

**Northern Sacramento Valley Integrated Regional Water Management
Special Board Meeting**

**Monday, November 6, 2023
9:00-11:00 a.m.**

**Location: Willows City Hall
201 N. Lassen Street, Willows, CA, 95988**

**Alternate Location:
1855 Placer Street, Redding, CA 96001**

Public Participation Remote Access Option:

Microsoft Teams meeting

Join on your computer, mobile app or room device

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Meeting ID: 296 522 406 388

Passcode: sTWMvu

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Agenda

1. Open meeting/roll call/introductions – (Tod Kimmelshue, Chair)
2. *Approve meeting minutes (pg. 3)
 - a. May 1, 2023 NSV IRWM Special Board meeting minutes (pg. 4)
3. Technical Advisory Committee Update (Guadalupe Rivera, TAC Vice Chair)
 - a. Report on TAC meetings, including Joint Board/TAC Executive Committee (JEC) meetings
4. Presentation on 2023 Fall Hydrology and Groundwater Level Update (Michelle Dooley, Department of Water Resources, Northern Region Office)
5. Presentation: Field-by-field crop type and water use: Using accurate and objective science for informed policy decisions (Joel Kimmelshue, Land IQ)
6. *Update on Proposition 1, IRWM Implementation Round 2 grant (pg. 8)
 - a. Mountain Counties Funding Area (Christina Buck)
 - b. Sacramento River Funding Area (Guadalupe Rivera)

7. *Establish 2024 Meeting Schedule (pg. 12)
 - a. Potential action to accept TAC recommendation and adopt 2024 Meeting Schedule
8. TAC County representative reports regarding SGMA implementation and SGM Round 2 grant status:
 - a. Butte (Christina Buck, TAC Representative)
 - b. Colusa (Steve Geiger, TAC Representative)
 - c. Glenn (Lisa Hunter, TAC Representative)
 - d. Shasta (Charleen Beard, TAC Representative)
 - e. Sutter (Guadalupe Rivera, TAC Representative)
 - f. Tehama (Justin Jenson, TAC Representative)
 - g. Tribal (Patrick Spielman, Tribal TAC Representative)
9. DWR Update
10. Board member comments and updates – (All)
 - a. General comments and updates
 - b. Suggested future agenda items
 - c. Suggested future presentations/speakers
 - d. Upcoming meeting reminders
11. Public wishing to address the NSV Board on items not listed on the agenda. (The NSV Board is prohibited by State law from taking action on any item presented if it is not listed on the agenda). Comments will be limited to three minutes per person.
12. *Correspondence (pg. 13)
13. Next Meetings:
Next NSV IRWM TAC Meeting: TBD
Next NSV Board Meeting: TBD
14. Adjourn

* Indicates attachment included in the meeting packet.

Public Comments: The public comment period is a time set aside for members of the public to address the Board on matters not included on the Regular Agenda. Each speaker is limited to three (3) minutes to speak. Speakers may not cede their time. Speakers must address the Board, not the audience. Comments should be limited to matters within the jurisdiction of the NSV Board. If members of the audience have documents to present to the Board to review, they should provide a minimum of twenty (20) copies. Public comments on agenda items will be permitted during consideration of each item.

NSV IRWM Board Agenda Item #2

2. *Approve meeting minutes
 - a. May 1, 2023 NSV IRWM Special Board meeting minutes

The minutes from the May 1, 2023 NSV IRWM Board meeting are attached.

Attachments:

- May 1, 2023 NSV IRWM Board meeting minutes

MINUTES

NORTHERN SACRAMENTO VALLEY INTEGRATED REGIONAL WATER MANAGEMENT SPECIAL BOARD MEETING

May 1, 2023 | 9:00 a.m.

Meeting Location: 201 N. Lassen Street, Willows, CA 95988

Alternate Location: 1855 Placer Street, Redding, CA 96001

Board Members Present <input checked="" type="checkbox"/> :			
Butte County	Colusa County	Glenn County	Shasta County
<input checked="" type="checkbox"/> Tod Kimmelshue (2023 Chair) <input type="checkbox"/> Donna Bayliss <input checked="" type="checkbox"/> Bill Connelly	<input checked="" type="checkbox"/> Gary Evans <input checked="" type="checkbox"/> Denise Carter (2023 JEC) <input type="checkbox"/> Daurice K. Smith	<input checked="" type="checkbox"/> Grant Carmon (2023 VC) <input type="checkbox"/> John Campbell (2022 JEC) <input type="checkbox"/> Tom Arnold	<input checked="" type="checkbox"/> Chris Kelstrom <input checked="" type="checkbox"/> Chris Muehlbacher <input type="checkbox"/> Patrick Jones
Sutter County	Tehama County	Tribal	
<input checked="" type="checkbox"/> Mat Conant (2022 VC) <input checked="" type="checkbox"/> Michael Pasquale <input type="checkbox"/> Mike Ziegenmeyer	<input checked="" type="checkbox"/> Matt Hansen (remotely) <input checked="" type="checkbox"/> Dean Sherrill <input checked="" type="checkbox"/> Pati Nolen (remotely, 9:32)	<input checked="" type="checkbox"/> He-Lo Ramirez <input type="checkbox"/> Isaiah Meders	
Text= Alternate Board Member VC= Vice Chair JEC= Joint Executive Committee Member			

Members joining remotely are not counted toward a quorum, do not vote, and are considered members of the public.

1. Open meeting/roll call/introductions

Vice Chair Conant called the meeting to order at 9:05 a.m. Roll call was taken as noted above.

2. Election of Chair, Vice Chair, and Joint Executive Committee Member

On motion by Ms. Carter, seconded by Mr. Ramirez, it was unanimously ordered to elect Tod Kimmelshue as Chairman of the Northern Sacramento Valley Integrated Regional Water Management Board.

The newly appointed Chairman, Tod Kimmelshue (Chairman Kimmelshue), assumed Chairman duties.

On motion by Mr. Kimmelshue, seconded by Mr. Connelly it was unanimously ordered to elect Grant Carmon as Vice Chair of the Northern Sacramento Valley Integrated Regional Water Management Board.

Christina Buck explained the purpose of the Joint Executive Committee.

On motion by Mr. Evans, seconded by Mr. Carmon it was unanimously ordered to elect Denise Carter as a Joint Executive Committee Member of the Northern Sacramento Valley Integrated Regional Water Management Board.

3. Presentation on the Dunnigan Area Recharge Project

Bill Vanderwaal, Deputy Manager from Reclamation District 108 conducted a presentation on the Dunnigan Area Recharge Program (DARP). He touched on specific needs and goals of the project to recharge up to 5,000 acre-feet of water each year. He further described the habitat benefits, funding needs to create self-reliance, current funding sources, and water rights. Mr. Vanderwaal provided an overview on previous pilot projects and their results. The Board members and public engaged in discussion relating to the presentation including monitoring, water quality, recharge mapping index, conjunctive use, impacts on land subsidence, water conveyance, and logistics.

4. *Approve meeting minutes

- a. October 3, 2022 NSV IRWM Board meeting minutes
- b. November 7, 2022 NSV IRWM Special Board meeting minutes

On motion by Mr. Conant and seconded by Mr. Sherrill, it was unanimously ordered to approve the meeting minutes from the October 3, 2022 meeting and the November 7, 2022 meeting.

5. Technical Advisory Committee Update

- a. Report on TAC meetings, including Joint Board/TAC Executive Committee (JEC) meetings

Guadalupe Rivera, Technical Advisory Committee (TAC) Chair, stated the TAC meeting was on January 18, 2023 where TAC elections were held, a groundwater presentation was given, and updates were provided on grant applications. He further stated JEC meetings were held to prepare for TAC and Board meetings. Responding to a question, there was a discussion on the composition of the TAC.

6. Presentation on Spring 2023 Groundwater Conditions

Michelle Dooley, Department of Water Resources (DWR) Northern Region, provided an update/presentation on the 2023 Spring Groundwater Levels. She presented on the water year and precipitation index and the NOAA climate prediction. She then presented various maps available on [California's Groundwater Live](#) website including groundwater change maps and groundwater trend maps with state-wide statistics. Ms. Dooley shared information on land subsidence which can be found on the [SGMA Data viewer](#) web map.

7. *Receive update on Proposition 1, IRWM Implementation Round 2 grant application (Christina Buck, Guadalupe Rivera)

Ms. Buck stated round 2 of the grant applications were due February 1, 2023. She stated the NSV IRWM is in two different funding areas resulting in two application submittals. She stated two projects were submitted in the Mountain County Funding Area (MCFA) application including the Berry Creek Forest Health and Watershed Protection Project and the Lake Madrone Replacement of Potable Water Distribution System project for a total grant request of \$1,146,232. DWR has been in touch with Butte County staff regarding clarifications which have been provided and final awards have not yet been released.

Mr. Rivera stated \$1,677,458 of grant funds were applied for in the Sacramento River Funding Area (SRFA). The Board gave direction to include four projects in the application with the caveat that as the Clear Creek NIS Plan Control project scope and budget was developed, any excess funding available would be transferred to the Arbuckle Area Groundwater Recharge Demonstration and Pilot Project. During preparation of the application, staff received notification the Clear Creek project was not ready to move forward and would not be able to be included in the application; therefore, the application included funding for the three remaining projects: Spiva Avenue Water

Main Replacement, Northern Sacramento Valley Mobile Irrigation Lab, and Arbuckle Area Groundwater Recharge Demonstration and Pilot Project. DWR has been in touch with Sutter County staff regarding clarifications which have been provided and final awards have not yet been released.

8. *Round Table of Regions

- a. Update on activities and transition plan
- b. Provide initial direction on NSV IRWM preferences

Charleen Beard, Shasta County TAC member, asked the Board for direction regarding feedback to the Round Table of Regions on the potential path of the transition plan. There was discussion on the importance of funding for projects (such as recharge projects), the jurisdiction of the IRWM, and what it would mean to expand the role of the IRWM, particularly relating to the role that water plays in climate change, climate resiliency, and forestry and upper watershed issues. There were concerns of repeating efforts and wasting resources regarding climate change issues.

9. Drought and SGMA updates and discussion

- a. TAC County representative reports regarding drought response and SGMA implementation:
 - i. Butte (Christina Buck, TAC Representative)
 - ii. Colusa (Steve Geiger, TAC Representative)
 - iii. Glenn (Lisa Hunter, TAC Representative)
 - iv. Shasta (Charleen Beard, TAC Representative)
 - v. Sutter (Guadalupe Rivera, TAC Representative)
 - vi. Tehama (Justin Jenson, TAC Representative)
 - vii. Tribal (Patrick Spielman, Tribal TAC Representative)

Ms. Buck stated the Vina Subbasin annual report was submitted and a SGMA grant application was also submitted in December for \$5.5 million which included funding for data gaps, monitoring, recharge projects and inter-basin coordination. The Vina Subbasin also submitted a land repurposing grant. Wyandotte Creek Subbasin also submitted their annual report. There will be a meeting on Thursday June 11th with the GSA Board where an update of the fee study and annual report will be provided. The Butte Subbasin also submitted the annual report. The Butte Advisory Board will meet on May 30th where they will provide an update on their annual report. She then provided an update on drought response indicating that 180 households are being served through the drought program.

Mr. Geiger stated Colusa County has a grant to deliver water to landowners experiencing dry wells. There were 29 dry wells reported in the county but has dropped to 21, of which 19 are receiving water through the grant program.

Ms. Hunter stated the Colusa Groundwater Authority and Glenn Groundwater Authority (GGA) continue to work well together in the Colusa Subbasin. Geosyntec and Water and Land Solutions have been hired to help the GGA plan for recharge projects. She spoke about tasks, coordination and logistics of moving forward with the recharge projects. Ms. Hunter stated the focus in the Corning Subbasin is the fee project and trying to develop a funding mechanism to stay compliant with the State requirements. Regarding drought response, she went over data that included the number of dry wells throughout Glenn County and stated the Drought Task Force will meet on May 11th. She stated the well permit moratorium will expire on June 22nd and the county is currently working on updating the well permit standards.

Ms. Beard stated Shasta County has two medium priority groundwater subbasins. She stated they have submitted their annual report and are still waiting on DWR to hear the status of the Groundwater Sustainability Plan. She stated a grant application has been submitted for management, monitoring, and data gaps. She stated the drought response is ongoing and provided an updated on dry well management.

Mr. Rivera stated the SGMA annual reports and grant applications have been submitted to the State.

No Tehama County or Tribal updates were given.

10. DWR Update

Ms. Vellines stated three GSPs have been approved in the north-state and referred to DWR's website for more information. She stated the determinations will continue to be released throughout the year. She further stated DWR has been working diligently on the SGMA grant application reviews and she gave an update on the amount of funding available through the grants and number of applicants.

11. Board member comments and updates – (All)

- a. General comments and updates
- b. Suggested future agenda items
- c. Suggested future presentations/speakers
 - i. Critically overdrafted groundwater basins speaker
 - ii. Forecast Informed Reservoir Operations (FIRO)
- d. Upcoming meeting reminders

Mr. Connelly discussed the difficulties he has been experiencing in trying to fund SGMA. He expressed complications and concerns in trying to be fair to landowners while maintaining compliance with the State. There was discussion on experiences of others and ideas on how to alleviate some of the issues that are arising while trying to fund SGMA.

Ms. Hunter provided an update on previously suggested presentations and speakers, potential formats to receive presentations which could include a webinar sponsored by the IRWM, and requested any further feedback on potential topics or format preferences. There were suggestions to include funding topics, specific actions and projects to mitigate subsidence issues, and support for a webinar format.

Bruce Houdesheldt spoke regarding his concerns with various programs and funding needs and suggested a future agenda topic related to groundwater quality protection targets related to nitrates/nitrogen.

12. Public wishing to address the NSV Board on items not listed on the agenda.

Ms. Buck stated there will be a webinar hosted by Butte County regarding Forecast Informed Reservoir Operations (FIRO) projects on Wednesday, May 3rd.

13. Correspondence

None heard at this time.

14. Next Meetings

The next NSV IRWM TAC meeting is scheduled for June 21, 2023 at 9:00 a.m. and the next NSV IRWM Board meeting is scheduled for August 7, 2023 at 9:00 a.m.

15. Adjourn

The meeting was adjourned at 10:57 a.m.

NSV IRWM Board Agenda Item #6

6. *Update on Proposition 1, IRWM Implementation Round 2 grant
 - a. Mountain Counties Funding Area (Christina Buck)
 - b. Sacramento River Funding Area (Guadalupe Rivera)

STAFF REPORT

The Department of Water Resources (DWR) Prop 1 IRWM Implementation grant program made funds available to funding regions through two Rounds. For Round 2, applications were due February 1, 2023, and projects must be completed by December 31, 2027. Two applications were submitted for our NSV region by the deadline. One for the Mountain Counties Funding Area and the other for the Sacramento River Funding Area. The following describes the status of this funding opportunity.

Mountain Counties Funding Area

The IRWM regions in the Mountain Counties Funding Area (MCFA) agreed to split their allocation of Prop 1 IRWM Implementation funds equally between the nine regions in the funding area. The NSV IRWM region was allocated \$1,146,232.67. No projects were submitted for funding during Round 1 so the full allocation was available for Round 2.

Background

Two projects will be funded by the IRWM Prop 1, Round 2 funds:

1. Berry Creek Forest Health and Watershed Protection Project
2. Lake Madrone Replacement of the Potable Water Distribution System

The Berry Creek Forest Health and Watershed Protection Project will reduce wildfire risk and provide needed water conservation by improving forest health through thinning and fuels reduction and increase in water release on 60 acres of forest land. The project is located in and would provide benefits to the Feather River watershed in Butte County and will take place around the residential portions of Berry Creek, adjacent to US Forest Service lands, along key ingress and evacuation routes as well as ridge lines for wildfire defense.

The Lake Madrone Water District (LMWD) supplies potable water to residential and community properties surrounding Madrone Lake in Butte County, California located 8 miles north of Lake Oroville. The North Complex Fire started by lightening on August 17, 2020, and caused significant damage to LMWD's system infrastructure either by heat damage to system components, damage by personnel during fire-fighting efforts, or falling debris. The principal benefit of this project is water supply/water supply reliability and water quality. As originally scoped, the completed system will be able to deliver 7 million gallons per year (GPY) of potable water to residents. LMWD is seeking funding from the Federal Emergency Management Agency (FEMA) for the majority of projects costs but the IRWM grant will help the district meet cost share requirements of the federal grant and will enable the project to get an earlier start.

The table below shows the budget submitted for each project and for grant administration.

Grant Application Budget Table:

PROJECTS	Grant Amount	Required Cost Share: Non-State Fund Source	Other Cost Share	Total Cost	Cost Share Waiver Received
Grant Administration	\$50,000	\$25,000	\$0	\$75,000	N/A
Berry Creek Forest Health and Watershed Protection Project	\$296,232	\$0	\$30,000	\$326,232	100%
Lake Madrone Replacement of Potable Water Distribution System	\$800,000	\$0	\$7,003,000	\$7,803,000	100%
GRAND TOTAL	\$1,146,232	\$25,000	\$7,033,000	\$8,204,232	

Current Status

DWR released recommended awards for funded projects in May 2023 and Butte County received the Notification of Award letter from DWR. Butte County has been in touch with grant managers at DWR regarding the development of a grant agreement. Progress on executing the grant agreement has been delayed by uncertainty regarding the FEMA funding for the Lake Madrone project. This project is only partially funded by the IRWM grant and relies primarily on FEMA funding to complete the project as originally scoped which was a full replacement of the distribution system. The Lake Madrone Water District (District) recently received a determination from FEMA that FEMA will fund only partial replacement (\$400,000) instead of full system replacement (\$7.8M). They will pursue arbitration in response to this decision. However, since only implementation projects that provide quantifiable benefits are eligible for the IRWM funds, there is a need to scale down the project scope for the IRWM grant agreement so that quantifiable benefits can be delivered for the budget of the grant amount (\$800,000). DWR has allowed for additional time to work through these issues before establishing a grant agreement. Butte County is working with the District to provide a revised project work plan, budget, and schedule to DWR for consideration for the grant agreement. This is expected to occur this month. The revised work plan would include rehabilitation of a defunct well, addition of new storage, and construction of pipeline and connections that would result in delivery of water to a portion of the district. Once the grant agreement is executed with Butte County, Butte County will establish subrecipient agreements with the District and the Fire Safe Council and then the projects can get underway.

Sacramento River Funding Area

According to the Implementation Grant Program webpage, the Sacramento River Funding Area (SRFA) has \$1,677,458 available in implementation funds. Based on negotiations between the six regions in the

SRFA in 2019, \$1.2 million of the available funds were designated to the NSV IRWM region. The Upper Sac IRWM region pursued the remaining funds. The other IRWM regions in the SRFA did not submit projects for Round 2 funding.

Background

Three projects will be funded by the IRWM Prop 1, Round 2 funds:

1. Spiva Avenue Water Main Replacement - Clark Ave to Cooper Avenue
2. Northern Sacramento Valley Mobile Irrigation Lab (NSV MIL)
3. Arbuckle Area Groundwater Recharge Demonstration and Pilot Project

The Spiva Avenue Water Main Replacement project will provide a new and upsized water main with the required capacity to provide potable water efficiently to the affected water services, while also being less likely of leaks and other contaminants generally found with aged water mains greater than 75 years old. The project will increase water service by 1.56 cfs and fire flow capacity for an area of a disadvantage community.

The RCD of Tehama County's (RCDTC) Mobile Irrigation Lab (MIL) program will cover 4 counties in the Northern Sacramento Valley, providing free access to all interested growers for irrigation system evaluations. This proposed MIL project will address two main program objectives by first, performing a minimum of 60 irrigation evaluations each year (current average is 82) of which all collected information will be summarized in detailed reports and discussed in a one-on-one technical assistance setting. Second, by providing irrigation water management training that will involve either presenting, leading, or participating in workshops, seminars, or agriculture related events.

The Arbuckle Area Groundwater Recharge Demonstration and Pilot Project's aim is to demonstrate and pilot a multi-benefit groundwater recharge project to assist in meeting the sustainability goals under the Sustainable Groundwater Management Act, as addressed in detail in the Colusa Subbasin Groundwater Sustainability Plan (GSP). The project will build drought resiliency and advance local conjunctive use practices through groundwater recharge according to the State's prioritization of groundwater recharge projects. The project will implement multi-benefit, direct and in-lieu groundwater recharge projects in a unified approach and demonstrate that groundwater recharge is a viable tool to immediately alleviate critical drought conditions. This project will benefit the disadvantaged community surrounding Arbuckle, provide habitat for migratory shorebirds, and enhance groundwater dependent ecosystems supporting the region's objective to implement multi-benefit projects.

The table below shows the budget submitted for each project and grant administration.

Application Budget Table:

PROJECTS	Grant Amount	Required Cost Share: Non-State Fund Source	Other Cost Share	Total Cost	Cost Share Wavier Received
Grant Administration	\$80,000	\$0	\$0	\$80,000	N/A
Project 1: Spiva Ave Water Main - City of Yuba City	\$375,000	\$0	\$25,000	\$400,000	100%
Project 2: Northern Sacramento Valley Mobile Irrigation Lab	\$200,000	\$28,572	\$0	\$228,572	75%
Project 3: Arbuckle Area Groundwater Recharge Demonstration and Pilot Project	\$545,000	\$0	\$19,665	\$564,665	100%
GRAND TOTAL	\$1,200,000	\$28,572	\$44,665	\$1,273,237	

Current Status

DWR released recommended awards for funded projects in May 2023 and Sutter County received the Notification of Award letter from DWR regarding the three submitted projects. Sutter County has been in touch with their grant manager at DWR regarding the development of a grant agreement and has provided additional requested information. Once the grant agreement is executed with Sutter County, Sutter County will establish subrecipient agreements with the project proponents and then the projects can get underway.

NSV IRWM Board Agenda Item #7

7. *Establish 2024 Meeting Schedule

- a. Potential action to accept TAC recommendation and adopt 2024 Meeting Schedule

On October 18, 2023, the NSV IRWM TAC made a recommendation to the NSV IRWM Board on the 2024 meeting schedule. The recommendation includes consideration of the requirements within the Bylaws, which are shown below.

The Bylaws state “at least two Regular meetings of the NSV IRWM Board will be held each year” and “meetings are to be held at least four times per year on the third Wednesday of the month” for the TAC. Board meetings have typically been held on the first Mondays of the month.

Proposed 2024 Meeting Schedule

- January 2024- No meeting
- February 21, 2024- TAC Meeting
- March 2024- No meeting
- April 17, 2024- TAC meeting
- May 2024- No meeting
- June 3, 2024 -Board
- July 2024- No meeting
- August 21, 2024- TAC meeting
- September 2024- No meeting
- October 16, 2024- TAC meeting
- November 2024- No meeting
- December 2, 2024- Board meeting

Attachments:

- None

NSV IRWM Board Agenda Item #12

12. *Correspondence

Correspondence is attached.

Attachments:

1. NSV IRWM Funding Recommendation Announcement
2. Board Meeting follow up- presentations

Buck, Christina

From: BCWater
Sent: Thursday, May 25, 2023 8:35 AM
To: BCWater
Cc: 'lhunter@countyofglenn.net'; Buck, Christina; 'grivera@co.sutter.ca.us'
Subject: FW: NSV IRWM Funding Recommendation Announcement
Attachments: Round 2 Final Funding Recommendations- Mountain Counties.pdf; Final Funding Recommendations- Sacramento River.pdf

This past week, the NSV IRWM received fantastic news. DWR has recommended funding for the NSV Region under the Prop 1, Round 2 IRWM Implementation Grant Program. The funding recommendations include the following:

Mountain County Funding Area

Project 1: Butte County Fire Safe Council – Berry Creek Forest Health and Watershed Protection Project, \$296,232

Project 2: Lake Madrone Water District – Lake Madrone Replacement of the Potable Water Distribution System, \$800,000

Grant Administration, \$50,000

Total: \$1,146,232

Sacramento River Funding Area

Project 1: Spiva Ave Water Main - City of Yuba City, \$375,000

Project 2: Northern Sacramento Valley Mobile Irrigation Lab, \$200,000

Project 3: Arbuckle Area Groundwater Recharge Demonstration and Pilot Project, \$545,000

Grant Administration, \$80,000

Total: 1,200,000

The DWR Funding Recommendation Summaries are attached.

Lisa Hunter
Glenn County
Water Resource Coordinator
(530) 934-6540
www.countyofglenn.net

Lisa Hunter

From: Buck, Christina <CBuck@buttecounty.net>
Sent: Friday, May 5, 2023 2:28 PM
To: Buck, Christina
Subject: Presentations from NSV IRWM Board Meeting
Attachments: 5.2023 DARP - NorthSacValleyIRWM Presentation.pdf; NSV TAC Spring 2023 GWLs_5-1-23.pdf

Dear Board Members and Alternates,

Please find attached the presentations from Monday's NSV IRWM Board meeting. These have been posted on the website as well.

Have a wonderful weekend,
Christina

Christina R. Buck, Ph.D.

Assistant Director

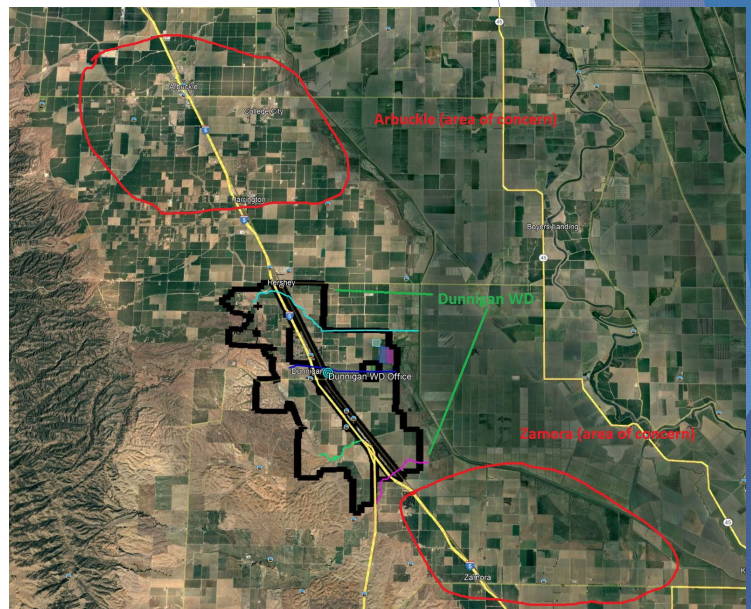
Dept. of Water and Resource Conservation
Butte County
308 Nelson Avenue
Oroville, CA 95965-3302
Off: [530.552.3593](tel:530.552.3593)
Cell: 530.864.6057
cbuck@buttecounty.net

Dunnigan Area Recharge Program (DARP)

May 2023 North Sacramento Valley IRWM

Dunnigan Water District

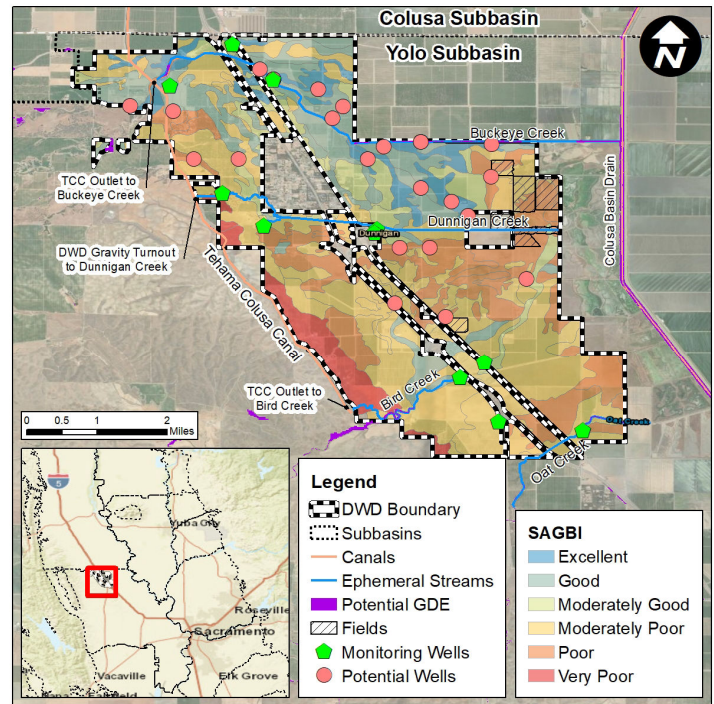
- ▶ 11,500 acres
- ▶ Located between two areas of significant subsidence and GW related issues
- ▶ USBR Service Contract - served by Tehama-Colusa Canal
- ▶ 19,000 AF contract : received **ZERO** allocation previous 3 years, 100% this year
- ▶ Strong partnership with RD-108
 - ▶ Management and Administration by RD-108 staff
 - ▶ Long standing transfer agreements with RD-108
 - ▶ Shared landowners (~40% of DWD is shared landownership)



DARP Overview

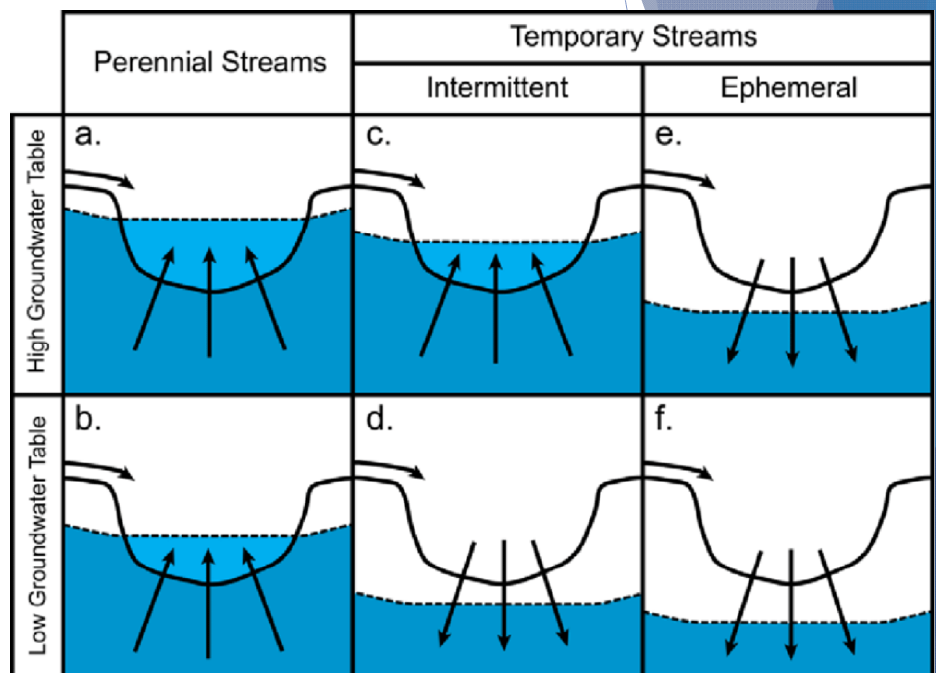
Goals

- ▶ Recharge up to 5000 AF each year
 - ▶ DWD is 11% land area of the North Yolo Management Area (NYMA)
 - ▶ 5000 AF is 16% of the GW depletion in the NYMA (31,000 AF annual average depletion)
 - ▶ Domestic use is all groundwater and approximately 130 AF per year (population of 1400)
- ▶ Habitat
 - ▶ Shorebird habitat of 500-600 acres each year
- ▶ Funding to bridge the gap between SGMA enactment and self reliance
- ▶ Winter Water Rights



Ephemeral Streams

- ▶ Concept is to mimic nature and trickle flow water into ephemeral streams.
- ▶ Four (4) streams that bracket the Dunnigan area: Buckeye, Dunnigan, Bird, Azevedo Drain and Oat Creek.
 - ▶ 14.02 miles of ephemeral streams
- ▶ Previous tests done on Stony Creek in Glenn County



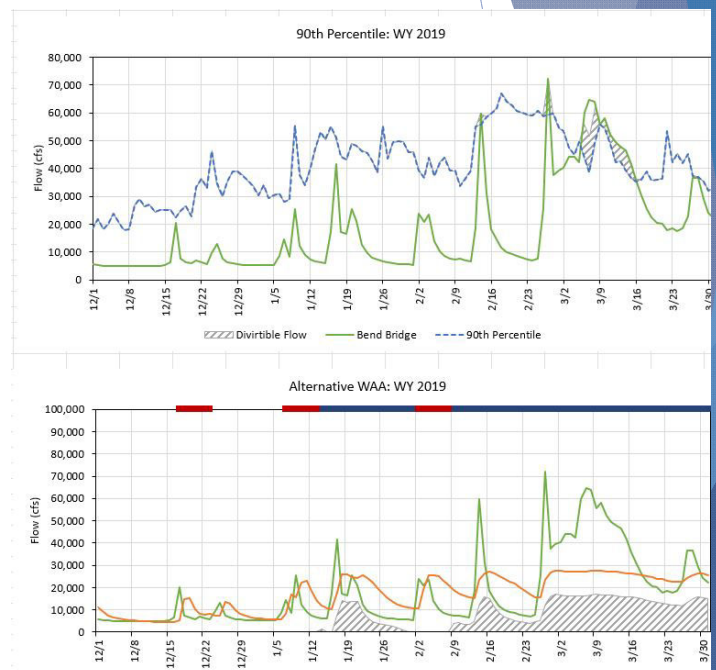
Shorebird Habitat/Recharge & FloodMAR

- ▶ Shallow flooding of fields to provide habitat for migrating shorebirds.
- ▶ Demonstrated by Davis Ranch/The Nature Conservancy
- ▶ FloodMAR similar without the shorebird component emphasized.
- ▶ Goal of 500-600 acres of habitat and recharge in any given year.
- ▶ Exercise the aquifer if needed to support the habitat



Funding & Water Rights

- ▶ SGMA Implementation is providing funds for now
- ▶ Eventually, landowners/water users will have to self sustain recharge
- ▶ Underground drip irrigation dilemma
- ▶ Funding needs:
 - ▶ Monitoring & Infrastructure - currently lots of funding
 - ▶ Water! - very little of it, and very little funding currently
- ▶ Winter Water Rights
 - ▶ Diversion of Sacramento River water in winter, high flows
 - ▶ Harnessing ephemeral streams natural flow



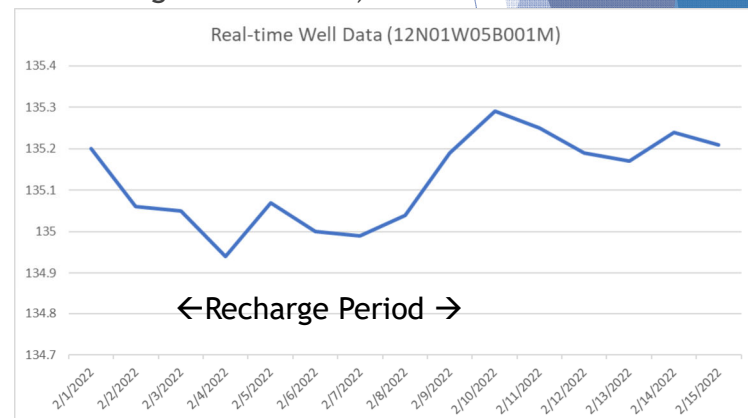
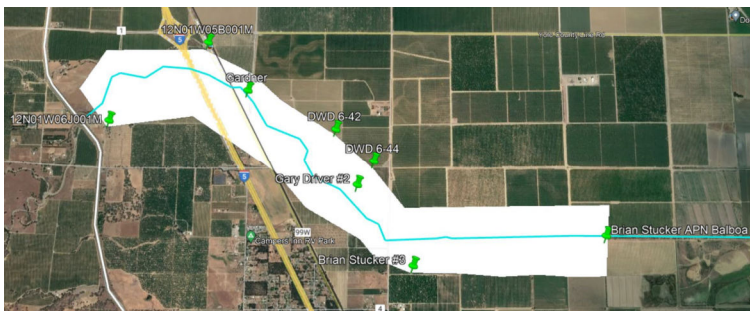
Pilot Projects

- ▶ 2022 - one of the worst water years on record in Sacramento Valley
- ▶ DARP - 425 to 510 AF recharged in this year
 - ▶ 125-210 AF in Buckeye Creek test run
 - ▶ 300 AF in TNC-DWD Shorebird Habitat/Recharge
- ▶ Received \$800k grant funds via Sierra Institute and Westside Sac Valley IRWM Program
- ▶ TNC contribution of ~\$127,000 for water and farmers work on shorebird/recharge pilot. (From General Mills grant)



Buckeye Creek Test Recap

- ▶ February 2022 TCCA needed repairs
- ▶ Dewatered canal primarily through Buckeye Creek (500 AF +/- over Thursday pm to Sunday pm)
- ▶ 125-210 AF of recharge measured (6 inches to 9 inches average rise in wells)



Buckeye Creek Photos



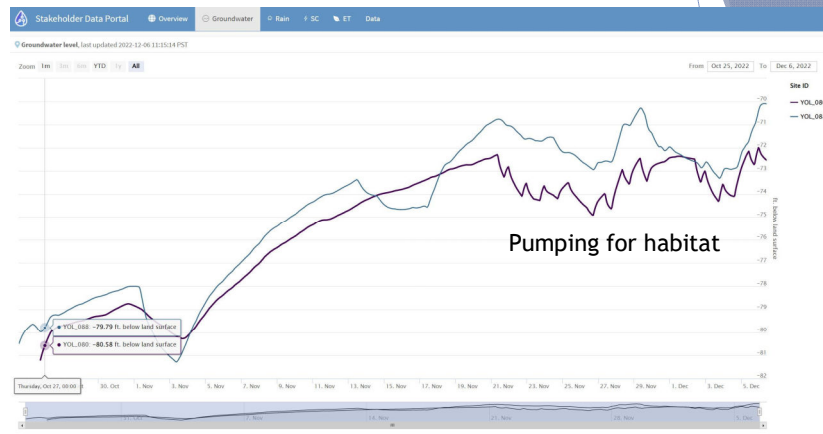
Near Gary Driver's property



County Road 88 Crossing

TNC Shorebird Habitat/Recharge Pilot

- ▶ 200 acres of fields
- ▶ 300 AF applied
- ▶ \$731 per AF
 - ▶ \$400 by TNC plus farmers cost (~\$127,000)
 - ▶ \$331 by SI/WSVIRWM grant
- ▶ Draft report shows 91%-92% deep percolation, so 276 AF effective recharge
- ▶ Exercised aquifer for habitat because of fast infiltration



TNC Shorebird Habitat/Recharge photos



Big White Birds (Egrets) feasting

Video
courtesy of
Brian
Stucker



February to April 2023

- ▶ Reclamation made Section 215 water available
- ▶ Between Thursday, Feb 9th and Friday, April 28th, 691 AF of recharge was been done in Buckeye Creek and 685 AF on C & H 3 Farm fields for a total 1,376 AF
- ▶ Wells in the area have come up about 40 ft overall.
- ▶ This is funded by the grant.
- ▶ Nitrogen levels appear lower post recharge (empirical observation)



Funding Sources

- ▶ Disadvantaged Community Grant via the Sierra Institute and West Sac Valley IRWM
 - ▶ Includes funding to purchase recharge water
 - ▶ Providing funding to install monitoring network (both water level and water quality)
- ▶ Being included in GSA grant application
- ▶ Urban Drought Grant with CCWD
- ▶ Private investment
 - ▶ Landowners - tracking for future “credit”
 - ▶ NGO’s

Questions?

- ▶ Project Partners
 - ▶ DWR
 - ▶ Sierra Institute
 - ▶ West Sac IRWM
 - ▶ Yolo GSA
 - ▶ Yolo County Flood Control & Water Conservation District
 - ▶ The Nature Conservancy
 - ▶ CalAM Water Company
 - ▶ Dunnigan Water District
 - ▶ RD-108
 - ▶ Schaad Family Farms
 - ▶ C & H 3 Farms
 - ▶ The TCCA

NSV IRWM Board

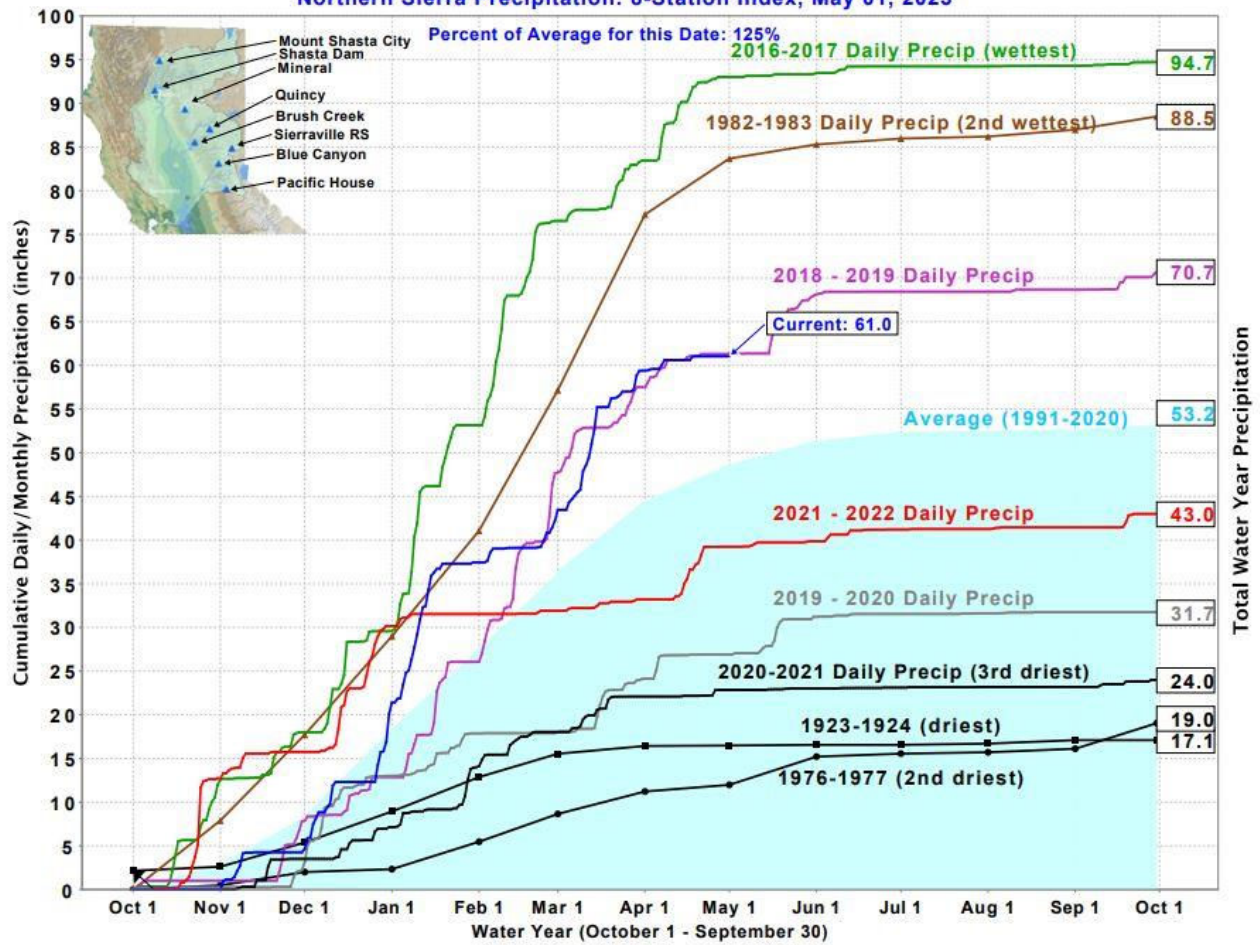
2023 Spring Groundwater Level Update

Michelle Dooley
Regional Planning Branch
DWR Northern Region

Outline

- **Water Year and Precipitation Index**
- **NOAA Climate Prediction**
- **Groundwater Live**
 - Groundwater Change Maps
 - Groundwater Trend Maps
- **Land Subsidence (SGMA Dataviewer)**

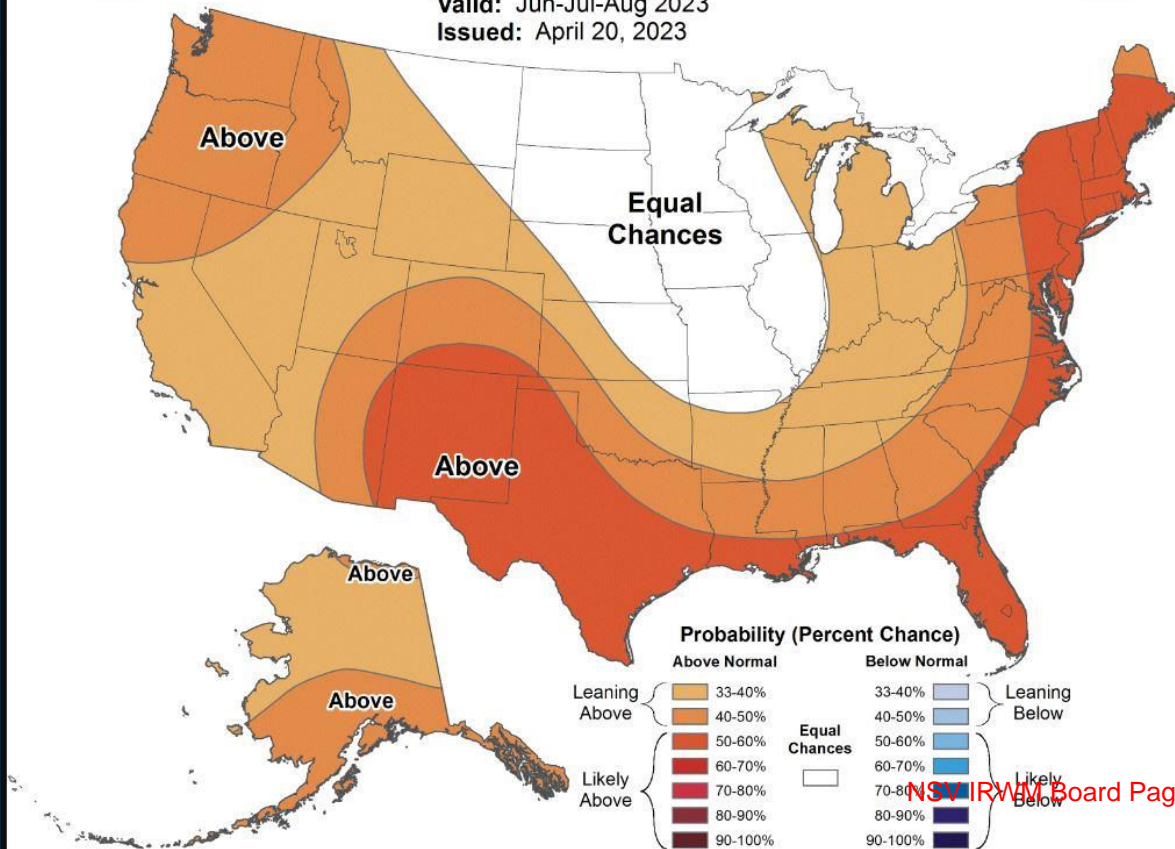
Northern Sierra Precipitation: 8-Station Index, May 01, 2023

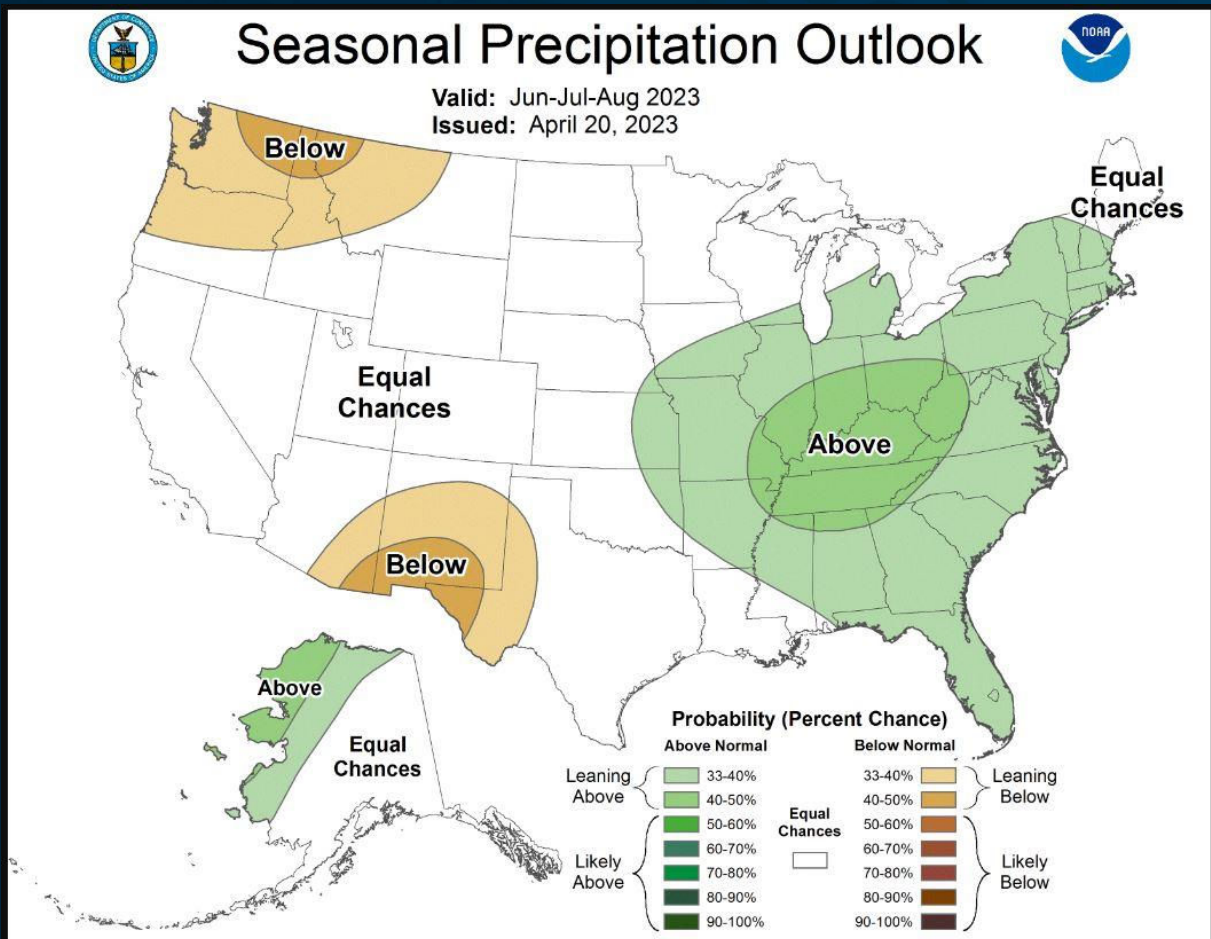


Seasonal Temperature Outlook



Valid: Jun-Jul-Aug 2023
Issued: April 20, 2023





Groundwater Live Website Overview and Examples

California's Groundwater Live

[Current Conditions](#)
[Groundwater Levels](#)
[Well Infrastructure](#)
[Land Subsidence](#)

California's Groundwater Live

CALIFORNIA'S LATEST GROUNDWATER INFORMATION AND CONDITIONS

SECTIONS

[CURRENT CONDITIONS](#)

[GROUNDWATER LEVELS](#)

[WELL INFRASTRUCTURE](#)

[LAND SUBSIDENCE](#)

[About](#)
[How to access data](#)
[Questions/Feedback: calgw@water.ca.gov](#)

NSV IRWM Board Page 25

Statewide – Statistics based over the last 10 years

Current Groundwater Conditions

Groundwater is a vital resource in California. It sustains our ecosystems, supports our agriculture, fuels our economy, quenches our thirst, and reduces the impacts of drought and our changing climate. Groundwater accounts for 40 percent of the State's total annual water supply in normal years and almost 60 percent in drought years. This is why the California Department of Water Resources (DWR) is committed to protecting this precious resource and has developed California's Groundwater Live in conjunction with the public release of [California's Groundwater Update 2020](#). We welcome you to explore our newest groundwater tool which features the latest groundwater information, live statistics and a series of interactive dashboards that can be accessed by clicking the icons below.

Monitoring Wells
Below Normal Level

54%

Monitoring Wells
at Normal Level

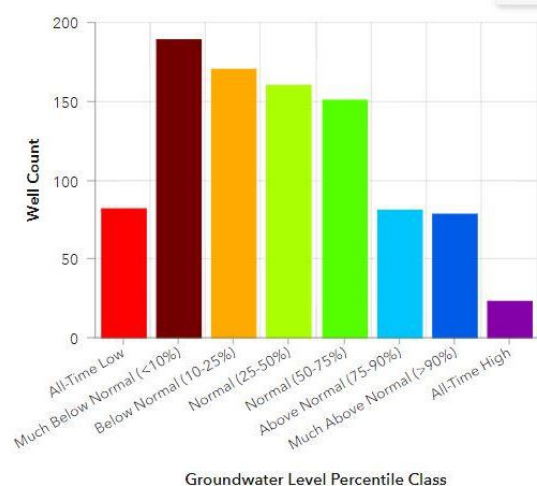
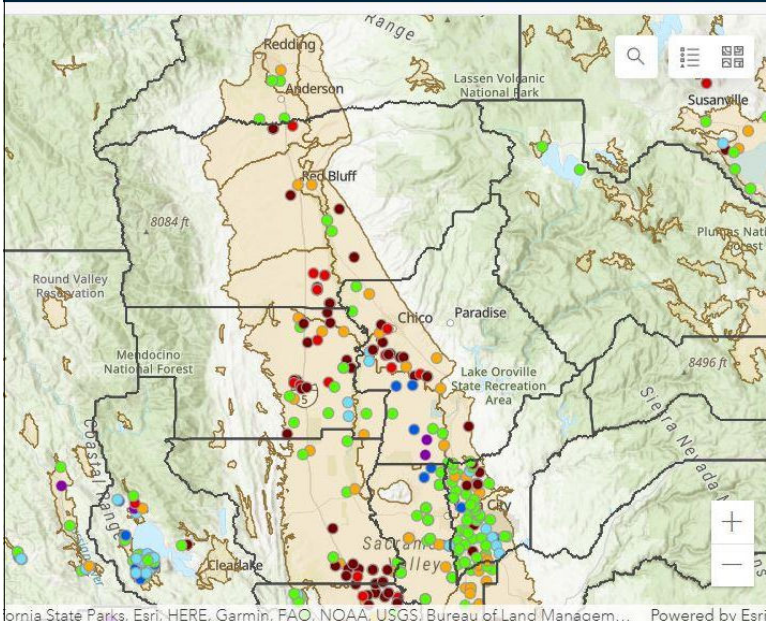
30%

Monitoring Wells
Above Normal Level

16%

These numbers are calculated from combining All-Time High, Above Normal, Normal, Below Normal and All-Time Low categories in the Current Groundwater Level Conditions dashboard below. [Learn more about the calculations](#)

Current GWL Conditions – Last 60 Days



Monitoring Wells

3.5k

Total

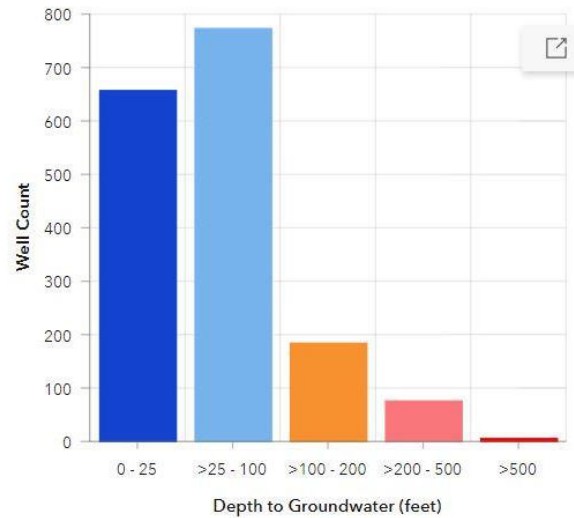
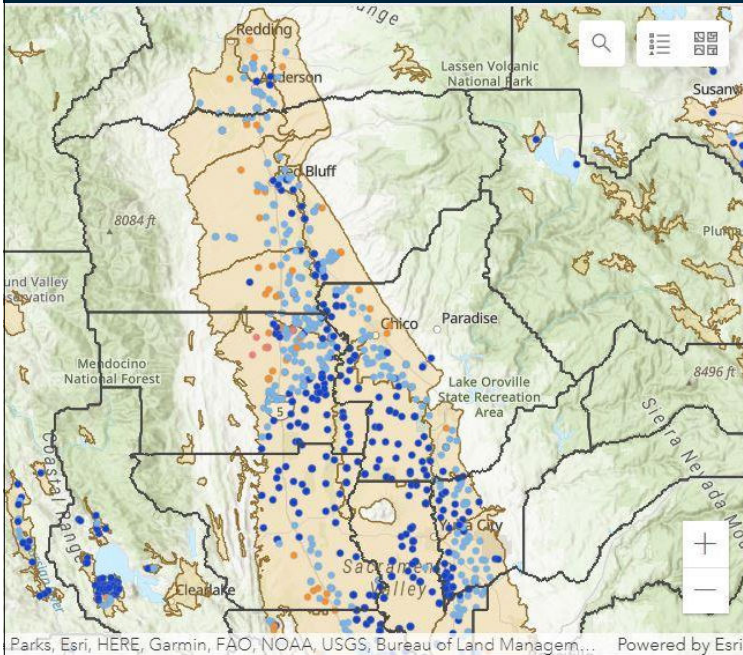
Monitoring Wells

934

Based on Selection

Learn how to use this dashboard.
Learn more about how this dashboard was created.

Current GWLs – Last 60 Days



Monitoring Wells

8.4k

Total

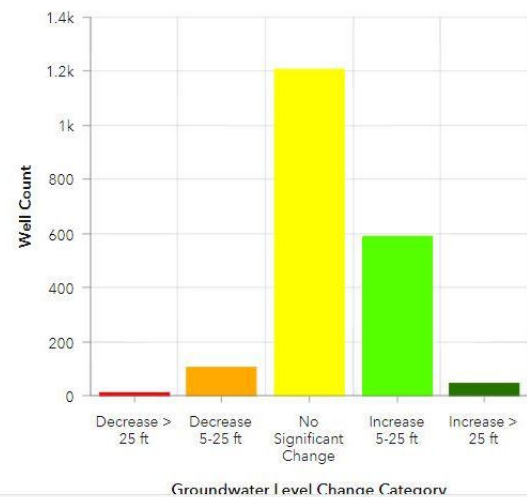
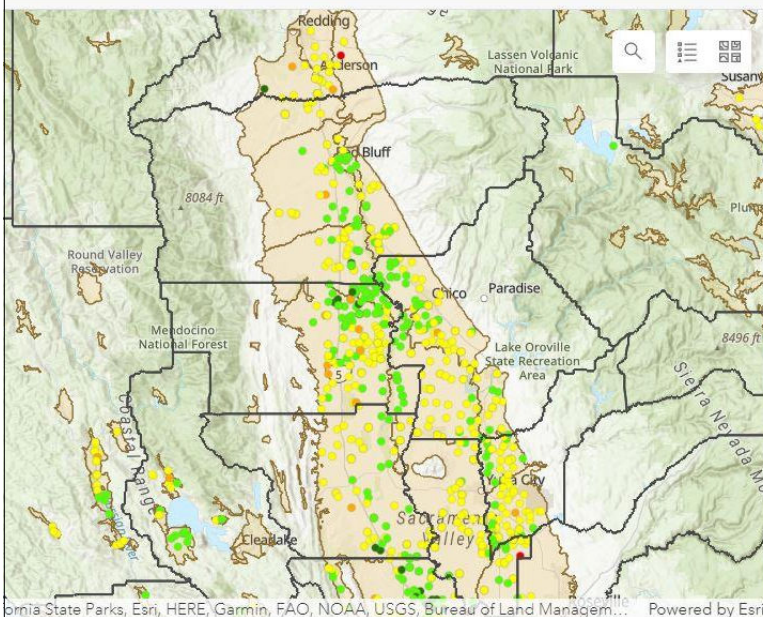
Monitoring Wells

1.7k

Based on Selection

to use this dashboard.
e about how this dashboard was created.

Seasonal Groundwater Level Changes – 1 yr



Monitoring Wells

6.4k

Total

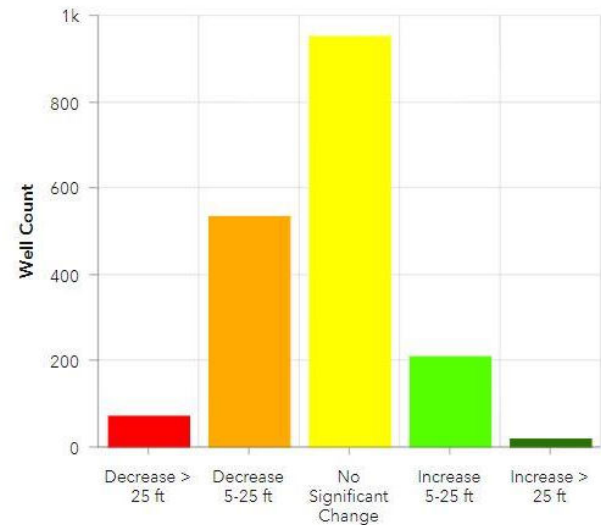
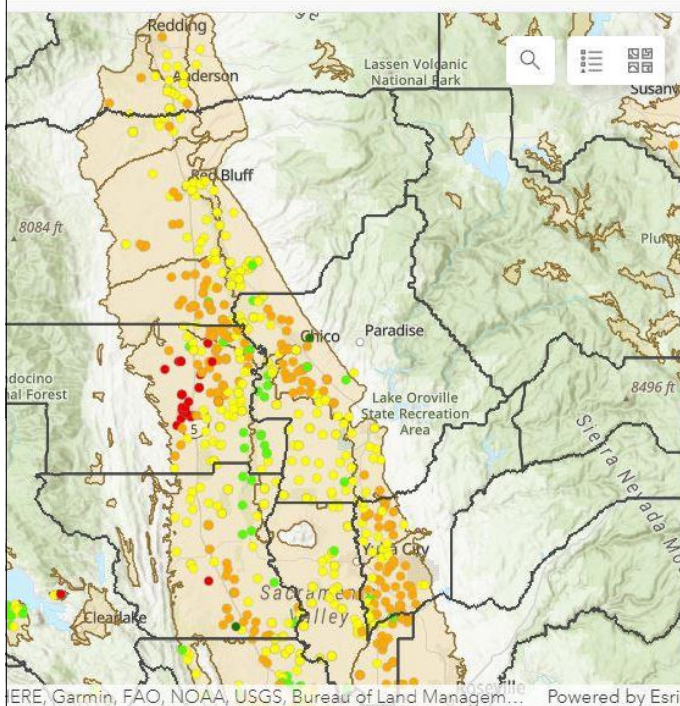
Monitoring Wells

2k

Based on Selection

earn how to use this dashboard.
earn more about how this dashboard was created.

Seasonal Groundwater Level Changes – 3 yrs



Groundwater Level Change Category

Monitoring Wells

6.4k

Total

Monitoring Wells

1.8k

Based on Selection

Change Dot Maps of the North Sacramento Valley: California's Groundwater Live

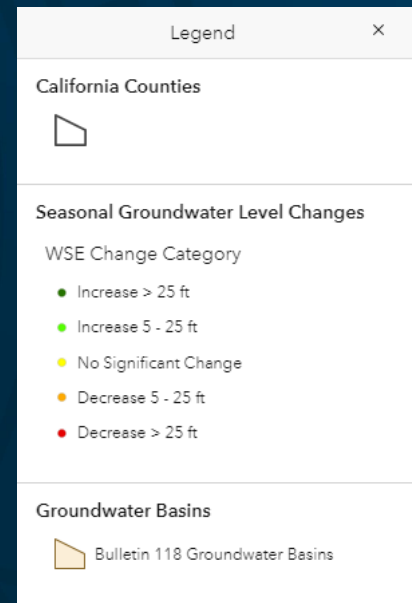
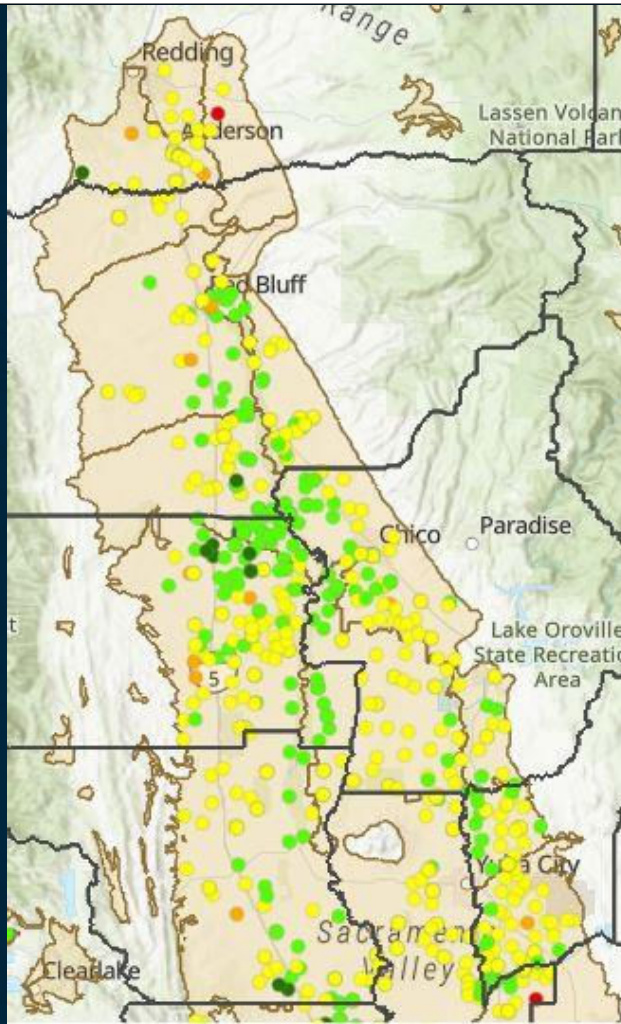
By well depth:
100 - 450 ft. deep
> 600 ft. deep

By 1, 3, 5, and 10 years
Spring to Spring
2023 - 2022
2023 - 2020
2023 - 2018
2023 - 2013

Wells
100 - 450 ft
deep

Spring
2023-2022

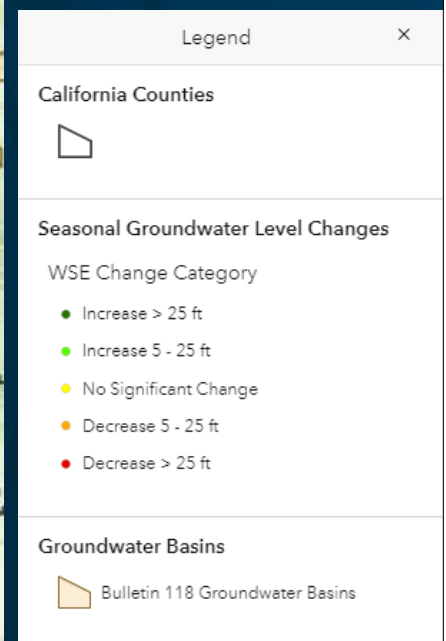
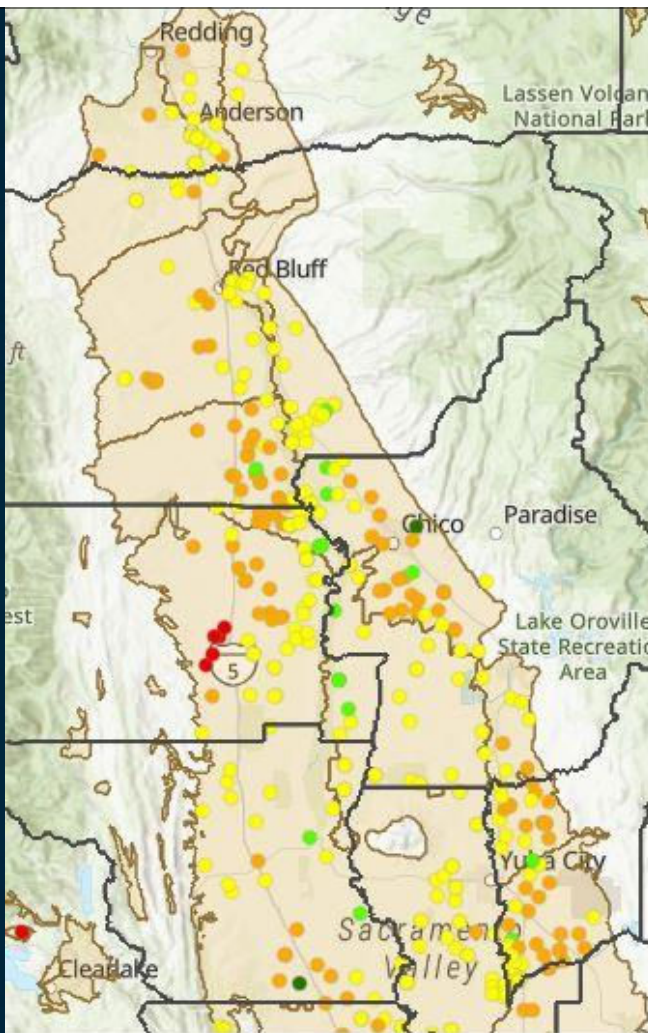
1 year



Wells
100 - 450 ft
deep

Spring
2023-2020

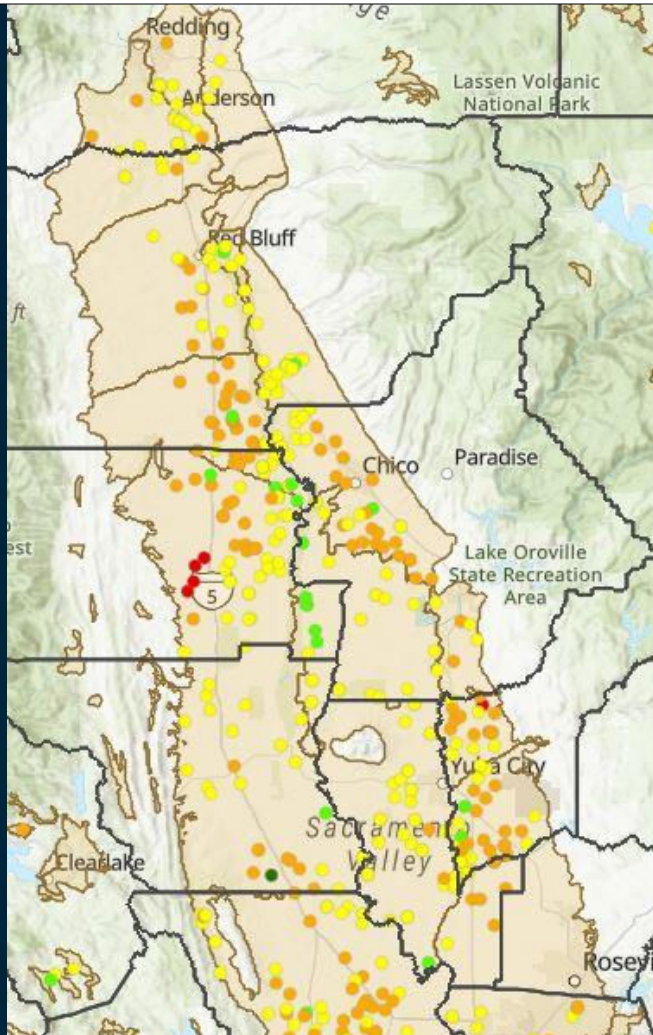
3 years



Wells
100 - 450 ft
deep

Spring
2023-2018

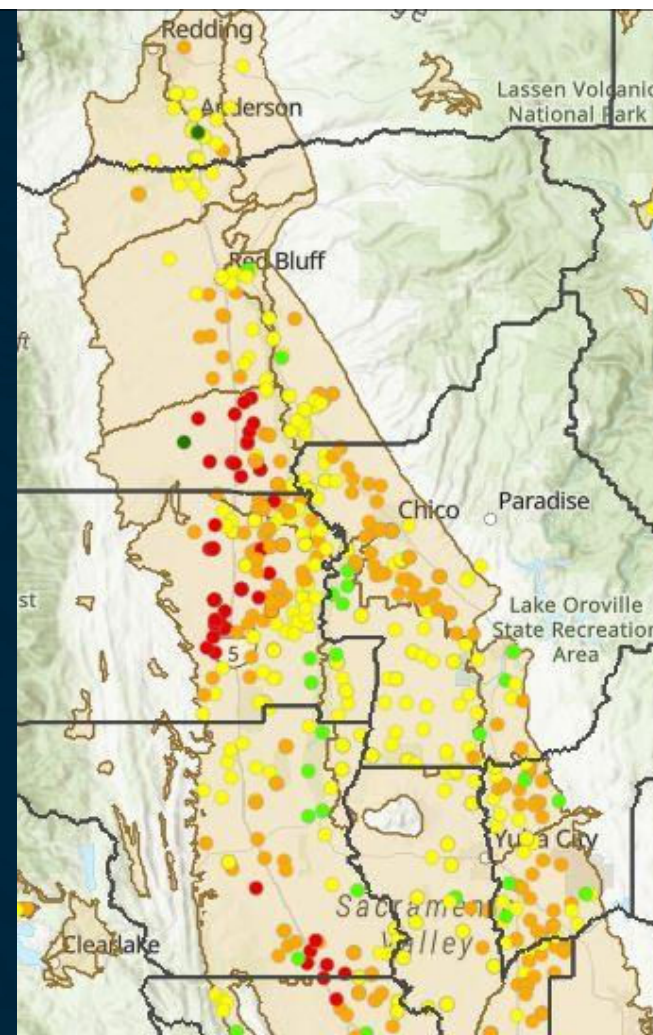
5 years



Wells
100 - 450 ft
deep

Spring
2023-2013

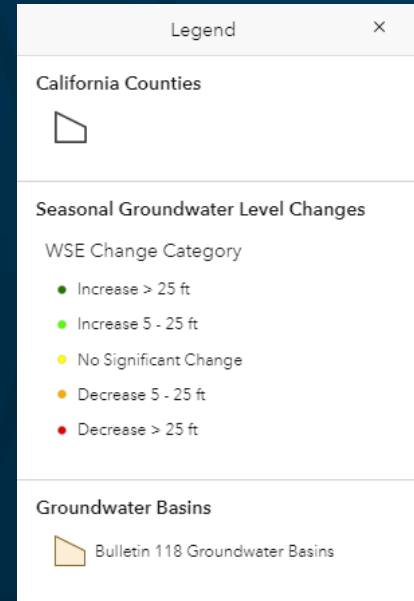
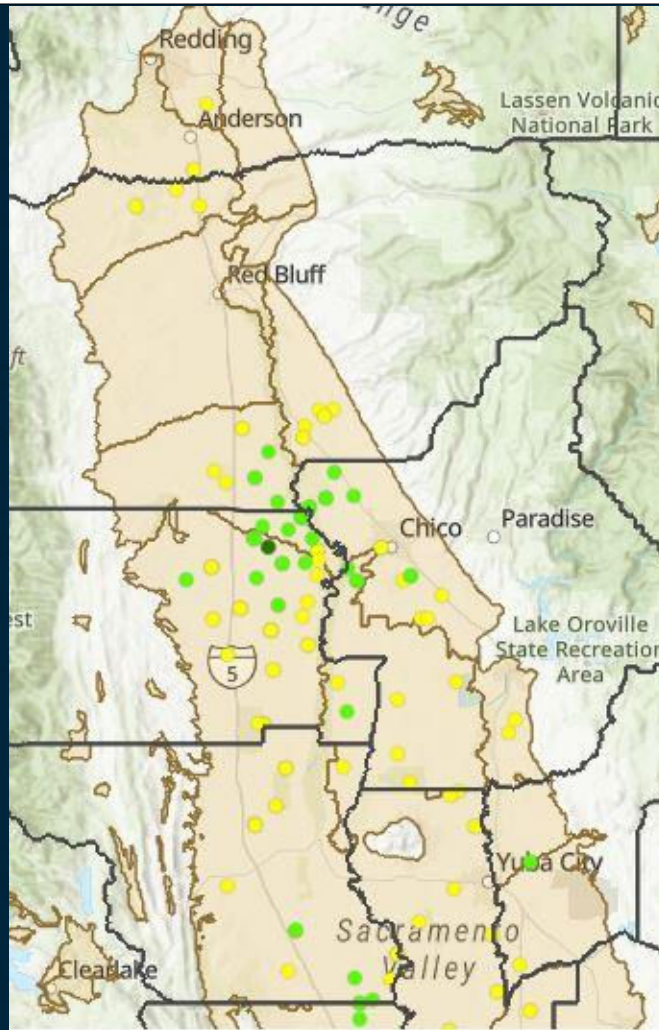
10 years



Wells
> 600 ft
deep

Spring
2023-2022

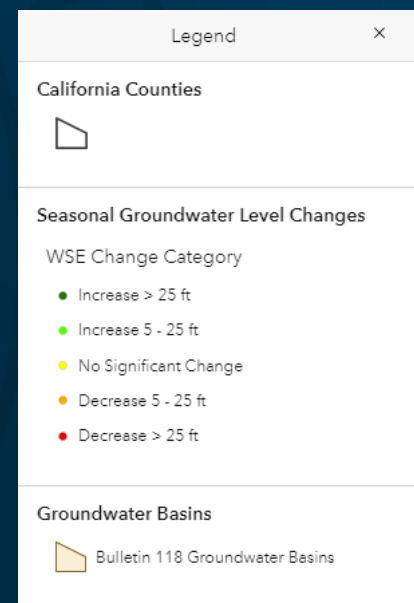
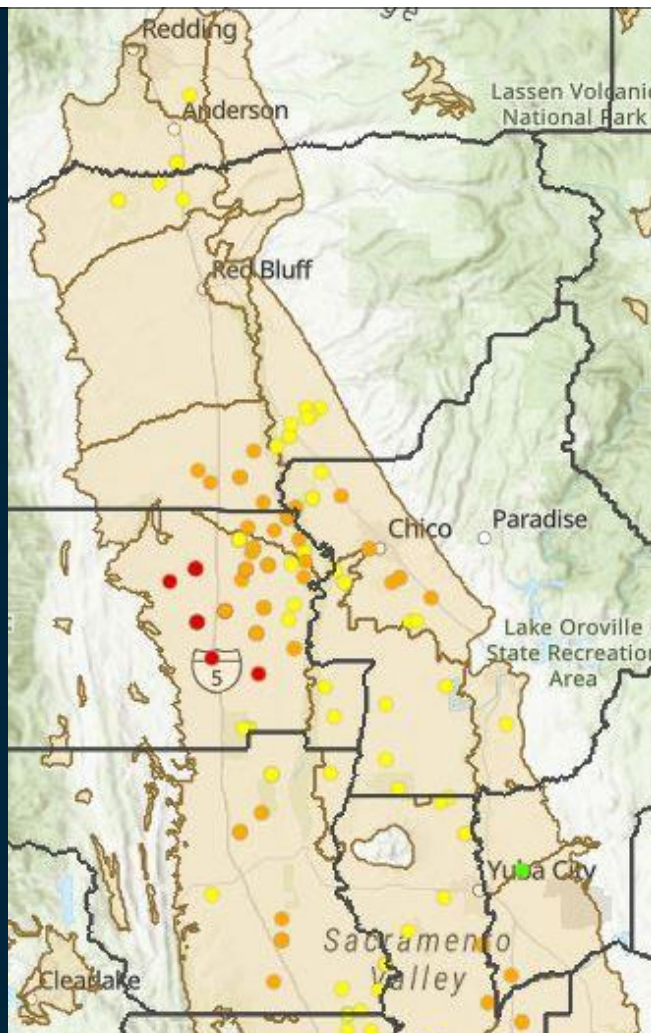
1 year



Wells
> 600 ft
deep

Spring
2023 – 2020

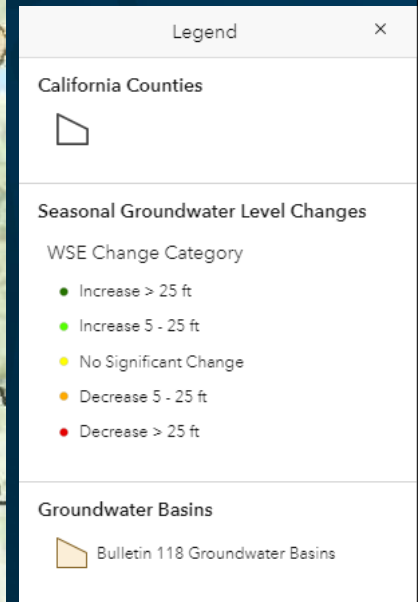
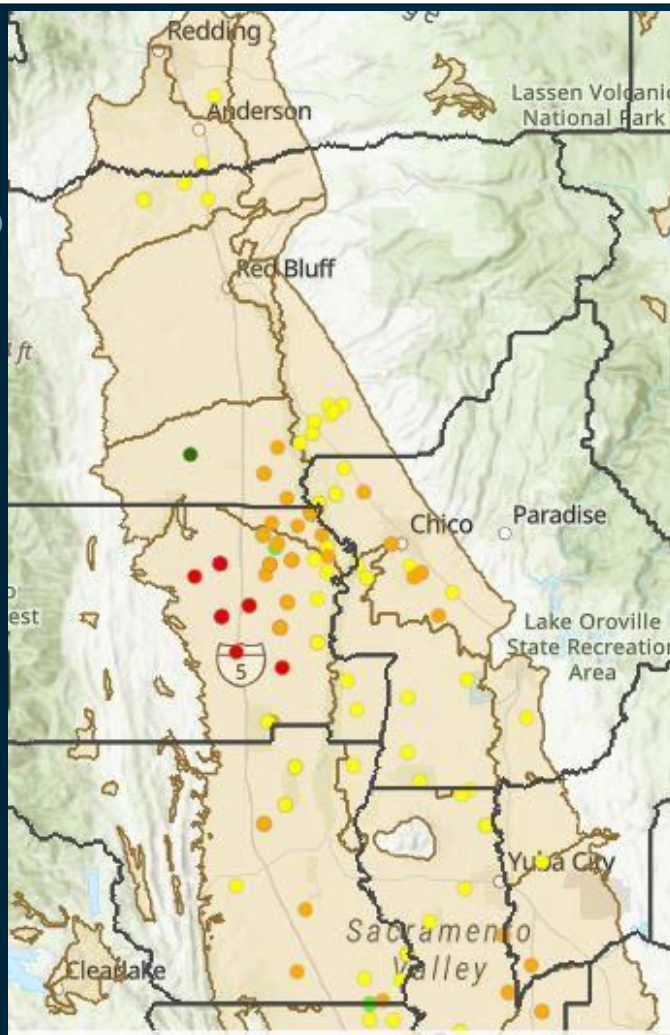
3 years



Wells
> 600 ft deep

Spring
2023-2018

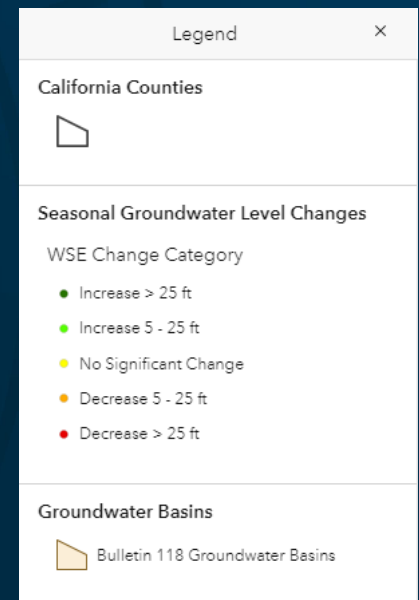
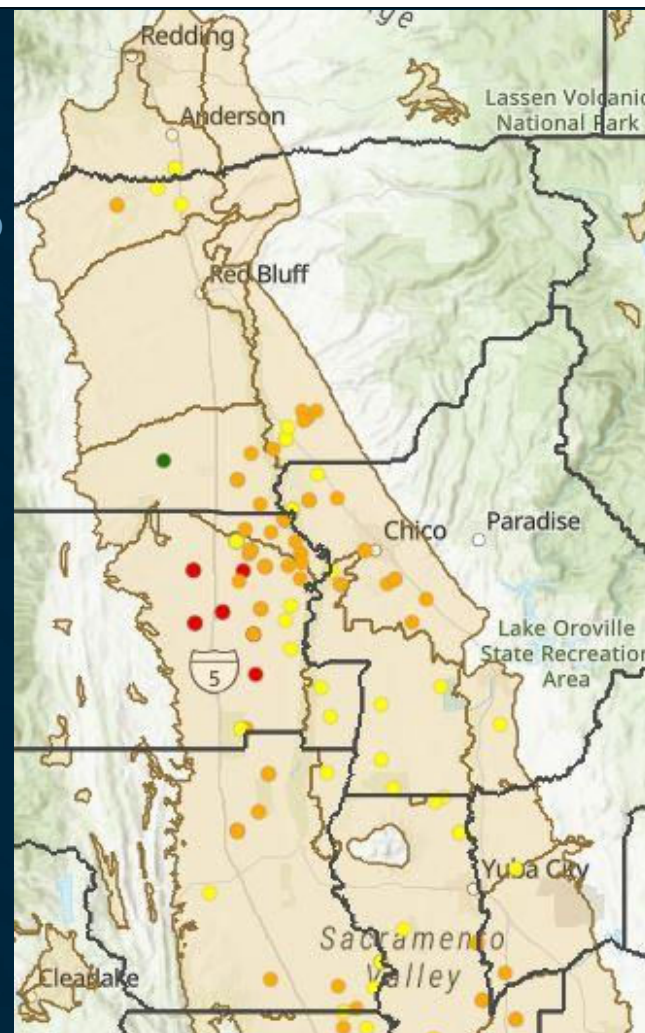
5 years



Wells
> 600 ft deep

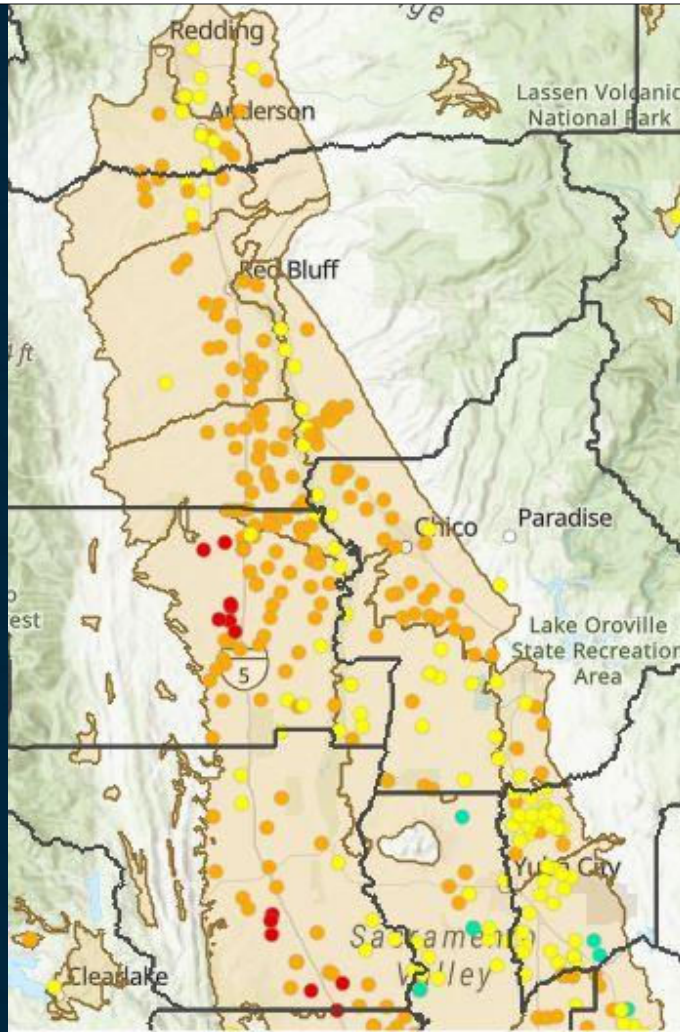
Spring
2023-2013

10 years



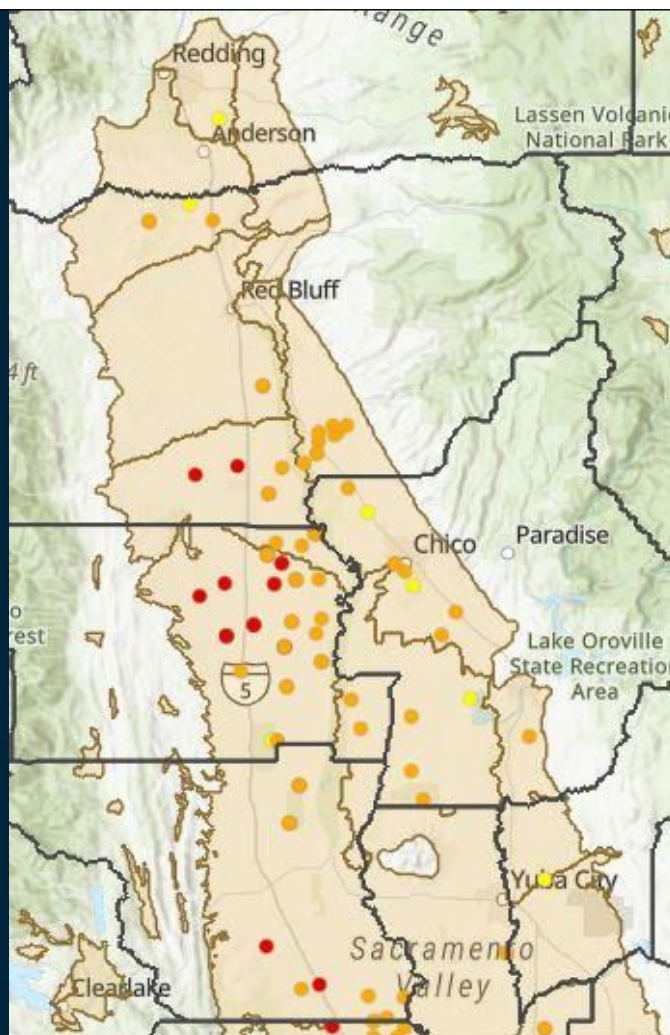
20-year Groundwater Level Trends

Wells
100-450 ft
deep



20-year Groundwater Level Trends

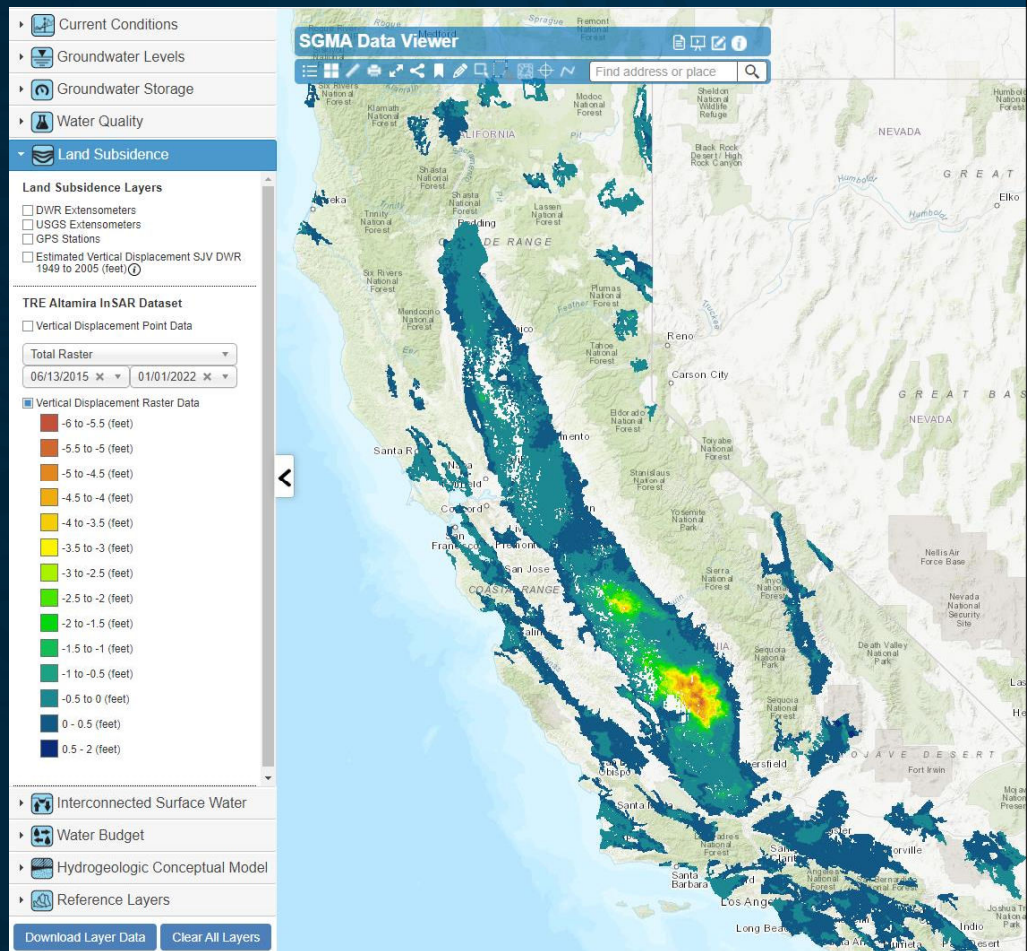
Wells
> 600 ft deep



Land Subsidence SGMA Data Viewer

- InSAR collected monthly since 2015 and updated monthly

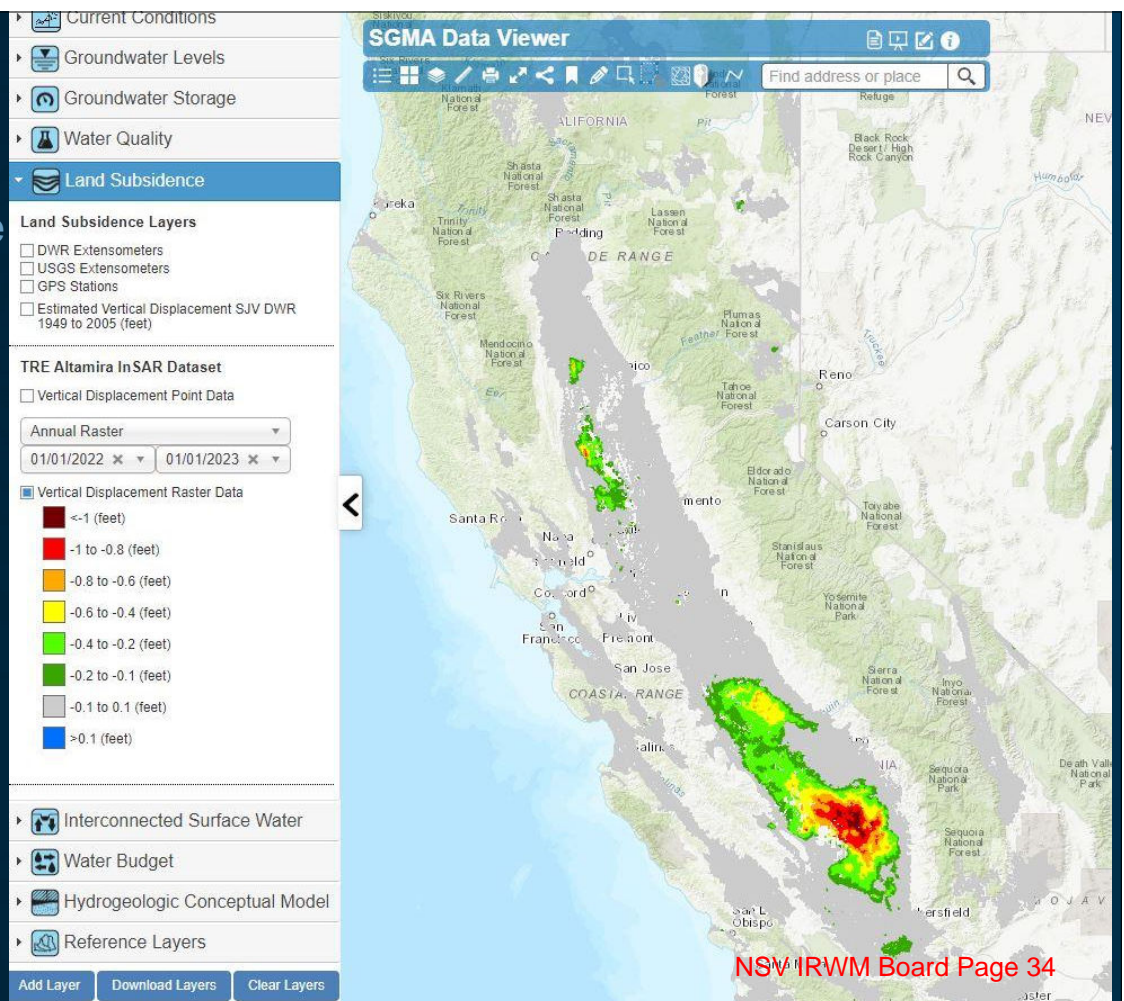
- Additional continuous GPS stations will be added starting in areas of concern over the next several years

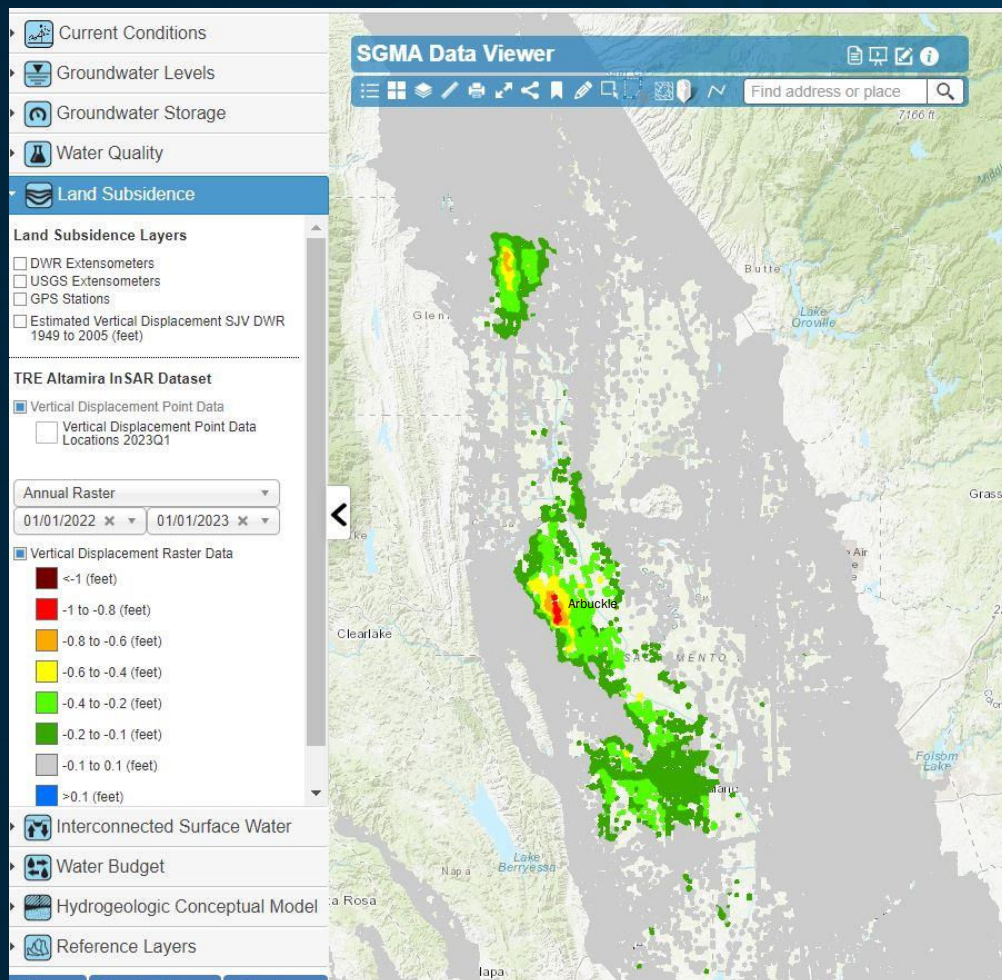


NSV Land Subsidence

1 Year

Jan 1 22 – Jan 1 23





*Groundwater is a renewable resource
and CAN be managed sustainably*



<http://water.ca.gov/groundwater/>
<https://sgma.water.ca.gov/CalGWLIVE/>
<https://sgma.water.ca.gov/webgis/>