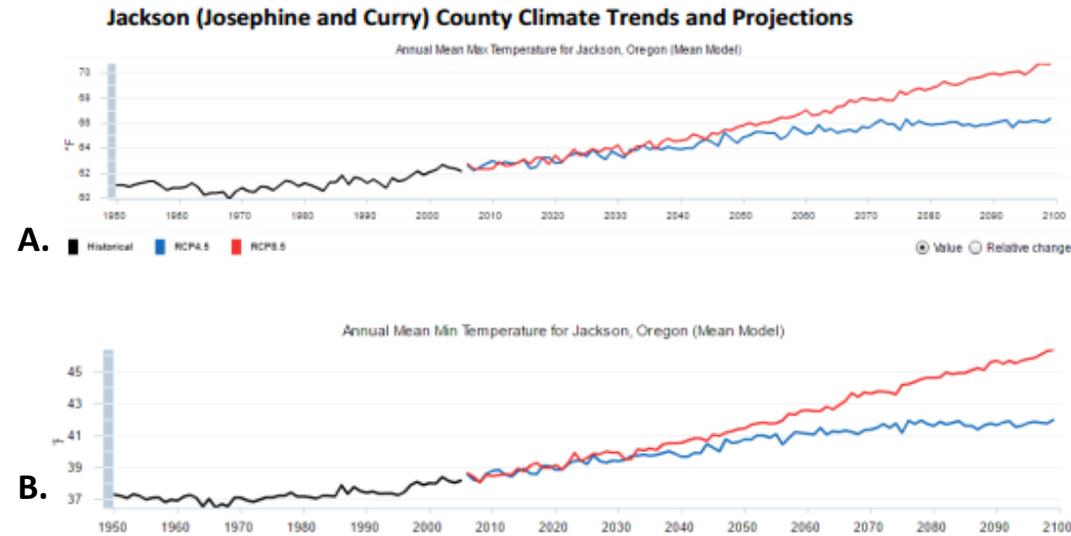


# Rogue Basin Watershed Climate Trends and Projections (compared to 1950-2005 average)

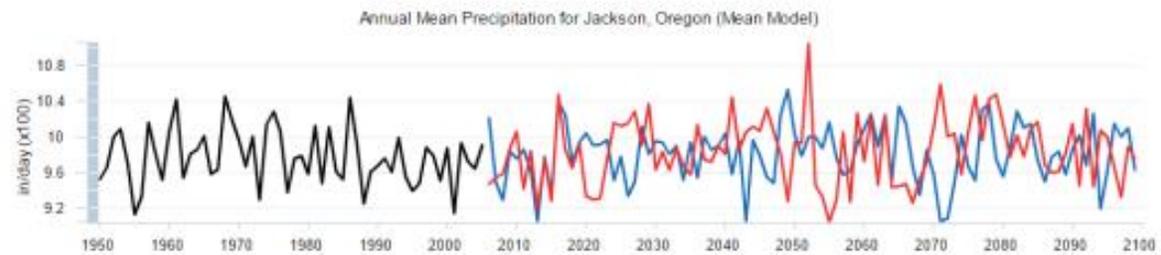
Jackson County TEMPERATURE <sup>1</sup>	2050-74	2090-99
Average Annual Increase	6°F	9.4°F
Average Summer Increase (June-Aug)	7°F	12°F
Average Winter Increase (Dec-Feb)	5°F	8°F

Average temperature trends/projections for Jackson County are the average of the max (Figure A.) and the min (Figure B.) data. These show a substantial increase under the “Business as Usual (BAU)” scenario assuming accelerating fossil fuel use and greenhouse gas emissions. Projected BAU 2100 increase: Jackson Co: 9.4°F; Josephine Co: 8.8°F; Curry Co: 8.3°F

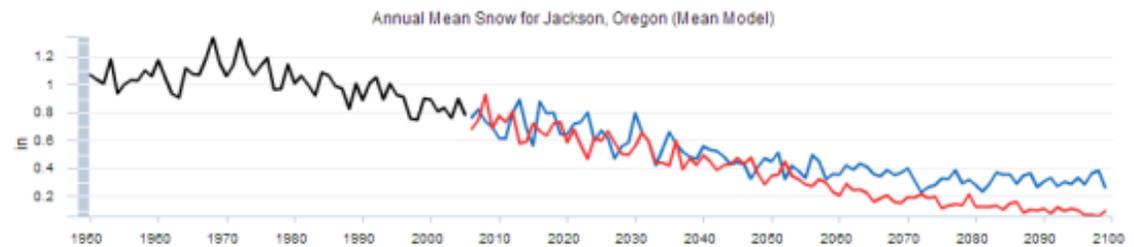


Jackson County PRECIPITATION <sup>1</sup>	2050-74	2090-99
Average Annual Change	0"	0.4"
Summers (June-Aug)	Drier	Drier
Winters (Dec-Feb)	Wetter	Wetter

Precipitation trends & projections through 2100 show much variability, with wetter winters and dryer summers, and rain falling in heavier downpours.



However, little/no overall change is expected from current approximate total annual rainfall : 35" Jackson; 62" Josephine; 116" Curry.



Snow Water Equivalent displays decreasing trend and projection. This has already decreased and will likely drop substantially by the end of the Century. Jackson Co. already down 15-20%, by 2100 80 – 90%; Josephine Co. already down 20-25%, by 2100 down ≈ 100%, Curry Co. already down ≈ 30%, by 2100 down ≈ 100%.

Jackson County SNOW WATER EQUIVALENT <sup>2</sup>	2035-45	2090 - 99
Average Annual Reduction	60 - 65%	80 - 90%
More rain on snow events due to increasing temperatures		
Reduced Runoff in late summer/fall affecting domestic, commercial, and irrigation needs		

## WILDFIRE<sup>2</sup>

Likely increase in severity and frequency due to:

- Higher Temperatures
- Earlier Spring Melt
- Decline in snowpack
- Longer Drought periods

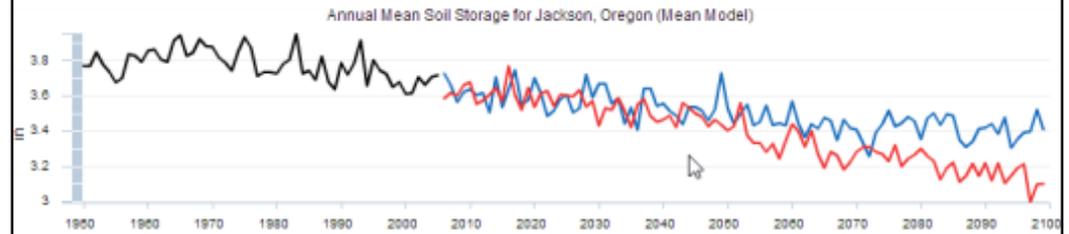
## NATIVE TERRESTRIAL SYSTEMS<sup>2</sup>

- Likely shift to more fire adapted plant communities
- As native species decline, non-native, invasive, and disease/pathogenic species may increase
- Due to increasing drought conditions, species with limited dispersal capacity are most at risk. Also at risk are old growth and legacy trees and the species they support, especially amphibians.
- Likely disruption in synchronicity of the food cycle between insect hatching and bird clutch hatching with migratory birds at higher risk
- Better climate for Bark beetle growth and development will likely increase their threat

## SEVERE WEATHER<sup>2</sup>

- Likely increase in weather variability due to increases in length and severity of wet/dry cycles
- More days over 90-100°F
- More heavy rainfall days
- Transition from high elevation snow to lower elevation rainfall increasing flash flood frequency especially in winter and spring

## SOIL STORAGE



As temperature rises and precipitation remains constant, soil moisture decreases. By the end of the Century, this may decrease from the late 20th Century average: Jackson Co. ≈ 22% ; Josephine and Curry Counties ≈ 13%.

## VEGETATION

- Community shifts to more drought tolerant species (e.g. Oaks)
- High elevation species decline (spruce/fir/hemlock)
- Likely reduction in Douglas Fir communities
- Likely increase in grassland and scrubland conditions
- Likely negative impact on many critical tree species

## NATIVE AQUATIC SYSTEMS<sup>2</sup>

- Increase in soil erosion causing sediment build-up in streams
- Higher water temps reducing dissolved oxygen levels compromising fish species; potentially increased bacteria and diseases
- Modified streamflow patterns with earlier and lower peak flow
- Earlier aquatic insect emergence, affecting food web
- Cold water species unable to survive warmer temps
- Increase and expansion of non-native and pathogen species