

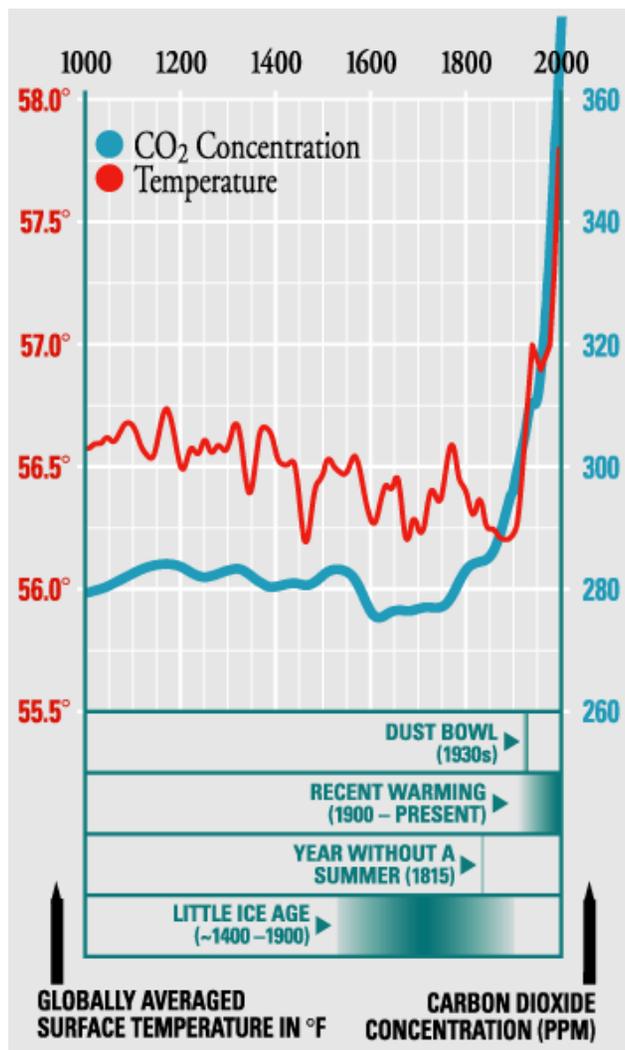
Resilient Forests
and Communities
in a
Changing Climate

Aug. 24, 2017

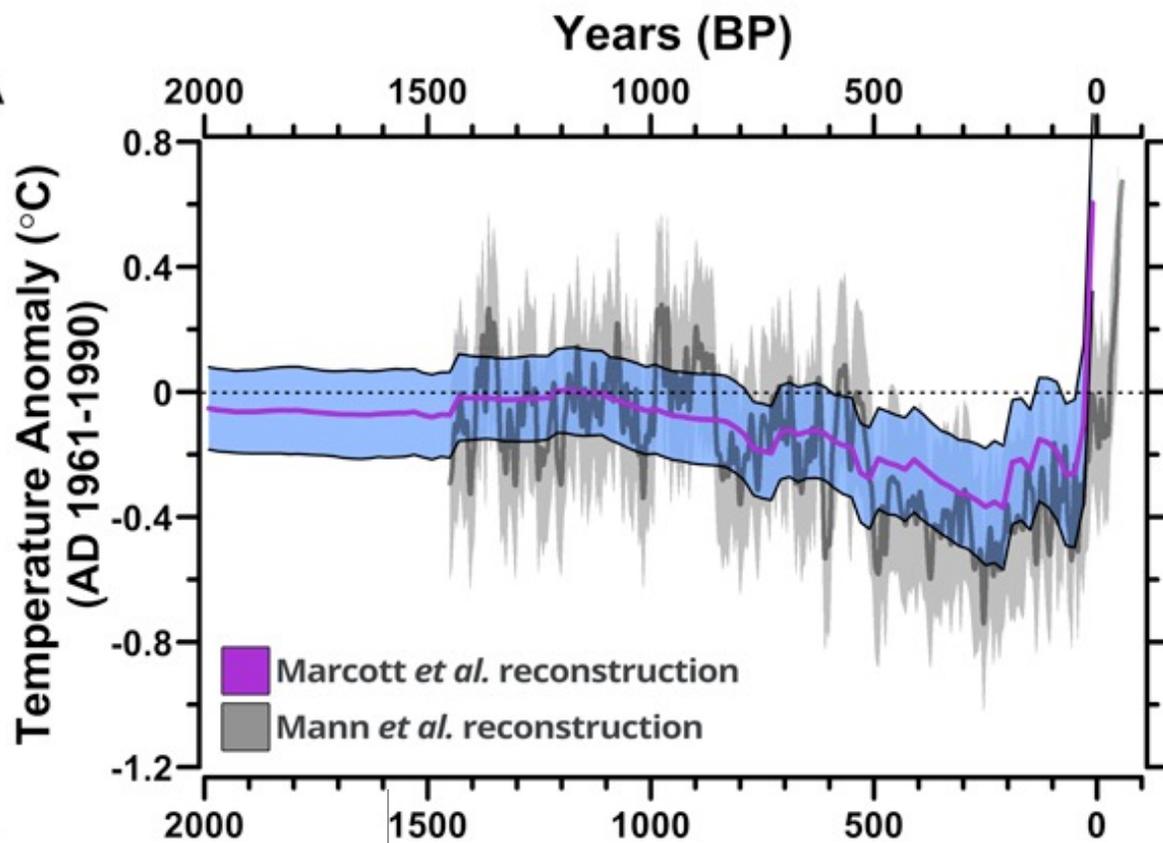


Who am I?

- **Forest Hydrologist**
- **Chair - High Country Forest Collaborative**
- **Facilitator/Lead - Watershed Wildfire Protection Group**
- **Board - Forest Health Task Force**
- **JW Associates**



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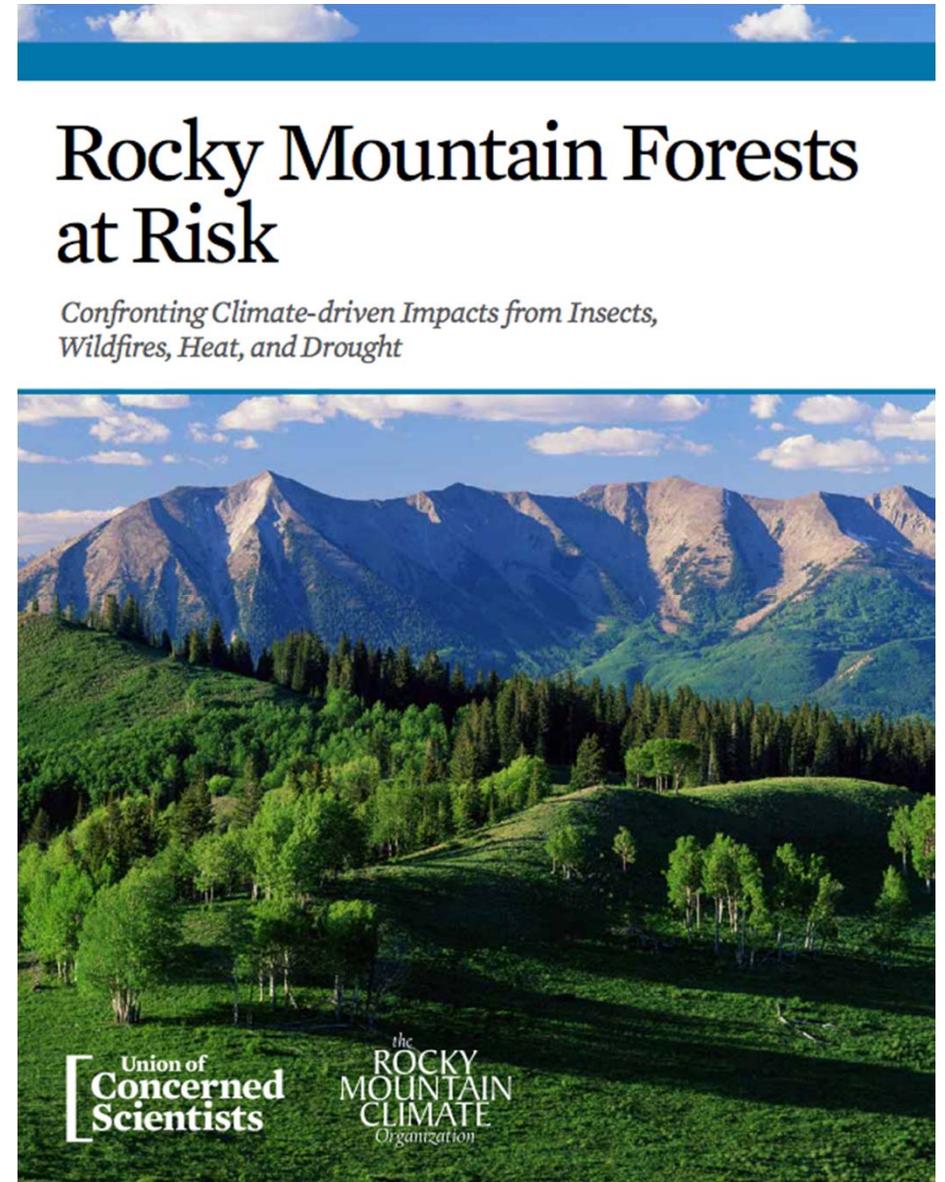
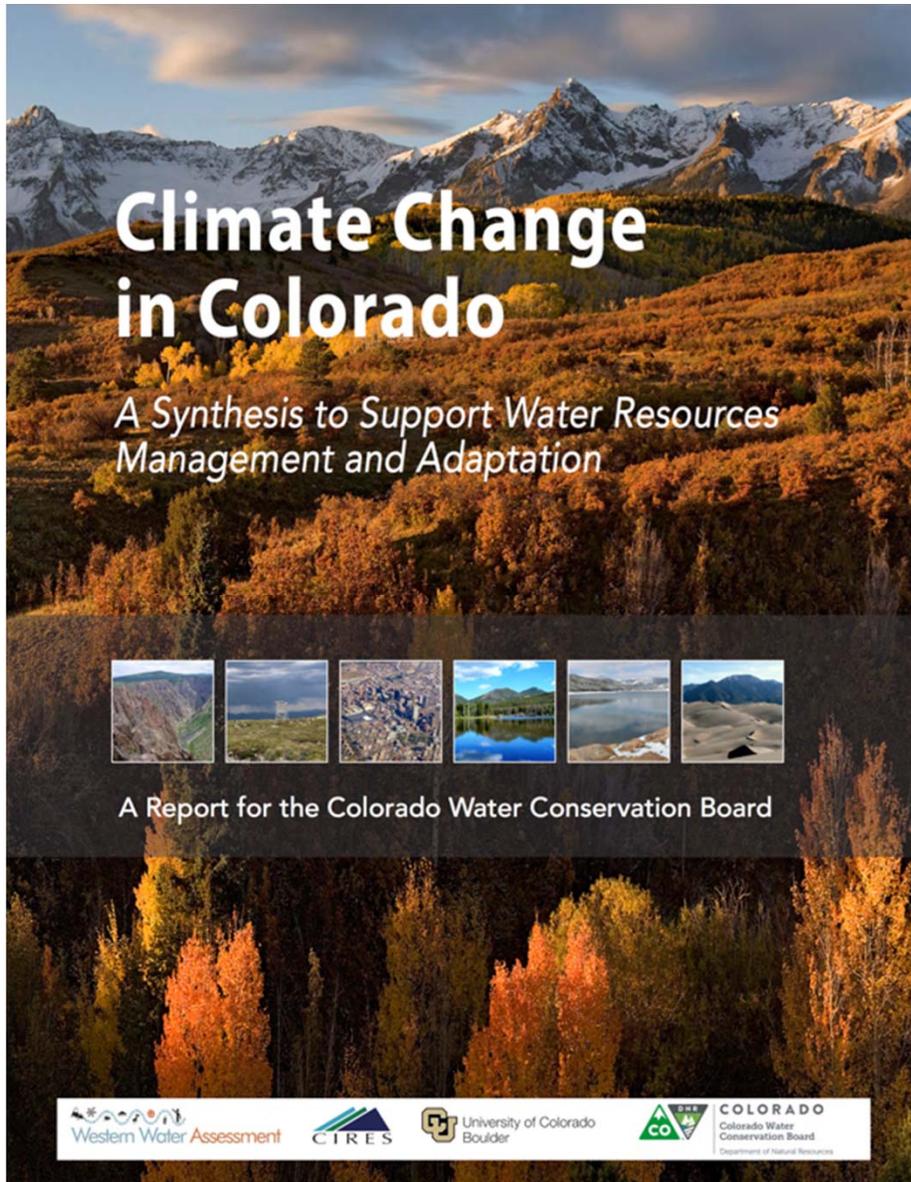


FIGURE ES-2. Projected annual temperature and precipitation changes for the western U.S. under RCP 4.5 for 2050

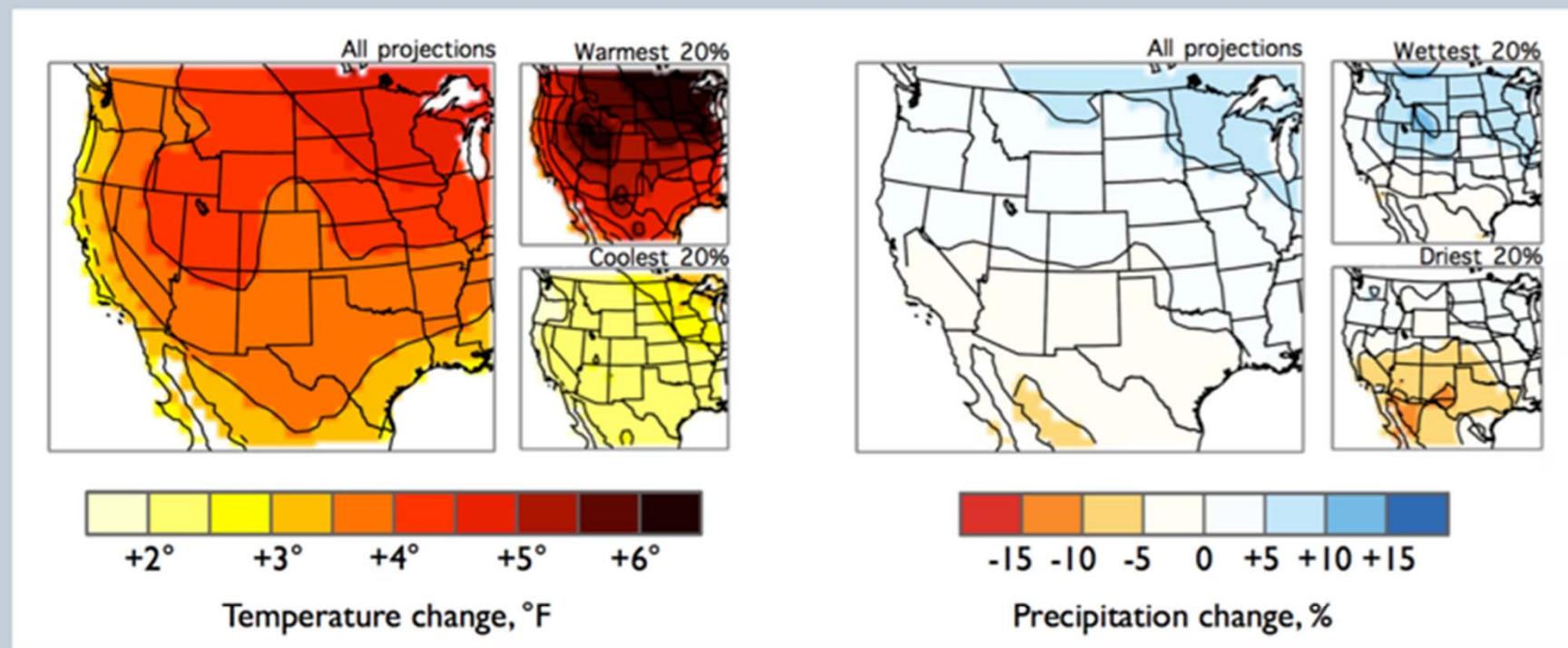
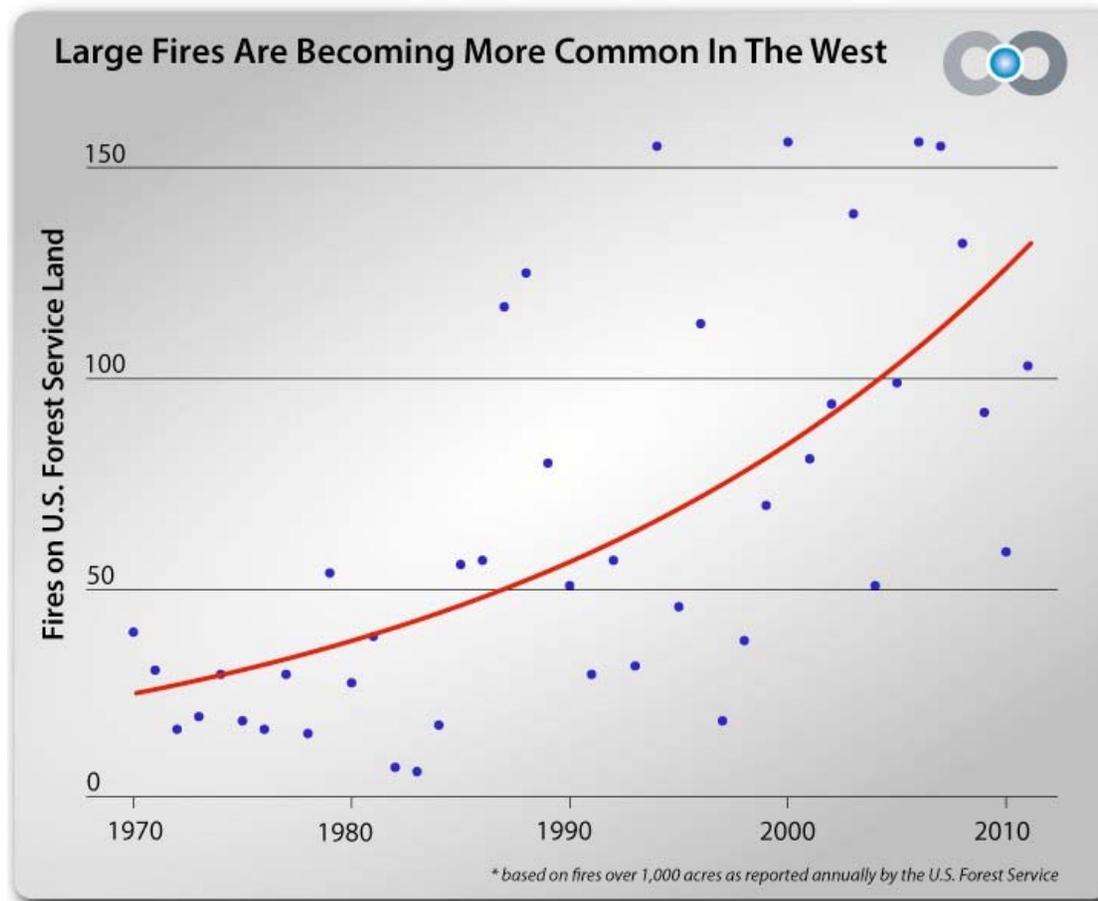


Fig. ES-2. Projected changes in annual average temperature and precipitation by 2050 (2035–2064) over the western US from an ensemble of 37 climate models under RCP 4.5, a medium-low emissions scenario. The large maps show the average change for all of the models ($n=37$), and the small maps show the average changes for the highest 20% ($n=8$) and lowest 20% ($n=8$) of the models, based on the statewide change for Colorado. For Colorado, all models show substantial warming, but there is less agreement about the direction of precipitation change. See Figure 5-1 for an expanded version that also shows seasonal changes. (Data source: CMIP5 projections re-gridded to 1-degree grid, Reclamation 2013; <http://gdo-dcp.ucllnl.org/>)

Number of Wildfires in Colorado up 150%



Fire Season is 65 days longer

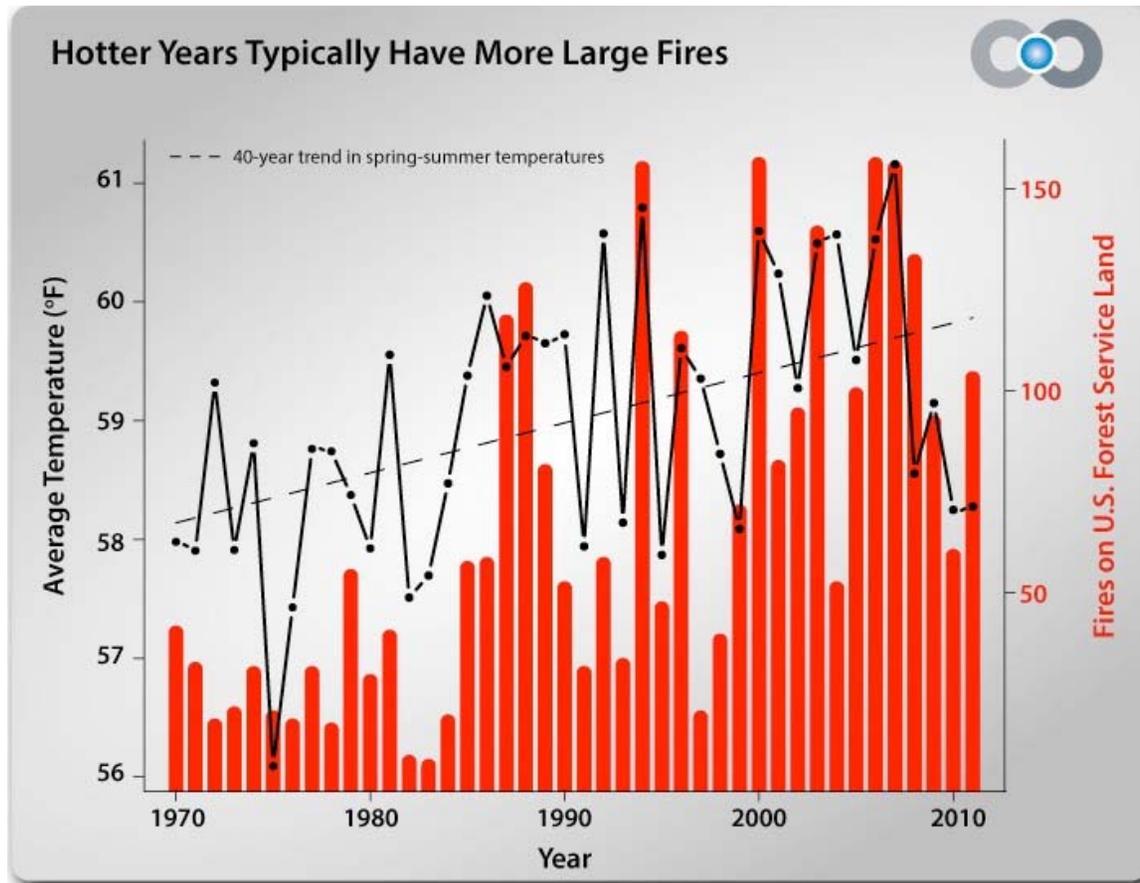
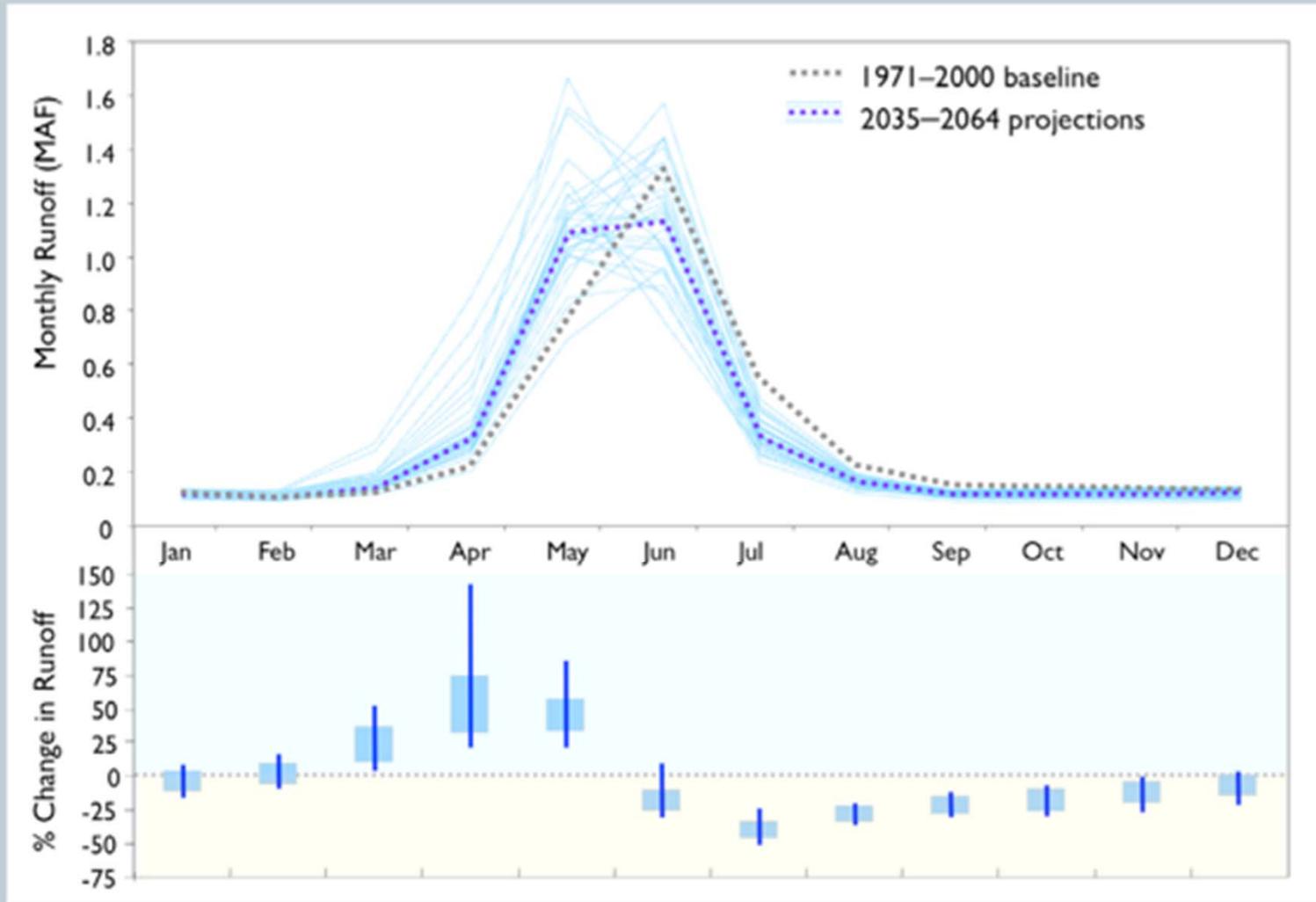
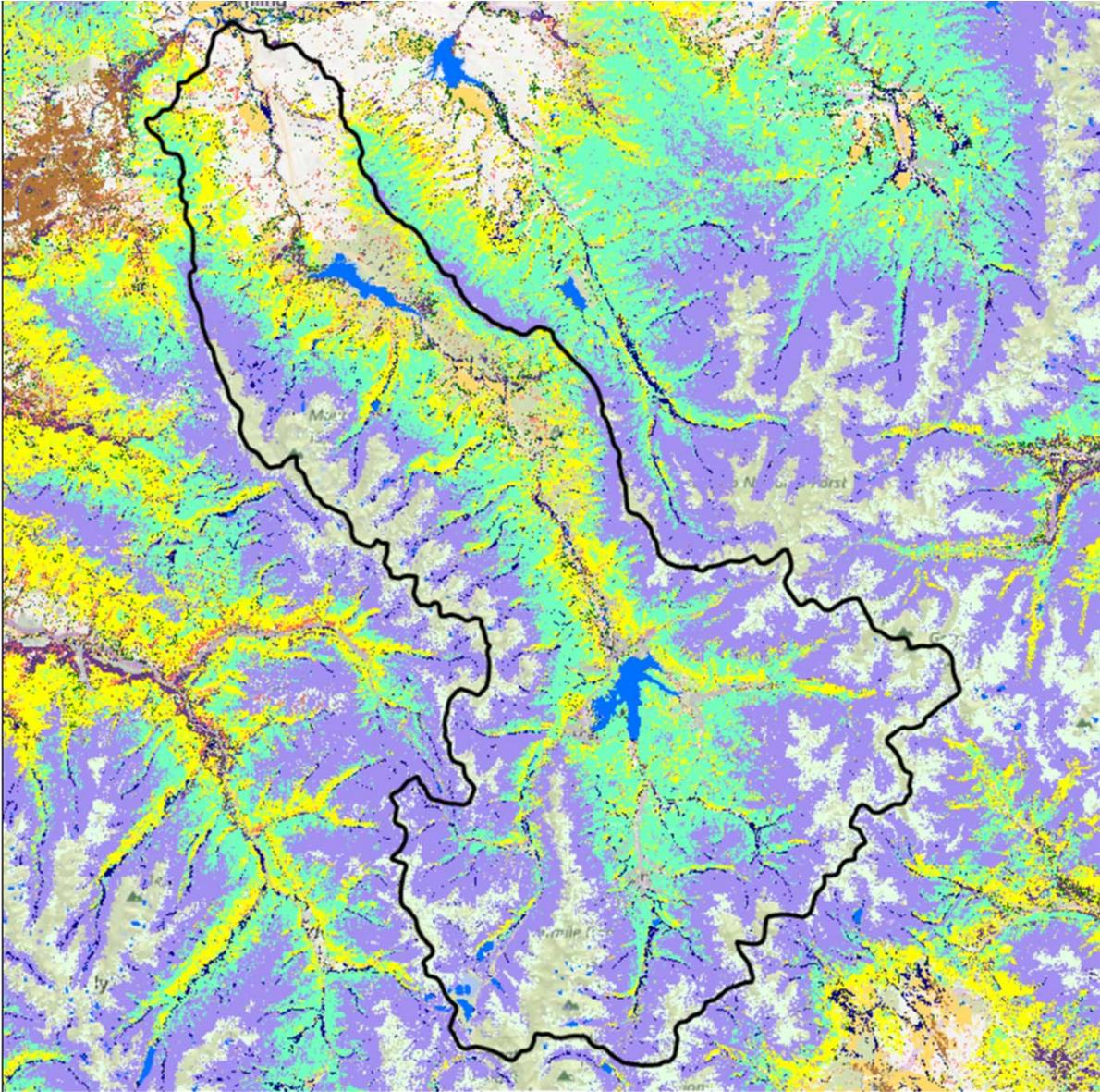


FIGURE 5-16. Projected change in monthly runoff for the Colorado River headwaters



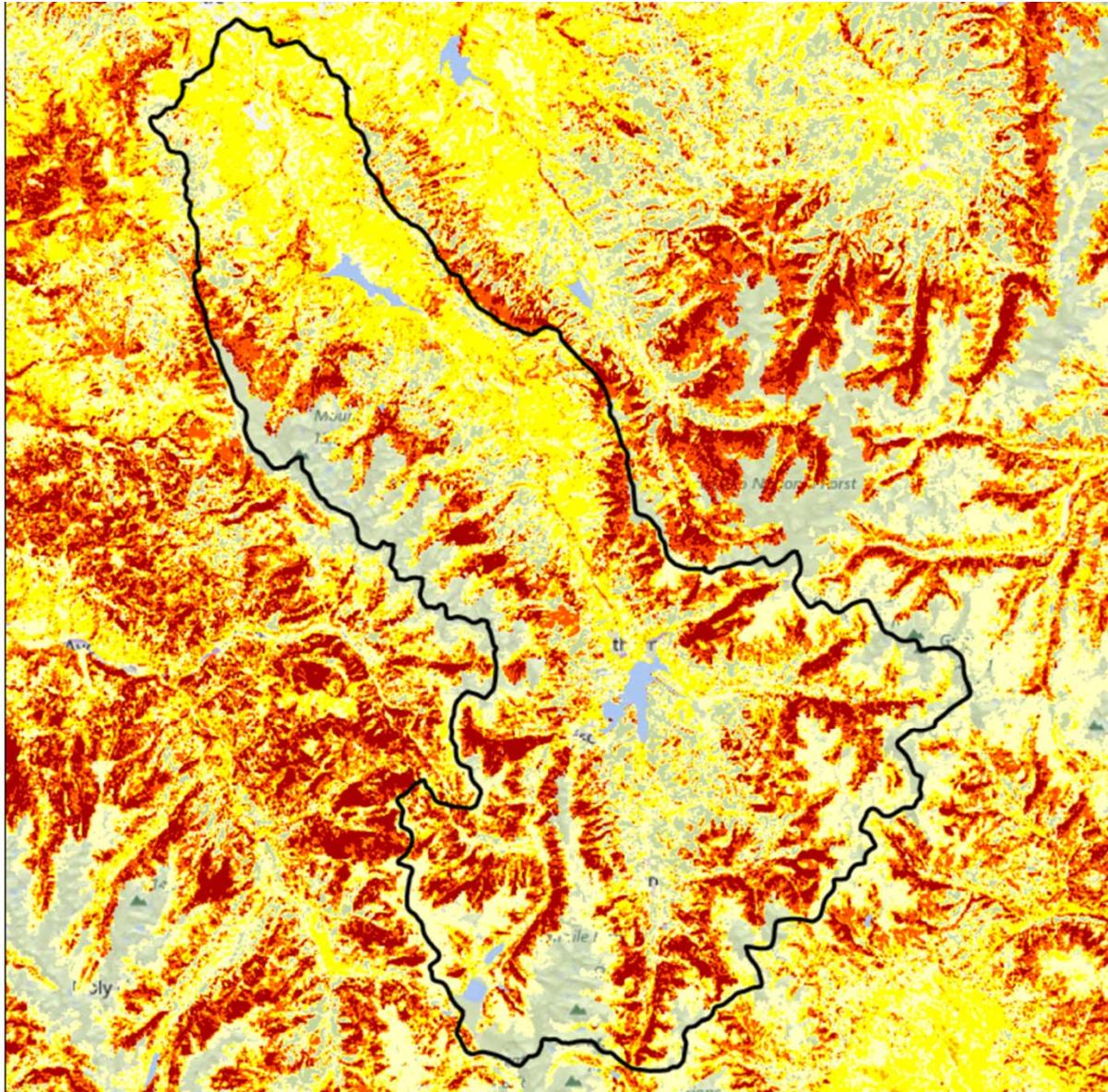


Blue1

Vegetation

- Agriculture
- Aspen
- Grassland
- Introduced Riparian
- Lodgepole Pine
- Mixed Conifer
- Oak Shrubland
- Open Water
- Pinon-Juniper
- Ponderosa Pine
- Riparian
- Shrubland
- Spruce-Fir
- Urban & Community





Blue1

Characteristic Flame Length

- Non-burnable
- 0 - 1 ft
- 1 - 4 ft
- 4 - 8 ft
- 8 - 12 ft
- 12 - 25 ft
- 25+ ft



Colorado Wildfire Risk Assessment
<http://www.coloradowildfirerisk.com>

FIGURE 4. Projected Changes in Average Area Burned with a 1.8°F Rise in Average Temperature

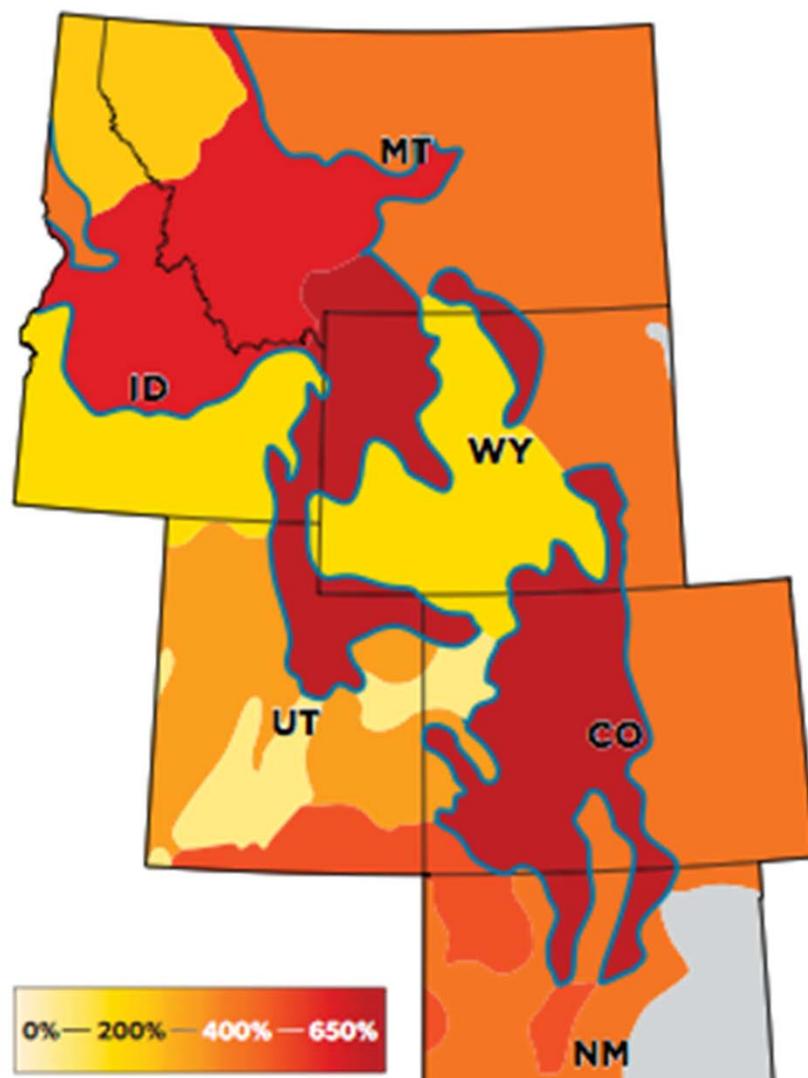
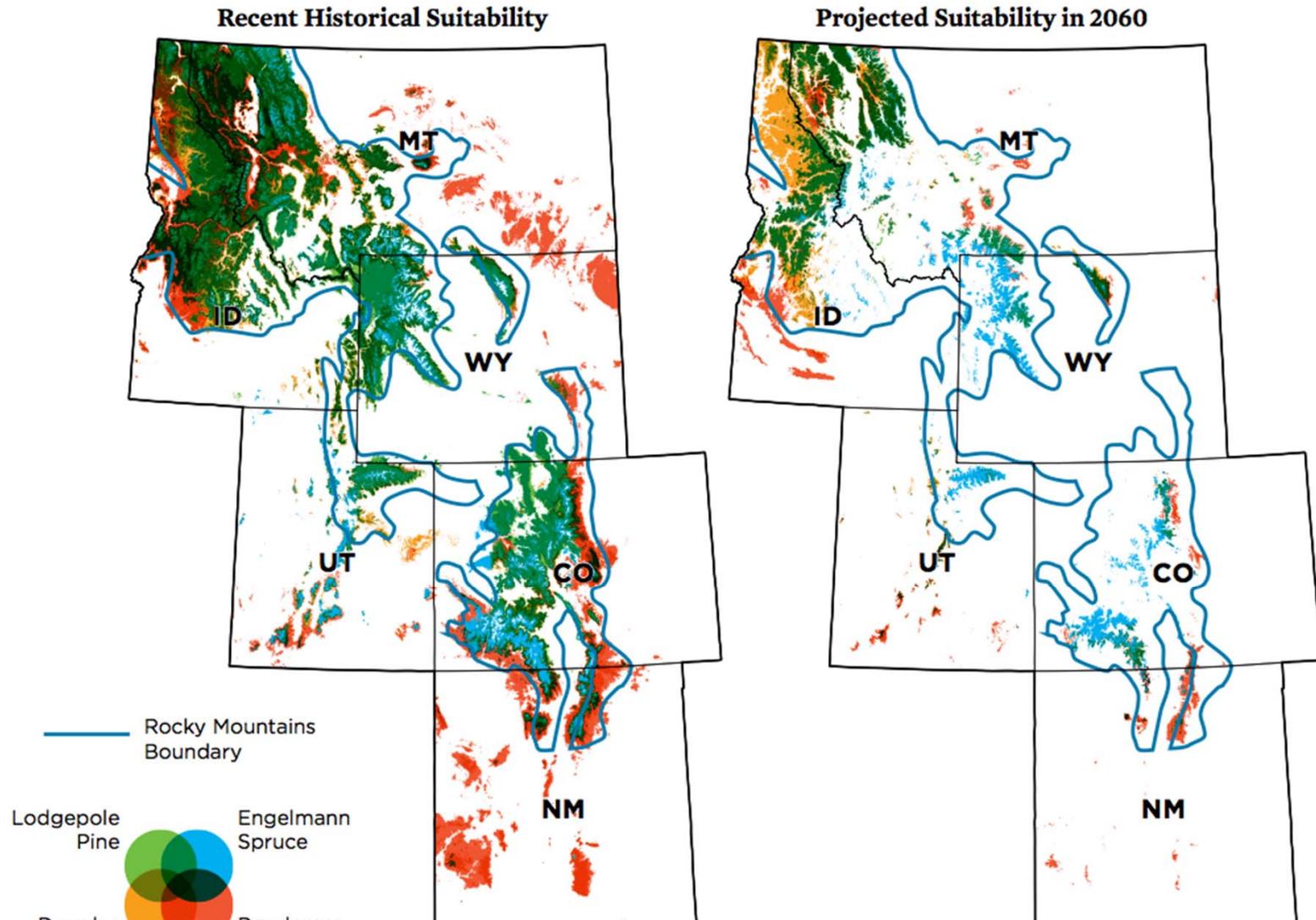


FIGURE 5 AND TABLE 1. Projected Changes in Suitable Ranges for Key Rocky Mountain Tree Species



Resilience and Stability of Ecological Systems, Holling: 1973

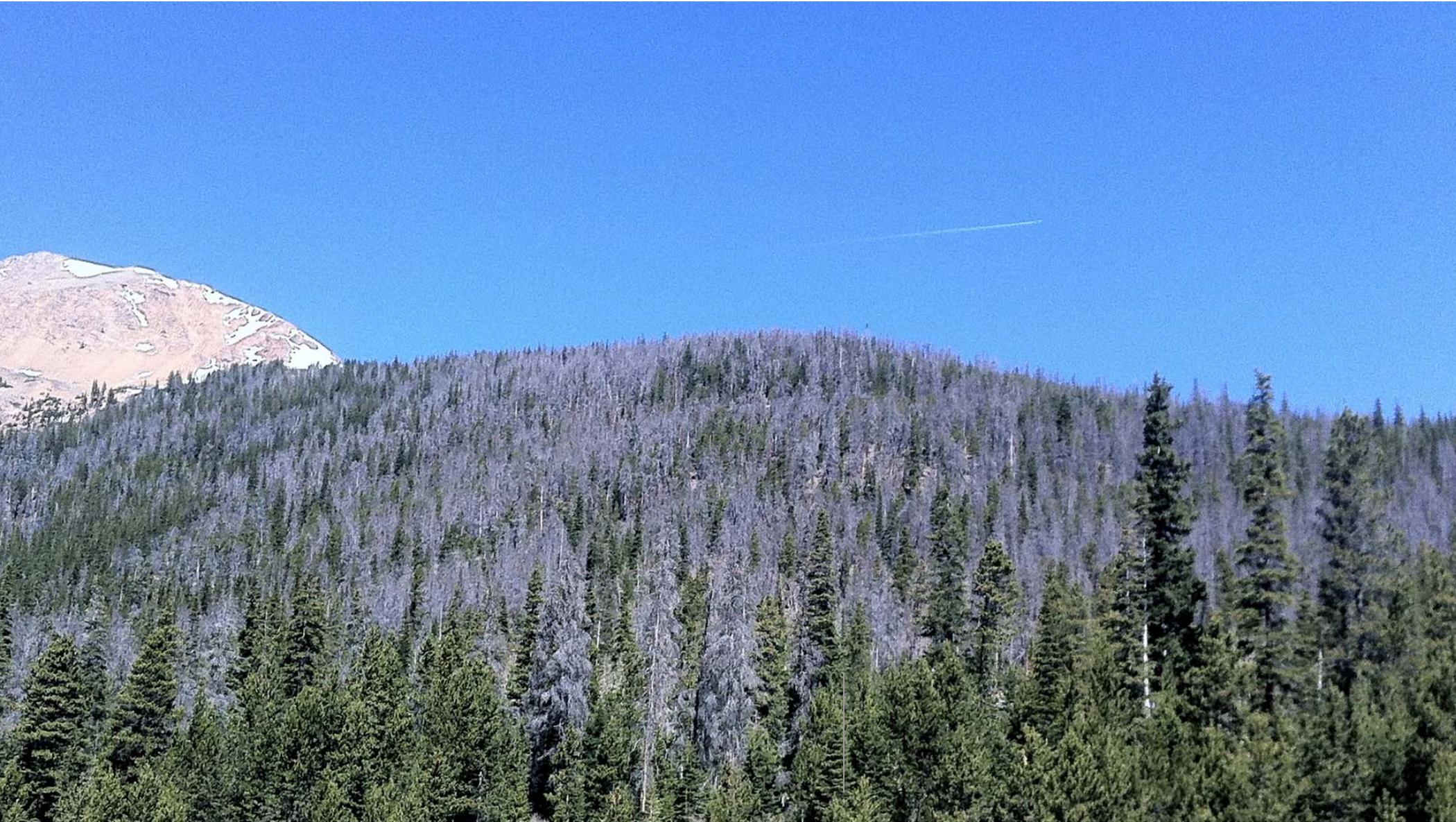
- the resilience of an ecosystem = the measure of its ability to absorb changes and still exist.



Dillon Reservoir

Why?

- Large area of mature lodgepole pine
- Drought
- Higher low winter temperatures
- Earlier spring, longer summer



What are Resilient Forests?

- Diversity (ages and species)
- Openings, meadows, etc.
- Functional riparian areas and floodplains









What are we doing?

- Identifying hazards and values
- Using collaborative groups to agree on actions
- Advocating for funding, policies, and agency directions

How to get involved

- **High Country Forest Collaborative**
highcountryforest.org
- **Watershed Wildfire Protection Group**
csfs.colostate.edu/forest-management/watershed-management
- **Forest Health Task Force**
summitpinebeetle.org
- **JW Associates**
jw-associates.org

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