



The Great Basin Restoration Initiative: Setting the Stage for Native Plant Development & Use

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Presentation Outline

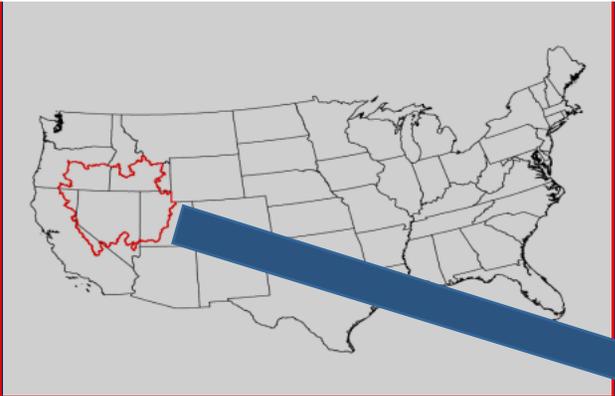
- Overview of Great Basin (GB)
- Great Basin Restoration Initiative
 - Origin
 - Strategy
 - Appropriate Scale for Restoration Initiatives
- Summary and Recommendations

Is the Mojave Desert Great Basin Bound?

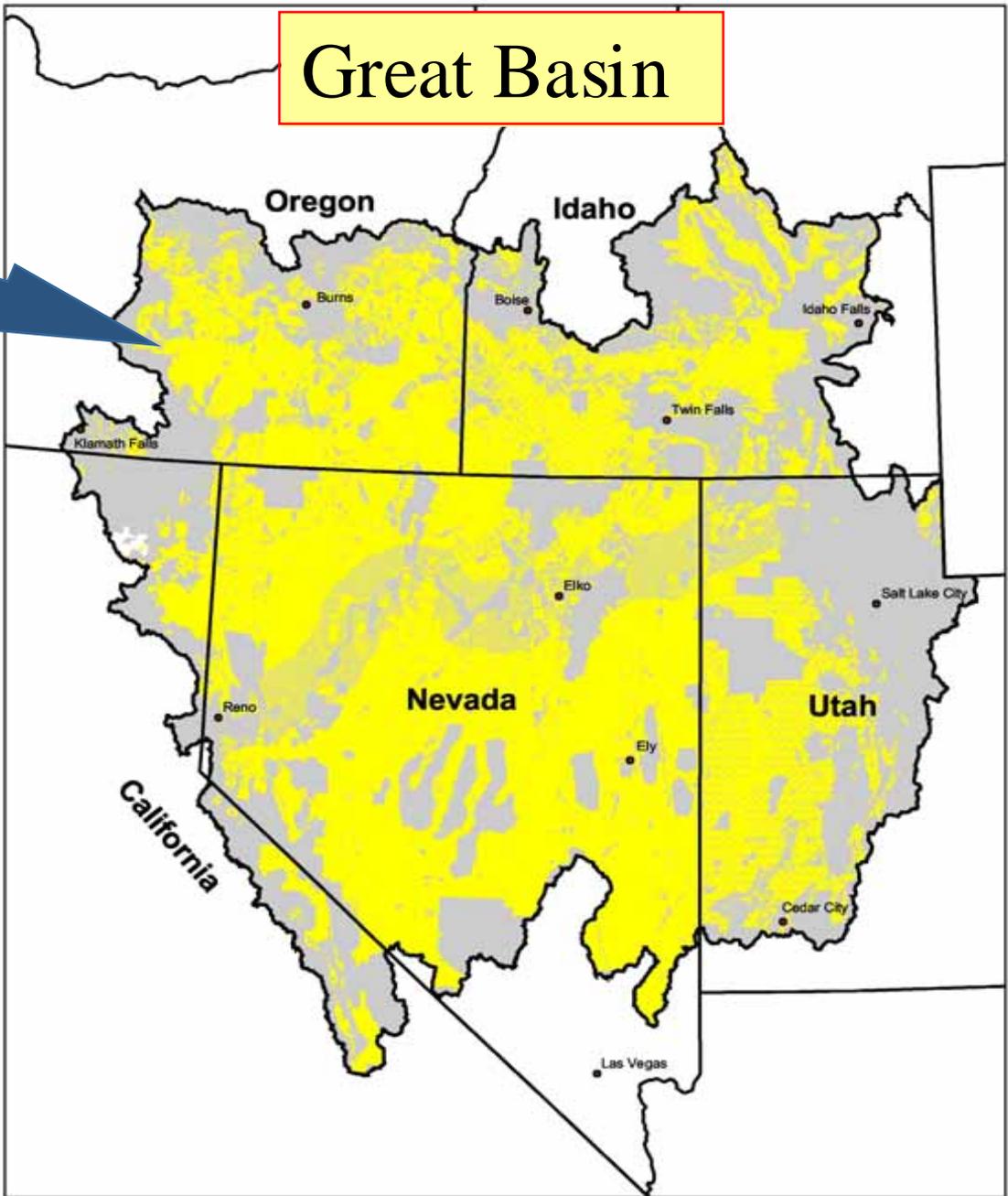


Lessons, Opinions, and Advice
from a neighbor to the
North.....





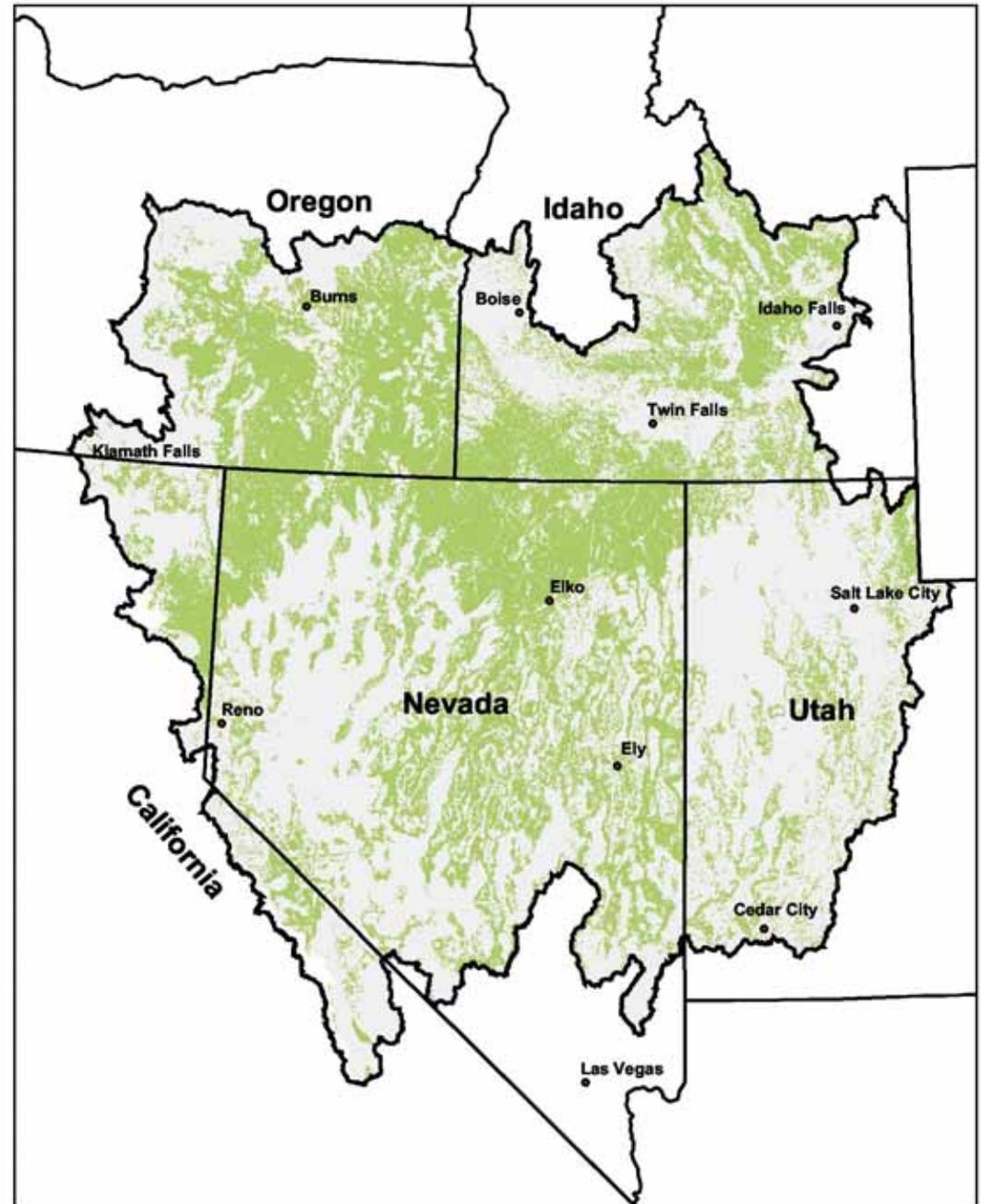
Great Basin



Owner	Acres
BLM	73 million
Private	29 million
FS	19 million
State	4 million
D.Def.	3 million
Tribes	2 million
Other	5 million
Total	135 million

Sagebrush in the Great Basin

- 57 million acres of sagebrush in the Great Basin (54% of total remaining)
- Rapidly disappearing biome --wildfires



Invasive Plants in the Great Basin

- Includes native plants as well as exotic species:
 - Native conifer encroachment
 - Flammable exotic annual grasses
 - Exotic biennial or perennial forbs
- The Nature Conservancy recently ranked the Great Basin (primarily Nevada/western Utah) as the third most imperiled ecosystem in the US due in large part to the ecological threat that invasive species pose.



Invasive Plants- Flammable, Exotic Annual Grasses



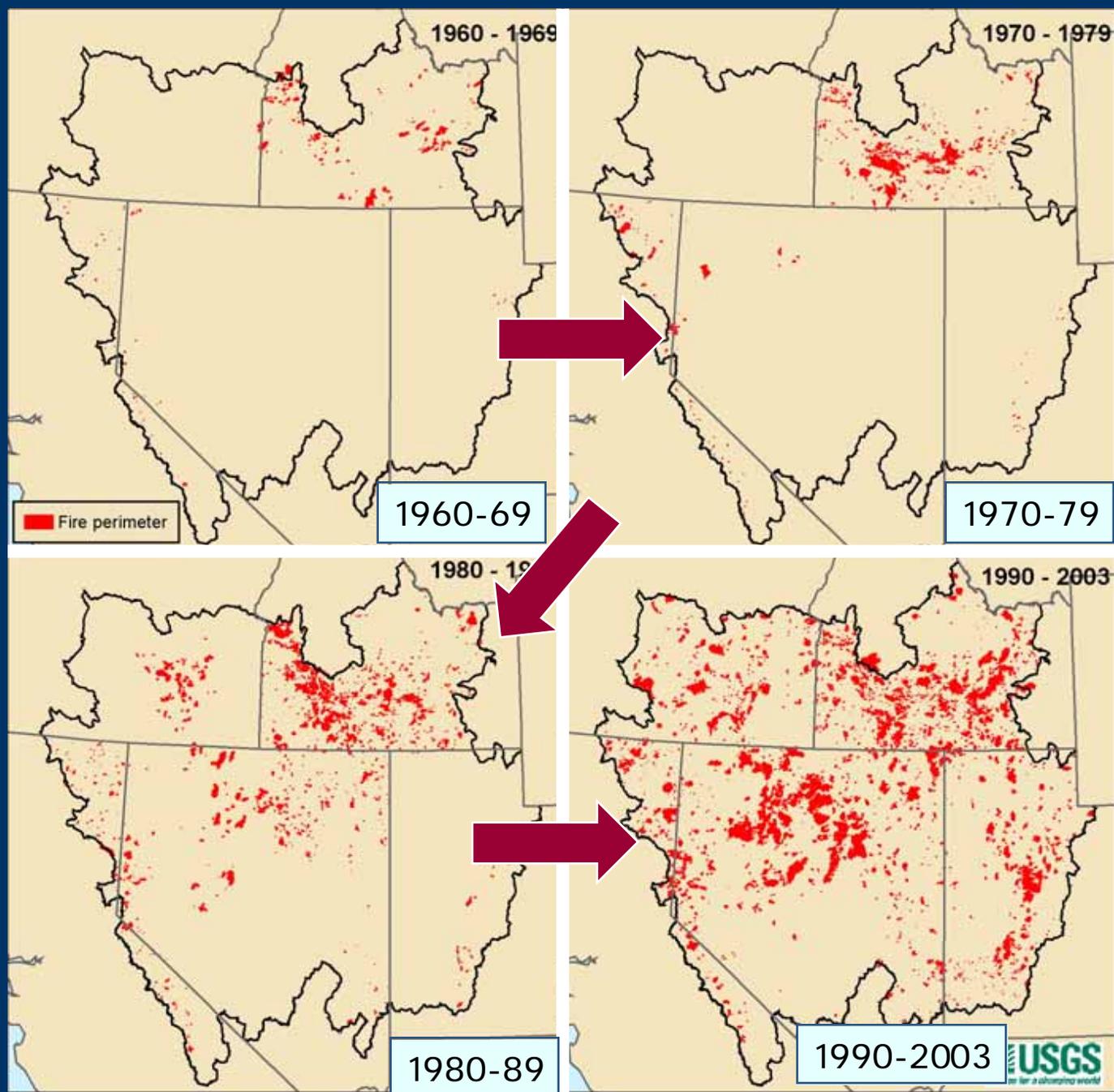
Cheatgrass



Medusahead Wildrye

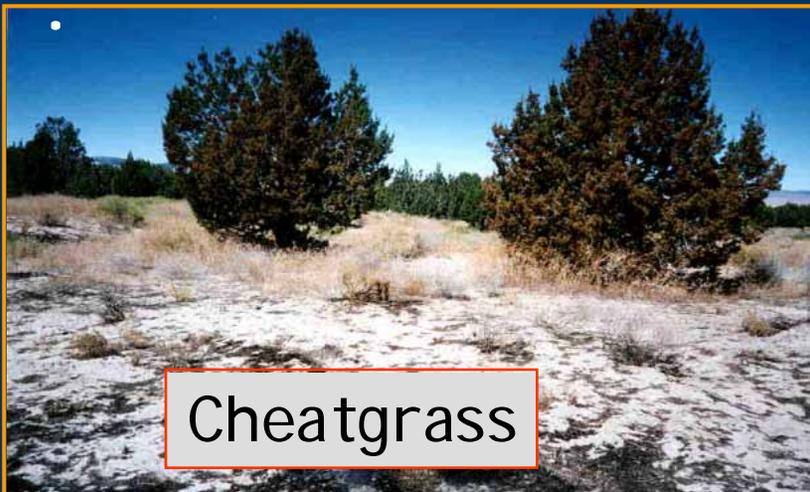
Significant Increase in Fire Frequency

Wildfires in
the Great
Basin from
1960-2003
(adapted from:
"Conservation
Assessment of
Greater Sage-
grouse and
Sagebrush
Habitats"
(2004)



CO₂ and Exotic Annual Grasses

Increased CO₂ (Smith et. al 1987) is predicted to increase the success of annual plants such as cheatgrass (*Bromus tectorum*) and red brome (*Bromus rubeus*) and increased lignin content in cheatgrass (Ziska et al. 2005)....**more fires?**



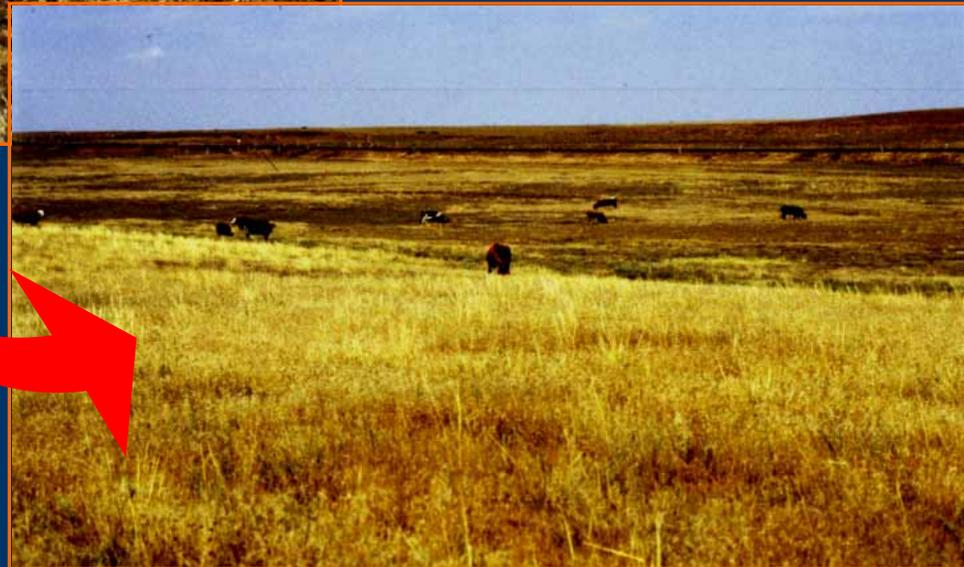
Cheatgrass in Russia (Republic of Kalmikia)

3-4 inch annual precipitation zone

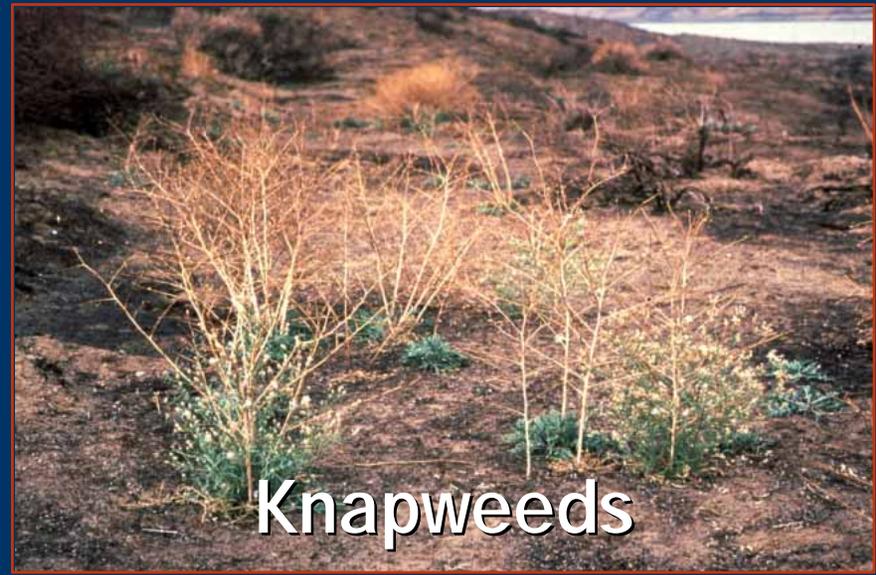


Cheatgrass

Kalmikian "Range Rover"

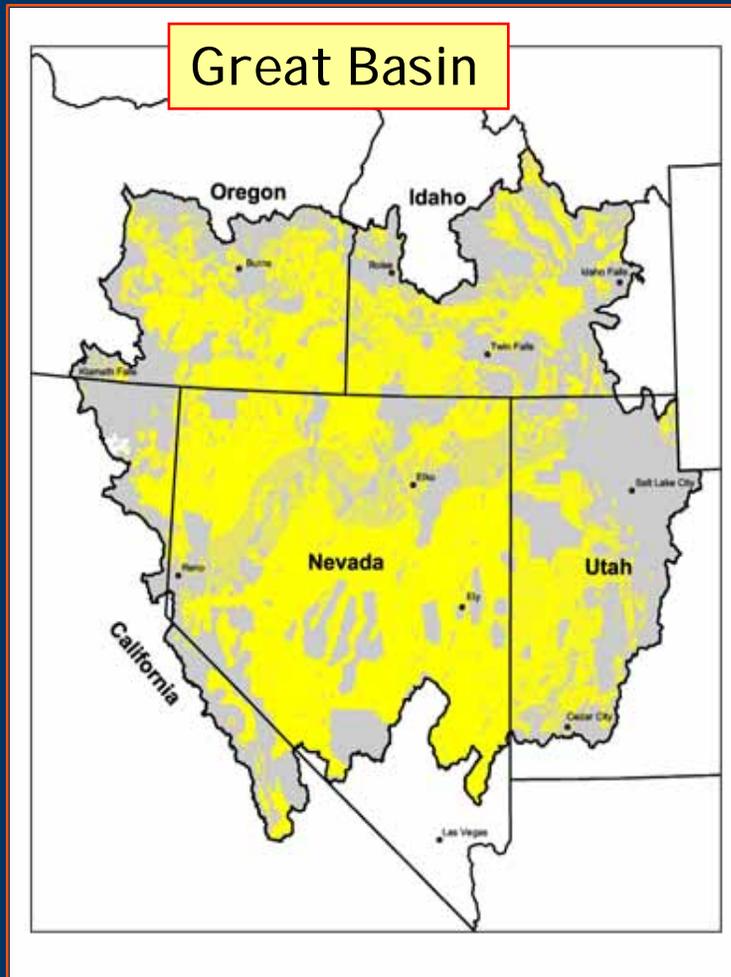


Invasive Plants- Exotic Biennial or Perennial Forbs



Fire Adapted/Opportunistic

Great Basin Restoration Initiative: Origin and Strategy



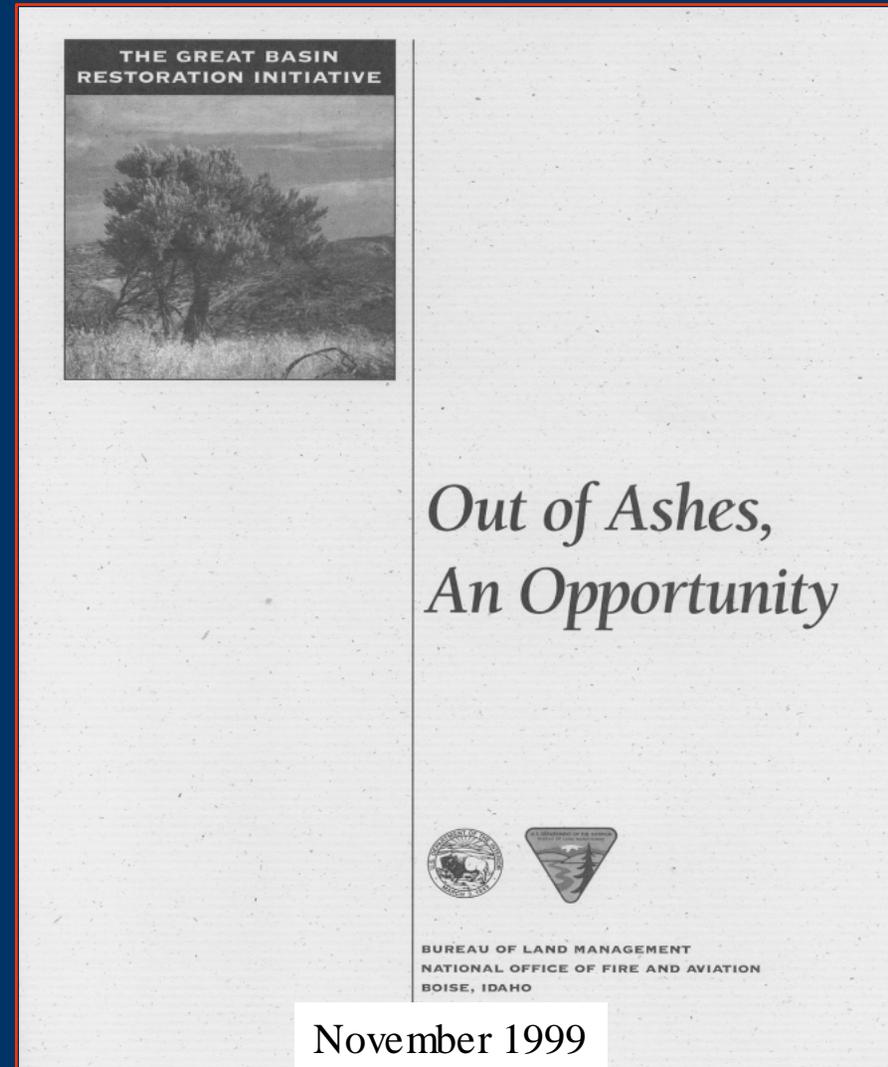
www.fire.blm.gov/gbri

What Happened?

- August 1999, hundreds of wildfires ignited.
- By month's end, more than 1.7 million acres burned.
- 1999 was the worst fire season in the Great Basin in more than four decades.
- In 2000 another 1 million acres burned



The wildfires of 1999 served as a wake-up call to the plight of the Great Basin.



Interagency publication focusing on loss of fiscal and natural resources in GB due to fire and weeds.

GBRI Support

Universities and Colleges

University of Nevada Reno
Community College of Southern Nevada
Utah State University
Oregon State University
Brigham Young University
University of Utah
Idaho State University
University of California (Berkeley)
Great Basin College

Interest Groups

Rocky Mountain Elk Foundation
The Nature Conservancy
Mule Deer Foundation
Nevada Cattlemen's Association
Nevada Woolgrower's Association
Society for Range Management
Red Rock Audubon Society
National Cattlemen's Beef Association
NW Chapter of the Society for Ecological
Restoration

Native American Tribes

Pyramid Lake Paiute Tribe
Walker Lake Paiute Tribe
Fallon Paiute-Shoshone Tribe

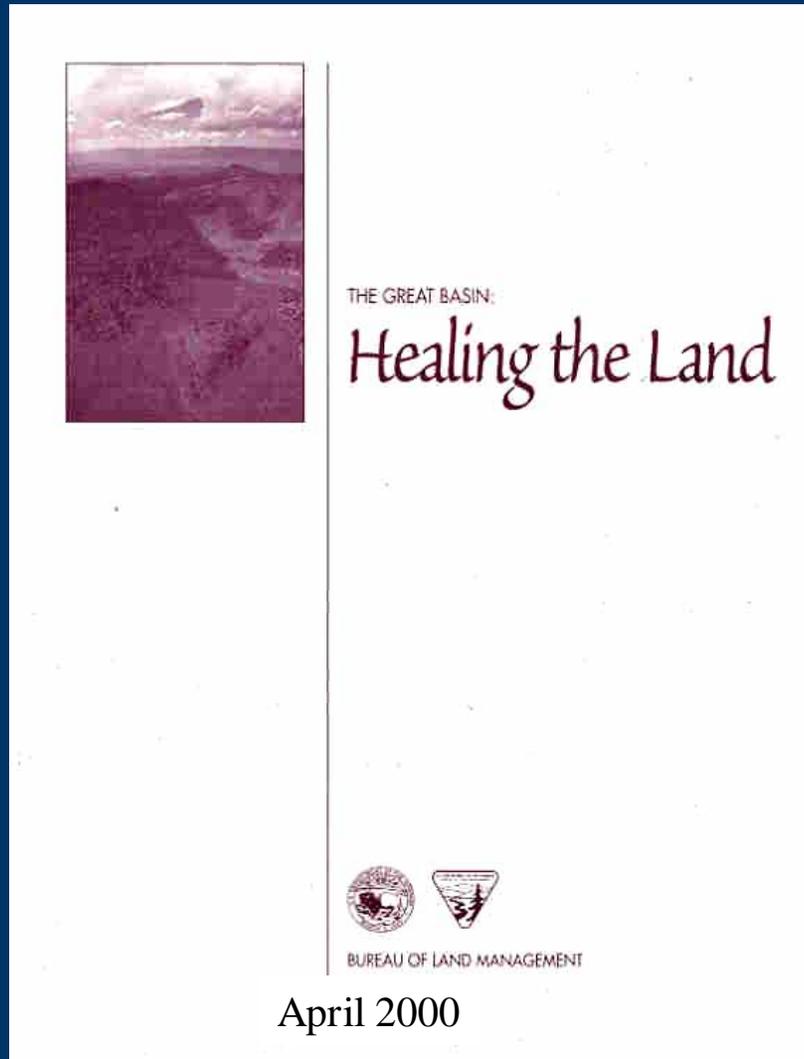
Agencies

U.S. Geological Survey (USDI)
Agriculture Research Service (USDA)
Natural Resources Conservation Service (USDA)
Forest Service (USDA)
Bureau of Indian Affairs (USDI)
Bureau of Reclamation (USDI)
National Park Service (USDI)
Fish and Wildlife Service (USDI)
Nevada Depart. of Conservation and Natural Resources
Nevada Department of Agriculture
Nevada Division of Emergency Management
California Department of Fish and Game
Lassen County Fish and Game

Others:

Western Governors Association
U.S. Senator Larry Craig (Idaho)
Nevada Gov. Kenny Guinn
U.S. Rep. Michael K. Simpson (Idaho)
U.S. Senator Harry Reid (Nevada)
U.S. Rep. James A. Gibbons (Nevada)
State Senator Dean A. Rhoads (Nevada)

“A proactive, landscape approach is needed...”



Components of Strategy:

- Planning
- Implementation
- Inventory/Assessment & Monitoring/Evaluation
- Science

www.fire.blm.gov/gbri

GBRI Strategy--Goal 1

A landscape photograph showing a fire burning in a field with smoke rising into the sky. The fire is in the foreground, and the smoke is rising into the sky. The background shows a hazy, mountainous landscape.

Maintain landscapes (especially native plant communities) and dependent species where healthy land exists now or can be obtained by using or modifying standard management practices

GBRI Strategy--Goal 2



Restore degraded landscapes to improve land health and reduce invasive species, especially those responsible for altered wildfire regimes.

Great Basin Restoration Initiative Strategy



First-Maintain



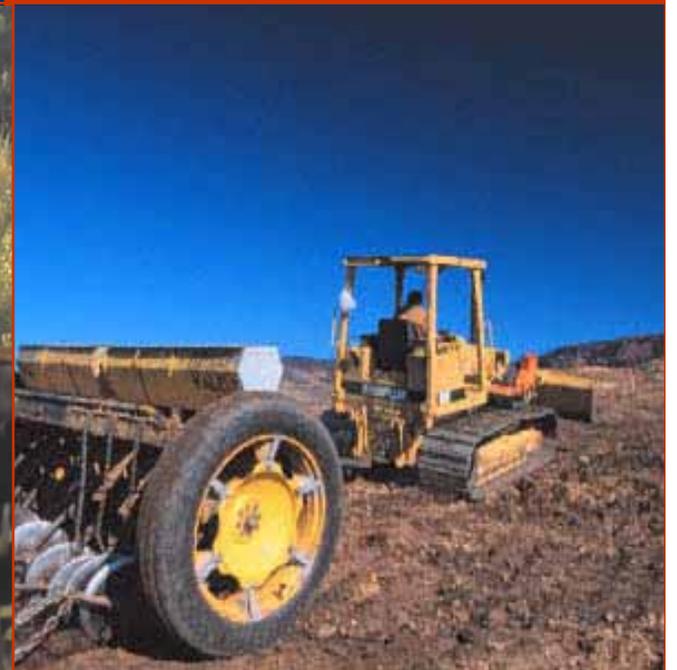
Great Basin Restoration Initiative Strategy

Then Restore



GBRI Strategy--Goal 3

Sustain long-term multiple use and enjoyment of public land in the Great Basin and provide potential economic opportunities to local communities in the restoration process.



Great Basin Restoration Initiative Organization Chart

Ron Wenker
Nevada SD
(OR,UT, CA & ID SD's)

Five Great Basin DSD's for Resources

Mike Pellant
GBRI Coordinator (January 2003)

GBRI Core Team

State GBRI Leads
OR , UT, CA, ID & NV

National Interagency Fire Center
Fire & Public Affairs

National Office
(Bob Bolton)

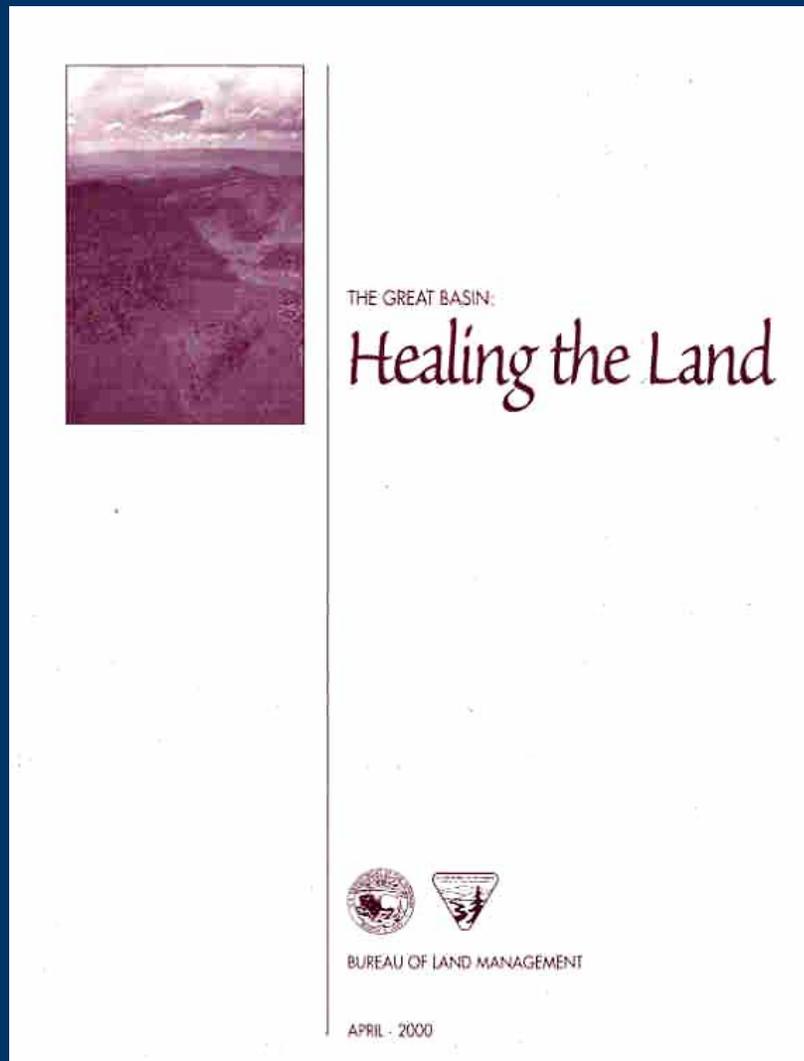
National Seed Coordinator
(Scott Lambert)

Cooperative Ecosystems Study Unit
Coordinator (Nora Devoe)

The Nature Conservancy/BLM Fire Ecologist
(Don Major)

Proposed
Technical and Management Advisory Team

"A proactive, landscape approach is needed..."

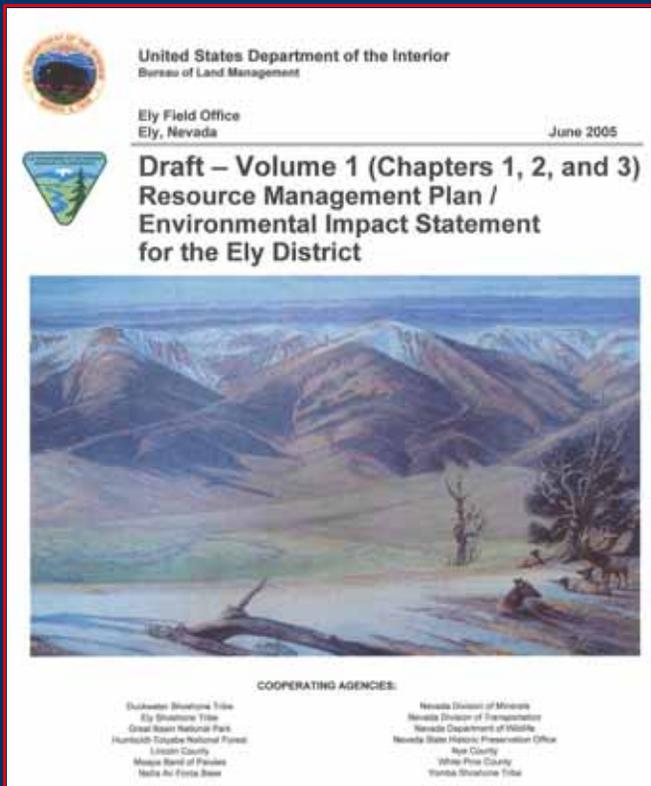


Components of Strategy:

- Planning
- Implementation
- Inventory/Assessment & Monitoring/Evaluation
- Science

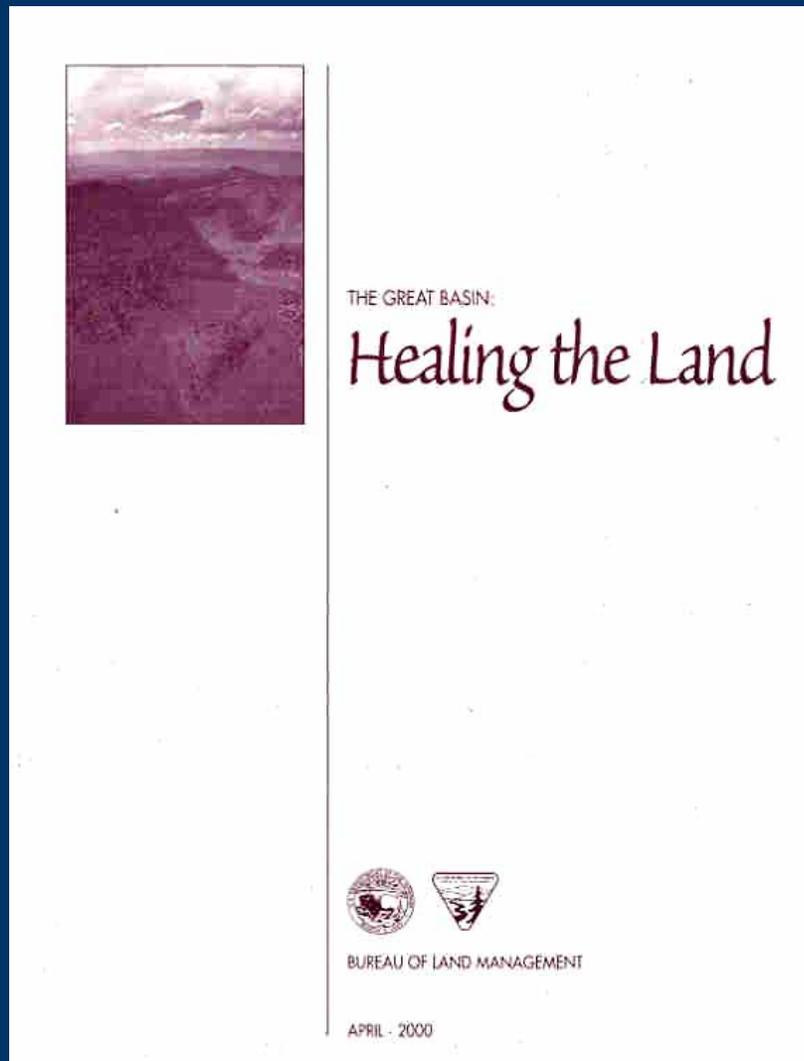
GBRI —Planning

Incorporate GBRI Strategies/Goals Into:



- Land Use, Fire Rehab, Restoration, and Fire Plans
- Sage-Grouse Strategy
- Vegetation Treatment Strategy and Handbook.

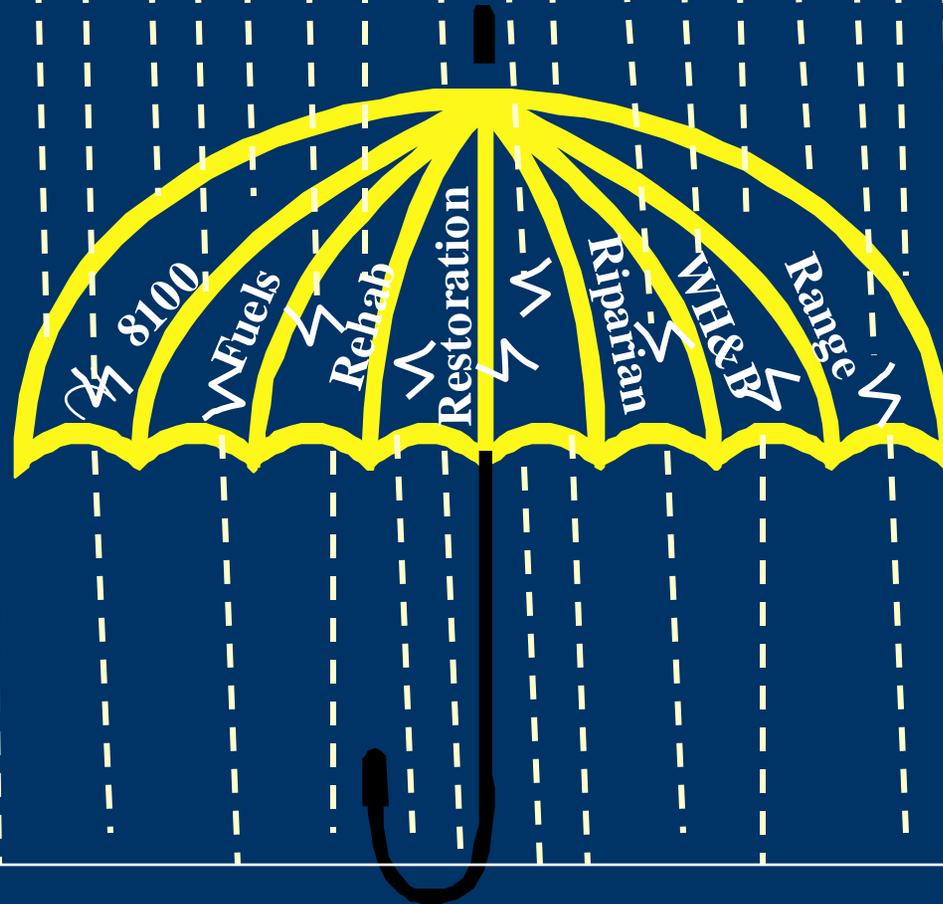
"A proactive, landscape approach is needed..."



Components of Strategy:

- Planning
- Implementation
- Inventory/Assessment & Monitoring/Evaluation
- Science

GBRI — Implementation Model



Goal was to fill the funding gaps in BLM programs to implement "full" restoration on a landscape basis.

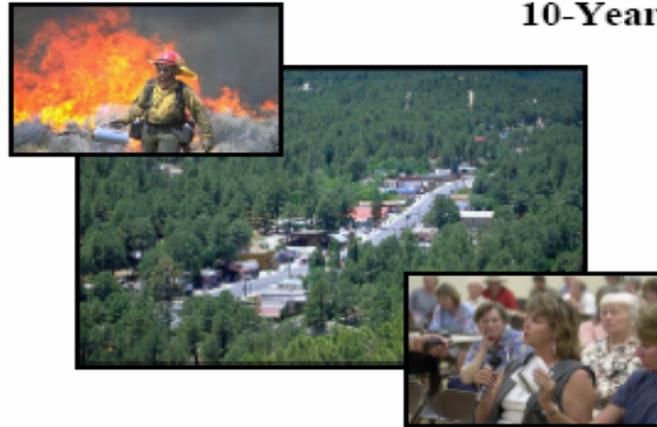
GBRI -- Implementation



**A Collaborative Approach
for Reducing Wildland Fire Risks
to Communities and the Environment
10-Year Comprehensive Strategy**

Implementation Plan

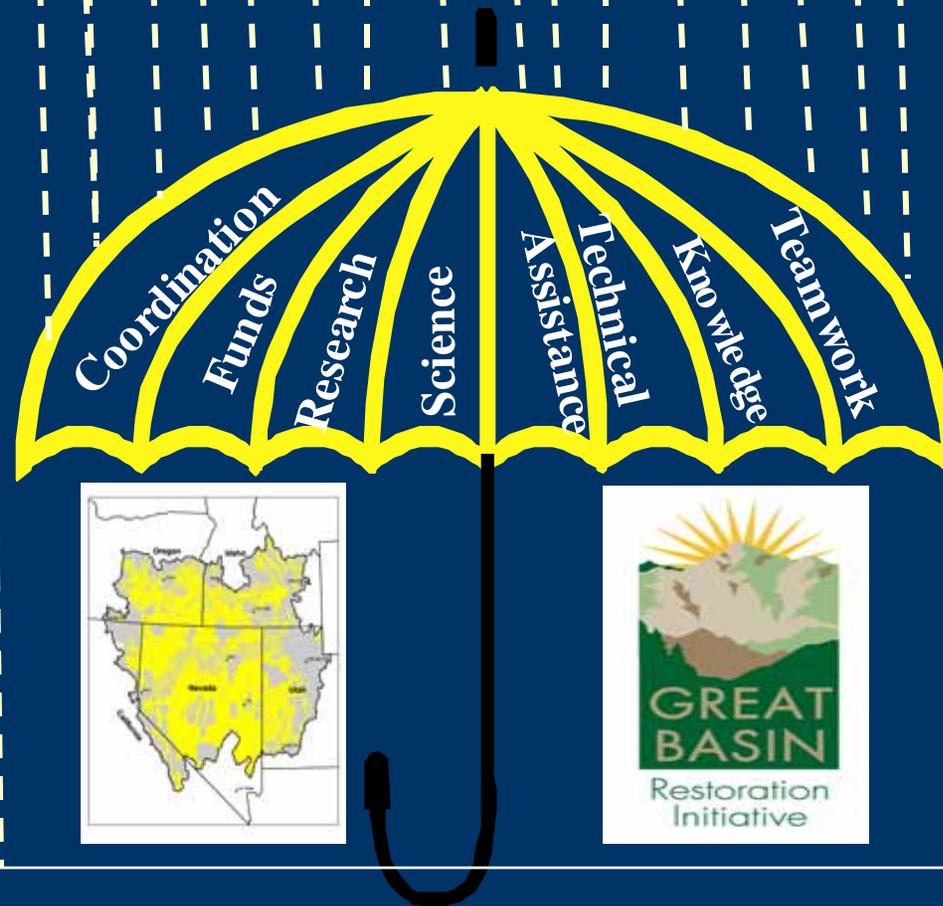
May • 2002



NFP Goal Three: Restore Fire-adapted Ecosystems

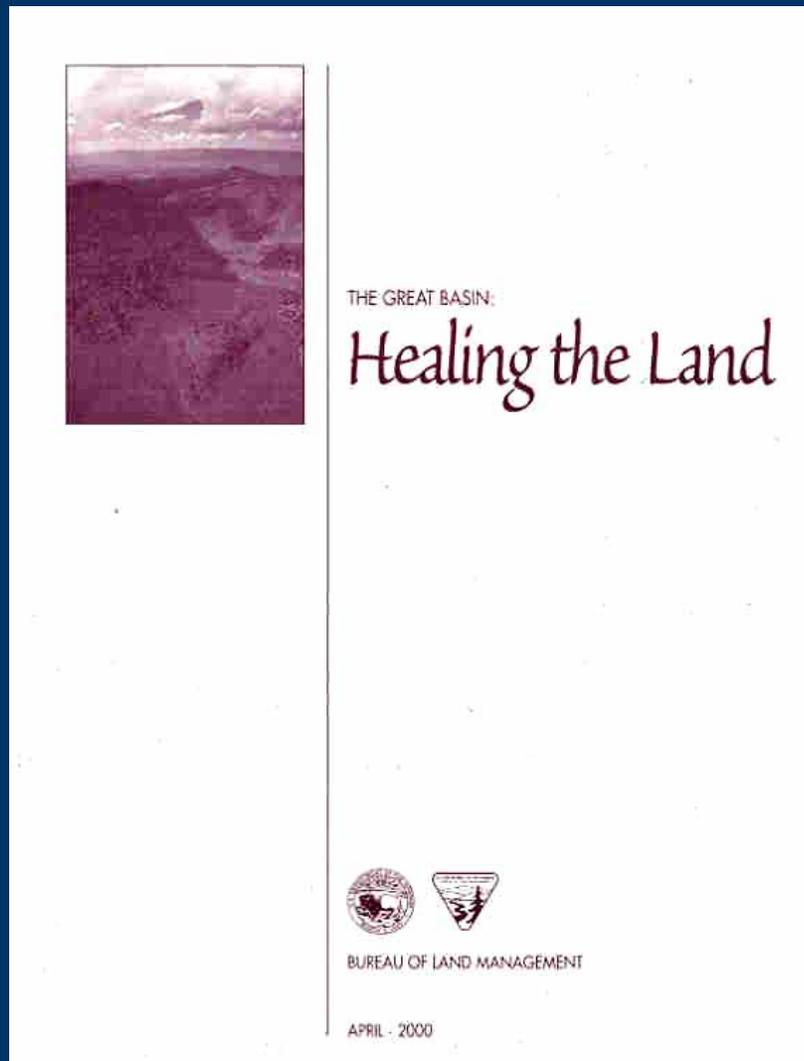
OUTCOME: "Fire adapted ecosystems are restored, rehabilitated and maintained, using appropriate tools, in a manner that will promote sustainable environmental, social and economic benefits."

Current Model for GBRI



GBRI has evolved into a 5-state information sharing, science, technical assistance, and coordination program.

"A proactive, landscape approach is needed..."



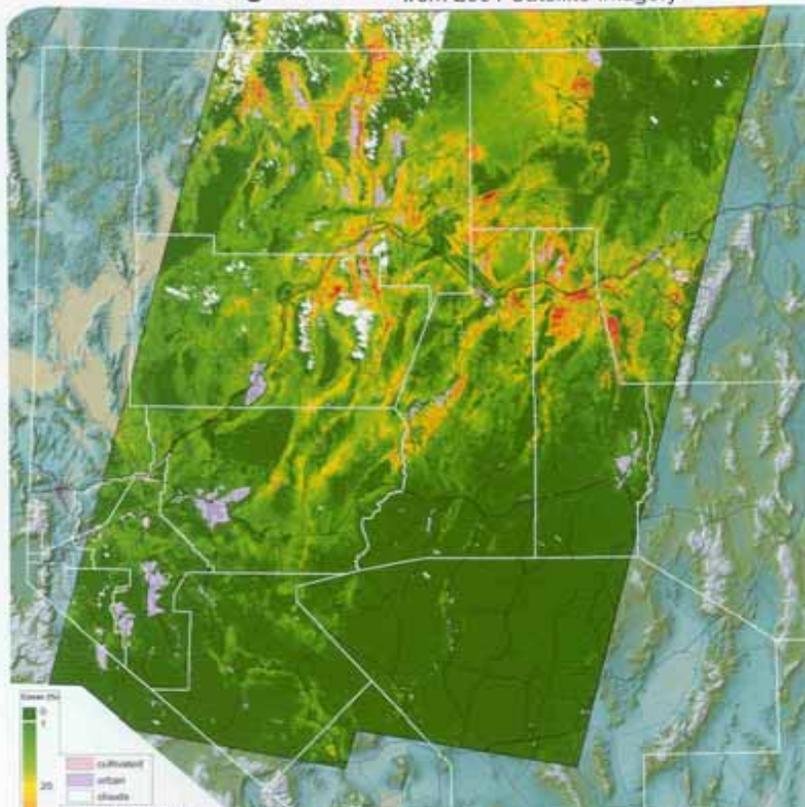
Components of Strategy:

- Planning
- Implementation
- Inventory/Assessment & Monitoring/Evaluation
- Science

GBRI — Inventory & Assessment

Cheatgrass Mapping

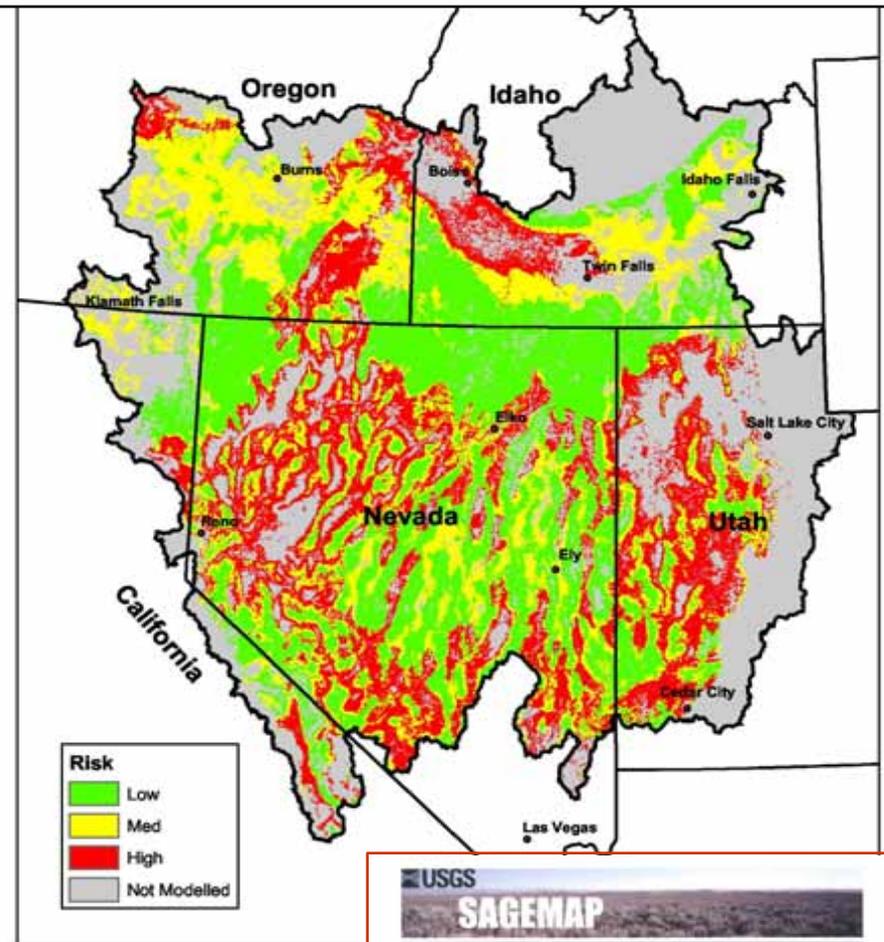
Nevada Cheatgrass - Estimated Percent Cover from 2001 Satellite Imagery



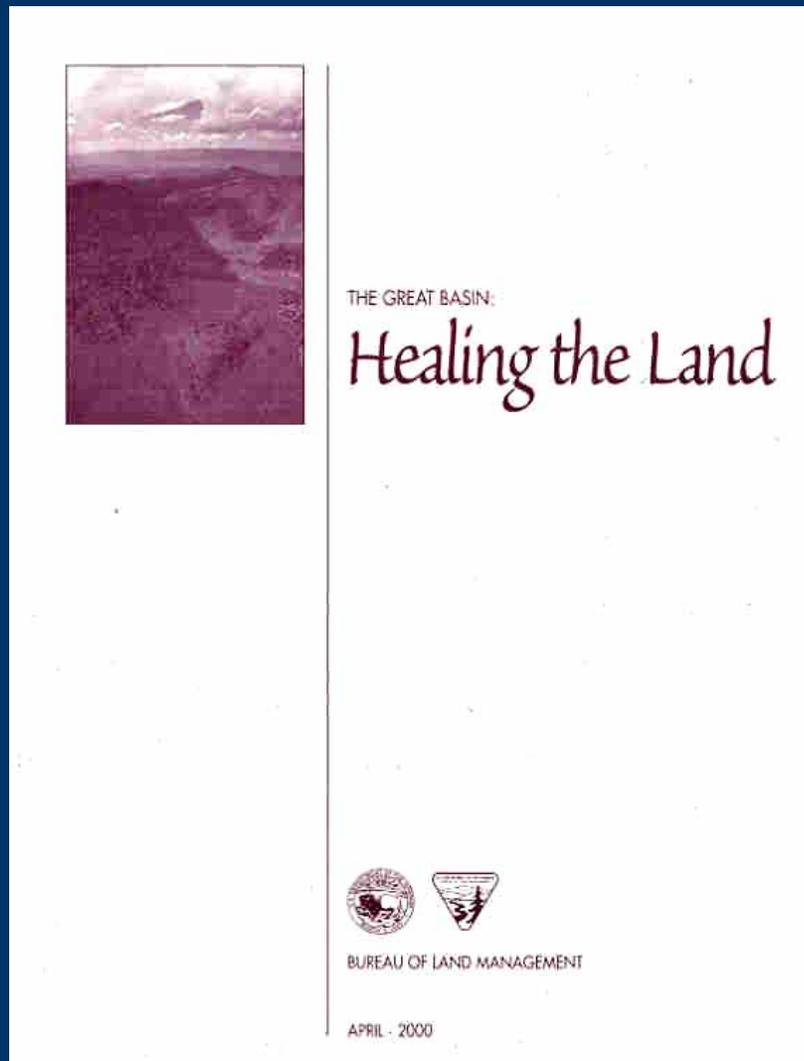
Bromus tectorum (cheatgrass) cover estimated from the early green-up and early senescence (yellowing) as detectable in Landsat 7 ETM+ imagery, corrected for elevation. Accuracy assessment shows RMS (typical) Error of less than 10 percent. Significant overestimation is known in the eastern Cheyenne area. Project by Eric Peterson, NVNRP, December 2003.



Cheatgrass Risk Assessment



"A proactive, landscape approach is needed..."



Components of Strategy:

- Planning
- Implementation
- Inventory/Assessment & Monitoring/Evaluation
- Science
 - Native Plant
 - Fire & Fire Surrogates
 - Cheatgrass Restoration

GBRI ----Use of Native Species

GBRI defines restoration as, “a set of actions that promotes plant community diversity and structure that allows plant communities to be more resilient to disturbance and invasive species over the long-term.”

The use of native species is, “recommended dependent on seed availability, cost and chance for success.”



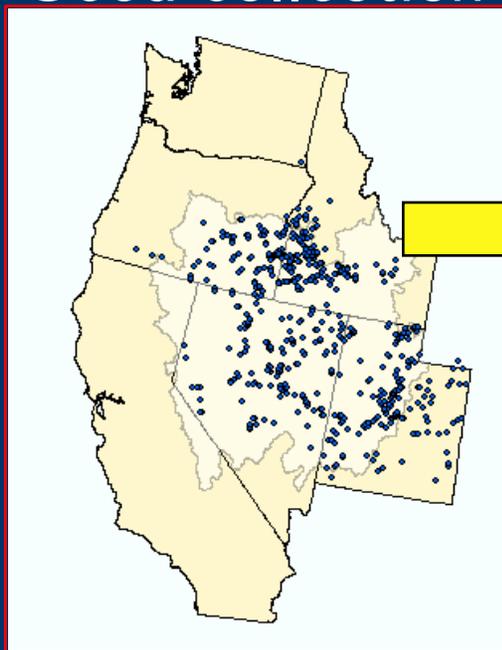
Why Use Native Plants?

- Return to “near normal” fire-return intervals
 - ✓ Reduced disruption to users
 - ✓ Reduced fire fighting/ rehab costs
 - ✓ Reduced loss of property and life
- Slow spread of invasive weeds
- Provide ecological and economic stability



Great Basin Native Plant Selection and Increase Project--Strategy

Seed Needs/ Seed Collection



500+ seed collection sites

Evaluation/Selection



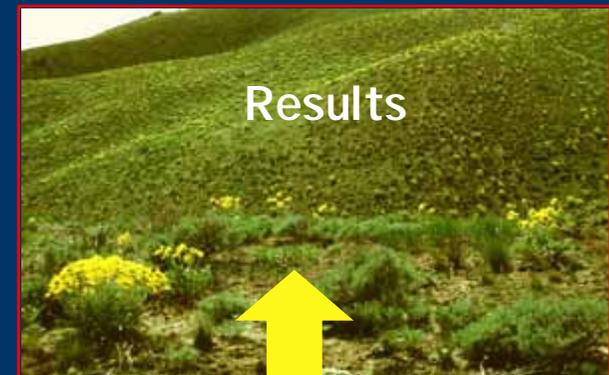
Private Production



Application



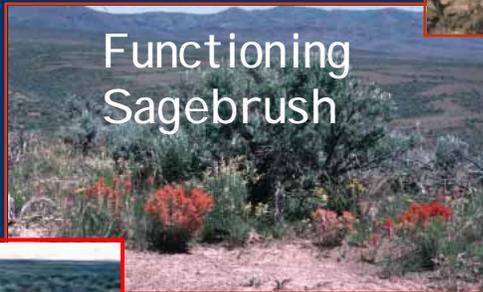
Results



Funding of \$6+ million provided by BLM's Native Plant Initiative



"Fire & Fire Surrogates in the Sagebrush Biome"

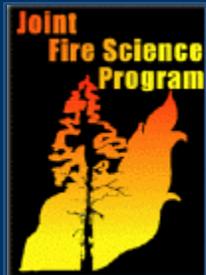


"Maintain"



JFS

<http://www.sagestep.org/>



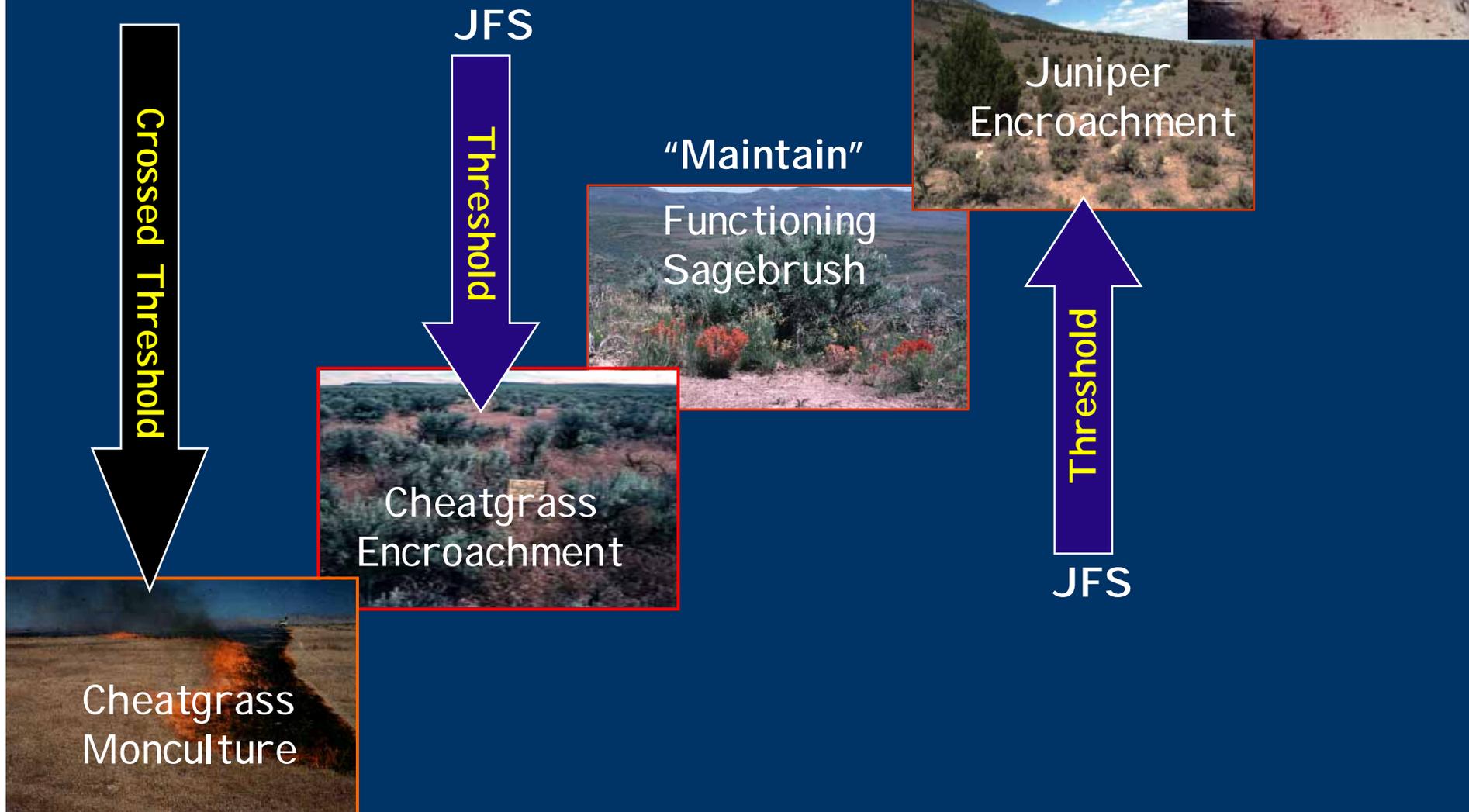
Fire/Fire Surrogates in the Sagebrush Biome



Joint Fire Science Research Team

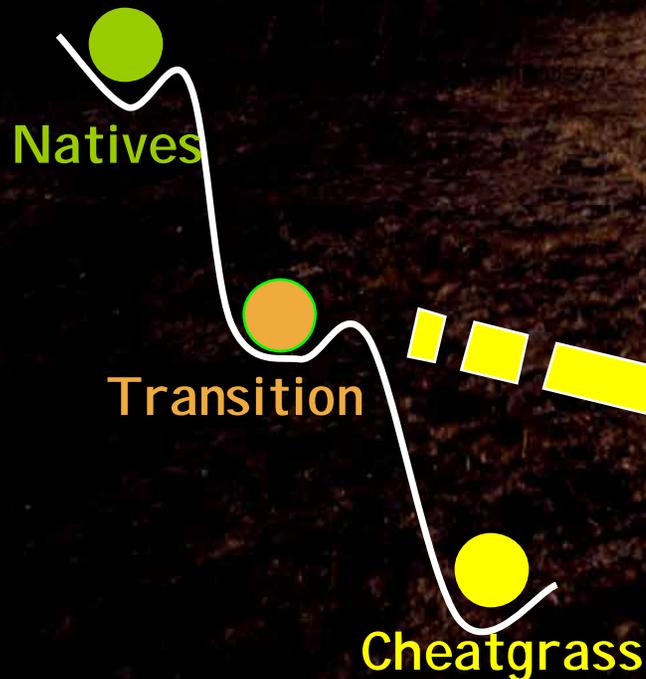
- BLM involved in research proposal development/implementation
- Research sites—ID, NV, UT, & OR
- \$12+ million for studies; BLM funds treatments

Cheatgrass Rangeland Restoration



Cheatgrass Rangeland Restoration

Assisted Succession Model



USDA funded research
"Integrating Weed Control
and Restoration for Great
Basin Rangelands"—

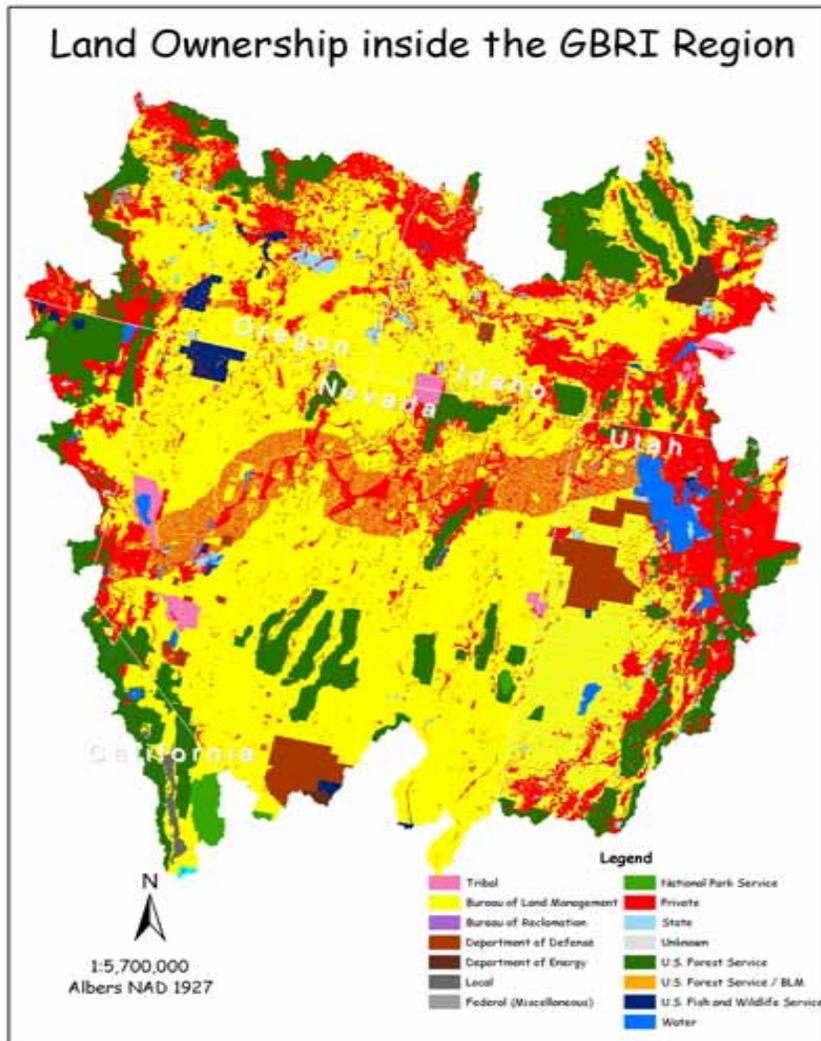
- Three universities
- Five federal agencies
- Replicated in four states



Appropriate Scale for Collaborative Restoration Partnerships

- **Regional**-Great Basin Restoration Initiative
- **State**- Utah Partners for Conservation and Development
- **Sub-state**- Eastern Nevada Landscape Restoration Project

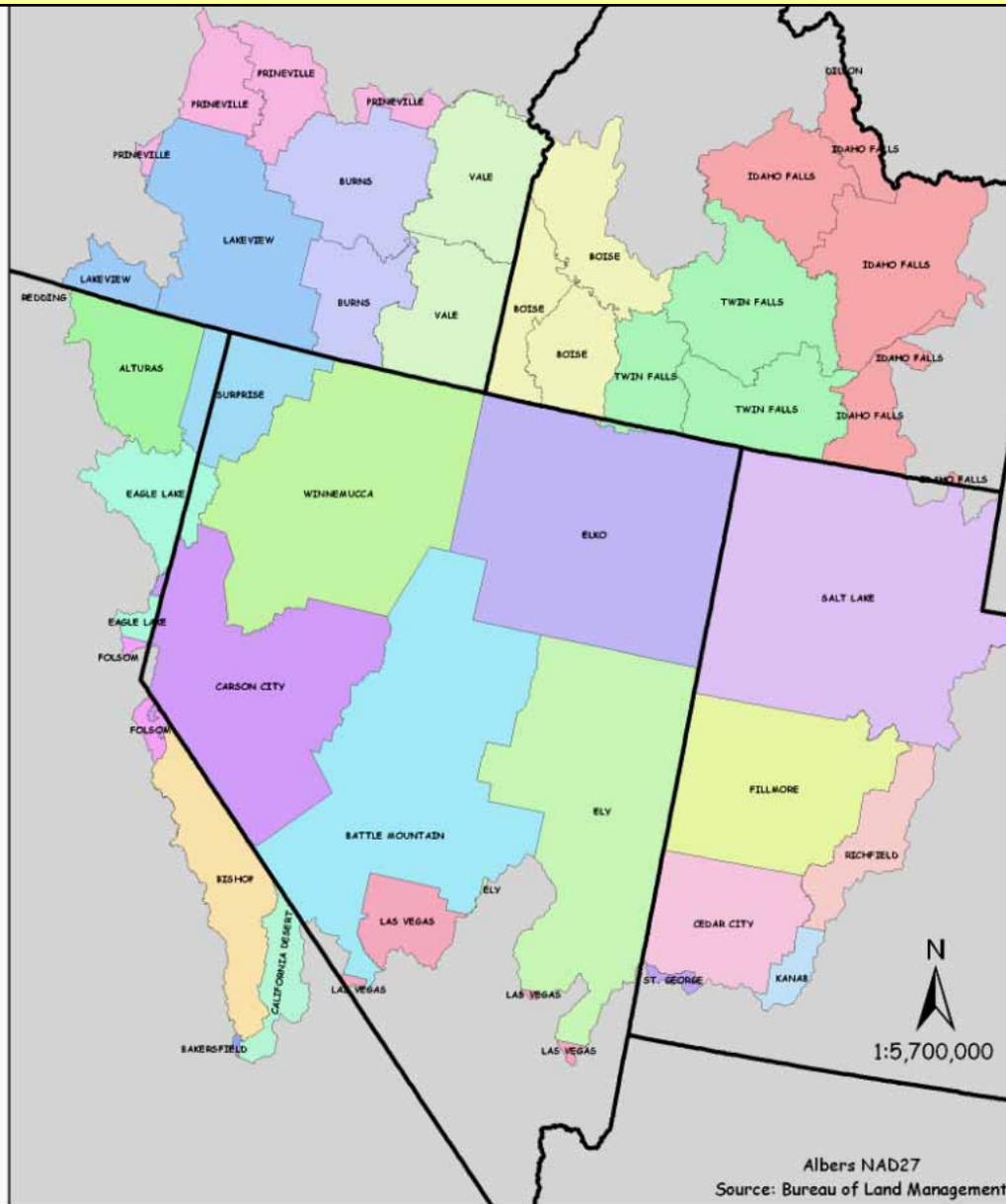
Regional- Great Basin Restoration Initiative



Collaboration is increasingly difficult as acreage and ownership increases!

	Acres	Percentage
Tribal	1,382,365	0.95%
Bureau of Land Management	78,499,886	53.93%
Bureau of Reclamation	38,321	0.03%
Department of Defense	3,570,405	2.45%
Department of Energy	670,169	0.46%
Local	358,390	0.25%
Federal (Miscellaneous)	132,831	0.09%
National Park Service	919,144	0.63%
Private	32,385,413	22.25%
State	3,716,394	2.55%
Unknown	7,296	0.01%
U.S. Forest Service	20,343,170	13.98%
U.S. Forest Service / BLM	191,902	0.13%
U.S. Fish and Wildlife Service	1,319,074	0.91%
Water	2,011,978	1.38%
Total	145,546,736	100.00%

Great Basin Restoration Initiative Area

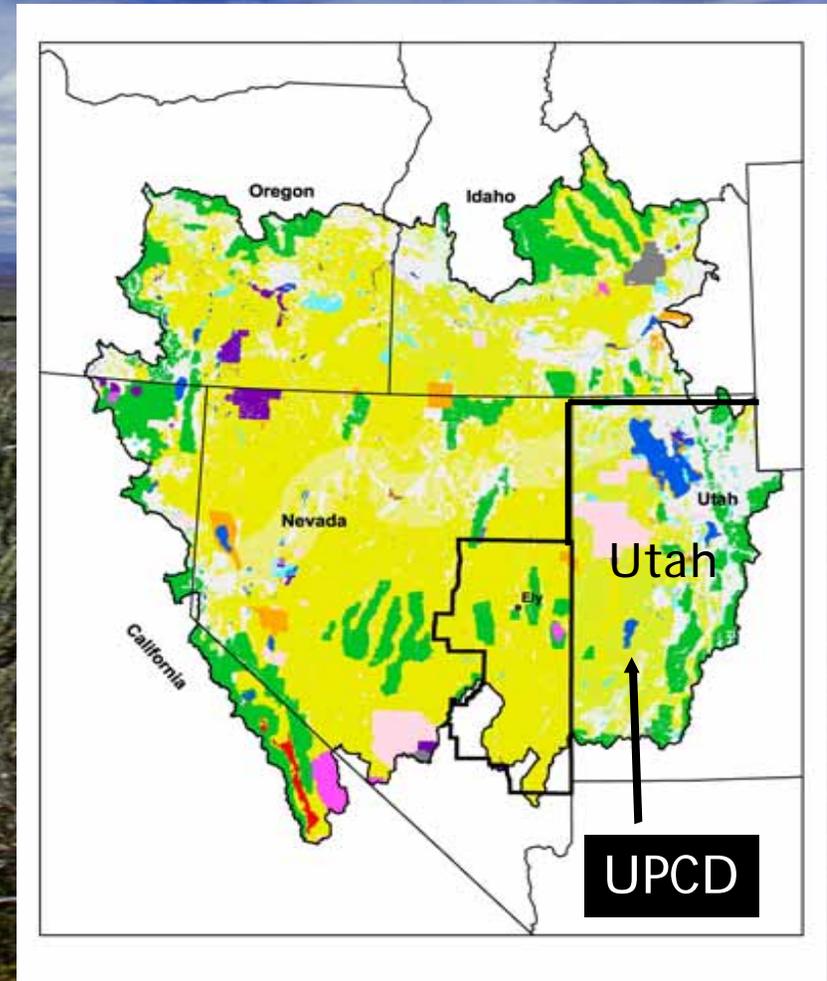


Internal BLM Collaboration

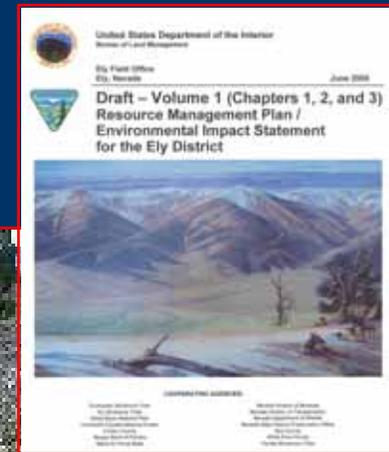
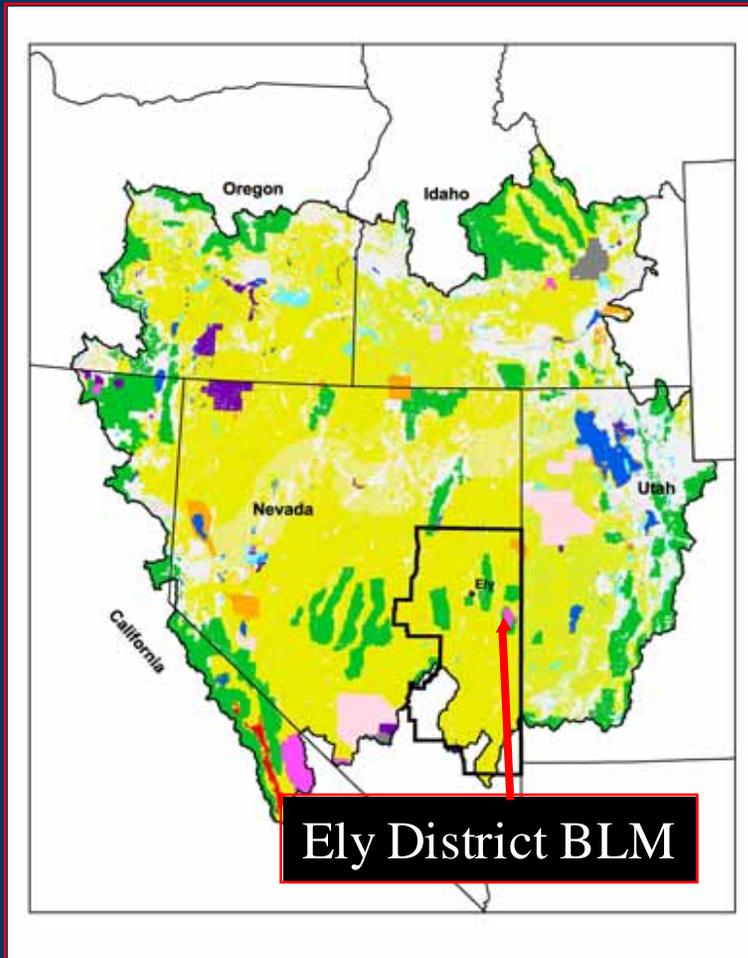
- 5 states
- 36 Field Offices
- 78 million acres of public land
- Diverse programs and issues

State- Utah Partners for Conservation and Development (UPCD)

Cooperatively identify common, cross-boundary issues and implement solutions (in focus areas) to promote sustainable ecosystems within healthy watersheds

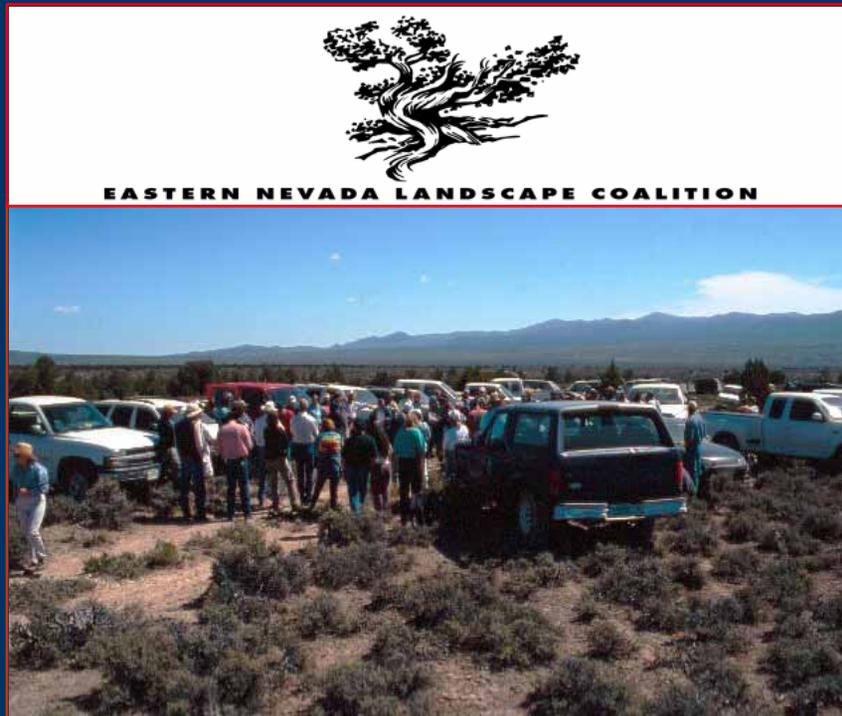


Sub-state- Eastern Nevada Landscape Restoration Project—Ely, NV



Sub-state- Eastern Nevada Landscape Coalition

ENLC's mission is to restore the dynamic and diverse landscapes of the Great Basin for present and future generations through collaborative efforts.



2005 ENLC Summer Meeting



Summary and Recommendations

- **Coordination:** Establish a Core Team and Coordinator early in the process then build solid partnerships.
- **Organization:** Nest local implementation efforts under a larger " Umbrella" Initiative.
- **Science:** Focus on interdisciplinary, regional research with scientist/manager coordination from research proposal to results.
- **Native Plants:**
 - Develop a sound strategy
 - Involve private industry
 - Don't overlook seed application and weed control

Restoration is expensive...

- Cost to restore one acre is estimated at \$100
- The cost to repeatedly react to and fix problems is even more expensive:
 - Wildland fire management- \$71/acre
 - Fire rehabilitation- \$64/acre
 - Weed control- \$70/acre

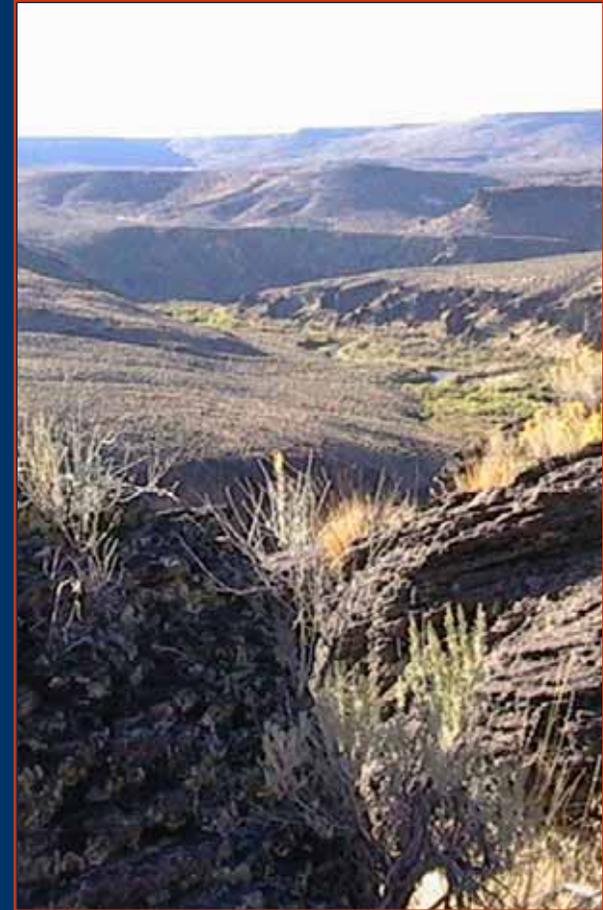
...Pay Now \$ or Pay More \$\$\$ Later!



"In this desert lies an ocean of shrubs... More than anything else, however, in this Great Basin lies a message about time."

Stephen Trimble

Questions (if time allows)



The Cheatgrass-Wildfire Cycle

