

Ecological Drought in Southern California

Developing a framework for drought
preparedness and proactive response

Megan Jennings, Ph.D.

Research Scientist

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www.climatesciencealliance.org/drought

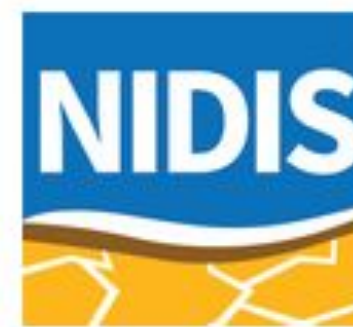
A circular inset image showing a close-up of parched, cracked soil, illustrating the effects of drought. The cracks are deep and irregular, forming a mosaic pattern across the dry earth. Some sparse, dry vegetation is visible in the background.

SDSU

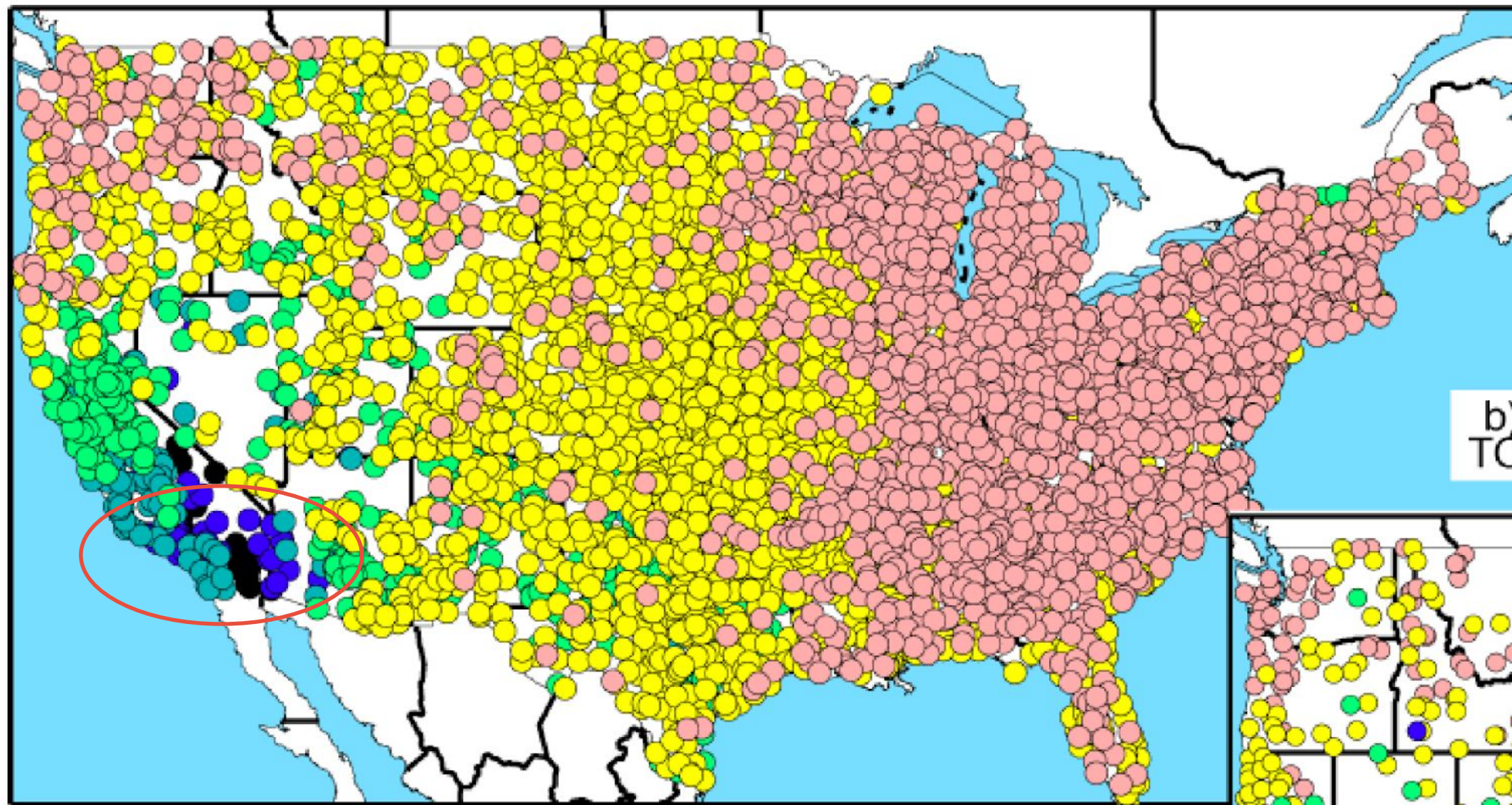
Project Partners



This research is funded by NIDIS through the *FY 2022 Coping with Drought Competition — Ecological Drought*.

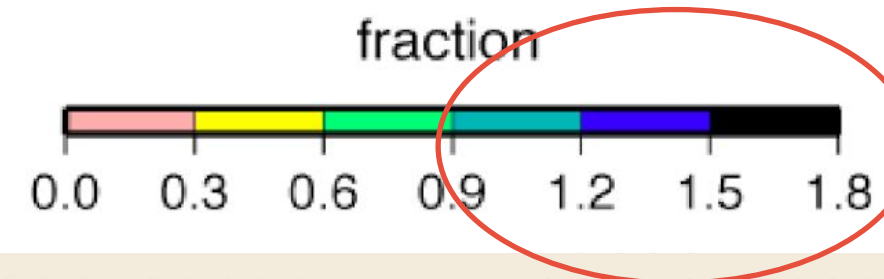
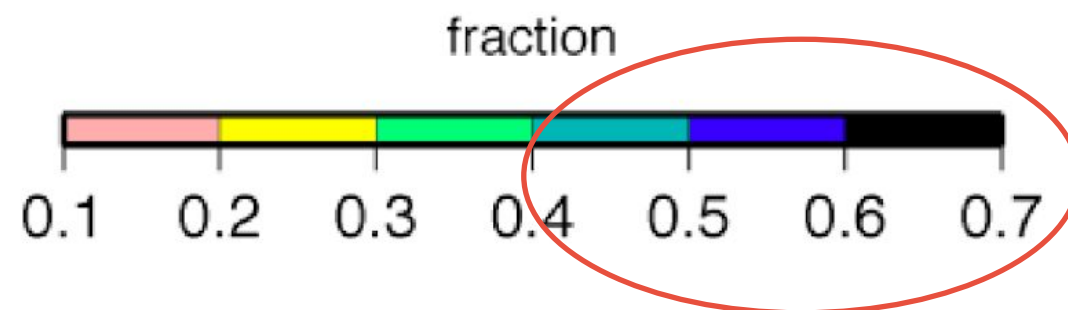
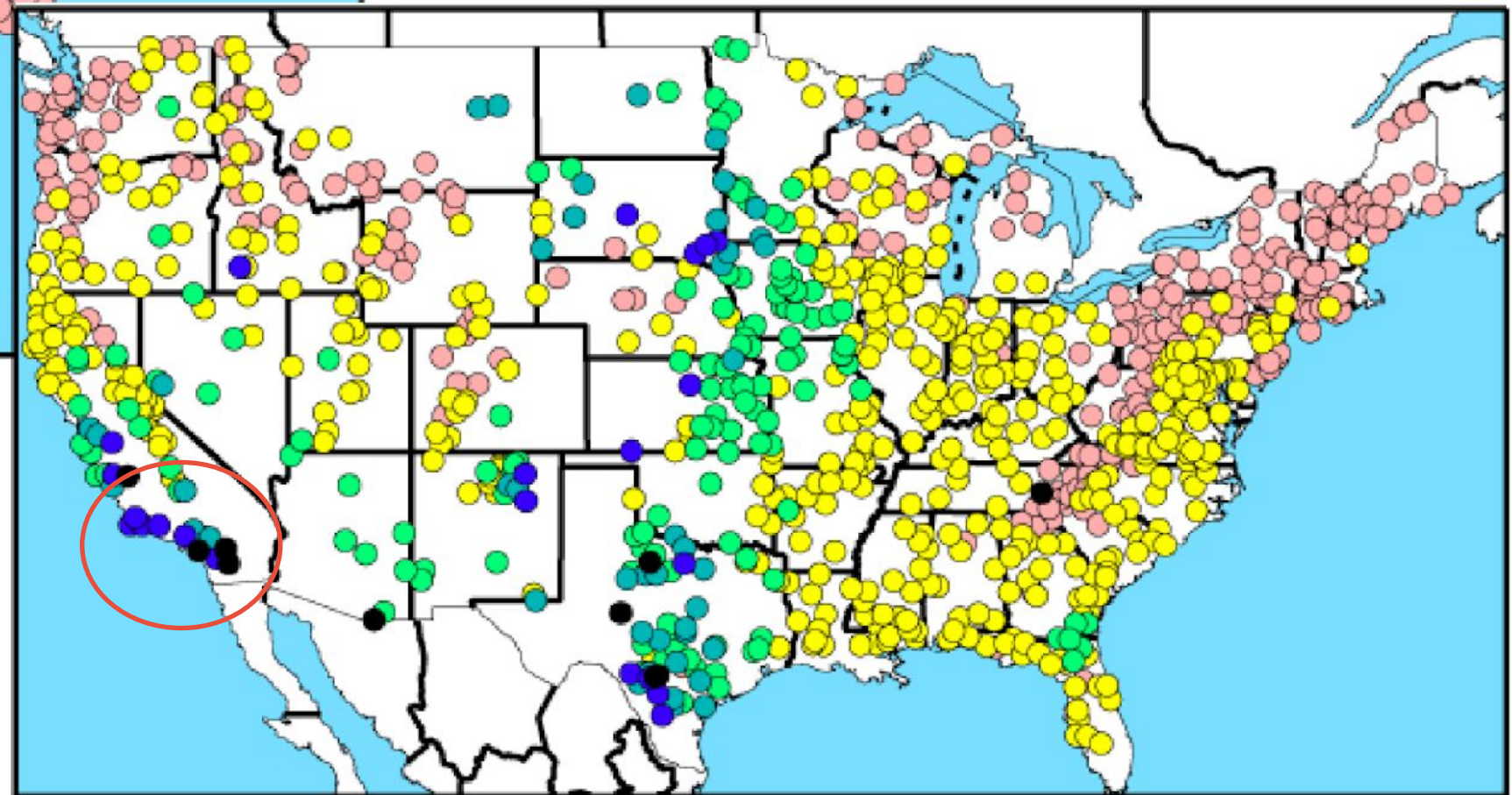


a) COEFFICIENTS OF VARIATION OF
TOTAL PRECIPITATION, WY 1951-2008



Drought in SoCal

b) COEFFICIENTS OF VARIATION OF
TOTAL STREAMFLOW, WY 1951-2008

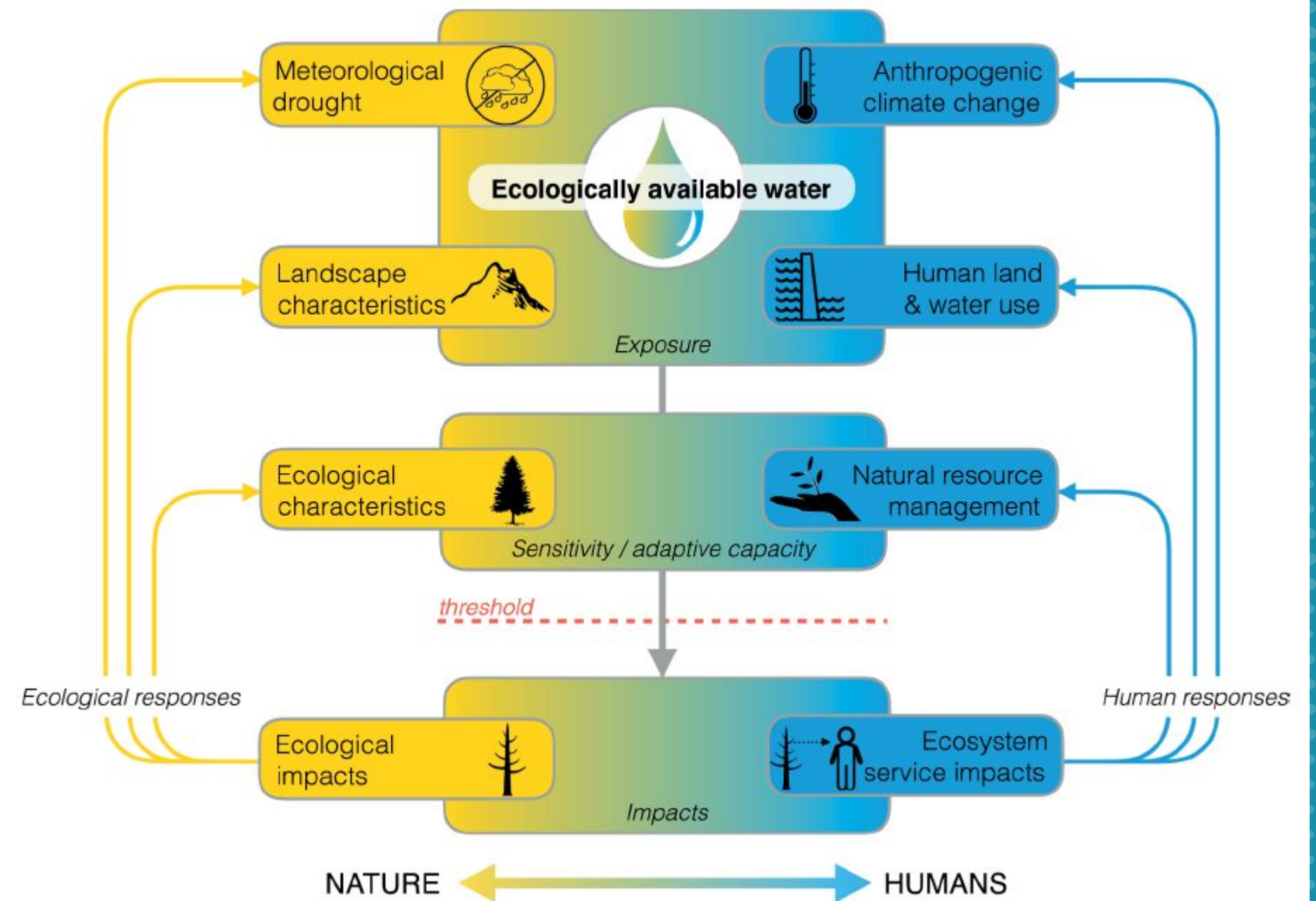


Dettinger et al. 2011

Ecological drought

Episodic deficit in water availability that can cause:

- ecosystems to shift beyond thresholds of vulnerability
- impacts to ecosystem services
- feedbacks in natural and/or human systems



(Crausbay and Ramirez 2017)



Connecting Wildlands & Communities

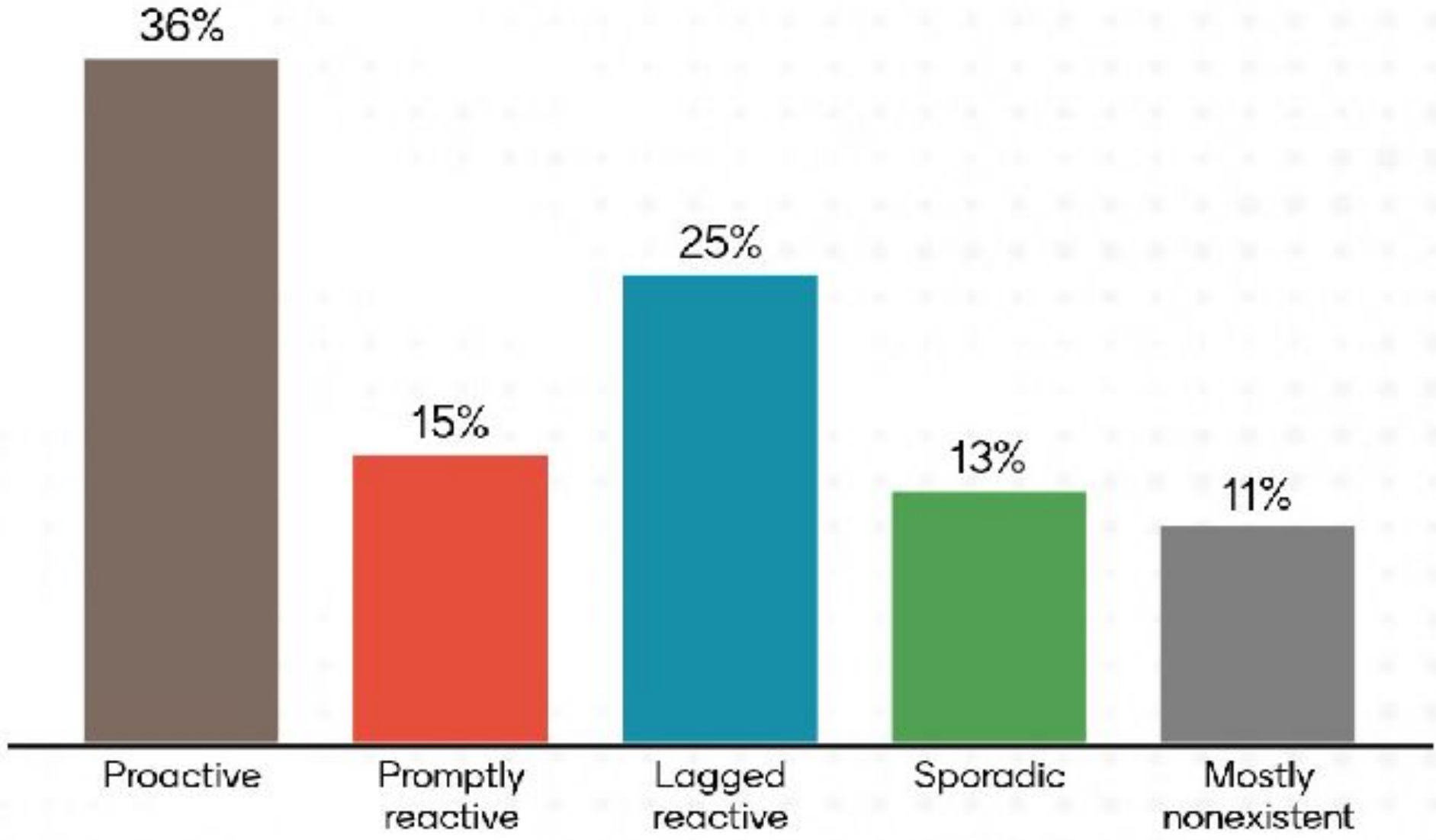
Planning for climate-ready landscapes in SoCal



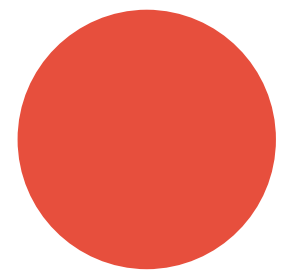
CALIFORNIA STRATEGIC GROWTH COUNCIL



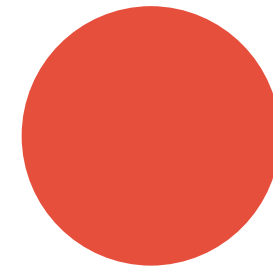
How would you describe your organization's current drought response approaches?



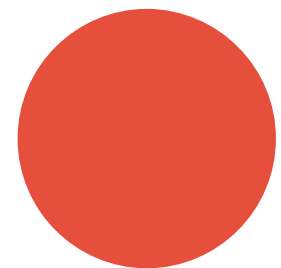
A framework for drought response



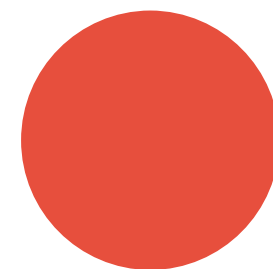
Foster and support a community of practice



Improve and increase accessibility of regionally relevant research

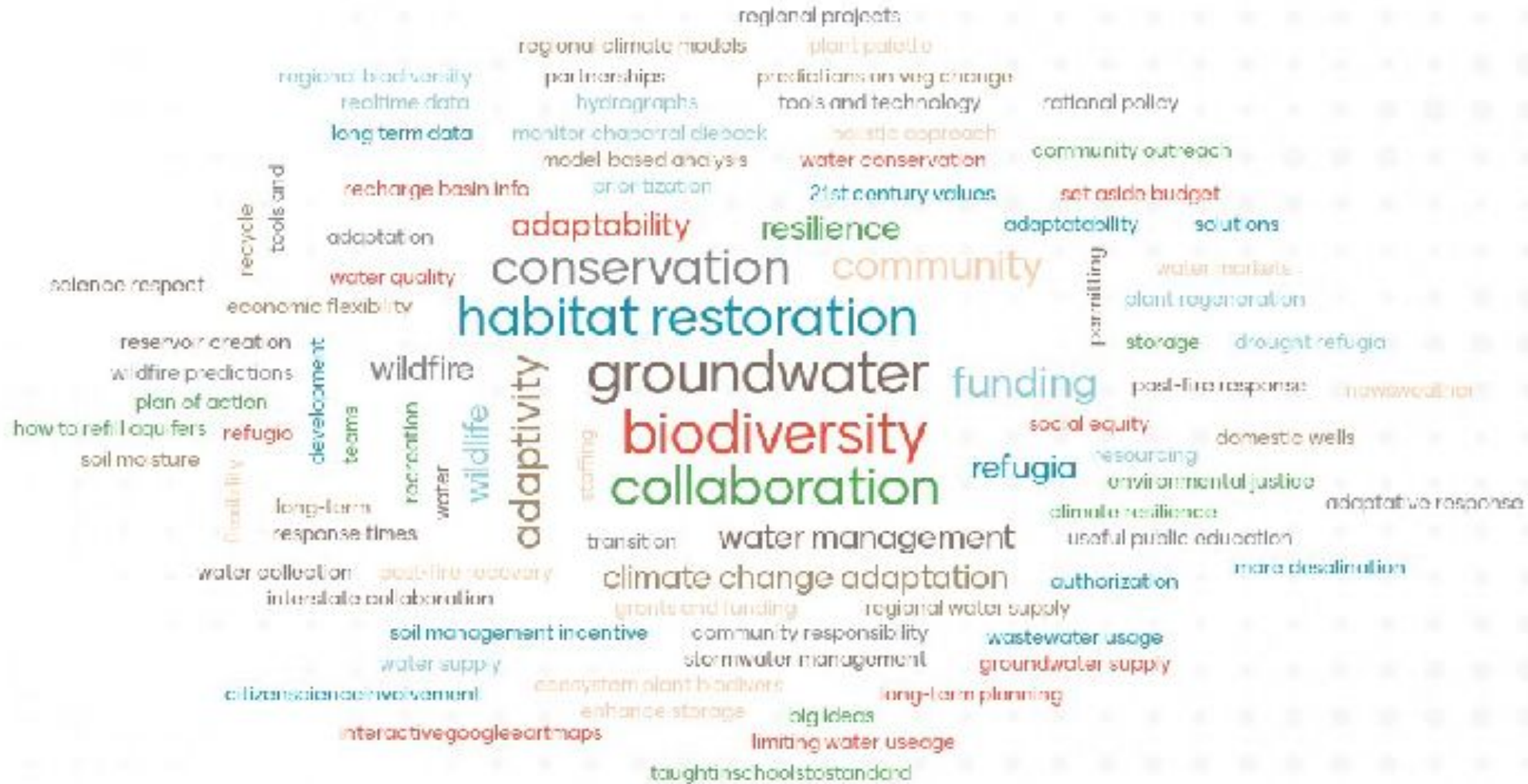


Identify priority research needs and products



Support strategic and science-informed decision making

What would you like to see emphasized in a drought response strategy?



Data integration

- **Climatic conditions**
 - Drought indices
- **Fire**
 - Risk
 - Post-fire recovery
- **Biodiversity**
 - Priorities, vulnerabilities
 - Refugia
- **Water**
 - Quality
 - Quantity
- **Built environment**



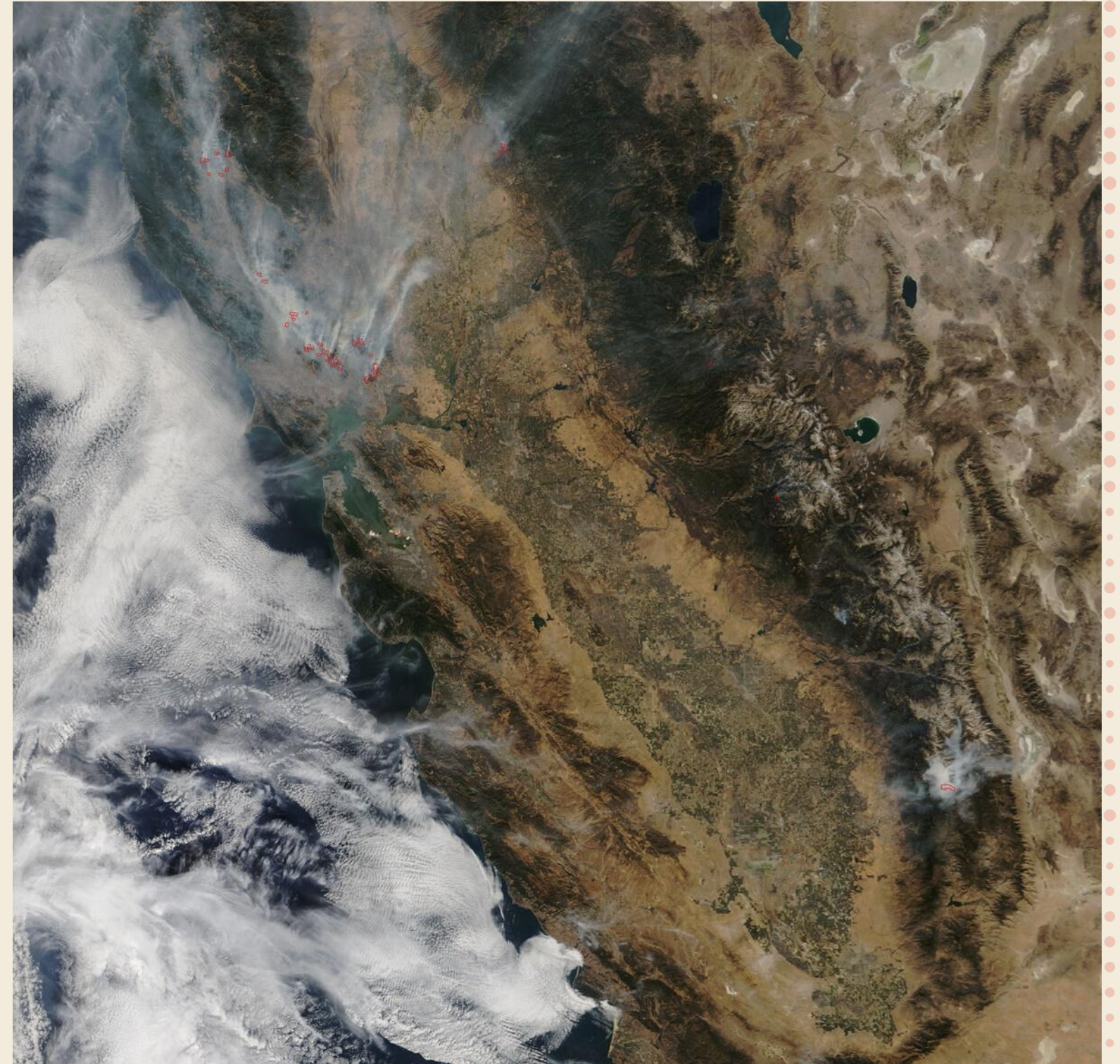
Responding to ecological drought

Ecosystem processes

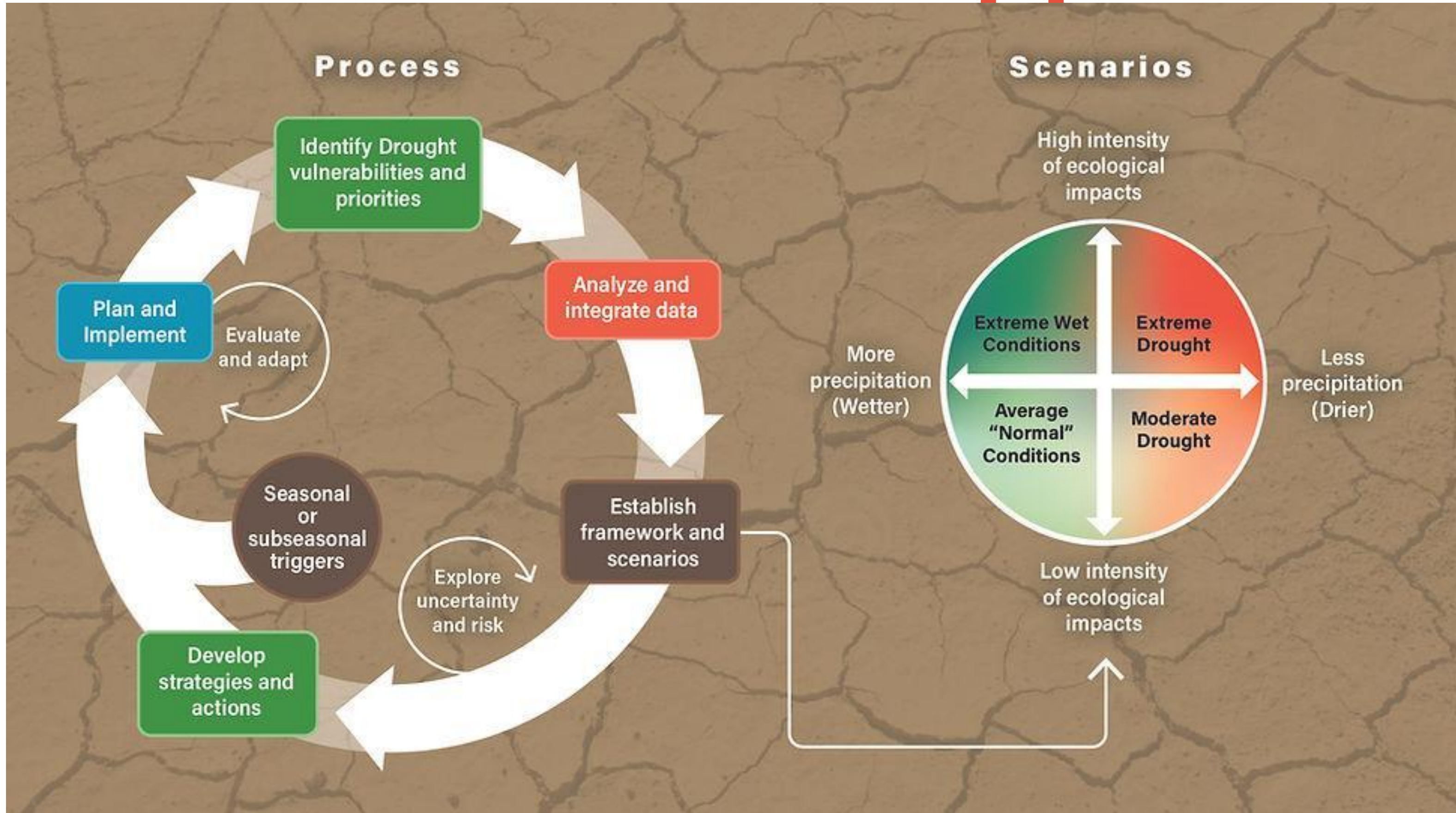
- Maintaining hydrologic flows
- Reducing risk of ecologically damaging fire
- Promoting post-fire recovery

Biodiversity

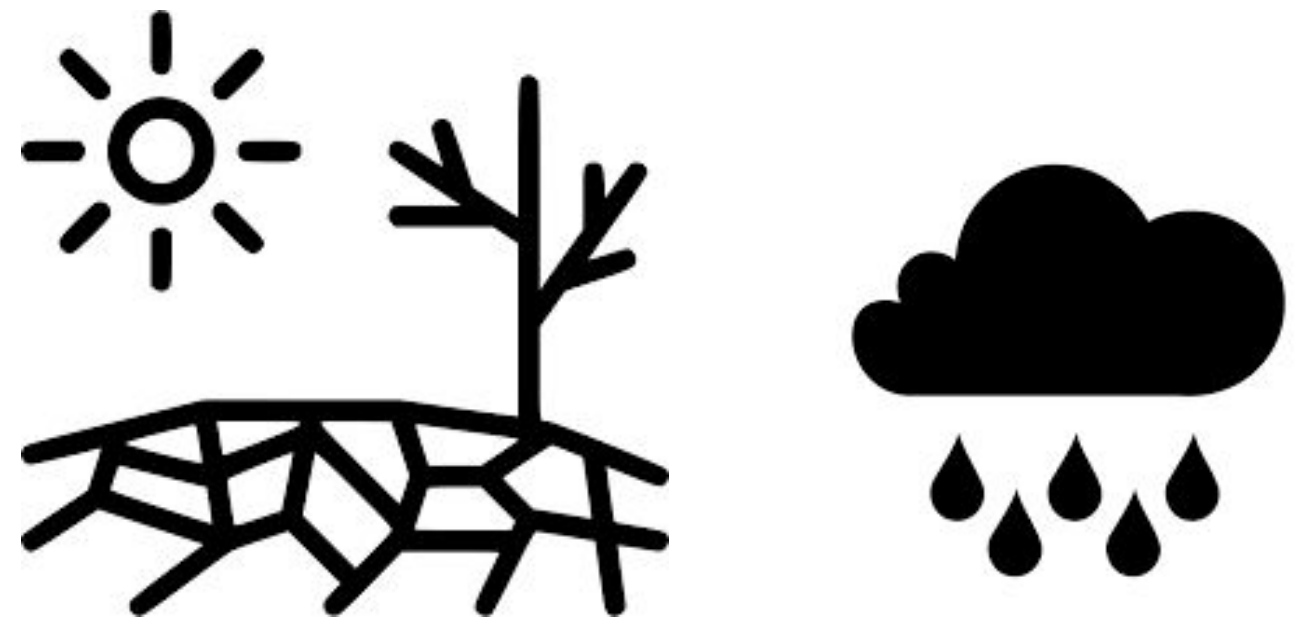
- Preventing most severe impacts for sensitive species
- Drought-informed habitat management
- Restoration strategies aligned with drought risk



Scenario-based approach



Drought preparedness



- Response & adaptation strategies
- Short & long-term strategies
- Drought monitoring
- Flexibility and adaptive management



Questions?

mjennings@sdsu.edu

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