



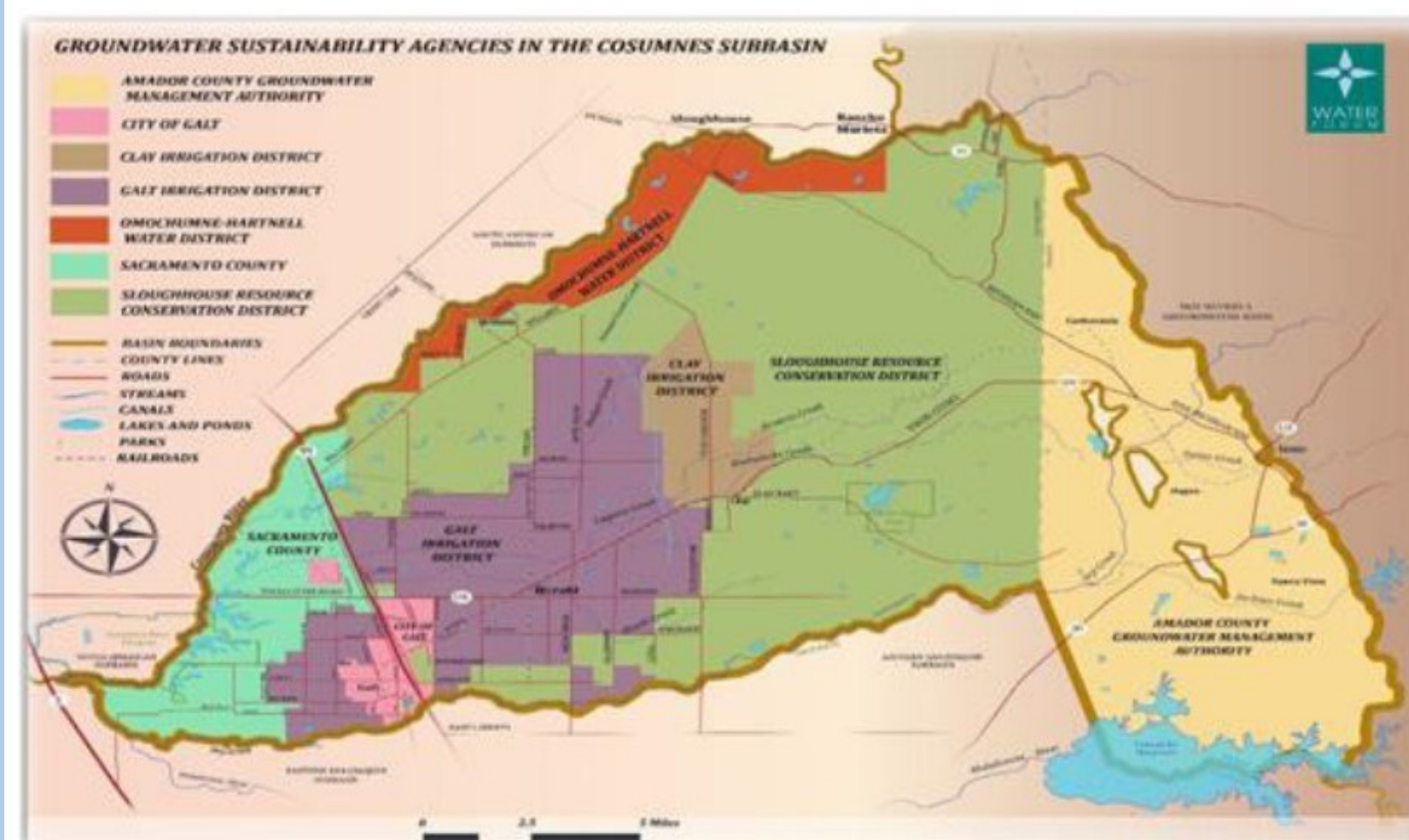
Cosumnes Groundwater Authority 101

History of the Groundwater Authority

SGMA became law in 2014, requiring formation of Groundwater Sustainability Agencies (GSA's) within the identified Subbasins that reside in the major watersheds throughout the state of California. Shortly after SGMA became law, the work began in the Cosumnes Subbasin to build our Groundwater Sustainability Plan (GSP). A group of dedicated volunteers, consultants and specialists then developed the framework that is now the Cosumnes Subbasin GSP. In January 2022, the Cosumnes Subbasin Groundwater Sustainability Plan was adopted by the Cosumnes Subbasin Working Group and presented to the newly formed Cosumnes Groundwater Authority (CGA), a Joint Powers Authority (JPA) consisting of the 7 Cosumnes Subbasin GSA's.



The California Department of Water Resources (DWR) is now in the process of reviewing our GSP. It is expected we will receive notice of Final Review of the Cosumnes GSP by the end of 2023. The first official act of the CGA was to approve the GSP and submit it to the Department of Water Resources (DWR). The Cosumnes Groundwater Authority (CGA) Board is made up of 2 representatives from each of the 7 GSA's within the Subbasin, each GSA nominates a Representative and an Alternate from this GSA governing Boards. The Board of Directors meets in open session the First Wednesday of every month. The agenda for each meeting is posted at www.cosumnegroundwater.org.



7 GSA's of CGA

- Amador County Groundwater Management Authority (AWA)
- Sloughouse Resource Conservation District (SRCD)
- Omochumne-Hartnell Water District (OHWD)
- Clay Water District
- Galt Irrigation District (GID)
- City of Galt
- Sacramento County

The Cosumnes Subbasin

The Cosumnes Subbasin

The Cosumnes Subbasin, located in the southeast portion of Sacramento County, incorporates part of eastern Amador County, with the Cosumnes River as the northern and eastern boundaries, Dry Creek/San Joaquin County Line as the southern boundary, and part of Sacramento County just east of Interstate 5 as the western boundary.

What is the Cosumnes Subbasin doing to protect our Groundwater?

- Conservation Efforts – continued efforts to conserve water to maintain aquifer “balance” between inflows and withdrawals
- Projects and Partnerships – determine the best options for future implementation of aquifer recharge projects, explore the potential of delivery of water from outside the Basin
- Active Basin wide Monitoring – full and active monitoring of volunteer groundwater wells, test wells, local rivers, creeks and streams will tell us our current aquifer conditions

The Cosumnes River

The Cosumnes River originates on the western slope of the Sierra Nevada Mountains, and flows approximately 52.2 miles into the Central Valley, eventually dumping into the Mokelumne River in the Sacramento-San Joaquin delta. The Cosumnes River is thought to have been named as the Moke-lumne and Tuolumne rivers were, using the "-umne" suffix meaning "people of". The prefix is derived from the Miwok word "kosum" meaning "salmon".



Cosumnes River Preserve—Bureau of Land Management



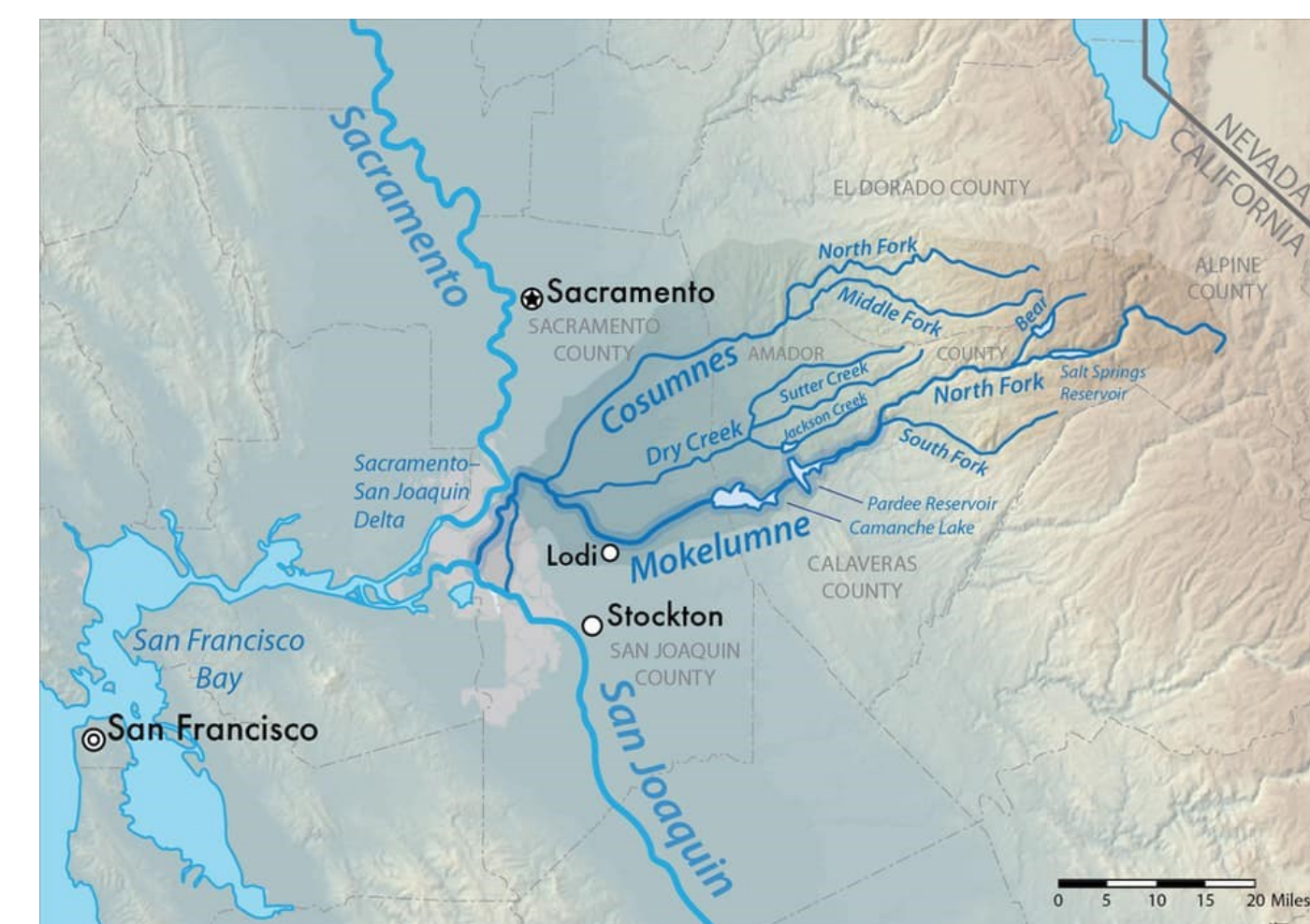
Cosumnes River College—Elk Grove Center

As one of the last rivers flowing from the west slope of the Sierra without a major dam, the Cosumnes is a vital example of a healthy watershed. However, its salmon and steelhead populations have been harmed by invasive fish species and pollution from illegal mining activity, as well as the two irrigation diversion structures near Rancho Murieta. There are plans to re-introduce salmon spawning into the river. The Cosumnes River flows almost year-round and has traditionally been a source of surface water irrigation for local farmers and ranchers in the Spring and early Summer.

Cosumnes River College, a two-year community college located in the southern part of Sacramento County is named after the river being located only a few miles off campus. CRC's mascot is the Hawk due to the number of hawks that inhabit the river area.

Water Systems

Historically, because the basin has only one major source of water, the Cosumnes River, and even that source did not flow throughout most summers, much of the land was dry farmed until the advent of the turbine pump. The turbine pump allowed water diverters to dig individual wells to reach depths below the pervasive clays in the basin and pump sufficient water supplies for the domestic, irrigation, and urban needs of the growing population. The only actual distribution systems in the basin include the domestic water service systems in Amador County, Jackson Valley Irrigation District, and the City of Galt. The Folsom South Canal runs through the basin, but the US Bureau of Reclamation withdrew all interim supply contracts during the 1990's and no longer supplies water in the basin.

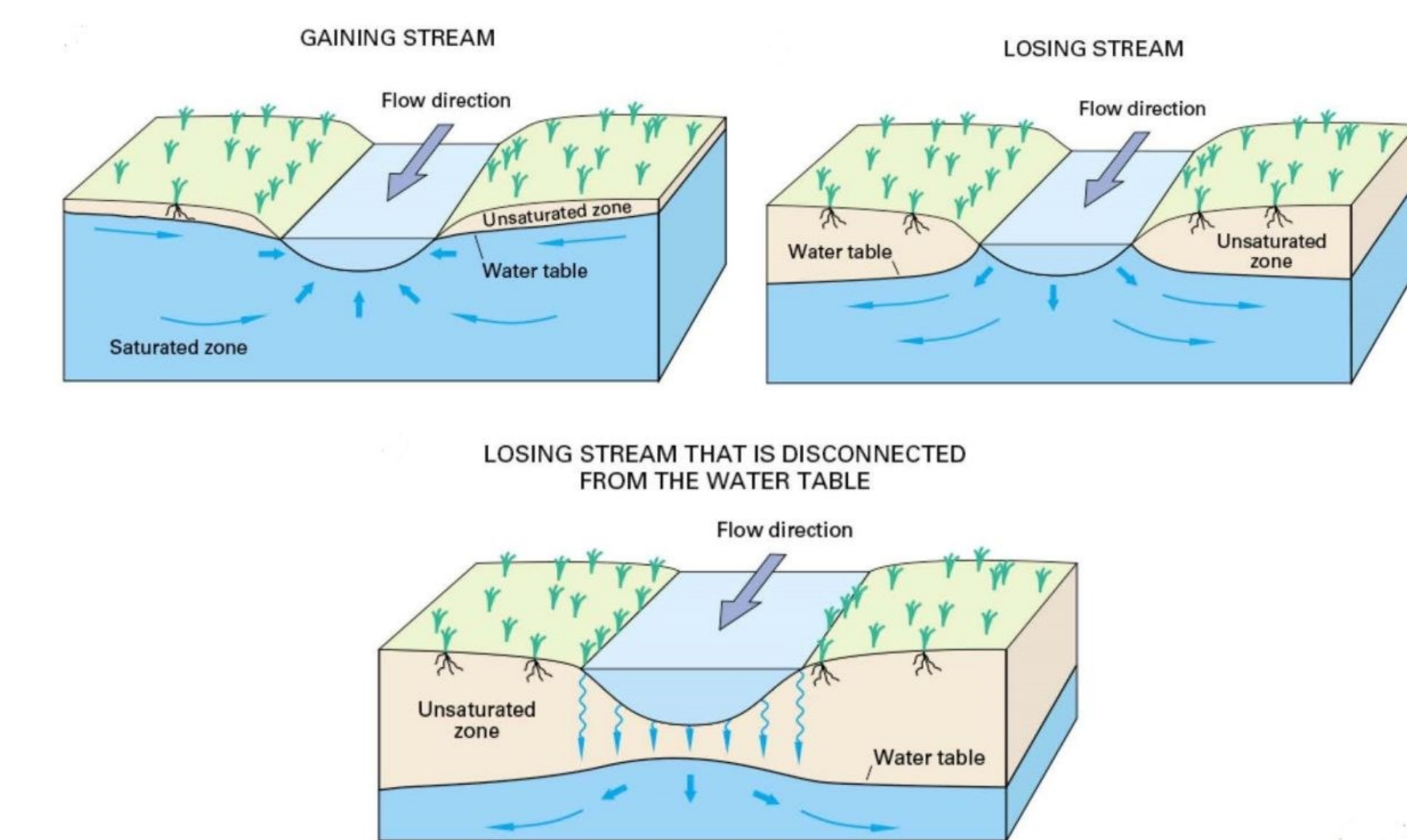


Since the 1960's, OHWD has installed 4 summer diversion dams in the Cosumnes River. The dams originally provided for surface diversion to lands adjacent to the river. With the more recent changes in agricultural practices and the predominate use of wells, the dams now provide a source of recharge for the groundwater that these wells draw from.

What the water issues mean for local entities

Inter-connect surface water: This refers to the connection between surface water bodies (such as streams, rivers, lakes, and wetlands) and below-the-surface groundwater bodies. This connection can occur in 3 ways:

- Surface-water bodies gain water from the inflow of groundwater through their bed
- Surface-water bodies lose water to groundwater by outflowing through the bed
- Surface-water bodies both gain and lose water in different reaches.



Interconnected Surface Water—Groundwater Exchange

The interaction between groundwater and surface water is crucial for sustaining the flow in streams, as well as water levels in lakes and wetland areas, especially during dry periods. Groundwater and surface water are interconnected resources, and their exchange can affect water quality, and supply. Groundwater pumping can affect the natural flow of groundwater into surface water bodies, leading to a decrease in surface water.

According to the U.S. Fish & Wildlife Service, climate change is causing more damage than at any time in recorded human history. In the Cosumnes Subbasin, the following effects can be seen:

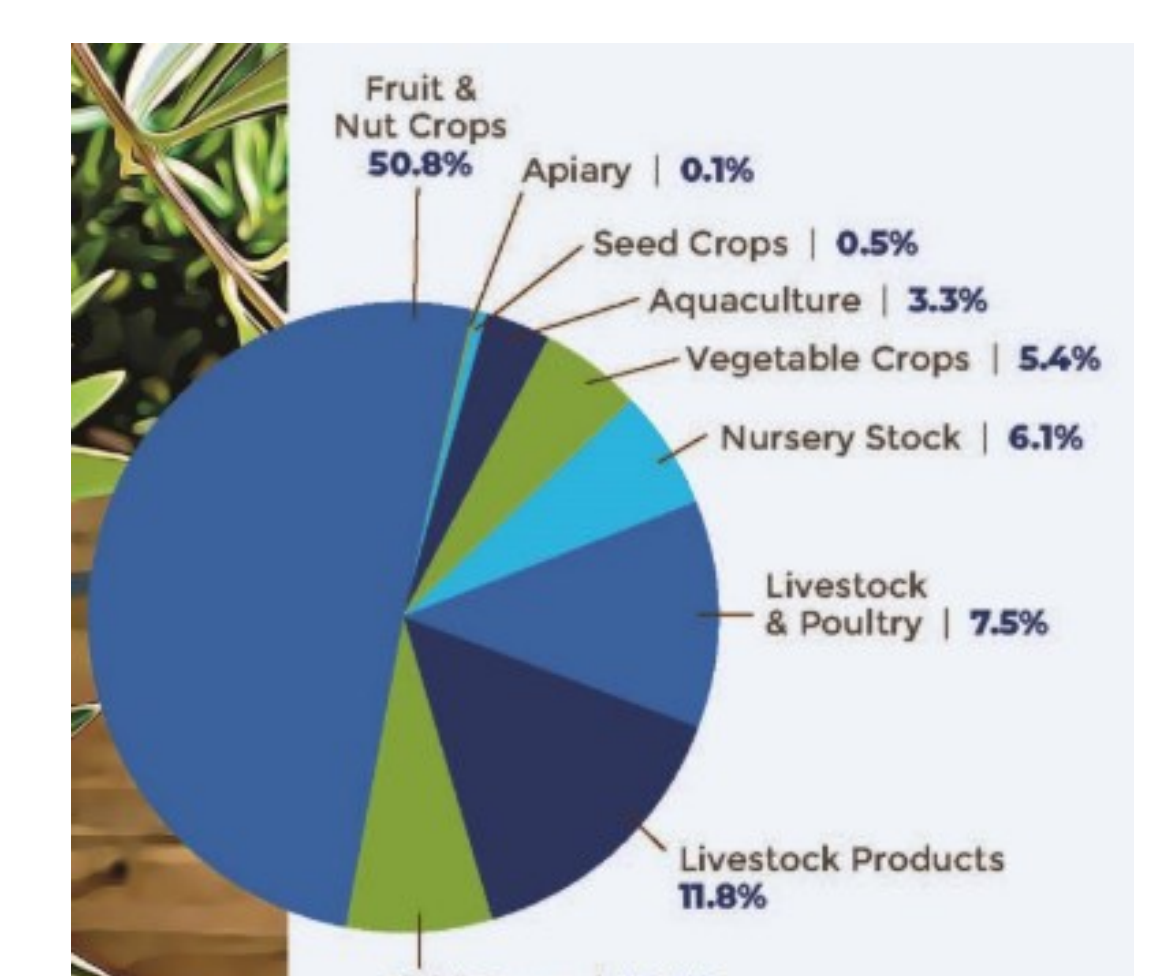
- Lowered surface water levels cause disruptions in fish migration and spawning and in some cases this disruption becomes permanent.
- Low surface waters are warmer waters that contribute to high death rates in cool-water fish species like salmon, and toxic algae blooms that can kill fish, wildlife, pets, and humans by contact.

Agriculture

The Cosumnes Basin has a long agricultural history due to past abundance of surface water from the Cosumnes River, Mokelumne River, and many streams and creeks. In 1850, a group of farmers settled around the banks of a small stream, Dry Creek, close to Galt. Their plans were to grow beef and dairy products. In 1869, the town of Galt, California, was laid out by the Central Pacific Railroad Company. In addition to dairy and cattle operations, the Basin has also grown hay, grain crops, corn, cotton, and more recently grapes, tree nuts, and aquaculture/fish farming.

The 2021 Crop and Livestock Report from the Sacramento County Agriculture Commissioner shows the following information about Sacramento County Agriculture statistics:

Fruit & Nut Crops	\$288,346,000
Field Crops	\$82,232,000
Livestock Products	\$67,215,000
Livestock & Poultry	\$42,872,000
Nursery Stock	\$34,878,000
Vegetable Crops	\$30,524,000
Aquaculture	\$18,524,000
Seed Crops	\$2,820,000
Apiary	\$590,000
Total	\$568,001,000





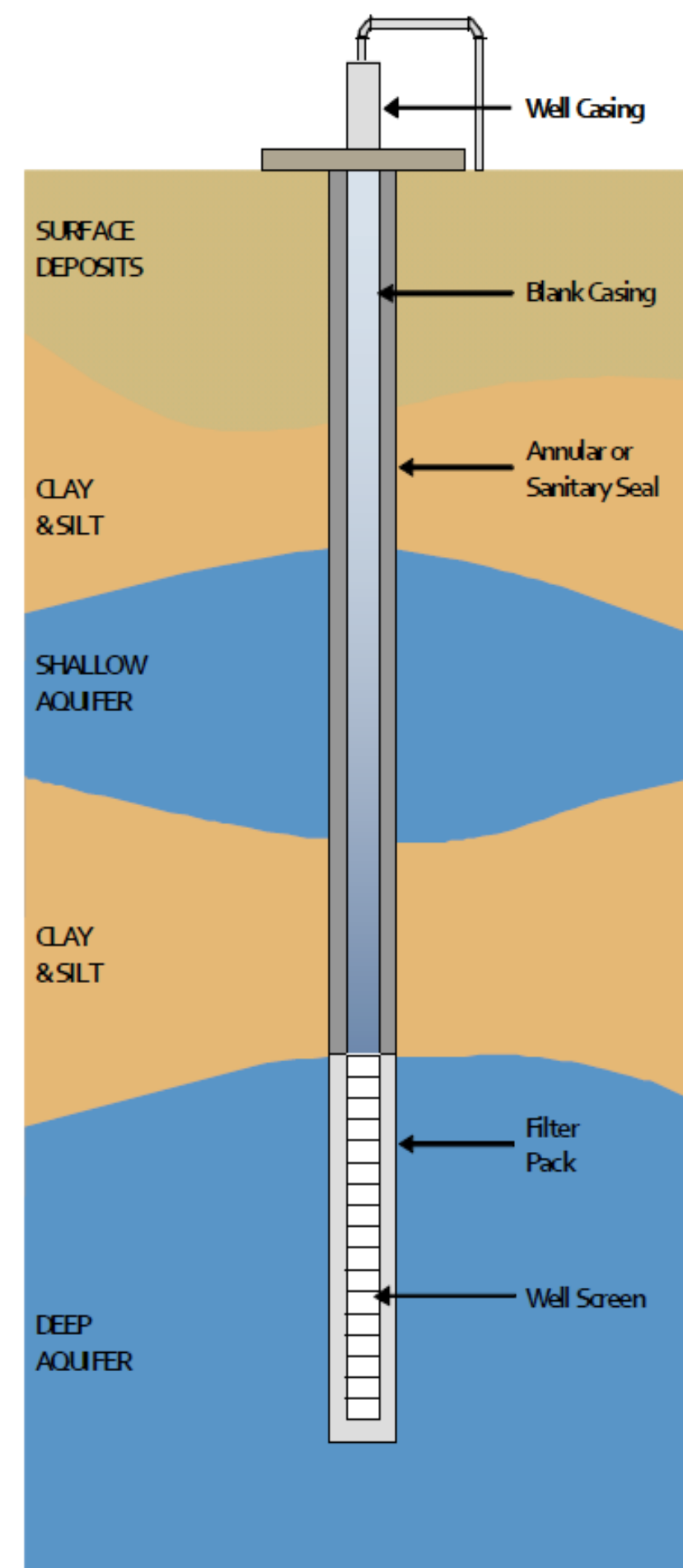
Domestic Wells 101

The Cosumnes basin has many rural residences that depend solely on domestic wells for drinking water. In total there are an estimated 2,350 private wells in the basin, according to the CA Dept. of Water Resources database. The depths of domestic wells on average is 265 feet, with the minimum being 37 feet below ground surface and the maximum being 812 feet deep. This compares with the average agricultural well which is over 400 feet deep. The median well depth is 255 feet. These wells are located throughout the basin, but tend to be concentrated in the north and eastern portions of Wilton and below Twin Cities Road.

Anatomy of a Water Well

State standards have been established for construction of water wells. When a well is constructed or modified, a documentation must be submitted to various state agencies. The key parts of a well including, going from outside to the interior: an annular or sanitary seal, composed of gravel or rocks and found in the upper portions of the well, and the inner casing, composed of steel. Toward the bottom of the well may be screens that allow water to flow into the well. The bottom of the well is left open. Most domestic wells or 6-10" in diameter into which the pump is found. The depth of the well depends on how deep the driller must go to reach a stable source of water.

Because domestic wells tend to be shallower, the impacts of a falling water table, such as found in the Cosumnes and many other basins in the Central Valley, are noticed before deeper wells. When the water table falls, a few options are available: lower the pump, deepen the well, or drill a new well. Once the pump has been lowered to the bottom of the casing, it cannot be lowered any further. If the water table falls to within a few feet of the top of the pump, the well must be deepened, if possible. If the casing is too narrow to deepen the well, then a new well must be drilled.

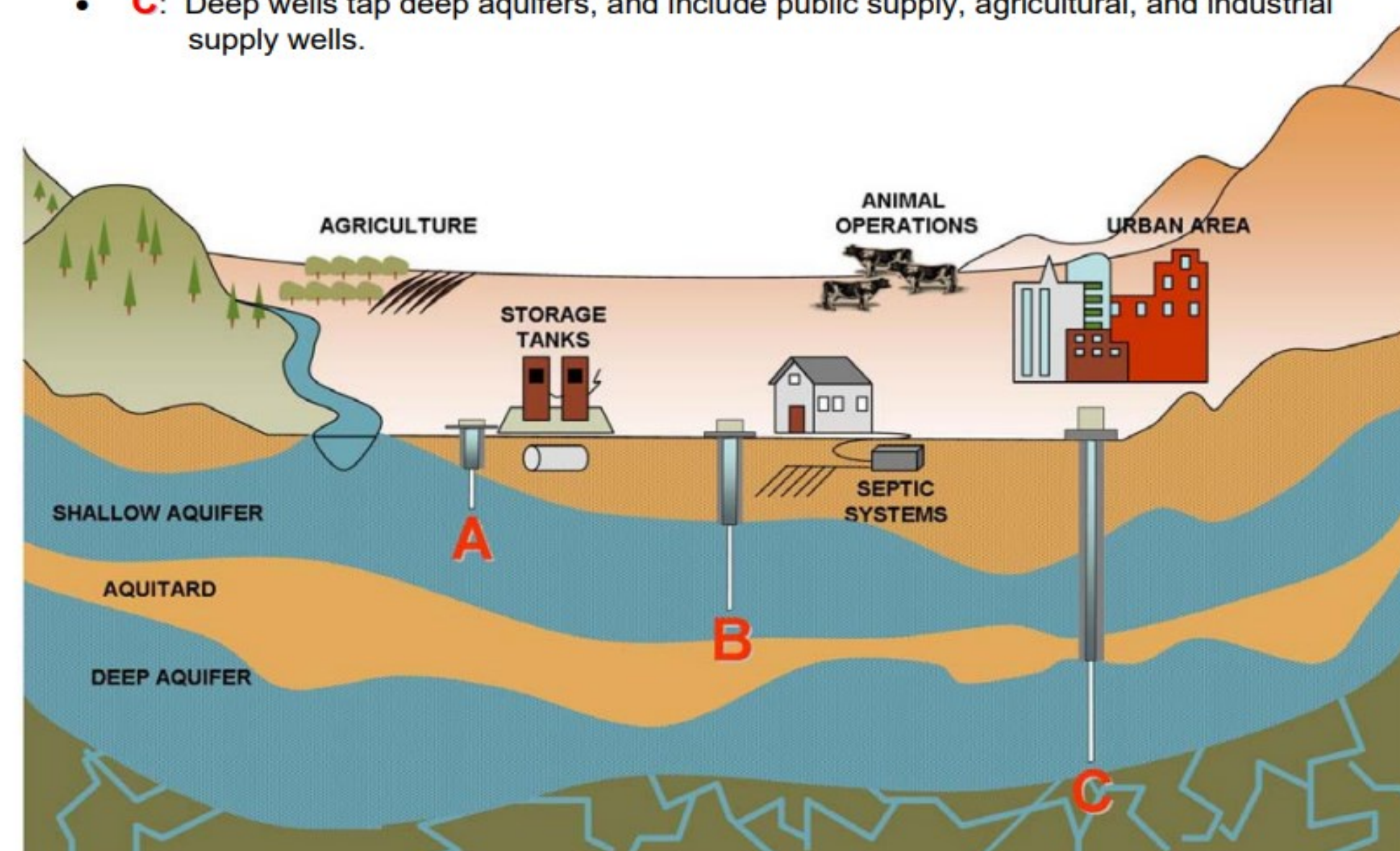


See Image to the Right
Source: State Water Resource Control Board, A Guide for Private Domestic Well Owners

Domestic Wells are Shallower than Urban and Agricultural Wells

Because domestic wells tend to be shallower than other types of water wells, they tend to be more susceptible to a variety of adverse impacts, including dewatering and contamination. The image below illustrates the differences in depth found with types of wells as well as their susceptibility to pollution.

- Wells draw water from different depths, and can be affected by different pollution sources. Types of wells and possible pollution sources are illustrated in the figure below:
 - A: Shallow wells capture water from shallow aquifers close to the surface. Some private domestic wells are shallow wells.
 - B: Intermediate wells can tap either deep or shallow aquifers, and can include private domestic, agricultural, and industrial supply wells.
 - C: Deep wells tap deep aquifers, and include public supply, agricultural, and industrial supply wells.



Source: State Water Resource Control Board, A Guide for Private Domestic Well Owners

Maintaining a Domestic Well

- On a yearly basis, experts recommend testing for bacteria. Home testing kits are available and provide a good first estimate if you have an issue with bacterial contamination. Local laboratories can be found in Rancho Cordova for more accurate analysis. Nitrates are not a problem in the Cosumnes basin, so testing is not recommended.
- Inspect your well annually. Look for the following:

CRACKED WELL CASING



A cracked well casing may allow surface water and contaminants into your well. One of the most common water quality issues associated with a cracked well casing is the presence of coliform bacteria. Other chemicals can also be introduced into the well through the cracked casing. Consult a water quality professional, like a licensed well driller to repair or replace the cracked casing.

MISSING PLUG



Many wells have a small plug located at the top of the well casing. The plug may degrade over time and sometimes fall off. If the plug is missing, the well is directly open to potential contamination. The most frequently observed contaminant associated with a missing plug are coliform bacteria. Replacing a missing plug is an effective way to reduce potential contamination.

- Avoid contamination by following some common sense practices:

AVOID STORING OR DISPOSING OF CONTAMINANTS WITHIN A 100 FEET OF THE WELL HEAD. LOCAL LAW REQUIRES THAT SEPTIC SYSTEMS BE AT LEAST 150 FEET FROM A WELL HEAD.



Storage tanks for hazardous materials should be kept at least 100 feet from your well. Gasoline products, VOCs, and pesticides are the most common contaminants associated with spills or leaks from storage tanks. Keeping your fuel tanks at least 100 feet away from your well may help avoid well water contamination.

AVOID GRAZING HORSES OR LIVESTOCK WITHIN A 100 FEET OF THE WELL HEAD



Manure is a source of microbial contaminants (including coliform bacteria), nutrients (such as nitrate), and salts. Your well should be located at least 100 feet from any permanent animal enclosure.

MINIMIZE THE GROWTH OF VEGETATION AROUND THE WELL HEAD. DO NOT APPLY PESTICIDES OR HERBICIDES IN THE VICINITY, JUST PULL IT OR COVER AREA WITH GRAVEL OR MULCH.



Overgrowth of vegetation near your well may lead to root damage of the casing, creating a conduit for possible well water contamination. Do not apply herbicides, pesticides, or other chemicals to vegetation near your well, as these chemicals may contaminate your well water.

Free well assessment are available to domestic well owners

The Rural Community Assistance Corporation (RCAC) offers free assessments of private wells. These assessments include:

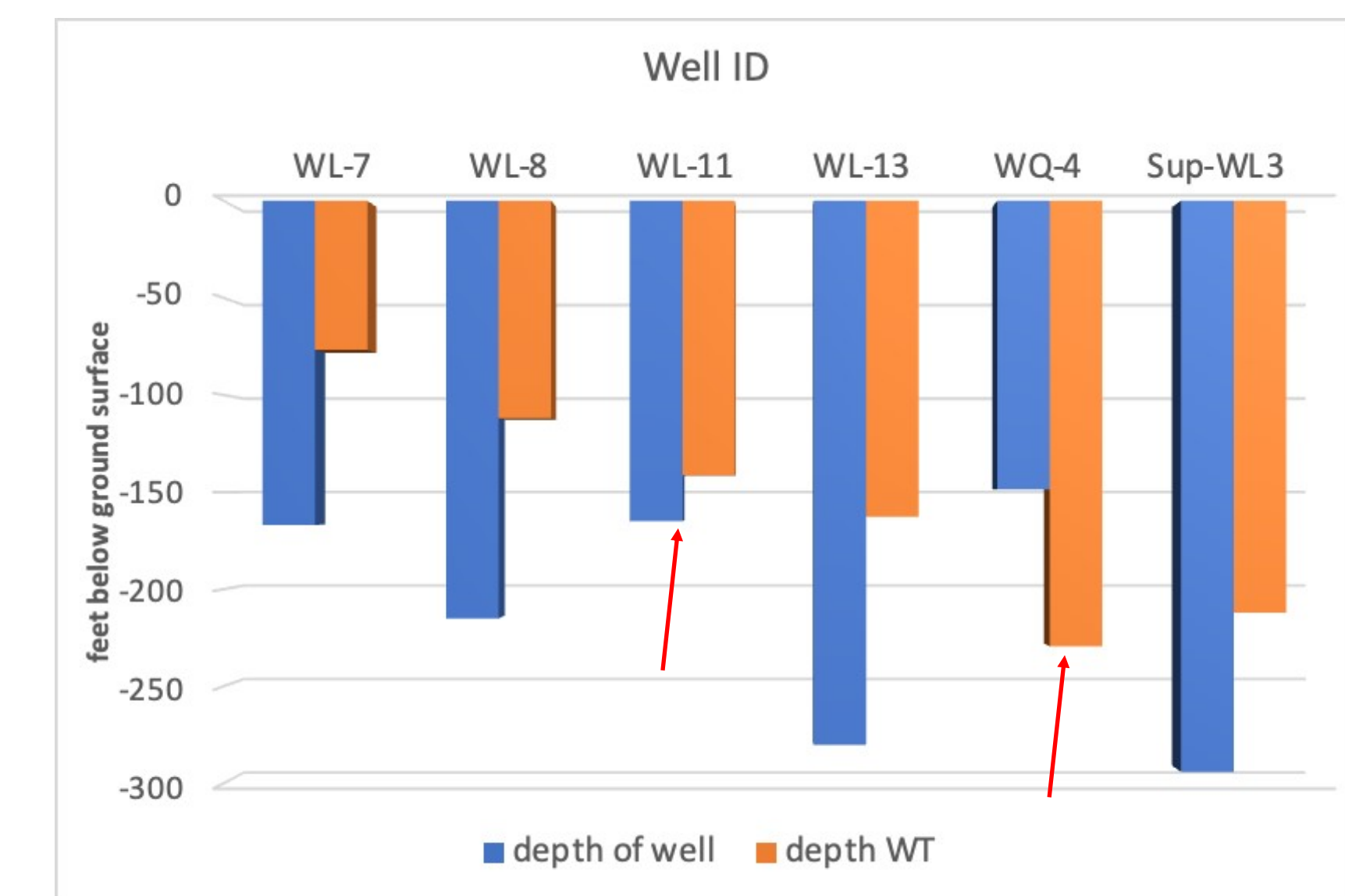
- Well construction inspection
- Identification of sources of possible contamination
- Testing for common contaminants
- A report with recommendation for repairs and follow up action

For more information, contact <http://www.rcac.org/environmental/individual-well-program/> or call (916) 447-2854 and ask for Stephanie Villegas.

More information is available from the Groundwater Monitoring and Assessment Program (GAMA), State Water Resources Control Board: waterboards.ca.gov/gama. Call (916) 341-5577.

Dry Domestic Wells

The water table in the Cosumnes basin is falling at an average annual rate of 1 foot/year. This has impacted domestic wells. In an analysis presented at a previous workshop, we looked at the depth of the 6 domestic wells in our monitoring network and the depth of the water table (see figure to the right). We found that 2 of the 6 wells had been dewatered: 1 homeowner drilled a new well, the other had to deepen the existing well. In other words, 33% of the domestic wells in our monitoring network were adversely affected. Given the small sample size (6 wells), we can't generalize to the entire basin. However, it does suggest that domestic well owners are significantly impacted by the declining water table.



KEEPING TRACK OF CHANGES IN THE GROUNDWATER IN THE BASIN

This is the best way to anticipate if your well might be affected. Know the depth of your well and where your pump sits within the casing. The Cosumnes Groundwater Authority submits an Annual Report to the Department of Water Resources. That report is available each spring on the website (cosumnesgroundwater.org). The report is not long and you can estimate from tables and figures in the report if the water level in the basin has fallen to a few feet above where your pump sits. If it does, call a drilling contractor to see if lowering your pump is possible. If so, get on their schedule as soon as possible since contractors are very busy. If lowering your pump is not possible, the driller can offer options to avoid the worst case scenario—a completely dewatered well.

Dept. of Water Resources Dry Well Reporting System

If your well is partially or totally dewatered, please report this information to the DWR's dry well reporting system. This is an important way state and local agencies, such as the groundwater sustainability agencies with the basin, can understand the impacts of groundwater conditions on domestic wells.

mydrywell.water.ca.gov/report



Domestic Well Owners—

Would you be willing to participate in one or two 1 hour meetings to share your thoughts on your well, possible future fees, and other issues of concern. We would like your input. Please provide your name and email on the sign up sheet at this poster if you are willing to help.



Historic and Current Groundwater Conditions in the Cosumnes basin

Introduction

The Cosumnes Groundwater Basin encompasses approximately 210,300 acres in the northern region of the San Joaquin Valley Basin, within Amador and Sacramento Counties. Adjacent subbasins include the South American Subbasin (SASb), which lies to the north and west, and the Eastern San Joaquin (ESJ) Subbasin, which lies to the south. The eastern boundary of the Basin is defined by the Sierra Nevada foothills. The western portion of the Basin extends to the edge of the Delta. Approximately two-thirds of the Basin is covered by native or riparian vegetation and one-quarter by irrigated agriculture. The most abundant agricultural land uses are vineyards, pasture, and grain. Cities, Ag-Res, and aquaculture uses, totaling approximately 18,000 acres, constitute just under 9% of the total Basin area.

Who Uses How Much Water

The total amount of water pumped in 2021 increased by about 11% over recent years, largely due to the drought. Most of the water in the Cosumnes basin is used for irrigated agriculture. Major crops include grapes, pasture, various types of forage grown for hay, and fruit and nut trees. Fish farms are the second biggest user of water. The most important fish cultivated is the sturgeon, and the caviar produced by these fish. In many cases, waste water from these fish farms is used to irrigate crops or for hydroponic growth of lettuce and other vegetables. Domestic or ag-res users pump a small amount of water relative to the total.

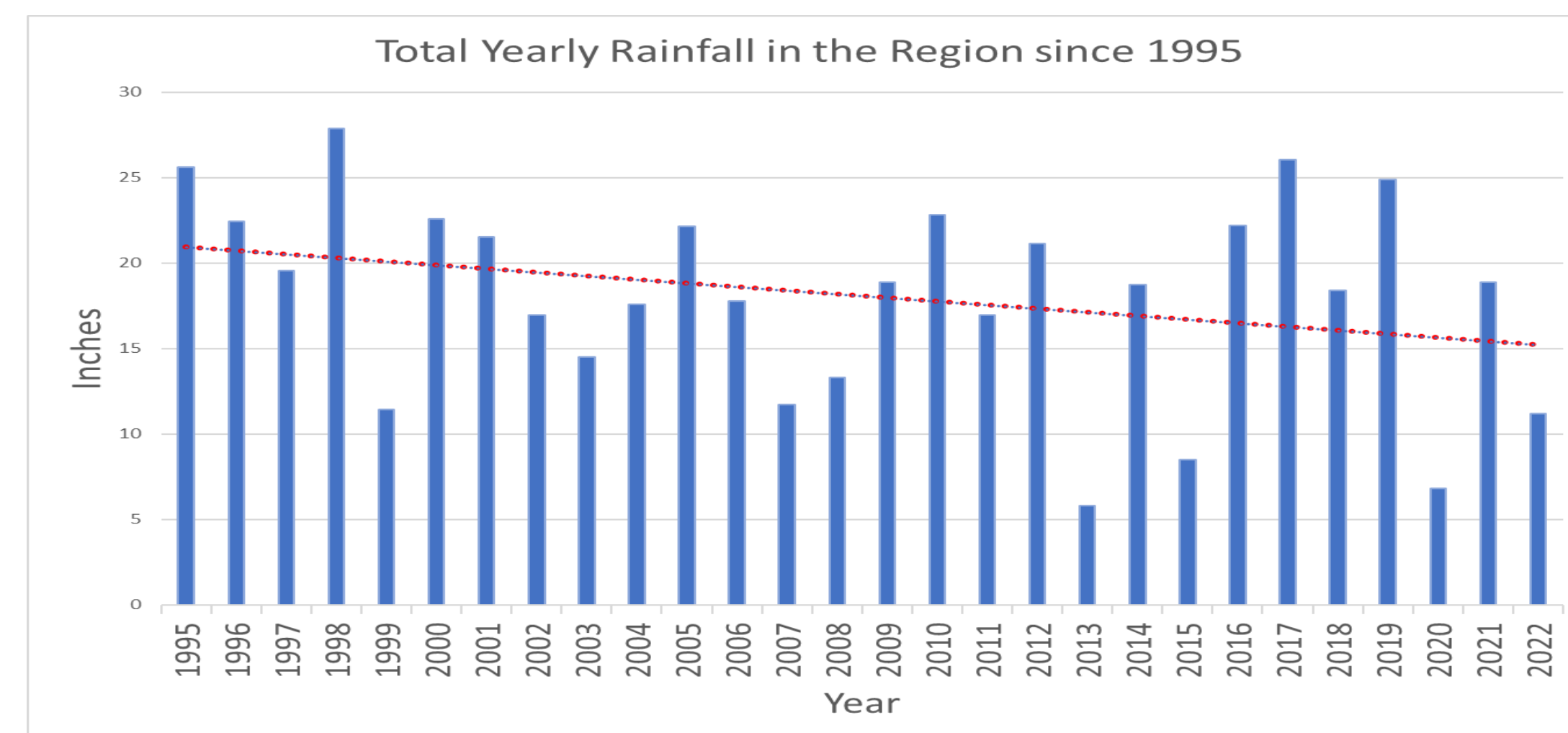
Sector	Estimated 2022 Water Pumped (AF/yr)	% Used by Each Sector
Ag-Res	8,000	5
Aquaculture	10,600	8
Urban	5,200	4
Ag	115,000	83
TOTAL	139,300	100%

Water Use by Sector
Estimates of water use by sector as calculated from the 2022 Cosumnes Groundwater Authority's Annual Report.

Climate Change has Stressed Groundwater Resources

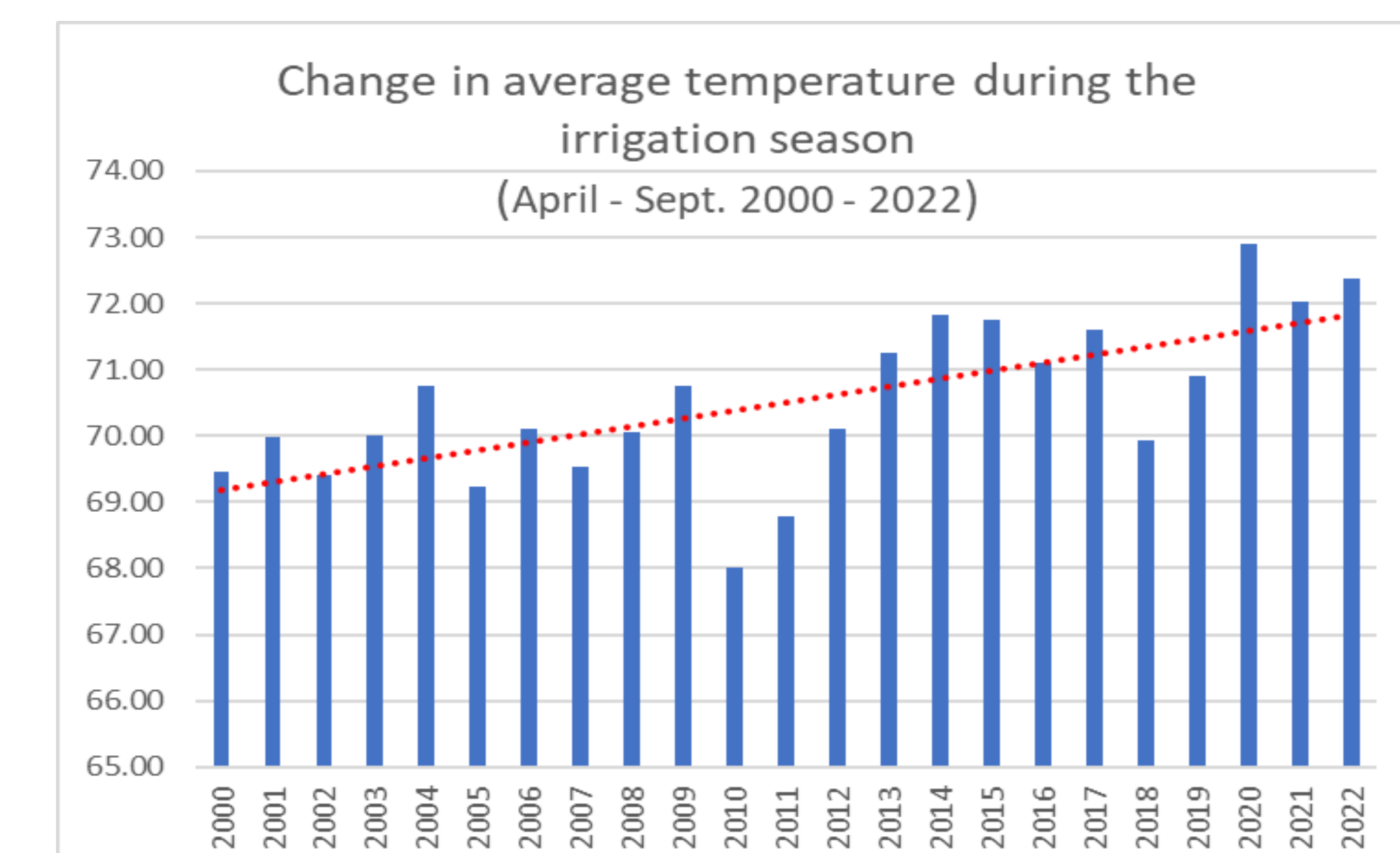
Precipitation has Decreased

Rainfall amounts have been decreasing in the recent past. This has meant that less water is percolating into the ground than in the past. Over the past 10 years, the average rainfall was 14" compared with the long term average of 18"/year.



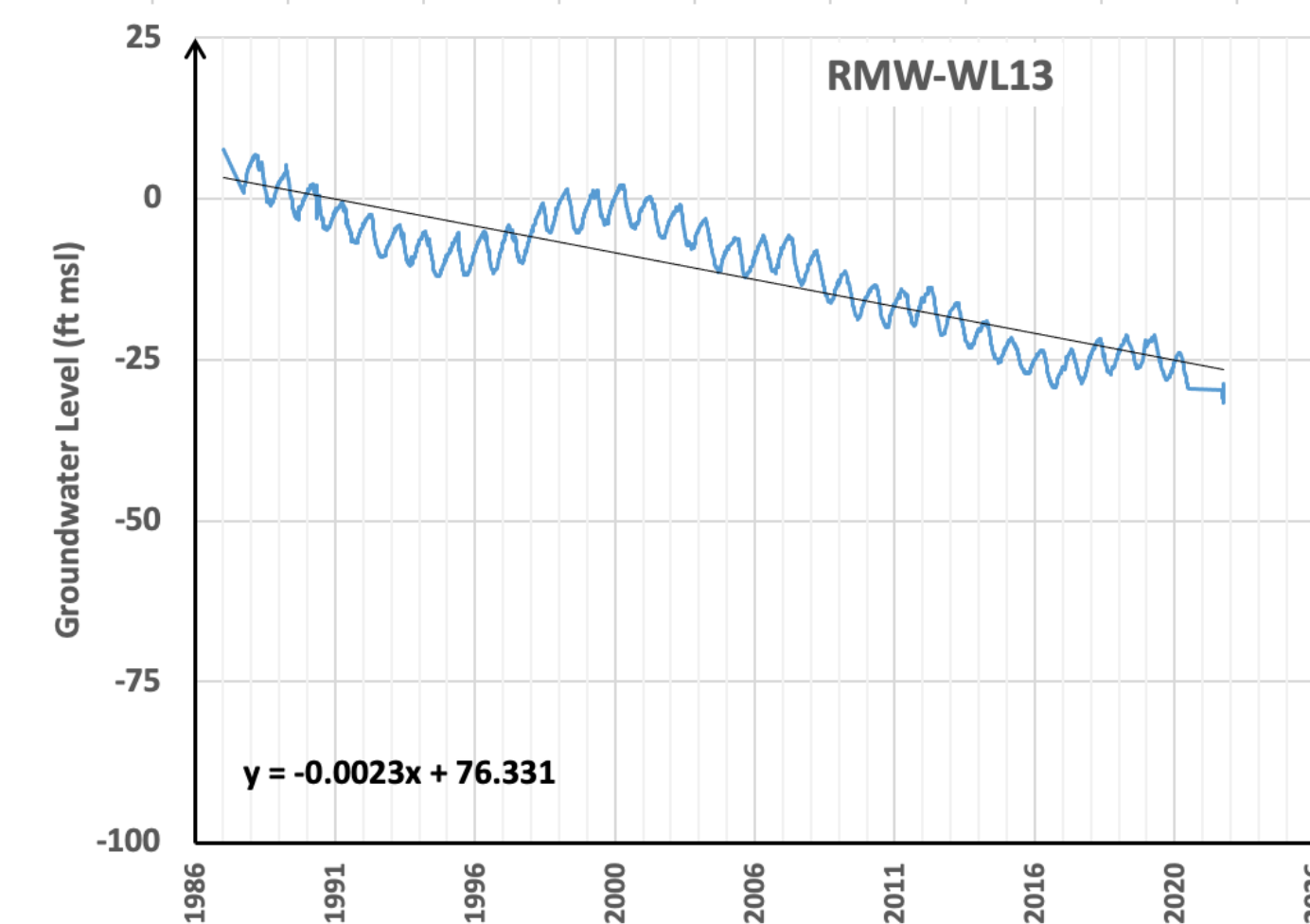
Temperature has Risen

In contrast to precipitation, temperature continues to rise, increasing evapotranspiration, the loss of water due to evaporation from the ground and transpiration, the loss of water through the leaves of plants. This necessitated the use of more water on crops, assuming the same methods of irrigation were used.



The water table has fallen approximately 1 foot/year over the last 20+ years.

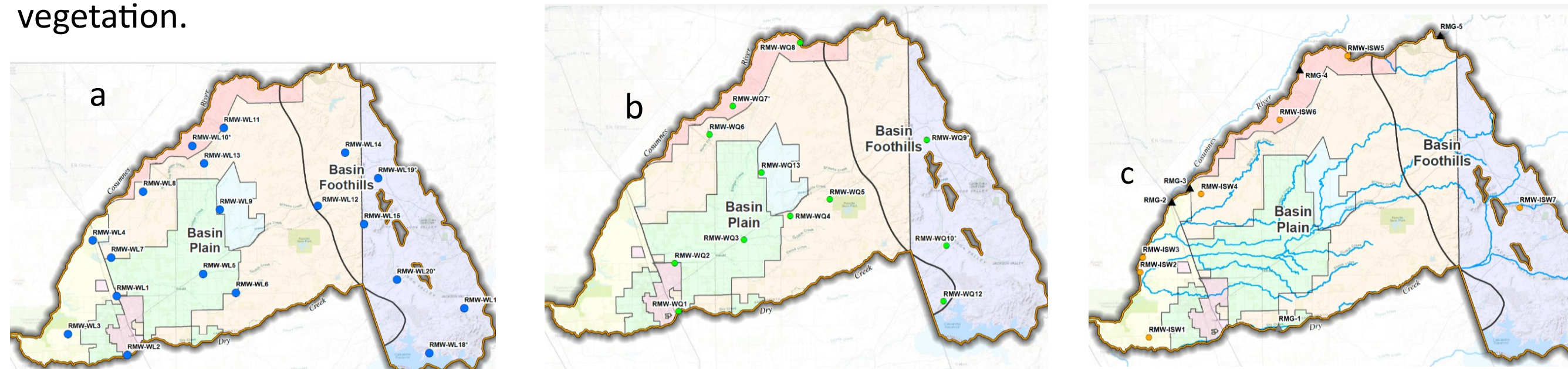
The figure below illustrates the pattern seen throughout the basin. Water level (vertical axis) have been declining at a rate of .875 feet/year or about 35 feet over the last 40 years.



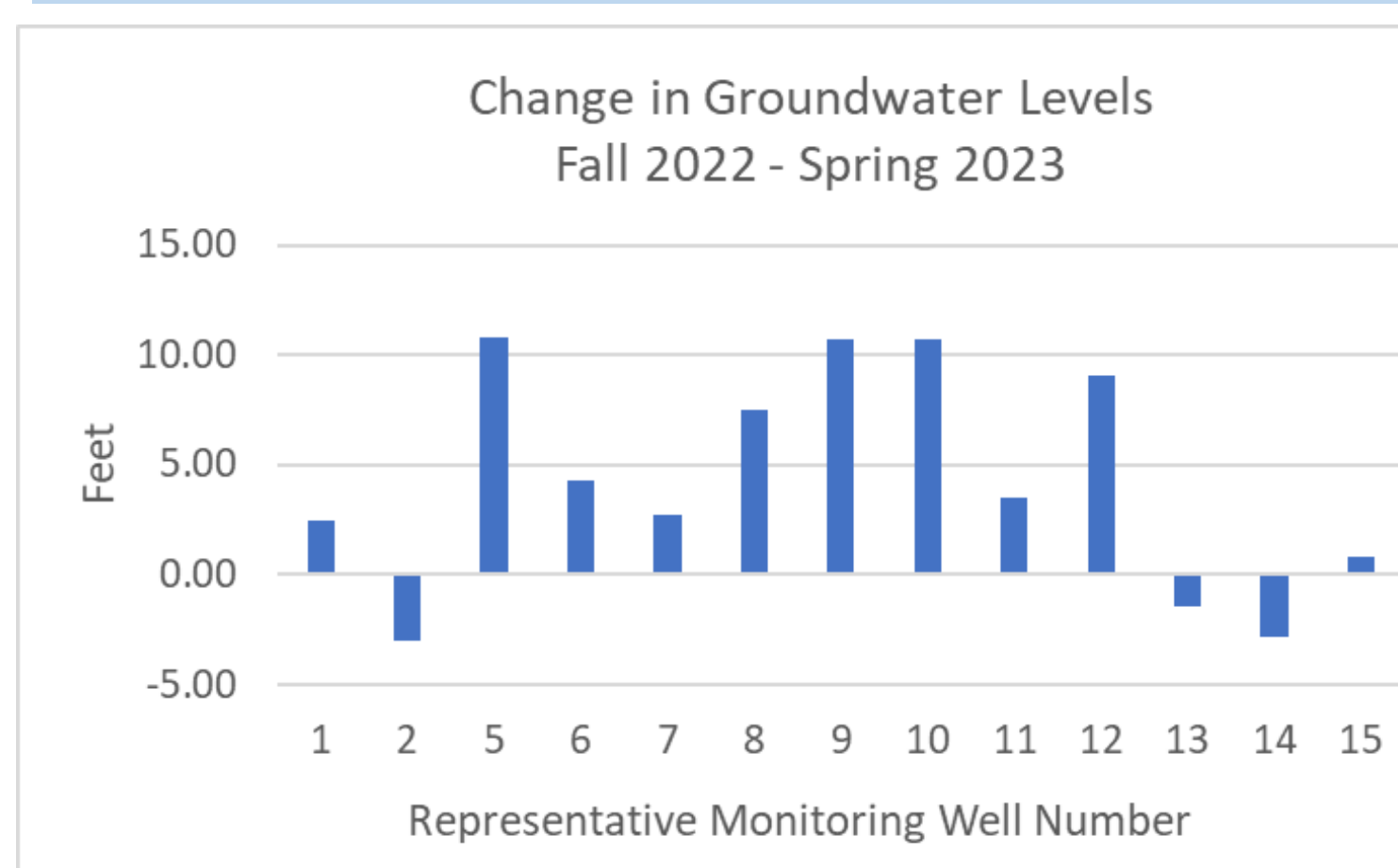
In 2022, 8 domestic wells have reported to DWR's **Dry Well Reporting System** as having gone dry within the Cosumnes Basin. More wells are likely affected, but never were reported. If your well is dry or close to going dry, report this information to DWR at <https://mydrywell.water.ca.gov/report>.

Groundwater Monitoring in the Cosumnes Basin

Groundwater is monitored 2 times/year for water level and once a year for water quality. The maps below show the location of water level monitoring sites (a), water quality sites (b), and interconnected surface water groundwater monitoring sites (c). These are locations where groundwater and surface water are likely to be interchanged, near waterways, that support large trees and other vegetation.

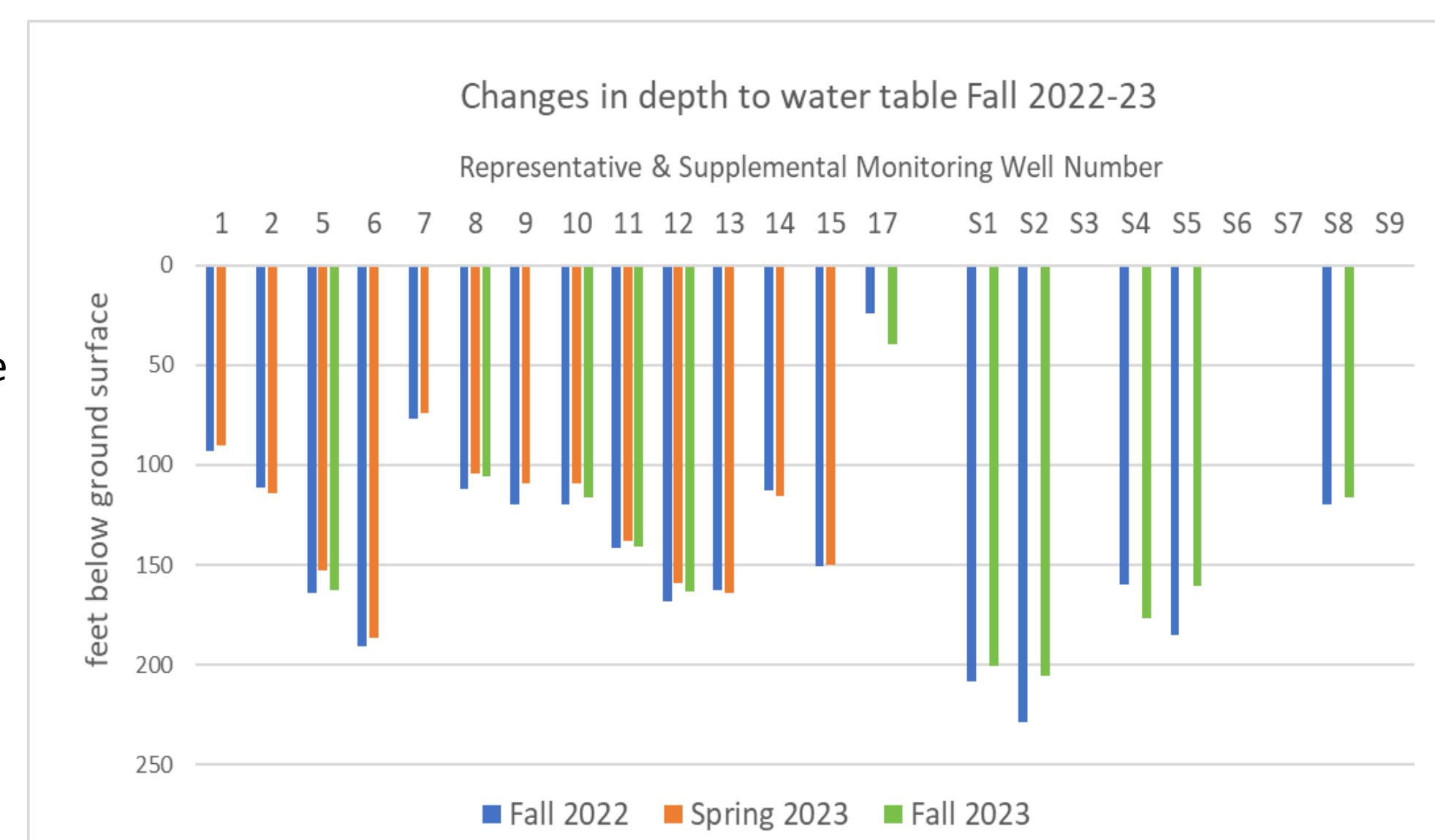


How did the wet winter of 2022-23 affect groundwater levels?



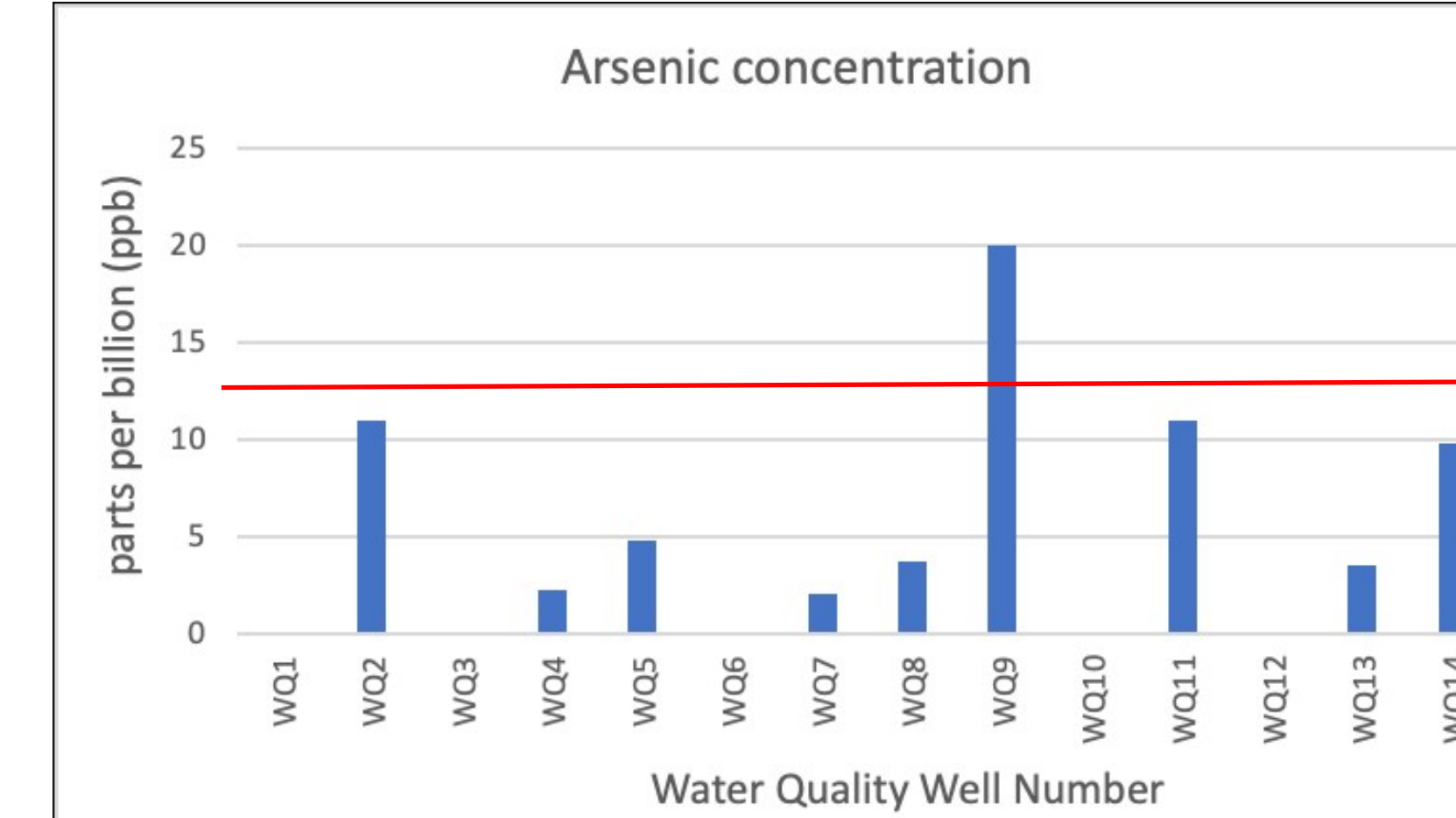
Water levels increased on average by 4.25 feet as a result of the precipitation last winter. In a few wells, the rains did not affect water levels. At this time, we do not have an explanation as to why groundwater declined at these 3 sites.

By the Fall, 2023, water levels in 50% of our monitoring wells had fallen to similar levels as in Fall, 2022. In others, depth to groundwater remained higher than in the Fall, 2022. These comparisons can only be made when measurements were made in the Fall '22, Spring '23, and Fall '23. The take home message is: In any one year, water levels can go up or down. But that does not change the overall trend of decline.



What is the quality of our groundwater

We monitor the concentration of arsenic, nitrate, and total dissolved solids on a yearly basis. With one exception, all of our 9 water quality monitoring wells reflect very low levels of nitrate, an unusual situation for agricultural areas like ours. Total dissolved solids are also present at low levels. However, at a few sites, elevated levels of arsenic were detected. The figure below shows that arsenic concentrations exceed the maximum contaminant level at 3 monitoring sites. The MCL balances



health and the costs of contaminant removal. WQ2 is a public supply well in Galt, which treats their drinking water. WQ9 is located in a remote area of Amador County. WQ11 is small public supply well in Amador. The elevated levels of arsenic identified here are not associated with any groundwater management activity, but are naturally occurring.

WANT TO LEARN MORE ABOUT GROUNDWATER QUALITY CONDITIONS IN OUR BASIN? The State Waterboard has recently released a new tool with info on groundwater quality throughout the state. Take the online tour to learn how to get the information you want. URL: gamagroundwater.waterboards.ca.gov/gama/gamamap/public/ OR search GAMA GIS

Domestic wells

Domestic wells are at particular risk of going dry.

This is the case because they are generally shallower than commercial or agricultural well, which are often 400+ feet deep. Since domestic wells are shallower, as the water table declines, they are among the first to be impacted. To the right is graph from a domestic wells in our monitoring network showing changes in water levels over the past 2-3 years. In the past 5 years, 2 of the 6 domestic wells in our network have had to be deepened or replaced. This situation can be turned around when conservation, especially by the largest users,



Conclusions

Groundwater has been declining in the Cosumnes basin for decades. In recent years, the condition has been exacerbated by the drought and a steady increase in temperature, which resulted in increased groundwater pumping. The significant amount of precipitation received in the Winter 2022-23 only temporarily moderated the deficit. The decline in the water table remains at about 1 foot/year. Water quality in the basin is generally good. Shallow domestic wells are impacted by this situation more than deeper production wells. The groundwater overdraft in the basin is about 10,000 acre-feet/year. This is not as serious as in some basin, where the overdraft condition is 80,000 acre-feet/year, but it is still serious condition. A combination of conservation, especially by the largest users of groundwater, and aquifer recharge will be necessary to begin to address the overdraft condition.

Are you a domestic well owner?

If so, would you be willing to spare 1-2 hours of your time to offer you opinion and ideas on a planned assessment and projects to help address the deficit. If so, be sure to sign up. We are collecting names for a future discussion group to get your input. Sign up sheets are stationed throughout the meeting room.



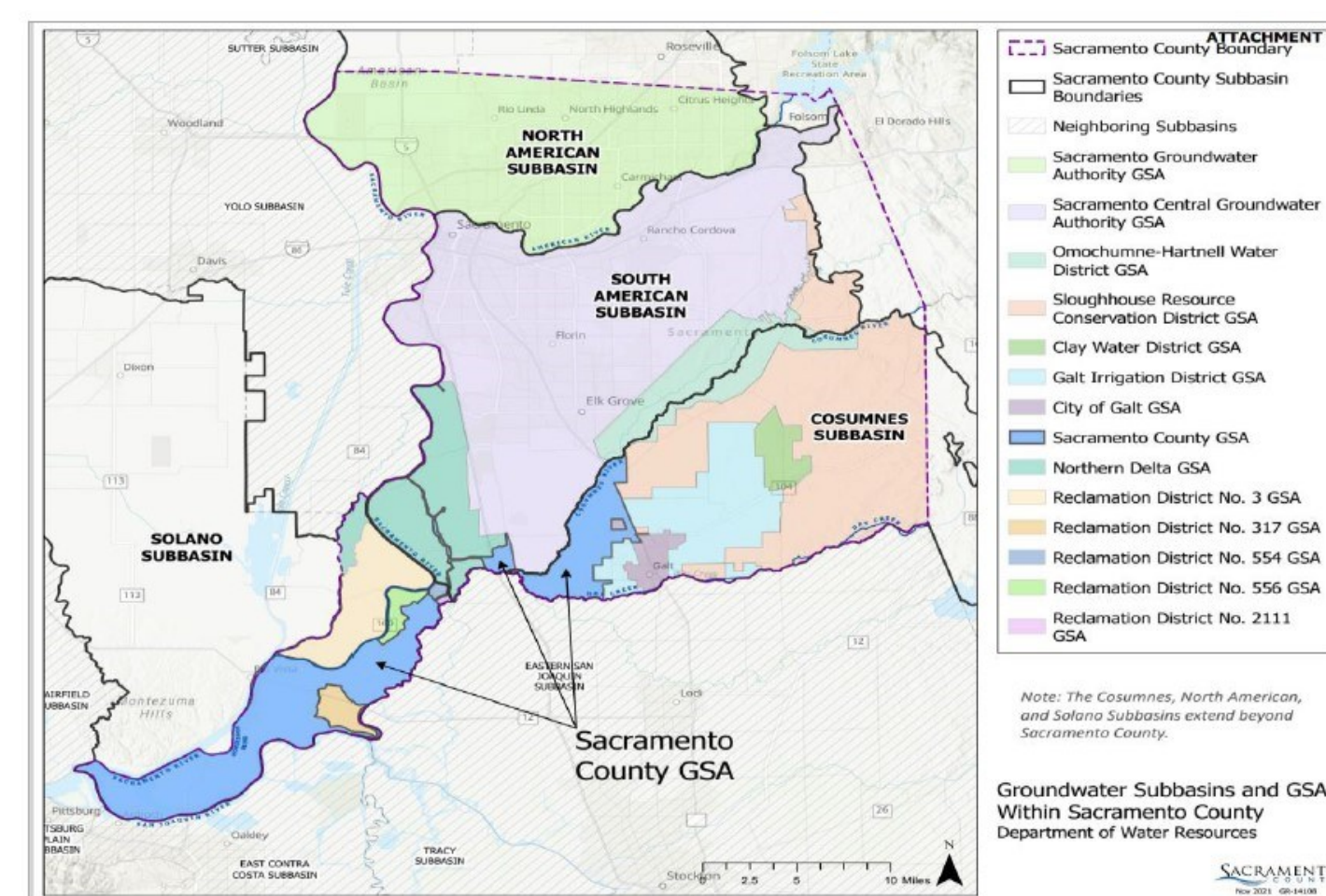
What is SGMA and why does it matter to me?

The **Sustainable Groundwater Management Act (SGMA)** is a three-bill package that passed the California state legislature and was signed into California state law by Governor Jerry Brown in September 2014. Its purpose is to ensure better local and regional management of groundwater use and it seeks to have a sustainable groundwater management in California by 2042. It emphasizes local management and formed groundwater sustainability agencies (GSAs) from local and regional authorities.



Key Provisions of SGMA

- **Protection of water rights:** Existing water rights are protected, SGMA does nothing to “determine or alter surface water rights or groundwater rights under common law or any provisions of law that determines or grants surface water rights”.
- **Consideration of multiple stakeholder interests:** Groundwater Sustainability Agencies must consider and conduct outreach to a broad range of stakeholders, such as beneficial users of water, environmental interests, disadvantaged communities, tribes, and others.
Provides new authorities to Groundwater Sustainability Agencies to manage groundwater: Groundwater Sustainability Agencies are granted authority for Groundwater Sustainability Agencies to conduct investigations, determine the sustainable yield of a basin, measure and limit groundwater extractions, impose fees for groundwater management, and enforce the terms of a groundwater sustainability plan (GSP).
- **Increases coordination between land use planning agencies and Groundwater Sustainability Agencies:** Planning and zoning laws are amended to require increased coordination between land use planning agencies and groundwater sustainability agencies regarding groundwater plans and updates and modifications of General Plans.
- **Increases availability of information while ensuring privacy protection:** The legislation requires access to groundwater information for a groundwater basin be provided to the Department of Water Resources; however, information related to individual groundwater pumpers is limited.
- **State oversight and involvement:** The legislation allows for intervention by the State Water Board if a Groundwater Sustainability Agency does not complete a groundwater sustainability plan by the mandated deadline (2020 or 2022); the Groundwater Sustainability Plan is deemed inadequate by the Department of Water Resources and the deficiencies remain inadequately addressed; or the groundwater sustainability plan is being implemented and simply does not work. In these cases, the State Water Board is authorized to create an interim plan that will remain in place until the GSA is able to reassume responsibility.



Who is responsible for implementing SGMA locally?

- SGMA requires that all groundwater basins designated as high or medium priority establish Groundwater Sustainability Agencies to manage their groundwater basin.
- Any public agency with water or land use responsibilities can be a Groundwater Sustainability Agency; these include cities, counties, municipal water districts, irrigation districts, community services districts, resource conservation districts, and water conservation districts.
- In its simplest form, a groundwater basin can be managed by a single Groundwater Sustainability Agency that develops a single Groundwater Sustainability Plan. However, some groundwater basins have more than one.

What does SGMA Regulation require?

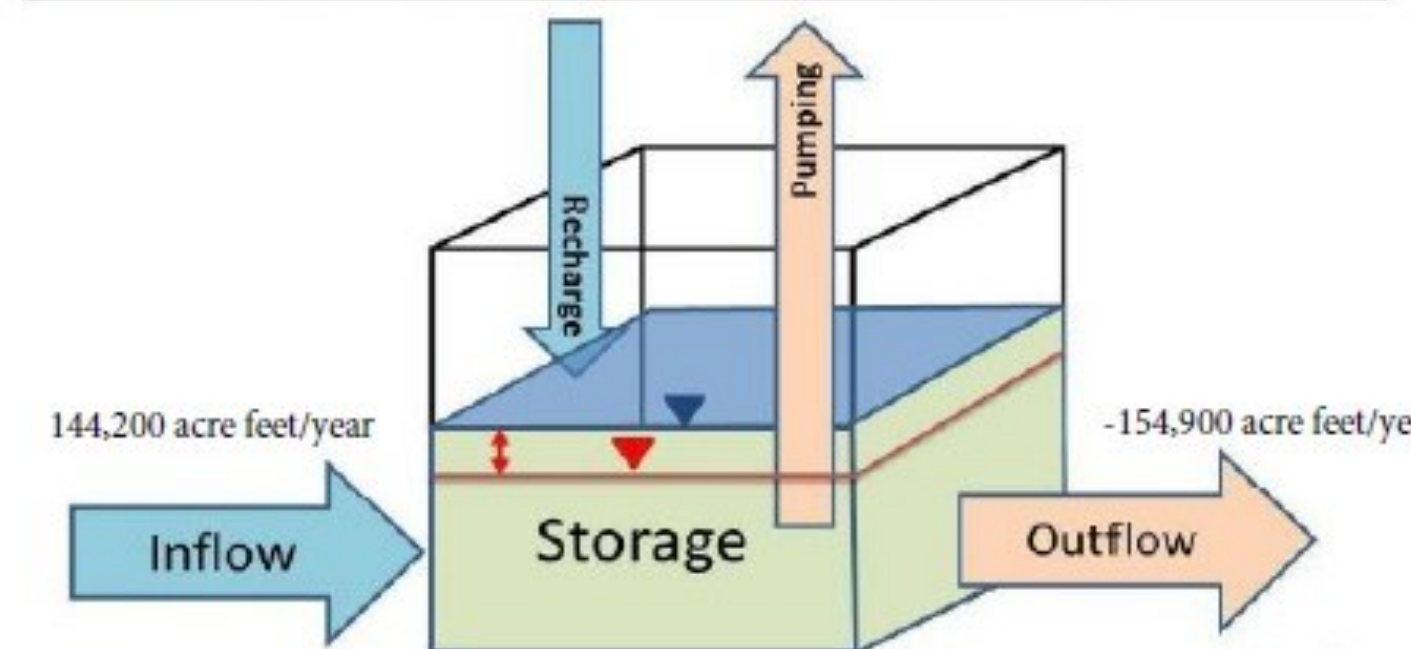
- January 31, 2020: Groundwater Sustainability Plans must be adopted for those basins designated as critically over drafted, and January 31, 2022 for all other remaining groundwater basins designated as high and medium priority.
- 2040/2042: All groundwater basins designated as high or medium priority must attain sustainability.



Do Domestic and Ag/Res Wells fall under SGMA?

- Generally, domestic well users meet the SGMA definition of a de minimis extractor, defined as “a person who extracts, for domestic purposes, two acre-feet or less (of groundwater) per year.” Most households with a domestic well that are not watering crops or large areas of landscape are likely de minimis extractors; however, under certain circumstances, SGMA may apply.
- Whether or not SGMA applies to a domestic well owner, the implementation of a Groundwater Sustainability Plan will mean changes in the management of groundwater with potentially wide-ranging effects. All stakeholders in a groundwater basin subject to SGMA are encouraged to participate.

Change in Storage (+/-) = Inflow – Outflow
Change in Bank Balance (+/-) = Income – Expenses
SGMA requires a sustainable balanced budget

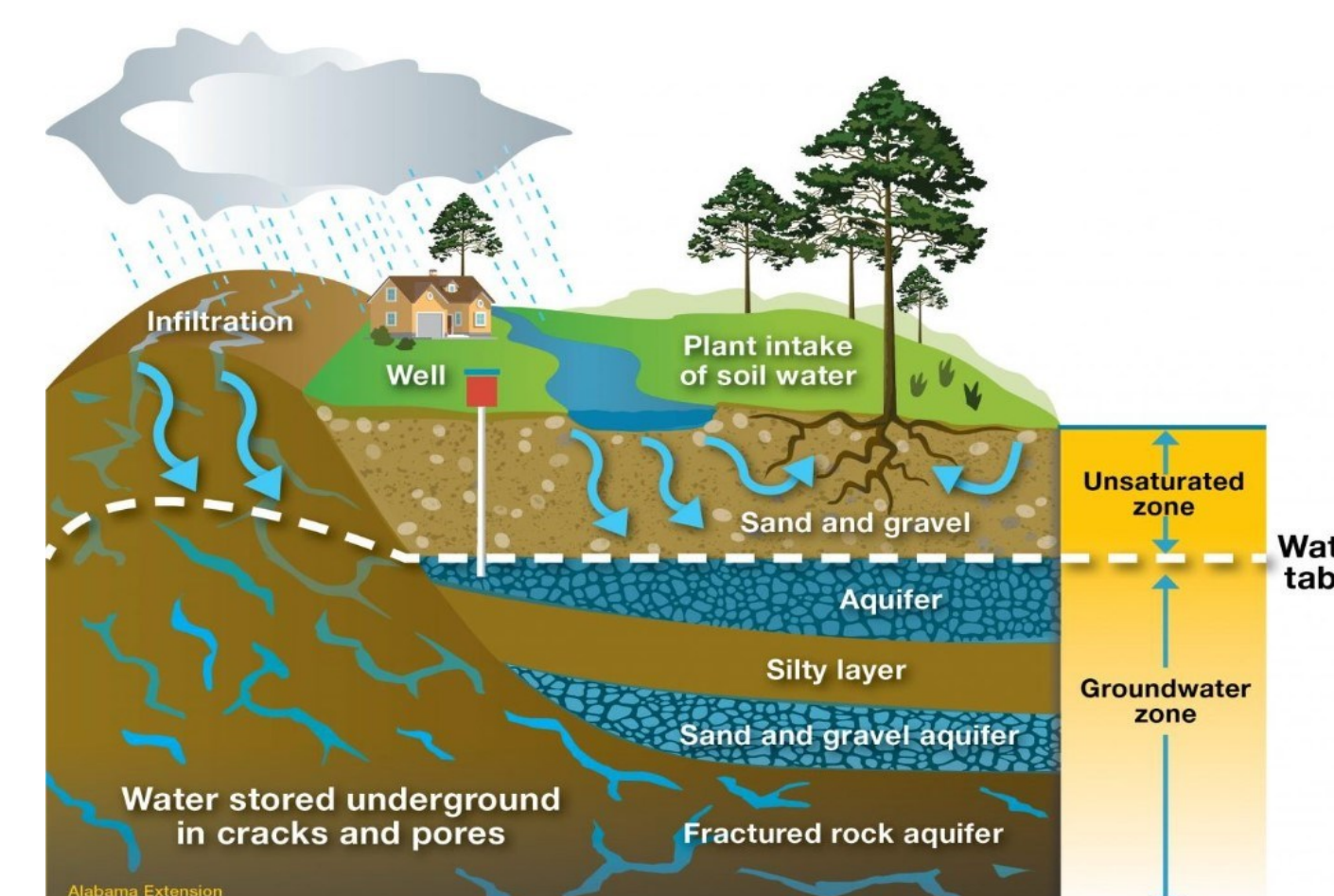


Results in the graphic above represent an annual overdraft of approximately 10,000 acre feet per year

Why is it important SGMA regulates Groundwater?

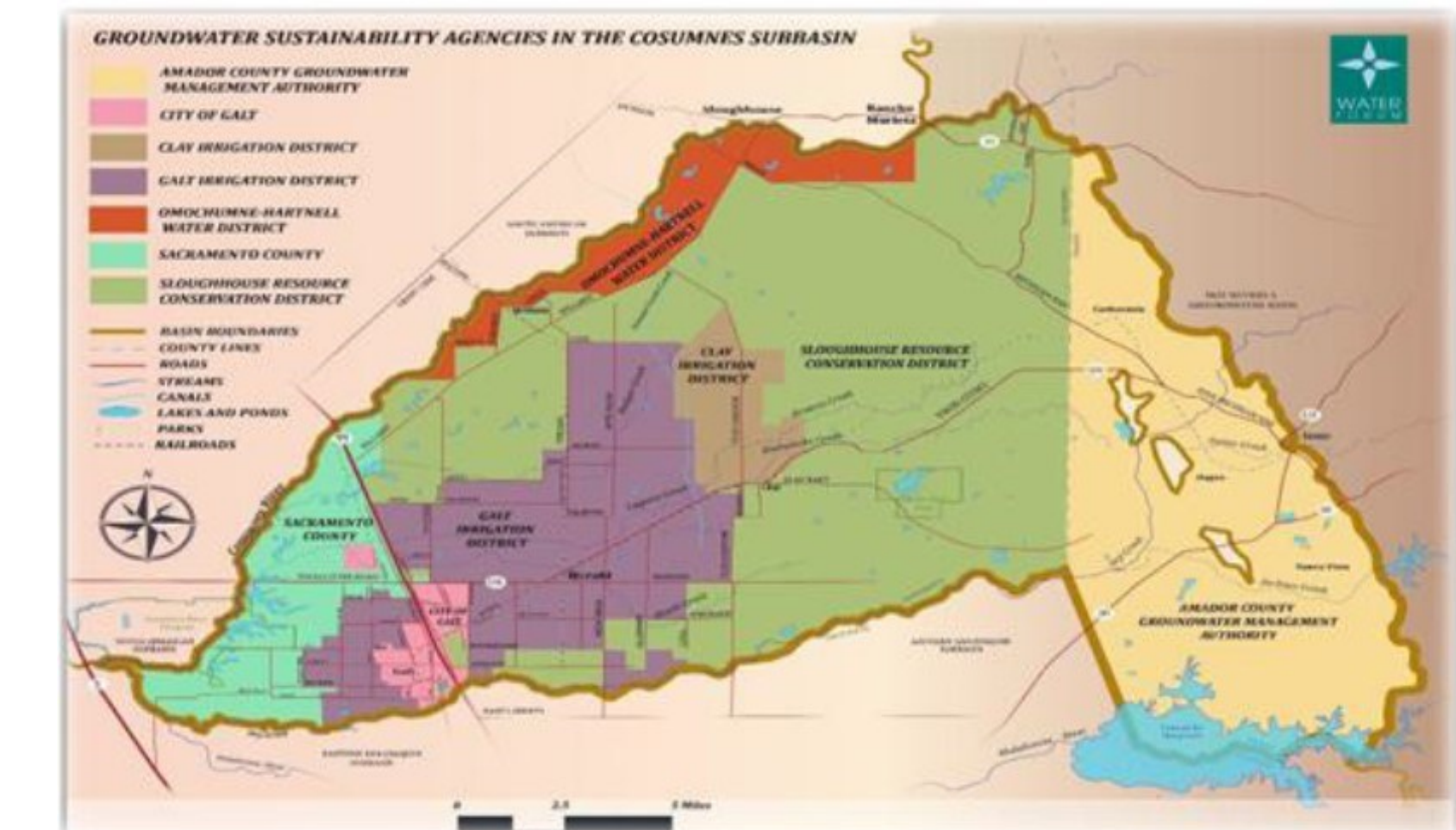
Groundwater is an important source of water stored in the earth beneath our feet, in spaces between sand, soils, and fractured rock known as an aquifer. Layers of aquifers make up a groundwater basin. During an average year, California's 515 alluvial groundwater basins and subbasins contribute approximately 38 percent toward the State's total water supply. During dry years, groundwater contributes up to 46 percent (or more) of the statewide annual supply, and serves as a critical buffer against the impacts of drought and climate change. Many municipal, agricultural, and disadvantaged communities rely on groundwater for up to 100 percent of their water supply needs. We mostly access groundwater through wells and pumps, and it is a crucial buffer against drought when surface water levels, like that in lakes and reservoirs, are running low.

- When groundwater is extracted in excess of what nature recharge efforts can replenish, groundwater elevations drop. Drops in groundwater levels can cause wells to go “dry”, creating a need to deepen a well, or the drilling of a new well. Over-pumping of our aquifer on a continued basis has several negative consequences such as groundwater level declines, land subsidence, reduction of groundwater storage, and water quality issues. Additionally, seawater intrusion and disruption of interconnect surface-water can impact a Basin.
- Between 1999 and 2018, Groundwater levels in the Cosumnes Subbasin have dropped as much as 25 feet in some areas.



The Cosumnes Subbasin

- Designated as a Medium Priority Basin by the Department of Water Resources based on population size.
- Our Local Groundwater Agency is the **Cosumnes Groundwater Authority (CGA)**. The CGA is the lead agency for the entire Subbasin, and coordinates with the 7 Groundwater Sustainability Agencies (GSA's) in the Basin
- Each GSA has 1 appointed, and 1 alternate member that make up the 14 member **Cosumnes Groundwater Authority Board**



What is the Cosumnes Subbasin doing to protect our Groundwater?

- **Conservation Efforts** – continued efforts to conserve water to maintain aquifer “balance” between inflows and withdrawals
- **Projects and Partnerships** – determine the best options for future implementation of aquifer recharge projects, explore the potential of delivery of water from outside the Basin
- **Active Basin wide Monitoring** – full and active monitoring of volunteer groundwater wells, test wells, local rivers, creeks and streams will tell us our current aquifer conditions



Laguna Del Sol Test Dry Well, Omochumnes-Hartnell Water District PMA

What can I do and where can I find more information?

All GSAs are legally required to consider all beneficial uses and users of groundwater, including domestic, agricultural, municipal, environmental, tribes, and disadvantaged communities; it is critical that local water users participate in the process to ensure the management changes address the diverse needs and priorities of the region. A Groundwater Sustainability Plan developed through robust involvement with all stakeholders within the basin will ensure the Plan's success.

- Sign up for CGA Meeting notifications at www.cosumnesgroundwater.org
- Join the Citizens Advisory Council (CAC), find the application at www.cosumnesgroundwater.org
- Attend your GSA (Groundwater Sustainability Agency) meetings, find your GSA on the map link at www.cosumnesgroundwater.org
- SGMA resources and learning materials are available through the Department of Water Resources at www.water.ca.gov
- Visit drought.ca.gov for water shortage assistance information that may be available in your area.
- Complete your mailed Farmers Survey, link found at www.cosumnesgroundwater.org

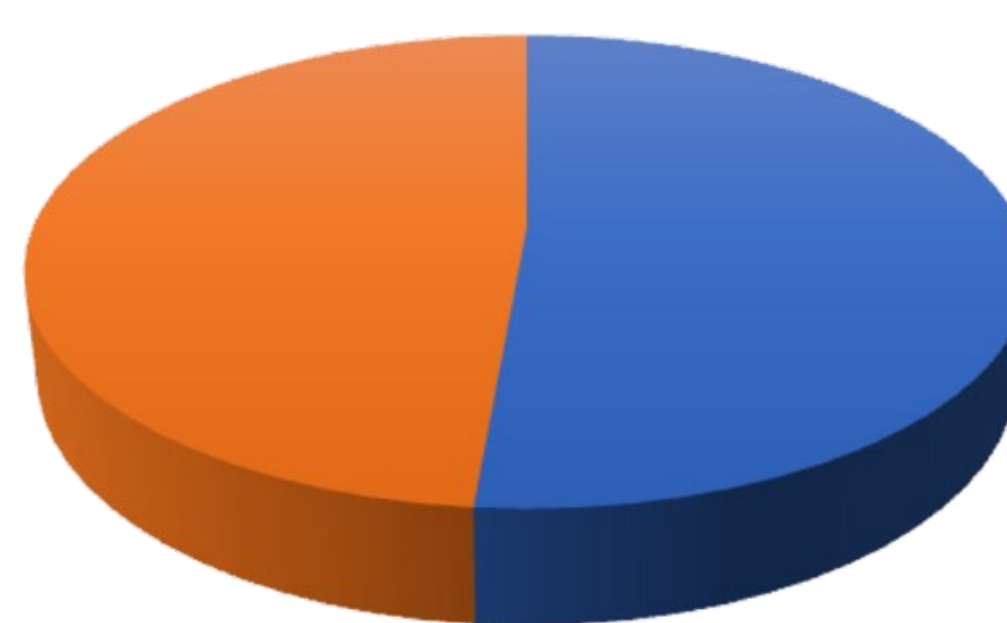


Cosumnes Groundwater Authority Funding

Past and Current Funding

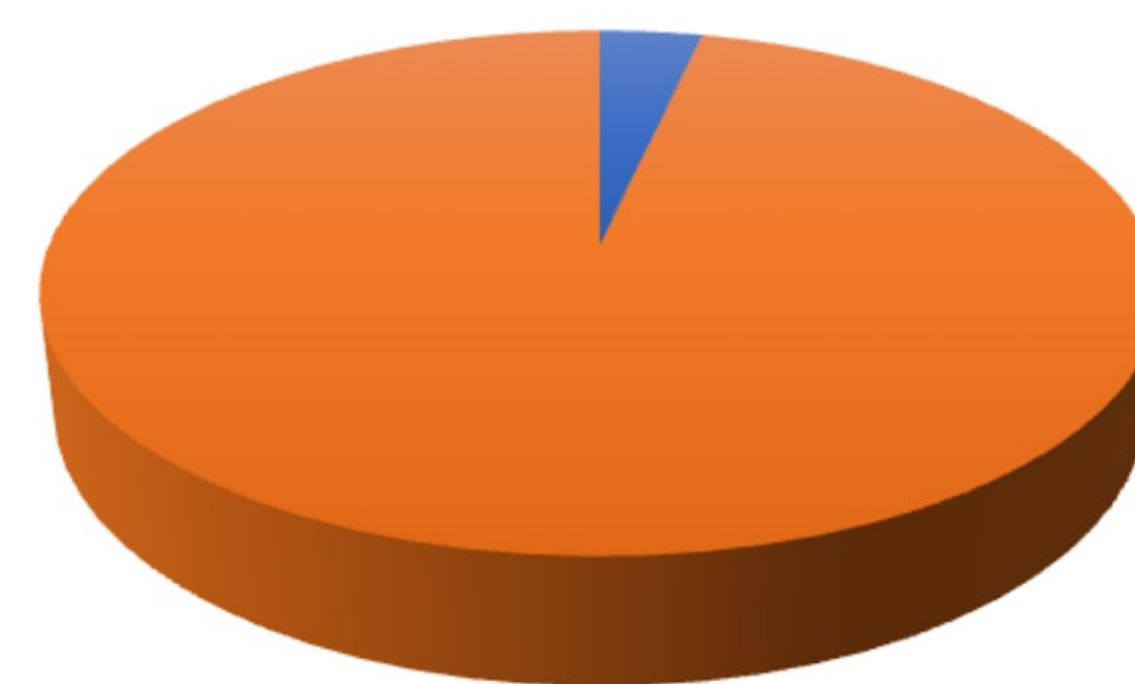
To comply with the Sustainable Groundwater Management Act (SGMA) and to implement the Cosumnes Groundwater Sustainability Plan (GSP), there is a cost. The GSP was developed (occurred from 2017-2021) through funding by state grant funds (over \$2 million!) and contributions from local agencies. In the initial years of GSP implementation, a groundwater sustainability fee of \$10 per irrigated acre was levied on agriculture (the Subbasin's largest user of groundwater). City of Galt also contributes an amount roughly equivalent to their groundwater use.

Current CGA Budget Breakdown (~\$500,000/year)



■ SGMA Activities ■ Outreach and Administration

Current CGA Funding Sources

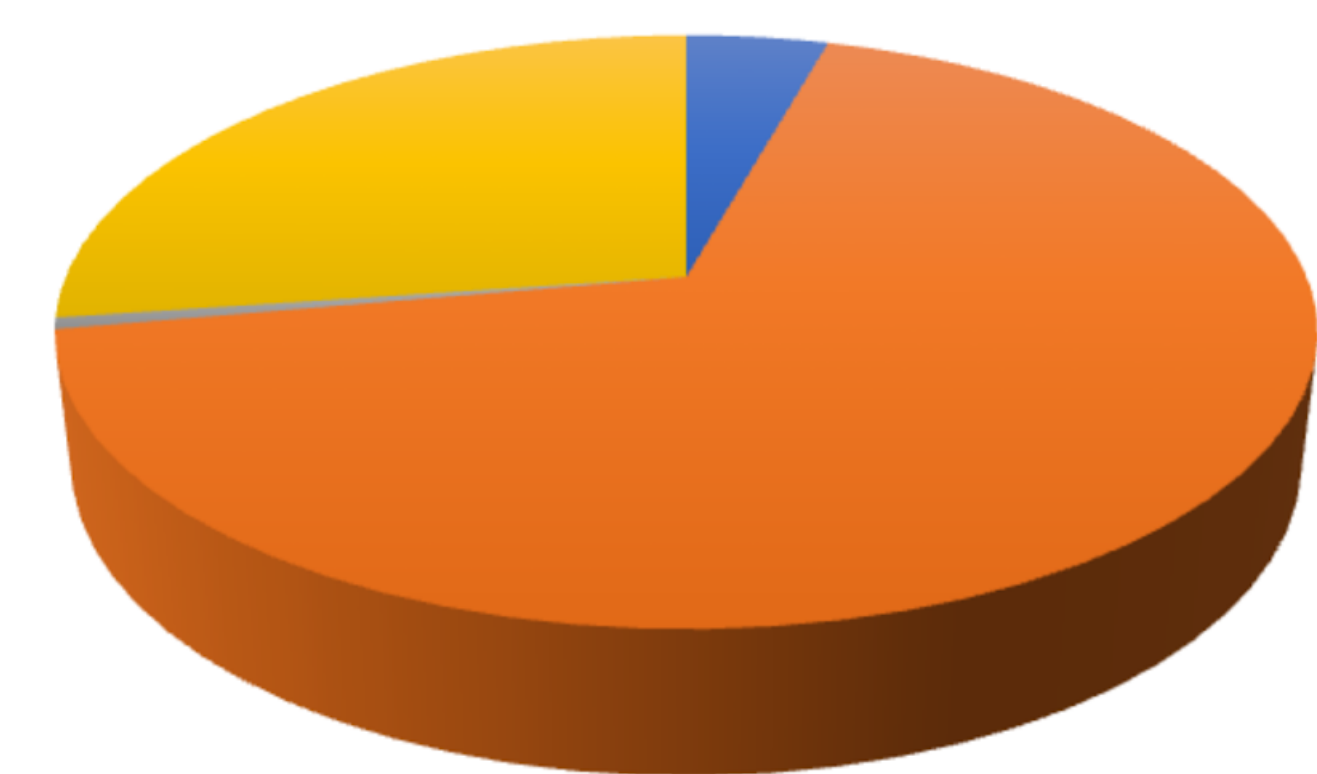


■ City of Galt ■ Irrigated Agriculture

Future Funding

The Cosumnes Groundwater Authority is currently developing a long-term funding plan for GSP implementation and will be holding a series of outreach events in early 2024. While the Cosumnes Groundwater Authority provides a venue for collaboration amongst the Groundwater Sustainability Agencies (GSAs), it will be the responsibility of those GSAs to implement any funding mechanism agreed upon. Before any new groundwater fee is levied, there will be extensive public outreach to impact groundwater users. At this time, local agencies are planning on holding public workshops in the first quarter of 2024 and directly mailing information to potential rate payers. Additionally, grants and other external funding is being pursued to lessen the burden on local groundwater users.

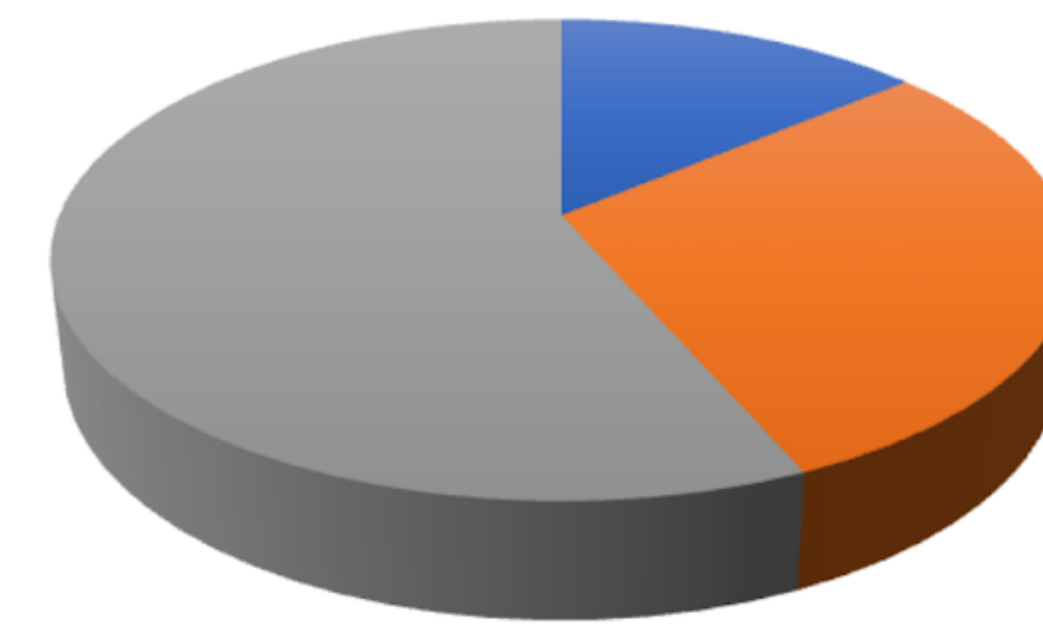
Estimated Future CGA Funding Sources



■ City of Galt ■ Irrigated Agriculture
■ Commercial ■ Rural Residential

The goals of the funding study currently in development are to have all users of groundwater be part of the solution and to ensure there is adequate funding for the required implementation of the California Sustainable Groundwater Management Act and for projects that will conserve or replenish local groundwater supplies.

Estimated Future CGA Budget Breakdown (~\$800,000/year)



■ SGMA Activities ■ Outreach and Administration ■ Projects

Fee Study Timeline – 2024 Implementation



Funding of Other Groundwater Projects

In addition to the efforts led by the Cosumnes Groundwater Authority, member agencies are also in the process of developing projects/programs that will have a positive impact on local groundwater conditions.

- OHWD Recharge Project
 - The Omochumne-Hartnell Water District (OHWD) GSA works along the Cosumnes River to capture excess winter water in the groundwater aquifer. Through flashboard dams, on-farm recharge, and initial research on the feasibility of injection wells they are creating a template for how we can make best use of excess water when it is available in the wet season. Funding for these efforts have come from existing district funds, grant programs, and partnerships with both public and private partners.



Recharge Well located in the Cosumnes Subbasin

- SRCD Conservation Program
 - The Sloughhouse Resource Conservation District (SRCD) GSA is preparing to launch a water conservation program. Starting in 2024 SRCD will have an on-farm water use efficiency program coordinator who will work directly with farmers to implement technology and strategies to use less water. Funding for this program comes from the California Department of Food and Agriculture's Office of Environmental Farming and Innovation.



Sloughhouse RCD Board Member Gary Silva at his well

Cost of State Intervention

SGMA provides that if locals are unable or unwilling to sustainably manage their subbasin, the State Water Resources Control Board (State Board) can step in to protect groundwater using a process called state intervention. This would occur if the State Department of Water Resources determines the GSP is inadequate (determination expected to be made by the end of 2023) or if the Subbasin fails to make progress towards implementing their plan at the 5-year update milestone (2027).

If the State were to take over the Subbasin, the follow fees would likely apply to all groundwater users. Additionally, meters would be placed on agricultural and commercial wells.

Base Filling Fee	\$300 per Well	Excludes de minimis users (ex: domestic wells)
Unmanaged Area Rate	\$10 per Acre Foot	Excludes de minimis users
Probationary Rate	\$40 per Acre Foot	Excludes de minimis users
Interim Plan Rate	\$55 per Acre Foot	Excludes de minimis users
De Minimis Fee	\$100 per Well	
Automatic Late Fee	25% per month	Impacts extracts that do not file reports of groundwater use by annual due date.

REACHING THE SUSTAINABILITY GOALS OUTLINED IN THE COSUMNES GSP IS THE BEST WAY TO AVOID THIS SCENARIO AND KEEP FEES LOW!

State Intervention Definitions

Probationary Subbasin

If locals fail to form a GSA, fail to develop an adequate sustainability plan, or fail to implement the plan successfully, the State Board may designate the entire subbasin probationary. Anyone who extracts groundwater from a probationary subbasin must file an extraction report with the State Board unless they decide to exclude certain types of extractions. The State Board may require the use of a meter to measure extractions and reporting of additional information.

Interim Plan

The State Board will allow local agencies time to fix the issues in the basin that led to probation. If local agencies are unable to fix the deficiencies, the State Board will develop an interim plan to directly manage groundwater extractions. An interim plan will contain corrective actions, a timeline to make the basin sustainable, and a monitoring plan to ensure corrective actions are working.



Recent Activities and Upcoming Projects

Understanding the Subbasin

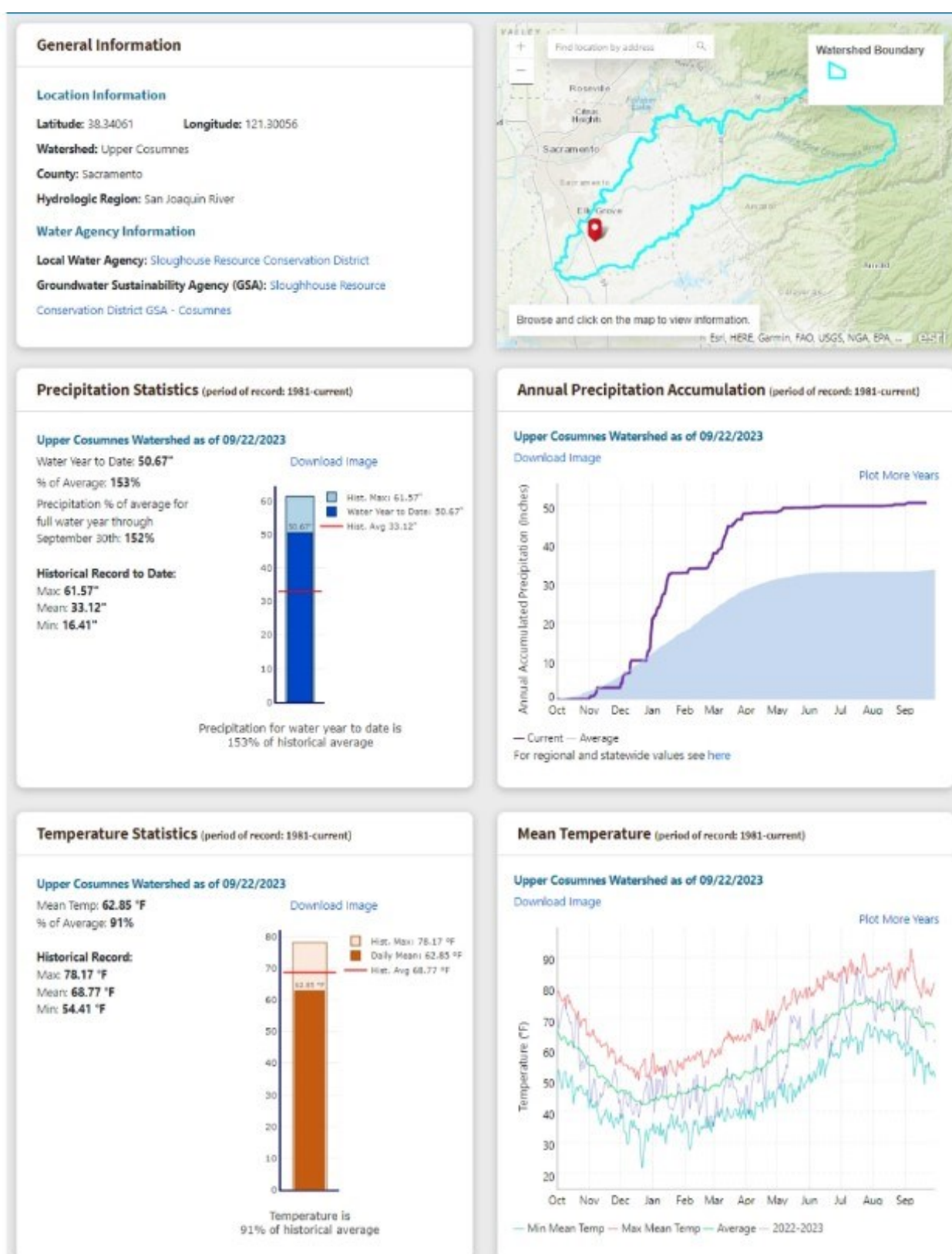
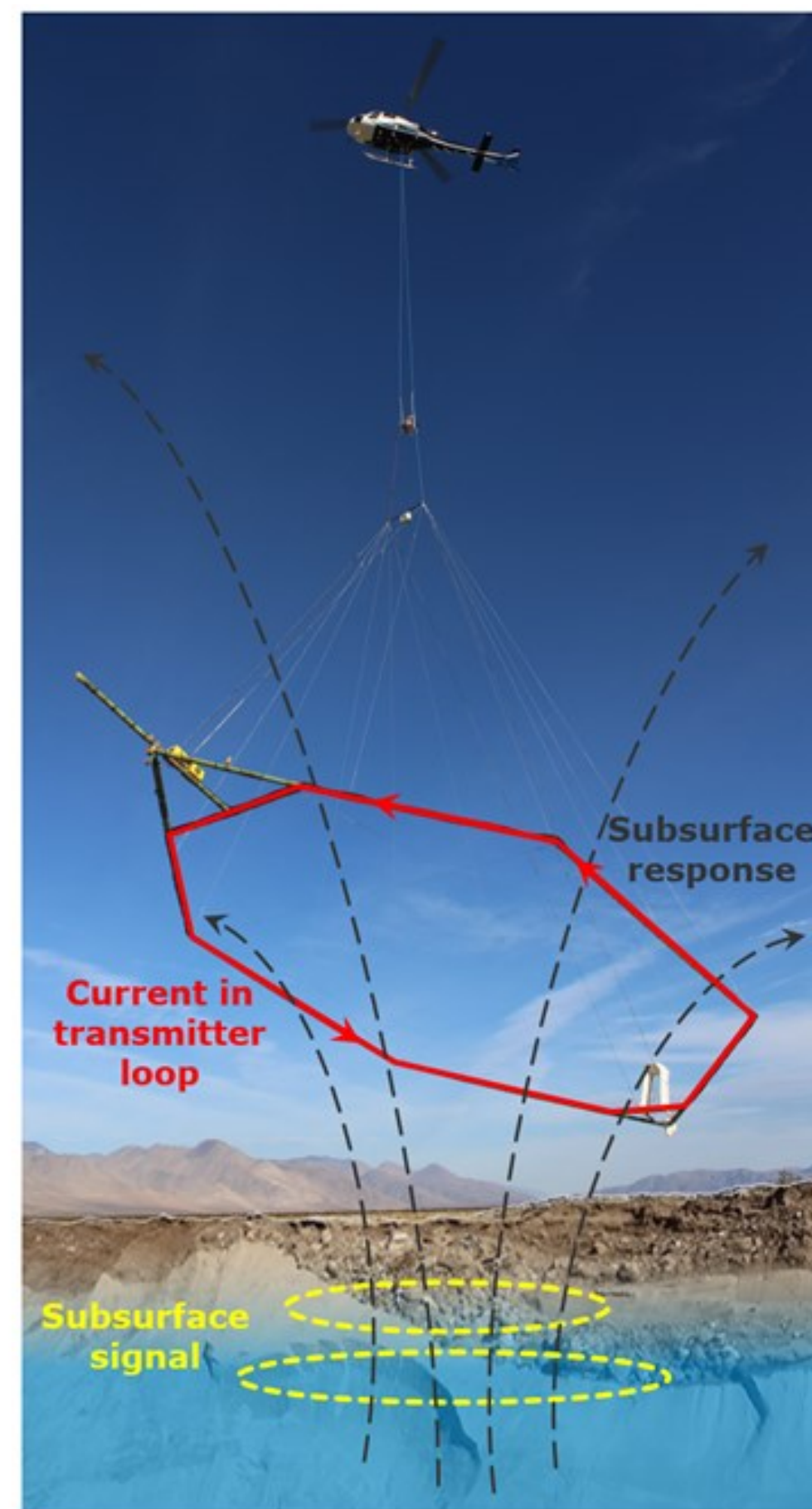
Electromagnetic/AEM Survey Flyover's

California Department of Water Resources conducted airborne electromagnetic (AEM) surveys throughout much of the state including the Cosumnes Subbasin.

Electronic equipment is towed behind a helicopter or small plane that sends a signal to the ground below, and then it bounces back to the equipment overhead – this has been called “an MRI of the ground’s subsurface”.

The data created by the AEM survey is used to help interpret the underground geology of an area or region. This data helps in understanding the water below the surface, where the aquifers are located, and reveals unknown features and conditions.

The surveys are performed by Department of Water Resources (DWR), and the cost is funded by voter-approved Proposition 68, Senate Bill 5, and the State General Fund.



CA Water Watch Online www/water.ca.gov

California Water Watch is a user-friendly online portal that offers current local and statewide water conditions that can be researched on a statewide or regional level, all the way down to your own neighborhood.

The many water-related topics available to research are in easy-to-understand graphics and text, and all information is updated regularly.

Ideas for Future Projects

To address the current overdraft of groundwater supplies, local agencies are exploring both **Demand Reduction** and **Supply Augmentation** projects.

Demand Reduction:

Demand reduction simply refers to efforts that result in less groundwater use. To ensure we have sustainable groundwater conditions for long into the future, we encourage all groundwater users to consider what conservation practices you can implement! Flow restrictors, low flow fixtures, limiting landscape to drought tolerant/native vegetation, and regularly checking (and fixing!) leaks can all lead to significant groundwater savings.

Anonymously report leaks/water waste from your smartphone, tablet, or computer at :

SaveWater.CA.Gov



Additionally, local agencies are exploring grant funds to bring additional assistance to local landowners. The Sloughouse Resource Conservation District (RCD)



recently received a CA Department of Food and Agriculture grant to work directly with farmers to provide irrigation system diagnostics and recommendations.

Contact the Sloughouse RCD to schedule a meeting with a water efficiency expert:

916-526-5447

info@SloughouseRCD.org

Supply Augmentation:

Supply augmentation projects could include groundwater re charge, utilization of recycled water, capturing excess stormwater flows, and conjunctive use efforts. While local agencies would like to offset our entire deficit by supply augmentation (to ensure all beneficial users/uses have water), there are significant challenges to implementing these projects (comparative to conservation). Depending on the project, there are permitting, project design, funding, and water rights logistics that need to be addressed before these efforts can be delivered at scale. Thankfully, several efforts are already underway to replenish our aquifers.



The Omochumne-Hartnell Water District (OHWD) has initiated a variety of on-farm recharge pilot projects. Through a project called Ag-MAR or Flood-MAR, MAR standing for Managed Aquifer Recharge, OHWD works with partner landowners to flood agricultural fields (in this case, grapes!) with excess water from the

Cosumnes River during the wet season. Without negatively impacting the crop, water seeps into the underground aquifer. OHWD is also in the initial stages of testing the process to directly inject water into the sub-surface. Recharging the groundwater aquifers takes time to filter through the many layers to the underground aquifer. Increasing the number of locations that water can be recharged has the potential increase eventual groundwater levels.

Urban water users can also help replenish groundwater aaquifers. The City of Galt hopes to provide additional recycled water near by farms. This water would be used to irrigate the farms instead of pump additional groundwater. Similarly, the Regional San (the regional wastewater conveyance and treatment system) is nearing the final stages of their Harvest Water Project which will deliver up to 50,000-acre feet of tertiary-treated recycled water to nearly 16,000 acres of farm and habitat lands in southern Sacramento County which is anticipated to have a positive impact on groundwater conditions throughout Sacramento County.

TAKE THE SURVEY!

We need your help! The main purpose for the survey is to assess the interest of farmers/ranchers in participating in efforts to reduce water use as well as parallel efforts to increase water supply by engaging in managed aquifer recharge. We would also like to understand the types of incentives farmers would consider in exchange for their participation. The information gained from the survey will be used to help identify approaches/options to reduce groundwater pumping in the Cosumnes Subbasin that are consistent with the interests of farmers/landowners.



**Scan this code
to take the
survey!**