Lower American River Task Force

March 12, 2024

1:00-3:00

https://www.waterforum.org/lartf

Checklist for Virtual Participation

- ✓ **If you have less than optimal internet connection, join through both a phone (for audio) and your computer (for video).** Join the online meeting via the Zoom link and opt to join via phone audio. When dialing in, be sure to enter your participant ID.
- ✓ **Please mute yourself when you are not speaking.** This helps cut down on background noise.
- ✓ **Introduce yourself** in the chat: Name, affiliation, location.

Introduction to Zoom Controls

Phone Users:
Press *9
to “Raise Hand”

When we call on you,
Press *6
to unmute/mute

Orient yourself to Zoom meeting controls:

Unmute/Mute **Start Video** **Zoom Chat** **Raise Hand**

How you can participate today:

- **Verbal:** Get into the queue w/ Raise Hand function
- **Written:** Submit questions in Chat Box

Opening and Agenda Review

Sophie Carrillo-Mandel, CBI

Lower American River Task Force: Celebrating 30 Years

Gary Bardini, SAFCA & Jessica Law, Water Forum

Lower American River Conditions

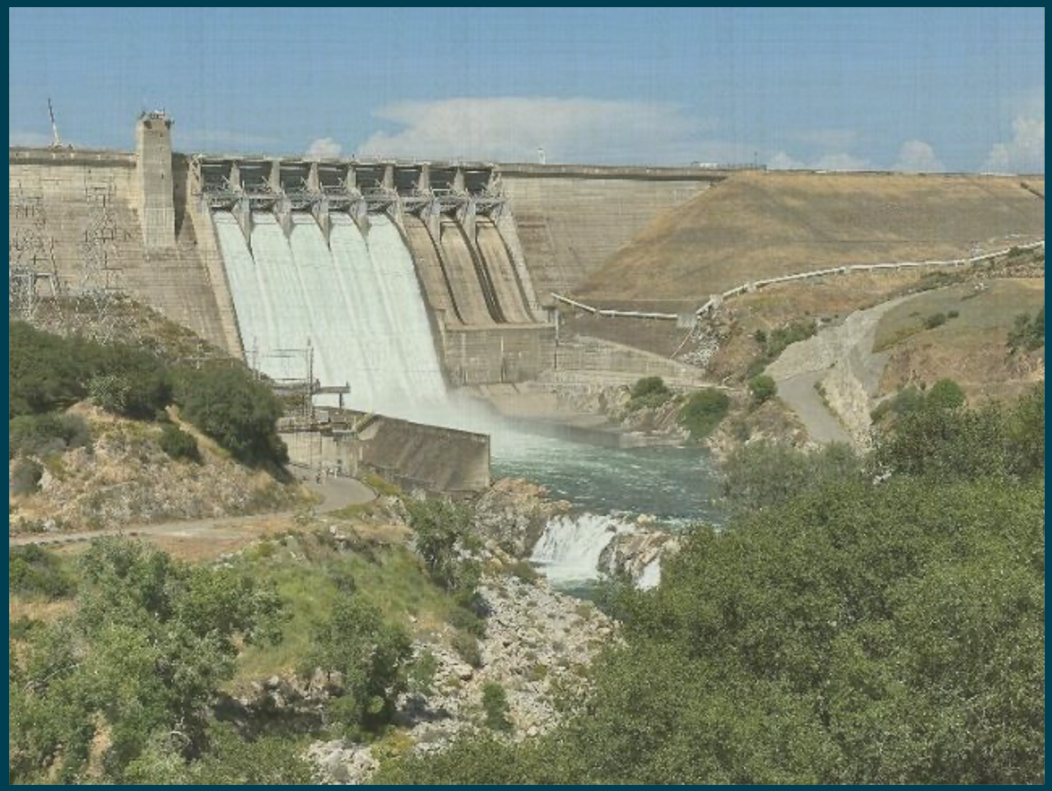
Levi Johnson, Bureau of Reclamation

BUREAU OF RECLAMATION

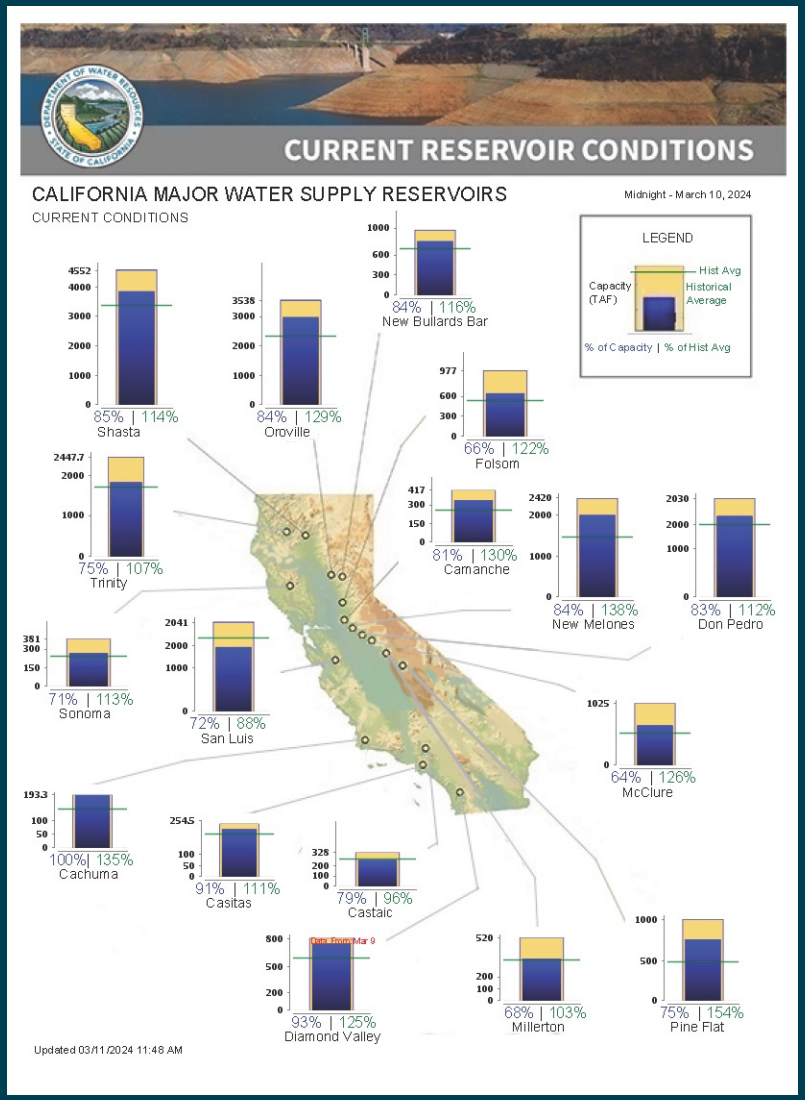
WY2024 CVP Ops Update

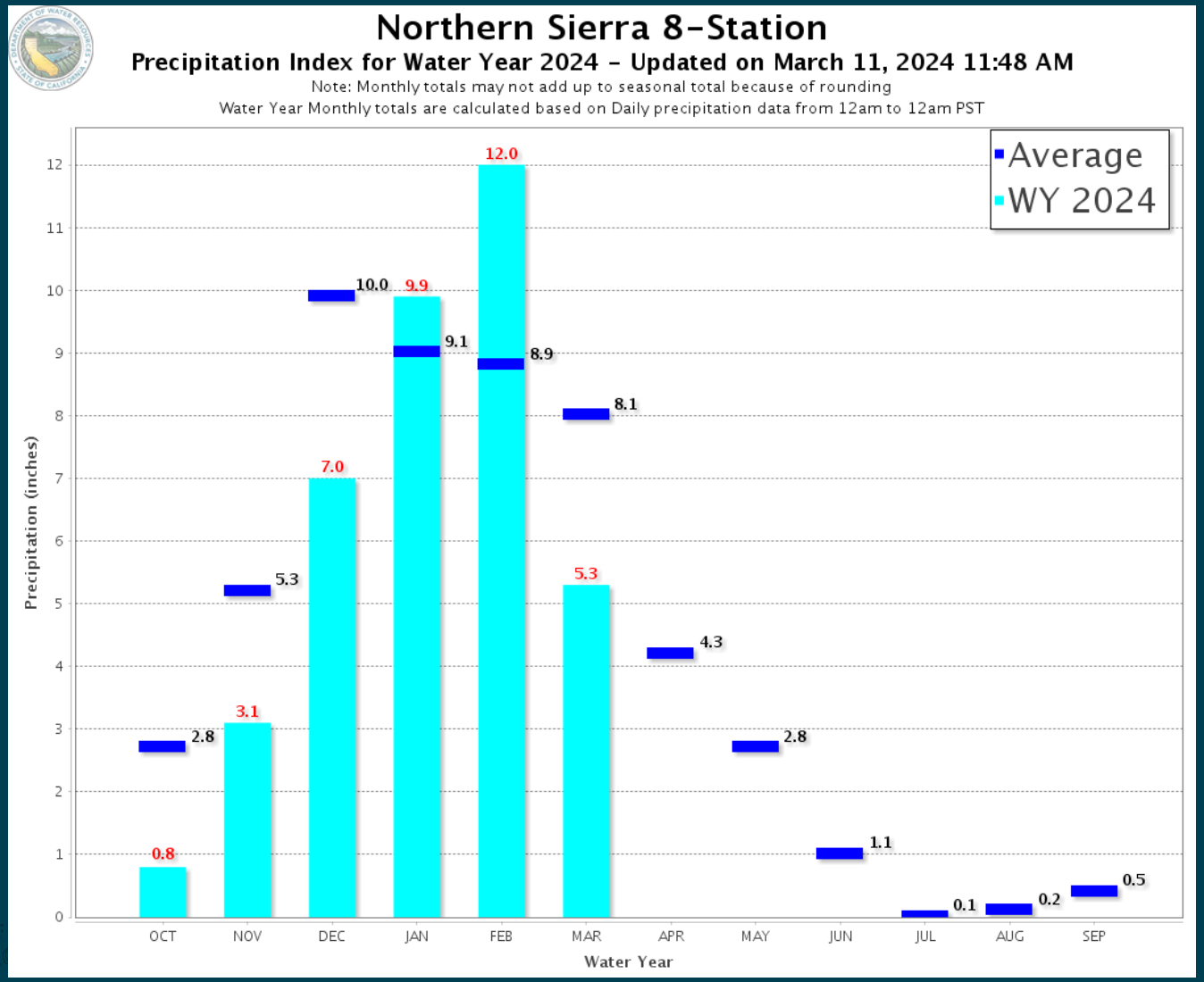
Lower American River Task Force

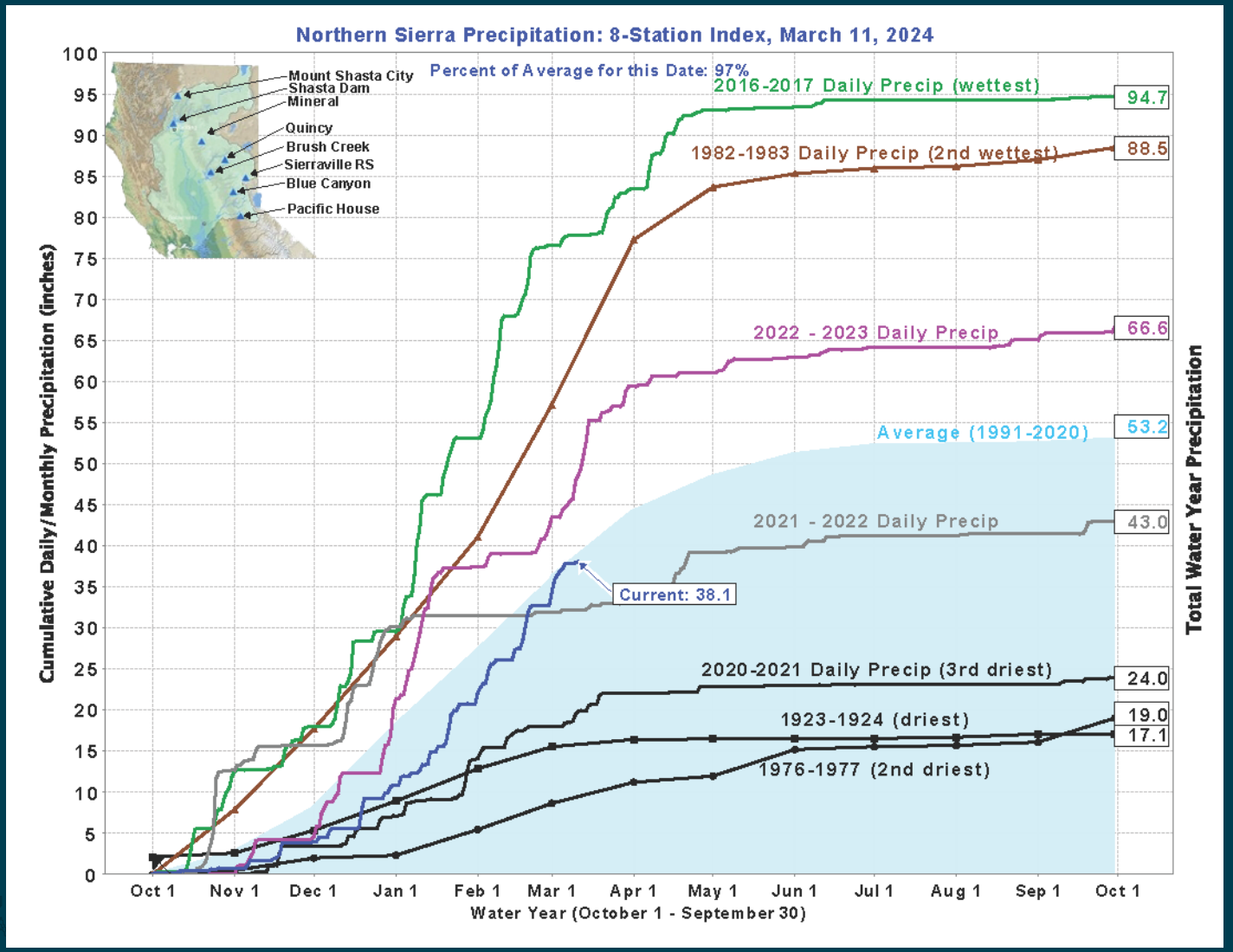
March 12, 2024

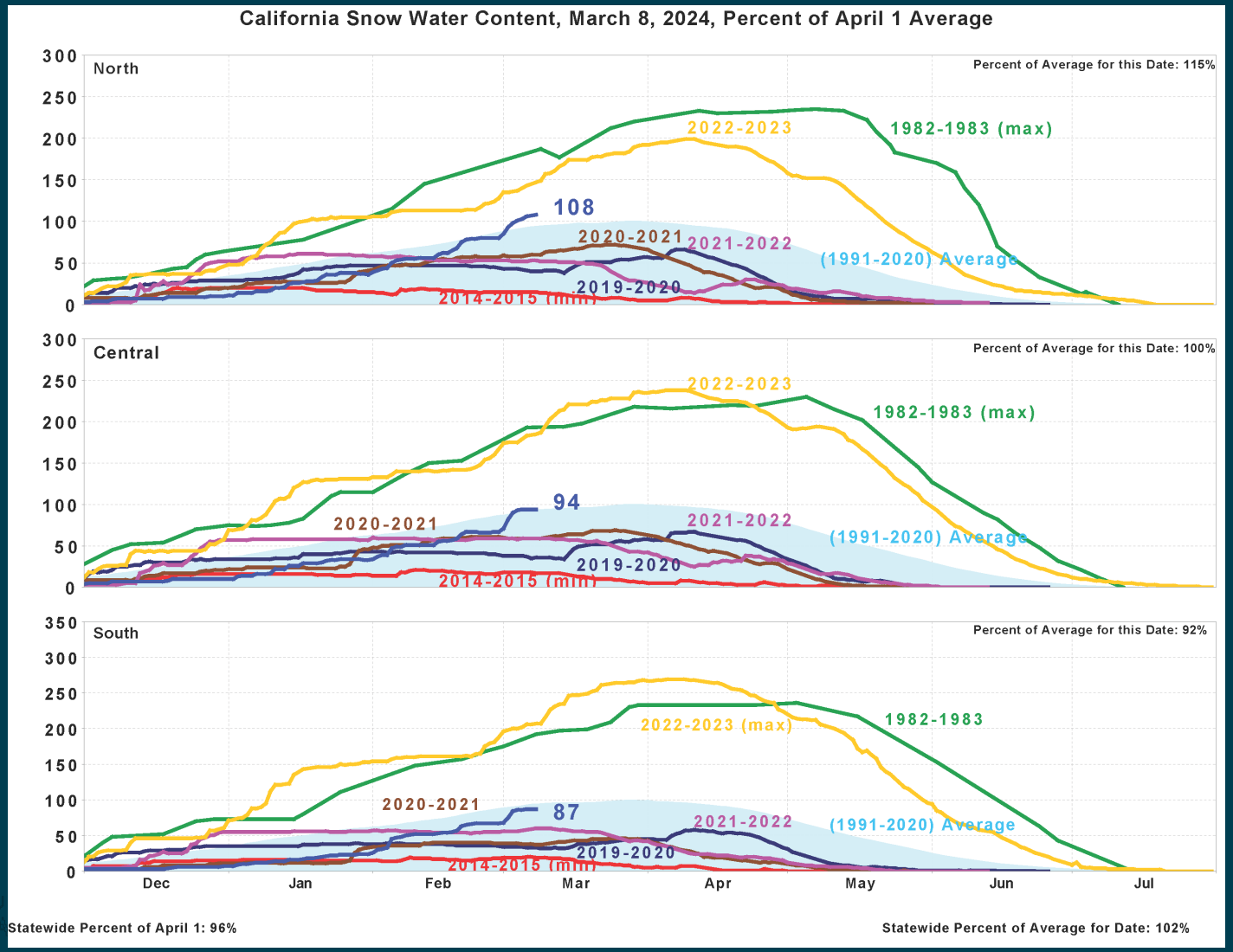


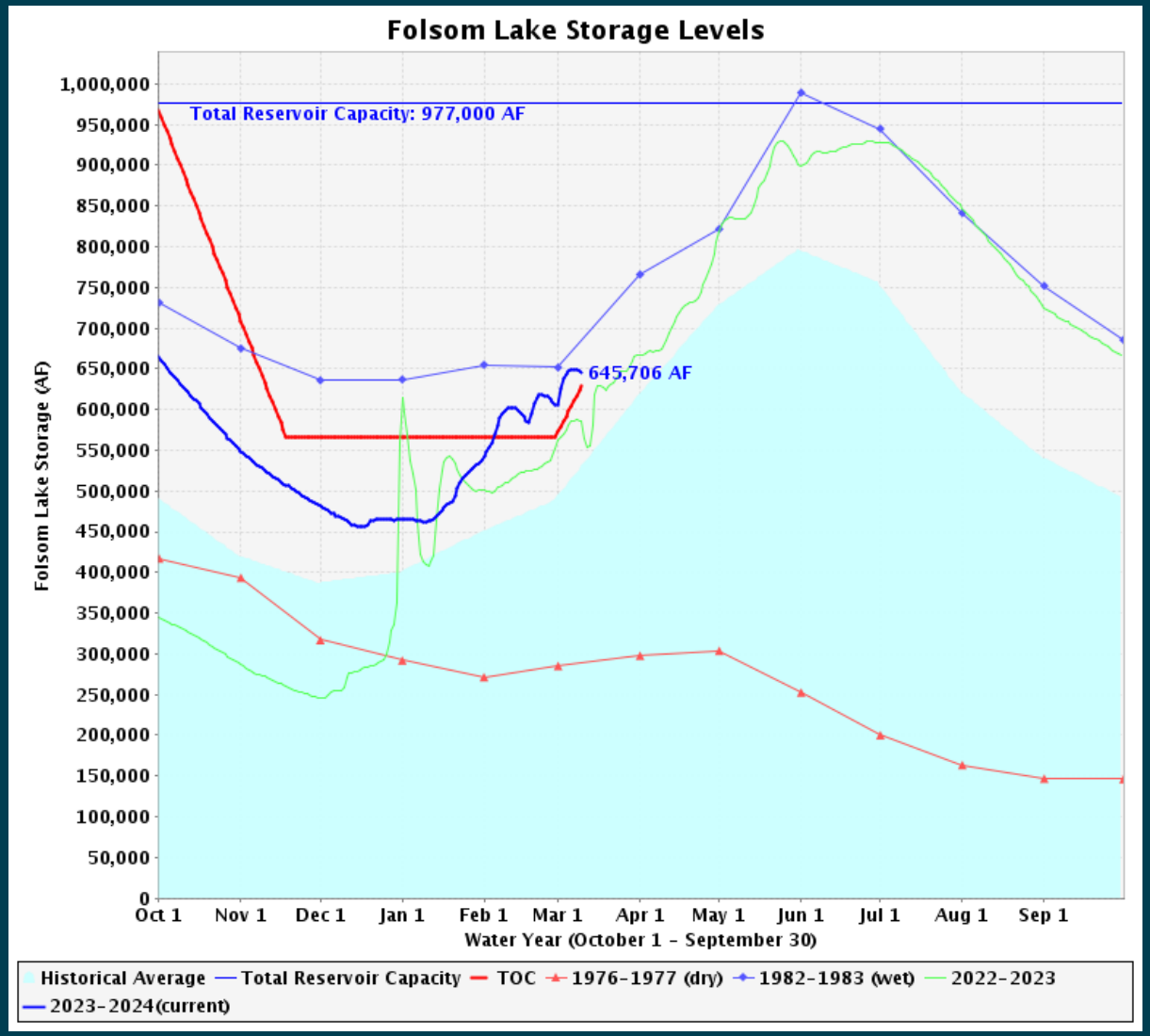
- Shasta – 3.85 MAF
- Trinity – 1.83 MAF
- Folsom – 646 TAF
- San Luis – 1.48 MAF
- New Melones – 2.0 MAF




Northern Sierra 8-Station
Precipitation Index for Water Year 2024 - Updated on March 11, 2024 11:48 AM
Note: Monthly totals may not add up to seasonal total because of rounding
Water Year Monthly totals are calculated based on Daily precipitation data from 12am to 12am PST
Average
WY 2024
Precipitation (inches)
0
1
2
3
4
5
6
7
8
9
10
11
12
0.8
2.8
3.1
5.3
7.0
10.0
9.9
9.1
12.0
8.9
5.3
8.1
4.3
2.8
1.1
0.1
0.2
0.5
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
Water Year


Northern Sierra Precipitation: 8-Station Index, March 11, 2024
Percent of Average for this Date: 97%
Mount Shasta City
Shasta Dam
Mineral
Quincy
Brush Creek
Sierraville RS
Blue Canyon
Pacific House
2016-2017 Daily Precip (wettest)
94.7
1982-1983 Daily Precip (2nd wettest)
88.5
2022 - 2023 Daily Precip
66.6
Average (1991-2020)
53.2
2021 - 2022 Daily Precip
43.0
Current: 38.1
2020-2021 Daily Precip (3rd driest)
24.0
1923-1924 (driest)
19.0
1976-1977 (2nd driest)
17.1
Cumulative Daily/Monthly Precipitation (inches)
Total Water Year Precipitation
Oct 1
Nov 1
Dec 1
Jan 1
Feb 1
Mar 1
Apr 1
May 1
Jun 1
Jul 1
Aug 1
Sep 1
Oct 1
Water Year (October 1 - September 30)

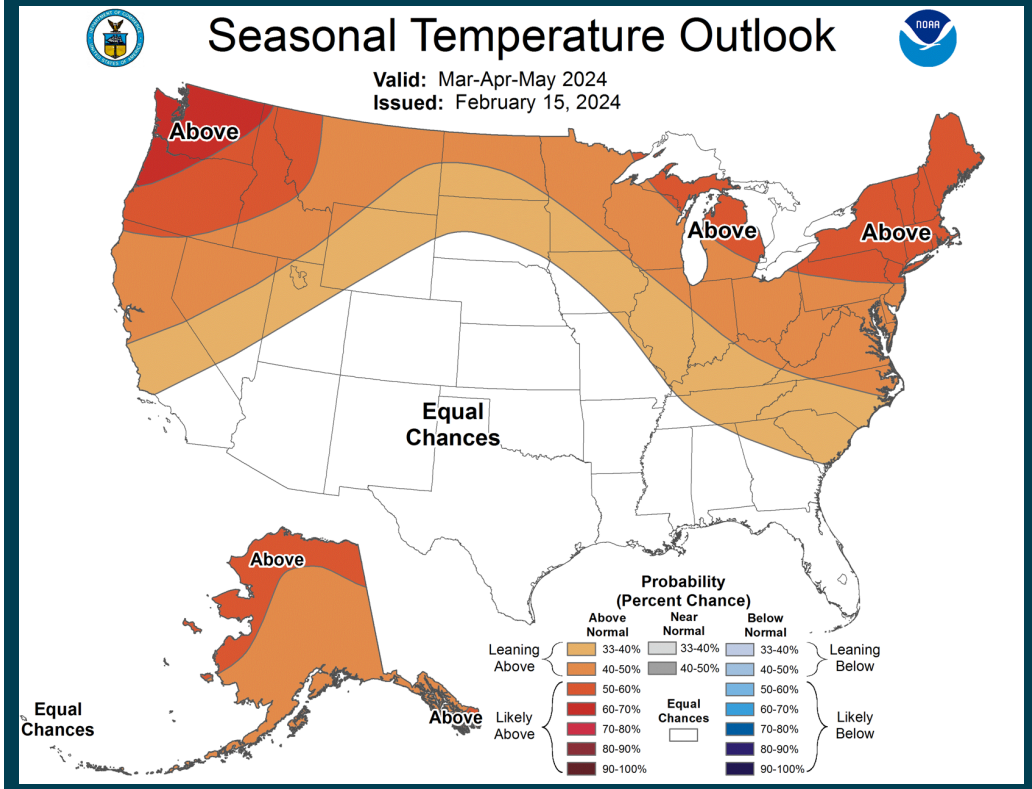

California Snow Water Content, March 8, 2024, Percent of April 1 Average
North
Percent of Average for this Date: 115%
2022-2023
1982-1983 (max)
108
2020-2021
2021-2022
(1991-2020) Average
2019-2020
2014-2015 (min)
Central
Percent of Average for this Date: 100%
2022-2023
1982-1983 (max)
94
2020-2021
2021-2022
(1991-2020) Average
2019-2020
2014-2015 (min)
South
Percent of Average for this Date: 92%
2022-2023 (max)
1982-1983
2020-2021
87
2021-2022
(1991-2020) Average
2019-2020
2014-2015 (min)
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Statewide Percent of April 1: 96%
Statewide Percent of Average for Date: 102%

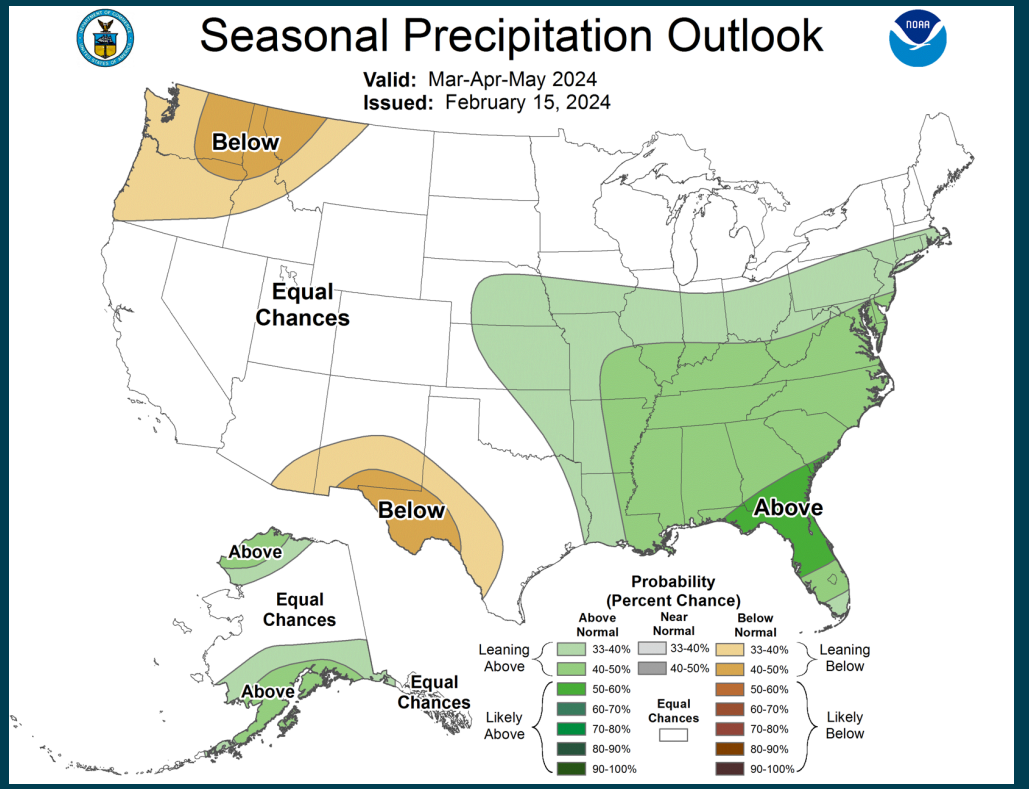


BUREAU OF RECLAMATION

2024 CVP Spring/Summer Ops

- Upstream Reservoirs
  - Storage management releases continuing but gradually reducing at Shasta, Folsom, and New Melones
  - Temperature operations planning starting in April/May
- Delta
  - San Luis storage below average (Fed. share almost full)
  - Managing exports for OMR
- CVP Allocations February 2024, reviewed monthly





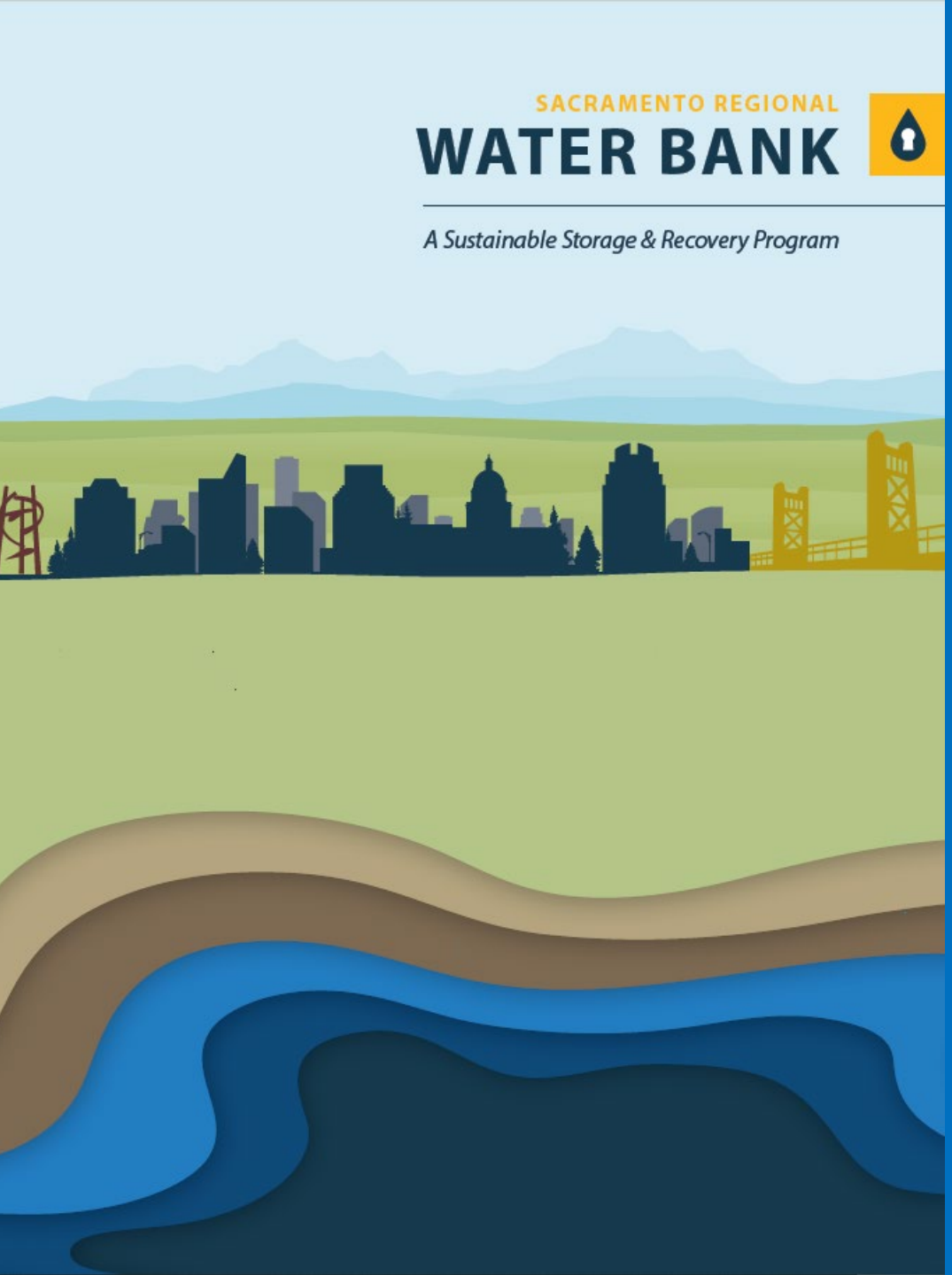
BUREAU OF RECLAMATION

Thank you!

Levi Johnson
lejohnson@usbr.gov

RWA Groundwater Bank Update

Trevor Joseph, RWA

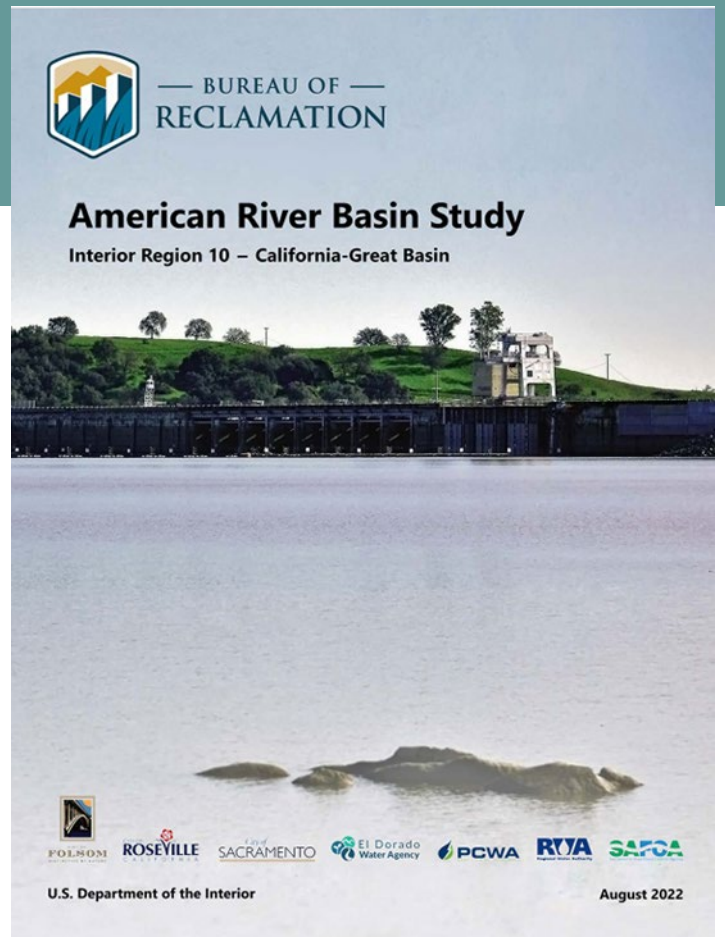


The Sacramento Regional Water Bank

Trevor Joseph, PG, CHG
Regional Water Authority (RWA)

March 12, 2024

Regional Water Authority
BUILDING ALLIANCES IN NORTHERN CALIFORNIA

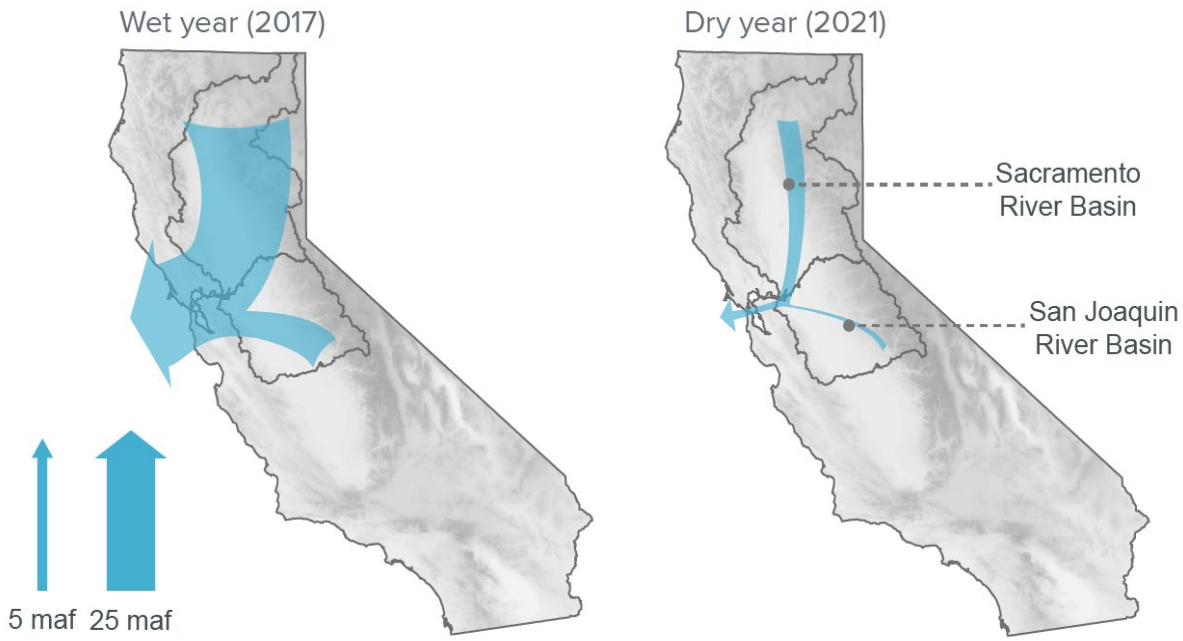

BUREAU OF
RECLAMATION
American River Basin Study
Interior Region 10 – California-Great Basin
FOLSOM
ROSEVILLE
SACRAMENTO
El Dorado Water Agency
PCWA
RWA
SAFCA
U.S. Department of the Interior
August 2022


The American River Region Supershed
Water Efficiency Program
North Fork American River
Middle Fork American River
Forestry Management
RiverArc Diversion
North Basin
South Fork American River
Folsom Reservoir
Sacramento River
South Basin
Cosumnes River
Upstream Storage Enhancement
Sacramento Regional Water Bank
Flood Improvements
Stewardship & Collaboration

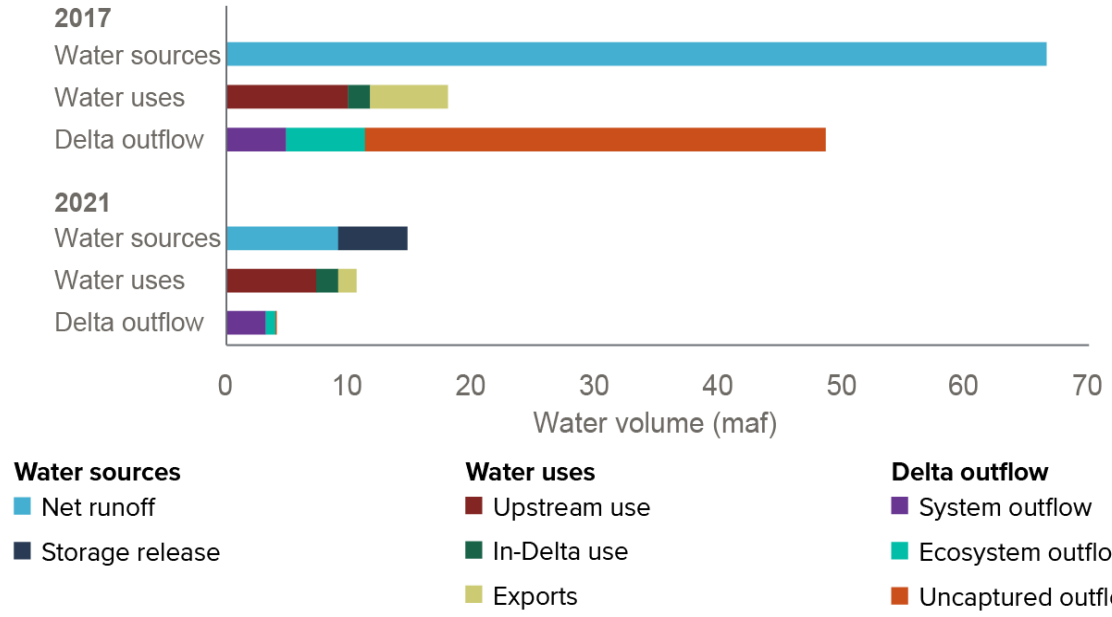
Changing Hydrology

Regional Water Authority
BUILDING ALLIANCES IN NORTHERN CALIFORNIA

Water sources and outflow from the Delta



Where water goes in the Delta watershed

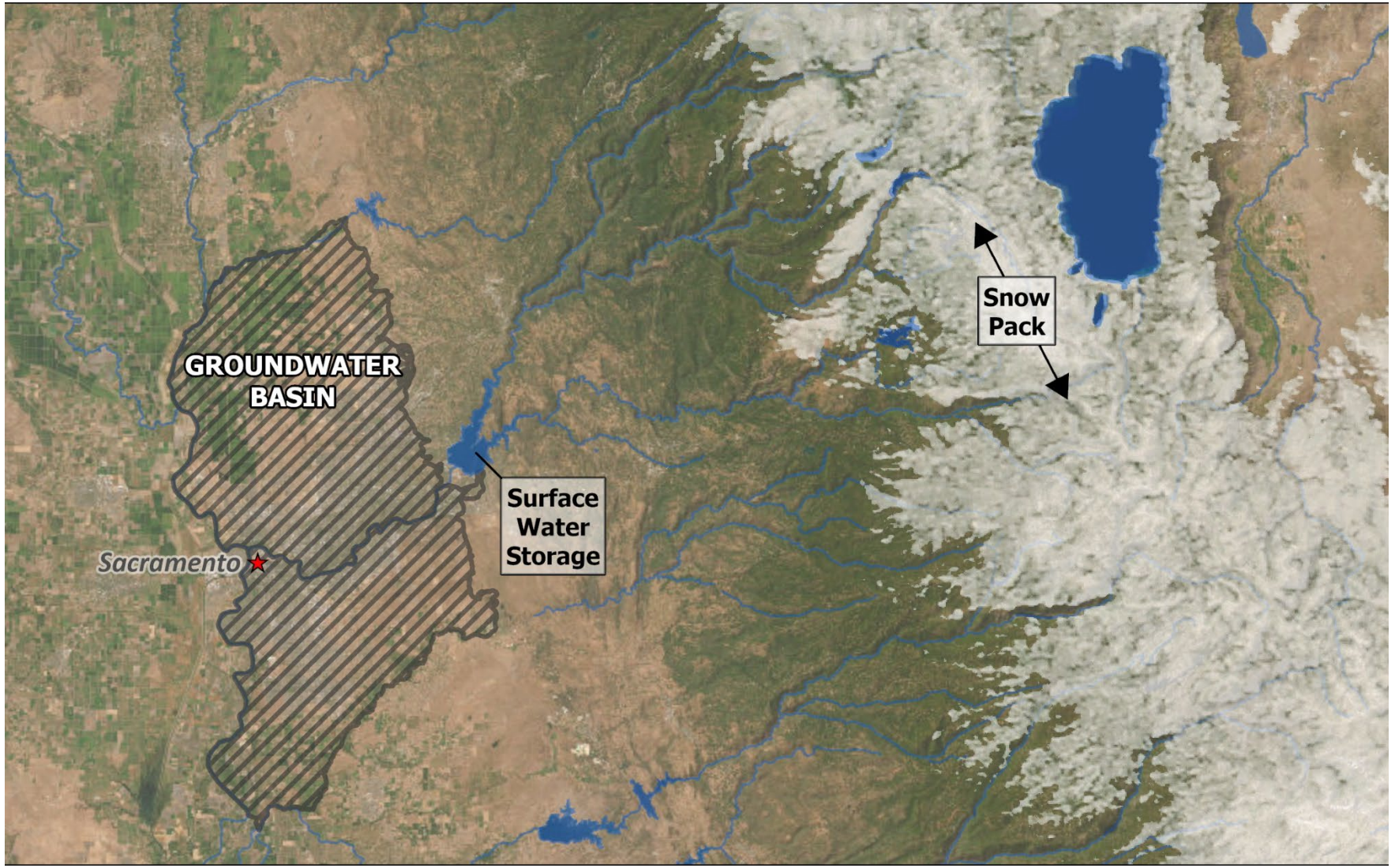


- In very wet years, upstream and in-Delta uses consume less than 20% of runoff and exports account for 10%, leaving the remainder (70%) as outflow.

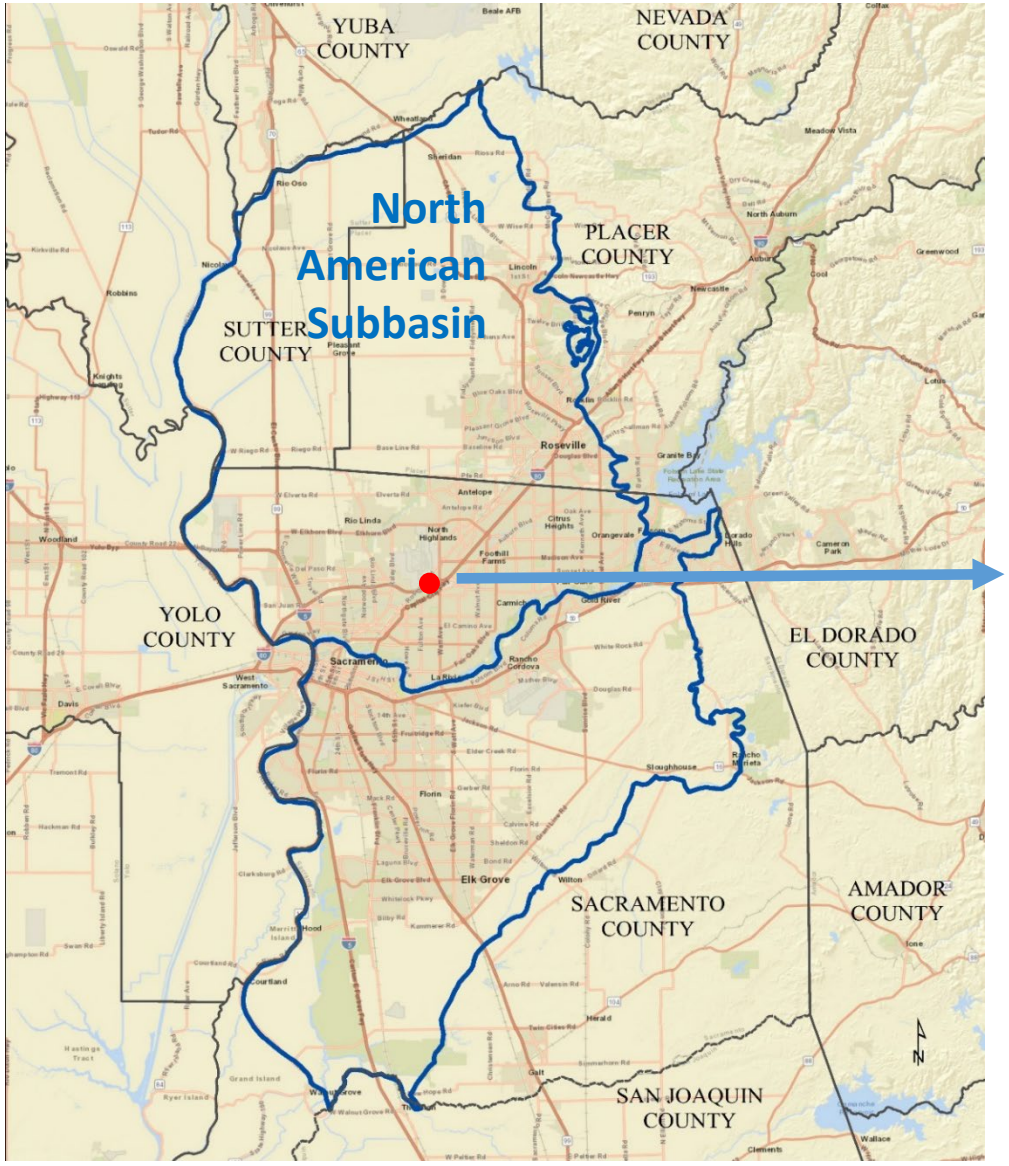
- In very dry years, upstream and in-Delta uses consume most of the water in the watershed; in 2021, they used all available runoff, leaving water stored in reservoirs to meet export demands and water quality and flow standards.

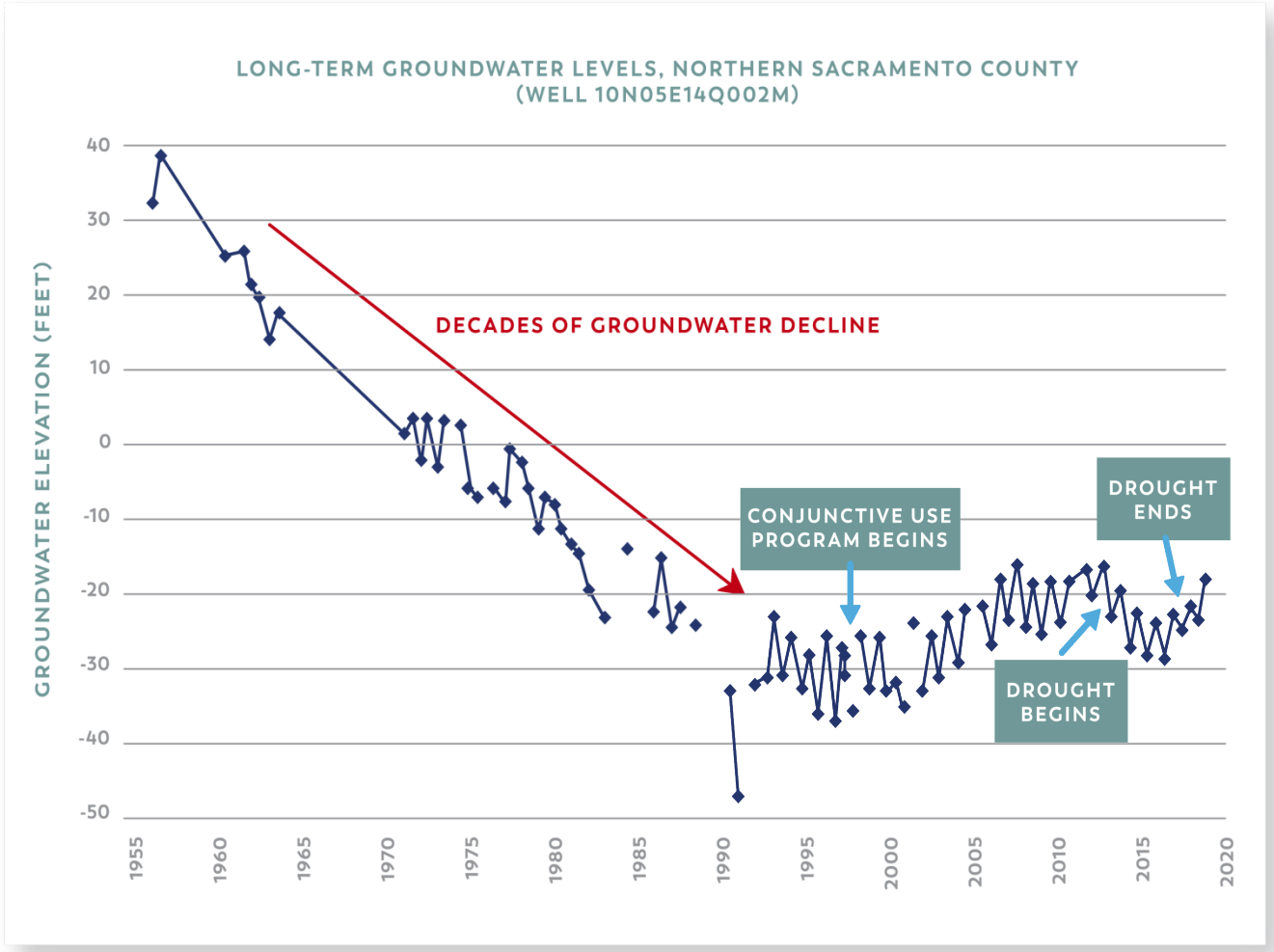
Scale of Groundwater Storage

- Historical reliance on **snowpack**, **surface water**, and **groundwater**
- Going forward, **groundwater storage** and **recovery** needs to be a more prominent part of our vision



Conjunctive Use—Proven Method of Groundwater Management





Sacramento Regional Water Bank

- Recharge and storage of water underground on behalf of specific parties - both regional and statewide
  - Predominantly in-lieu with direct recharge through wells
- Formal accounting systems to keep track of balances
- Comprehensive institutional structure including governance to properly manage banking activities
- Financial agreements and economic incentives to encourage and expand water banking activities

Water Bank – Goals/Objectives and Principles

Regional Water Authority
BUILDING ALLIANCES IN NORTHERN CALIFORNIA

Goal

The **GOAL** of the Water Bank is to expand conjunctive use, thereby increase water banking operations throughout the region to:

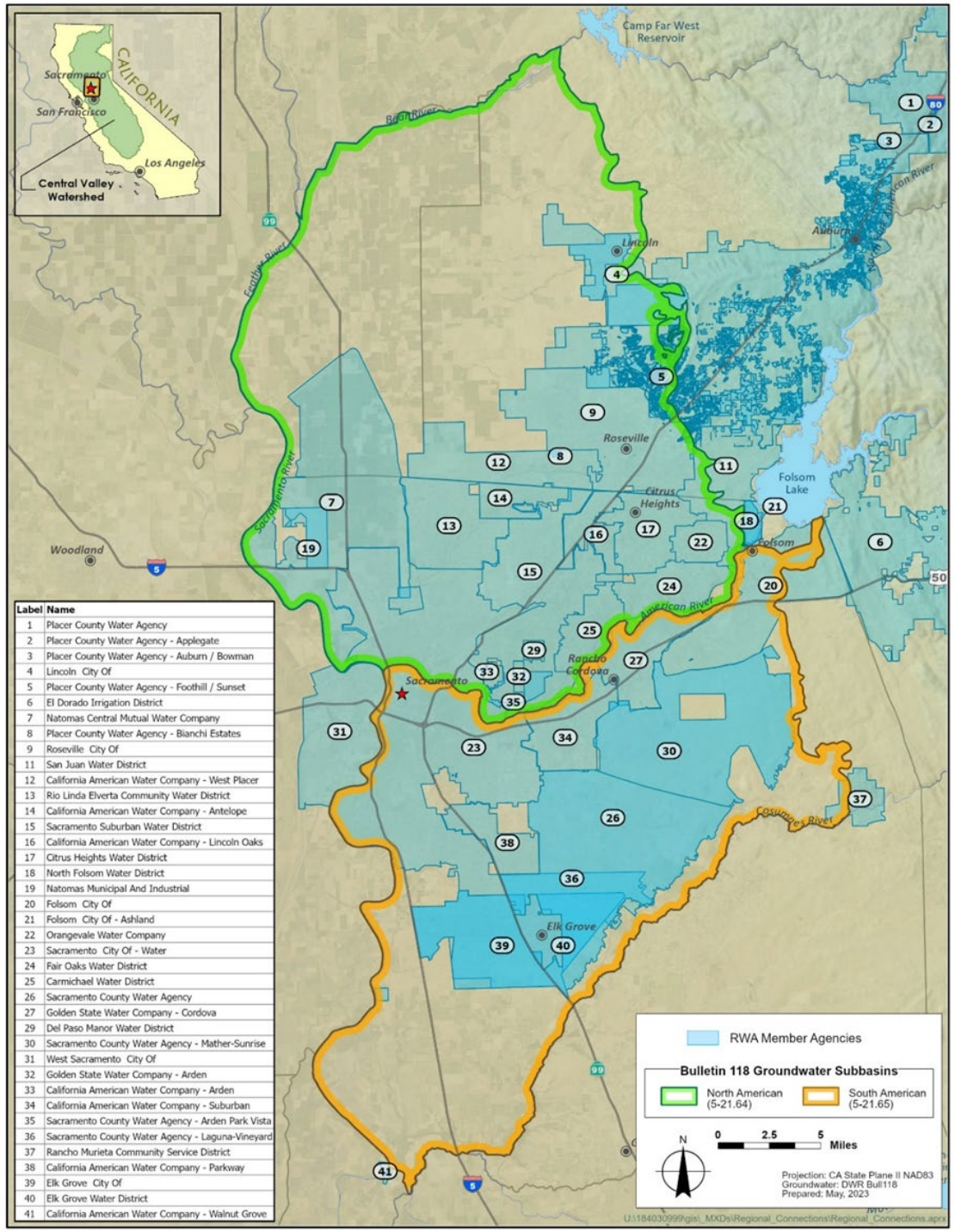
(1) Improve long-term regional reliability and provide statewide water supply opportunities when possible; and

(2) Support healthy ecosystem function on the lower American River.

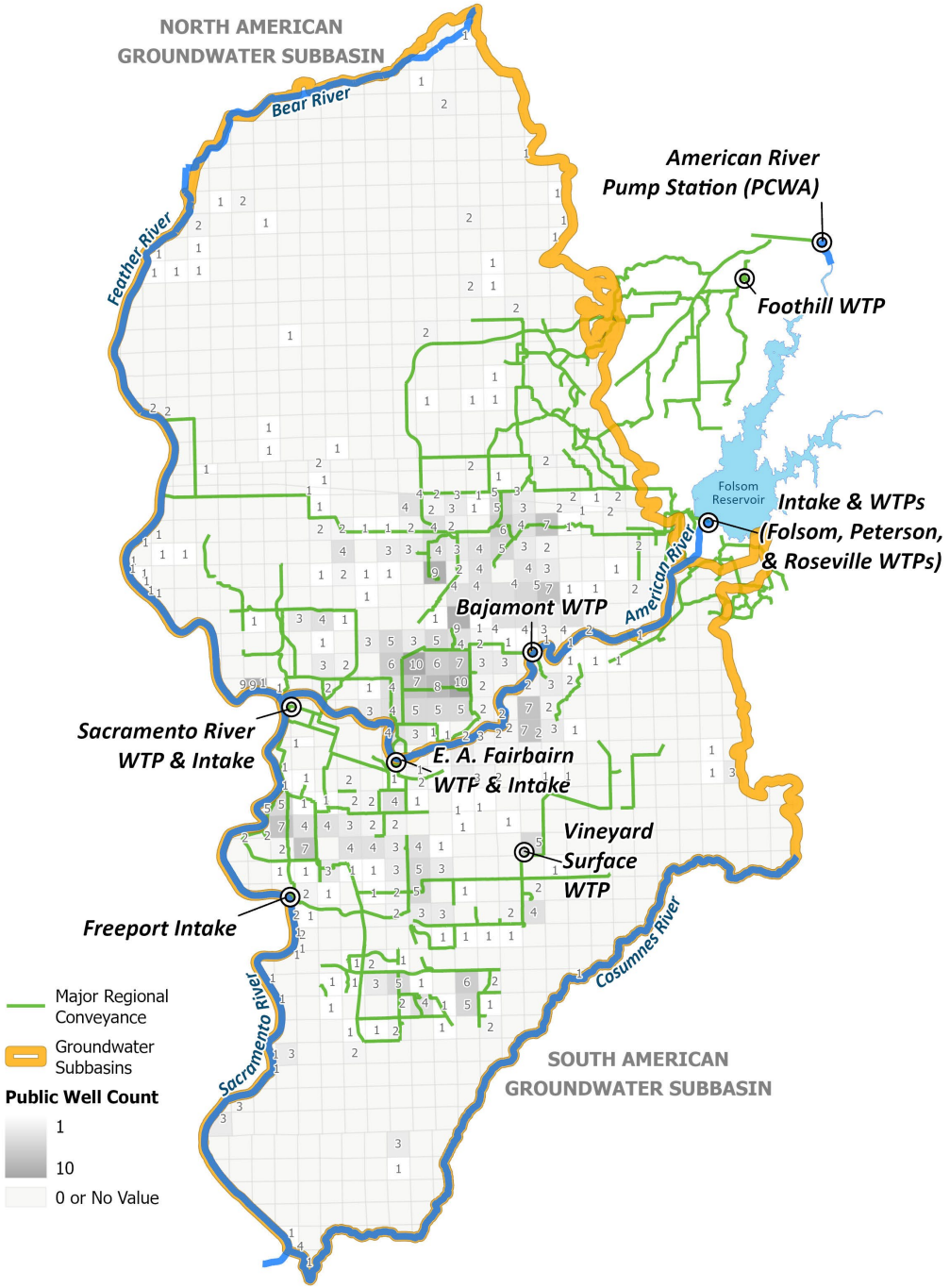
Objectives

The Water Bank **OBJECTIVES** are to:

- Increase groundwater recharge during wet conditions using available surface and recycled water supplies.
- Reduce reliance on surface water during dry conditions by using previously banked groundwater.
- Contribute to water reliability of water agencies in the region with no or limited access to groundwater.
- Contribute to water reliability of water agencies in the region with no or limited access to surface water.
- Maintain the quality of surface water and groundwater.
- Contribute to CVP operational flexibility by reducing reliance on Folsom Reservoir during dry conditions.
- Contribute to healthy ecosystem function, including on the lower American River.
- Consider and advance mutually beneficial opportunities to partner with entities outside the region on operational collaboration and/or investment in the Water Bank.
- Generate revenue for investment in infrastructure and other projects/programs to improve regional water supply reliability, resiliency, and affordability for participating agencies.
- Generate revenue to reduce financial barriers to conjunctive use for participating agencies.

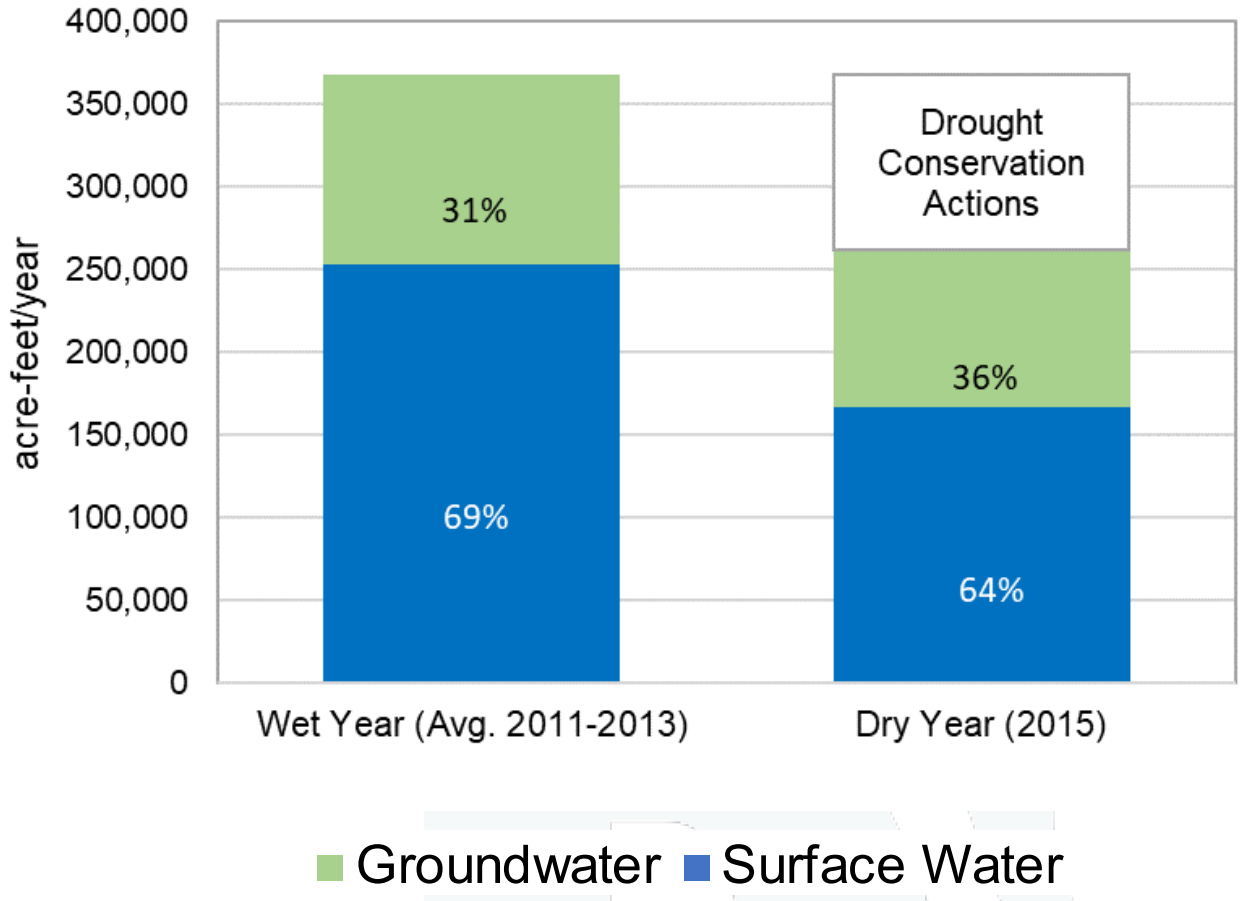


Label	Name
1	Placer County Water Agency
2	Placer County Water Agency - Applegate
3	Placer County Water Agency - Auburn / Bowman
4	Lincoln City Of
5	Placer County Water Agency - Foothill / Sunset
6	El Dorado Irrigation District
7	Natomas Central Mutual Water Company
8	Placer County Water Agency - Bianchi Estates
9	Roseville City Of
11	San Juan Water District
12	California American Water Company - West Placer
13	Rio Linda Elverta Community Water District
14	California American Water Company - Antelope
15	Sacramento Suburban Water District
16	California American Water Company - Lincoln Oaks
17	Citrus Heights Water District
18	North Folsom Water District
19	Natomas Municipal And Industrial
20	Folsom City Of
21	Folsom City Of - Ashland
22	Orangevale Water Company
23	Sacramento City Of - Water
24	Fair Oaks Water District
25	Carmichael Water District
26	Sacramento County Water Agency
27	Golden State Water Company - Cordova
29	Del Paso Manor Water District
30	Sacramento County Water Agency - Mather-Sunrise
31	West Sacramento City Of
32	Golden State Water Company - Arden
33	California American Water Company - Arden
34	California American Water Company - Suburban
35	Sacramento County Water Agency - Arden Park Vista
36	Sacramento County Water Agency - Laguna-Vineyard
37	Rancho Murieta Community Service District
38	California American Water Company - Parkway
39	Elk Grove City Of
40	Elk Grove Water District
41	California American Water Company - Walnut Grove



Water Bank – Shifting Water Sources

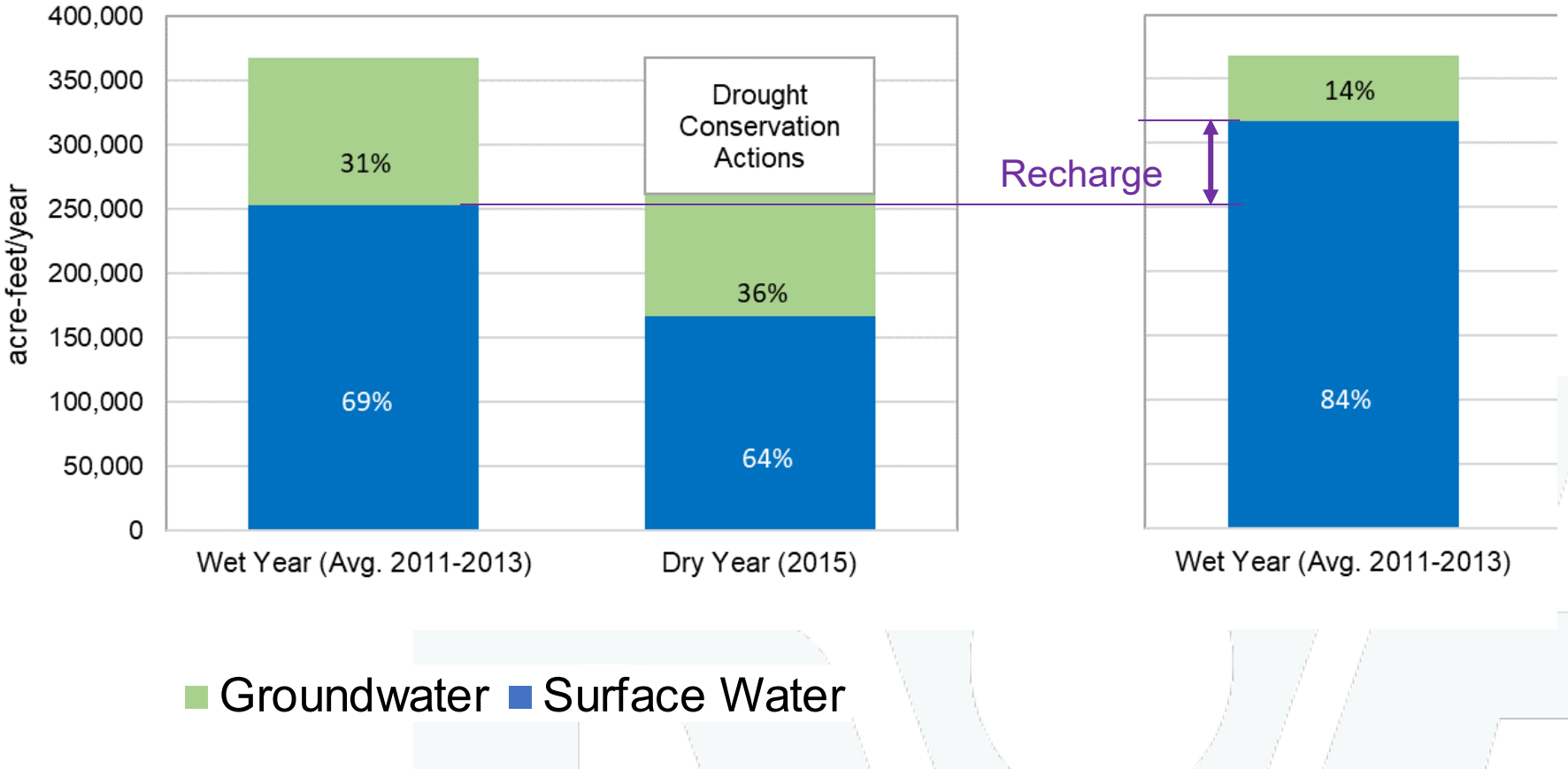
Current Conditions



Water Bank – Shifting Water Sources (cont.)

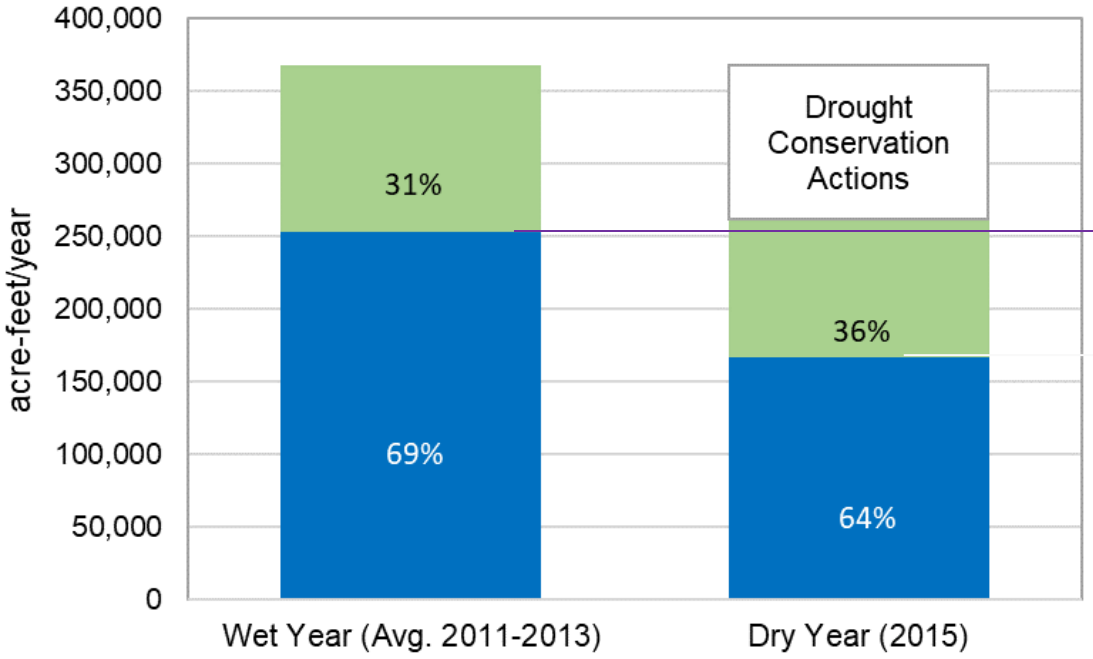
Current Conditions

Conditions With the Water Bank

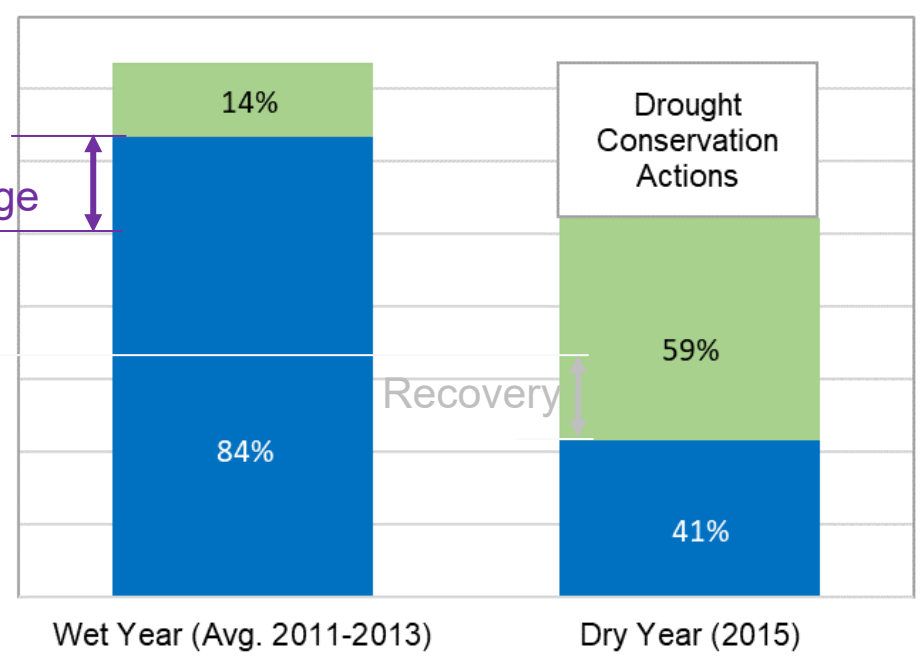


Water Bank – Shifting Water Sources (cont.)

Current Conditions



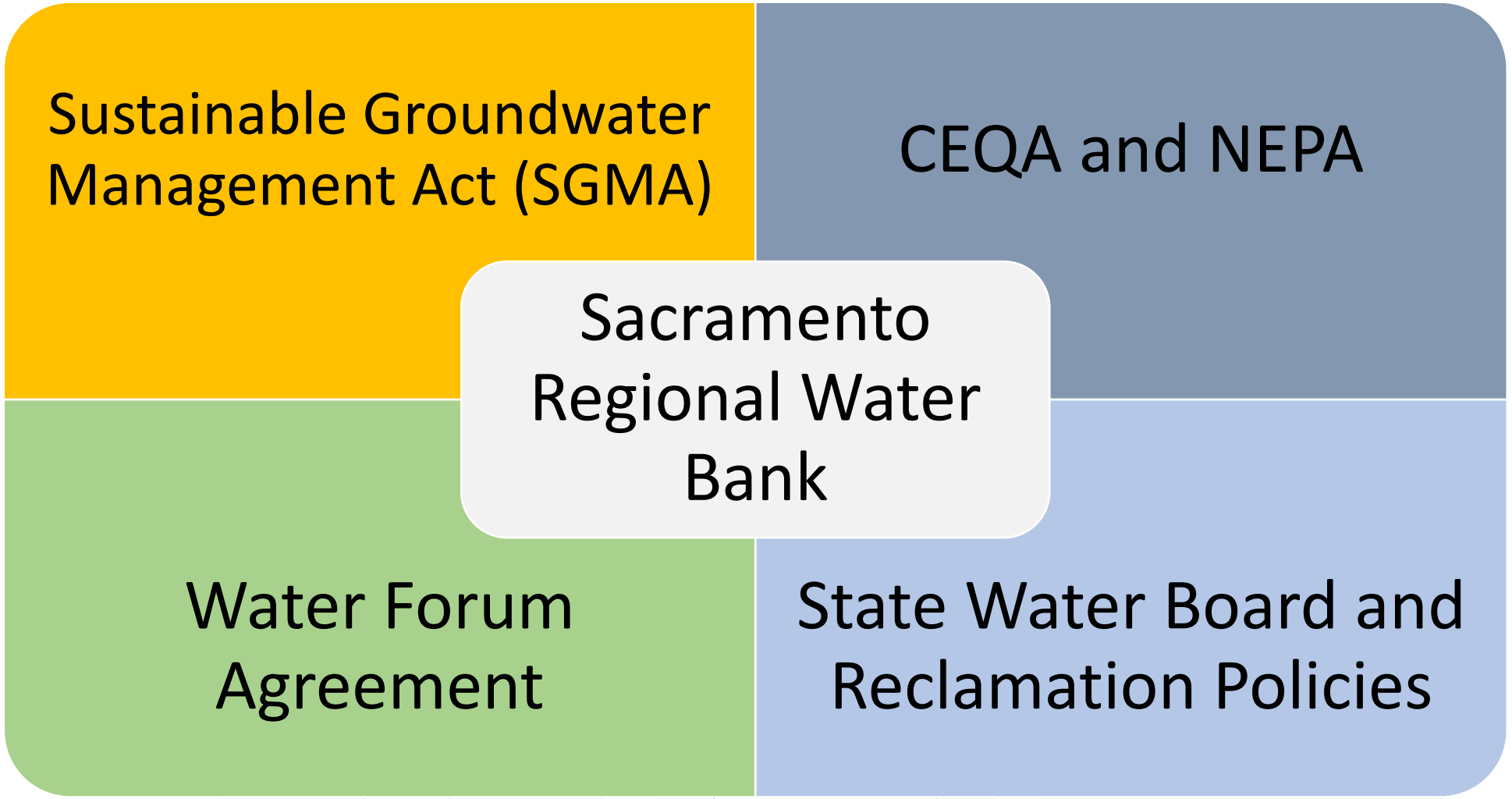
Conditions With the Water Bank



Groundwater ■ Surface Water

Applicable Regulatory Setting

Regional Water Authority
BUILDING ALLIANCES IN NORTHERN CALIFORNIA



Federally Recognized Water Banks

Regional Water Authority
BUILDING ALLIANCES IN NORTHERN CALIFORNIA

— BUREAU OF —
RECLAMATION

Groundwater Banking Guidelines for Central Valley Project Water

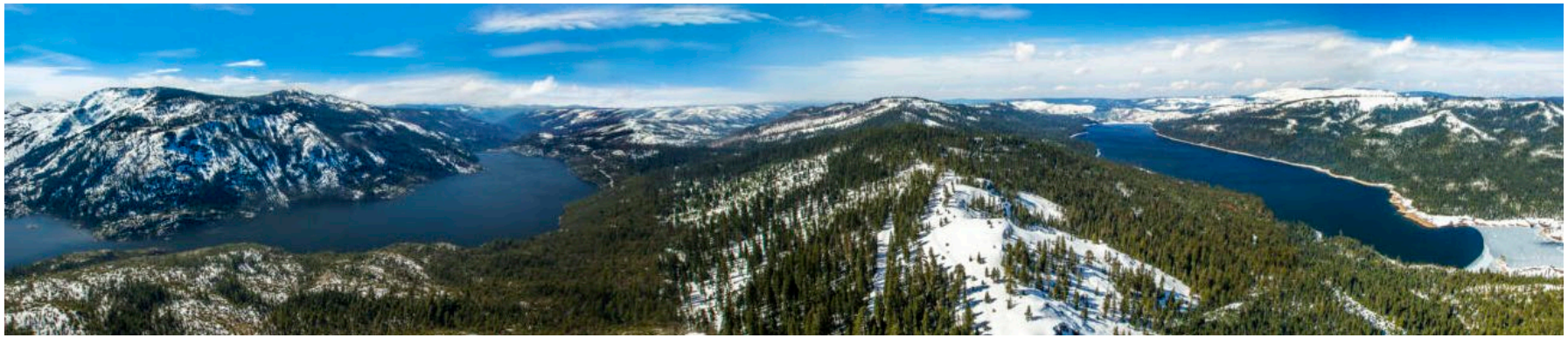
Effective Date: November 12, 2014
Updated October 4, 2019

	Acknowledged Water Banks	Identifer Number
1	North Kern Water Storage District	05-WC-20-3256
2	Rosedale-Rio Bravo Water Storage District	05-WC-20-3257
3	Semitropic Water Storage District	05-WC-20-3258
4	Tulare Lake Basin Water Storage District	05-WC-20-3259
5	Cawelo Water District	05-WC-20-3260
6	Lakeside Irrigation District	05-WC-20-3261
7	Kaweah Delta Water Conservation District	05-WC-20-3266
8	Kern Water Bank Authority	18-WC-20-5263
9	Meyers Farms Family Trust	N/A
10	Pixley Water Bank Project	18-WC-20-5264
11	West Kern Water District Groundwater Bank	18-WC-20-5255

Benefits and Outcomes

RWA
Regional Water Authority
BUILDING ALLIANCES IN NORTHERN CALIFORNIA

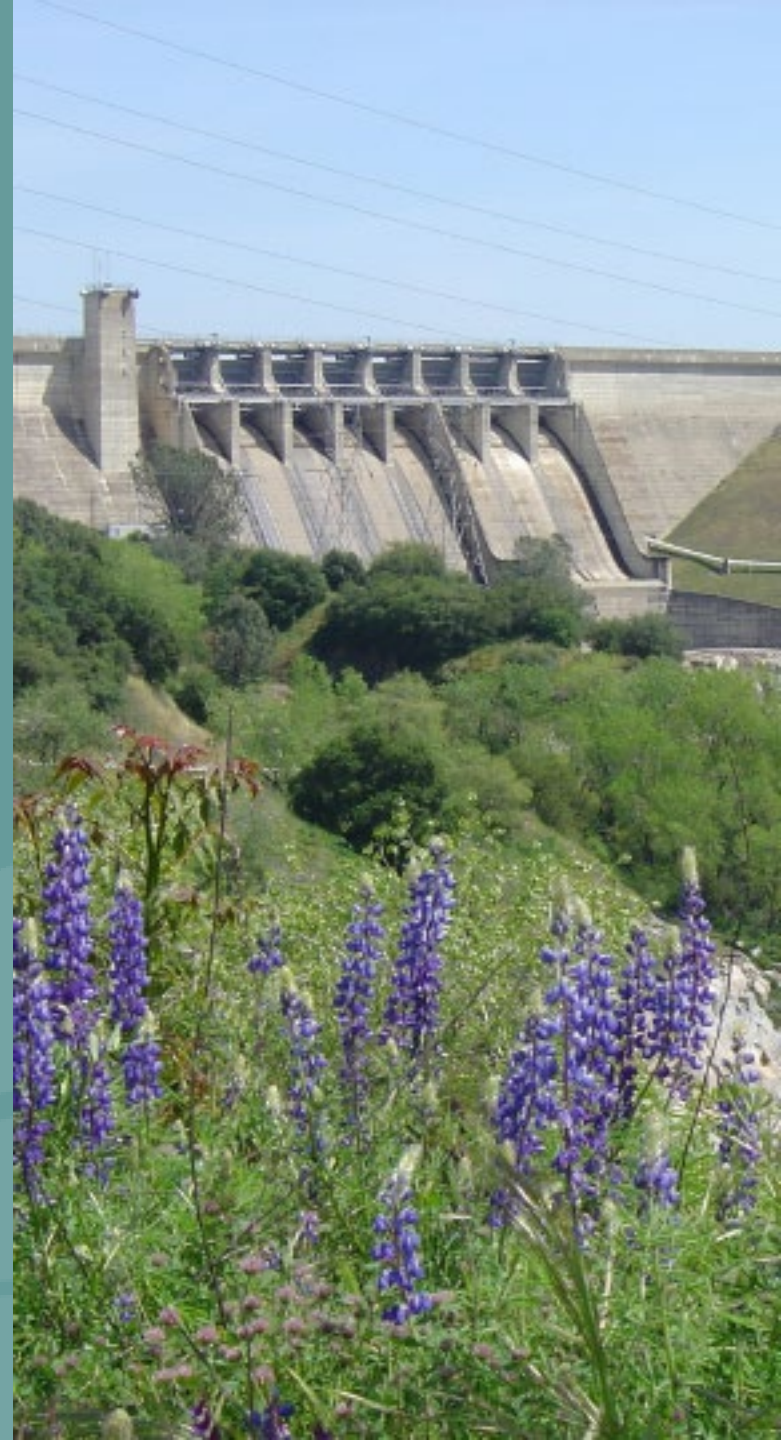
- Water Supply Reliability
- Ecosystem, Fish, & Wildlife
- Water Quality
- Economic



Thank you!

Sacramento Regional Water Bank contact information:
waterbankinfo@rwah2o.org

Sacramento Regional Water Bank website:
https://rwah2o.org/sacramento-regional-water-bank/



RWA
Regional Water Authority
BUILDING ALLIANCES IN NORTHERN CALIFORNIA

Bank Protection Working Group

Gregg Ellis, ICF

Q&A: River Conditions, Planning, and Management Updates

Opportunity for Task Force questions

UPPER/MIDDLE REACH UPDATES

2024 Habitat Projects

Erica Bishop, Water Forum

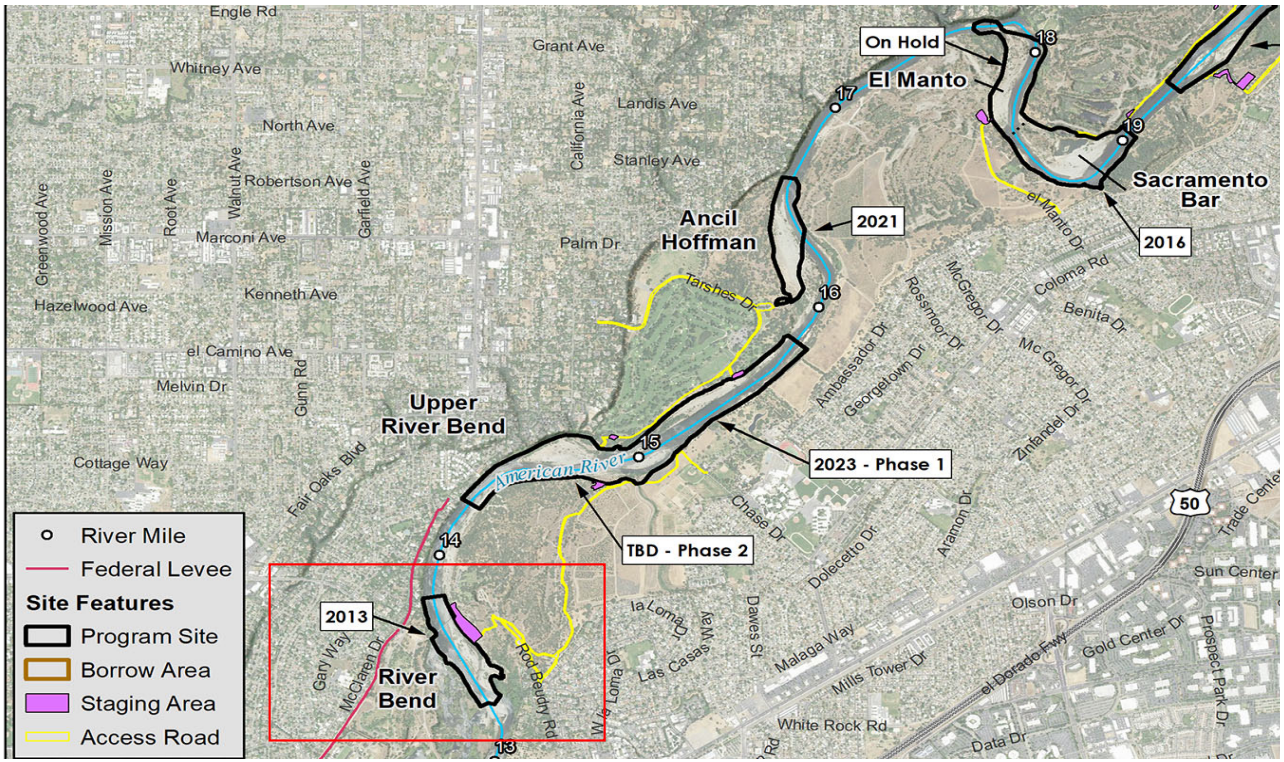
WATER FORUM

Lower American River Salmonid Habitat Improvement Program

2024 Project Briefing: River Bend

LARTF – MARCH 2024

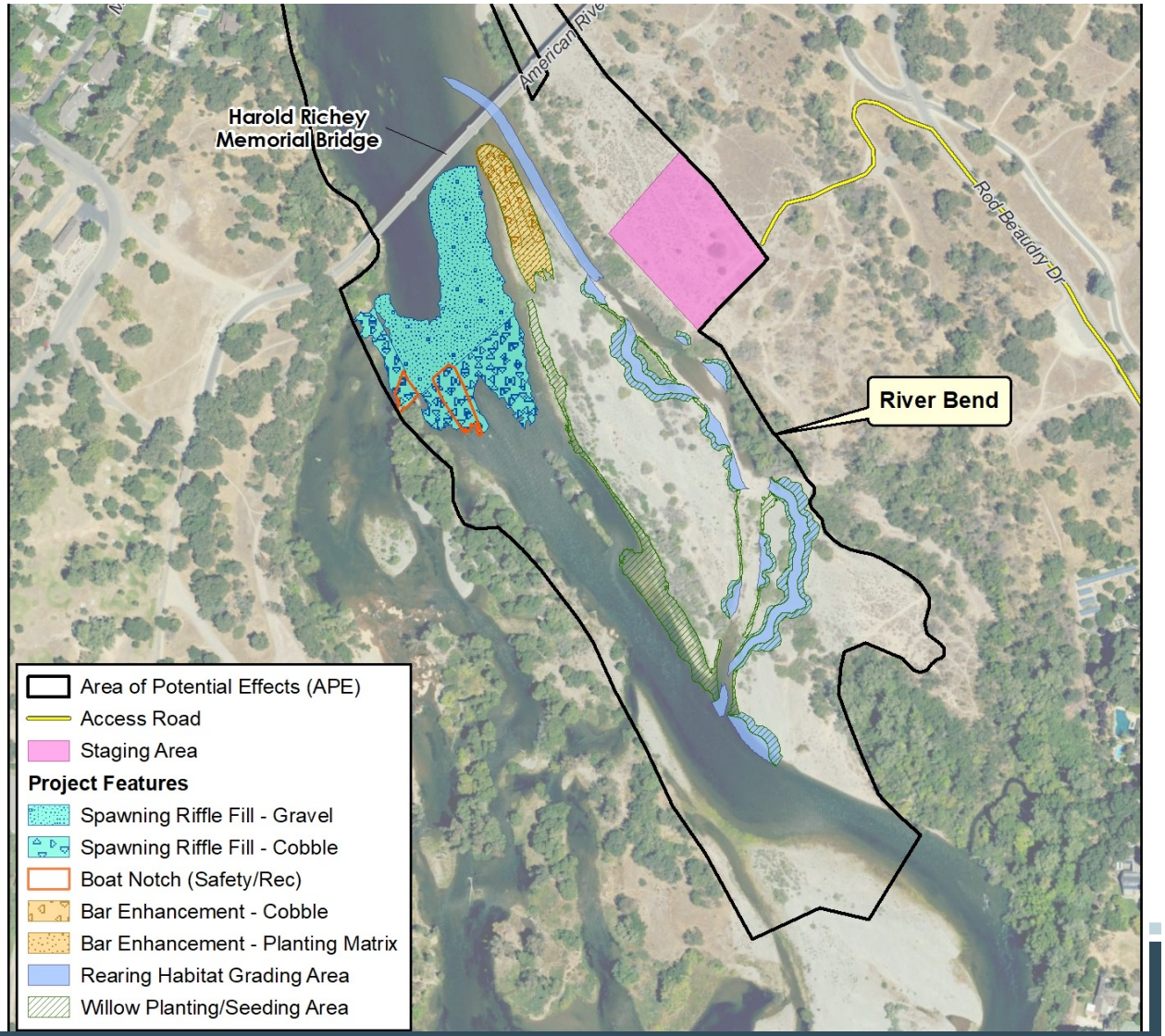
River Bend 2024 Overview



Project Elements

Habitat Features

- Spawning riffle (~3 acres)
  - ~8,400 cy gravel/cobble import
  - Offsite borrow (MS Bar)
- Rearing habitat (2.6 acres)
  - Re-wet side channel at lower flows (mitigate stranding risk)
  - Add seasonally inundated benches
- 35 woody habitat structures
- Native seeding/willow planting
- Excess material offhaul (~6,400 cy)
- ~8 week project duration



Other Program News

- Recent peer-reviewed publication
  - *Applying parentage methods to detect gravel augmentation effects on juvenile Chinook Salmon recruitment rates.*
    - Published in River Research and Applications, March 2024.
    - Special thanks to CVPIA-USFWS (funding), Cramer Fish Sciences/Genidaqs, PSMFC, and CDFW
- Potential future funding
  - February 2024, $1 Million, Reclamation-Watersmart
    - Study and Design of Rearing Habitat Sites
  - March 2024, $10 Million, Reclamation-CVPIA
    - Maintenance and Monitoring of Previously Constructed Spawning/Rearing Sites

Q&A: Upper/Middle Reach Updates

Opportunity for Task Force questions

Truxel Bridge Feasibility Study

Fedolia “Sparky” Harris, City of Sacramento

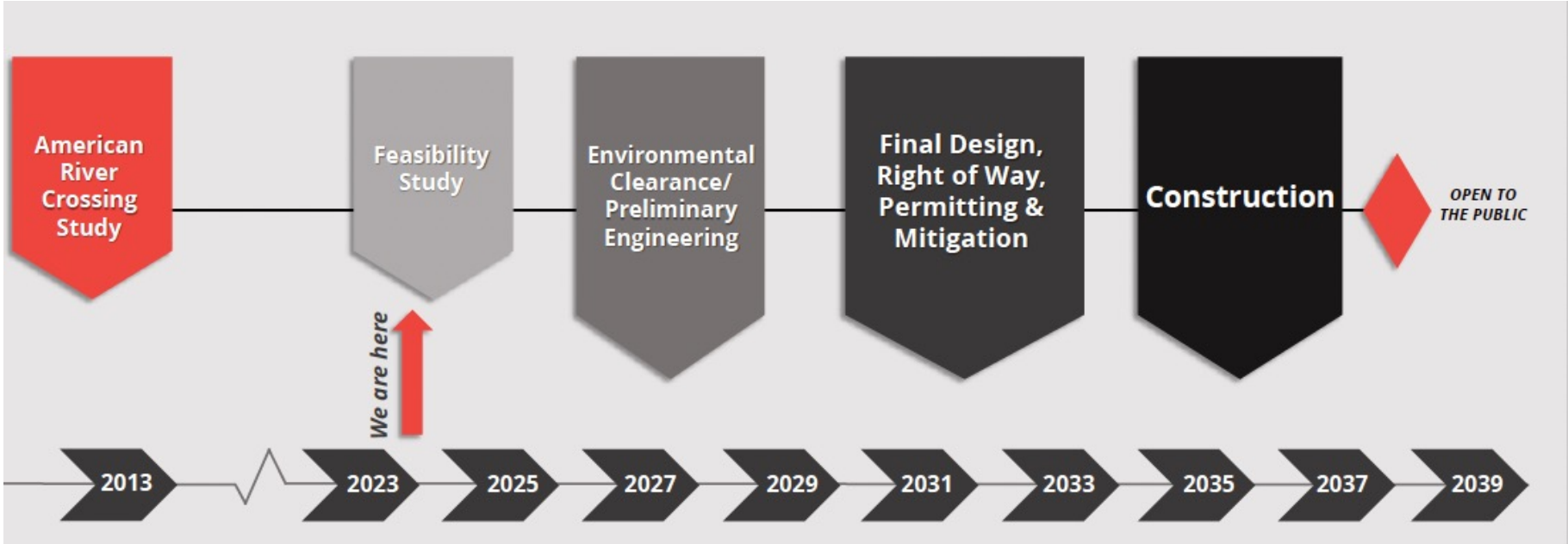
City of SACRAMENTO

Truxel Bridge Concept and Feasibility Study

Lower American River Task Force

March 12, 2024

Where are we?


American River Crossing Study
Feasibility Study
Environmental Clearance/ Preliminary Engineering
Final Design, Right of Way, Permitting & Mitigation
Construction
OPEN TO THE PUBLIC
We are here
2013
2023
2025
2027
2029
2031
2033
2035
2037
2039

What are we trying to address?

Limited connectivity across the American River:

- Creates a barrier to economic activity, land use development, social exchanges, and access to jobs
- Contributes to rush hour delays on I-5
- Contributes to longer emergency response times and limits evacuation alternatives
- Creates a barrier to recreational opportunities within the American River Parkway

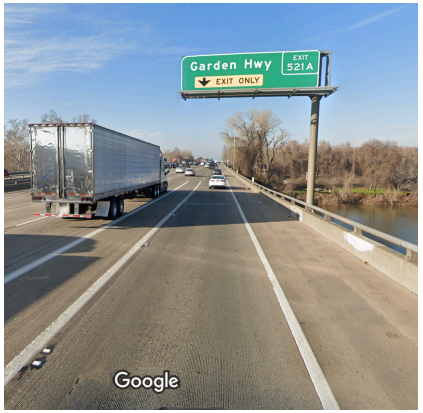
What are we trying to address?

The river as a barrier causes longer trip lengths between origins and destinations that are physically close, which:

- Discourages walking and bicycling
- Impacts public health
- Leads to inefficient transit routing
- Consumes more fuel
- Generates higher levels of air pollutants and Greenhouse gas (GHG) emissions due to the reliance on automobiles

What are we trying to address?

Jibboom Street Bridge



I-5 Bridge

State Route 160 Bridge

Pipe’s Bridge

2013 City Council Direction

2013 City Council Direction

Objective of the Study

Evaluate and assess the constraints, risks, cost, and overall viability of the bridge crossing.

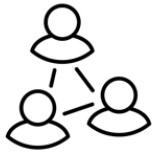
Study Components

Engineering

- Survey
- Traffic Analysis
- Geotechnical
- Hydraulics
- Utilities
- Geometrics
- Structural

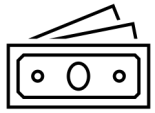
Environmental

- Biological Resources
- Cultural Resources
- Mitigation Opportunities
- CEQA & NEPA



Public Engagement

- Community Engagement Plan
- Project Website
- Project Information Sheets
- Pop-up Events
- Community Meetings



Funding

- Funding Strategy

Geometrics – Cross Section

Completed To Date

- Identified elements for serving multiple modes of travel
- Coordinated with stakeholders to refine widths/placement of cross-sectional elements

Constraints Identified

- Existing infrastructure on Sequoia Pacific Blvd.

Next Steps

- Refine cross sectional elements, widths, and locations

Geometrics – Horizontal Alignment

Completed To Date

- Identified existing infrastructure (buildings, utilities)
- Identified existing environmental resources
- Developed alignments to reduce impacts

Constraints Identified

- Existing buildings on Sequoia Pacific Blvd.
- PG&E power line towers along Garden Highway
- Trail connections

Next Steps

- Determine if buildings can be avoided

Geometrics – Vertical Alignment

Completed To Date

- Completed survey to identify existing elevations of the site
- Identified clearance requirements from Coast Guard, FEMA, American River Flood Control

Constraints Identified

- PG&E power line along Garden Highway
- Levees along the American River and Steelhead Creek
- Elevation of Garden Hwy/Truxel

Next Steps

- Evaluate extent of walls needed

Flood Control

Completed To Date

- Coordinated with Army Corps of Engineers and Central Valley Flood Protection Board
- Obtained preliminary concurrence on vertical clearance from US Coast Guard

Constraints Identified

- Navigable waterway clearance
- Levee freeboard requirements
- Allowable impacts to water surface elevations

Next Steps

- Evaluate impacts from encroachments
- Develop mitigation options

Environmental

Completed To Date

- Initial identification of biological & cultural resources
- Coordinated with Sacramento County Regional Parks
- Initiated outreach to Native American tribes

Constraints Identified

- Cultural resources
- Biological resources (protected species, sensitive habitat, & waters)
- Limited mitigation opportunities

Next Steps

- Coordination with resource agencies (CDFW, USFWS, NMFS) & tribes

Structural

Completed To Date

- Identified height and length requirements for the bridge
- Identified potential pier locations and widths
- Identified potential structure types

Constraints Identified

- Vertical clearance requirements from the Coast Guard, Army Corps, FEMA
- Environmental resource locations as it relates to pier placement

Next Steps

- Pier optimization with flood control, environmental resources
- Optimizing bridge type with cost
- Assess foundation options and costs

Funding

Completed To Date

- Outreach to federal, state, and local representatives

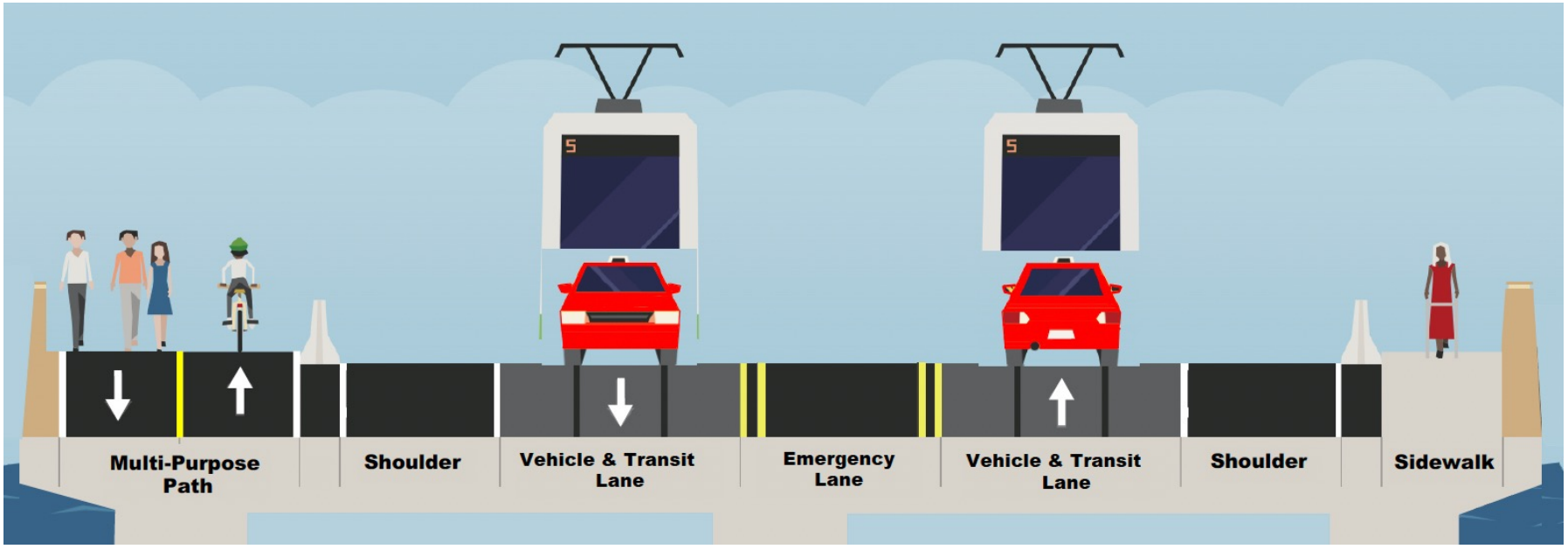
Constraints Identified

- Magnitude of cost anticipated
- Availability of funding sources

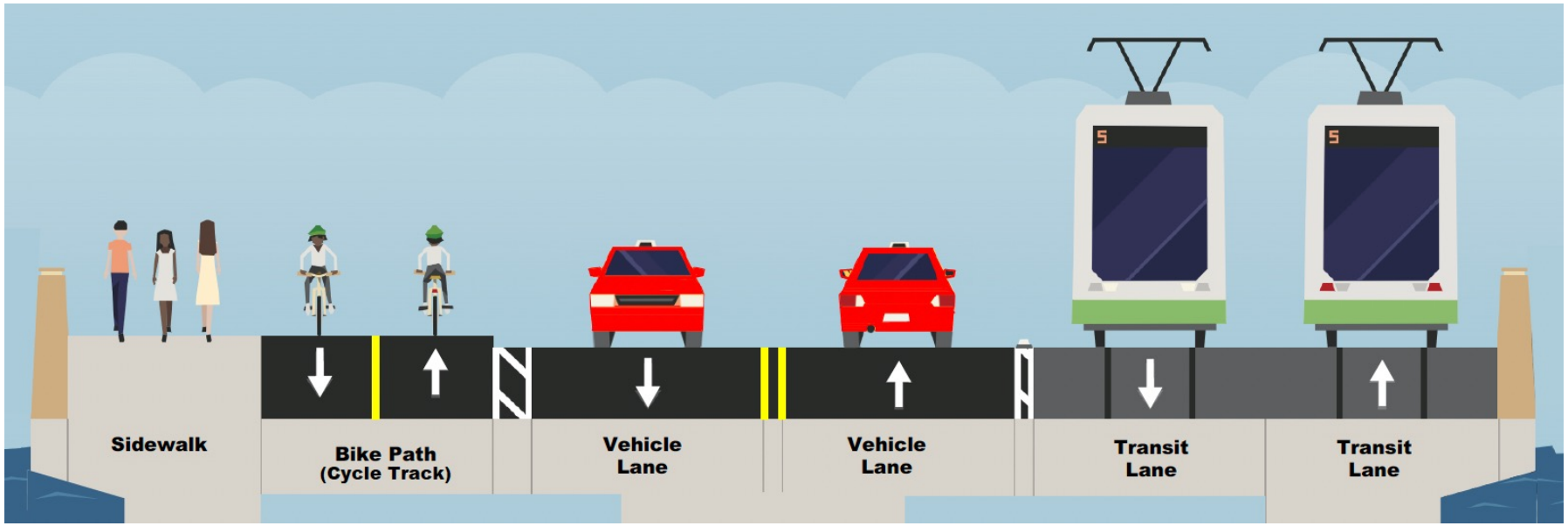
Next Steps

- Identify cost range for project

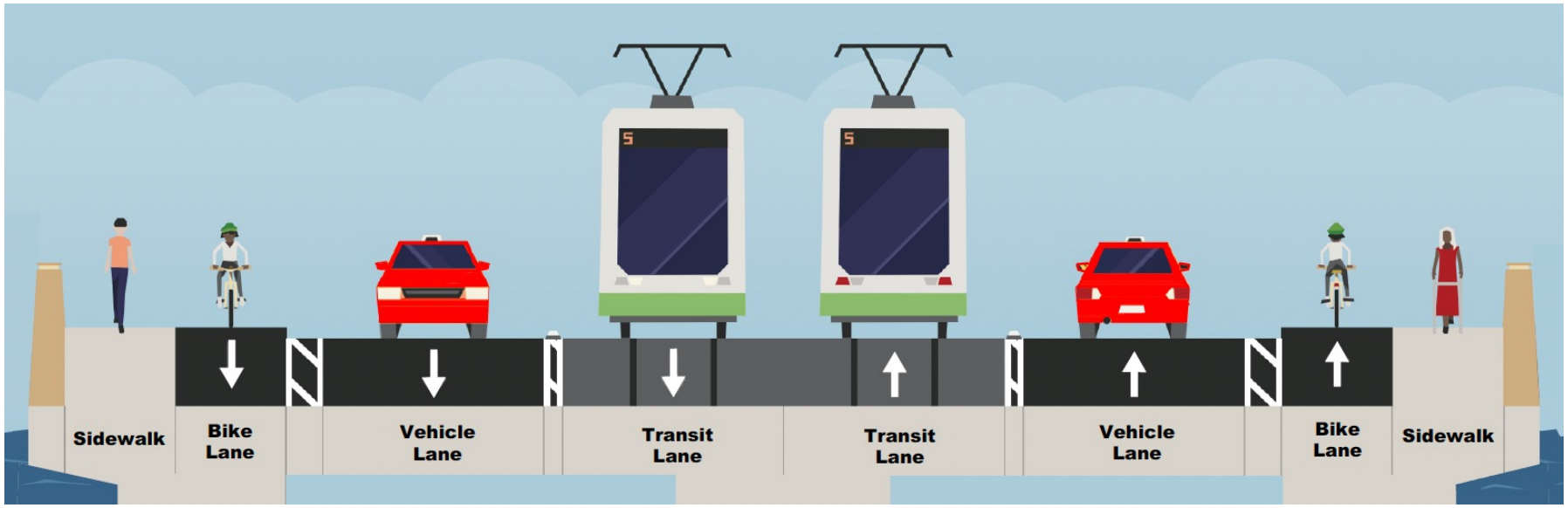
Option A
Mixed Use Travel Lanes with Trail Connection



Option B
Separated Transit with Trail Connection



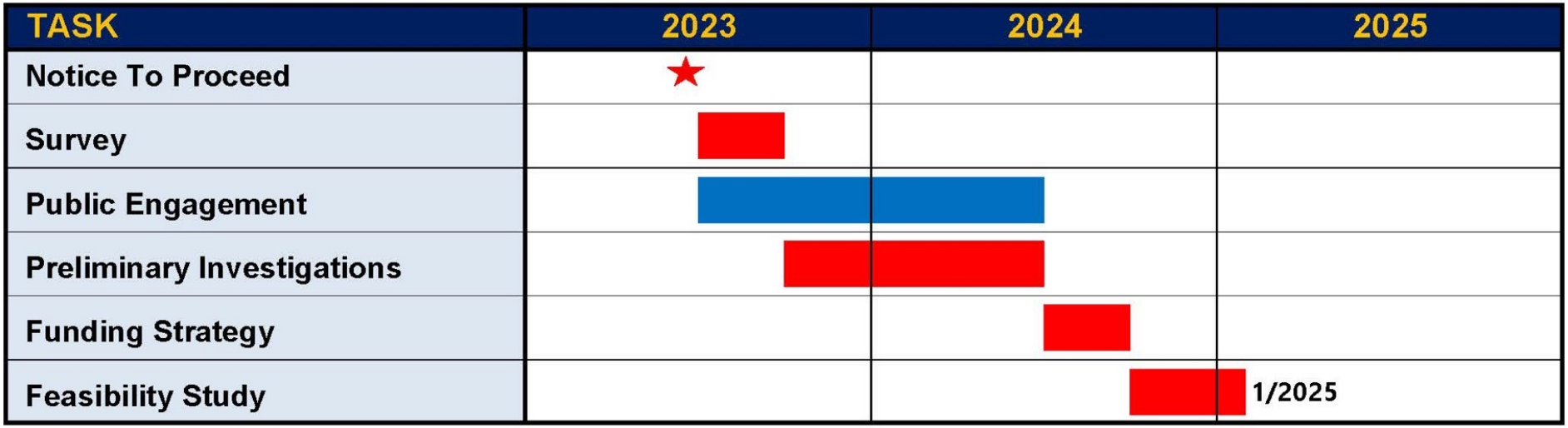
Option C
Sacramento RT Green Line



Small Group Discussions

1. What benefits do you think you, your family, and/or your community would have if there was a faster connection between your neighborhood and downtown/midtown?
2. What concerns might you currently have with the Truxel Bridge?
3. It sounds like most participants use a single automobile to travel between South/North Natomas currently (if the poll reflects that or if not then we can say the traffic studies indicate this travel pattern), how would having a bridge that accommodates all modes of travel (auto, bike, pedestrian, and transit) change current travel patterns?
4. Looking at the diagram that illustrates the current lane configuration options of the bridge, please share your thoughts on what you like/dislike about each concept and why.
5. Using the map in front of you, please trace the current route(s) you take for your trips to downtown/midtown. Tell us what challenges you face.

Project Schedule



Stay Involved

- Sign up for email updates at **www.bit.ly/TruxelBridge**

- Project contact:

  Fedolia “Sparky” Harris,
  fharris@cityofsacramento.org

Bushy Lake Eco-Cultural Restoration

Michelle Stevens, Sacramento State University

American River Parkway Advisory Committee Bushy Lake Eco-Cultural Conceptual Restoration Plan

Dr. Michelle Stevens

WCB State of California Wildlife Conservation Board

SACRAMENTO STATE

AREA WEST ENVIRONMENTAL, INC. EST 2000

THE WILDLIFE PROJECT

Bushy Lake Team

Awanata Dream Team

Dr. Michelle Stevens (Co-PI)

Alexandra von Ehrenkrook

Kathleen Colima Aguirre

Jaman Antitila

Joel Craven

Riley Deleurme

Theo Halidy

Dereck Martinez-Goodwin

Maria Mauricio

Monique Medina

Brandi Nessen

Emily Turner

Alexis Weiser

Caitlyn Wilson

WCB Project Manager of Bushy Lake CRP

Cara Allen

Collaborators

Becky Rozumowicz-Kodsuntie (Co-PI)

Jeff Alvarez (Co-PI)

Daniel Williams (HDR)

Biology Team

Dr. Tim Davidson

Dr. Jamie Kneitel

Carla Cruz Medina

Geology Team

Dr. Kevin Cornwell

Kody Wedell

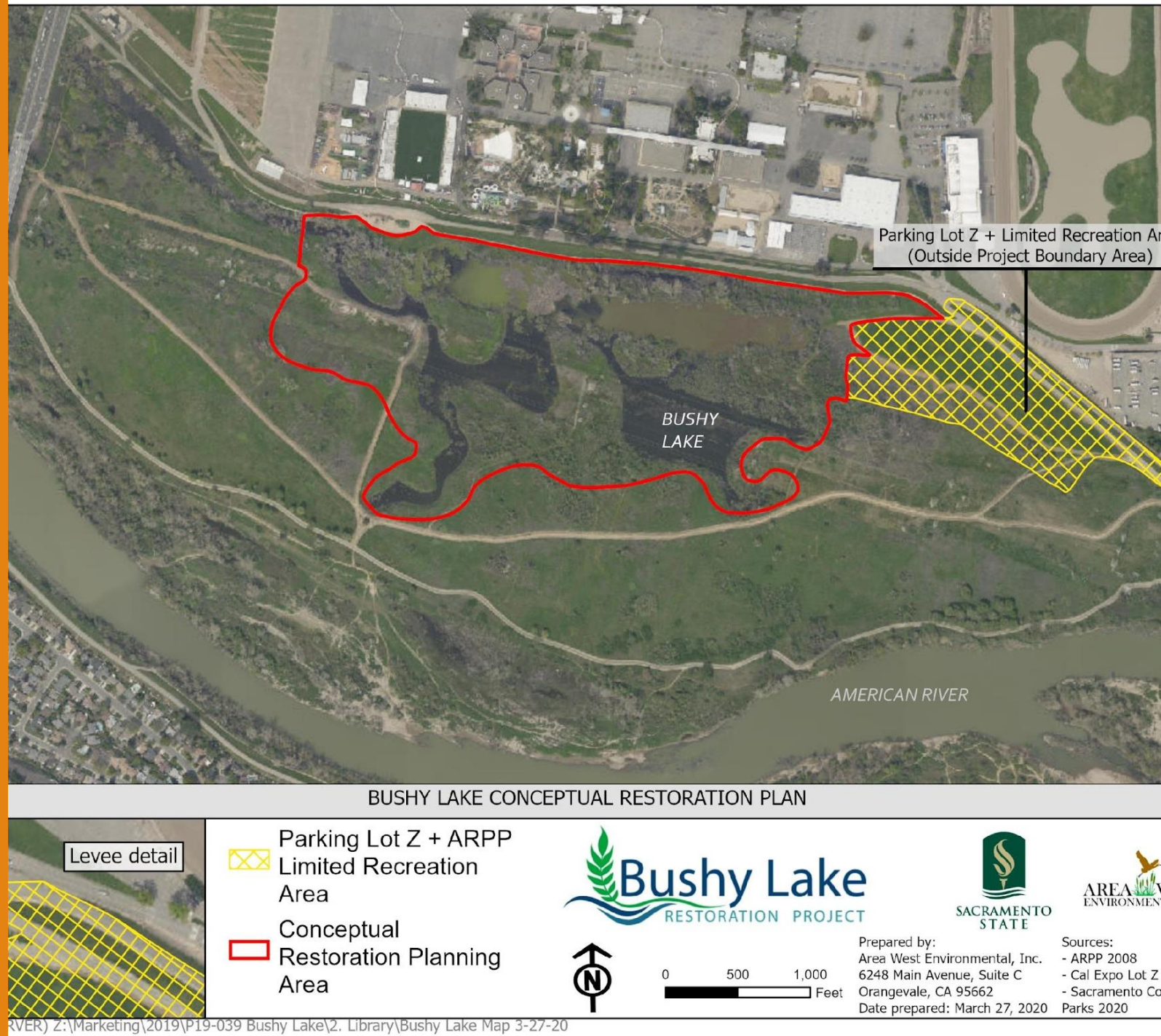
Avian Team

Daniel Williams

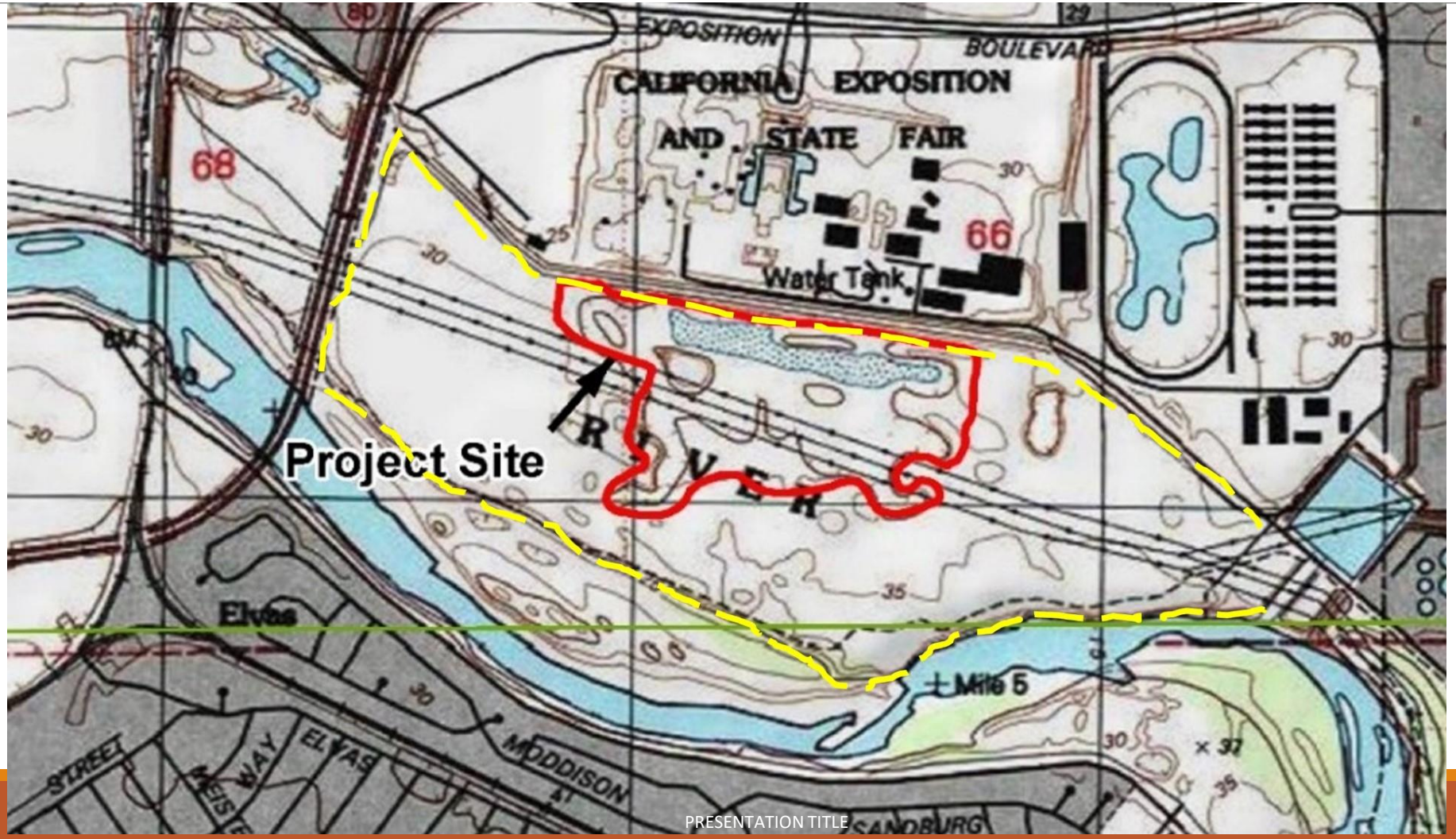
Joel Craven

Dereck Martinez-Goodwin

Bushy Lake: Located on Lower American River – Near Cal Expo



BLPA "Bushy Lake, which line is 100 feet outside the 25-foot elevation contour line as limited on the north side by the waterside toe of the levee and as limited on the west side by a line 100 feet east of State Highway Route 80 as it exists on January 1, 1977")



Bushy Lake Conceptual Restoration Plan Goals

Prepare a Bushy Lake Conceptual Restoration Plan (CRP) with the following goals:

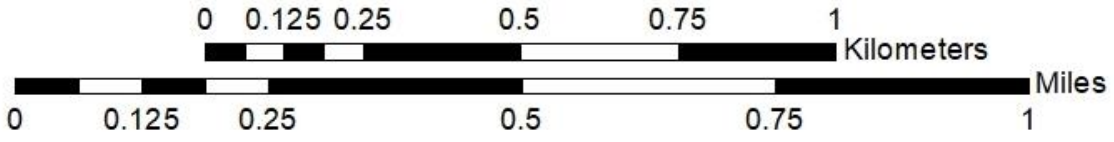
1. Protect, enhance and restore a sustainable habitat refuge for (north) western pond turtles; *revised to include* biodiversity
2. Enhance culturally significant habitat for fire resiliency and cultural tending and gathering; and
3. Enhance the education and interpretation of resources in the Parkway, specifically showcasing tribal cultural use of the Parkway.

Key Take-Aways From Research

1. Bushy Lake is a hidden treasure and a biodiversity hot spot on the Lower American River, and is protected through the Bushy Lake Protection Act and LAR Management Plan as wildlife habitat
2. Essential wildlife Corridor between Bushy Lake and the Lower American River – river otters, coyote, deer, etc.
3. Diversity of habitats: riparian, lacustrine, open water habitat uncommon on lower American River
4. Cultural significance to Nissenan, Miwok, Maidu tribes
5. “Paternoster” fluvial lacustrine habitats – Urritia Property, Wood Lake, Bushy Lake and Arden Pond – Bushy Lake most diverse

Hydrology Objective 1
Determine the land surface drainage conditions that contribute to surface water flow and storage at Bushy Lake.

Ground Survey Points as of July, 2021



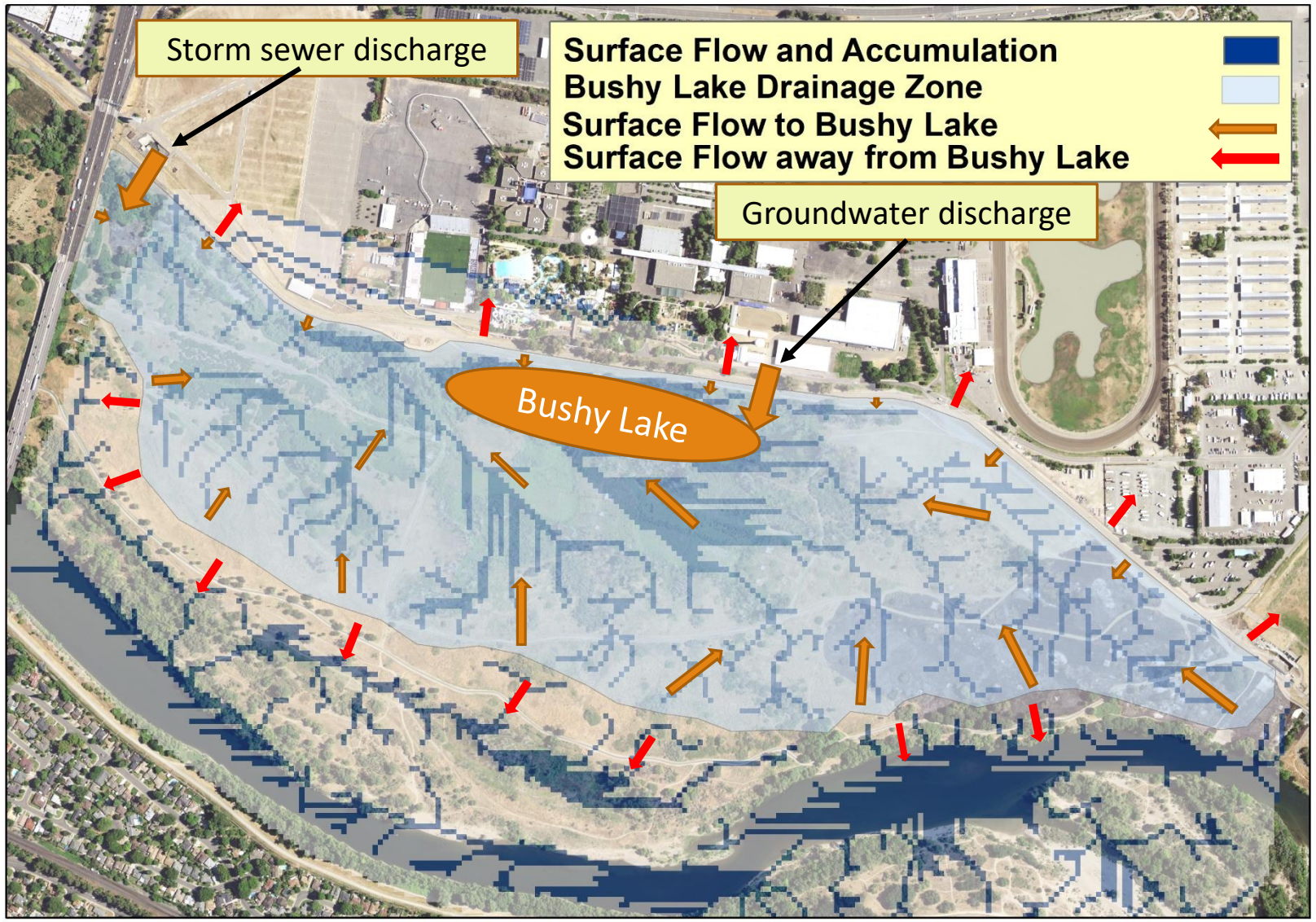
Hydrology

Determine the land surface drainage conditions that contribute to surface water flow and storage at Bushy Lake.

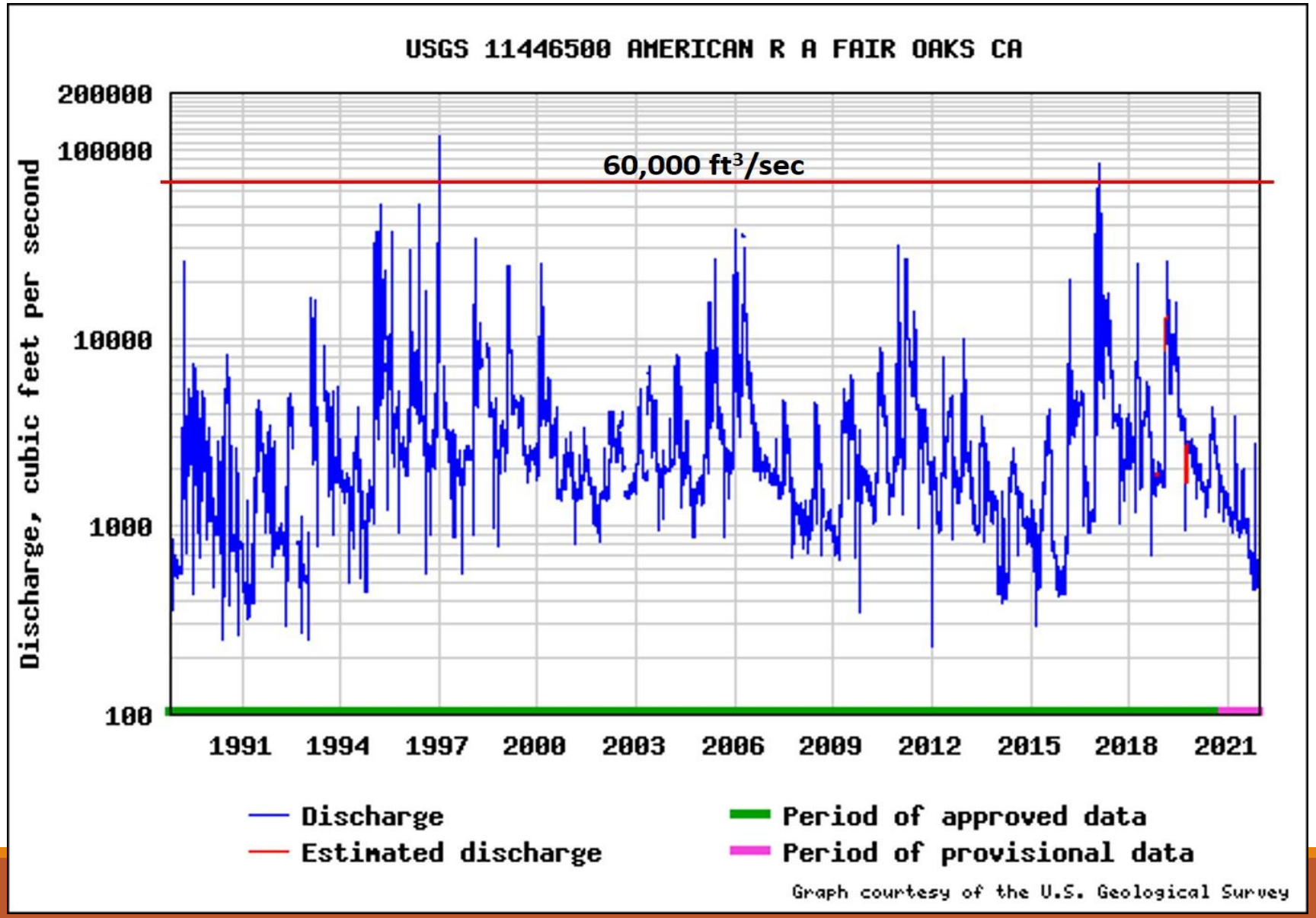
Bushy Lake Drainage Area – 942,000 m^2

Bushy Lake – 119,060 m^2

Bushy Lake Surface Flow Contributors



Assess how Bushy Lake responds to upstream dam releases and what impact high discharge flow events may have on Bushy Lake



Hydrology Conclusions

- Bushy Lake is not sustainable under normal mean precipitation and likely groundwater recharge rates and requires groundwater pumping from Cal EXPO to keep surface water in the Lake during certain times of the year (warm, dry summers).
  - Mean rainfall rate in the Sacramento region is approximately 18.5 inches/year and regional studies suggest an evapotranspiration (eT) rate of about 7.2 inches/year.
- Groundwater flows from the Lake to the nearby American River at a gradients of more than 0.003. How much water infiltrates through the lake bottom and surrounding groundwater elevations are unknown.
- Upstream American River discharges greater than 60,000 cfs will inundate portions of the terrace surface that contains Bushy Lake and will impact Bushy Lake.

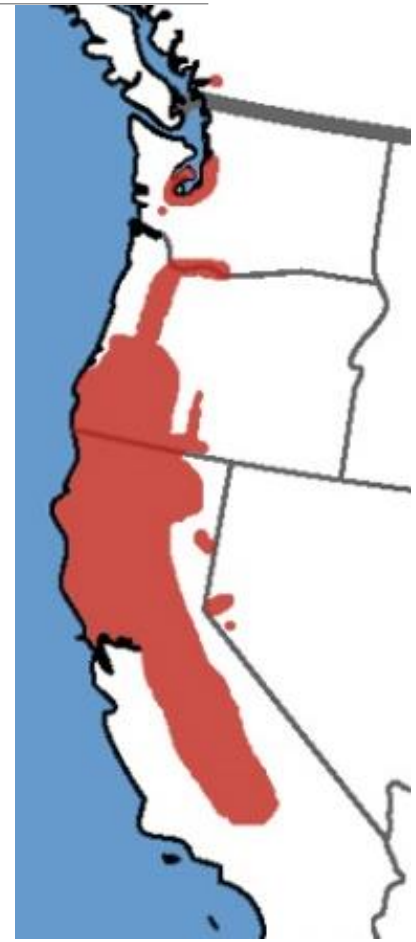
I Conservation

Northwestern pond turtle (*Actinemys marmorata*)

Bushy Lake Turtles

Northwestern pond turtle (*Actinemys marmorata*) (NWPT)

- Only native freshwater turtle in CA
- Proposed for listing as Threatened under the federal ESA. State Sensitive Species.
- Declining population
  - Habitat loss, wildfires, disease, invasive species, nest and hatchling predation, and competition



Four Years of Detailed Turtle Surveys

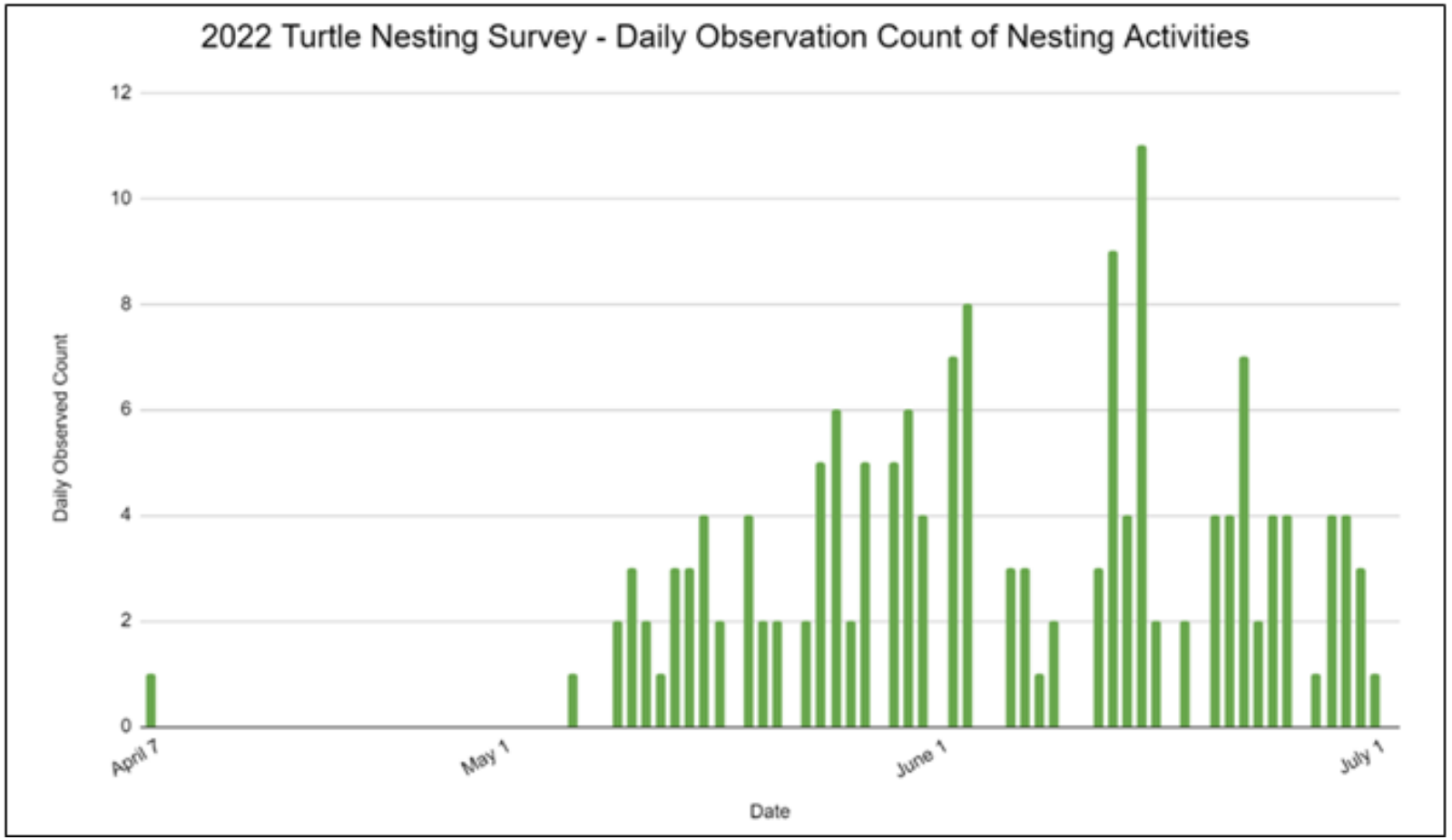
1. Visual Basking Surveys
2. Nesting Surveys
3. Mark and Recapture

Turtles Nesting Surveys (daily for three years)

- Walking & binocular surveys
- Identify nesting activities
  - Predated nests
  - Active turtles
- Identify nesting habitat
- Approximate active species
  - RES – larger nests & eggs, greater egg count than WPT

Turtle Life History – Nesting Season

(Nesting season late April – early August)



Nesting Red-eared Slider

Hatchling

2-year-old Northwestern Pond Turtle

Alvarez, J. (2020, October 6). Considerations for Western Pond Turtle Conservation, Monitoring, and Restoration. ENVS 187 Colloquium [Colloquium]. California State University Sacramento.

2021 Turtle Nesting Surveys

June 6, 2021 Fire Footprint

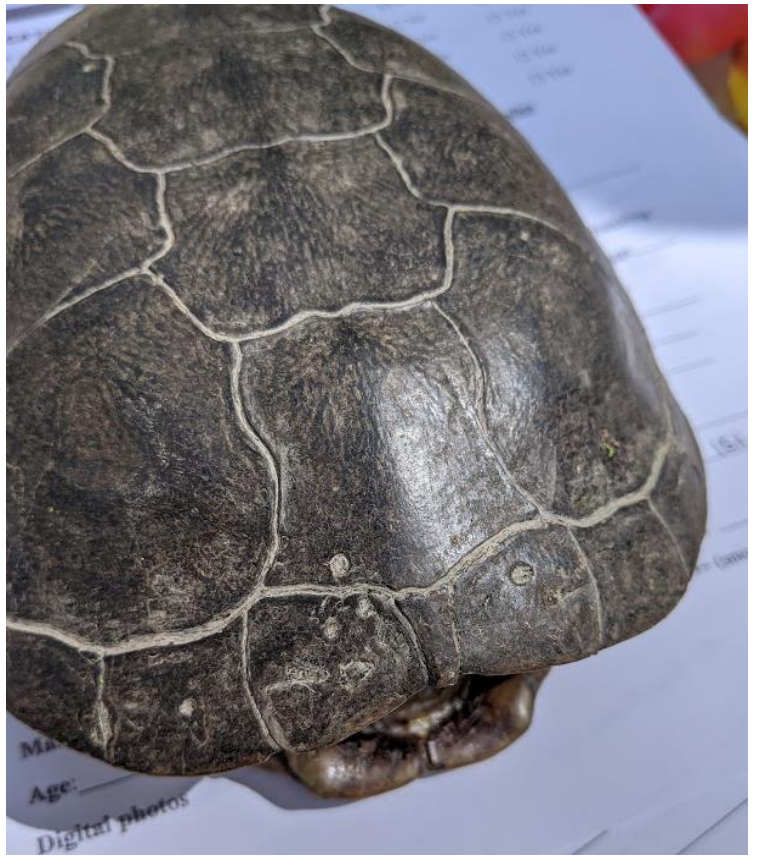
Post-Fire Turtle Nesting Surveys - 2022

Post-Fire Turtle Nesting Surveys - 2023

Vulnerable to Strikes with Bicycles and Vehicles

Public Education

- Signage along recreational paths (Sacramento County Parks)
- Education materials in American River Bike Patrol newsletters
- Educational materials on the Bushy Lake website (BushyLake.com)
- Social Media



Female NWPT with shell pitting

NW Pond Turtle Recommendations

1. Optimize Basking Sites
2. In Situ Nesting Sites - protect and manage (mowing and grazing)
3. Protect nests from predation
4. Headstarting eggs, returning juvenile turtles to site
5. Rehoming non-native turtles
6. Removing bullfrog and non-native fish predators
7. Long term monitoring and adaptive management
8. Extend study area to lower American River Parkway

Enhance habitat for fire-resilient native flora

Objective 1. Maintain, expand, and restore existing native vegetation species, particularly culturally significant species for food, medicine, fiber, basket weaving, ceremonial regalia, and other uses.

Objective 2. Implement irrigation and mulching practices to establish and support native vegetation. Monitor vegetation and implement adaptive management for these practices.

Objective 3. Manage and remove invasive and non-native vegetation. Monitor vegetation and implement adaptive management for these practices. Avoid use of herbicides/ pesticides in areas used for tending and gathering

Objective 4. Develop and implement a plan for Traditional Fire Management at Bushy Lake. Expand the Traditional Fire Management plan to include adjacent Woodlake and the lower American River Parkway

Revegetation Plan Palette

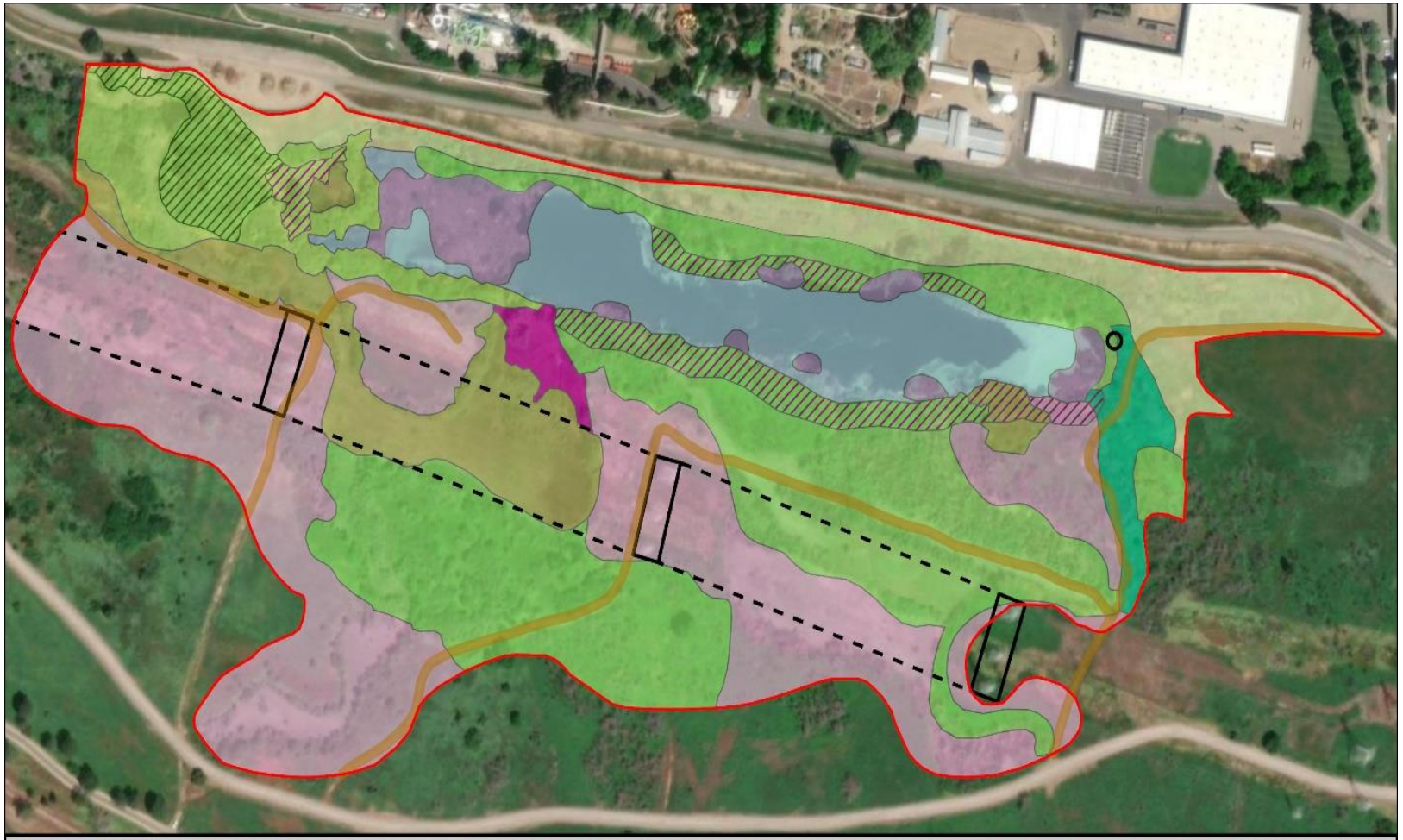
We propose utilizing a native plant species palette based on plant species tested experimentally in the in-situ restoration area.

The plant seeds and seedlings chosen are culturally significant plants and are proven experimentally to be adapted to site conditions.

They were also chosen if they are beneficial to pollinators and provide wildlife habitat.

We have created a preliminary plant palette focusing on native species observed during a 1986 plant survey (Wymar 1986) and personal ethnobotanical knowledge/ tribal input.

This gives us a reference baseline for the re-establishment of native species known to occur on this site that are also on the lower American River plant list developed by Sacramento County Parks.



Proposed Cultural Plant Alliances* for the Bushy Lake 35% Conceptual Restoration Plan (February 2024)

- Forested Riparian - Cottonwood, Gooding's Willow
- Oak Riparian and Woodland
- Narrowleaf Willow Shrubland
- Walnut Thickets
- White Root Herbaceous
- Dogbane Herbaceous
- Tule - Hardstem Bulrush Cattail
- Pinole Pollinator Prairie
- Ruderal
- Perennial Open Water
- Conceptual Restoration Plan Boundary
- Unpaved Utility Access
- Utility Corridor
- Developed Infrastructure

0 100 200 400 Meters

N

Bushy Lake RESTORATION PROJECT

AREA WEST ENVIRONMENTAL, INC. EST 2000

SACRAMENTO STATE

*The Cultural Plant Alliances were developed for the Bushy Lake Restoration plan based on personal knowledge of ethnoecology and culturally important plants, conversations with Californian Indian traditional knowledge holders, and historic maps and records of the riparian forest at the Cal Expo reach.

Culturally Significant Plant Species

White Root
Carex barbarae

Indian Hemp
Apocynum cannabinum

Mugwort
Artemisia douglasiana

Elderberry
Sambucus nigra

Important Pollinator and Pinole Species

Yarrow

Gumweed

Rock Phacelia

Milkweed

California Poppy

Great Valley Phacelia

Sunflower

Restore Structural Diversity and Woody Vegetation

Black Walnut	***Juglans hindsii***
Fremont Cottonwood	***Populus Fremontii***
Black willow	***Salix Goodingii***
Red willow	***Salix laevigata***
Yellow willow	***Salix lasiandra***
Arroyo willow	***Salix lasiolepis***
Valley oak	***Quercus lobata***
Interior live oak	***Quercus wislizenii***
Box elder	***Acer negundo ssp. californica***

Cultural Keystone Species
White Root (Carex barbarae) Fire Resiliency

OCT 11, 2021

JAN 16, 2022

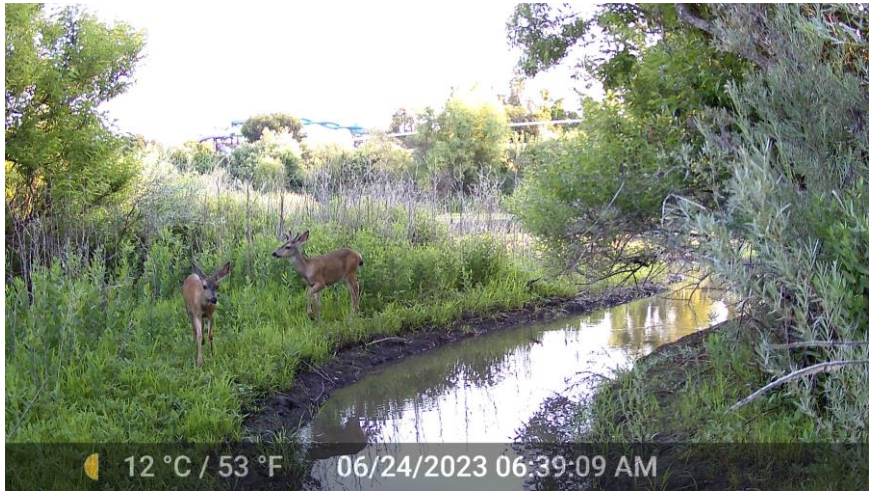
JUNE 16, 2023

Mugwort (Artemisia douglasiana) Fire Resiliency

- Dec 1 mugwort has increased from 37% cover to 55% cover since the fire.
- Percent Cover and Plant Height increased
- The area has recovered from the fire, and we have expanded the area through replanting

Biodiversity and Habitat Corridors

Beavers are a keystone species and ecosystem engineers




72°F
10/02/2023 12:48PM
CAMERA1


52°F
10/09/2023
02:34AM
CAMERA1

Avian Biodiversity

The avian diversity of Bushy Lake is truly astounding; over 140 bird species have been identified

Peregrine Falcon

Swainson’s Hawk

Northern Flicker

Confirmed Nesting	Year-round Resident but not Confirmed Nesting	Summer (Spring through Fall) Resident but not Confirmed Nesting	Winter (Fall through Spring) Resident	Migrant	Flyover Only	CalExpo Racetrack Pond/RV Park Only	eBird Records for Bushy Lake but Surveys haven't been Recorded to Date
Canada Goose	Ring-necked Pheasant	Osprey	Cackling Goose	Sora	Greater White-fronted Goose	Canvasback	Mute Swan
Wood Duck	Pied-billed Grebe	Barn Swallow	Sharp-shinned Hawk	Solitary Sandpiper	Snow Goose	Ring-necked Duck	Cinnamon Teal
Mallard	Rock Pigeon	Cliff Swallow	Merlin	Band-tailed Pigeon	Ross's Goose	Bufflehead	Green-winged Teal
Gadwall	Eurasian Collared-Dove	Northern Rough-winged Swallow	Peregrine Falcon	Vaux's Swift	Tundra Swan	Common Goldeneye	Hooded Merganser
California Quail	White-throated Swift	Wrentit	Say's Phoebe	Black Swift	Northern Pintail	Barrow's Goldeneye	Eared Grebe
Wild Turkey	Virginia Rail	Lark Sparrow	Common Raven	Allen's/Rufous Hummingbird	Northern Shoveler	Common Merganser	Common Gallinule
Mourning Dove	American Coot	Bullock's Oriole	Ruby-crowned Kinglet	Lewis's Woodpecker	American Wigeon	Ruddy Duck	Long-billed Dowitcher
Anna's Hummingbird	Double-crested Cormorant	Hooded Oriole	Blue-gray Gnatcatcher	Olive-sided Flycatcher	Sandhill Crane	Greater Yellowlegs	Spotted Sandpiper
Black-chinned Hummingbird	Great Blue Heron	Western Tanager	Hermit Thrush	Western Wood-Pewee	Long-billed Curlew	Calliope Hummingbird	Cattle Egret
Killdeer	Great Egret	Black-headed Grosbeak	Cedar Waxwing	Pacific-slope Flycatcher	California Gull	Red-breasted Sapsucker	Golden Eagle
Red-shouldered Hawk	Snowy Egret	Blue Grosbeak	American Pipit	Willow Flycatcher	Ring-billed Gull	Mountain Bluebird	Great Horned Owl
Red-tailed Hawk	Green Heron	Lazuli Bunting	Purple Finch	Dusky Flycatcher	Herring Gull	Varied Thrush	Barn Owl
Swainson's Hawk	Black-crowned Night-Heron		Pine Siskin	Warbling Vireo	Glaucous-winged Gull		Loggerhead Shrike
Nuttall's Woodpecker	Turkey Vulture		Fox Sparrow	Purple Martin	"Thayer's" Iceland Gull		Violet-green Swallow
Downy Woodpecker	White-tailed Kite		Dark-eyed Junco	Bank Swallow	American White Pelican		Golden-crowned Kinglet
American Kestrel	Northern Harrier		White-crowned Sparrow	Marsh Wren	White-faced Ibis		Brown Creeper
Black Phoebe	Cooper's Hawk		Golden-crowned Sparrow	Swainson's Thrush	Bald Eagle		Rock Wren
Ash-throated Flycatcher	Belted Kingfisher		Savannah Sparrow	Yellow-breasted Chat	Budgerigar		Phainopepla
Western Kingbird	Acorn Woodpecker		Lincoln's Sparrow	Yellow Warbler	Horned Lark		Scaly-breasted Munia
California Scrub-Jay	Northern Flicker		Western Meadowlark	Wilson's Warbler	Lawrence's Goldfinch		Chipping Sparrow
Tree Swallow	Yellow-billed Magpie		Yellow-rumped Warbler	Black-throated Gray Warbler	Tricolored Blackbird		White-throated Sparrow
Bushtit	American Crow				Great-tailed Grackle		Yellow-headed Blackbird
White-breasted Nuthatch	Oak Titmouse						Northern Waterthrush
Bewick's Wren	House Sparrow						Nashville Warbler
House Wren	American Goldfinch						Palm Warbler
European Starling	Brewer's Blackbird						Townsend's Warbler
Northern Mockingbird	Orange-crowned Warbler						
Western Bluebird							
American Robin							
House Finch							
Lesser Goldfinch							
Song Sparrow							
California Towhee							Key
Spotted Towhee							State Species of Special Concern
Red-winged Blackbird							State Threatened
Brown-headed Cowbird							State Endangered
Common Yellowthroat							State Fully Protected

Discoveries from Bushy Lake Research

1. Data from NW Pond Turtle Research – low number of resident NW pond turtles, nesting habitat seems to be limiting factor

2. Pilot Project informs Revegetation Plan for fire resilient, culturally significant and wildlife/ pollinator habitat

3. Tribal tending and gathering on site –

4. Incredible avian diversity – over 140 species recorded over five years

5. Wildlife Habitat – wildlife cameras

6. Significance of beavers as keystone species

Stressors and Challenges for Sustainable Eco Cultural Restoration at Bushy Lake

1. **Need funding and partner for next stage: 65% Conceptual Restoration Planning**

2. **Continuous fragmentation and degradation of habitat between Bushy Lake and lower American River parkway – off road bike riding, cross-country running, and lack of coordination with adjacent restoration and environmental planning efforts**

3. **Ongoing (but reduced?) threat of Wildfires – 2014/ 2017/ 2021**

4. **Unhoused populations (improved)**

5. **Need for Long term monitoring and adaptive management**

6. **Land management from a state agency other than Cal Expo?**

Thank you, Donors

- Bushy Lake Conceptual Restoration Plan Grant WC-1943CA from the CA Wildlife Conservation Board 2020-2023
- CSUS Anchor University Grant 2022 Bushy Lake Restoration Project
- Sacramento Zoo Grant 2022 & & Sacramento Zoo Grant 2021
- CSUS Presidents Circle Bushy Lake Restoration Grant
- Save the American River Association, Sacramento Audubon, Green Inc, Sierra Club
- Sacramento County Parks

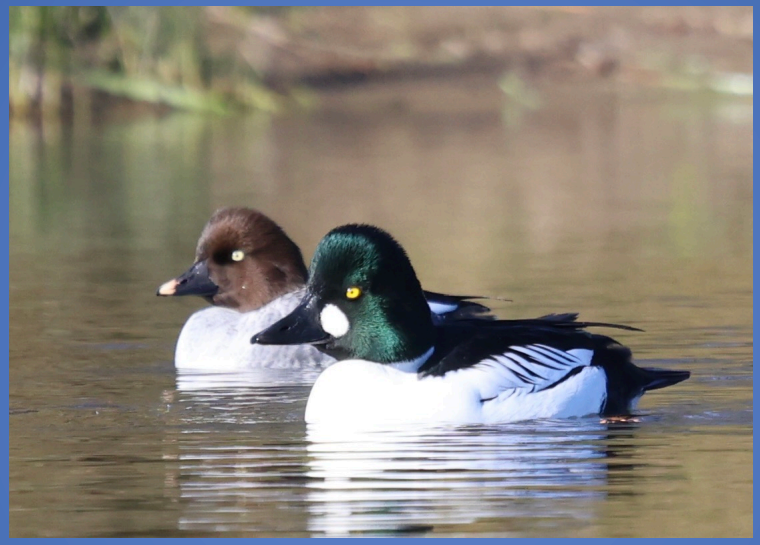
Thank you for listening
Please come out for Earth Day Celebration April 6

Website	• www.bushylake.com
Email	• bushylake.ca@gmail.com
Facebook	• Bushy Lake Eco-Cultural Restoration
Instagram	• @bushylake.restoration
LinkedIn	• Bushy Lake Eco-Cultural Restoration

Research: The Importance of Off-Channel Ponds to Wintering Waterbirds

Daniel A. Airola, Conservation Research and Planning

Waterbird Use of Off-Channel Ponds along the Lower American River, Sacramento



Daniel Airola

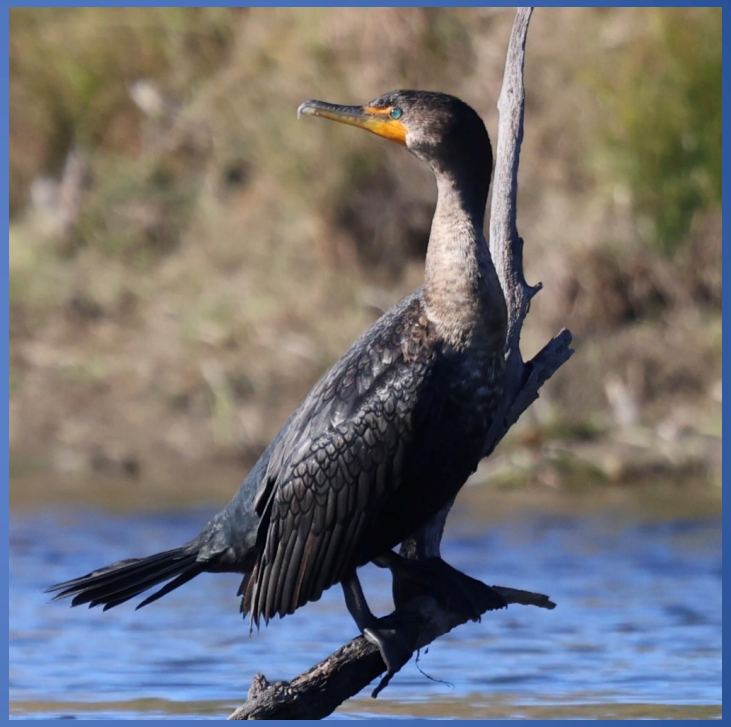
d.airola@sbcglobal.net

Maureen Geiger, Susan Goodrich

Photos by Dr. Andrea Willey

Background

- Urrutia and Arden Ponds recognized as important areas for birds
- Some indication of high use for night roosting by certain species, esp. diving ducks
- Information scattered and anecdotal



Study Goals

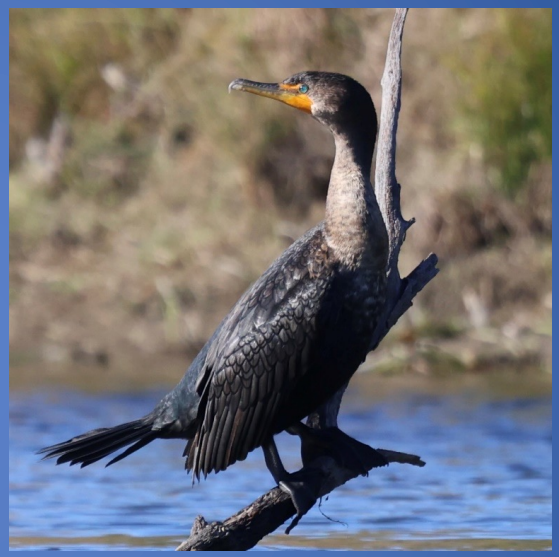
- Summarize waterbird use of Urrutia and Arden ponds
- Survey daytime and nighttime use
- Characterize the importance of ponds to Lower American River (LAR) bird populations
- Inform impact analysis for proposed mitigation use of Urrutia Pond
- Suggest means to reduce impacts to waterbirds
- Paper published as peer-reviewed study in Central Valley Birds

Methods

- Summarized Christmas Bird Count data from Urrutia Pond
- Conducted daytime and dusk (night) surveys at Arden (2 yr) and Urrutia Pond (1 yr)
- Summarized waterbird #s from ARNHA count for entire LAR
- Compared pond use #s to LAR #s to gauge importance and potential effects

Urrutia Pond CBCs

- All Waterbirds
  - 16 species, 2,500 individuals ave.
- Mostly diving ducks
- 2,150 Canvasbacks
- Only place Canvasbacks occur on LAR



Urrutia Pond

Daytime and Dusk Winter Counts

Species/Group	Daytime	Nighttime	% Change
Common Goldeneye	15	165	1000%
All Diving Ducks	55	270	237%
All Waterfowl	90	360	273%
All Waterbirds	240	390	63%

- High water birds use in day – esp. Cormorants
- Nighttime use much higher – esp. for diving ducks
- Diving ducks that use the river during the day come to Urrutia to roost at night

Urrutia and Arden Ponds

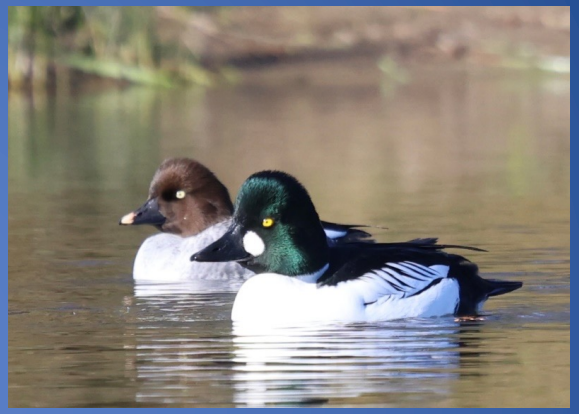
Proportions of LAR Birds Supported

Species/Group	ARNHA LAR Count Average	Average Counts			High Counts at Both Ponds
		% at Urrutia	% at Arden	% at Both	
C. Goldeneye	700	18	23	41	134%
Bufflehead	145	19	29	48	96%
C. Merganser	150	3	29	32	91%
All Diving Ducks	1030	16	26	42	

- Both ponds important to diving ducks:
  - On average used by 1/3-1/2 of LAR populations
- During peak use, nearly 100% of individuals use ponds
- Use high during high flow events, so may be critical to species

Treatment in SEIS/SEIR

- Waterbird use of Urrutia Pond raised in scoping
- No surveys conducted
  - At ponds or anywhere else, it appears
  - Access for further study at Urrutia property (beyond Xmas Bird Count) not allowed due to change in ownership
- No response yet to our comments on this issue in SEIS/SEIR
  - Assumes birds will just go elsewhere
- Main species will not use seasonally flooded riparian habitat to be created as mitigation
- Impacts significant under CEQA
  - Conversion of pond would disrupt established movement corridors and affect regional populations – thus significant



Note: Language in this slide was modified after the LARTF meeting

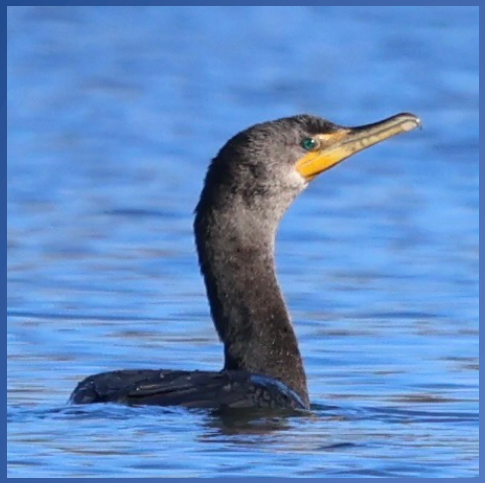
Bald Eagle

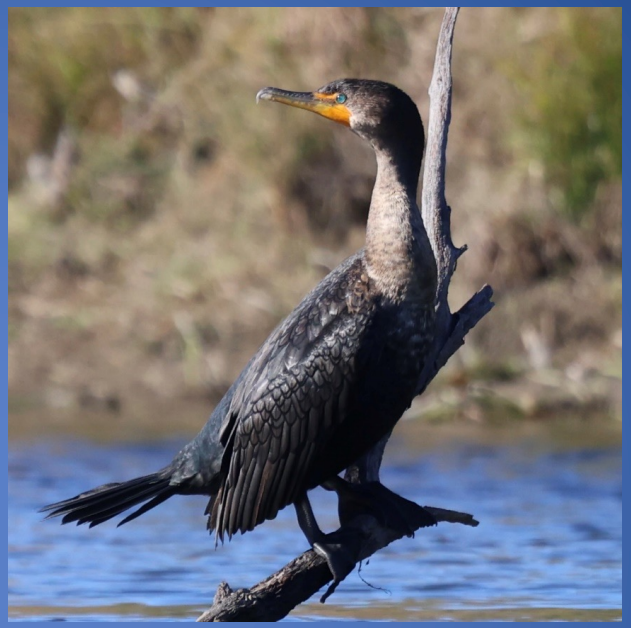
- Nest established 2023
- Nest occurrence likely influenced by:
  - Low human disturbance
  - Presence of pond and waterbirds, fish
- Species addressed in SEIS/SEIR only based on disturbance, not habitat change

Recommendations

- Adequately address issues in SEIS/SEIR to allow public comment
- Retain at least 30 ac pond area with circular configuration
- Continue studies and monitoring

Thank you!





Q&A: Lower Reach Updates

Opportunity for Task Force questions and discussion

LARTF Member Updates

- Announcements & Disclosures

Wrap Up & Next Steps

- LARTF Survey for 2024 Agenda items
- Next Member/Community Spotlight:
  - American River Parkway Foundation (ARPF) - Invasive Plant Management Program
- Next meeting: June 11

Thank you!

https://waterforum.org/lartf