



**State Water Project Briefings: Current Steps to Address Climate Extremes**

**Introduction**

The third State Water Project (SWP) briefing of 2022 will continue to explore this year's theme of preparing for climate extremes – ensuring a reliable State Water Project to meet the challenges of drought, flood, and wildfire. The Commission will receive two briefings: one on the drought outlook for 2023, and another on the SWP's ongoing climate resilience efforts and wildfire response planning.

2023 Drought Outlook

This briefing will update the Commission on the drought actions taken by the SWP during 2022 and place them in the context of the hydrologic conditions and outlook at the time. It will cover the current hydrological conditions under the Governor's declared drought emergency, including water storage levels in SWP reservoirs, a breakdown of California rainfall and snowpack during late 2021 and early 2022, and their impact on water supply for 2022 and 2023. The briefing will explain the contemplated drought actions for 2023 in context of the lessons learned from the previous two year's drought management.

Climate Change and Wildfire Response Planning

This briefing will focus on two main areas of the SWP's climate resilience efforts: 1) improved forecasting and watershed assessments and 2) improved planning for future conditions. Each of these areas includes multiple actions.

**Improved forecasting and watershed assessment:** Since 2018, 57% of the Feather River watershed has burned. To respond to these conditions, the SWP has stepped up activities to monitor, coordinate, and assess watershed conditions. SWP identified hydrology changes resulting from the changes in forest structure and groundcover as a potential information and action gap. To fill this gap, the SWP has begun work with the National Center for Atmospheric Research and the Airborne Snow Observatory (ASO) to improve modeling of burn scarred areas in the Feather River watershed and evaluate how fire has and will continue to impact snowpack accumulation and runoff, as well as the timing and amount of runoff.

ASO involves the flying of manned aircraft equipped with specialized radar and sensors over the snowpack to assess its extent and depth. In 2022, the SWP funded DWR's Division of Flood Management to expand their ASO program into the Feather River watershed that feeds Oroville Reservoir. Combining this information with the long-standing ground-based Cooperative Snow Survey network of sensors provides for significant improvements in the estimates of water supply trapped in the Sierra snowpack. In 2022, four flights occurred over the Feather watershed allowing water supply forecasters to predict end-of-year water supply conditions

more accurately. SWP has committed to funding of ASO again in 2023 and is supporting DWR Flood Management as they incorporate additional data, modeling, and other improvements to their forecasting process.

**Improved planning for future conditions:** The SWP is implementing several significant improvements to the climate change information provided in the bi-annual SWP Delivery Capability Report (DCR). The 2023 DCR will move away from a single future climate change projection, as has been provided in the past, and will provide a range of risk-informed future climate change projections. This range of projections will give water agencies more information about potential future conditions and the ability to plan for more extreme outcomes.

In July, the SWP completed scoping and began work on its first Climate Change Adaptation Plan, which will provide SWP's portion of DWR's broader Climate Action Plan Phase 3: Adaptation Process. The SWP Adaptation Plan will evaluate how the system would perform under future extreme climate conditions if several major improvement projects are implemented. This analysis will show how the SWP is preparing for hotter, more extreme conditions in the future.

### **Background**

The California State Water Project, consisting of 36 water storage facilities and 700 miles of rivers, pipelines, and canals, supplies water to 27 million people and irrigates 750,000 acres of farmland. The system includes 21 pumping plants, powered by a system of power-generation and power-recovery plants. DWR also operates the world's tallest water lift – the Edmonston Pumping Plant – which pumps water more than 1,900 feet up and over the Tehachapi Mountains into Southern California.

Goal Two of the Commission's Strategic Plan directs the Commission to remain apprised of the operations and construction activities of the State Water Project, focusing on how the SWP adapts and responds to hydrological extremes expected with climate change, restores critical ecosystems, and addresses aging infrastructure. As required by Water Code section 165, the Commission conducts an annual review on the progress of the construction and operation of the SWP and reports its findings and recommendations to the Department and the Legislature. This series of briefings will inform the Commission of SWP activities in preparation for the Commission's 2022 annual review

### **Meeting Overview**

At the September meeting, SWP Assistant Deputy Director John Yarbrough will offer opening remarks and brief the Commission on the 2023 drought outlook. SWP Climate Change Coordinator Andrew Schwarz will brief the Commission on some of the SWP's ongoing climate change and wildfire response planning.

This is an informational item.

### **Contact**

Agenda Item: 11

Meeting Date: September 21, 2022

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