

Climate Scenarios For the Water Sector



CA Dept of Water Resources
Climate Change Technical Advisory Group
Elissa Lynn, Chair (DWR)

February 27, 2015



DWR

Climate Change Technical Advisory Group

14 volunteer Subject Matter Experts

Provide guidance on handling climate change



<http://www.water.ca.gov/climatechange/cctag.cfm>



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❖ Model and Scenario selection



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- ❖ Advice for water resources projects



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- ❖ Supporting local water management in CA



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DWR-specific climate change modeling needs

Types of Studies and Projects

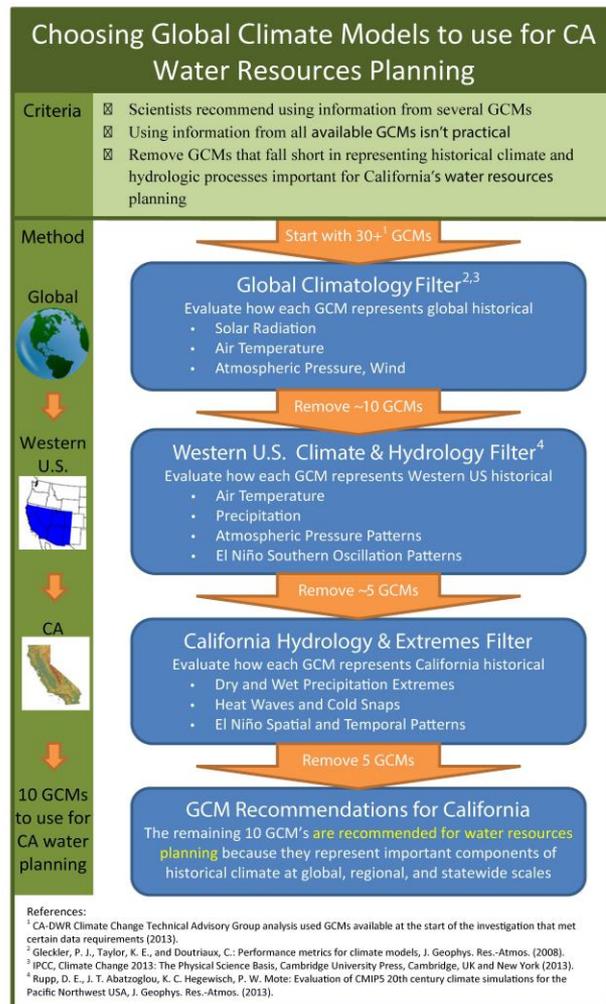
- ❖ General Planning Studies (strategic water mgmt)
- ❖ Long-Range Planning for Water Projects
- ❖ Reliability Reports for water supply
- ❖ Operations investigations
- ❖ Specific projects with limited funding for climate change impacts assessment

Water Resource – specific Variables

Key metrics for water resource modeling

- ❖ Temperature
- ❖ Precipitation
- ❖ Relative Humidity
- ❖ Radiation
- ❖ etc.

So how to select a subset of models when using information from all available GCMs isn't practical?



Department of Water Resources
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DWR's
Climate Change Technical
Advisory Group
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Start with 30+¹ GCMs

Global Climatology Filter^{2,3}

Evaluate how each GCM represents global historical

- Solar Radiation
- Air Temperature
- Atmospheric Pressure, Wind

Remove ~10 GCMs

Western U.S. Climate & Hydrology Filter⁴

Evaluate how each GCM represents Western US historical

- Air Temperature
- Precipitation
- Atmospheric Pressure Patterns
- El Niño Southern Oscillation Patterns

Remove ~5 GCMs

California Hydrology & Extremes Filter

Evaluate how each GCM represents California historical

- Dry and Wet Precipitation Extremes
- Heat Waves and Cold Snaps
- El Niño Spatial and Temporal Patterns

Remove 5 GCMs

GCM Recommendations for California

The remaining 10 GCM's **are recommended for water resources planning** because they represent important components of historical climate at global, regional, and statewide scales

Thank you

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