

# Adaptation Tools and Decision Support Approaches

2022 Southwest Adaptation Forum

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**Adaptation** - the adjustment of systems in response to climate change.



Ecosystem-based adaptation activities build on **sustainable management, conservation, and restoration.**

- What do you **value**?
- How much **risk** are you willing to tolerate?

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What actions can be taken to  
**enhance the ability of a system  
to cope with change**  
***and***  
**meet goals and objectives?**



# Identifying Adaptation Actions

*Connecting Broad Ideas to Specific Actions*

## RESISTANCE



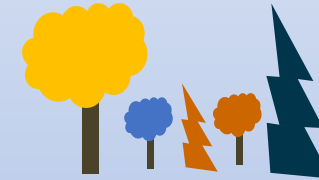
- Improve defenses of ecosystem against change and disturbance
- Maintain relatively unchanged conditions

## RESILIENCE



- Accommodate some degree of change
- Return to prior reference condition following disturbance

## TRANSITION



- Intentionally facilitate change
- Enable ecosystem to respond to changing and new conditions

**\*Reduce impacts/maintain current conditions**

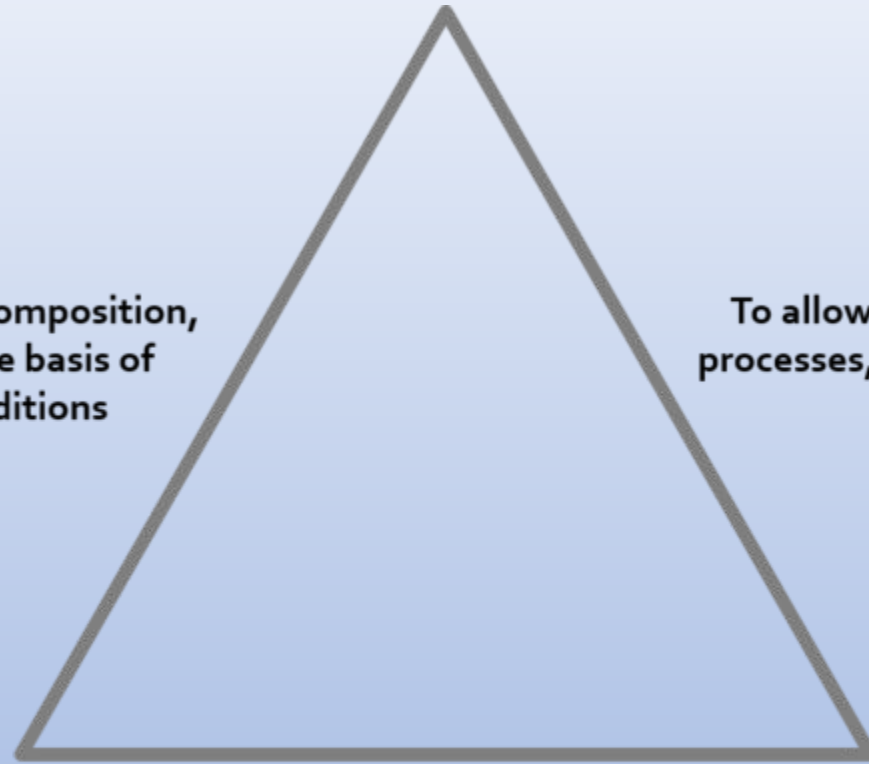
**\*Forward-looking/promote change**

## Resist

Work to maintain or restore ecosystem composition, structure, processes, or function on the basis of historical or acceptable current conditions

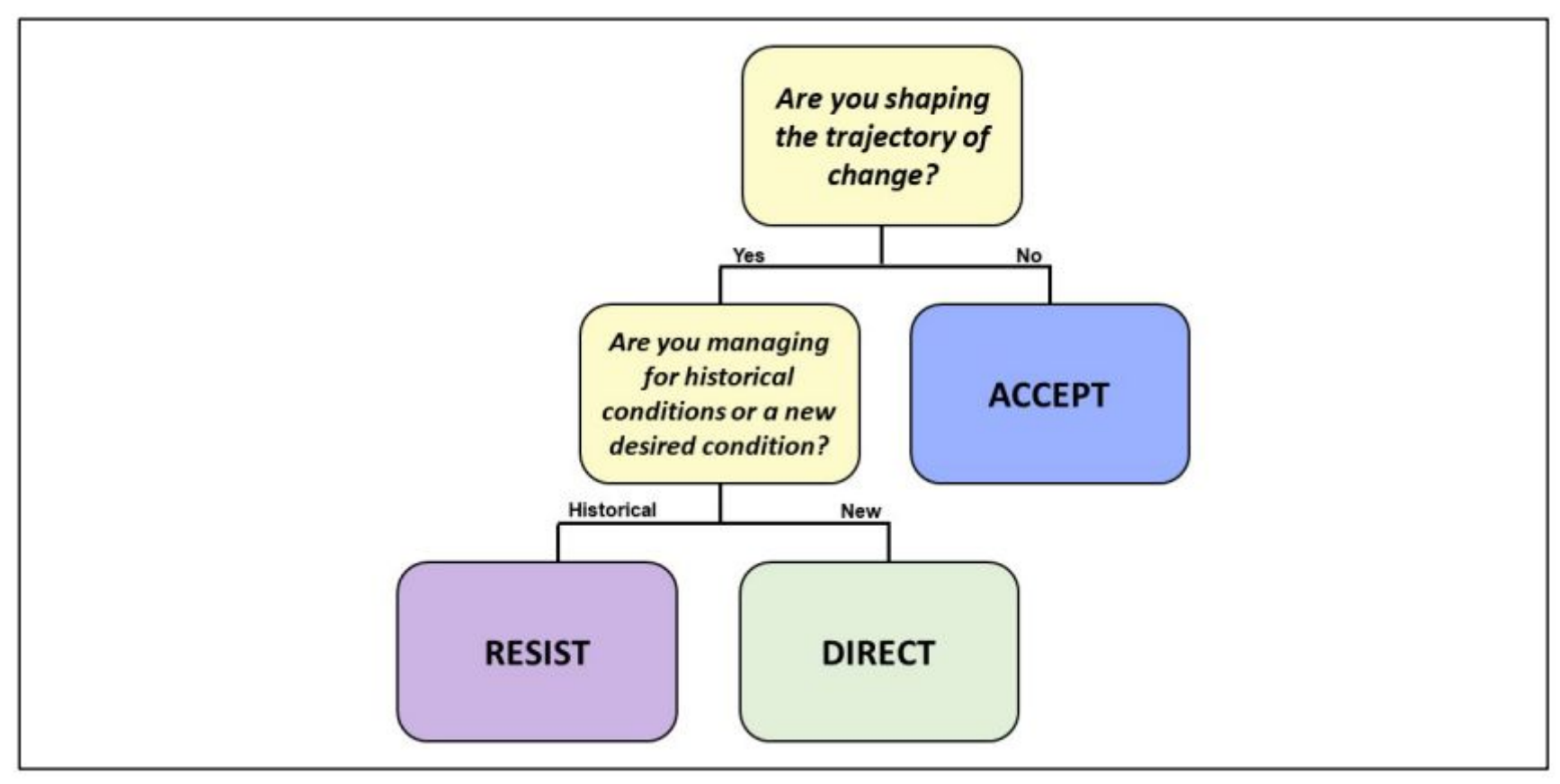
## Accept

To allow ecosystem composition, structure, processes, or function to change autonomously



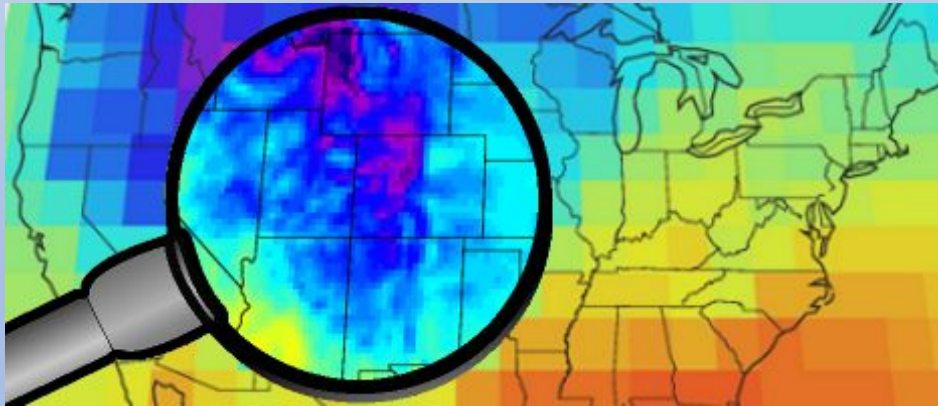
## Direct

Actively shape change in ecosystem composition, structure, processes, or function toward preferred new conditions



# Challenges to Implementing Adaptation

- Climate change is too big and too complex
- Climate information is not relevant enough (i.e. time scales)
- One-size-fits-all answers are insufficient
- Not enough real-world examples
- Often not considered “adaptation”



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# Agenda

## Resource collections, libraries and stories

- Collaborative Conservation and Adaptation Strategy Toolbox

- Forest Resource Inventory

- Water Adaptation Techniques Atlas

- After Fire: Toolkit for the Southwest

## Data, Projections and Analyses

- Grass-Cast

- Landscape scale vulnerability assessments for focal resources in the Southwest

- Climate Engine Research App

## Decision Processes

- Sierra Nevada Climate Refugia and Structured Decision-Making

- Adaptation decision processes and menus

- New Mexico Forestry Adaptation