

Motivation

Create climate change scenarios for water operations and restoration planning that

- Reflect the range of available downscaled climate projections for precipitation and air temperature
- Provide a manageable number of scenarios for alternatives evaluation

Ensemble-Informed Climate Change Scenario Selection

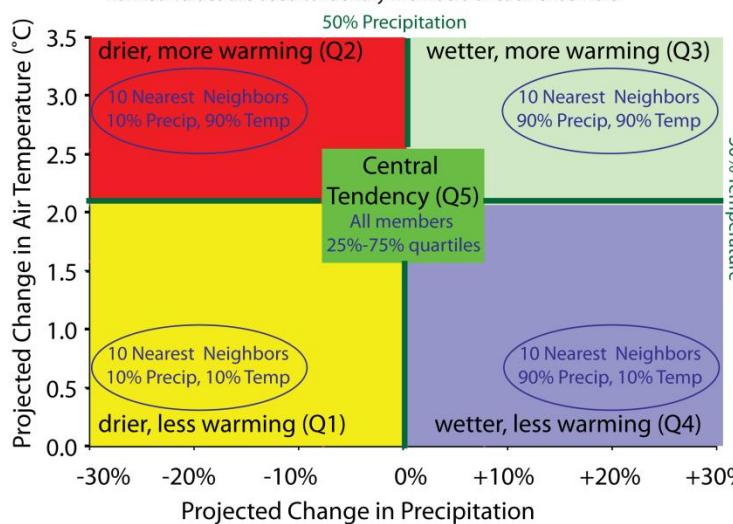
An ensemble is a group of climate change projections from several different models. Individual scenarios are created by using information from the ensemble. Ensembles have been shown to better reflect historical conditions than single model runs (e.g. Gleckler 2008, Pierce 2009).

For each future analysis period, 5 climate change scenarios are created by sampling from projection ensembles.

- 112 climate change projections are evaluated to create 5 ensembles (Q1-Q5) with a spatial resolution of 12 km over California.
- For each ensemble (Q1-Q5), a climate change scenario is created for projected changes in precipitation and air temperature.

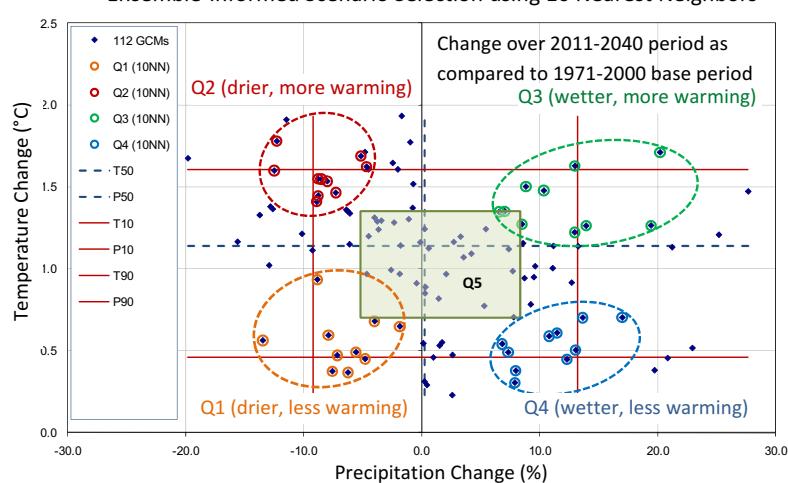
Precipitation and temperature changes relative to historical conditions

Ranked values are used to identify members of each ensemble



Feather River Basin Example for 2011-2040 Projections

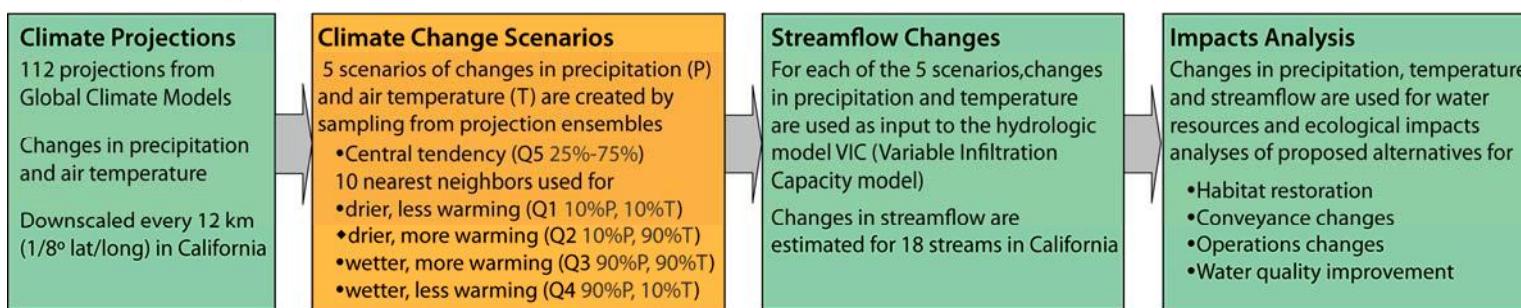
Ensemble-Informed Scenario Selection using 10 Nearest Neighbors



Note: 112 projections are from the Intergovernmental Panel on Climate Change's (IPCC's) Fourth Assessment Report.

Using Climate Change Information in Analyses of Proposed Alternatives

For each future analysis period (2015, 2025, and 2060):



Links for More Information

- Ensemble Method Summary in DWR Climate Change Methods Review Paper (pages 58-64)
http://www.water.ca.gov/climatechange/docs/DWR_CCCStudy_FinalReport_Dec23.pdf
- Bay Delta Conservation Plan Website: <http://baydeltaconservationplan.com>
- Recent Bay Delta Conservation Plan Summary Brochure:
http://baydeltaconservationplan.com/Libraries/Dynamic_Document_Library/BDCP_2011_Accomplishments_Brochure.sflb.ashx
- Bay Delta Conservation Plan Climate Change Assumptions (forthcoming):
<http://baydeltaconservationplan.com/Library/DocumentsLandingPage/BDCPPlanDocuments.aspx>