



The 2023 Delta Drought Response Pilot Program Report and Technical Analysis Staff Report

DESCRIPTION

This agenda item presents an overview of the 2023 Delta Drought Response Pilot Program (Program/DDRPP) Report (Report), which includes a technical appendix that analyzes water savings and evapotranspiration estimates on enrolled acres. The objectives of the 2023 Program were to evaluate if changing specific field management practices could result in water savings during water year 2023; protect Delta water quality by providing additional incremental instream flow benefits to reduce the effects of salinity on water quality; mitigate potential drought impacts on fish and migratory birds; and promote soil health. The 2023 Report focuses on the results from the 2023 water year (October 1, 2022, through September 30, 2023) with a short analysis comparing fields enrolled in both the 2022 and 2023 Program. The full Report is available on the Delta Conservancy's [Delta Drought Response Pilot Program webpage](#).

With \$10.8 million provided by the California Department of Water Resources (DWR), the Delta Conservancy solicited bids from growers through a reverse auction process, which opened on October 3, 2022 and closed on October 18, 2022. The competitive aspect of the auction, combined with the variety of costs across different farmers and locations, brought the cost per acre enrolled down substantially when compared to the fixed price scheme used for DDRPP 2022. A total of 61 projects, encompassing 18,450 acres, were successfully enrolled in the 2023 Program. Enrolled fields were assigned to a variety of water conservation practices and beneficial bird habitat practices.

The DDRPP Oversight Committee performed analyses using OpenET, a non-invasive and open-source satellite-based method, to evaluate consumptive water use and estimate water savings. The analysis found that, though growers in the Delta were willing to undertake water conservation practices, and all enrolled growers decreased applied water, the maximum estimated water savings for all fields enrolled in the 2023 DDRPP was 1,890 acre-feet — or 0.2 acre-feet/acre. This is in line with the savings estimates from 2022, which were also low. However, there was wide variation in the estimated savings among fields, with some areas showing more potential for effective water savings than others. Even though water savings were lower than initially anticipated, the Program provided a wealth of data about water use and incentives in the unique and complex setting of the legal Delta. There are several key takeaways from this analysis:

- Reducing applied irrigation may not be sufficient to produce substantial water savings within the legal Delta, especially at low elevations.
- Agricultural areas at lower elevations resulted in water savings less consistently, and areas at higher elevations show more potential for water savings and lower cost/acre-foot of water saved. Future programs could use elevation as a project selection criterion and/or focus on areas farther up in the watershed.

- In addition to field elevation, variation among fields may have been driven by crop type, vegetation management, soil type, and local flooding.
- OpenET makes it possible to cost-effectively study water use to improve the precision of water conservation guidance. Additional studies could identify field characteristics, practices, and regions likely to produce the most cost-effective and efficient agricultural water savings — within the Delta and beyond.
- Estimated average water use was slightly higher in the 2023 water year than in the 2022 water year, likely due to higher soil moisture.
- Droughts are multi-year and variable, and a program to address drought needs to be flexible enough to respond to that variability. Future water conservation programs could work with growers to build in flexibility for postponement or rapid deployment of practices, depending on water year conditions.
- Future water conservation programs and regulations will need to balance actions that produce the most water savings with consideration for climate and biodiversity objectives.

The Program also provided an opportunity for the Conservancy to strengthen its connections with Delta growers and water users. To further develop these relationships, the Conservancy convened a forum on June 20, 2024 to present the results of the 2023 DDRPP and to solicit feedback. The forum was attended by more than 50 individuals representing Delta growers, Delta water agencies, State workers, and interested members of the public. Attendees heard presentations from the Delta Conservancy, the Office of the Delta Watermaster (ODWM), the UC Davis research team, and The Nature Conservancy (TNC). Feedback was gathered during two interactive sessions facilitated by collaborators from the UC Cooperative Extension.

BACKGROUND

The Delta Drought Response Pilot Program (the Program/DDRPP) was funded by DWR and administered through an interagency agreement with the Sacramento-San Joaquin Delta Conservancy. The DDRPP launched in January 2022 as a response to the continuing risk of drought in the Sacramento-San Joaquin Delta Watershed. The information derived from the 2022 DDRPP analysis was sufficiently valuable to warrant refinement and redeployment of a follow-up Pilot Program during water year 2023. The second year of the pilot program included additional goals and an updated implementation approach. The 2023 Program was developed and overseen through a partnership with DWR, the Delta Conservancy, ODWM, TNC, the California Department of Food and Agriculture, UC Merced, the UC Cooperative Extension, and conducted in coordination with Delta water users.

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