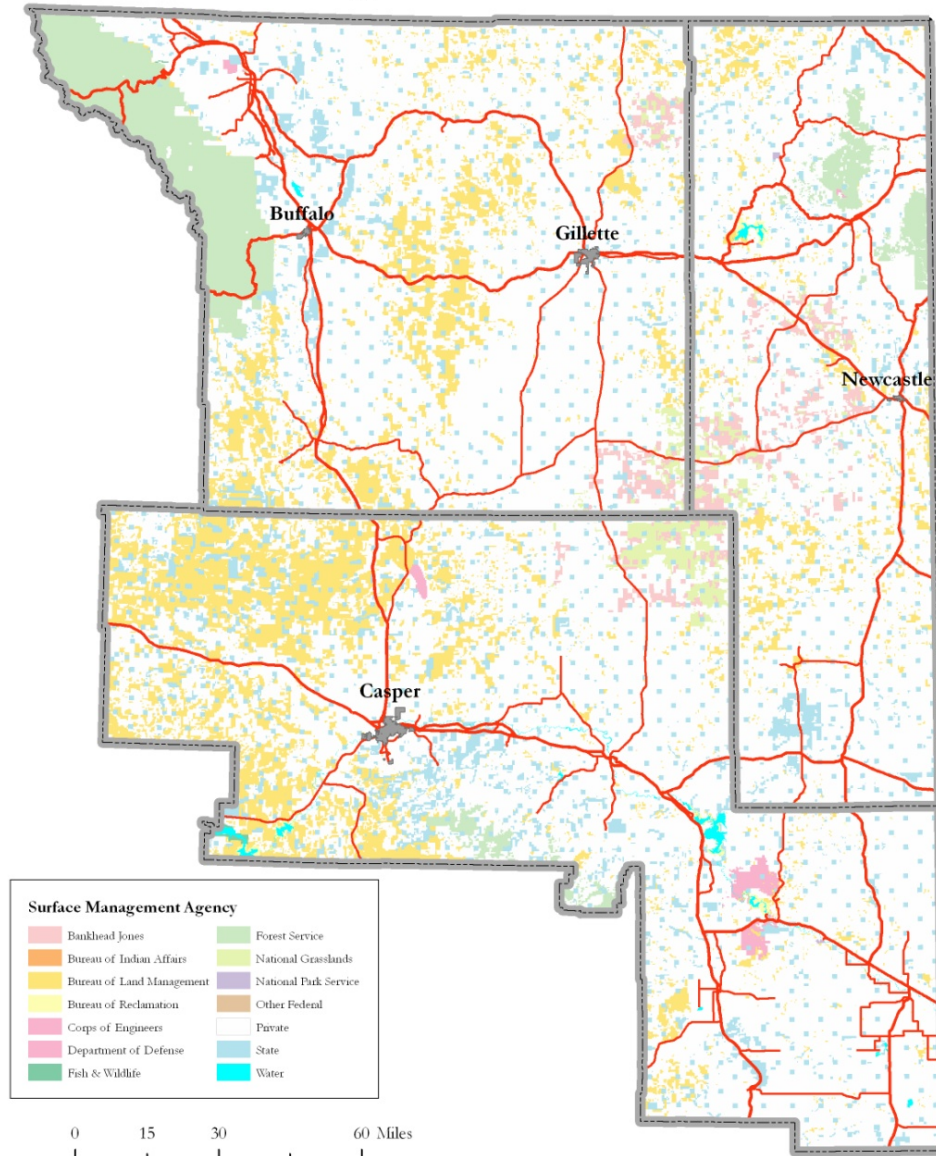 - **-planting sagebrush**

Powder River Basin Restoration

A Cooperative Approach to Restoring Sage-grouse Habitat within the Powder River Basin
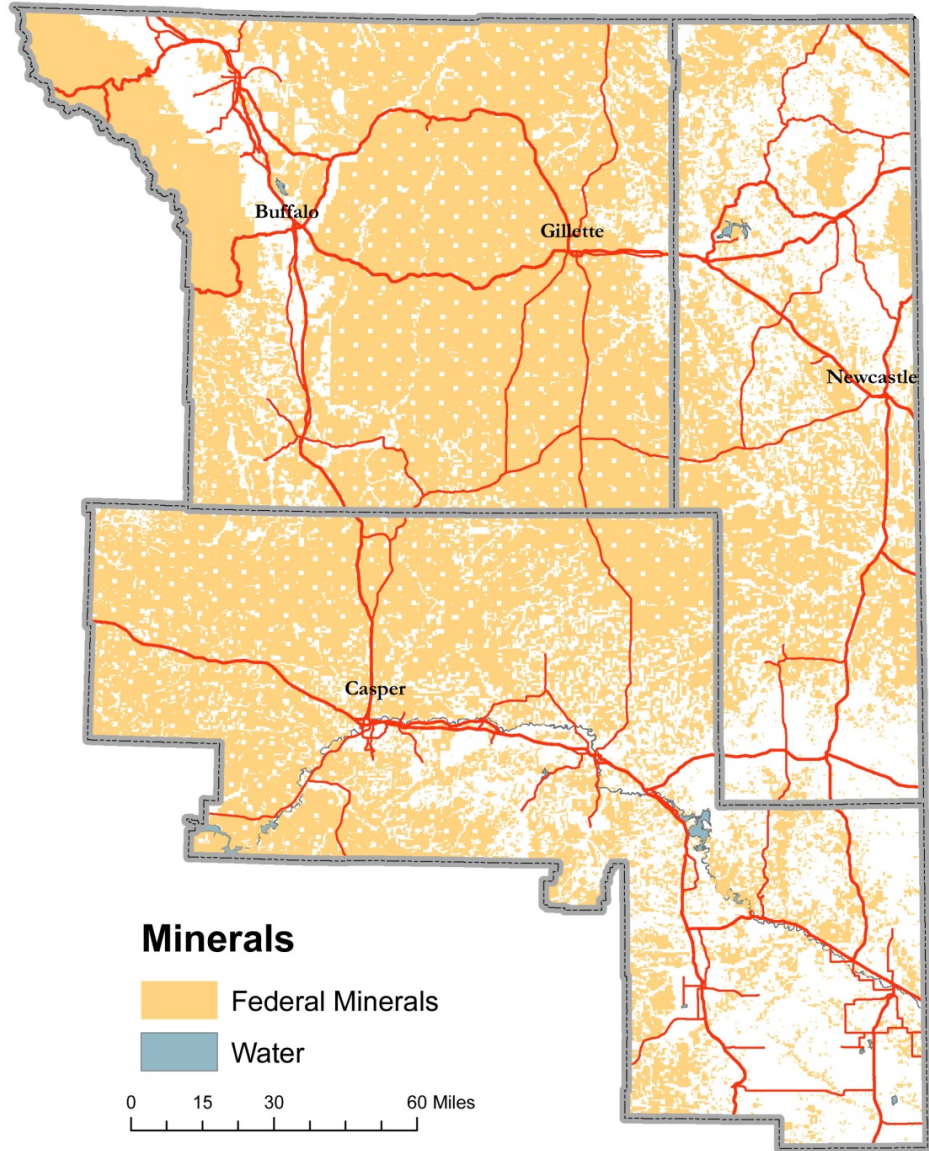
Powder River Basin

High Plains District

Buffalo

Gillette

Newcastle

Casper

Surface Management Agency

Bankhead Jones	Forest Service
Bureau of Indian Affairs	National Grasslands
Bureau of Land Management	National Park Service
Bureau of Reclamation	Other Federal
Corps of Engineers	Private
Department of Defense	State
Fish & Wildlife	Water

0   15   30   60 Miles

N

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data.
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High Plains District

Buffalo
Gillette
Newcastle
Casper

Minerals

Federal Minerals
Water

0   15   30   60 Miles

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CBNG Development in the Powder River Basin

Fragmentation of Habitats

Photo: Ann Fuller

Powder River Basin Restoration

Goal: enhance /restore habitats for Greater sage-grouse and other sagebrush obligate species on a landscape or watershed scale through partnerships.

Objectives include but are not limited to:

- Seek and leverage funding and assistance for habitat enhancement or restoration projects - development/implementation/monitoring

- Management and control of mosquitoes carrying West Nile virus (WNv).

- Reduce fuels in/near GSG habitat to enhance sagebrush stands. Manage pine stands/juniper woodlands for structural diversity and reduce fuels

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Three sectors of sage grouse habitat restoration in the Powder River Basin

1. Restoring habitats in conjunction with reclamation on lands affected by **energy development** in SG Core/Connectivity

2. Restoration of habitats affected by **wildland fires** in SG C/C

3. Restoration of other **high priority habitats**

4. **Enhancing habitats –**
   A. Level 1 habitats - healthy and functioning
   B. Level 2 habitats - additional improvements needed to raise these habitats to a Level 1
   C. Level 3 habitats– long term projects /investments needed to raise these habitats to a Level 2

Restoration in the PRB

- NRCS/RMBO/BLM Shared position
- Identifying sites where restoration work is needed/not needed (inventory)
- Site visit to determine potential and resource concern(s)
- Communication with landowner and State of Wyoming reps (Tate Smith or Cole Lambert) and Powder River Energy Corp.
- Partners -Need to be involved/Interested Others
- Project planning on landscape level…. Partners, Budget, Timetable, NEPA, Staff and agency/company coordination, Contract/Agreements
- Implementation/Maintenance
- Monitoring
- Assessments – benefits/unintended consequences
- Tours and Workshops

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Restoration Accomplishments
(2011-2013)

- ❑ **Cheatgrass treatments – 29,350 acres**
- ❑ **Invasive plant treatments– 37,069 acres**
- ❑ **Conifer removal – 180 acres (1500 trees)**
- ❑ **Sagebrush seed planting – 440 acres (3 wildfires)**
- ❑ **Native Seed collection (Seeds of Success) 16 grass collections/11 different species and 15 forb collections/14 different species and 6 shrub species.**

Reclamation Accomplishments

(2010 to July 2013 - Associated with Federal Minerals)

- **1,500 wells plugged or applied (application received) to be plugged** out of 17,692 wells that were drilled and produced

- **263 wells plugged/reclaimed/released** from operator liability

- **2 wells** in Core Greater sage-grouse habitat

- **8 impoundments** encompassing 25 reclaimed acres

- **6 impoundments** applied to be reclaimed

- **53 miles of roads - 540 acres** of reclaimed roads and wells (soils stabilized and vegetation established)

- **34 miles of CBNG associated overhead power lines** removed

Studies in the PRB

- **Welch Ranch** – WRRC and the Sheridan Research and Extension Center native grass seeding for future seed source (local adaptation) for reclamation/restoration
- **Biological Crust Study** - Terra Biologics LLC is working to develop the technology to grow biological crusts. Test trials of inoculum application techniques to increase soil microbial actively to increase reclamation potential of disturbed soils.
- **Fathead minnow study** - Doctoral student Ryan Watchorn investigating the use of fathead minnows in stock ponds/reservoirs to control mosquito larvae (*Culex tarsalis)* which can carry the West Nile virus.
- **USGS** – Coal and Water related studies – recharge of aquifers

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Issues and Challenges

❖ **Orphaned wells and ancillary facilities**

❖ **West Nile virus**

❖ **Land status**

❖ **Cheatgrass**

❖ **Grazing**

❖ **BLM reclamation vs. permitting**

❖ **Off-site mitigation**

     -timing stipulations

     -orphaned wells

❖ **New Development - Horizontal oil – long-term life expectancy of wells 10- ?? Years**

Questions ?

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Range-wide Lek Density Map

Doherty et al. 2010