# Northern California Climate Adaptation Project

**Focal Resources & Scenario Planning Workshops**
**March 7-10, 2016**
**Eureka, CA (March 7-8) and Redding, CA (March 9-10)**

Jessi Kershner, Lead Scientist
EcoAdapt

EcoAdapt™ Meeting the challenges of climate change

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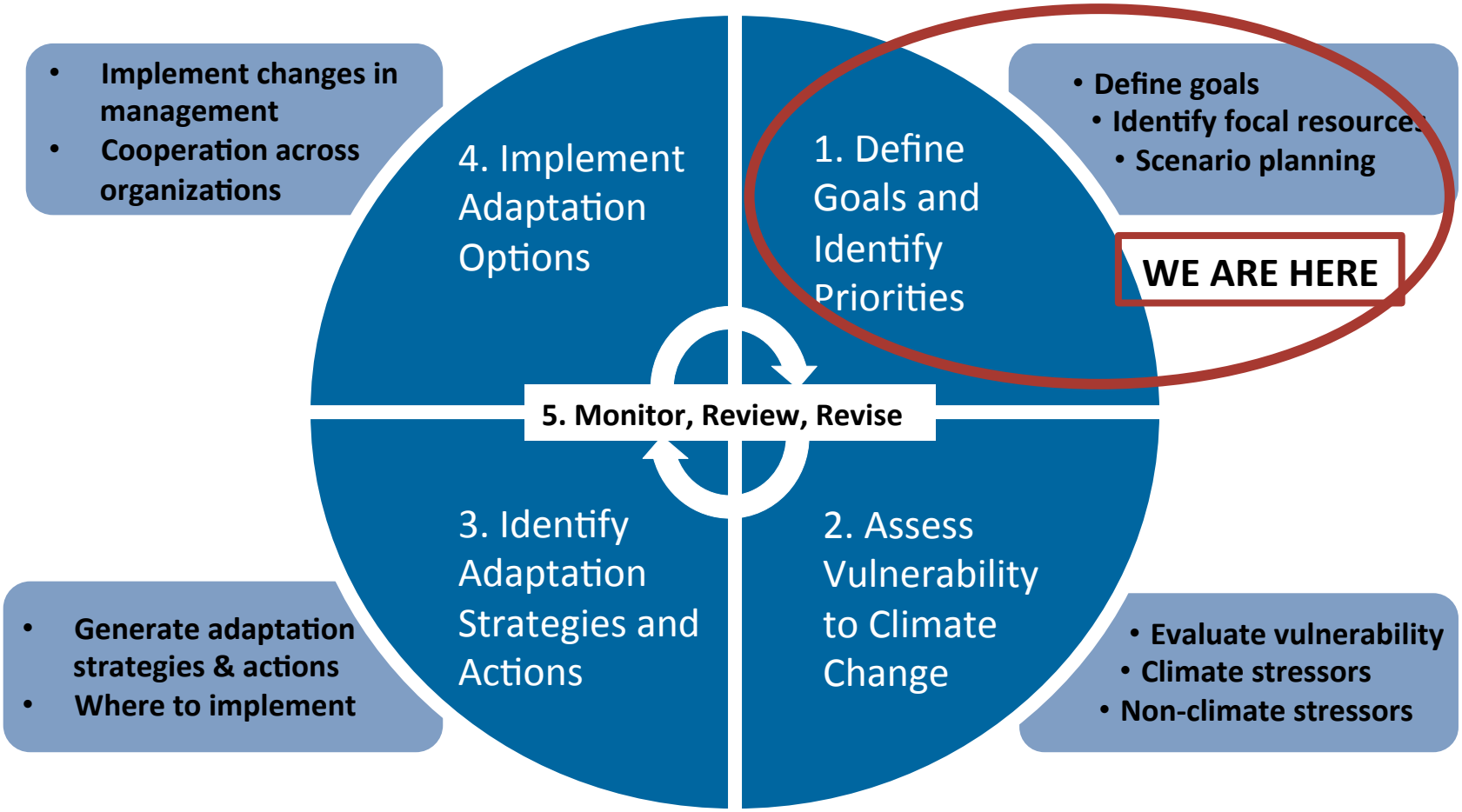
# Climate-Smart Planning Process



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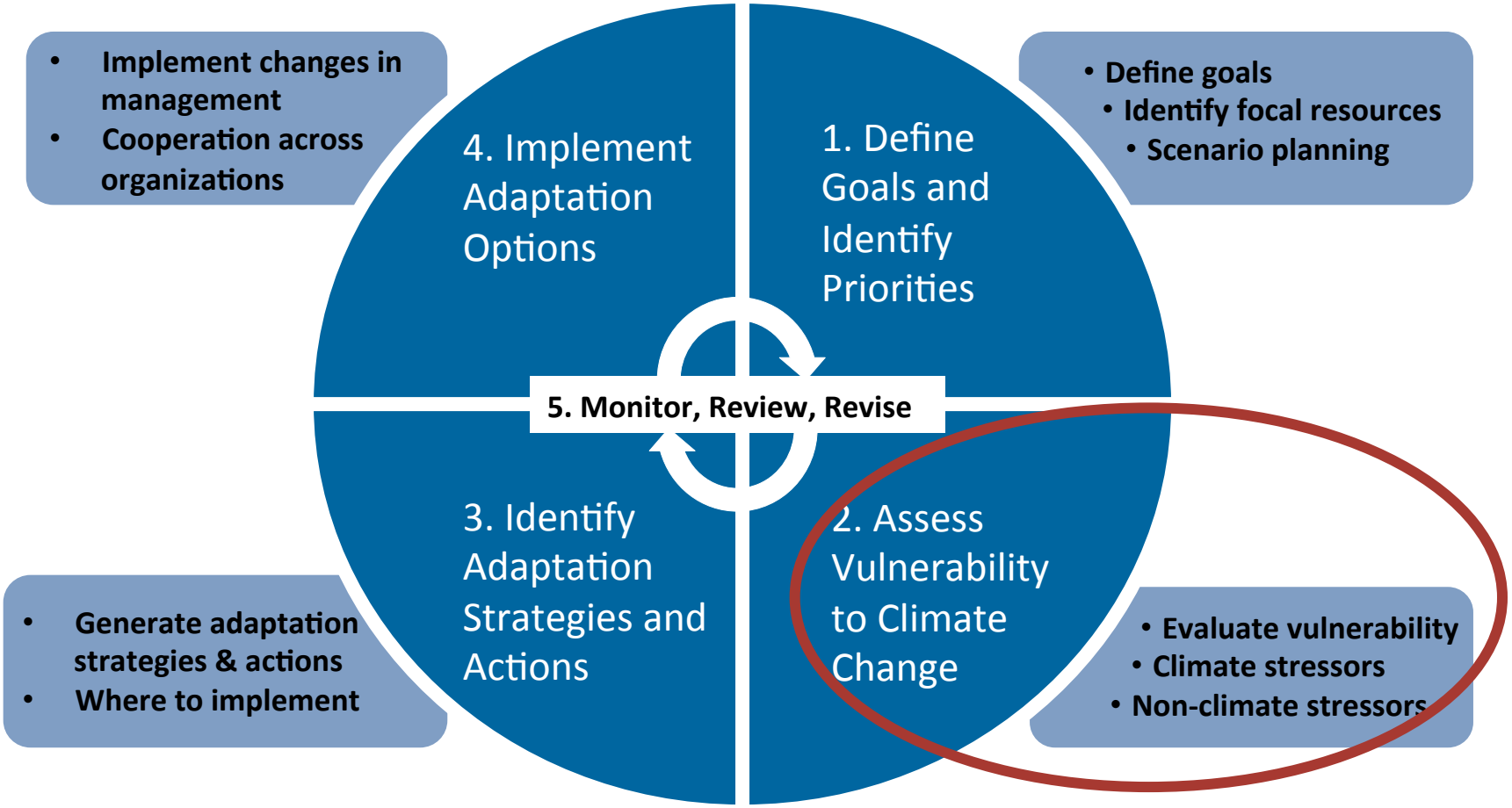
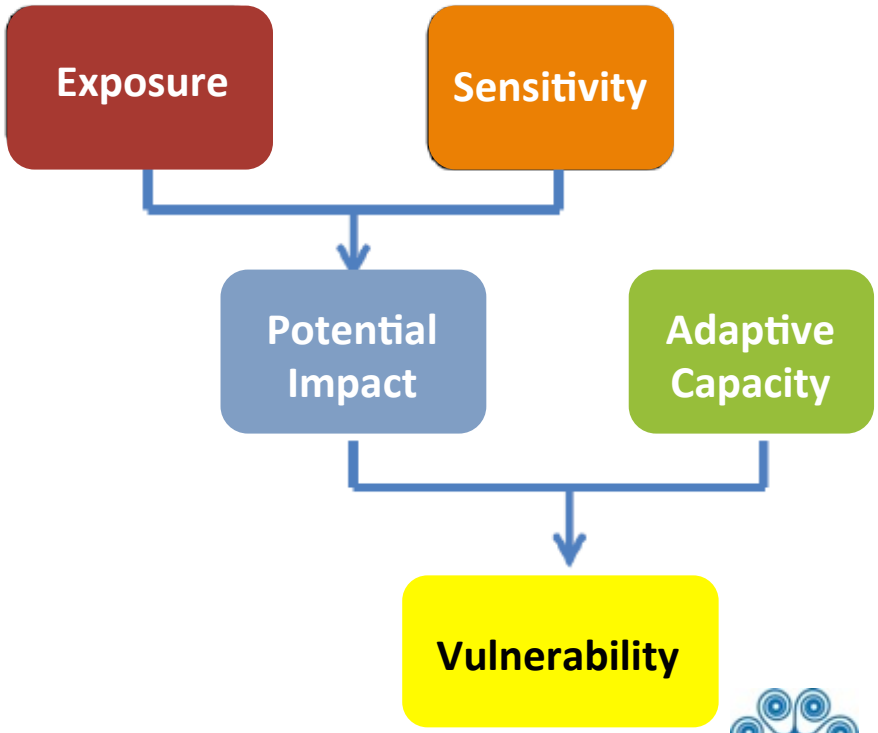


# Assess Vulnerabilities

**GOAL: Assess vulnerabilities of focal resources to climate and non-climate stressors by considering sensitivity, exposure, and adaptive capacity**

- Evaluate resource vulnerabilities through review of the scientific literature
  - Rank components of vulnerability; summarize key information from the literature
- Scientists, managers, and other stakeholders provide input into the assessment, review and evaluate draft results



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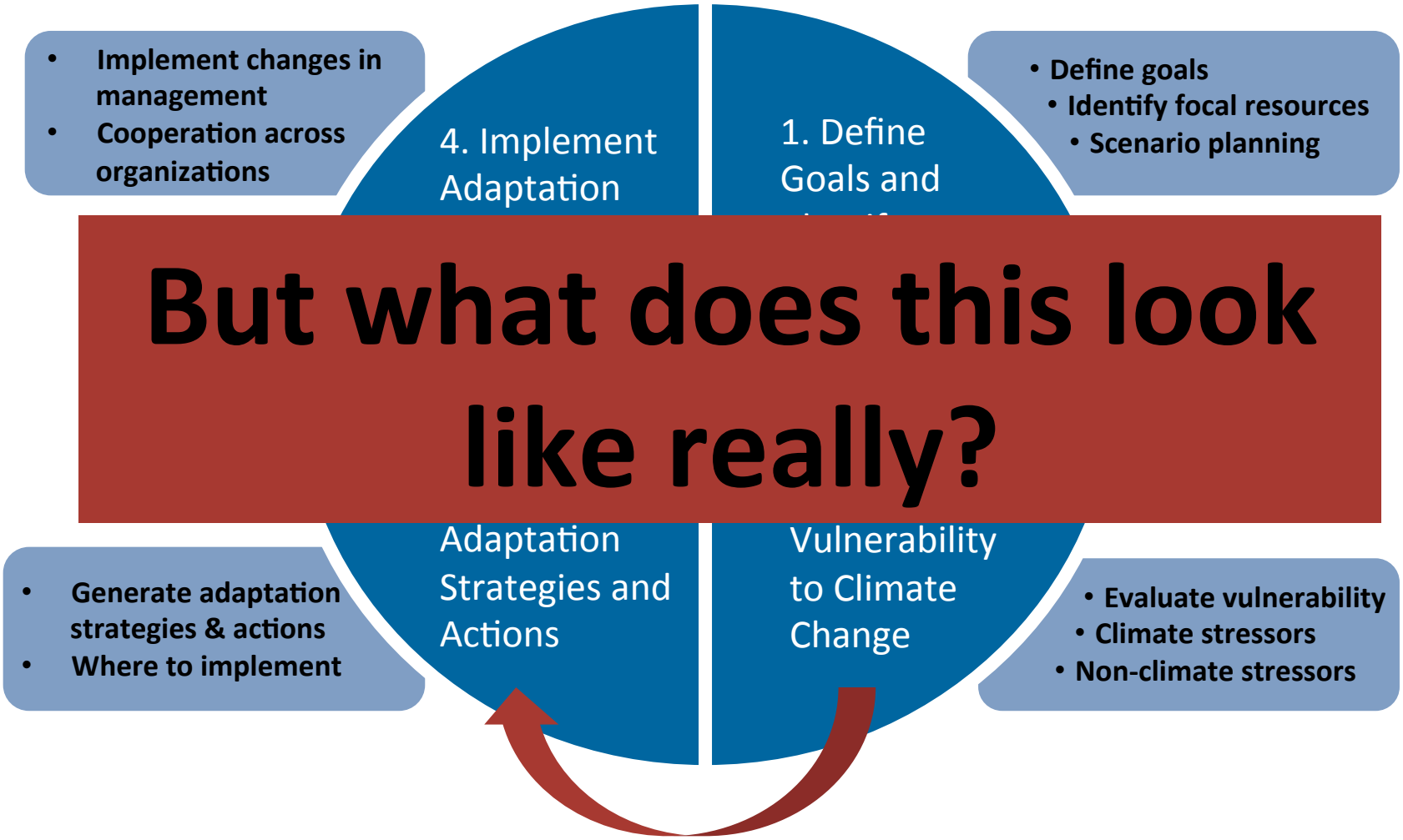
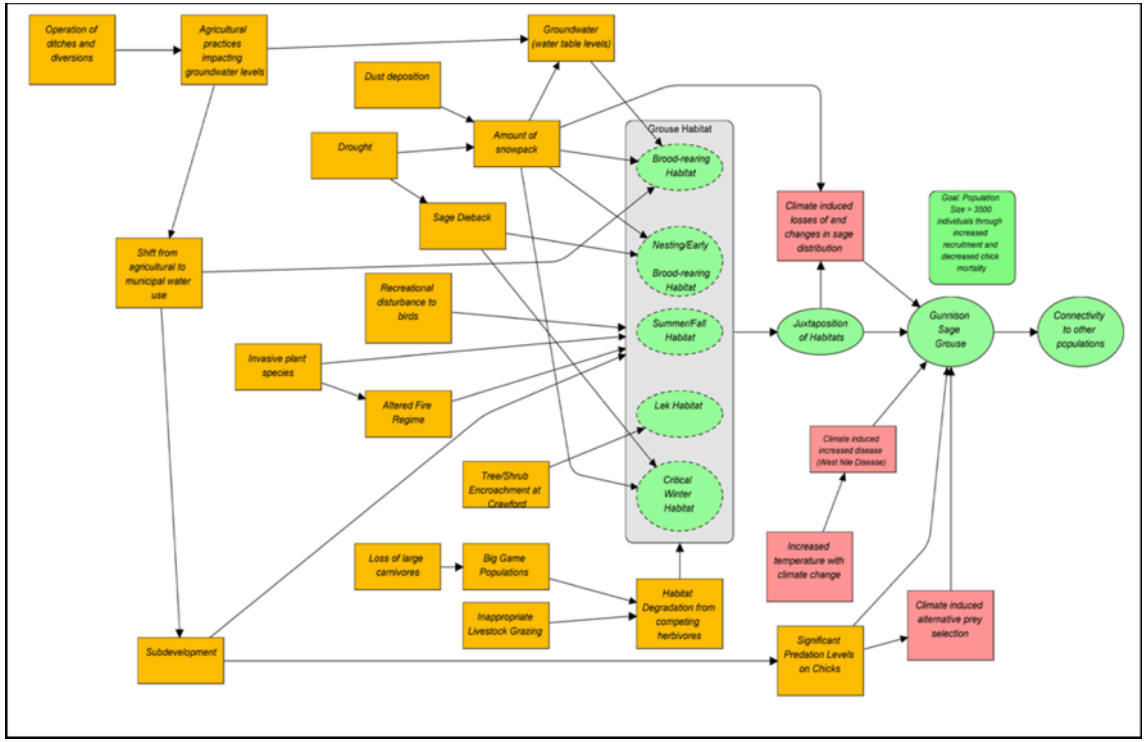



**But what does this look like really?**

# Case Study #1: Gunnison Basin sage-grouse

⬆ Temperature, Drought, Erosion ⬇ Water table




Built a conceptual model to diagram factors that affect Gunnison sage-grouse population size and habitat condition

# Goal: Build wet meadow resilience for sage-grouse

↑ Temperature, Drought, Erosion
↓ Water table

## Priority adaptation strategies

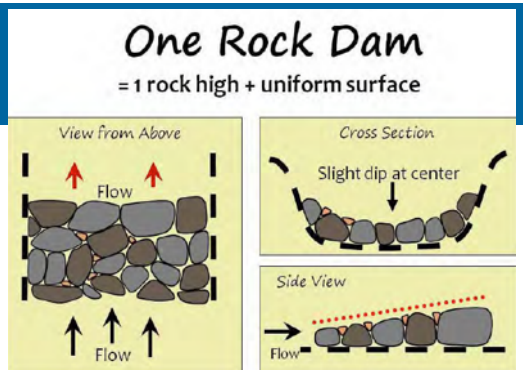
1. Retain water in most vulnerable brood-rearing habitats
   - Permanently tie water to land via easements
   - Improve irrigation practices
   - Restore seeps, springs; remove headcuts, gullies; raise water table
2. Improve and restore nesting and wintering habitats
   - Improve/re-establish leeward mtn shrub habitats via fencing, planting
   - Maintain and expand perennial grass and forb cover
   - Abate/prevent cheatgrass encroachment
3. Improve zoning laws and other policy options to protect habitat and maintain land uses
   - Transfer development rights
   - Protect habitats via subdivision planning

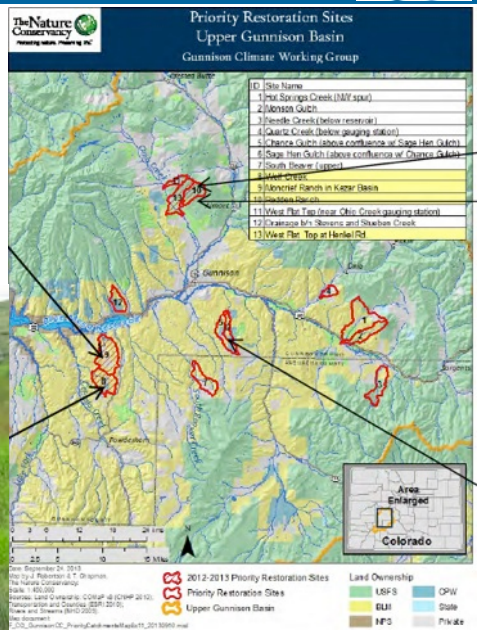
# Goal: Build wet meadow resilience for sage-grouse

⬆ Temperature, Drought, Erosion ⬇ Water table

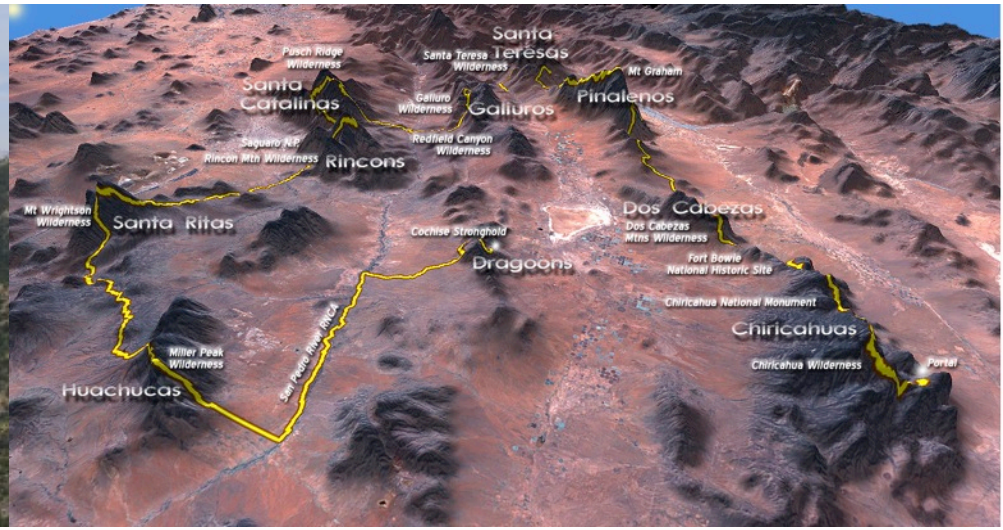
## Actions

- One rock dams
- Media Luna
- Monitoring



# Case Study #2: Seeps & springs in the Sky Islands

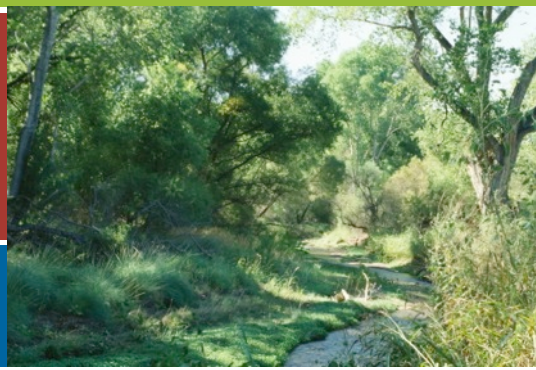



## Fire, Air Temperatures, Drought

## Altered Precipitation Patterns


# Goal: Restore seeps and springs in the Sky Islands

↑ Fire, Air temperature, Drought
Altered precipitation patterns



## Priority adaptation strategies

1. Create climate-smart spring restoration methodologies
   - Develop a springs restoration manual and conduct trainings on its use
2. Restore upland habitat to increase recharge and decrease erosion (include fire considerations)
   - Assess upland grazing management for spring benefit/detriment
   - Adapt prescribed fire planning to consider springs locations
   - Conduct springs assessments ahead of planned restoration treatments
3. Improve infrastructure at spring sites to conserve water and provide habitat
   - Identify and implement evaporation-reducing devices for cattle tanks
   - Repair/restore infrastructure to conserve water
   - Identify springs where renovation or improvement of agriculture water sources help take pressure off springs as water source

# Goal: Restore seeps and springs in the Sky Islands

## Actions

- Conducted spring inventories and assessments using trained volunteers and professional staff and instituted a citizen scientist “Adopt-A-Spring” monitoring
- Repaired a spring-fed pond and installed native plants
- Installed fencing around perennial spring on private property
- Installed wildlife entry/exit ramps at developed springs for endangered frogs
- Developed a spring restoration guidebook for the region

# Acknowledgements

Thanks to all of YOU!

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# Klamath-Siskiyou Climate and Wildfire Project

Rob Scheller, Tom Spies, Jonathon Thompson, Charles Maxwell

- First stakeholder meeting will happen April 18, 2016 at Klamath NF headquarters in Yreka, CA
- Our goal is to develop climate change adaptation scenarios that reflect potential on-the-ground management actions and meet management needs
- At the workshop:
  - we will design 4 to 6 scenarios with attendees and these scenarios will then be fed into our model of forest change
  - we will recruit additional technical assistance for model evaluation and feedback
- Results will be presented at next round of meetings Fall 2016
- Our project website:

  https://www.sites.google.com/a/pdx.edu/klamath-climate-and-fire/
- Questions? Contact Charles Maxwell at cjm23@pdx.edu

Klamath-Siskiyou Region Land Ownership Types