Managing Habitats in a Changing Climate: Serendipity or Strategy?

OVERVIEW

- Why the U.S. needs a National Seed Strategy?
  - 3 examples
- The National Seed Strategy and its key aspects
- Identify linkages of National Seed Strategy to Secretarial Order 3336 and Presidential Memorandum on Pollinators
- Current efforts implementing the National Seed Strategy

2012 Wildfires in Sage-Grouse Habitat

- 2 million acres of sage-grouse habitat burned
- Only 400,000 acres rehabilitated
- 1.6 million acres remain to be rehabilitated

2011 Bastrop County Texas Fire

The largest , most destructive wildfire in Texas history burned 32,400 acres

- Local drought hardy seed forgotten in grocery warehouse refrigerator
- After fire, seed grown out locally
- 500,000 seedlings now being used for restoration

2012 Hurricane Sandy

A total of $65 billion combined damages in 24 states

- 1 million dune stabilizing native plants needed
- No local plants available
- Ad hoc collection of local seed 1 week prior to Sandy, but it will take 5 years to meet the need

Seed is a Critical Natural Resource

Seed is a critical natural resource that has been largely unrecognized, unprotected, and undermanaged.

Locally adapted seed sources are critical for restoration and management because they do not pose a genetic risk to surrounding native populations.

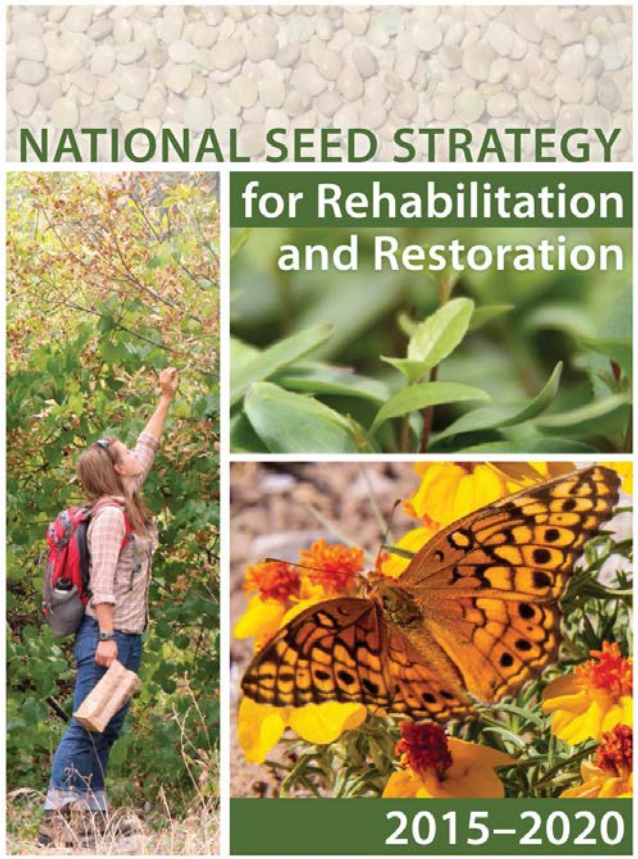
However, our nation's seed resources are in danger not only from extirpation but also from misuse when non-local source seed is used.

As such our nation's seed resources are in need of the same kind of forward-thinking management we demand for other natural resources such as timber and oil.

Chance or Strategy?

National Seed Strategy

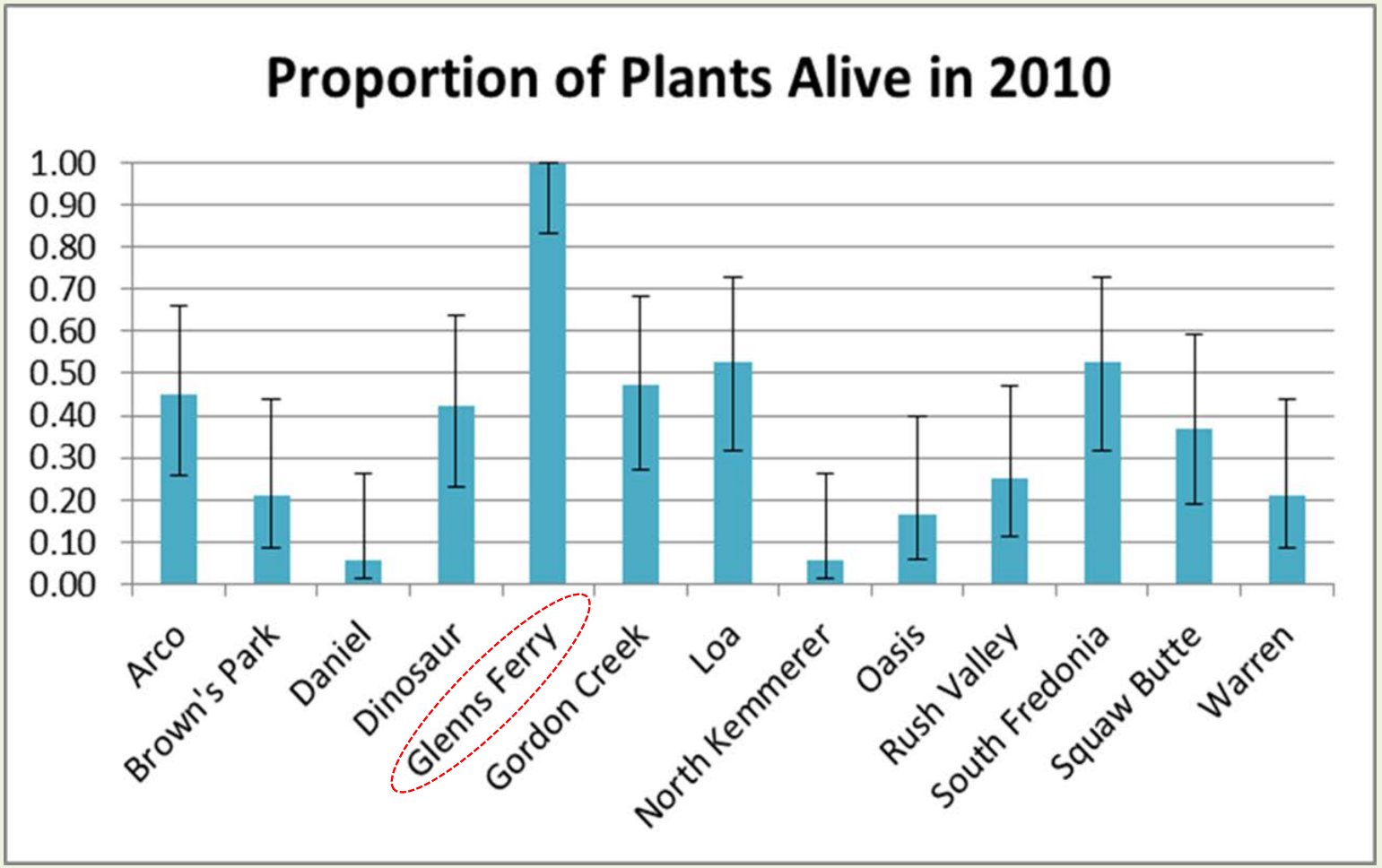
The right seed in the right place at the right time.



- Involving 12 federal agencies and other partners
- Four goals with associated objectives
  - Seed Needs
  - Research
  - Decision Making Tools
  - Communication

Wyoming Big Sagebrush

from 13 Locations Planted in Glenns Ferry, ID in 1987



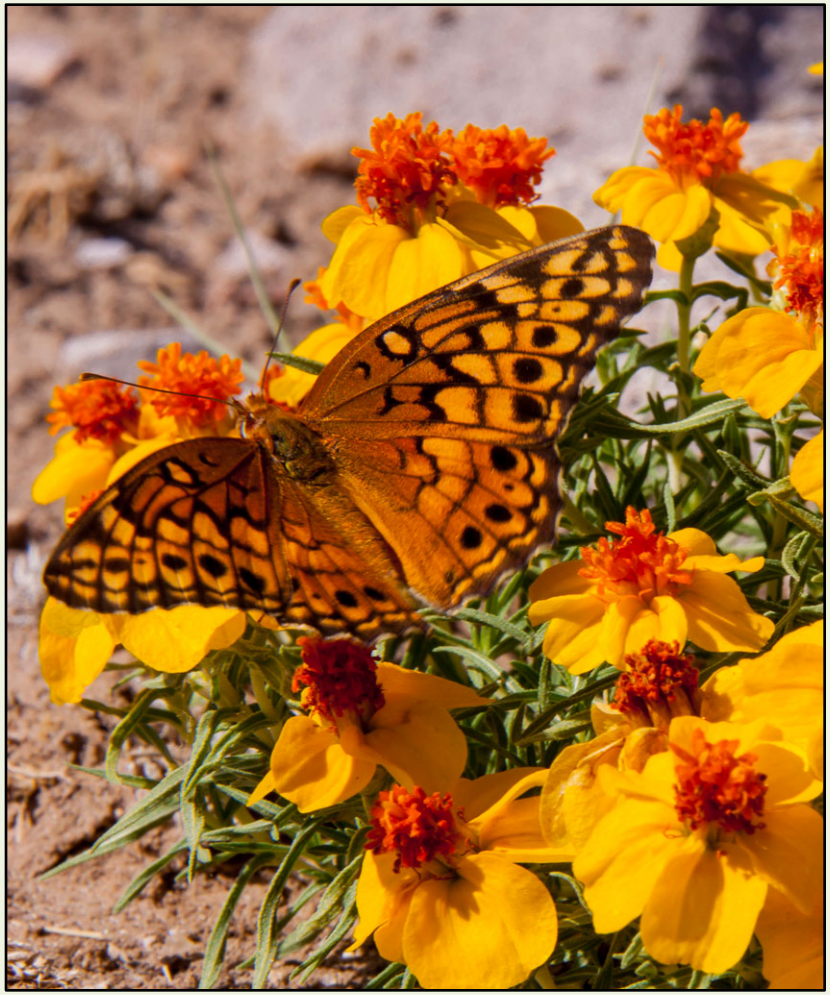
Sands & Moser, 2013

DOI Secretarial Order 3336

Rangeland Fire Prevention, Management and Restoration

- Sets forth enhanced policies and strategies for preventing and suppressing rangeland fire and for restoring sagebrush landscapes impacted by fire across the West
- 7b (ix) Develop a comprehensive strategy for acquisition, storage, and distribution of seeds and other plant materials.

Presidential Memorandum on Pollinators

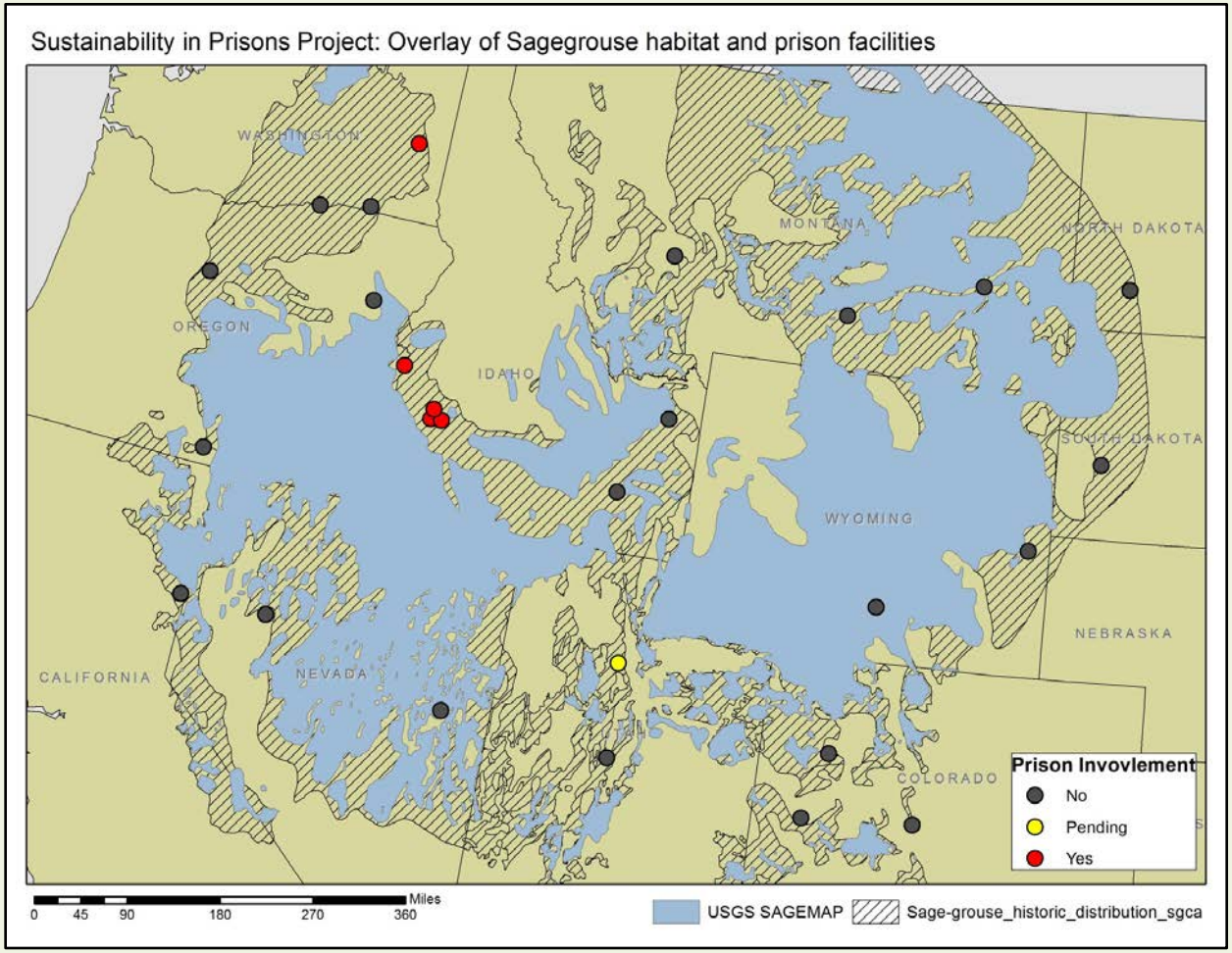


- GOAL: Establish a reserve of native seed mixes, including pollinator friendly plants for use in restoration and post-fire rehabilitation.
- GOAL: Increase and improve pollinator habitat, including increase native vegetation.
- GOAL: Strategies for developing affordable seed mixes, including pollinator friendly plants.

Sagebrush Growout in Prisons Project

- BLM funds the Institute for Applied Ecology
- Engages state prison systems in production of sagebrush and other important plants for habitat restoration
- Inmates work seven days a week to plant sagebrush seeds, water, and fertilize the seedlings

Sagebrush Growout in Prisons Project



On-going Native Plant Materials Development Activities

- **Natural Areas Journal Special Issue**
  Using Native Plant Materials in Restoration (18 scientific articles)
- **Renew West-wide Procurement Tool**
  Indefinite Delivery, Indefinite Quantity (for multiple agency use)
- **Sagebrush Grow Out in 5 Great Basin Prisons**
- **Webinar Series**
  The Right Seed in the Right Place at the Right Time: Tools for Sustainable Restoration
- **3rd National Native Seed Conference**
  Over 300 attendees
- **Great Basin Native Plant Project**
  30 partners
- **Seeds of Success**
  ~1,500 seed collections/year

NATIONAL SEED STRATEGY
FOR REHABILITATION AND RESTORATION

VISION

The right seed in the right place at the right time.

MISSION

To ensure the availability of genetically appropriate seed to restore viable and productive plant communities and sustainable ecosystems.

Goal 1: Seed Supply

- Identify Seed Needs, and Ensure the Reliable Availability of Genetically Appropriate Seed
  - Objective 1.1: Assess the seed needs and capacity of federal agencies
  - Objective 1.2: Assess capacity and needs of tribes, states, private sector seed producers, nurseries, and other partners
  - Objective 1.3: Increase the supply and reliable availability of genetically appropriate seed

Goal 2: Research

- Identify Research Needs and Conduct Research to Provide Genetically Appropriate Seed and to Improve Technology for Native Seed Production and Ecosystem Restoration
  - Objective 2.1: Characterize genetic variation of restoration species to delineate seed zones and provide seed transfer guidelines for current and projected future environmental conditions
  - Objective 2.2: Conduct species-specific research to provide seed technology, storage, and production protocols for restoration species
  - Objective 2.3: Conduct research on plant establishment, species interactions, and ecological restoration
  - Objective 2.4: Develop or modify monitoring techniques, and investigate long-term restoration impacts and outcomes

Goal 3: Decision Making Tools

- Develop Tools that Enable Managers to Make Timely, Informed Seeding Decisions for Ecological Restoration
  - Objective 3.1: Develop training programs for practitioners, producers, and stakeholders on the use of genetically appropriate seed for restoration
  - Objective 3.2: Develop native seed source availability data and tools for accessing the data
  - Objective 3.3: Integrate and develop science delivery tools to support restoration project development and implementation
  - Objective 3.4: Build on ecological assessments and disturbance data, and provide training that will allow managers to anticipate needs and establish spatially-explicit contingency strategies

Goal 4: Communication

- Develop Strategies for Internal and External Communication
  - Objective 4.1: External communications: conduct education and outreach through the Plant Conservation Alliance network
  - Objective 4.2: Internal communications: distribute and implement the Strategy across agencies, and provide feedback mechanisms
  - Objective 4.3: Report progress, recognize achievements, and revise Strategy

National Seed Strategy Implementation Next Steps

- Business Plan for National Seed Strategy
- Funding Commitment for Initial Assessment of Seed Needs, Resources & Capacity
- Interagency Support and Commitment
- Interagency Budget Initiative
- Strategy Implementation Committee
- Electronic Mailing List for Communication
- Webinars for Communication