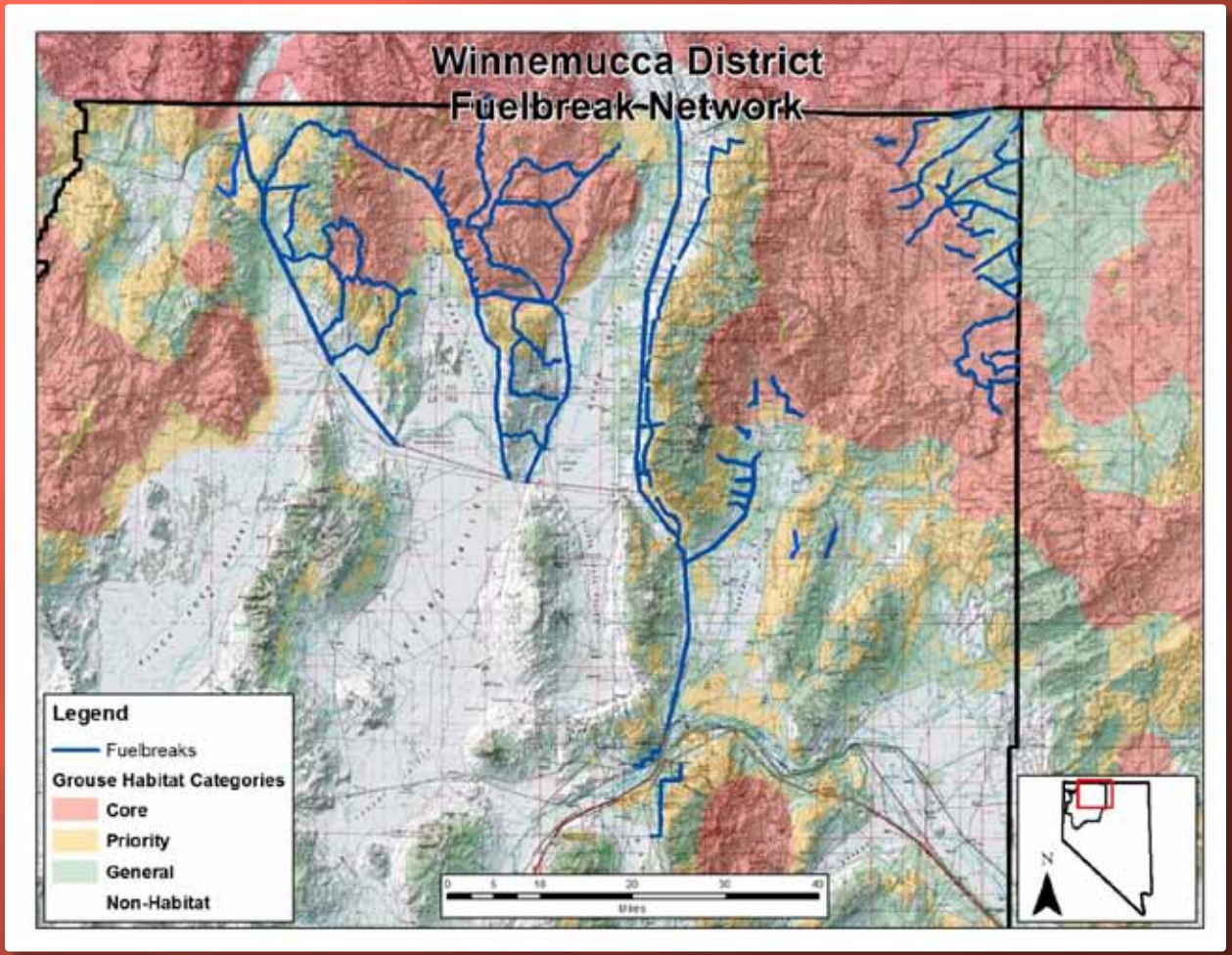
Beyond WUI –
Landscape Fuelbreak Systems



Mike Fettic
Desert Basin Zone
Fire Management Officer

Fuels Management in Rangelands

BLM - USFS FIRE WINNEMUCCA

Fuels Management – modifying fuel properties – vegetation and litter

Attributes modified: vegetation height, vegetative cover or continuity, composition (e.g., annual v. perennial), litter cover (i.e., removal through Rx), and total fuel loading.

Modifying fuel properties reduces fire intensity and/or fire spread.
Fuelbreak locations can then be utilized by fire operations resources for suppression.

End Result: less area burned in wildfire

Winnemucca WUI Fuelbreak

Hotsprings Fuelbreak

How do we prioritize placement of fuelbreaks across large landscapes?

Thomas Canyon Fire Winnemucca 2007

Photos taken from Winnemucca Dispatch Office

I. Fuelbreak placement priorities and types

II. Adapted Management

II. Success Stories

Stuart's Gap Fuelbreak

Fuelbreak Location Selection

BLM - USFS FIRE WINNEMUCCA

WUI - Primary target for treatment remains protection of communities-at risk in the wildland-urban interface

Fort McDermitt Reservation North Road Fire 2005

Fuelbreak Location Selection

BLM - USFS FIRE WINNEMUCCA

WUI - 13 federally-recognized communities-at-risk within the Winnemucca District

Pre-treatment Cheatgrass dominated

Winnemucca WUI Fuelbreak System

Winnemucca 2007

Post-herbicide fuelbreak

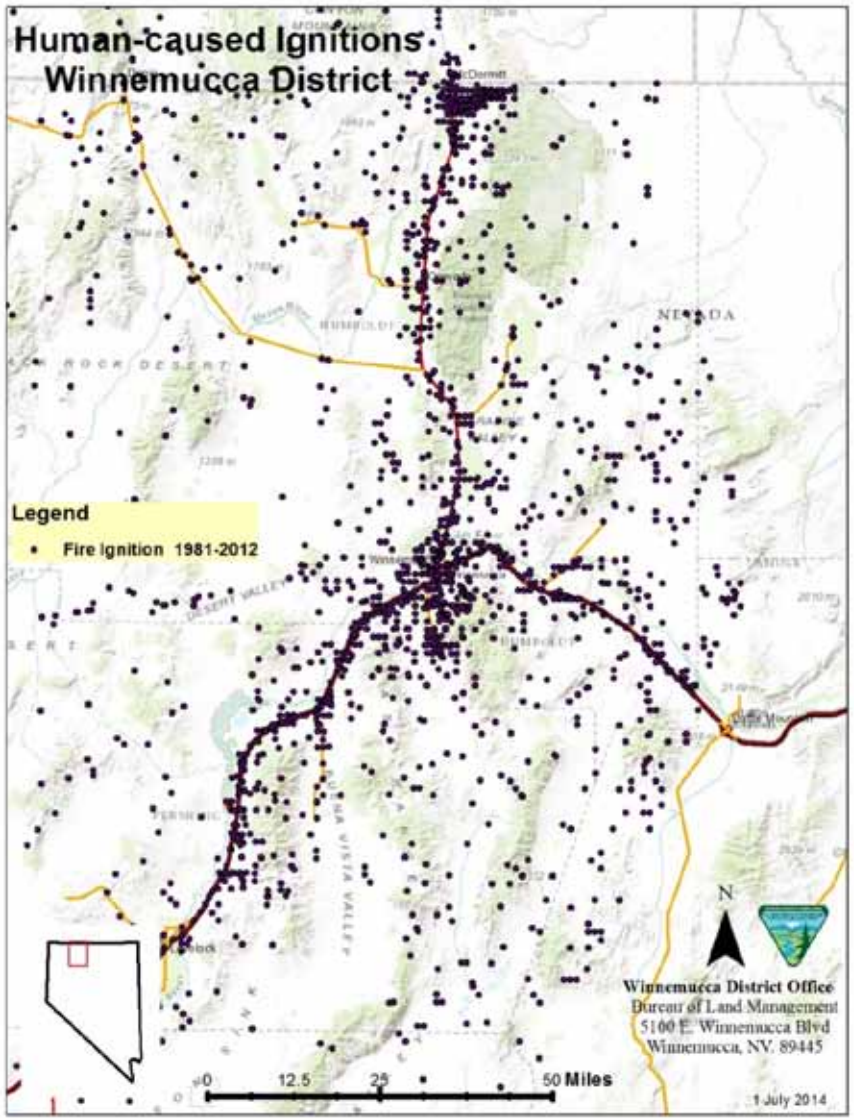
Drill seedling-fuelbreak

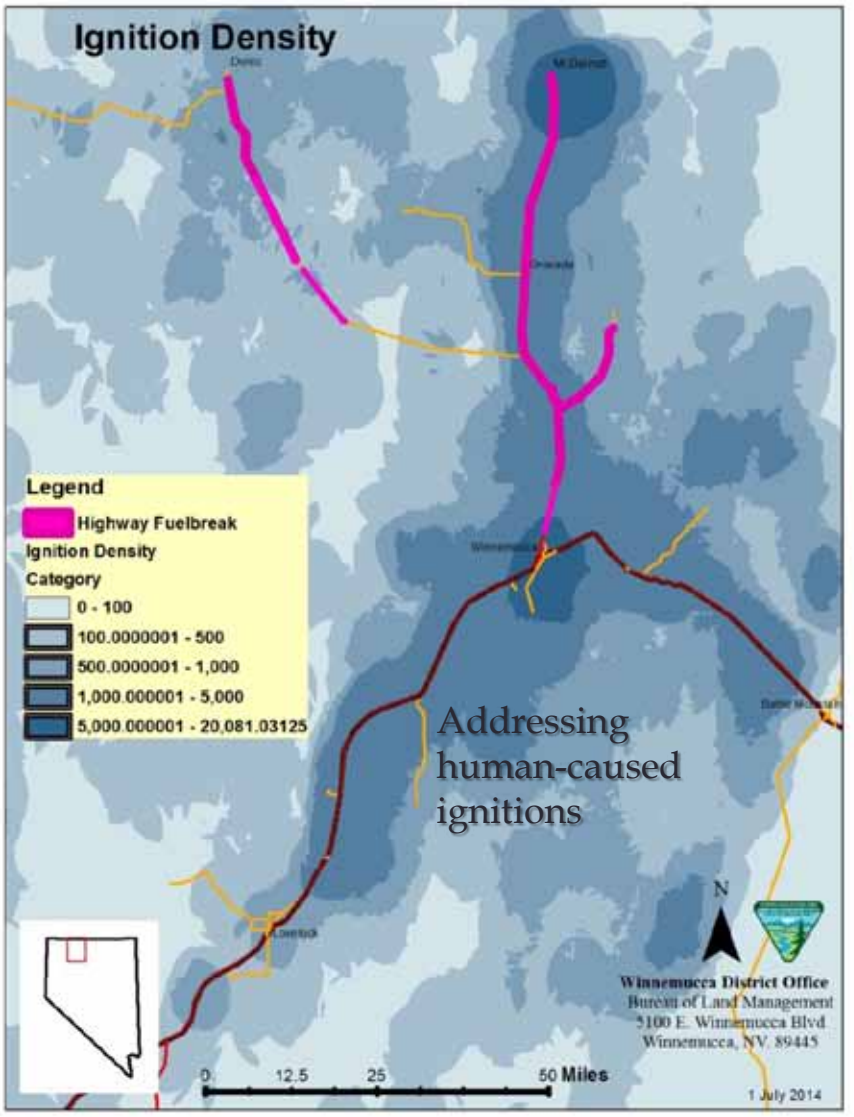
Protect communities and fires moving out of WUI into adjacent sagebrush habitat

Fuelbreak Location Selection

BLM - USFS FIRE WINNEMUCCA

Where do we have a high frequency of human-caused ignitions?





Linear Fuel Breaks
Mike Fettic, BLM Winnemucca District Fire Management Officer

Addressing Human-caused ignitions

Highway Disking Fuelbreaks

135 miles treated along 4 highways with high fire occurrence

Specifications
- maintained yearly with disk
- bare dirt 12-16 ft wide, both sides
- after major veg growth but prior to fire-prone conditions

Highly successful fuelbreaks that limit fire spread into adjacent intact habitat

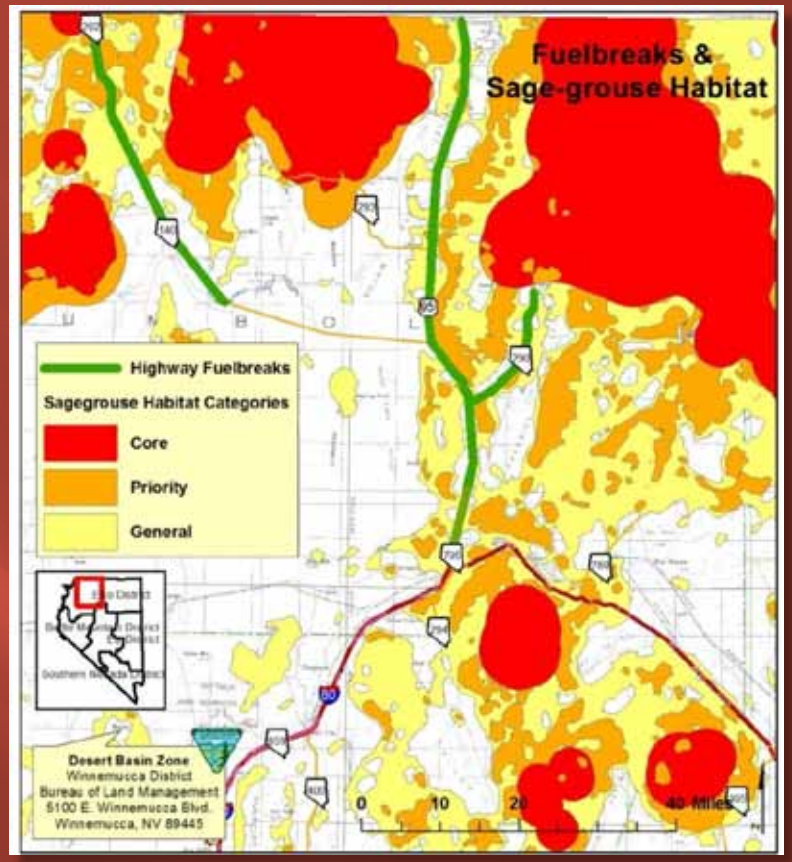
Why do they work?

1. Limit fire spread in the direction of large blocks of continuous fuel
2. Limits the distance from ignition origin to fuelbreak – fire cannot build in intensity
3. Fires in alignment with winds can only move in flanking and backing conditions

What are we saving?

BLM - USFS FIRE WINNEMUCCA

Denio Summit Fire June 2008

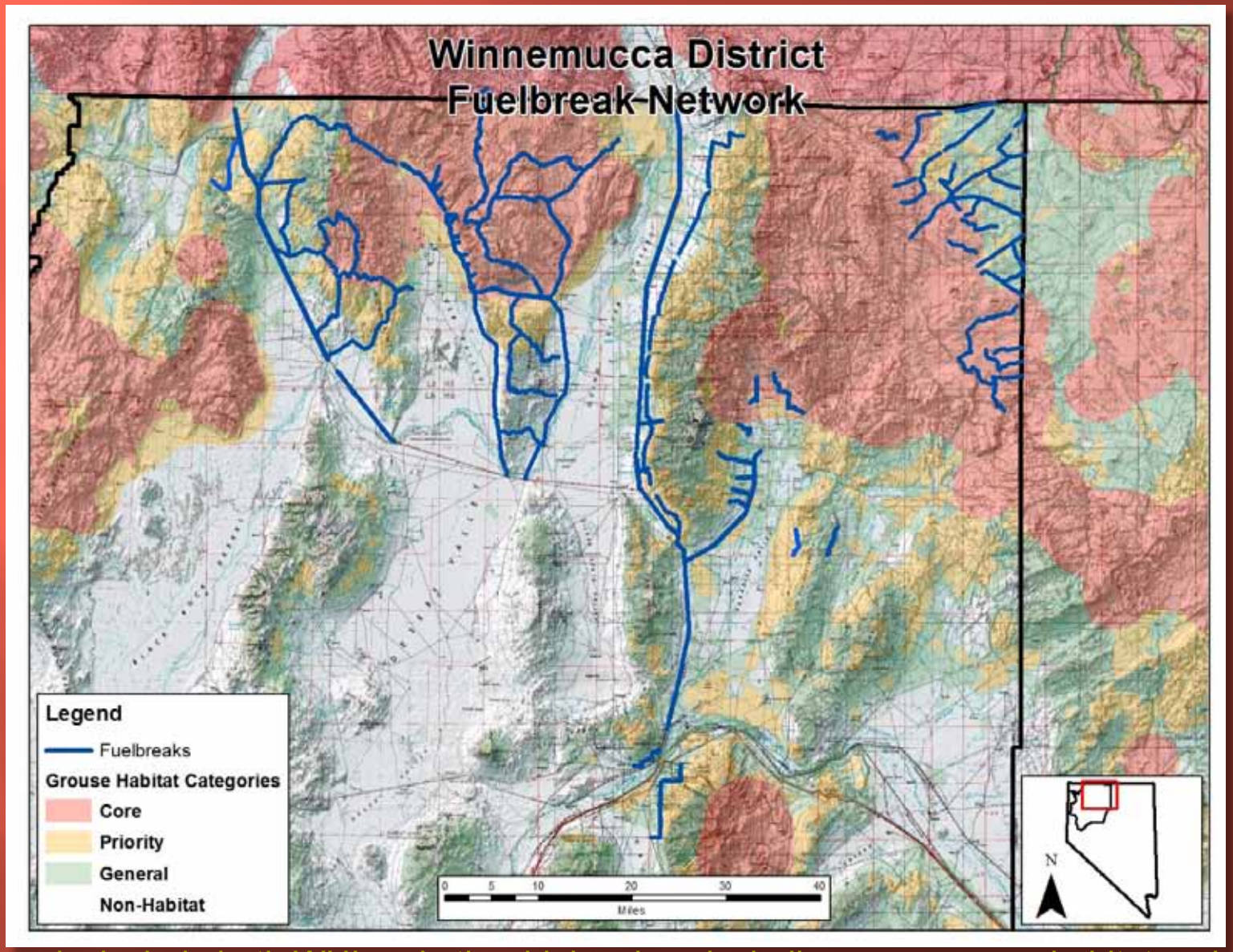


Intact Sage-grouse Habitat

Example: highway disking fuelbreaks

Linear Fuel Breaks
Mike Fettic, BLM Winnemucca District Fire Management Officer

What are we saving?

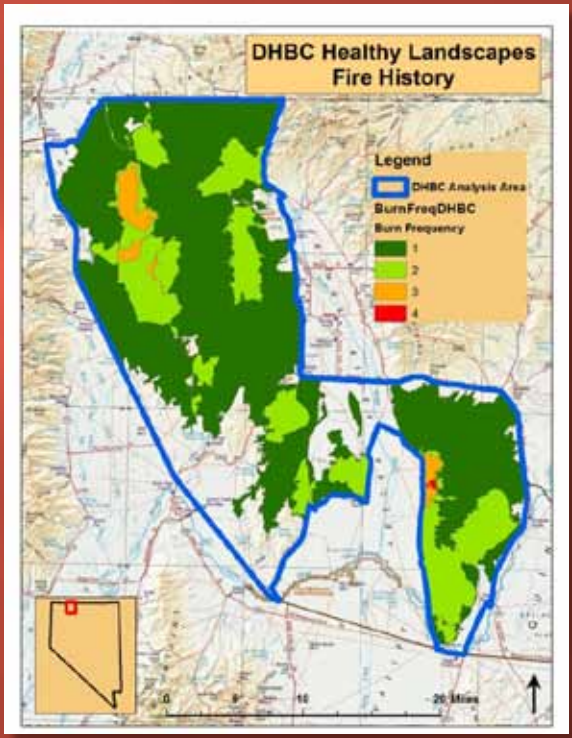


Fuelbreaks include both WUI and other high values including sage-grouse habitat and currently total approximately 840 linear miles with various widths

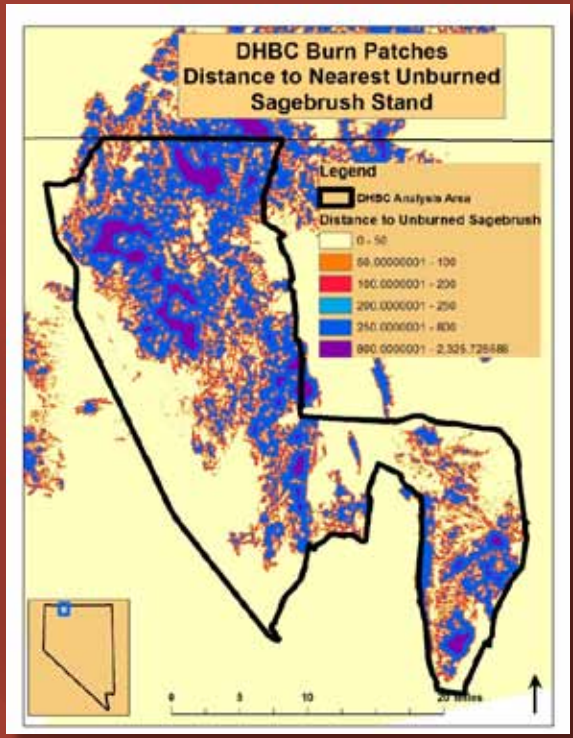
Why expand fuelbreaks outside of WUI?

BLM - USFS FIRE WINNEMUCCA

Large landscapes of core or priority sage-grouse habitat



Number of times grouse habitat has burned since 1985

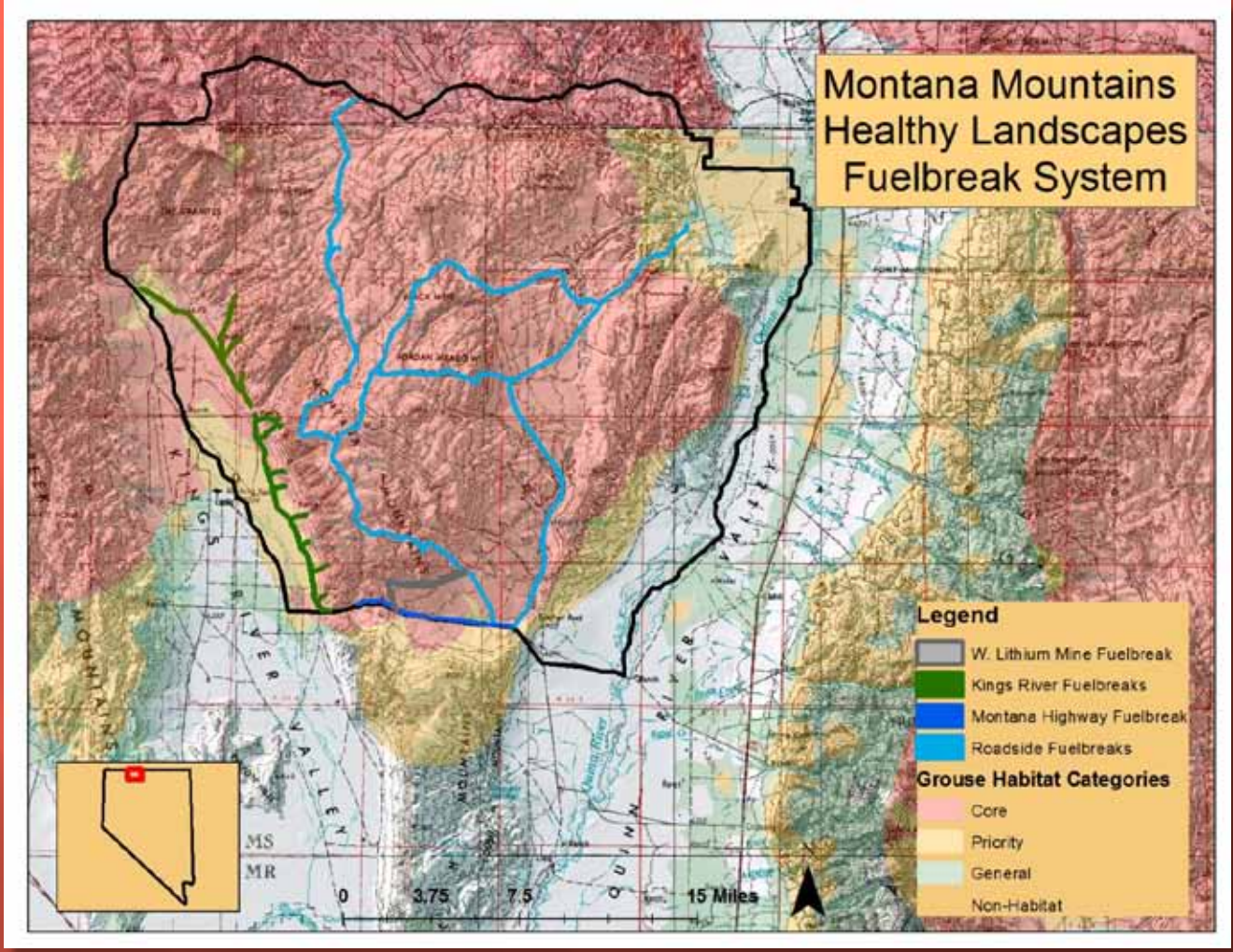


Large blocks of habitat located half mile or more from nearest unburned sagebrush stand – slow recovery

Example: Double H-Bilk Creek Mountains Healthy Landscapes Area - 393,000 acres
Total acres burned 401,800 from 1985 to 2012, some areas multiple times
- that's a frequency of once every 27.4 years

Some areas have burned 3 or 4 times since 1985

Montana Mountains Healthy Landscapes Project



Variety of fuelbreaks

- 300 ft wide drill-seeded with low-growing grasses 27 miles
- Road fuelbreak: mowing on both sides of road – 79 miles
- Fuelbreak around existing mining operations 5 miles
- Fuelbreak along high-traffic highway 7 miles

Full plan includes both fuels and sagebrush restoration treatments >14,000 acres

Double H-Bilk Creek Healthy Landscapes Project

Project currently in the planning stage – part of a continuous large block of Sage-grouse habitat.

A variety of fuelbreaks planned from mowing along existing roads in the mountains to drill seeding wide fuelbreaks in the flats.
177 miles proposed

Part of fire defense system to provide firefighters a defensible location for suppression.

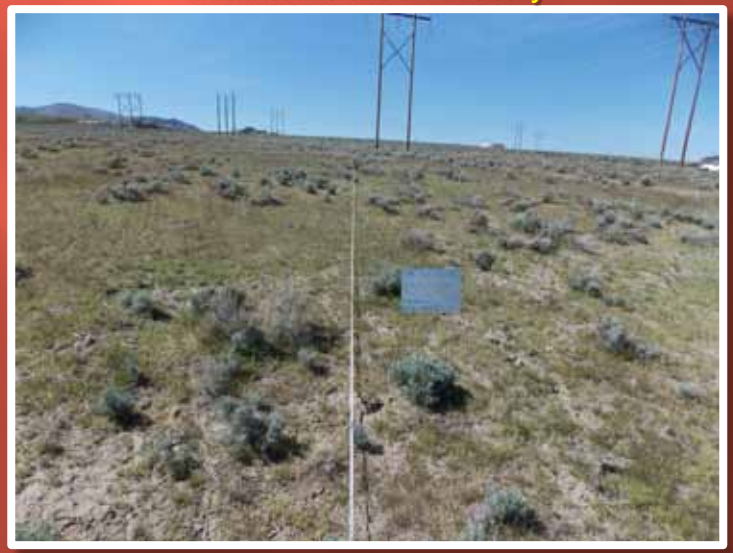
With the Montana Mts Project
313,000 acres PPH
84,000 acres PGH
15 LCT streams

Linear Fuel Breaks
Mike Fettic, BLM Winnemucca District Fire Management Officer

Adaptive Management – Fuels

BLM - USFS FIRE WINNEMUCCA

Pre-treatment - Site conditions determine what treatments are necessary



Post-treatment yr 10 – sagebrush re-establishing – identify maintenance treatments

Monitoring of treatments is key to successful fuels management program.

Monitoring assesses the change in fuels structure, success or failure of treatments, and need for maintenance or modification of treatments.

Companion Control Plot – Assess impacts and fuel response to treatments

Fuelbreaks – Alternative

Change from greenstrips –planting fire resistant vegetation - to planting low growing native perennials

We had mixed success with greenstrips – possibly due to our arid sites mostly 5-8” or 8-10” precipitation

Advantages of low stature native plants

1. Low growing–greatly reduced fine fuel loads
2. Highly competitive with cheatgrass- will completely exclude it at full occupancy
3. Very drought tolerant
4. Resilient to disturbance

Winnemucca Wildland-Urban Interface Fuelbreak Network

Drilled with blue grass and thickspike, mixture of loamy and sandy soils

Early Establishment

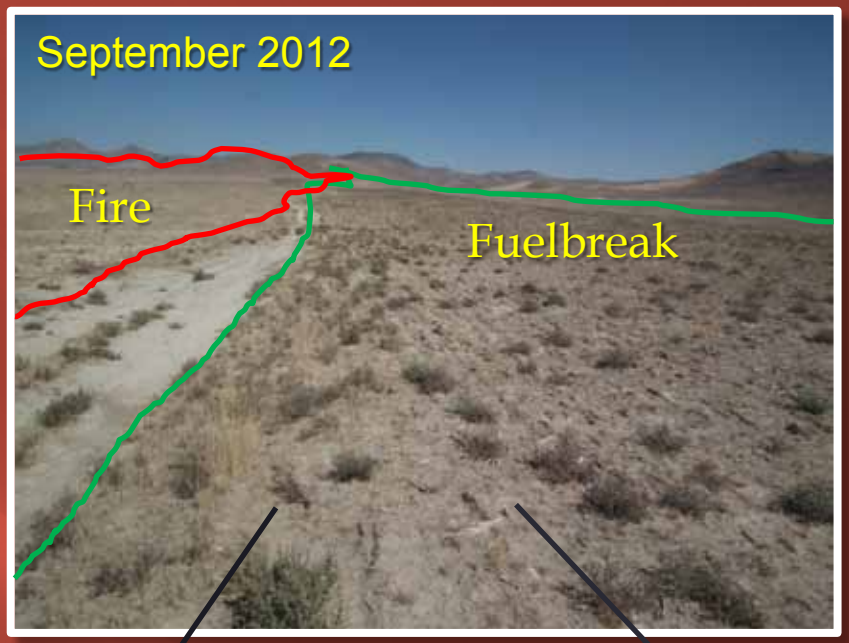
Full Occupancy May 2014

Fuelbreaks – Alternative Drill Seeding Strategy

BLM - USFS FIRE WINNEMUCCA

Hot Springs Fuelbreak

Full occupancy – Sandberg's blue grass



Hot Springs Fire October 2011
Note unburned fuel

Bluegrass cures early but has low fuel loading and stopped fire

Changes made due to monitoring – Drilling Method

BLM - USFS FIRE WINNEMUCCA

To reduce impacts of treatments – we now use depth bands on range drills

Less impact to existing perennial plants
Less impact to biological crust
Less surface disturbance and cheatgrass response
Better depth for low-growing native grass

Conventional Drilling

Much less damage to existing perennial plants

Drilling with depth bands

Fuelbreak Maintenance

BLM - USFS FIRE WINNEMUCCA

Highway Disking Fuelbreaks – require annual maintenance

Drill Seeded Fuelbreaks – maintenance is determined by monitoring
- Ultimate goal would be to have a fuelbreak that is fully occupied by low-growing perennials and maintenance free
- Sometimes we have to retreat a fuelbreak (e.g., failed seeding). The Great Basin has a temperamental precipitation regime.

Mowed Roadside Fuelbreaks – already have good understory of perennials – maintenance is determined by shrub recovery

Low impact WUI Fuelbreak – we have 1 fuelbreak that is treated annually with grass trimmers after major vegetation growth. Unique and only useful on small areas.

Pre-treatment

Post-treatment

Fuelbreak Success

BLM - USFS FIRE WINNEMUCCA

Highway Disking Fuelbreaks

Fire stopped in 2003 Moderate burning conditions

Fire stopped in May 2006 Moderate burning conditions

Fire is stopped under a variety of burning Conditions

2009 Fire, Moderate conditions

Andorno Fire, June 20, 2012 ERC-90, BI-62

Paradise Hill May 2013 Moderate conditions

MM47 Fire, May 11, 2012 ERC-74, BI-54

CODR Fire, July 22, 2012 ERC-102, BI-94

MM66 Fire, Aug 24, 2012

National Fire, August 24, 2012
ERC-99, BI-56

MM65 and MM66 Fires ERC=99, BI=56

Fuelbreak Success?

BLM - USFS FIRE WINNEMUCCA

You can't win every time

Fuelbreak still held backing and flanking fires

Buckskin Fire August 13, 2012
ERC-105, BI-64

Storm front with high winds snapped 4 powerpoles igniting fire and spotting over the highway and our fuelbreak, total size-10,720 ac

Fire spotted over the fuelbreak

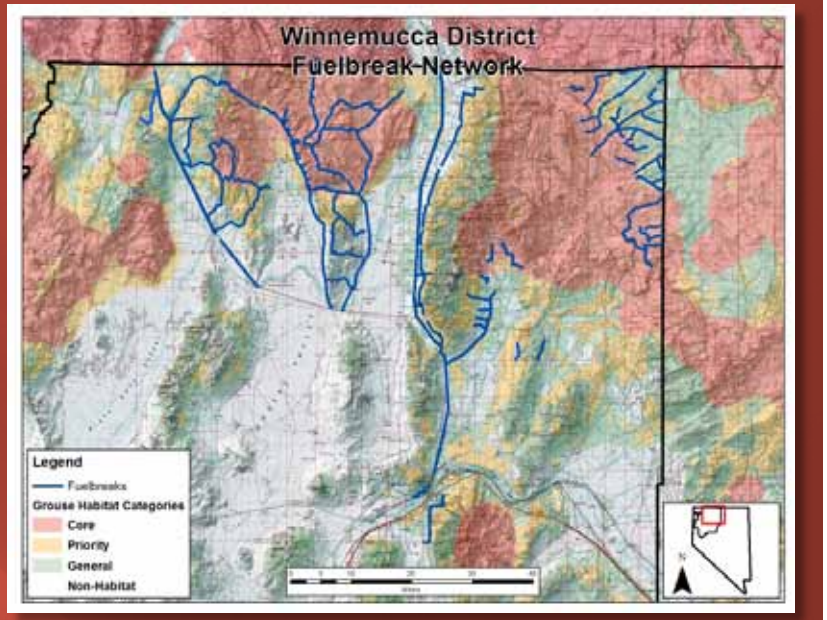
Conclusion

The large landscapes we manage require a sound comprehensive strategy to prioritize treatments with limited funding.

Although the WUI is still our # 1 priority, the threat of habitat loss due to wildfire makes protecting intact sagebrush habitat the # 1 natural resource priority.

Monitoring information can inform us of success/failure, need for treatment and needed adaptations to our current strategies.

There isn't a single fuels management strategy that will work for everyone – a variety of methods may be required.



Linear Fuel Breaks
Mike Fettic, BLM Winnemucca District Fire Management Officer