Water Supply and Demand Assessment Program
Watershed Selection

State Water Board Staff

CALIFORNIA
Water Boards

Division of Water Rights

May 14, Eureka | May 21, Salinas | June 3, Sacramento

Meeting Agenda

- Water Rights Introduction
- Division of Water Rights Drought Response
- Water Supply & Demand Assessment Program Overview
- Watershed Selection Process and Pilot Watersheds
- Preliminary Watershed Selections
- Comments and Questions

Please email any comments and questions to

DWR-SDA@waterboards.ca.gov

State Water Board's Mission

To preserve, enhance, and restore the quality of California's **water** resources and **drinking water** for the **protection of the environment, public health, and all beneficial uses,** and to ensure **proper** water resource **allocation and efficient use**, for the benefit of present and future generations.

Board Members from left to right: Nichole Morgan, Laurel Firestone, Board Chair Joaquin Esquivel, Vice Chair Dorene D'Adamo, and Sean Maguire

Division of Water Rights

- Permits diversions and storage of water from streams and rivers
- May set instream flows
- Helps manage water during drought

Lake Oroville, April 2024. CA DWR

What are Water Rights?

- Water Rights
  - Legal permission to use a reasonable amount of water for a beneficial purpose such as domestic use, irrigation, recreation, fish and wildlife protection, etc.
  - Water right holders do not own the water, but have a “usufructuary right” to use it for beneficial use
- Most Common Types of Water Rights
  - Riparian
  - Appropriative (pre-1914 or post-1914)

Most Common Water Rights

Riparian Rights

- Associated with the land contiguous to a river, stream, or lake
  - Water must be used on the riparian land
  - No seasonal storage of water
  - Only applies to natural flow
- Priority System: “Correlative Sharing”
  - Generally senior to appropriative rights

Appropriative Rights

- Associated with both riparian and non-riparian land
  - Allows for water to be exported, seasonal storage, and extends to all flows (natural + foreign)
- Pre-1914: do not need a water right permit
- Post-1914: permits, licenses, registrations
- Priority System: "First in Time, First in Right”
  - Priority dates are assigned based on when they were applied for

Water Right Reporting

- Water Use Reporting
  - Annually, water rights holders (or agents) required to report amount of water diverted, stored, and used during each month
- Self-reported data that often contains errors related to missing or duplicate reporting, unit conversions, or multiple owners
- Cleaned up data can be used to represent water demand for a watershed

South Yuba River, June 2023. CA DWR

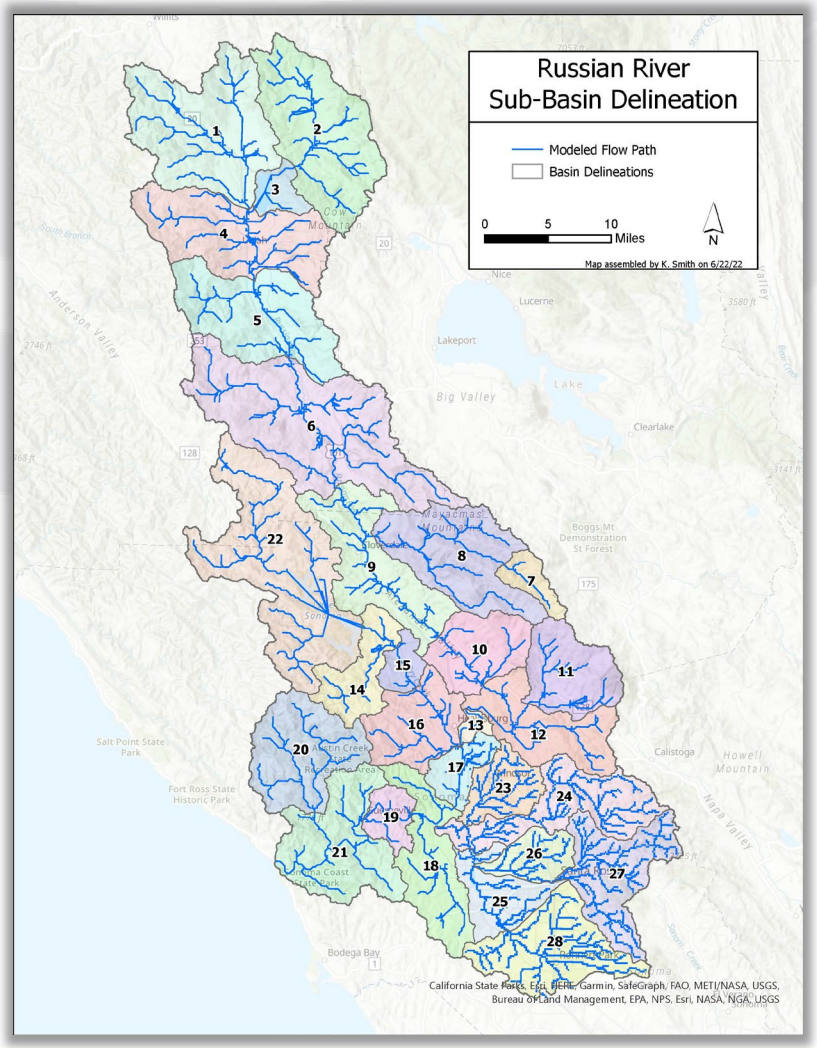
Russian River Drought Response

- 2021 & 2022 Emergency Regulations
  - Board adopted emergency regulations to prevent the unreasonable use of water and to require curtailments to protect senior water rights
  - Set specific exceptions to curtailment (Human Health & Safety Needs, Non-Consumptive Uses, etc.)
  - Established a methodology for determining the extent to which water was available for diverters in the Russian River Watershed, at their priority of right.
- Curtailment
  - Month-by-month curtailment based on forecast models and water right priority
  - Voluntary Water Sharing Program was developed with local stakeholders as an alternative to curtailment

Russian River Drought Response

Curtailments using a water allocation tool

- Observed and forecasted climate data are used to run hydrologic models that represent the “water supply” in watershed
- Division staff clean and process the diversion data (from annual water use reports) to develop a dataset that represents “water demand”
- The tool allocates available supply to water right holders based on the water right priority date, demand, and forecasted flow data on a monthly basis



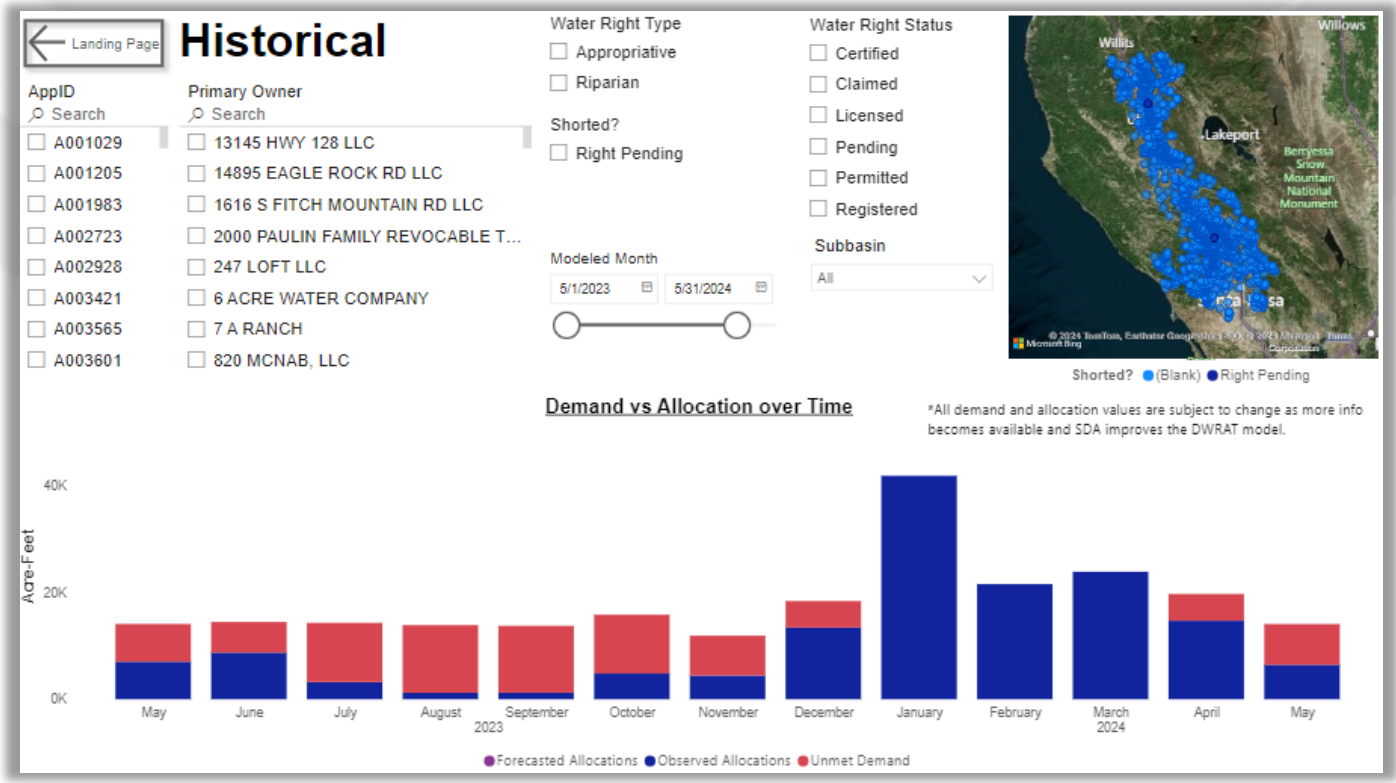
Supply & Demand Assessment Program

- Authorized in 2022, includes 9 positions building upon Russian River drought response
- $15M Modeling Contract with Paradigm Environmental, Inc.
- **Goal:** Provide data and tools to inform better planning and decision-making during times of water shortage

Lake Mendocino, October 2021. CA DWR

Supply & Demand Assessment Program

- Objective is to develop hydrologic models and tools to assess supply and demand in select watersheds throughout California
- Continued work on models and tools developed to monitor conditions in Russian River watershed
- Intend to develop these tools (supply models, demand datasets, and water allocation tools) for additional watersheds and plan to make all tools open source and accessible to public to support local and Board efforts



Power BI Data Visualization tool for the Russian River watershed
Available on the SDA Webpage: www.waterboards.ca.gov/sda

Supply & Demand Assessment Program

Future Applications:

- Provide water availability forecasts for upcoming month as well as water year
- Evaluate environmental flow scenarios
- Assess water availability to inform actions for addressing future water shortages
- Incorporate climate change modeling to predict how watersheds will react to future climate scenarios

Priorities for Watershed Selection

- Driven by **surface water demand** (regions where analysis would likely be successful)
- Contain regions of **salmonid habitat** or other important fisheries with known flow concerns
- Targeting watersheds in the **North Coast**, **San Francisco Bay**, and **Central Coast** Regions, but not a formal requirement
- Be a region where the Division is **not already engaged** in other drought or flow assessment efforts unless modeling work at a sub watershed level would accelerate efforts

Pilot Watersheds (work underway)

- Navarro River
- Napa River
- Butte Creek

Lake Berryessa, August 2022. CA DWR

Navarro River

Characterization

- Coastal watershed with drainage area of 315 sq. mi
- Characterized by many small diversions for agricultural, commercial, and residential use
- Degraded coho salmon and steelhead trout habitat

Status

- Paradigm is building the supply model and has delineated the watershed subbasins
- Staff is working on data quality control to finalize the demand dataset

Napa River

Characterization

- Drainage area of 283 sq. mi
- Significant surface water - groundwater interactions
- Large amount of groundwater pumping
- Heavy agriculture use
  - Irrigation Watering
  - Frost Protection
- Critical flow issues (stream drying)
- San Francisco Estuary Institute (SFEI) Model of the Bay Area used to assist in model development

Status

- Paradigm is adjusting the supply model further to better capture low flows
- Staff is working on data quality control to finalize the demand dataset

Butte Creek

Characterization

- Drainage area of 820 sq. mi
- Receives imported water from the Feather River
- Complex diversions in valley regions
- Critical habitat for largest population of Central Valley spring run Chinook salmon
  - Very active local stakeholders working to support collaborative improvements to fisheries

Status

- Staff is working on data quality control to finalize the demand dataset

Considerations for Additional Watersheds

- Iterative Criteria-Based Evaluation Process
  - Water Right Considerations
  - Hydrologic Complexity
  - Ecological Significance
  - Land Designations
- Developed Preliminary Watershed Tiers
- Provided a Preliminary Selection of Watersheds

Preliminary Watershed Selections

Received high scores in watershed evaluation process, specifically for water rights criteria and ecological significance

<u>San Francisco Region</u>

Tomales-Drake Bays

<u>North Coast Region</u>

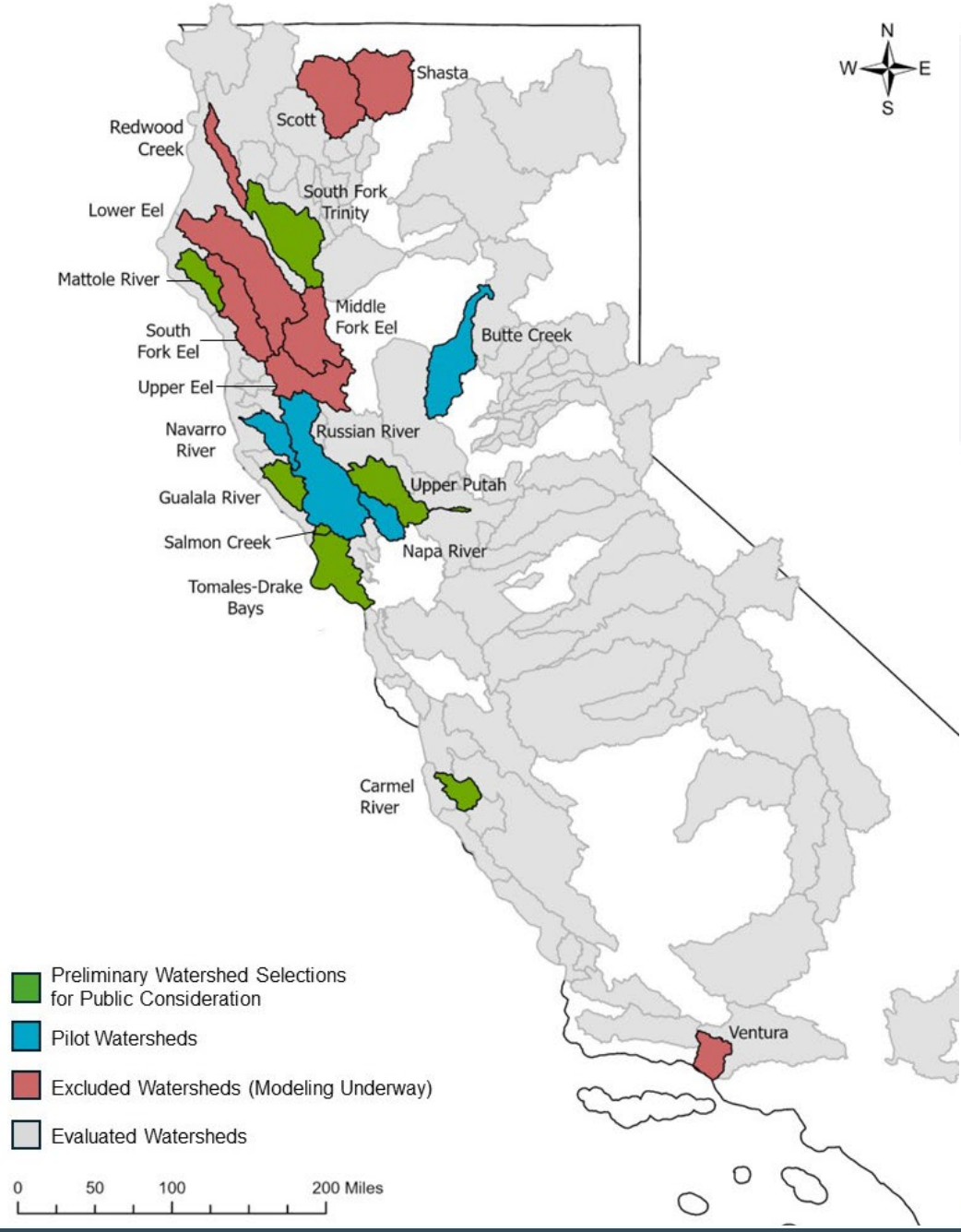
Mattole River
Gualala River
Salmon Creek
South Fork Trinity

<u>Central Coast Region</u>

Carmel River

<u>Central Valley Region</u>

Upper Putah



Informational Resources

For further information and to subscribe to the Supply and Demand Assessment Email List visit:

www.waterboards.ca.gov/sda

Water Supply and Demand Assessment Fact Sheet now available!

https://www.waterboards.ca.gov/waterrights/water_issues/programs/supply-and-demand/docs/2024-sda-fact-sheet.pdf

Water Rights Modernization

Updating Water Rights Data for California (UPWARD)

Water Board project to improve collection and management of water rights data and information

Read about the Project: https://www.waterboards.ca.gov/upward/

Contact Water Board Staff by Email: upward@waterboards.ca.gov

Water Right Modernization

Pilot Telemetry Project
2025-2028 in Russian River watershed

Water Board research project to test automated measurement and reporting. Keep monitoring equipment & help simplify future reporting.

Looking for volunteers in the Russian River to participate in this Pilot Project

Read about the Project: https://cawaterdata.org/projects/telemetered-data-project/

Contact Water Board Staff by Email: Laurel.Dodgen@waterboards.ca.gov

Subscribe/Contact the Water Data Consortium: https://cawaterdata.org/contact-us/

Comments & Feedback

- When evaluating a watershed, are there other specific criteria or datasets that we should have used?
- What other watersheds do you believe should be considered or prioritized?
- What existing data and information would help the successful development of these new models and tools?

Comments on the preliminary watershed selections are due by

12:00 Noon, June 17, 2024

Please email questions and comments to **DWR-SDA@waterboards.ca.gov**

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Comments on the preliminary watershed selections are due by **12:00 Noon, June 17, 2024**

For further information visit:

www.waterboards.ca.gov/sda