



RAMPS:

MAKING AMERICA GREAT THROUGH SHARED CONSERVATION STEWARDSHIP



Molly L. McCormick

Restoration Assessment and Monitoring Program for the Southwest (RAMPS)

U.S. Department of the Interior
U.S. Geological Survey

Southwest Biological Science Center / U.S. Geological Survey
Flagstaff, AZ


RAMPS Mission

Strengthen restoration
outcomes executed by
DOI and other agencies
in the southwestern U.S.
by providing science and
guidance on effective
management strategies



“Ecological Restoration”



Nudging a system towards
 **USGS** recovery and increased productivity

RAMPS works in iconic water-limited landscapes



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Chihuahuan Desert

Why RAMPS?



Landscape change threatens
livelihoods & ecosystems

Threats and Challenges



Drought and loss of
ground and surface water

Threats and Challenges



Bare soils and wind erosion

Threats and Challenges



Flash flooding and water erosion

Threats and Challenges

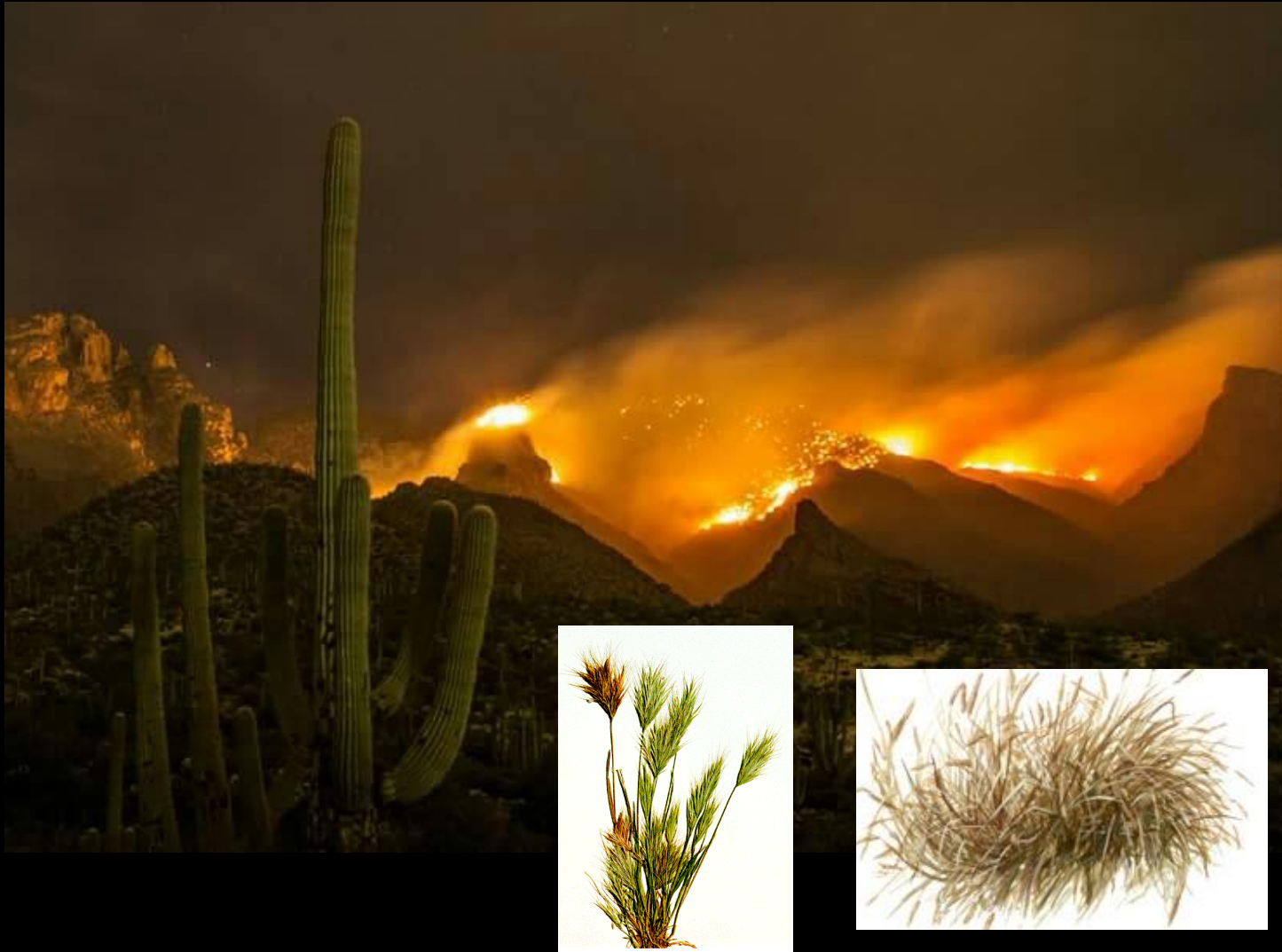
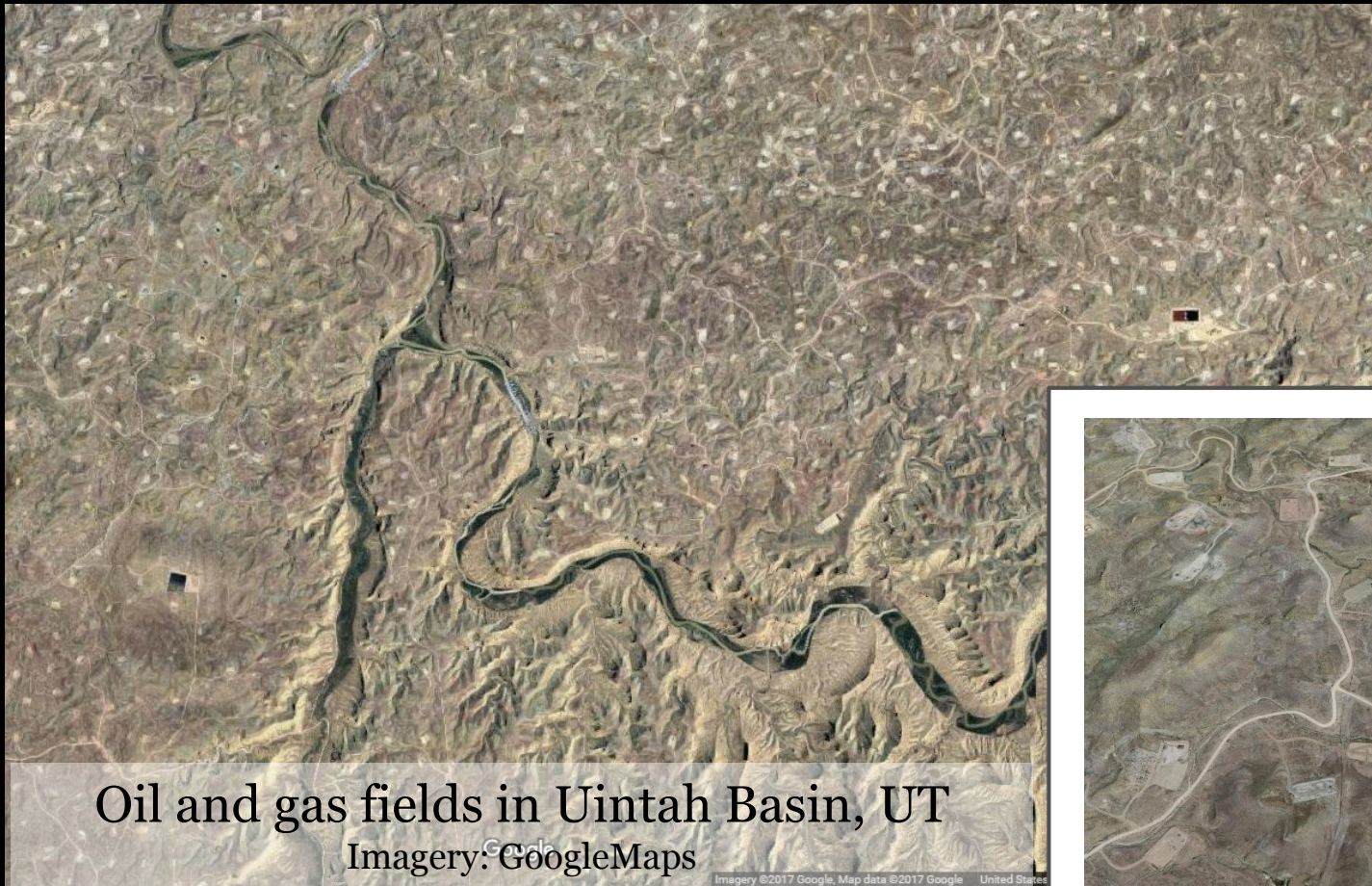


Image: Pinterest/wildfire in Sonoran



Invasive Species and Frequent Wildfire

Threats and Challenges



Recovery ensures sustained use

Restoration in the Arid Southwest



Challenges for establishing plants and stabilizing soils

Restoration in the Arid Southwest

5 years after treatment



Reference site



40 years after treatment



Reference site



Image: Travis Nauman, USGS



Challenges for establishing plants and stabilizing soils

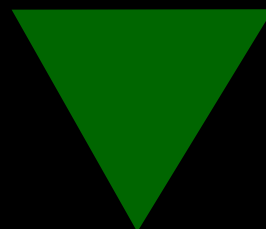
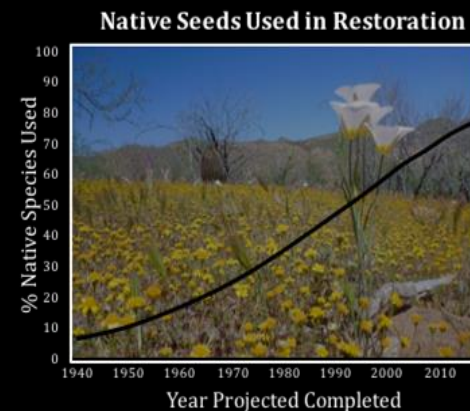


RAMPS Activities

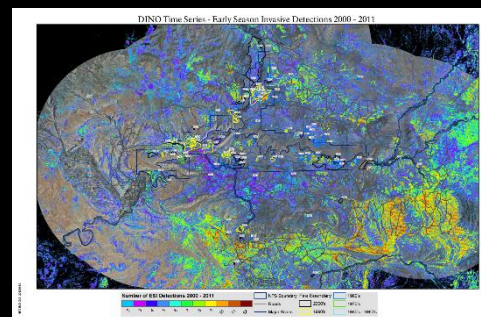
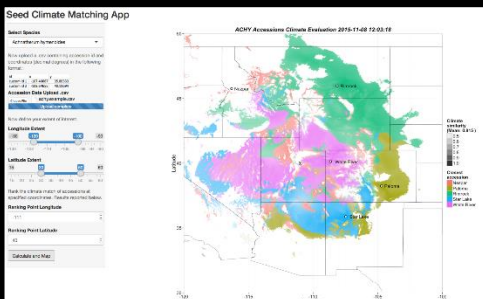


**Stakeholder
Engagement**

**Research &
Synthesis**



**Decision
Support**



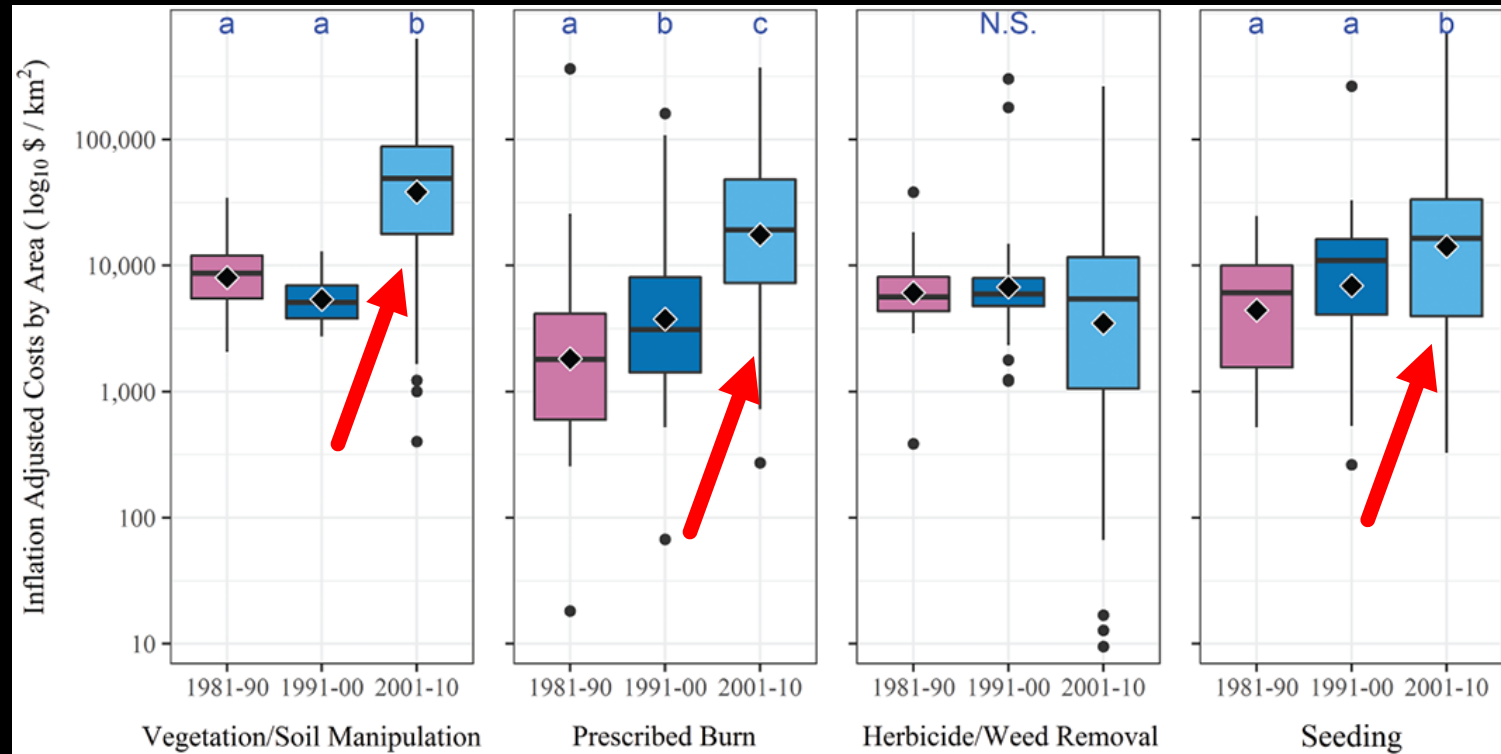
Stakeholder Engagement



Leveraging a legacy of restoration and
stewardship by strengthening a
community of practice



Data Synthesis



Copeland et al Res Eco, 2017

Using management records to decipher trends

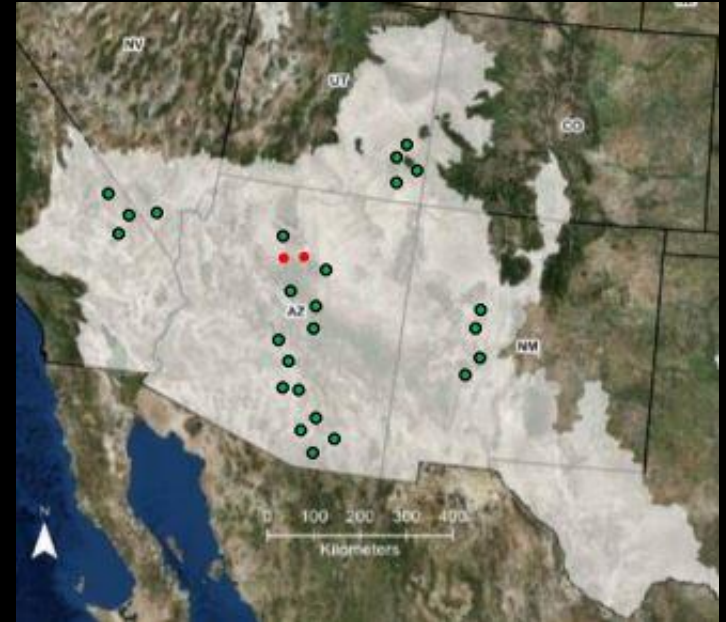
Synthesis: Cost vs Benefit



Munson et al. Biological Invasions 2015

Defining trade-offs

Research: Field Trial Network



Potential (black) &
Existing (red) Sites

Systematic testing of land treatment methods

Research: Field Trial Network



Treatment tested:
Wood Mulch

Research: Field Trial Network



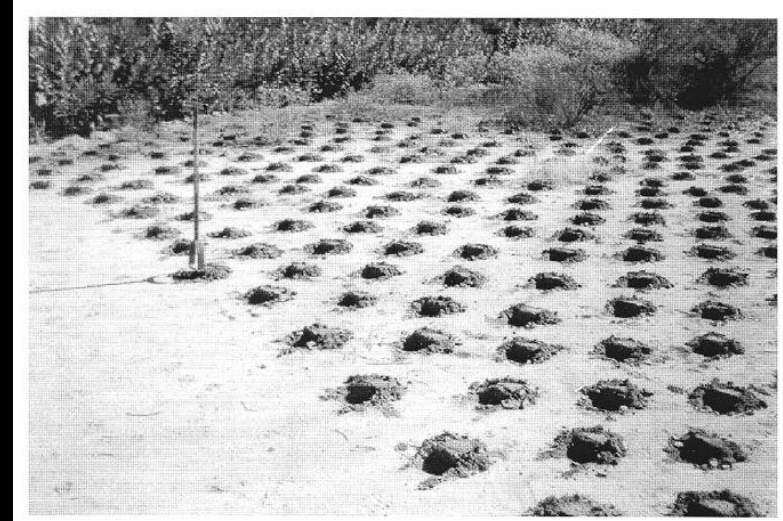
Photos: Becky Mann, USGS



Treatment tested:
Above-ground Micro-sites



Research: Field Trial Network



Photos: permaculturenews.org

Treatment tested:
Below surface
micro-sites



Research: Field Trial Network

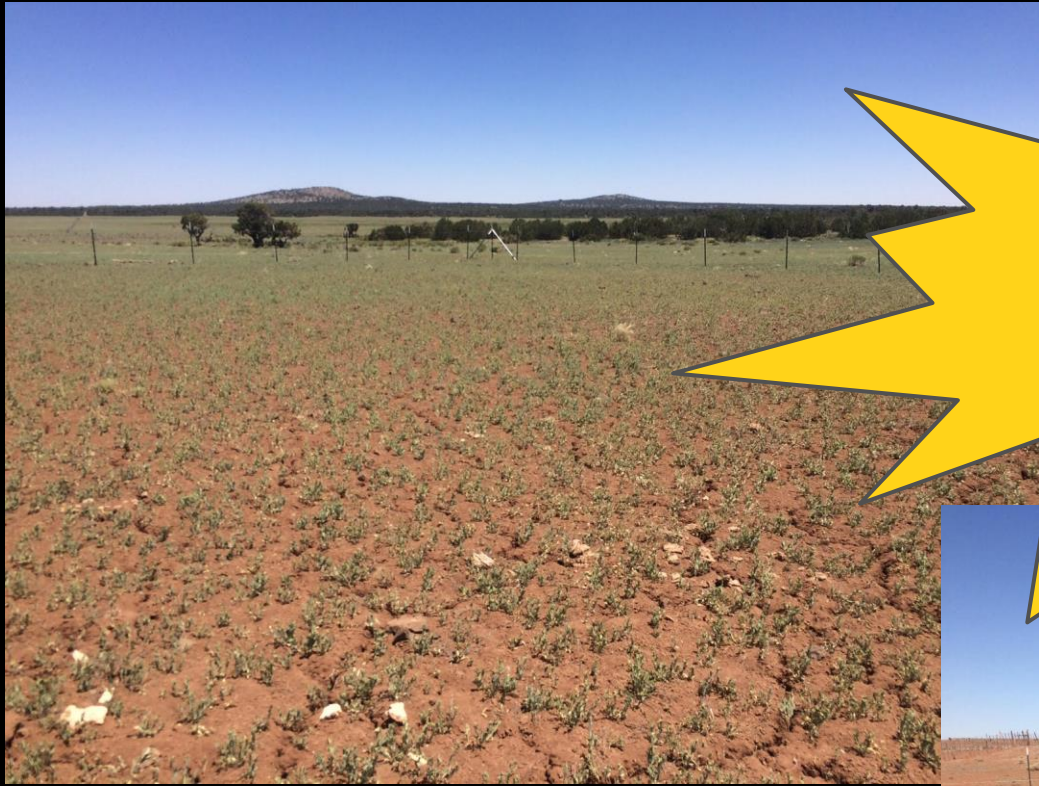


Photo: mnativelandscape.com



Treatment tested:
Seed Mixes

Research: Field Trial Network



WANTED!
CO Plateau
degraded sites



Decision Support



Easily accessible tools and actionable science



Land Enhancement Information Portal

Methods &



Protocols



Figure: public.wmo.int



Access to decision support tools & maps

RAMPS Supports Seed Strategy Objectives

- 2.1 Characterize genetic variation and delineate seed zones
- 2.2 Conduct species-specific research
- 2.3 Conduct research on plant establishment, species interactions and ecological restoration
- 2.4 Develop and modify monitoring techniques, and investigate long-term restoration impacts and outcomes
- 3.1 Develop training programs
- 3.2 Develop web-based dynamic tools for seed selection
- 3.3 Integrate and develop science delivery tools to support restoration project development and implementation

RAMPS Supports DOI and BLM Priorities

- Actionable research supporting DOI land managers and stewardship of Southwestern landscapes
- Work collaboratively across the western energy frontier
- Work with partners to develop and implement priority habitat monitoring and improvement projects
 - Collaborate with state and local partners to identify priority work, conduct appropriate training, and complete essential projects
 - Develop and strengthen local, state and national partnerships to manage and prevent the spread of invasive species to protect public lands and water resources.
- Support BLM's multiple-use mandate by providing education and outreach at the local level
- Develop and increase commercial availability of ecologically appropriate plant materials for coal and hardrock mining reclamation

Ways to Be Involved



Photo:DiabloTrust.org

Researchers, land managers, and business owners
 are important to RAMPS

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