

CITY OF SAN DIEGO- PUBLIC UTILITIES DEPARTMENT
U. S. DEPARTMENT OF THE INTERIOR – BUREAU OF RECLAMATION

SAN DIEGO WATERSHED BASIN STUDY

STAKEHOLDER MEETING
November 7, 2014



San Diego Watershed Basin Study Agenda

- Introductions-Leslie Cleveland and Goldy Herbon
- Opening Remarks-Bill Steele
- Memorandum of Agreement-Leslie Cleveland
- Study Organization/Milestones-Leslie Cleveland
- Plan of Study Purpose/Tasks -Leslie Cleveland
 - Climate Change Task-Subhrendu Gangopadhyay
- Questions
- Adjourn

BASIN STUDY ORGANIZATION & PUBLIC INVOLVEMENT

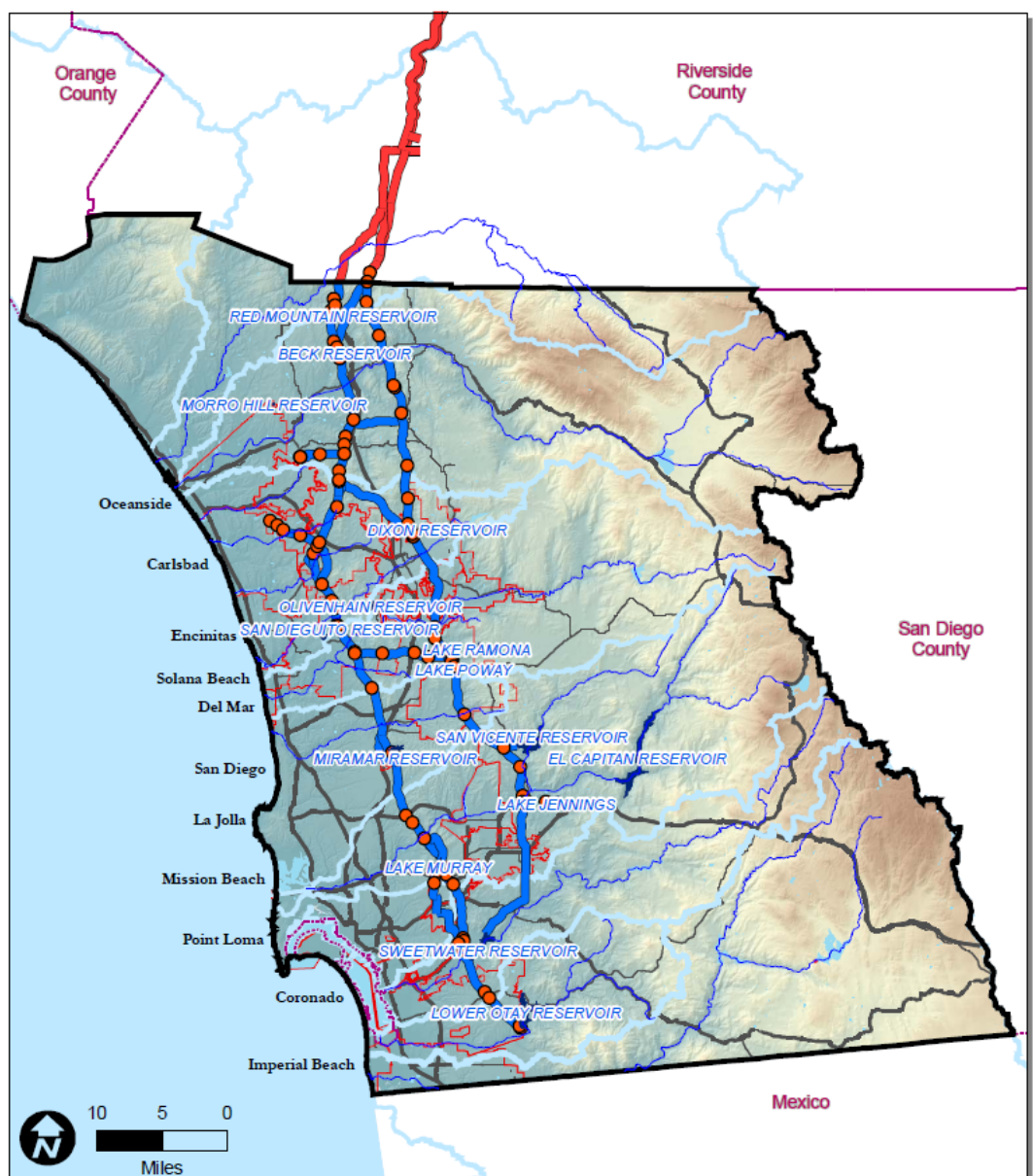


BASIN STUDY PURPOSE

- Help bridge current and future water supply gaps
- Complement existing planning efforts
- Develop partnerships

BASIN STUDY OBJECTIVES

- Evaluate water supply and demand conditions under future climate change conditions
- Recommend potential changes to existing structural operations or development of new facilities that could optimize reservoir systems



- SDCWA Facilities
- County Boundary
- Reservoirs connected to the SDCWA aqueduct system
- Highways
- San Diego Region Boundary
- Rivers
- Municipalities
- MWD Aqueducts
- SDCWA Aqueducts
- Hydrologic Units
- Waterbodies

BASIN STUDY TASKS

- **Task 1 - Project Administration**
- **Task 2 -Planning/Design/Engineering**
- **Task 2.1 - Water Supply and Demand Projections**
- **Task 2.2 - Downscaled Climate Change and Hydrologic Modeling**
- **Task 2.3 - Existing Structural Response and Operations Guidelines Analysis**
- **Task 2.4 – Structural and Operations Concepts**
- **Task 2.5 – Trade-Off Analysis and Recommendations**
- **Task 2.6 – Final Report**



BASIN STUDY TASKS & SCHEDULE

Completion Date



Task 2.3 Existing Structural Response and Operations Guidelines Analysis

- SDPUD/Reclamation/STAC
 - Develop Concepts
- Reclamation
 - Evaluate and Refine Concepts
 - Appraisal-Level Concept Planning
 - Interim Structural and Operations Concepts Report
- SDPUD/Reclamation/STAC
 - Document Review
- Peer Reviewers
 - Document Review

January 2016

Task 2.4 Structural and Operations Concepts

- SDPUD/Reclamation/STAC
 - Review of existing data
 - Develop Concepts
 - Draft and Final document Review
- Reclamation
 - Refine and integrate concepts
 - Concept Planning
 - Prepare Draft Interim Report

January 2016

Task 2.5 Trade-Off Analysis and Recommendations

- Reclamation
 - Conduct Trade-Off Analysis
- SDPUD/STAC/ Study Technical Teams
 - Develop Recommendations
- SDPUD/Reclamation/STAC
 - Document Review
- Peer Reviewers
 - Document Review

February 2016

Task 2.6 Final Report

- SDPUD/Reclamation
 - Prepare Final Report
 - Publish and Distribute Final Report
- Reclamation
 - Peer Review
- SDPUD/Reclamation/STAC
 - Internal Review
- STAC/General Public
 - Public Review

April 2016

Climate Change Impacts Assessment Questions

- How will watershed(s) in San Diego County be impacted by climate change?
 - surface water
 - groundwater
 - other (e.g., water quality)
- How will climate change impact water demands in the region?
- How might climate change impact the reliability and volumes of imported water supplies to the region?
- How will climate change impact the ability to capture and use local surface and groundwater supplies?
- How can local water supply infrastructure be used or optimized to support adaptations that are needed to ensure water supply reliability under climate change?

CLIMATE DATA

Downscaled CMIP3 and CMIP5 Climate and Hydrology Projections

This site is best viewed with [Chrome](#) (recommended) or [Firefox](#). Some features are unavailable when using Internet Explorer. [Requires JavaScript to be enabled.](#)



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Downscaled CMIP5 climate and hydrology projections' documentation and release notes available [here](#).

Summary

This archive contains fine spatial resolution translations of climate projections over the contiguous United States (U.S.) developed using two downscaling techniques (monthly BCS D Figure 1, and daily BCCA Figure 2), CMIP3 hydrologic projections over the western U.S. (roughly the western U.S. Figure 3), and CMIP5 hydrology projections over the contiguous U.S. corresponding to monthly BCS D climate projections.

Archive content is based on global climate projections from the [World Climate Research Programme's \(WCRP's\) Coupled Model Intercomparison Project phase 3 \(CMIP3\)](#) multi-model dataset referenced in the Intergovernmental Panel on Climate Change Fourth Assessment Report, and the phase 5 ([CMIP5](#)) multi-model dataset that is informing the IPCC Fifth Assessment.

For information about downscaled climate and hydrology projections development, please see the [About](#) page.

Purpose

The archive is meant to provide access to climate and hydrologic projections at spatial and temporal scales relevant to some of the watershed and basin-scale decisions facing water and natural resource managers and planners dealing with climate change. Such access permits several types of analyses, including:

- assessment of potential climate change impacts on natural and social systems (e.g., watershed hydrology, ecosystems, water and energy demands).
- assessment of local to regional climate projection uncertainty.
- risk-based exploration of planning and policy responses framed by potential climate changes exemplified by these projections.

Archive History

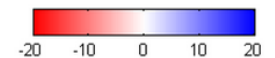
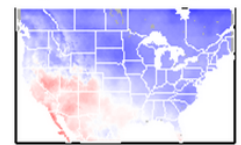
- November 2007: Archive launched, initially serving 112 projections of monthly BCS D CMIP3 temperature and precipitation projections over the contiguous U.S. for the period 1950-2099.
- December 2010: Archive expanded to include (1) gridded meteorological observations that guided BCS D CMIP3 application and (2) the intermediate datasets developed during BCS D application, namely the 2-degree "regrid" global climate projections (i.e. over spatially interpolated global climate model results from native model resolution to a common 2-degree grid over the contiguous U.S.) and 2-degree bias-corrected versions of the regrid projections.
- August 2011: Archive expanded to include (1) 53 projections of daily BCCA CMIP3 projections of minimum temperature, maximum temperature and precipitation for three periods (1961-2000, 2046-2065, 2081-2100), with results being of potential interest to ecological studies requiring information on projected diurnal temperature range and/or flood-related studies requiring information about projected daily precipitation patterns; and, (2) 112 projections of monthly and daily hydrologic projections in the western U.S. associated with the monthly BCS D CMIP3 projections.
- May 2013: Archive expanded to include (1) 234 projections of monthly BCS D CMIP5 projections of precipitation and monthly means of daily-average, daily maximum and daily minimum temperature; and, (2) 134 projections of daily BCCA CMIP5 projections of precipitation and daily maximum and daily minimum temperature, all covering the period 1950-2099.
- July 2014: Archive expanded to include 97 projections of monthly and daily hydrologic projections over the contiguous U.S. associated with monthly BCS D CMIP5 projections.

Through June 2014, this web-site has served projections to roughly 1766 users, collectively issued through approximately 34000 requests. Geographically, the requests have covered the contiguous U.S. and parts of southern Canada and northern Mexico.

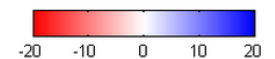
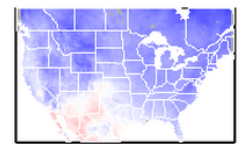
http://gdo-dcp.ucllnl.org/downscaled_cmip_projections/dcpInterface.html

Figure 1. Central Tendency Changes in Mean-Annual Precipitation over the contiguous U.S. from 1970-1999 to 2040-2069 for BCS D3, BCS D5, and Difference.

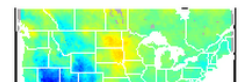
Mean-Annual Precipitation Change, percent
CMIP3,1970-1999 to 2040-2069,50%tile



Mean-Annual Precipitation Change, percent
CMIP5,1970-1999 to 2040-2069,50%tile



Mean-Annual Precipitation Change, percent
CMIP5 - CMIP3,1970-1999 to 2040-2069,50%tile



Questions?

San Diego Watershed Basin Study



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