

Web-Based Climate Change Decision Support System

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

PROJECT SUMMARY

The effects climate change has on water supply are an increasing concern for water managers. As a result, a means to rapidly assess the impact of predicted climate change on natural flows at critical nodes along a river network is needed. In Phase 1 of this multi-phased project, Riverside developed a prototype web-based Climate Change Decision Support System enabling water managers at various operational scales to assess the impact of projected climate change scenarios. Phase 2 will further expand the system with the inclusion of additional river basins and an investment in focus group sessions to infuse user input into the development of the system.

Location
Colorado, U.S.A.

Period
2008 – Present

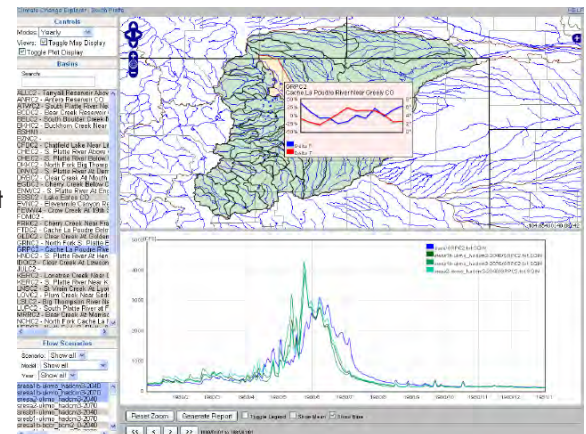
PROJECT DETAILS

Water managers are increasingly recognizing climate change as a significant issue and are requesting detailed information about potential hydrologic impacts suitable for inclusion in planning. Available studies, however, are most often academic in nature and have the added limitation of being incompatible with agency specific water management models or the streamflow period of interest. Commission of system focused studies are prohibitively expensive for most municipalities and agencies.

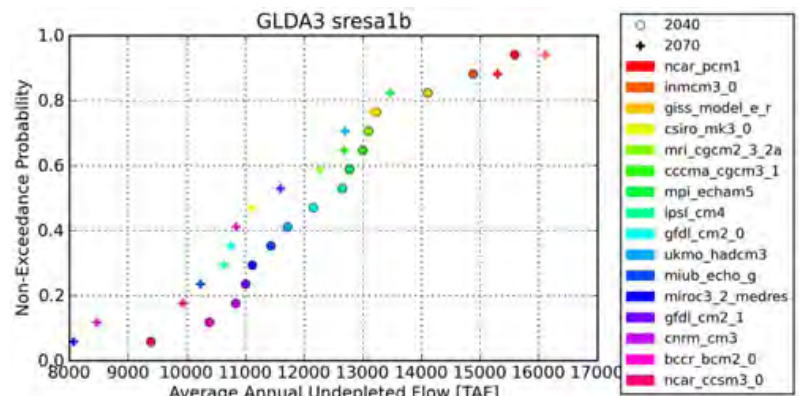
The goal of this project is to develop a web-based system providing widespread and low-cost access to tools used in generating scenarios of future streamflow, enabling water managers to rapidly assess the impact of projected climate change on natural flows at critical nodes along a river network.

Specific tools include:

- Calibrated hydrologic model(s) for the study area in Colorado
- Tools and procedures to review and analyze downscaled temperature and precipitation data from available climate projections (Intergovernmental Panel on Climate Change and other sources) to the hydrologic modeling scale
- Tools and procedures to generate climate-adjusted streamflow projections on a local scale
- Time series data handling and processing tools to develop ensembles and condition data to climate change information
- Tools to process the data and results into data products for decision-makers
- Climate-change hydrologic impact data analysis and visualization tools (graphing and GIS, etc.)



Full Viewer mode comparing historical streamflow with climate affected streamflow.



Colorado River Basin Inflow to Lake Powell

RELATED PROJECTS

Joint Front Range Climate Change Vulnerability Study

Colorado River Decision Support System

South Platte Decision Support System

The tool, initially developed and tested in Colorado and designed so that it can be readily extended to other states, will facilitate rapid and user-friendly development, visualization, and analysis of climate change scenario-based flows for assessment and input into operations models. To learn more about the Climate Change Decision Support System, visit www.climatechangedss.com.

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