Lessons from the Great Basin

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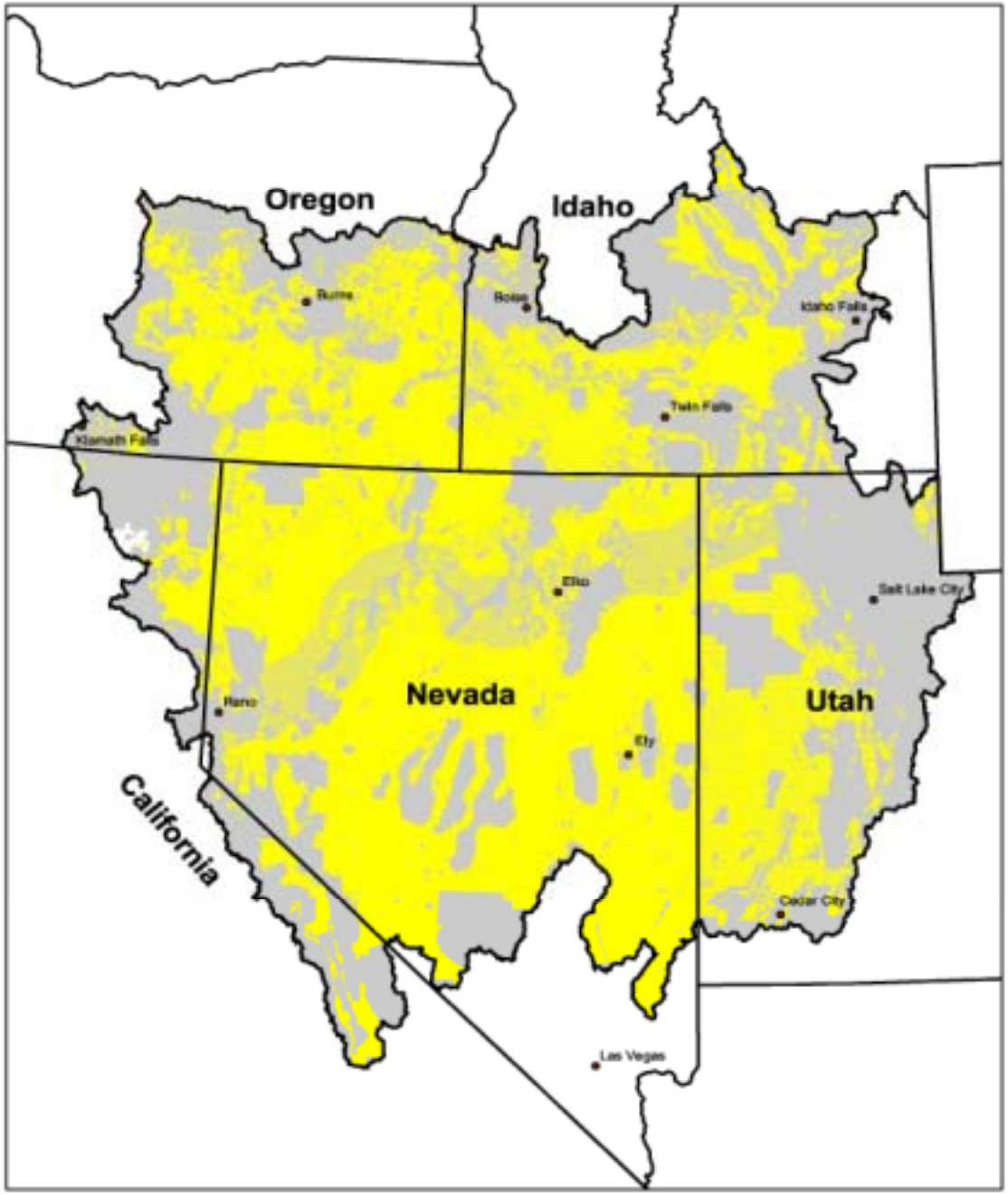
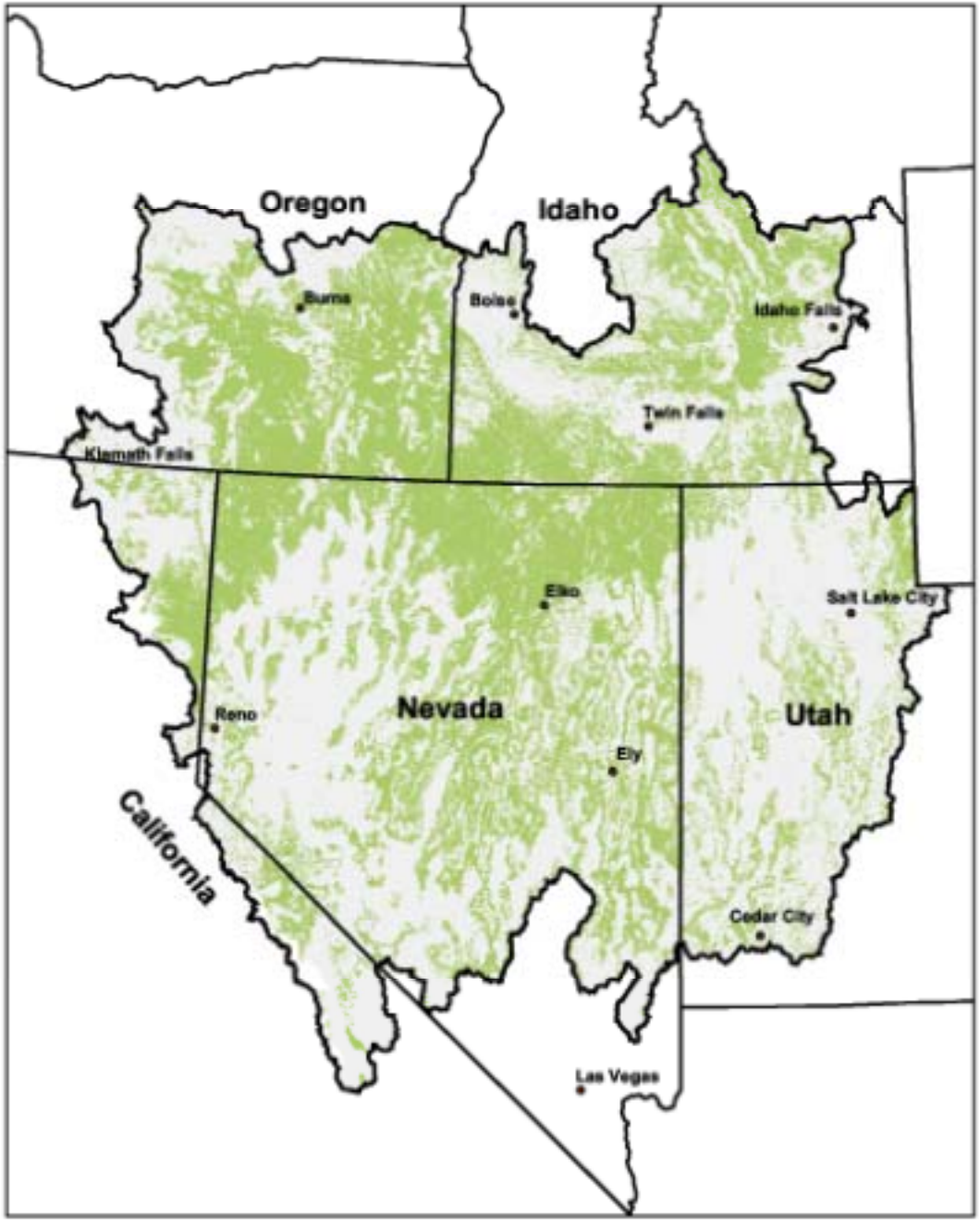
Great Basin

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
- Over 54% of the remaining western USA sagebrush stands are within the Great Basin



Invasive Plants in the Great Basin

- The Nature Conservancy recently ranked the Great Basin as the third most imperiled ecosystem in the US due in large part to the ecological threat that invasive species pose

- Invasives include native plants as well as exotic species:
  - Native conifer encroachment
  - Flammable exotic annual grasses
  - Exotic annual or perennial forbs

.

Invasive Plants- Native Conifers

Lengthened Fire Return Intervals

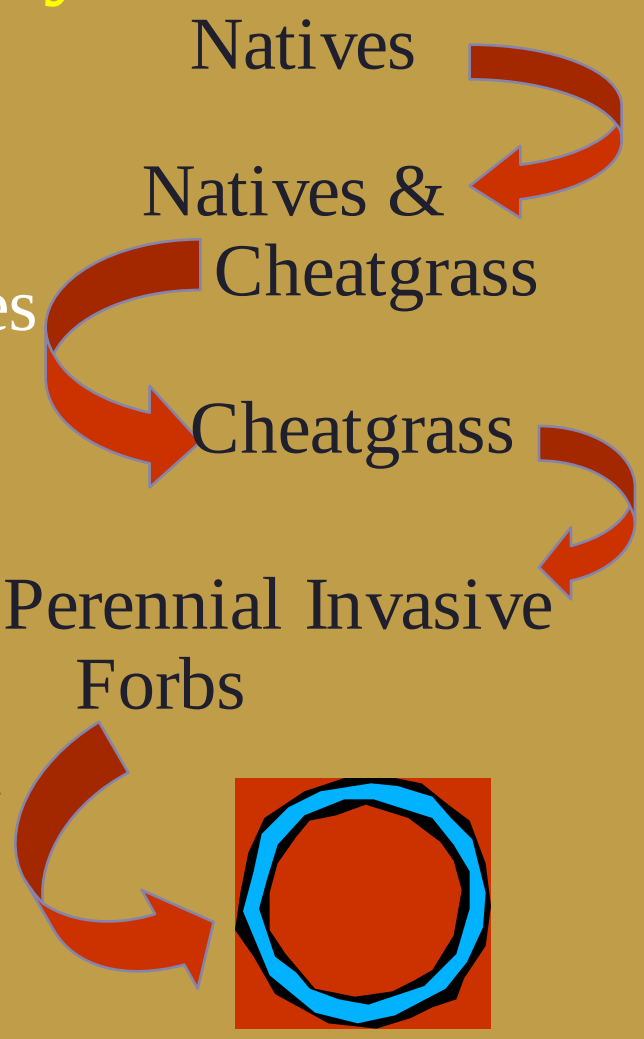
Invasive Plants- Flammable, Exotic Annual Grasses

Significant Increase in Fire Frequency

Invasive Plants- Exotic Annual or Perennial Forbs

Fire Adapted/Opportunistic

Great Basin Ecological Integrity



Is conversion to cheatgrass desertification?

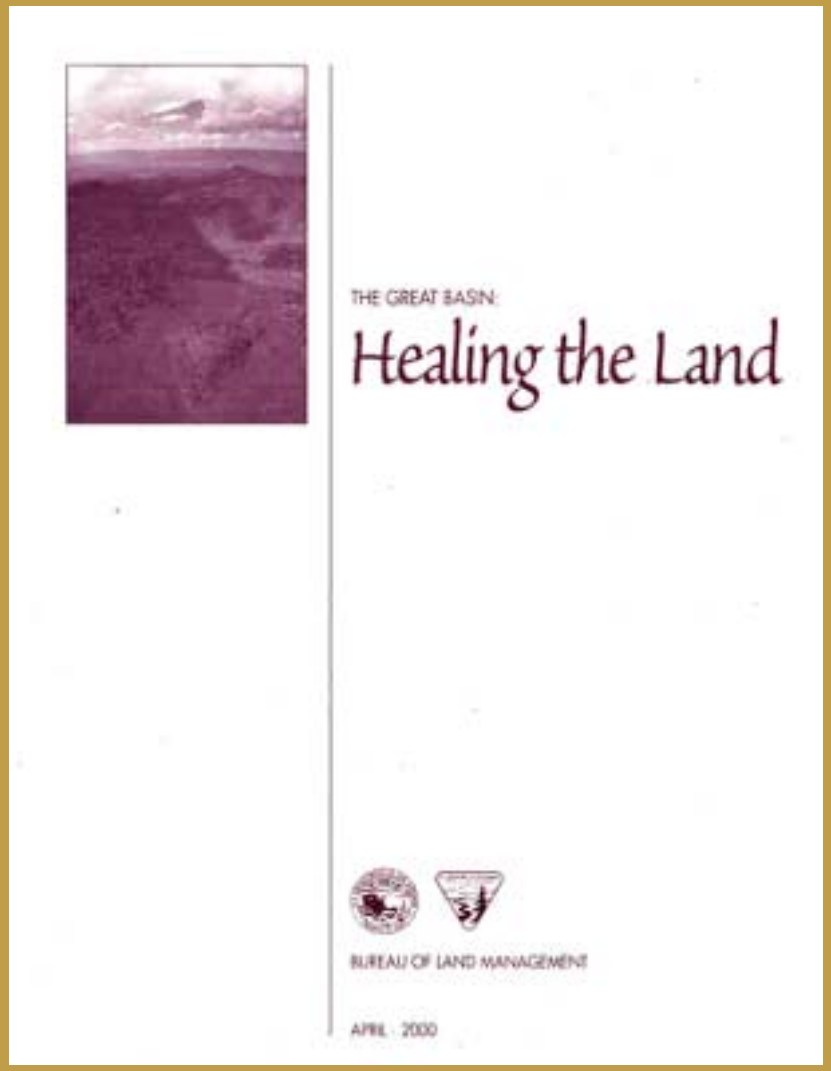
1. Invasion by undesirable exotics
2. Alteration in biological diversity
3. Reduced productivity of desirable plants
4. Accelerated soil erosion
5. Increased hazards for human occupancy

H. E. Dregne. 1977. Desertification of Arid Lands. Economic Geography 3:329.

Fighting wildfires and treating the cheatgrass and other weeds that follow won't reverse the downward spiral of degradation in the Great Basin…….

……Great Basin Restoration Initiative

"We need an overarching restoration program that is **proactive** at the landscape level."



www.fire.blm.gov/gbri

Great Basin Restoration Initiative--Vision

"Healthy Great Basin landscapes and sustainable resources that meet the needs of the public that use and enjoy these lands"

Goal 1

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

Goal 2

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

Great Basin Restoration Priorities:

First-Protect

Then-Restore

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."

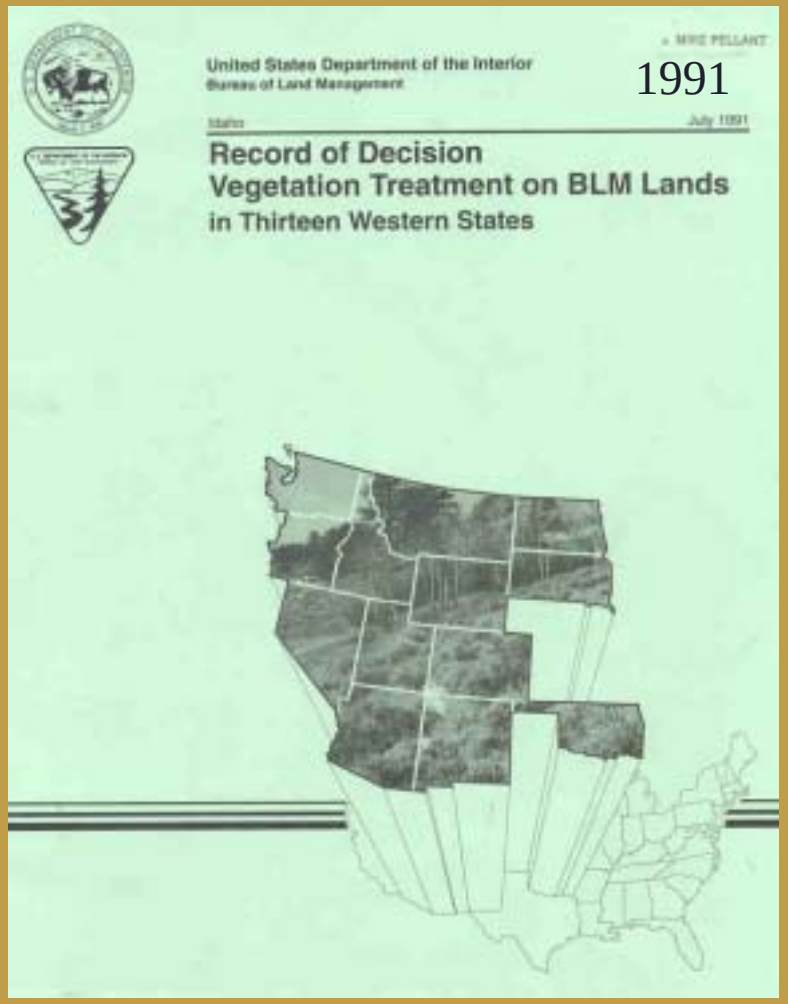
Goal 3

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.

Lessions Learned—Great Basin

Lessions Learned—Great Basin

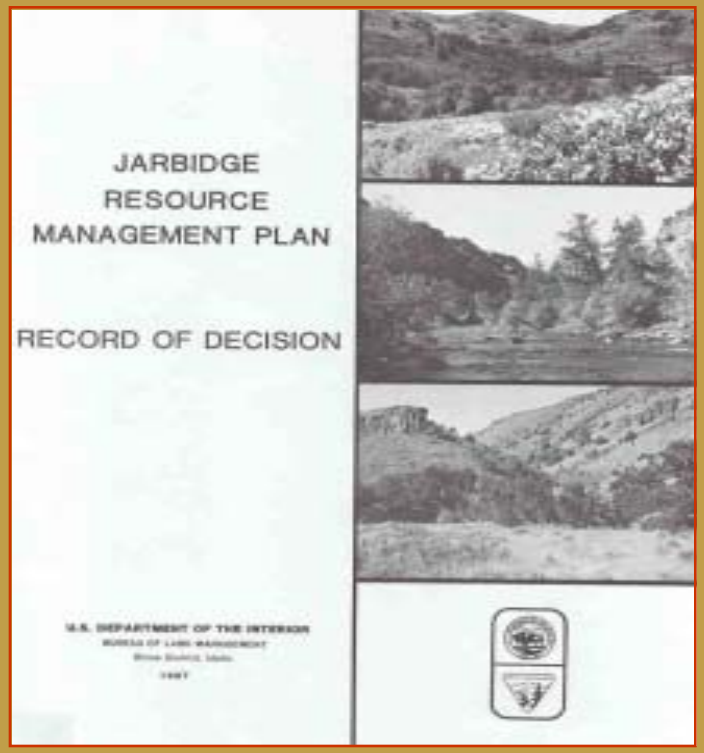
National Environmental Policy Act



- 1991 EIS- Average annual acres treated was estimated to be 500,000 acres
- Estimates of up to 6 million acres to be treated annually in the future
- Environmental Impact Statement expected to be completed in October 2004

Lessions Learned—Great Basin

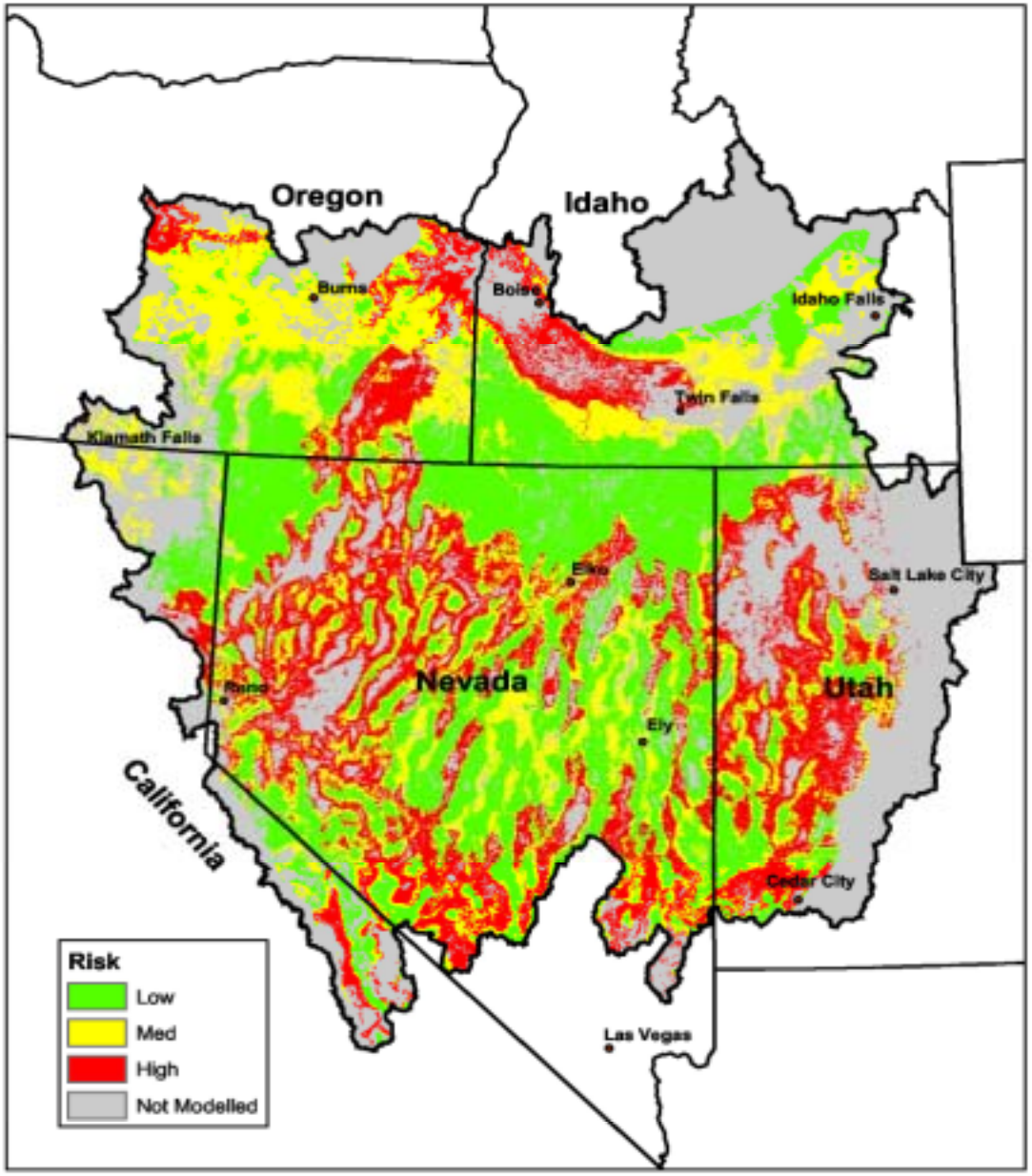
Land Use and Fire Planning



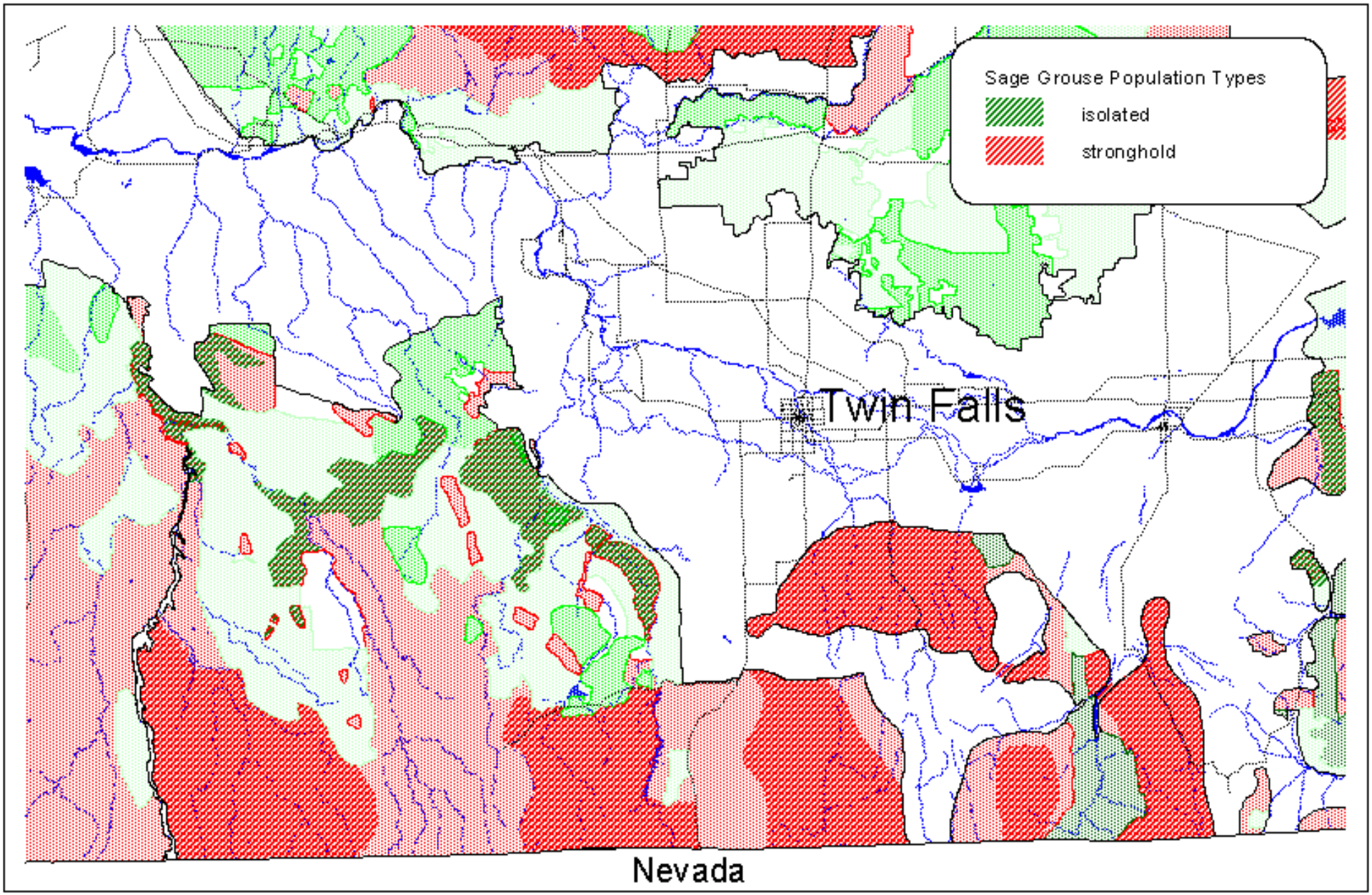
- **Guidance is needed to incorporate landscape context into appropriate sections of new Land Use and Fire Plans to address cheatgrass expansion and impacts.**
- **Avoid "postage stamp" approaches to restoration**

Cheatgrass Risk Assessment

http://SAGEMAP.wr.usgs.gov



Southern Idaho Sage Grouse/Sagebrush Habitat



Lessons Learned—Great Basin

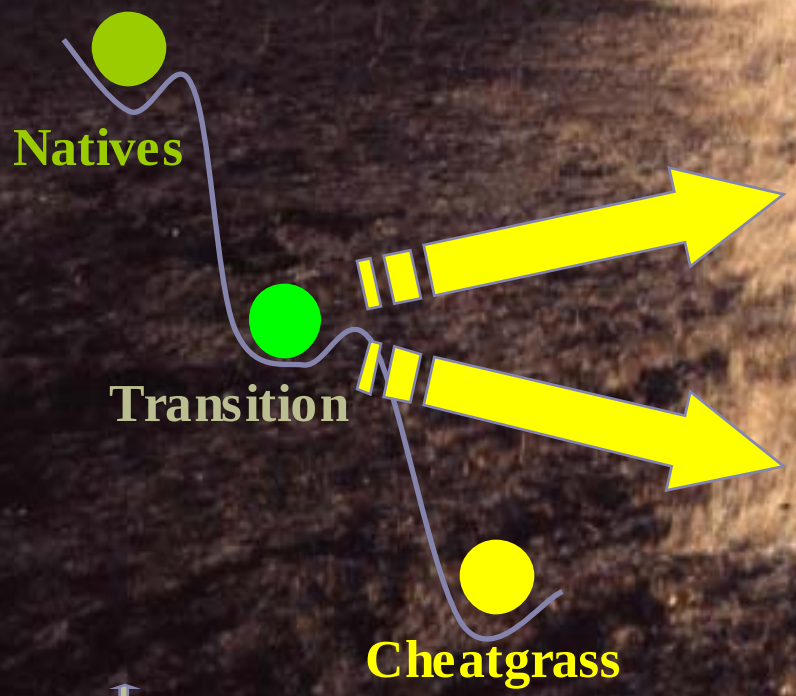
Collaboration/Partnerships

Integrating Weed Control and Restoration for Great Basin Rangelands—

- **Three universities**
- **Five federal agencies**
- **USDA grant for $2.9 M**

Strategy to Convert Cheatgrass Rangelands to a Desired, Diverse Plant Community

Assisted Succession Model



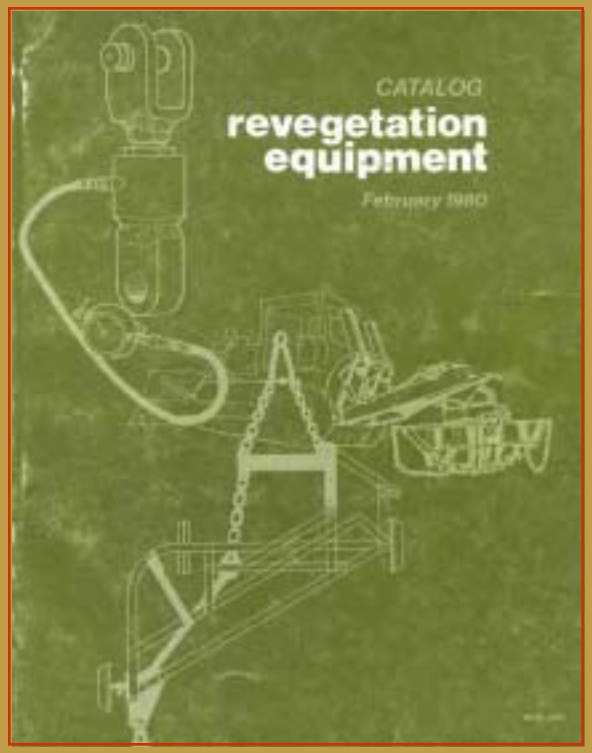
Lessons Learned—Great Basin

Science-based Restoration Strategies

- Improve treatment effectiveness and reduce costs to maximize restoration success and acres treated
- Stay out of court!
- Encourage development of new treatments and restoration strategies to address “new”invasive species/resource problems

Lessions Learned—Great Basin

Science-based Restoration Strategies



Under revision now

Rangeland Drill Improvements

Lessions Learned—Great Basin

Science-based Restoration Strategies

Use of Native Species

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

National Fire Plan- "*Interagency Native Plant Conservation Initiative*"

This research and seed increase project:

* Focus is on forbs
* $2.4 million funding
* Private contracts

GREAT BASIN NATIVE PLANT SELECTION and INCREASE PROJECT

Western Yarrow Seed Increase Field

Bureau of Land Management (Nevada, Utah and Idaho)

USFS Shrub Sciences Laboratory

Utah Division of Wildlife Resources

Agricultural Research Service- Logan, UT

Utah Crop Improvement Association

Natural Resources Conservation Service- Boise, ID

Great Basin Native Plant Selection and Increase Project

*USDI-BLM

*USDA-FS Rocky Mountain Research Station, Shrub Sciences Laboratory

*Utah Division of Wildlife Resources

*USDA Agricultural Research Service
Forage and Range Research Laboratory
Bee Biology and Systematics Laboratory

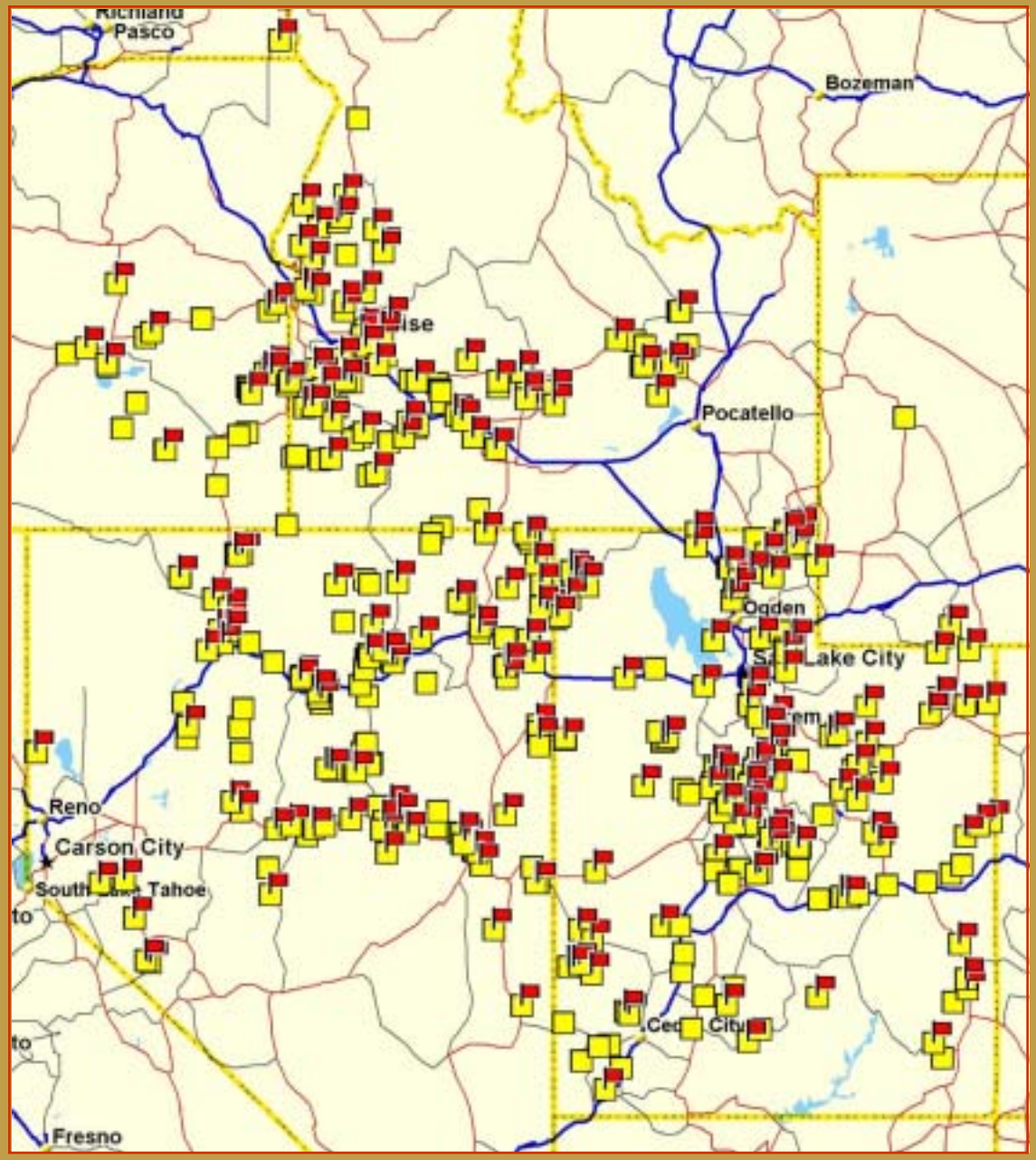
*USDA-NRCS Aberdeen Plant Material Center

* USDA-NRCS Upper Colorado Environmental Plant Center

*USDA-FS Lucky Peak Nursery

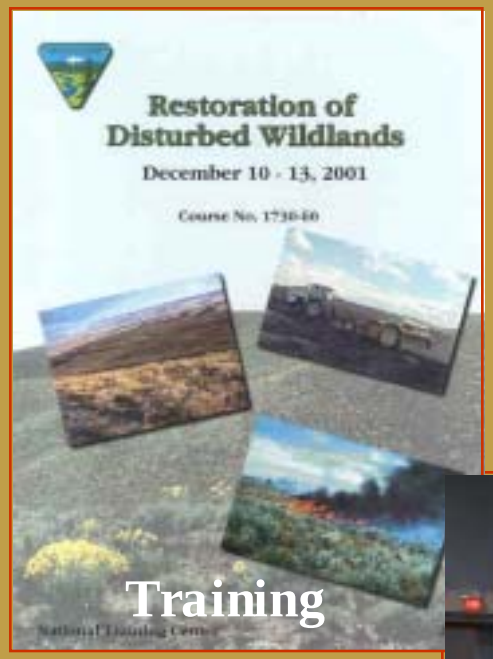
*Native seed industry

26 forbs important for vegetation diversity and sage grouse diet are included in this project (230 collection sites)



Lessons Learned—Great Basin

"Adaptive Restoration" Approach



Training

Monitoring—Long-term

Lessons Learned—Great Basin

Cheatgrass Control with Herbicides

Other Options

Roundup ULTRA MAX TRANSORB

PLATEAU herbicide

Lessons Learned—Great Basin

Coordination Among BLM Initiatives

- **Relevant BLM initiatives/programs:**
  - **Great Basin Restoration Initiative**
  - **Healthy Rangelands & Proposed Grazing Reg. Changes**
  - **Healthy Forest and Woodlands**
  - **Sagebrush/Sage Grouse Habitat Conservation Strategy**
  - **National Fire Plan**
  - **Invasive Species Program**

- **Reduce confusion internally and externally….. …..Promote efficiency in use of BLM staff and funding to accomplish restoration priorities**

Great Basin Plant Communities

Invasive Species Program

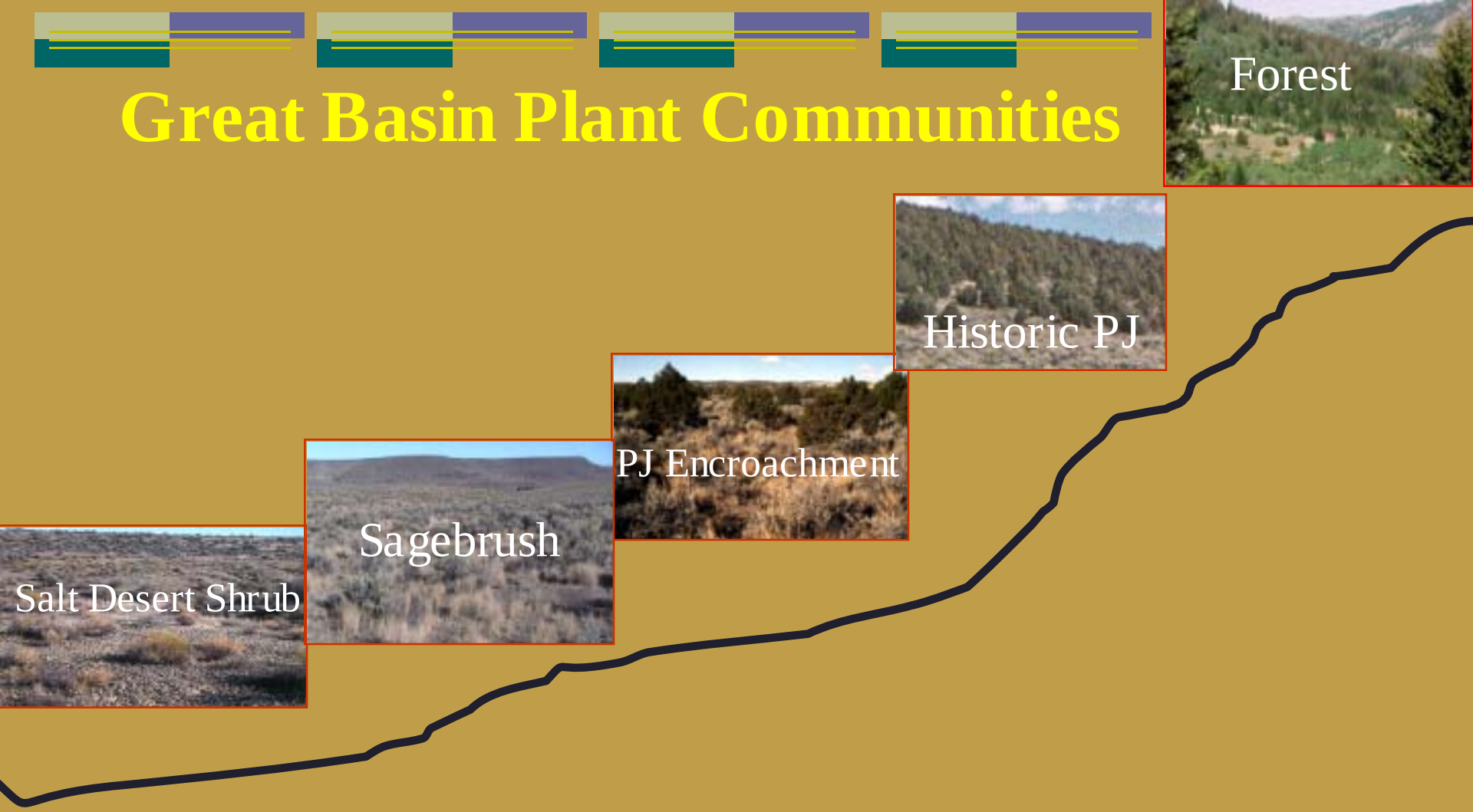
Healthy Forests
Woodlands

Great Basin Restoration Initiative

Sage Grouse/Sagebrush

National Fire Plan

Great Basin Plant Communities



Cheatgrass Distribution

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!

If we are not successful….

Both global warming (Ryan 1991) and increased CO_2 (Smith et. al 1987) are predicted to increase the success of annual plants such as cheatgrass in current and possibly new environments

Cheatgrass in Russia (Republic of Kalmikia)

Kalmikian “Range Rover”

…..More Losses of Property and Lives

Increasing fire suppression and rehabilitation costs

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

Stephen Trimble