

# Update on the status of creating climate projections for watersheds

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*River Herring Technical Expert Working Group*

*Climate Change Subgroup Conference Call and Webinar*

*Thursday August 14, 2014*



<http://www.brr.cr.usgs.gov/mows>

# Modeling of Watershed Systems

- Research question: What is the effect of projected climate and land use changes on watershed hydrology?
- Method: Develop and apply physically based, watershed scale, computer models to different climate and land use scenarios.

# Climate Change

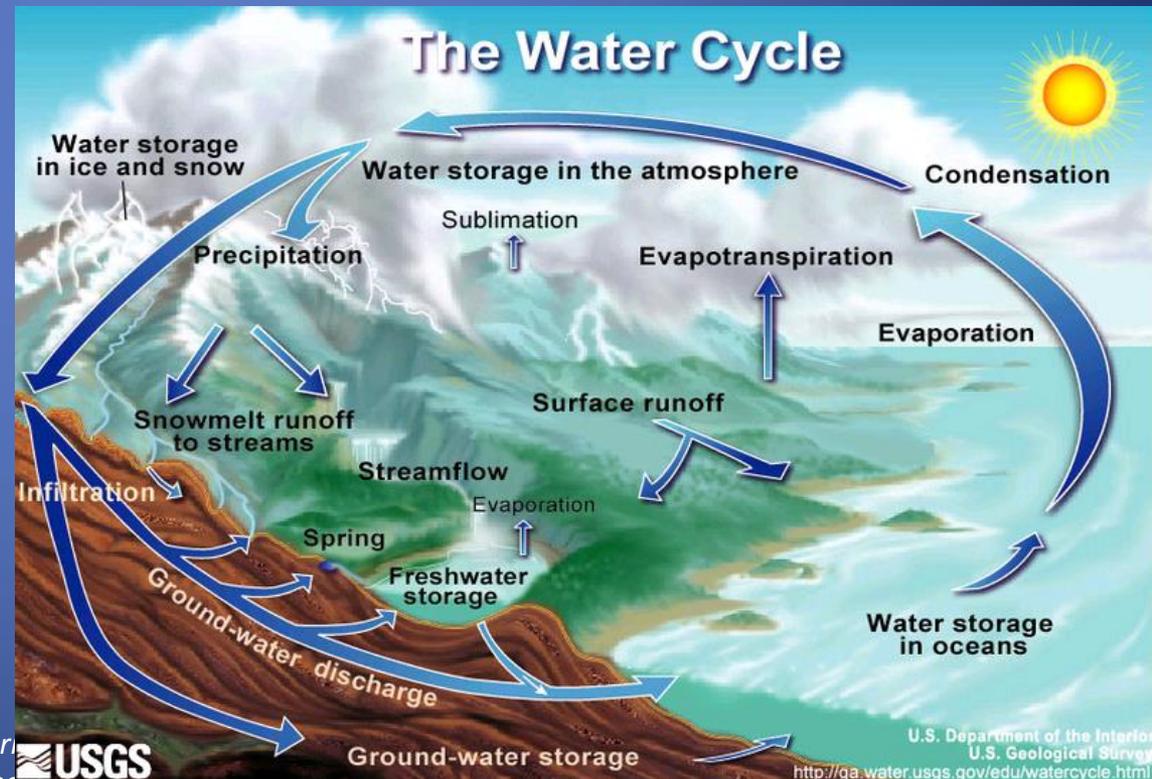
- Long term trends in precipitation, temperature, etc.
- Cyclical trends (ENSO, PDO, NAO)
- Seasonal shifts (rain/snow)
- Day-to-day patterns not reflected in the “usual statistics” (e.g. consecutive no precip days)

# Hydrologic effects

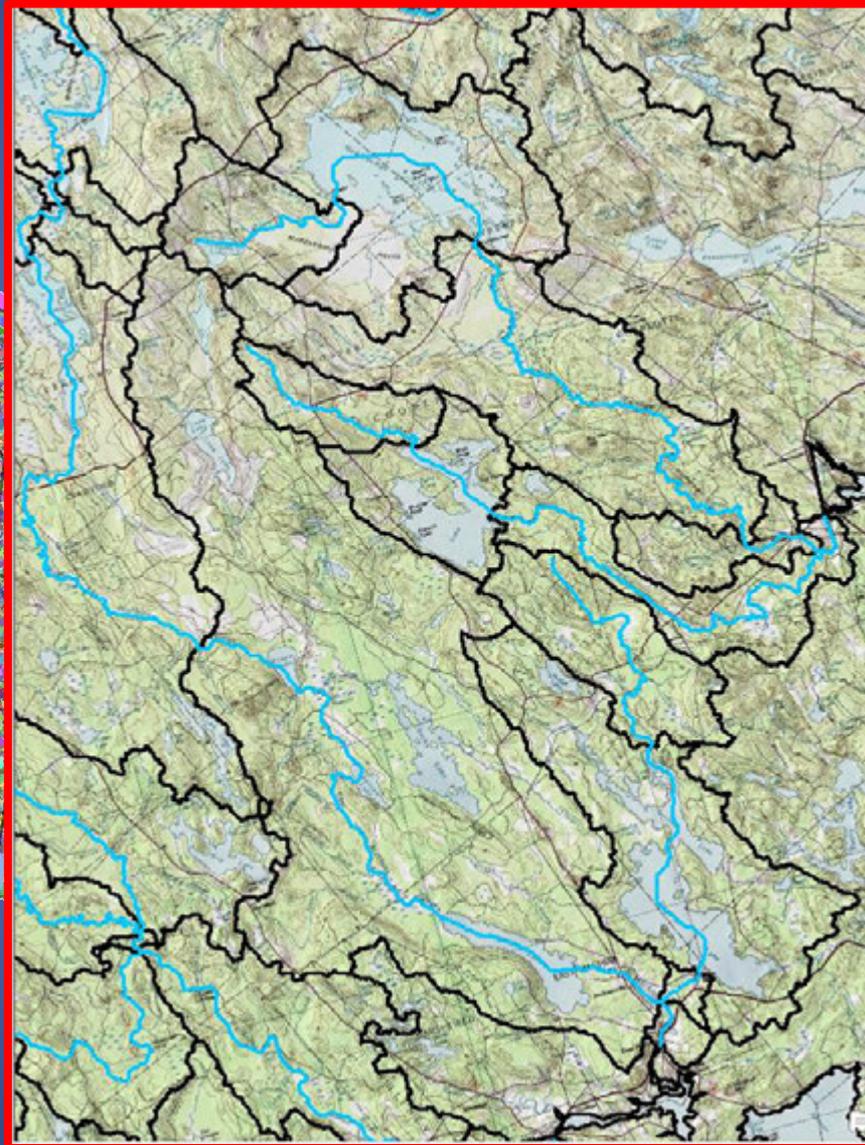
- Water availability
- Changes in timing and source of flow
- Subsurface conditions
- Stream temperature
- Uncertainty
- Local, regional and national scale

# Land Use Change

- Urbanization: impervious area vs. depression storage
- Vegetation: evapotranspiration, interception, insolation
- Big events: wild fire, forest insect blight
- Water resources management: reservoirs, canals, return flows, consumptive use



# MOWS Geospatial Fabric

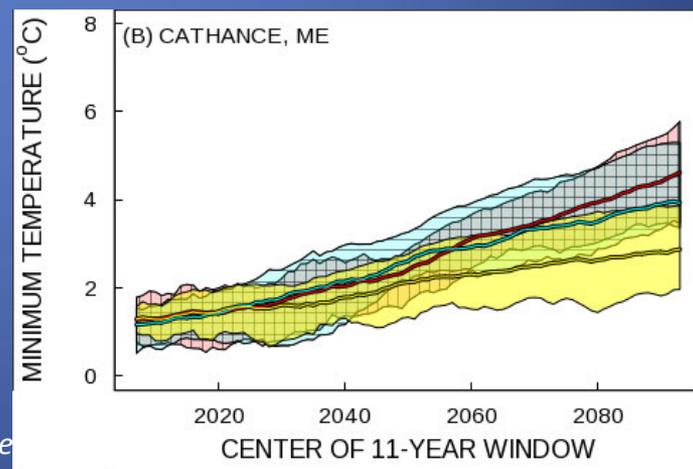
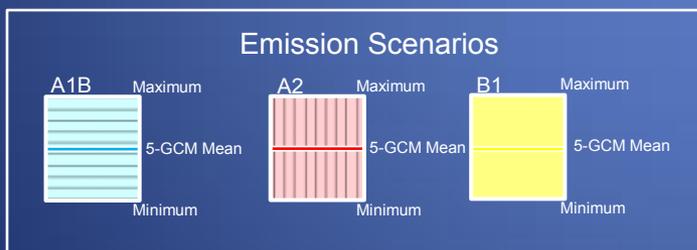
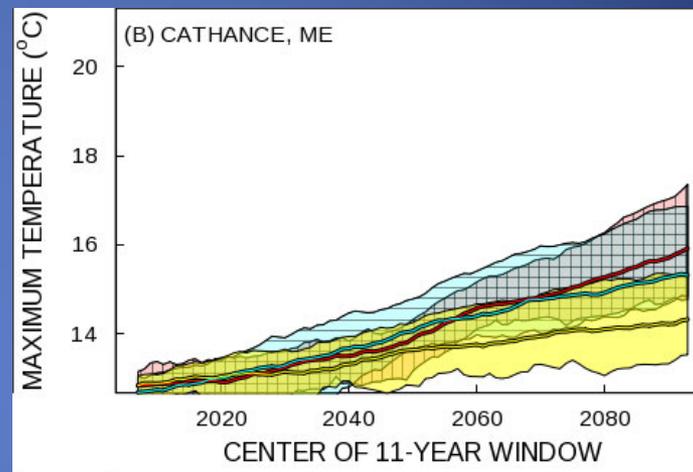
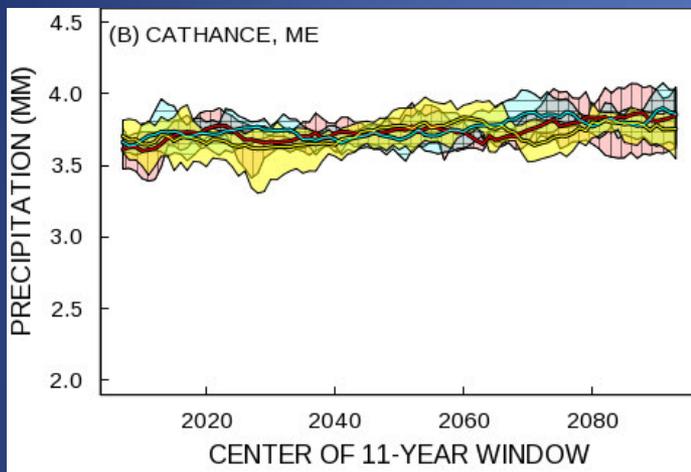


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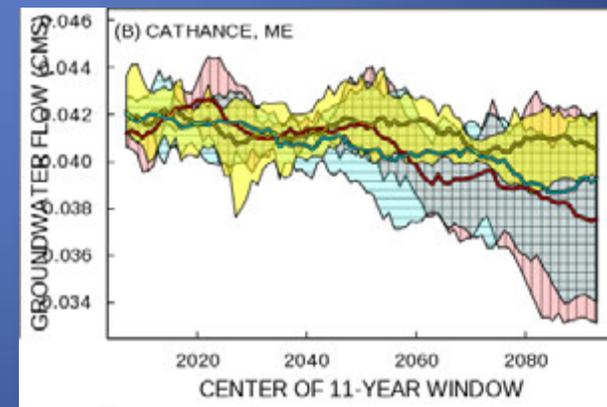
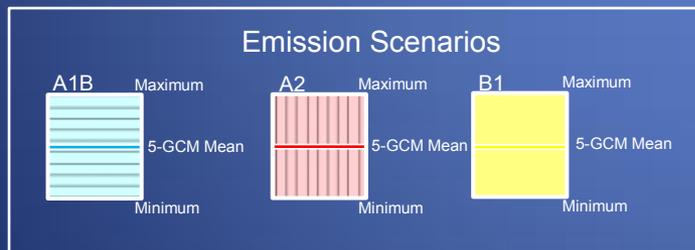
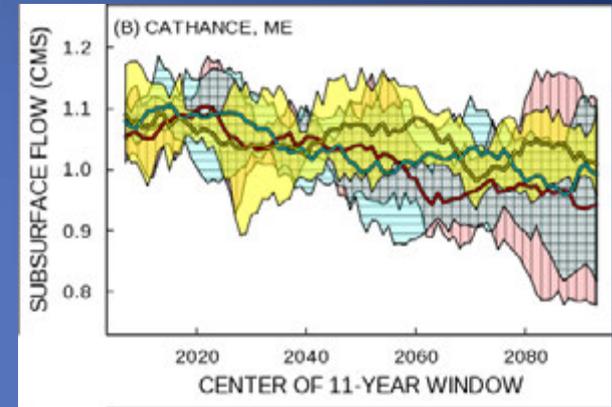
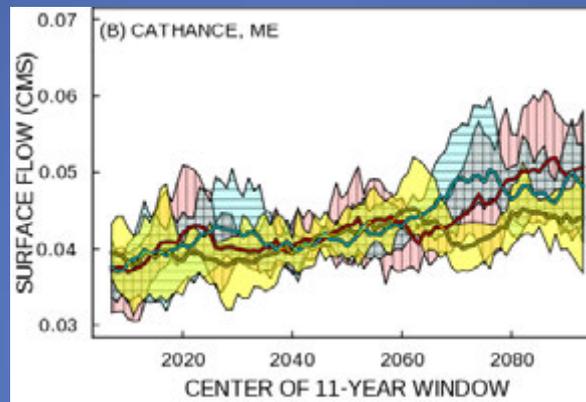
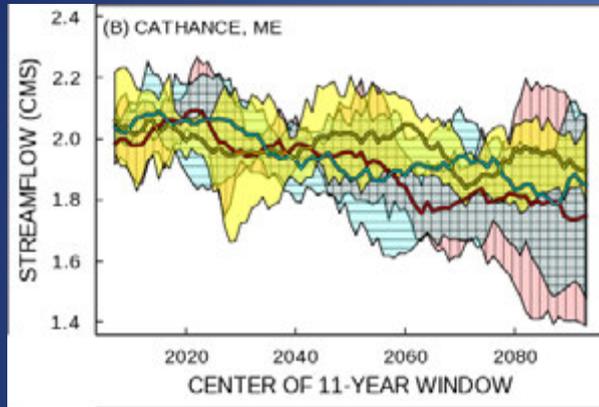
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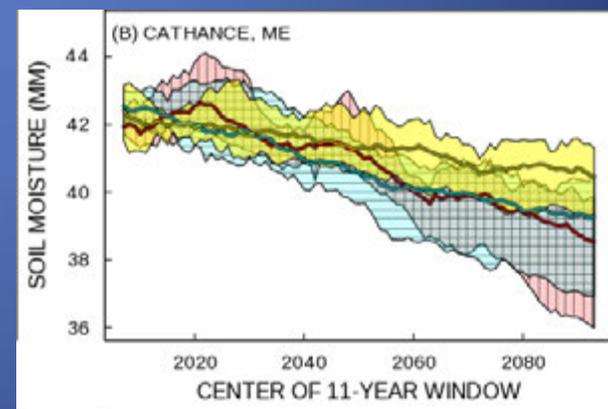
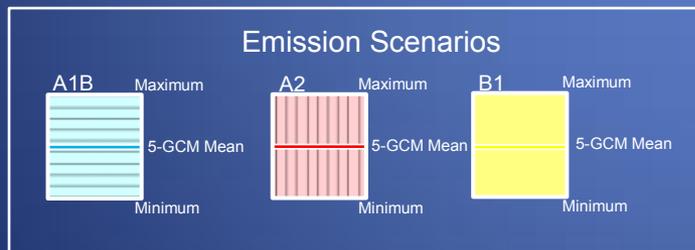
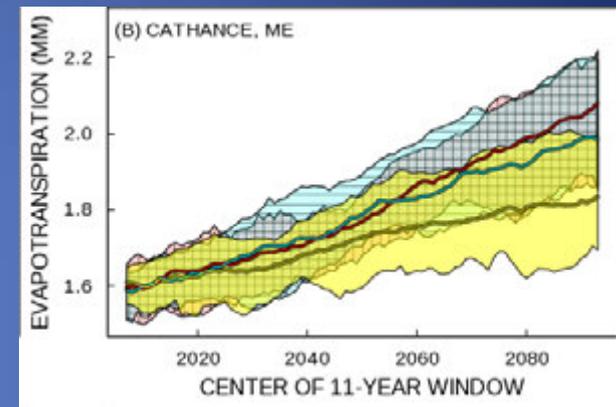
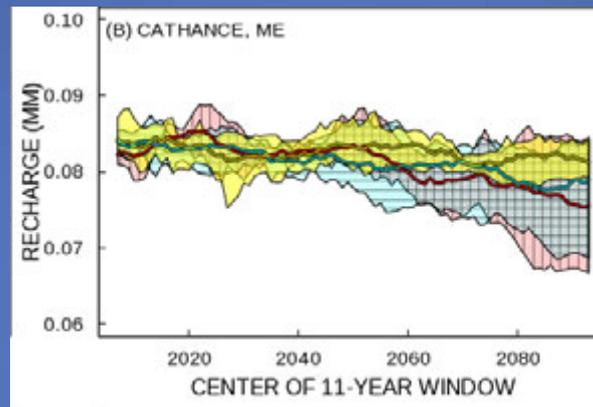
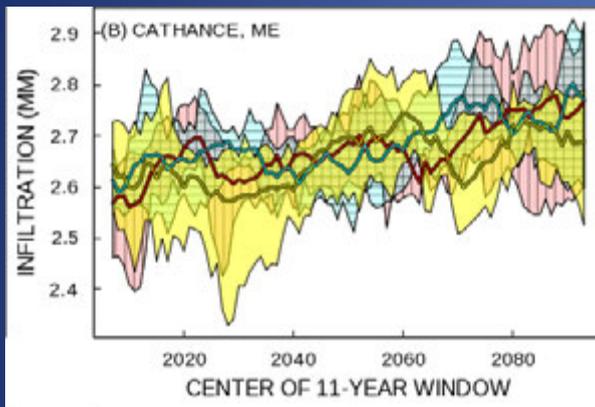
# Climate Projections Cathance Stream (Maine)



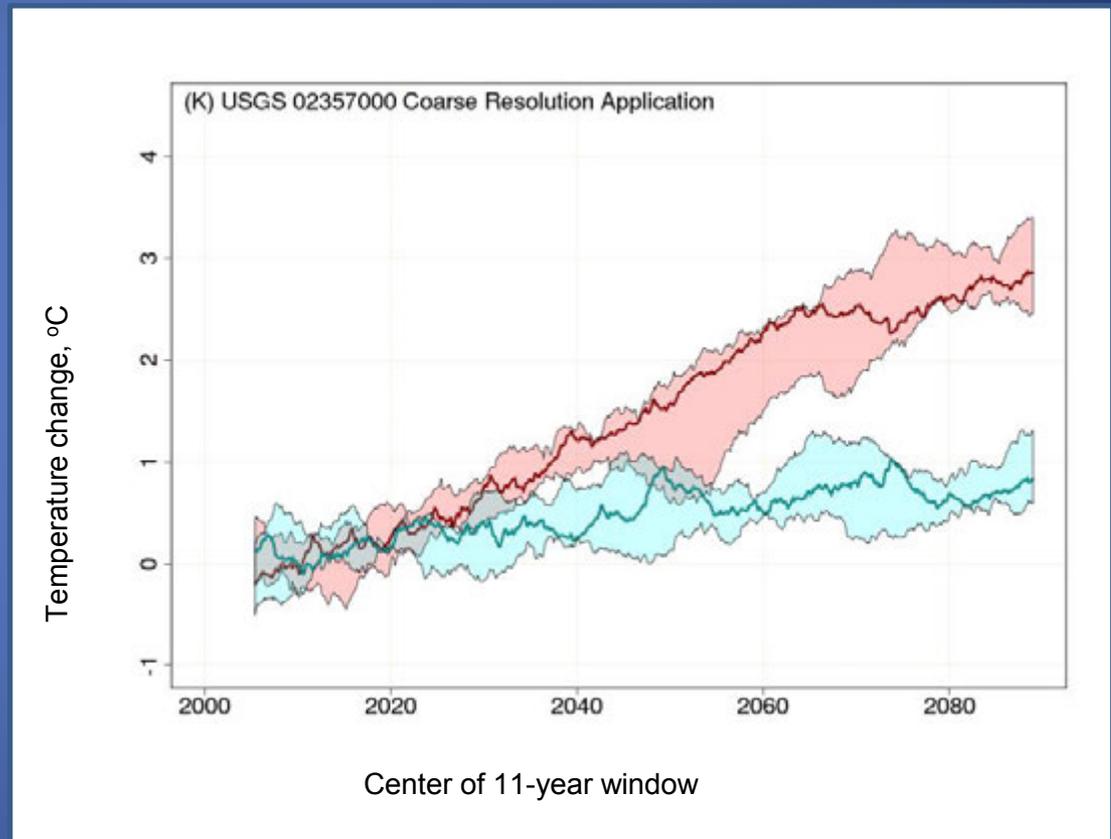
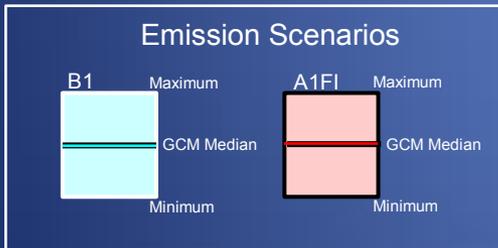
# Streamflow Projections Cathance Stream (Maine)



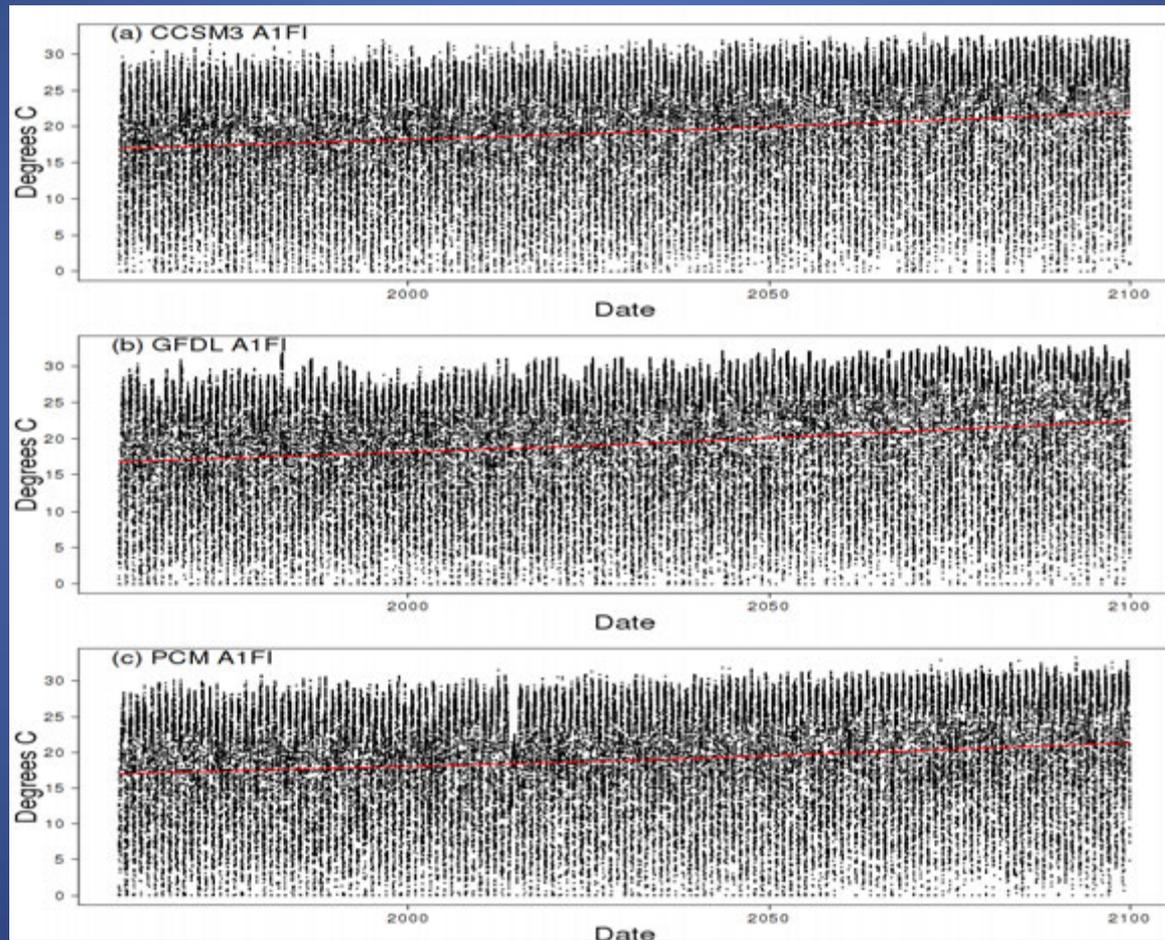
# Soil Water Projections Cathance Stream (Maine)



# Stream Temperature Projections Chattahoochee River (Georgia)



# Stream Temperature Projections Potato Creek (Georgia)





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