Climate Change Projections for the Mid-21st Century in the Crown of the Continent

Summary of a Climate Change Studies Internship with USDA Forest Service, Northern Region

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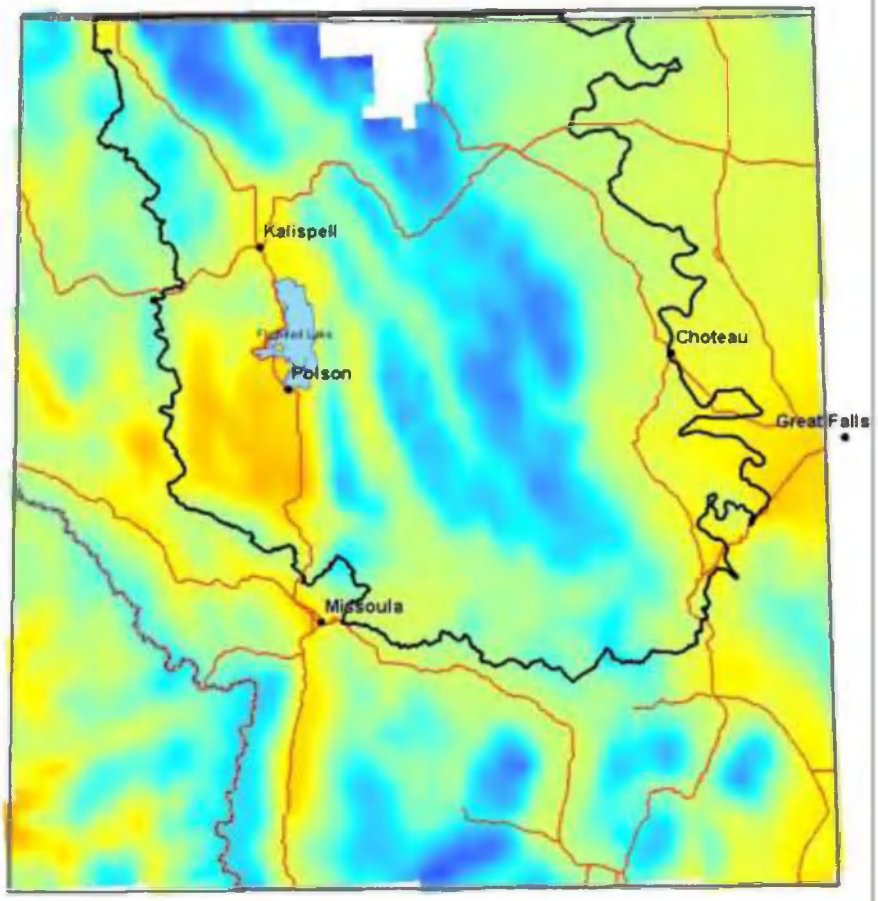
Gridded Climate Datasets

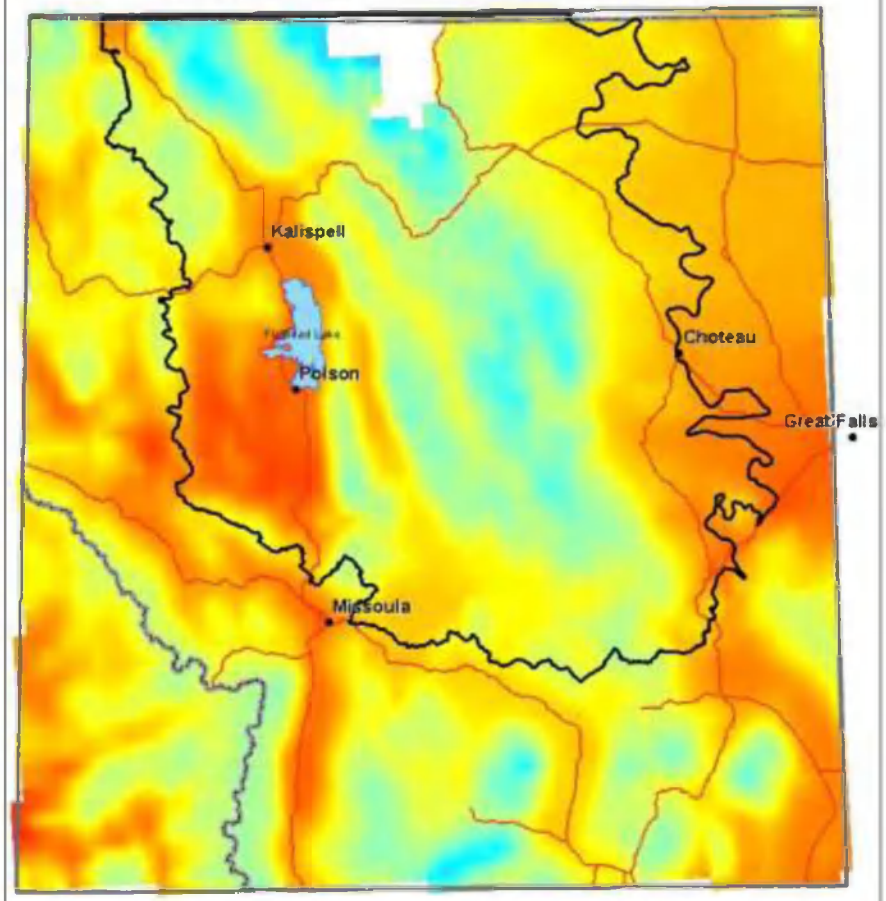
- Forest Service Partnership with University of Washington's Climate Impacts Group (CIG)
- CIG Publicly Available Gridded Data
  - 5x5 km grid cell size
    - Historic (1916-2006)
    - Mid-Century Projection (2030-2059)
      - Ensemble Mean GCM (10-model average)
    - Change between Projected and Historic
- *Crown of the Continent Variables Analyzed*:

-Average Temp (Seasonal & Annual)
-Minimum Temp (Seasonal)
-Maximum Temp (Seasonal)
-Average Precip. (Seasonal & Annual)
-Combined Flow (Seas.)
-Snow-Water Equivalent
-Snowpack Vulnerability

Historic Average Annual Temperature (1916-2006)



Mid-Century (2030-2059) Ensemble Mean
Projected Average Annual Temperature



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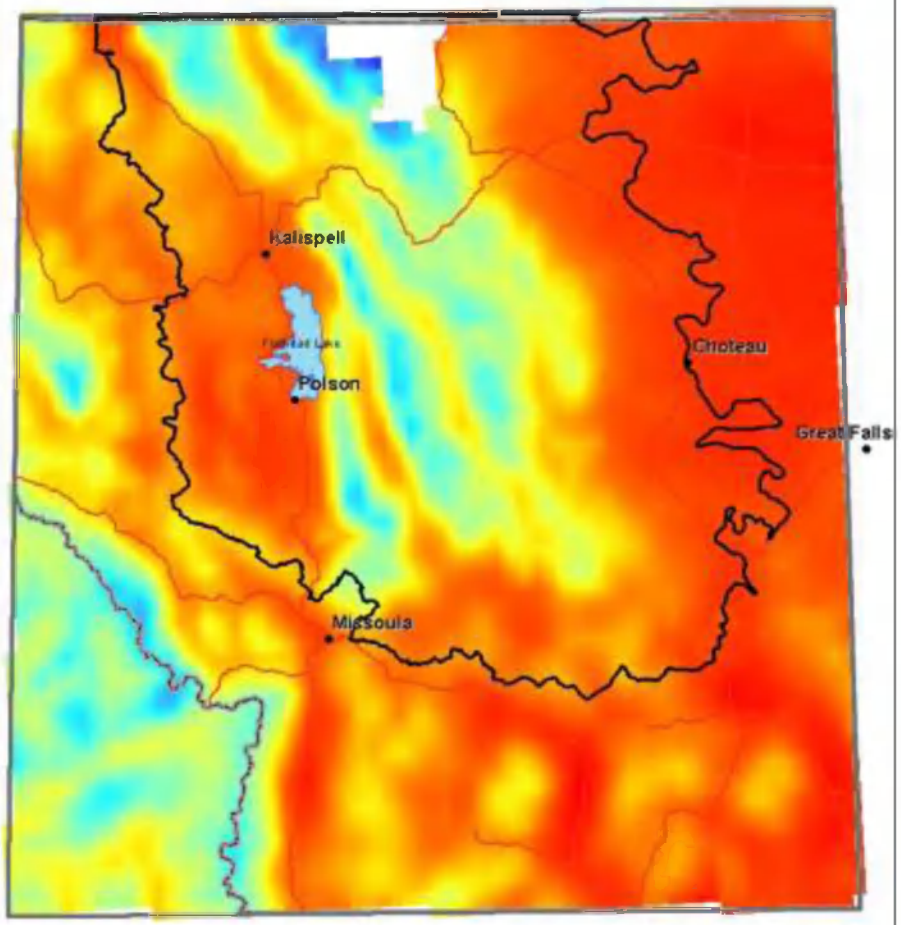
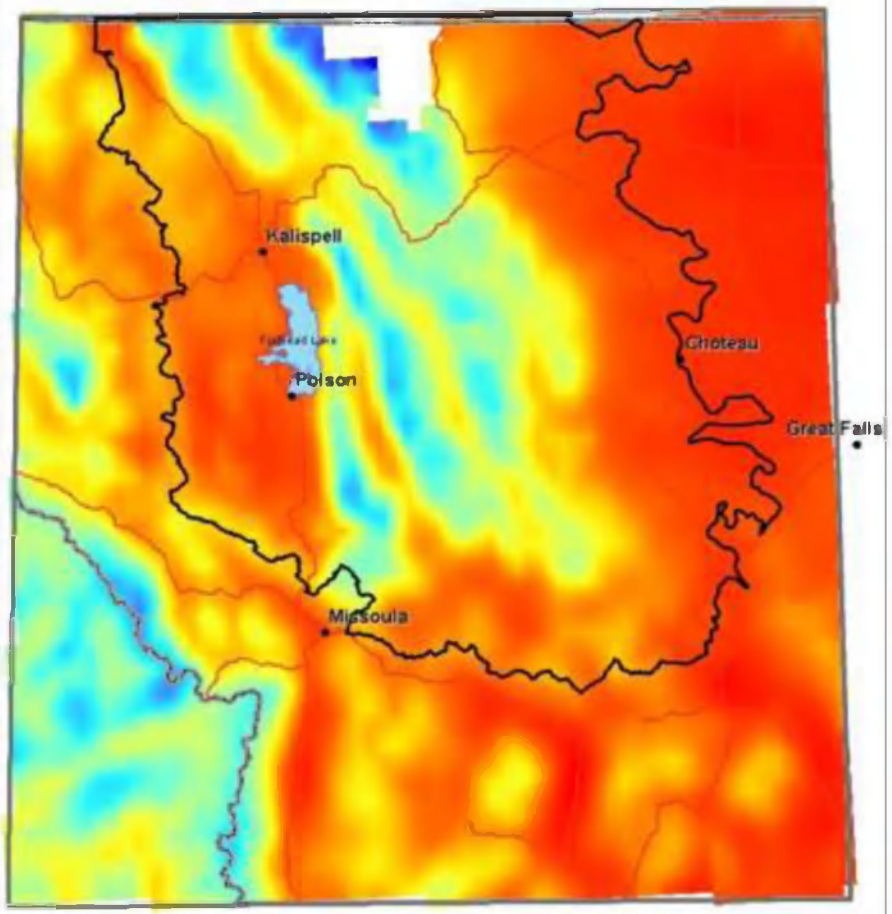
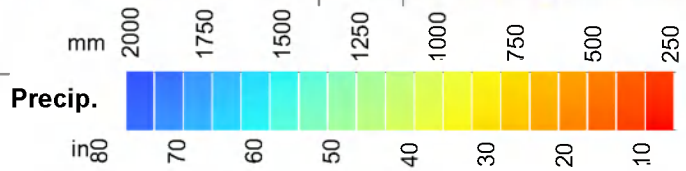
Climate models project increases in surface air temperatures in the COC for the mid-21st century.

Historic Average Annual Precipitation (1916-2006)



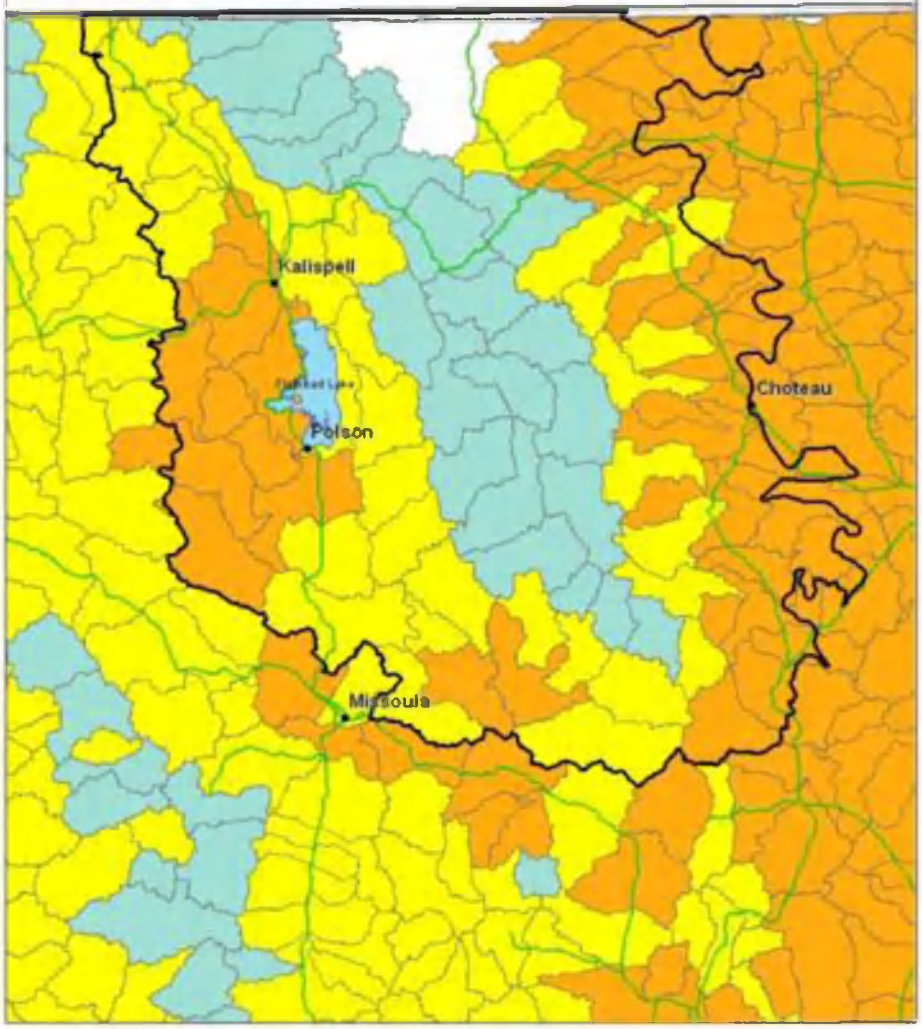
Mid-Century (2030-2059) Ensemble Mean
Projected Average Annual Precipitation



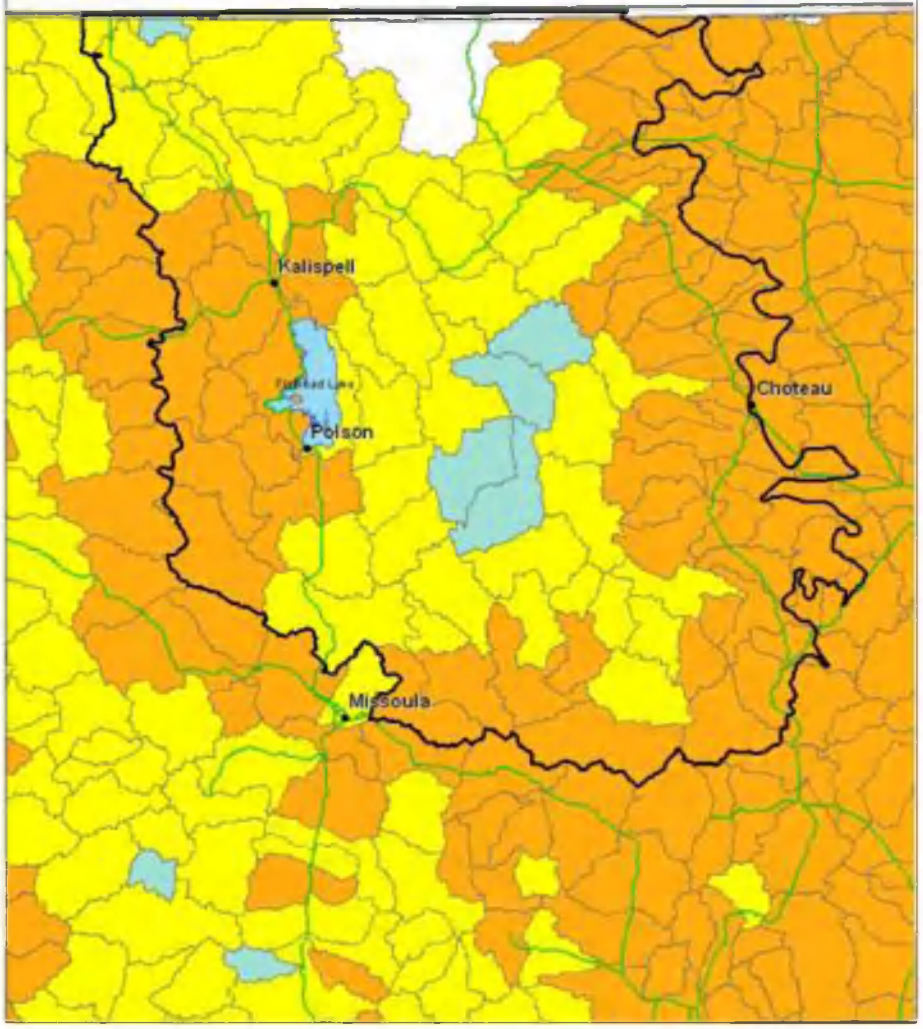


Climate models project increases in average annual precipitation, mainly in mid- to high-elevation areas of the COC.

Historic Watershed Snowpack Vulnerability (1916-2006)



Mid-Century Projected
Watershed Snowpack Vulnerability
(2030-2059)



Rainfall Dominant Watersheds

Transitional Watersheds

Snowmelt Dominant Watersheds

Many transitional watersheds become rain dominant and most (77%) snow dominant watersheds in COC become transitional in the 2040 scenario.

Special Thanks To:

Jim Morrison
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Climate Impacts Group