County of Santa Barbara
2020 Groundwater Basins
Summary Report

Public Works Department
Water Resources Division
Water Agency

130 East Victoria Street
Santa Barbara, CA 93101
(805) 568-3440

August 25, 2020

A report on the general condition of groundwater throughout Santa Barbara County.

On the cover (clockwise from top right):

Vineyard in Santa Ynez River Valley Groundwater Basin

Windmill and cattle in the Cuyama Valley Groundwater Basin

Flowers grown near Lompoc in Santa Ynez River Valley Groundwater Basin

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Copies of this report can be located online at:
http://www.countyofsb.org/pwd/SBCoGroundwater.sbc

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ACRONYMS:

AF	Acre Feet
CASGEM	California Statewide Groundwater Elevation Monitoring
DWR	California Department of Water Resources
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
SBCWA	Santa Barbara County Water Agency
MSL	Mean Sea Level
NWIS	National Water Information System
SGMA	Sustainable Groundwater Management Act
SMVWCD	Santa Maria Valley Water Conservation District
SYRWCD	Santa Ynez River Water Conservation District
TMA	Twitchell Management Authority
USGS	United States Geological Survey
USBR	United States Bureau of Reclamation
VAFB	Vandenberg Air Force Base
WSEL	Water Surface Elevation

EXECUTIVE SUMMARY

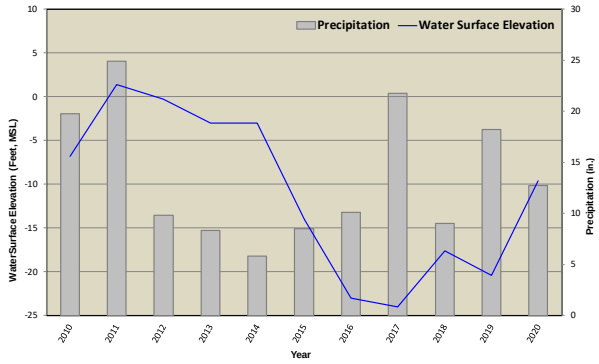
While a few Santa Barbara County groundwater basins show preliminary signs of recovery from the impact of the 2012-2018 drought, most basins have not yet rebounded to pre-drought levels. To illustrate recent changes and the effect of precipitation on groundwater recharge, the following charts show water level elevations below land surface for selected wells for the last eleven years, (represented by blue line) along with total precipitation within the basin (represented by gray bars). It should be noted that water level trends may react differently between wells and can be highly variable throughout a basin. These graphs therefore do not represent trends observed in all monitoring wells within the basin. Additional detail is located in the main body of this report.

SOUTH COAST GROUNDWATER BASINS

CARPINTERIA GROUNDWATER BASIN

Carpinteria: State Well 4N/25W-30D1
Land Surface Elevation 7'
Well Depth 210'

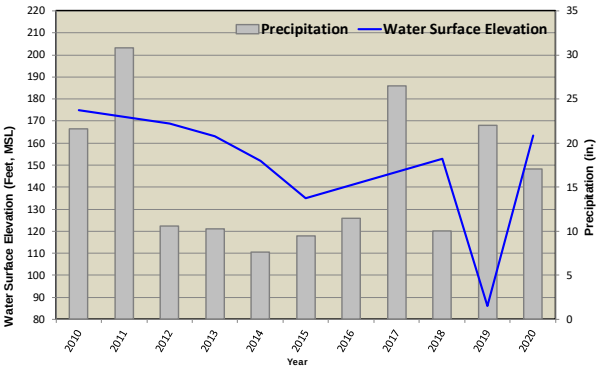
SUMMARY: Water levels drop during extended years of drought (1945-1951, 1984-1990, and 2012-2018), and historical monitoring data indicate levels reached their lowest elevation in 2017. General trends indicate continued increases in storage following above average precipitation in 2017 and 2019.



MONTECITO GROUNDWATER BASIN

Montecito: State Well 4N/26W-8P3
Land Surface Elevation 220'
Well Depth 404'

SUMMARY: Water levels drop during extended years of drought (1945-1951, 1984-1990, and 2012-2018), and have not rebounded to pre-drought levels. General trends indicate increased storage following above average precipitation in 2017 and following above average precipitation in 2019.

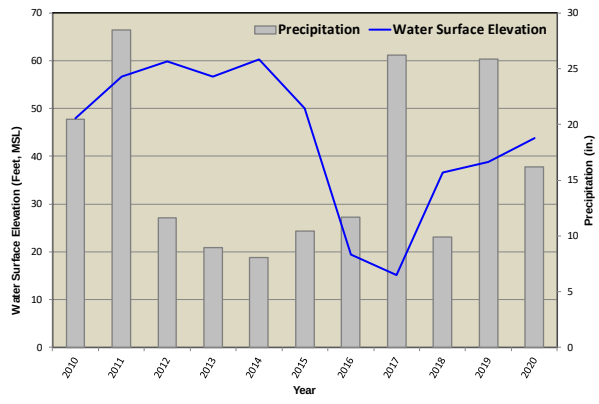


2019-2020 water surface elevation from nearby well 344389N1196326W002

SANTA BARBARA GROUNDWATER BASIN

Santa Barbara: State Well 4N/27W-15E1
Land Surface Elevation 145'
Well Depth N/A

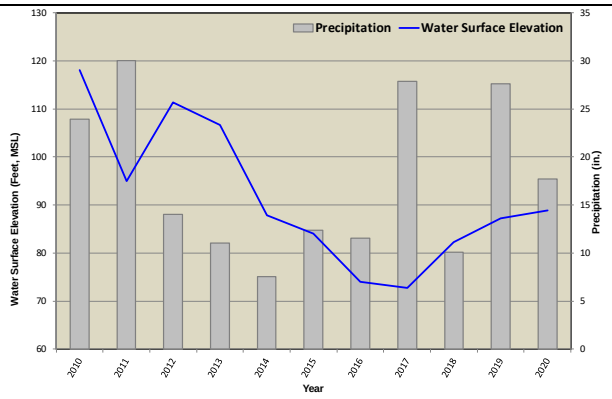
SUMMARY: Water levels drop during extended years of drought (1945-1951, 1984-1990, and 2012-2018), and have not rebounded to pre-drought levels. General trends indicate continued increases in storage following above average precipitation in 2017 and 2019.



FOOTHILL GROUNDWATER BASIN

Foothill: State Well 4N/28W-12H4
Land Surface Elevation 176'
Well Depth 290'

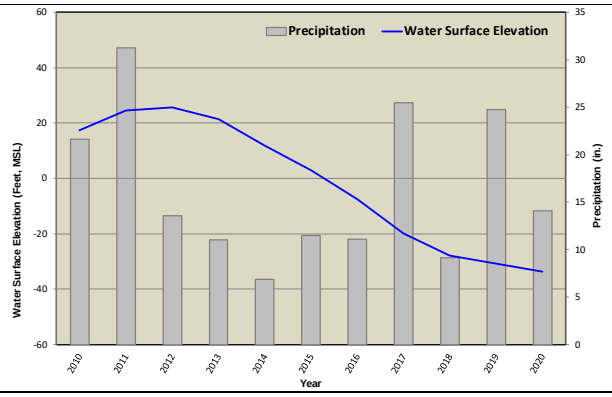
SUMMARY: Water levels drop during extended years of drought (1945-1951, 1984-1990, and 2012-2018), and have not rebounded to pre-drought levels. General trends indicate continued increases in storage following above average precipitation in 2017 and 2019.



GOLETA GROUNDWATER BASIN

Goleta: State Well 4N/28W-8B10
Land Surface Elevation 42'
Well Depth 212'

SUMMARY: Water levels drop during extended years of drought (1945-1951, 1984-1990, and 2012-2018), and have not rebounded to pre-drought levels. Water levels continue to drop following above average precipitation in 2017 and 2019.

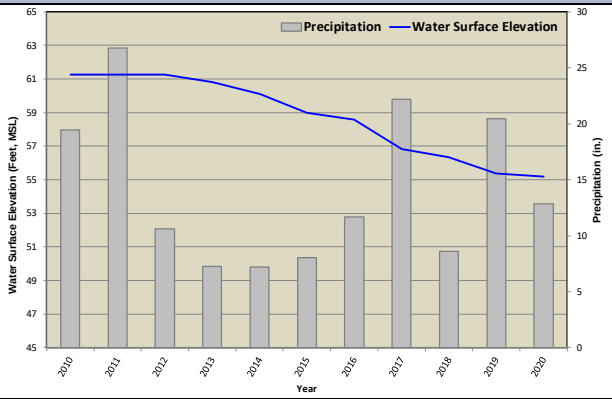


SANTA YNEZ RIVER VALLEY GROUNDWATER BASIN

WESTERN MANAGEMENT AREA

Lompoc Uplands: State Well 7N/34W-12E1
Land Surface Elevation 386'
Well Depth 385'

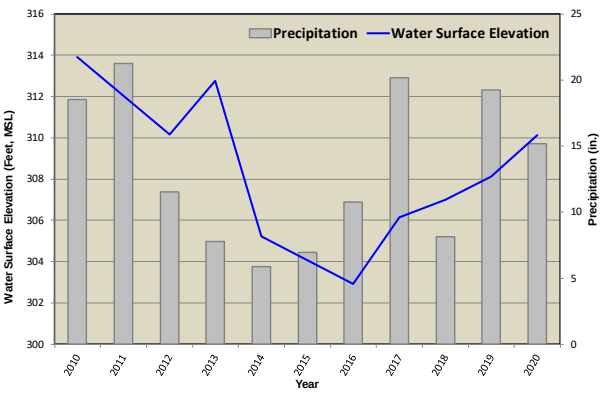
SUMMARY: Water levels within the Lompoc Uplands have continued to decline for the period of available record starting in 1930, while the Lompoc Plain has remained fairly stable. Water levels within the alluvium along the river have historically remained stable.



CENTRAL MANAGEMENT AREA

Buellton Uplands: State Well 6N/31W-7F1
Land Surface Elevation 385'
Well Depth 633'

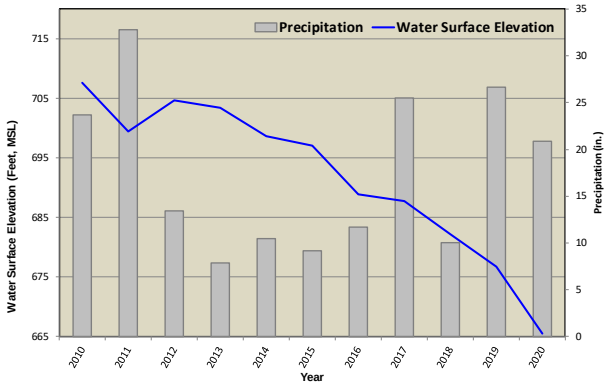
SUMMARY: Water levels within the management area have historically been stable, with minimal long-term declines. Levels are currently rising as a response to precipitation and recharge. Water levels within the alluvium along the river have historically remained stable.



EASTERN MANAGEMENT AREA

Santa Ynez Uplands: State Well 6N/29W-8P2
Land Surface Elevation 910'
Well Depth N/A

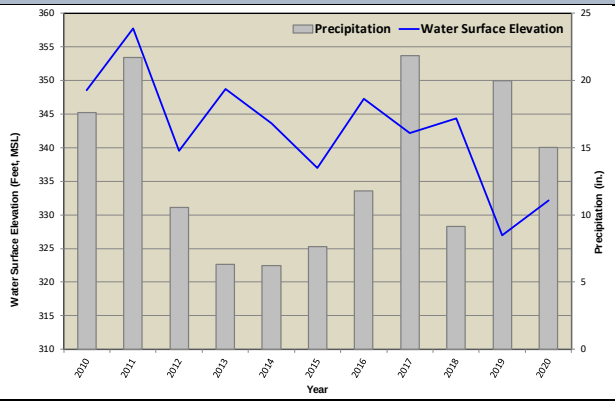
SUMMARY: Water levels in the western portion of the Eastern Management Area have continued to drop in recent years. Water levels within the uplands and foothills to the east as illustrated in the corresponding graph have historically remained stable, showing some gradual declines in recent years. Water levels within the alluvium along the river have historically remained stable.



SAN ANTONIO CREEK VALLEY GROUNDWATER BASIN

San Antonio Valley: State Well 8N/33W-20Q2
Land Surface Elevation 408'
Well Depth 260'

SUMMARY: Water level declines in some locations have been greater than 100 feet since the 1950s and levels continue to decline throughout the basin.

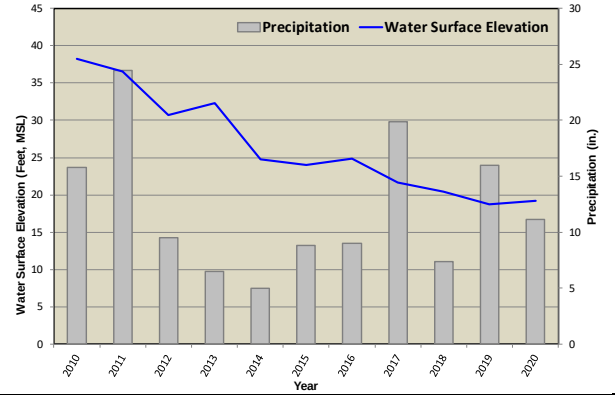


SANTA MARIA RIVER VALLEY GROUNDWATER BASIN

COASTAL AREA

Guadalupe: State Well 10N/35W-7E5
Land Surface Elevation 45'
Well Depth N/A

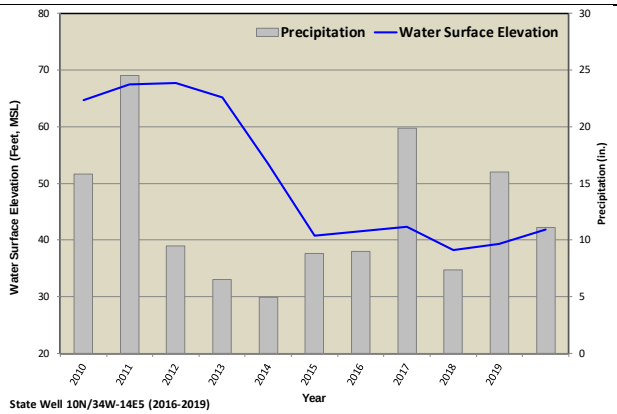
SUMMARY: The rate of water level decline has increased during the recent drought. Water levels have started to stabilized following above average precipitation in 2017 and 2019.



CENTRAL AGRICULTURE

Lower Orcutt Creek: State Well 10N/35W-24B2
Land Surface Elevation 145'
Well Depth 288'

SUMMARY: The rate of water level decline has increased during the recent drought. Water levels have started to stabilized following above average precipitation in 2017 and 2019.

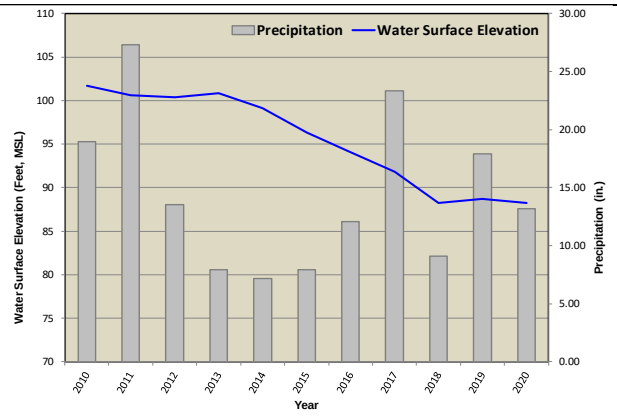


State Well 10N/34W-14E5 (2016-2019)

ORCUTT

Orcutt: State Well 9N/34W-8H1
Land Surface Elevation 222'
Well Depth 200'

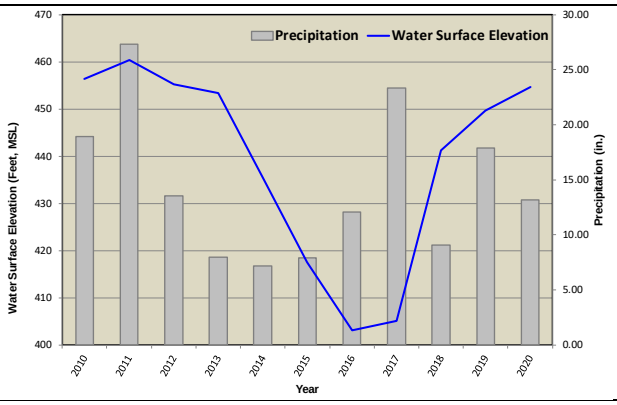
SUMMARY: The rate of water level decline has increased during the recent drought. Water levels have started to stabilized following above average precipitation in 2017 and 2019.



SISQUOC VALLEY

Sisquoc Valley: State Well 10N/32W-22D1
Land Surface Elevation 495'
Well Depth 203'

SUMMARY: Water level data show noticeable recent and consistent recharge along the Sisquoc River as a result of river infiltration since Water Year 2017.

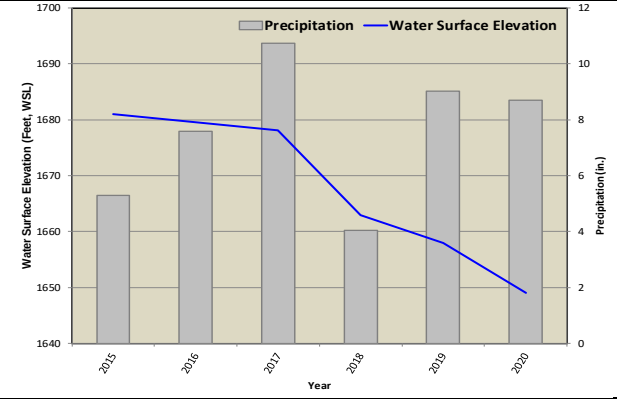


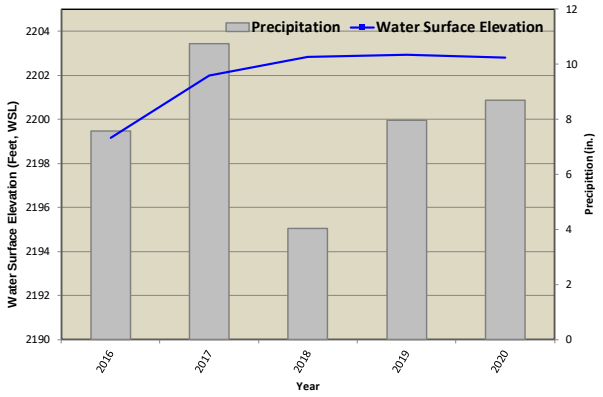
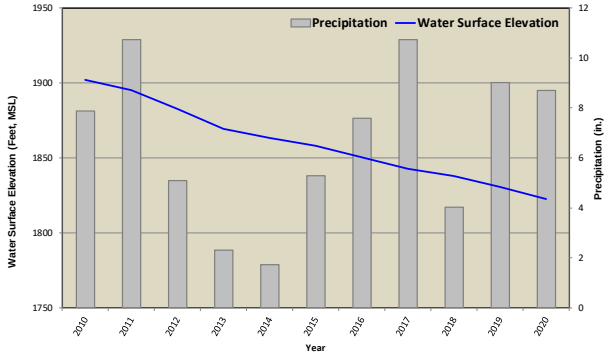
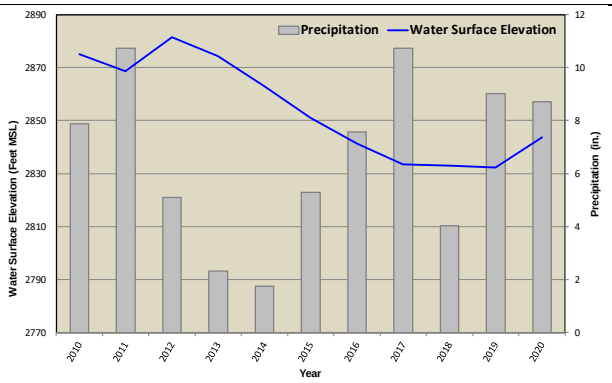
CUYAMA VALLEY GROUNDWATER BASIN

NORTHWESTERN THRESHOLD REGION

Northwestern: State Well 11N/28W-27A3
Land Surface Elevation 1,700'
Well Depth 730'

SUMMARY: Shallow wells indicate that water levels have historically remained stable. Deep wells along the river to the east have experienced continued declines as a result of recent agricultural development in 2016.



WESTERN THRESHOLD REGION **Sierra Madre Foothill: State Well 10N/26W-4M2** **Land Surface Elevation 2,250'** **Well Depth 500'**	
SUMMARY: Water levels in shallow wells are close to land surface and have generally remained stable for many decades.	
CENTRAL THRESHOLD REGION **Central Threshold Region: State Well (combination)** **Land Surface Elevation 2,284''** **Well Depth 780'**	
SUMMARY: Water levels within this region have been steadily declining since the late 1940s, with long term hydrographs showing declines of nearly 300 feet.	
EASTERN THRESHOLD REGION **Ventucopa Uplands: State Well 9N/24W-33M1** **Land Surface Elevation 3,049'** **Well Depth 233'**	
SUMMARY: This region has historically remained fairly stable with declining levels during the drought starting in 2012. In recent years, water level data indicate that the aquifer has stabilized following above average precipitation in 2017 and 2019.	

Water levels within the Southern Threshold Region are shallow with depth to water of about 50 feet. No recent data are available for this region or the Badlands Threshold Region where groundwater use is minimal due to limited development.

INTRODUCTION

This report summarizes current water level conditions and trends in Santa Barbara County's nine major groundwater basins (Figure 1) and provides resources for where these data can be located. Groundwater recharge is complex and can vary between and within each groundwater basin as a result of varying aquifer materials, local geology, physical barriers, hydrology, evapotranspiration, and anthropogenic activity. Water levels may rise quickly in shallow wells when located in alluvium along flowing rivers and creeks. Deeper wells however, may not show signs of recharge for many years following wet seasons. By tracking long-term water level trends and observing the localized responses to these variables, we develop a better understanding of our groundwater systems.

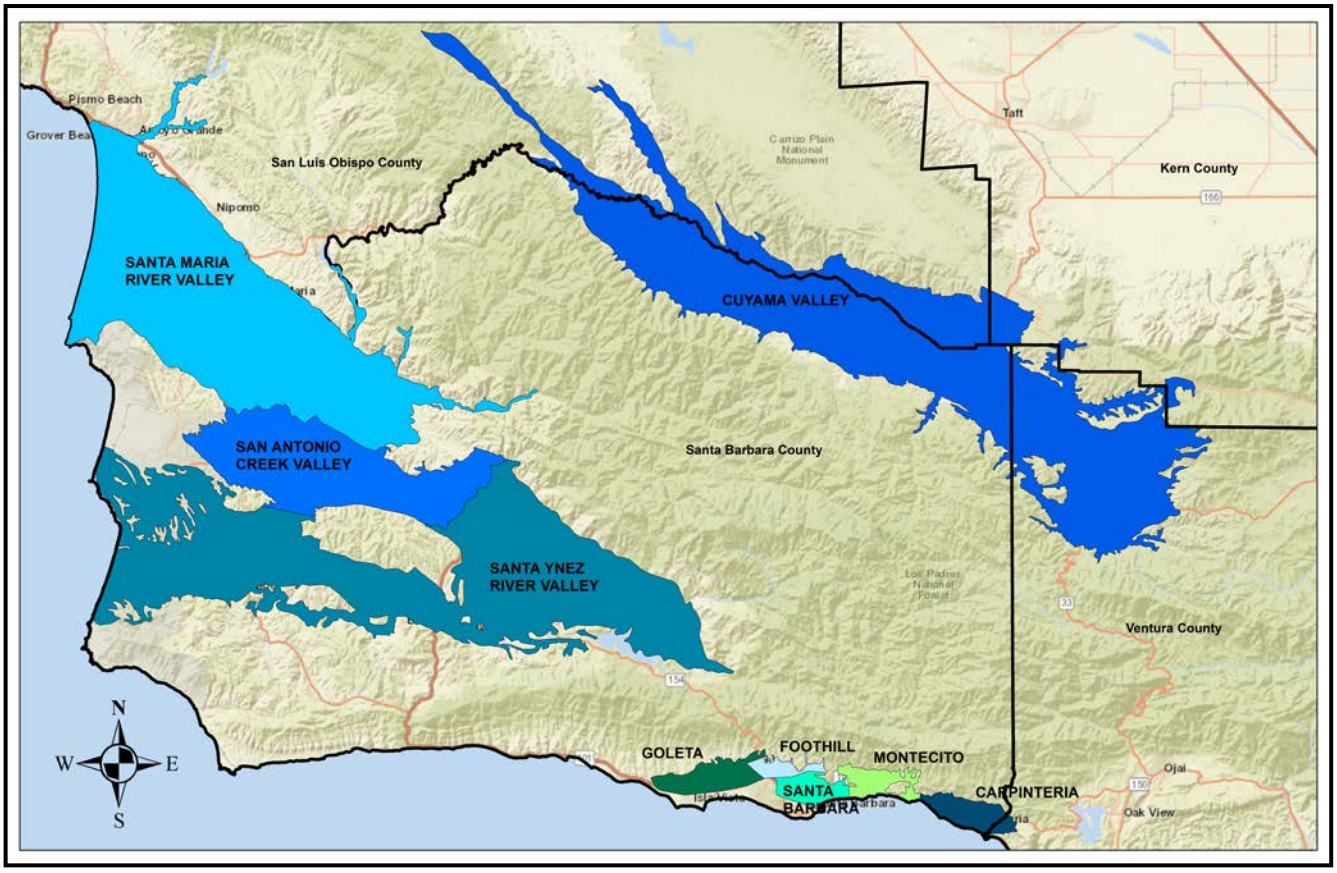


Figure 1: Major groundwater basins of Santa Barbara County

In 2019, the Board of Supervisors directed the Water Agency to prepare an annual report which illustrates groundwater conditions, summarizes the various monitoring programs throughout the County, and provides the resources available for locating groundwater data. Online data resources available to the public are hyperlinked within the report. A variety of public online data resources are also provided in Attachment F. Only groundwater basins defined by the Department of Water Resources (DWR) in its Bulletin 118 are included in this report. Although parts of some basins are located outside the boundary of Santa Barbara County, only data from areas located within the County are included. Sub-basins within the larger groundwater basins are differentiated as determined by jurisdictional boundaries or natural barriers to groundwater movement. Hydrographs of water surface elevation (WSEL) above mean sea level (MSL) for representative monitoring wells

within each of these basins are plotted in the Executive Summary and Attachments. Yearly precipitation totals above and below 80% of average within each basin are also plotted to illustrate long-term storage trends, seasonal recharge response, and discharge. Discrete water level values illustrated in these hydrographs are representative of yearly maximum aquifer levels during early spring (usually March) and before significant agricultural pumping resumes.

PRECIPITATION AND RESERVOIR RELEASES

Surface water storage is an important consideration in groundwater trend analysis. Groundwater pumping for both domestic and agricultural use are directly linked to annual precipitation and reservoir storage. In Water Year 2019, which runs from October 1, 2018 to September 30, 2019, precipitation throughout Santa Barbara County was above average at 128% of a normal water-year. Although the combination of January and February 2020 precipitation totals were the driest in recorded history in Southwestern California, Water Year 2020 is currently at 92% of a normal water year. No water was released from Lake Cachuma for downstream water rights use in Water Year 2019. Maximum storage at Twitchell Reservoir was 50,825 AF which was released for downstream recharge of the Santa Maria Valley Groundwater Basin.

GROUNDWATER MONITORING PROGRAMS

Water level data, measured as depth to water below land surface, have been collected from groundwater monitoring networks throughout Santa Barbara County for decades. Data from these networks are representative of the major aquifers and are intended to emphasize the role of local variables such as geology, topography, and land use on recharge, sub-surface flow, and distribution. These data also illustrate temporal variability in groundwater levels and are combined with meteorological data to assist in the interpretation of ambient water level changes. The temporal and spatial distribution of the monitoring network has changed over time and is dependent on many factors including funding, local groundwater study objectives, legislative requirements, and landowner access. Some networks have been developed to track long-term trends, while others are more specific to modeling goals or local water distribution objectives.

Monitoring Entities

The Santa Barbara County Water Agency (SBCWA) has historically maintained a comprehensive and long-standing groundwater monitoring network within unincorporated areas of Santa Barbara County in cooperation with the United States Geological Survey (USGS). The responsibility for monitoring these networks will eventually transition to the Groundwater Sustainability Agencies (GSA) after completion of their Groundwater Sustainability Plans (GSP). Additional groundwater data collection efforts are completed or sponsored by local water districts, municipalities, and GSAs throughout the County. Agencies including the City of Santa Barbara and Goleta Water District maintain monitoring networks in cooperation with the USGS. The Santa Maria Valley Water Conservation District (SMVWCD) collects water level trend data in cooperation with the Twitchell Management Authority (TMA). The San Antonio Basin GSA and Cuyama Basin GSA have recently started monitoring water levels within their respective basins. Other local water districts and municipalities support water level data collection efforts which are often for internal tracking within the district's or municipality's production well network or to meet requirements set by the California Statewide Groundwater

Elevation (CASGEM) program. The following agencies conduct groundwater monitoring within Santa Barbara County:

- Carpinteria Valley Water District
- City of Buellton
- City of Guadalupe
- City of Lompoc
- City of Santa Barbara
- City of Santa Maria
- City of Solvang
- Golden State Water Company
- Goleta Water District
- Los Alamos Community Services District
- Mission Hills Community Services District
- Montecito Water District
- Cuyama Community Services District
- San Antonio Groundwater Sustainability Agency
- Santa Maria Valley Water Conservation District
- Santa Ynez River Water Conservation District
- Santa Ynez River Water Conservation District Improvement District #1
- United States Bureau of Reclamation
- Vandenberg Air Force Base
- Vandenberg Village Community Services District

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act (SGMA) was passed in 2014 to create a framework for groundwater sustainability throughout California. Groundwater basins that are designated as high or medium priority by the DWR must form a GSA. Each GSA is responsible for the development, implementation, and oversight of a GSP. GSPs must achieve groundwater sustainability within 20 years of GSP adoption. GSP objectives require that future groundwater use does not cause undesirable results, which include the following: declining water levels, reduction of groundwater storage, seawater intrusion, degraded water quality, land subsidence, and depletion of interconnected surface water. Table 1 shows the status of GSP preparation for each groundwater basin within Santa Barbara County.

GSAs have been formed for all high and medium priority basins in the County. Categorized by DWR as a critically overdrafted basin, the Cuyama Basin GSA submitted its GSP to DWR in January, 2020. Other GSPs are being developed in preparation for the 2022, or 2024 deadlines. One requirement of a GSP is to establish a monitoring network to track water level changes, groundwater storage, and monitor pre-determined water level thresholds within each basin. Water level data for these basins will be available to the public through online portals.

Table 1: SGMA basin prioritization and required GSP year.

GROUNDWATER BASIN	SGMA BASIN PRIORITIZATION	GSP DUE	DWR BULLETIN 118 BASIN
Carpinteria	High	2024	3-018
Montecito	Medium	2024	3-049
Santa Barbara	Very Low	N/A	3-017
Foothill	Very Low	N/A	3-053
Goleta	Very Low	N/A	3-016
Santa Ynez River Valley	Medium	2022	3-015
San Antonio Creek Valley	Medium	2022	3-014
Santa Maria Valley	Very Low	N/A	3-012
Cuyama Valley	High (critically overdrafted)	Submitted 2020	3-013

GROUNDWATER BASINS

South Coast Groundwater Basins

South Coast groundwater basins include Carpinteria, Montecito, Santa Barbara, Foothill, and Goleta (Table 3). Boundaries for the five major south coast groundwater basins are designated by geologic features such as fault barriers to groundwater movement and impermeable bedrock, or inferred geologic features recognized by changes in water level or water quality. Major water supply sources for South Coast water purveyors consist of groundwater, surface water, imported State water, recycled water, and desalinization. The available quantity of surface and imported water is a result of seasonal precipitation and storage, and directly affects groundwater extraction.

Historical hydrographs of annual maximum water level trends for all South Coast basins display yearly fluctuations, with significant declines (reduced storage) during years of extended drought (1945-1951, 1984-1990, and 2012-2018). Recent water level measurements indicate that although increasing, the aquifers have not fully rebounded following the most recent drought and will require additional years of average or above average precipitation to rebound to pre-drought conditions. Water levels in South Coast Basins, except for Goleta, generally show increases in storage following above average precipitation in 2017 and 2019.

Attachment A illustrates the active monitoring network and shows representative hydrographs for wells within South Coast aquifers.

Carpinteria Groundwater Basin

The Carpinteria Groundwater Basin was reprioritized to high priority by DWR in 2019. Carpinteria Valley Water District is leading the GSA in cooperation with the City of Carpinteria, County of Ventura and Santa Barbara County Water Agency. The GSA is working to prepare a GSP by its 2024 deadline (5 years from reprioritization). Carpinteria Valley Water District currently monitors water level at 12 wells as part of the California Statewide Groundwater

Elevation Monitoring (CASGEM) program. Discrete data are collected every other month, and links to locate these water level data are provided in Table 2.

Table 2: General Carpinteria Groundwater Basin information and associated links.

CARPINTERIA GROUNDWATER BASIN INFORMATION: ***Data from DWR SGMA Basin Prioritization Dashboard https://gis.water.ca.gov/app/bp-dashboard/final***	
Groundwater Basin Surface Area (mi^2)	12.7
DWR Basin Population in 2010:	14,854
Irrigated acres	2,867
GW Percent of Supply	69%
LINKS TO AVAILABLE BASIN INFORMATION AND WATER LEVEL DATA:	
• DWR Basin ID No. 3-018 Information	
• CASGEM Water Data Library	
• National Water Information System (NWIS) interactive map for Hydrologic Unit 18060013 Santa Barbara Coastal	
• Santa Barbara County Water Agency - South Coast Basins	
• Carpinteria Basin Groundwater Sustainability Agency (GSA)	

Montecito Groundwater Basin

The Montecito Groundwater Basin was reprioritized to medium priority by DWR in 2019. MWD has formed a GSA and is working to prepare a GSP by its 2024 deadline (5 years from reprioritization). Montecito Water District monitors water level at 13 wells as part of the CASGEM program. Discrete data are collected twice annually, usually in the spring and fall. Links to locate water level data are provided in Table 3.

Table 3: General Montecito Groundwater Basin information and associated links.

MONTECITO GROUNDWATER BASIN INFORMATION: ***Data from DWR SGMA Basin Prioritization Dashboard https://gis.water.ca.gov/app/bp-dashboard/final***	
Groundwater Basin Surface Area (mi^2)	9.8
DWR Basin Population in 2010:	9,667
Irrigated acres	706
GW Percent of Supply	45%
LINKS TO AVAILABLE BASIN INFORMATION AND WATER LEVEL DATA:	
• DWR Basin ID No. 3-049 Information	
• CASGEM Water Data Library	
• National Water Information System (NWIS) interactive map for Hydrologic Unit 18060013 Santa Barbara Coastal	
• Santa Barbara County Water Agency - South Coast Basins	
• Montecito Basin Groundwater Sustainability Agency (GSA)	

Santa Barbara Groundwater Basin

The Santa Barbara Groundwater Basin is designated very low priority and is not currently subject to SGMA. The City of Santa Barbara works in cooperation with the USGS to monitor water levels at 42 wells as part of the CASGEM program. Discrete data are collected at monthly intervals and links to locate these water level data are provided in Table 4.

Table 4: General Santa Barbara Groundwater Basin information and associated links.

SANTA BARBARA GROUNDWATER BASIN INFORMATION: ***Data from DWR SGMA Basin Prioritization Dashboard https://gis.water.ca.gov/app/bp-dashboard/final***	
Groundwater Basin Surface Area (mi^2)	9.6
DWR Basin Population in 2010:	63,896
Irrigated acres	1
GW Percent of Supply	3%
LINKS TO AVAILABLE BASIN INFORMATION AND WATER LEVEL DATA:	
• DWR Basin ID No. 3-017 Information	
• CASGEM Water Data Library	
• National Water Information System (NWIS) interactive map for Hydrologic Unit 18060013 Santa Barbara Coastal	
• Santa Barbara County Water Agency - South Coast Basins	
• City of Santa Barbara	

Foothill Groundwater Basin

The Foothill Groundwater Basin is considered very low priority and is not currently subject to SGMA. The City of Santa Barbara works in cooperation with the USGS to monitor water levels at 9 wells as part of the CASGEM program. Discrete data are collected at monthly intervals and links to locate these water level data are provided in Table 5.

Table 5: General Foothill Groundwater Basin information and associated links.

FOOTHILL GROUNDWATER BASIN INFORMATION: ***Data from DWR SGMA Basin Prioritization Dashboard https://gis.water.ca.gov/app/bp-dashboard/final***	
Groundwater Basin Surface Area (mi^2)	4.9
DWR Basin Population in 2010:	16,570
Irrigated acres	5
GW Percent of Supply	8%
LINKS TO AVAILABLE BASIN INFORMATION AND WATER LEVEL DATA:	
• DWR Basin ID No. 3-053 Information	
• CASGEM Water Data Library	
• National Water Information System (NWIS) interactive map for Hydrologic Unit 18060013 Santa Barbara Coastal	
• Santa Barbara County Water Agency - South Coast Basins	
• City of Santa Barbara	

Goleta Groundwater Basin

The Goleta Groundwater Basin is considered very low priority under SGMA and was adjudicated in 1994. Goleta Water District works in cooperation with the USGS to monitor water levels at 47 wells as part of the CASGEM program. Discrete data are collected twice annually, usually in the spring and fall. Links to locate these water level data are provided in Table 6.

Table 6: General Goleta Groundwater Basin information and associated links.

GOLETA GROUNDWATER BASIN INFORMATION: ***Data from DWR SGMA Basin Prioritization Dashboard https://gis.water.ca.gov/app/bp-dashboard/final***	
Groundwater Basin Surface Area (mi^2)	14.4
DWR Basin Population in 2010:	48
Irrigated acres	575
GW Percent of Supply	34%
LINKS TO AVAILABLE BASIN INFORMATION AND WATER LEVEL DATA:	
• DWR Basin ID No. 3-016 Information	
• CASGEM Water Data Library	
• National Water Information System (NWIS) interactive map for Hydrologic Unit 18060013 Santa Barbara Coastal	
• Santa Barbara County Water Agency - South Coast Basins	
• Goleta Water District	

Santa Ynez River Valley Groundwater Basin

Groundwater monitoring in the Santa Ynez River Valley Groundwater Basin has historically been completed by SBCWA in cooperation with the USGS. SBCWA is identified as the designated monitoring entity for CASGEM, and as of 2019, has assumed water level data collection activity from the USGS throughout the basin. In addition, the U.S. Bureau of Reclamation (USBR) collects water level data monthly along the Santa Ynez River and the City of Lompoc monitors groundwater levels twice annually. Water supply sources in the Santa Ynez River Valley Groundwater Basin consist of groundwater, local surface water, and imported state water. The available quantity of surface and imported water is a result of seasonal precipitation and storage, and directly affects groundwater extraction.

The Santa Ynez River Valley Basin is defined by DWR as a medium priority basin. The Santa Ynez River Water Conservation District (SYRWCD), in cooperation with the SBCWA and other local agencies, led the formation of three separate GSAs to represent three Management Areas. These Management Areas are based on hydrogeologic and jurisdictional boundaries, and are hydraulically interconnected. Within each Management Area, there are various sub-basins with differing hydrogeological characteristics (Figure 2). The Santa Ynez River Alluvium is a layer of alluvial material that follows the course of the Santa Ynez River through all three Management Areas.

Attachment B illustrates the active County monitoring network and representative hydrographs for wells within the basin. Links to locate water level data are provided in Table 7.

Table 7: General Santa Ynez River Valley Groundwater Basin information and associated links.

SANTA YNEZ RIVER VALLEY GROUNDWATER BASIN INFORMATION: ***Data from DWR SGMA Basin Prioritization Dashboard https://gis.water.ca.gov/app/bp-dashboard/final***	
Groundwater Basin Surface Area (mi^2)	319.0
DWR Basin Population in 2010:	75,446
Irrigated acres	20,485
GW Percent of Supply	94%
LINKS TO AVAILABLE BASIN INFORMATION AND WATER LEVEL DATA:	
• DWR Basin ID No. 3-015 Information	
• CASGEM Water Data Library	
• National Water Information System (NWIS) interactive map for Hydrologic Unit 18060010 Santa Ynez	
• Santa Barbara County Water Agency - Santa Ynez River Valley	
• Annual Engineering and Survey Report on Water Supply Conditions of the Santa Ynez River WCD	
• Santa Ynez River Valley Groundwater Sustainability Agencies (GSA)	

Western Management Area

The Western Management Area contains the Lompoc Terrace sub-basin, the Lompoc Plains sub-basin, the Lompoc Uplands sub-basin, and a portion of the Santa Ynez River Alluvium. Water levels within the Lompoc Uplands have continued to decline for the period of available record starting in 1930 and have decreased by about 6 feet in the past 10 years. The Central and Eastern Lompoc Plain have decreased by about 6 feet in 10 years, while the Western Plains remained fairly stable with some wells showing a 10-year increase. Water levels within the alluvium along the river have historically remained generally stable as a result of direct recharge from the Santa Ynez River.

Central Management Area

The Central Management Area contains the Buellton Uplands sub-basin and a portion of the Santa Ynez River Alluvium. Water levels in the shallow wells within the alluvium are stable, with little fluctuation for the period of record. The remainder of this management area has historically been fairly stable, fluctuating with precipitation. The 10-year water level comparison for both shallow and deep wells north of the river alluvium in this management area indicate declining water levels.

Eastern Management Area

The Eastern Management Area contains the Santa Ynez Uplands sub-basin and a portion of the Santa Ynez River Alluvium. Water levels throughout this management region react differently to land use and recharge. Generally, water levels in the western portion have dropped in recent years, and are similar to those observed following the drought of 1984 to 1990. It may require consecutive years of average or above average precipitation to reverse the trend. Water levels within the uplands and foothills to the east have historically remained stable, showing some gradual declines in recent years

as a result of the drought. The 10-year water level comparison for a majority of the wells in this management area indicate declining water levels.

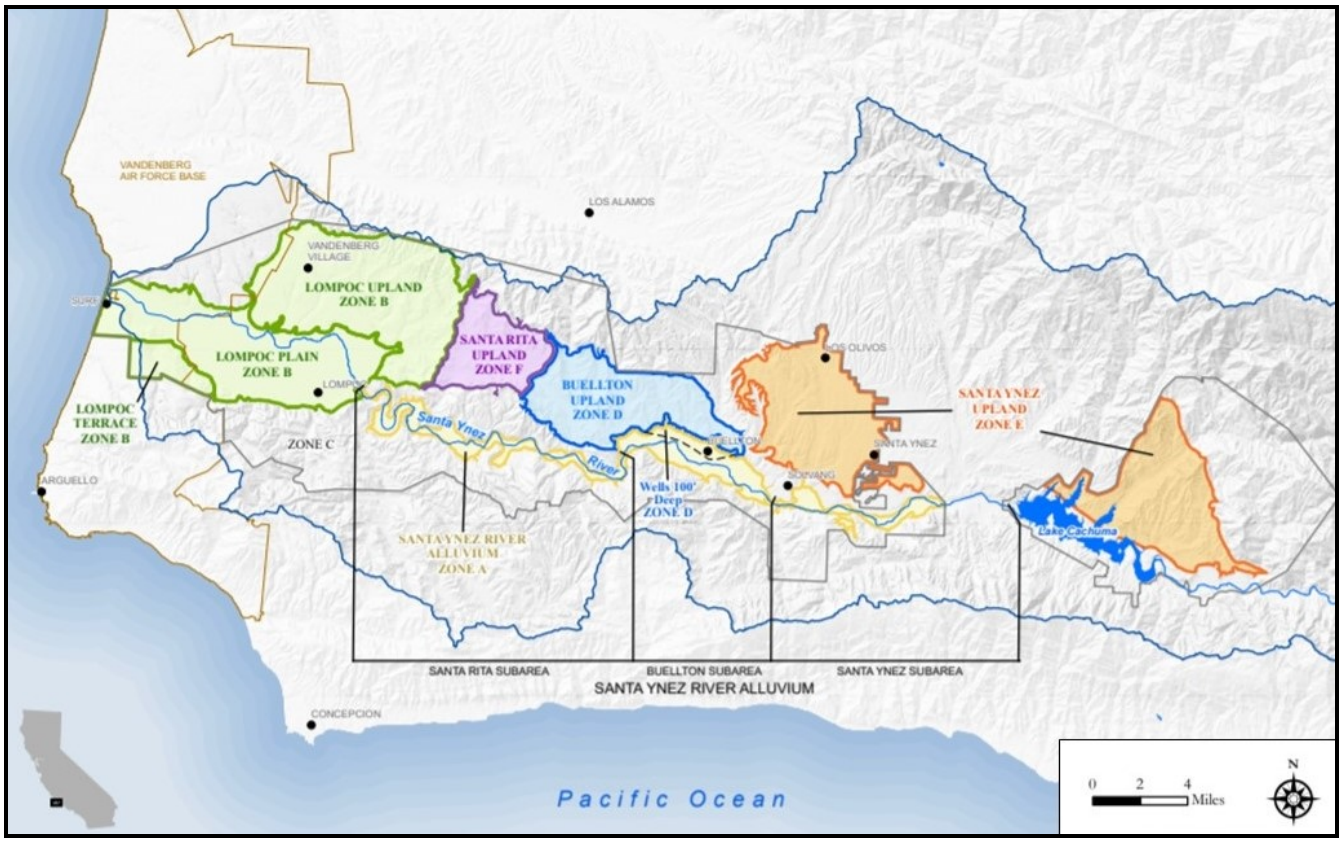


Figure 2: Groundwater recharge zones of Santa Ynez River Valley Basin. Image by Stetson Engineers.

San Antonio Creek Valley Groundwater Basin

Groundwater monitoring throughout the basin has historically been conducted by SBCWA in cooperation with the USGS. SBCWA is identified as the designated monitoring entity for CASGEM. As a medium priority basin, the San Antonio Basin GSA has been formed and a GSP is currently under development. Except for wells monitored in compliance with CASGEM, the San Antonio Basin GSA has assumed responsibility for maintaining a water level network within this basin. Groundwater is the only water supply source within the basin. Land within the valley is used primarily for agriculture, and production shifted in the 1980s from non-irrigated pastureland to irrigated crops and vineyards. This land use change resulted in an increase in groundwater withdrawals, which has exceeded recharge and reduced storage within the aquifer. Water level declines in some locations have been greater than 100 feet since the 1950s and available data indicate levels continue to decline.

Attachment C illustrates the active monitoring network from 2019 and representative hydrographs for wells within the basin. The monitoring network is currently being evaluated by the GSA, and a reduced number of wells were measured in spring 2020. Links to locate water level data are provided in Table 8.

Table 8: General San Antonio Creek Valley Groundwater Basin information and associated links.

SAN ANTONIO CREEK VALLEY GROUNDWATER BASIN INFORMATION: ***Data from DWR SGMA Basin Prioritization Dashboard https://gis.water.ca.gov/app/bp-dashboard/final***	
Groundwater Basin Surface Area (mi^2)	128.0
DWR Basin Population in 2010:	2,168
Irrigated acres	12
GW Percent of Supply	97%
LINKS TO AVAILABLE BASIN INFORMATION AND WATER LEVEL DATA:	
• DWR Basin ID No. 3-014 Information	
• CASGEM Water Data Library	
• National Water Information System (NWIS) interactive map for Hydrologic Unit 18060009 San Antonio	
• Santa Barbara County Water Agency - San Antonio	
• San Antonio Creek Valley Water Availability Study	
• San Antonio Basin Groundwater Sustainability Agency (GSA)	

Santa Maria River Valley Groundwater Basin

The Santa Maria River Valley Groundwater Basin resides in both Santa Barbara and San Luis Obispo Counties. Groundwater monitoring within Santa Barbara County has historically been conducted by the SBCWA in cooperation with the USGS, the Santa Maria Valley Water Conservation District (SMVWCD), and the Twitchell Management Authority (TMA). The TMA currently monitors water level as part of the CASGEM program. A reduced number of wells were measured in Water Year 2019, and the network is currently being evaluated by SMVWCD, which will soon resume a more complete data collection effort throughout the basin. The groundwater basin is defined by DWR as very low priority. The basin underwent a lengthy process of adjudication (Santa Maria Valley Water Conservation District vs. City of Santa Maria et al.), with an original Judgment issued in 2008 and an amended Judgment issued in 2014.

Water supply sources for water users in the Santa Maria River Valley Groundwater Basin within Santa Barbara County include both groundwater and imported State water. Surface water stored in Twitchell Reservoir is also used to supplement groundwater recharge to the basin when available. Water levels in the basin began to noticeably decline in about 1945, coinciding with an increase in agricultural acreage and urban population. Levels have fluctuated significantly throughout the basin in recent decades as a result of fluctuations in rainfall amounts, land use changes, and Twitchell Reservoir recharge availability. Water levels throughout the basin have declined since the beginning of the most recent drought in 2012, with noticeable recharge evident recently along the Sisquoc River.

Attachment D illustrates the active 2019 monitoring network and representative hydrographs for wells within the basin. Links to locate water level data are provided in Table 9.

Table 9: General Santa Maria River Valley Groundwater Basin information and associated links.

SANTA MARIA RIVER VALLEY GROUNDWATER BASIN INFORMATION: ***Data from DWR SGMA Basin Prioritization Dashboard https://gis.water.ca.gov/app/bp-dashboard/final***	
Groundwater Basin Surface Area (mi^2)	288.0
DWR Basin Population in 2010:	193,283
Irrigated acres	53,430
GW Percent of Supply	83%
LINKS TO AVAILABLE BASIN INFORMATION AND WATER LEVEL DATA:	
• DWR Basin ID No. 3-012 Information	
• CASGEM Water Data Library	
• National Water Information System (NWIS) interactive map for Hydrologic Unit 18060008 Santa Maria	
• 2019 Annual Report of Hydrogeologic Conditions, Water Requirements, Supplies and Disposition	
• Santa Barbara County Water Agency - Santa Maria River Valley	

Cuyama Valley Groundwater Basin

The Cuyama Valley Groundwater Basin resides within four counties: Santa Barbara, San Luis Obispo, Kern, and Ventura. Groundwater monitoring within Santa Barbara County has historically been completed by the SBCWA in cooperation with the USGS. In January, 2020 all CASGEM wells previously monitored by SBCWA were migrated to the Cuyama Basin GSA. The GSA has assumed all water level data collection activity within the Santa Barbara County portion of the basin from the SBCWA. Limited data were collected during spring 2020.

Groundwater is the only water supply source available within the Cuyama Valley Groundwater Basin. Land use in the valley has changed significantly in recent decades, shifting from non-irrigated pastureland and dry farming, to irrigated potato and alfalfa farming following the expansion of the petroleum industry in 1940. Agriculture further evolved with the introduction of grain and carrot crops around 1970, and orchards and vineyards around 1985. Continued groundwater withdrawals during the last 80 years have exceeded recharge in many parts of the basin and reduced storage within the aquifer.

The Cuyama Basin is defined by DWR as a high priority, critically overdrafted basin. The Cuyama Basin GSA has submitted a GSP, which is currently undergoing DWR review. As part of GSP development, six “threshold regions”, illustrated in Figure E, were defined within the basin based on geology, land use, and groundwater conditions for the purpose of setting minimum water level thresholds. The hydraulic response within each region to natural and anthropogenic activity varies, although each region may be at least partially connected hydraulically.

Attachment E illustrates the active monitoring network from 2019 and representative hydrographs for wells within the Cuyama Valley aquifer system. Links to locate water level data are provided in Table 10.

Table 10: General Cuyama Valley Groundwater Basin information and associated links.

CUYAMA VALLEY GROUNDWATER BASIN INFORMATION: ***Data from DWR SGMA Basin Prioritization Dashboard https://gis.water.ca.gov/app/bp-dashboard/final***	
Groundwater Basin Surface Area (mi^2)	230.0
DWR Basin Population in 2010:	1,259
Irrigated acres	15,279
GW Percent of Supply	100%
LINKS TO AVAILABLE BASIN INFORMATION AND WATER LEVEL DATA:	
• DWR Basin ID No. 3-013 Information	
• CASGEM Water Data Library	
• National Water Information System (NWIS) interactive map for Hydrologic Unit 18060007 Cuyama	
• Santa Barbara County Water Agency - Cuyama Valley	
• Cuyama Valley Basin Data Management System	
• Cuyama Valley Water Availability Study	
• Cuyama Basin Groundwater Sustainability Agency (GSA)	

Northwestern Threshold Region

The Northwestern Threshold Region has historically been characterized by rangeland with limited development. In 2015, a new vineyard was developed within the eastern portion of this sub-basin. A limited data set of shallow wells indicates that water levels have historically remained fairly stable throughout this region. However, deep wells within the vineyard have experienced continued declines as a result of recent pumping, with water levels dropping as much as 35 feet since pumping began in 2016.

Western Threshold Region

There is little agricultural use in the Western Threshold Region and minimal use of groundwater. Water levels in shallow wells are close to land surface and based on a limited data set, have generally remained stable.

Central Threshold Region

The majority of the basin's agricultural use is located within the Central Threshold Region. Water levels within this region have been steadily declining since the late 1940s, with long term hydrographs showing declines of nearly 300 feet. Recent monitoring indicates that levels continue to decline in this region.

Eastern Threshold Region

There is moderate agricultural groundwater use in the Eastern Threshold Region. Water levels within this region tend to react quickly to precipitation, showing rapid recharge during times of increased precipitation. However, recent water level data indicate that the aquifer has not rebounded following the most recent drought and have continued to decline since 2012. Consecutive years of average or above average precipitation may be needed for this region to rebound to pre-drought conditions.

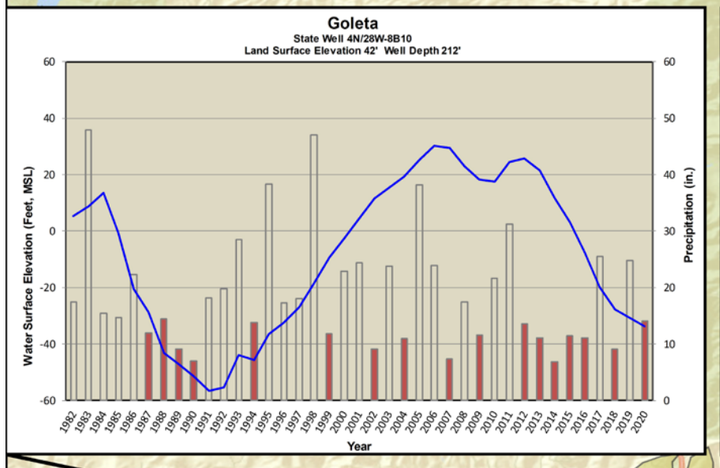
Southeastern Threshold Region

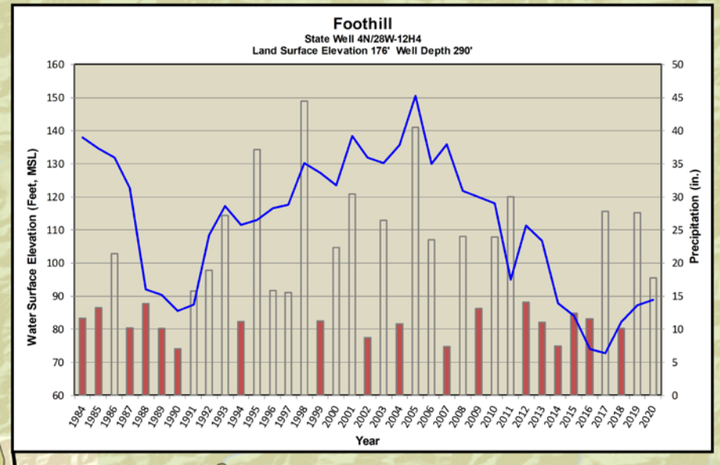
A small area of the Southeastern Threshold Region is located within Santa Barbara County, with the remainder located within Ventura County. Water levels within this region are shallow, with depth to water about 50 feet.

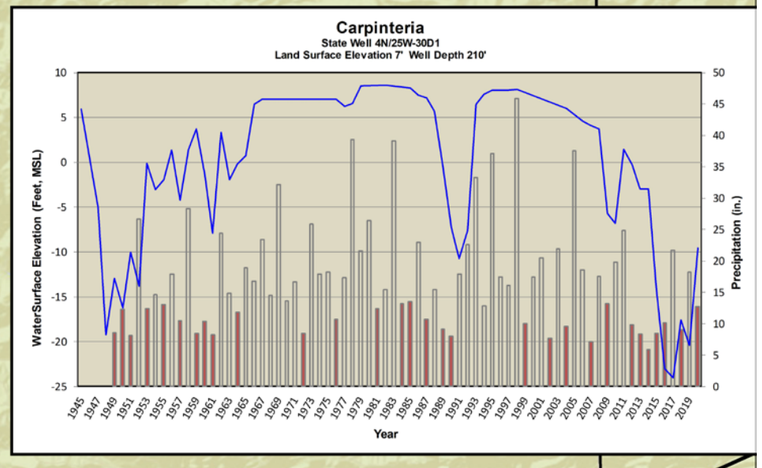
Badlands Threshold Region

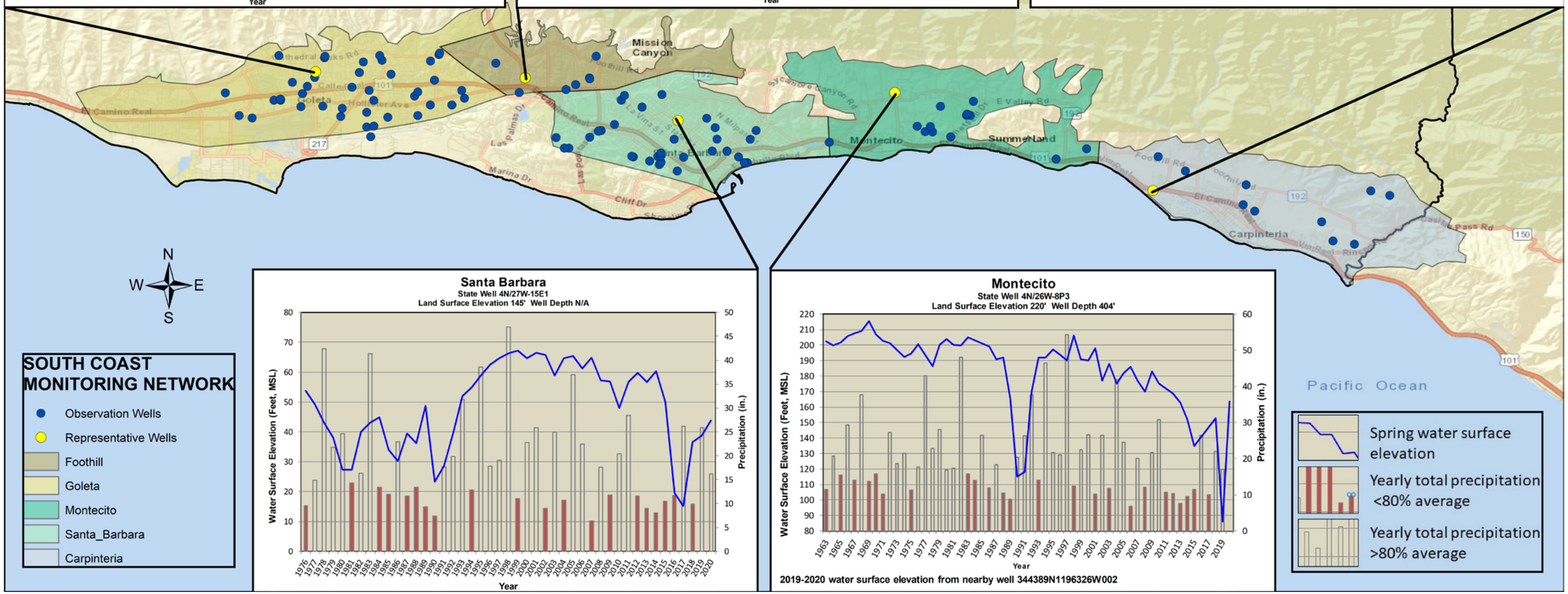
The Badlands Threshold Region is not located within Santa Barbara County. There is little agriculture or development in this area and groundwater use is therefore minimal.

ATTACHMENT A - South Coast Groundwater Basins







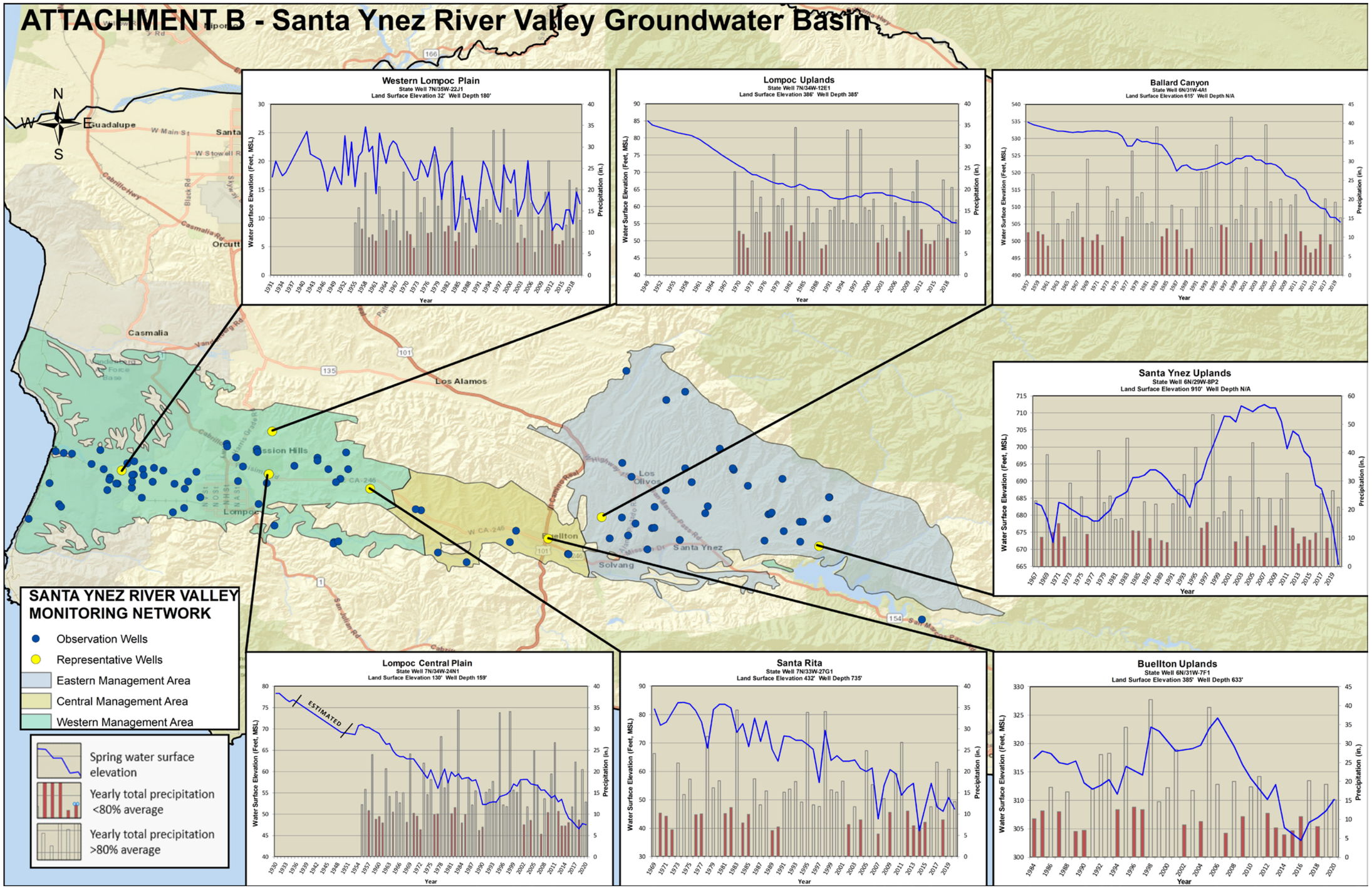


SOUTH COAST MONITORING NETWORK

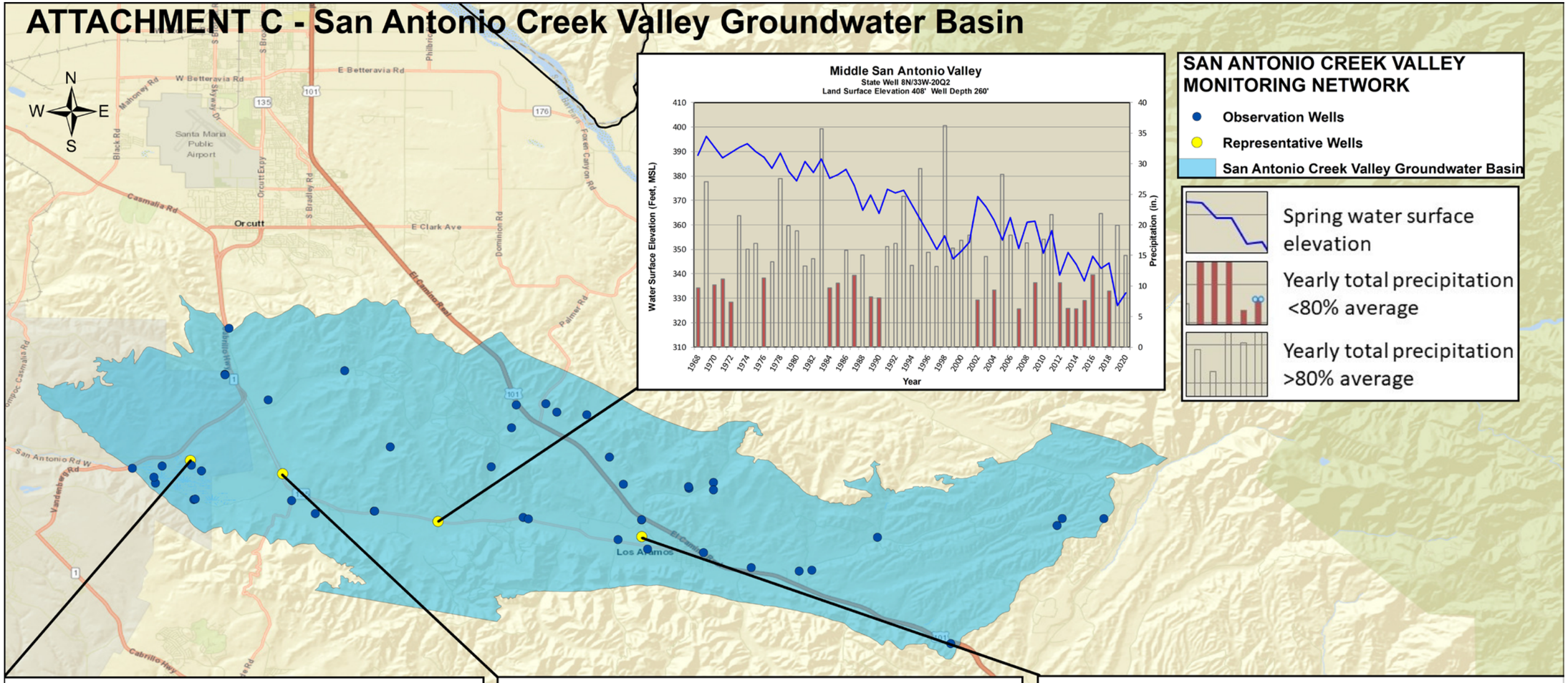
- Observation Wells
- Representative Wells
- Foothill
- Goleta
- Montecito
- Santa_Barbara
- Carpinteria

- Spring water surface elevation
- Yearly total precipitation <80% average
- Yearly total precipitation >80% average

ATTACHMENT B - Santa Ynez River Valley Groundwater Basin



ATTACHMENT C - San Antonio Creek Valley Groundwater Basin



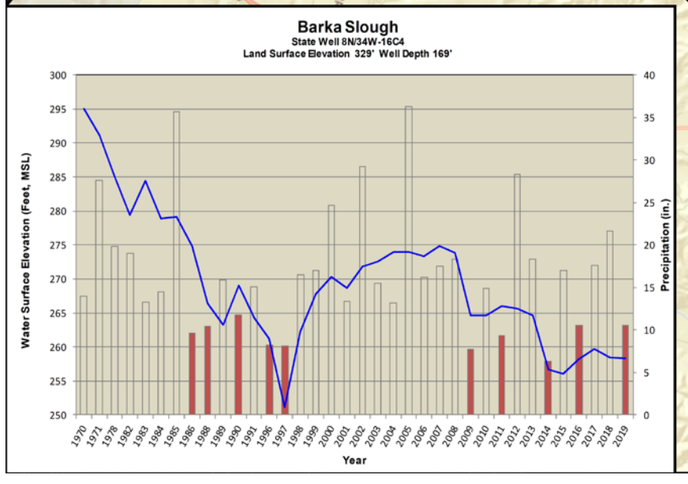
SAN ANTONIO CREEK VALLEY MONITORING NETWORK

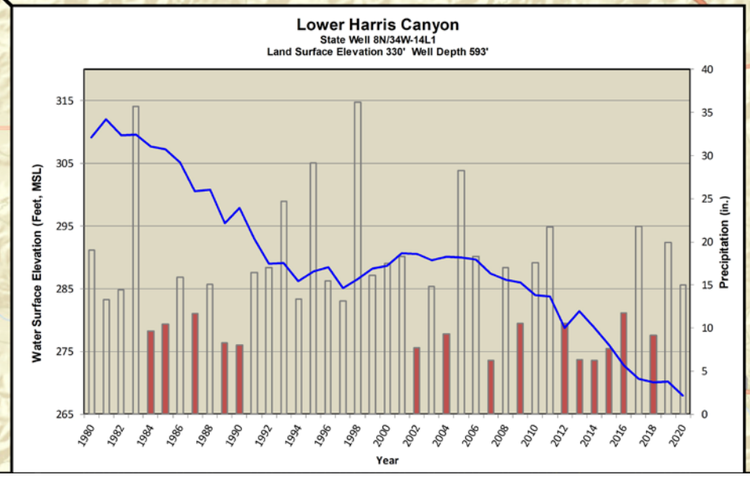
- Observation Wells
- Representative Wells
- San Antonio Creek Valley Groundwater Basin

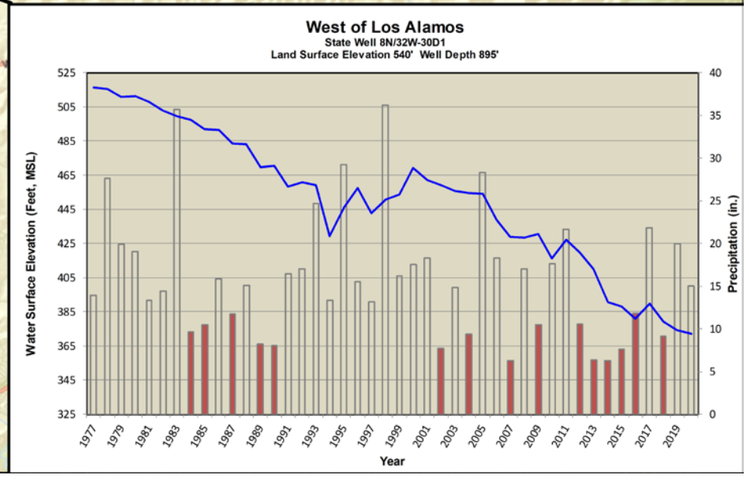
Spring water surface elevation

Yearly total precipitation <80% average

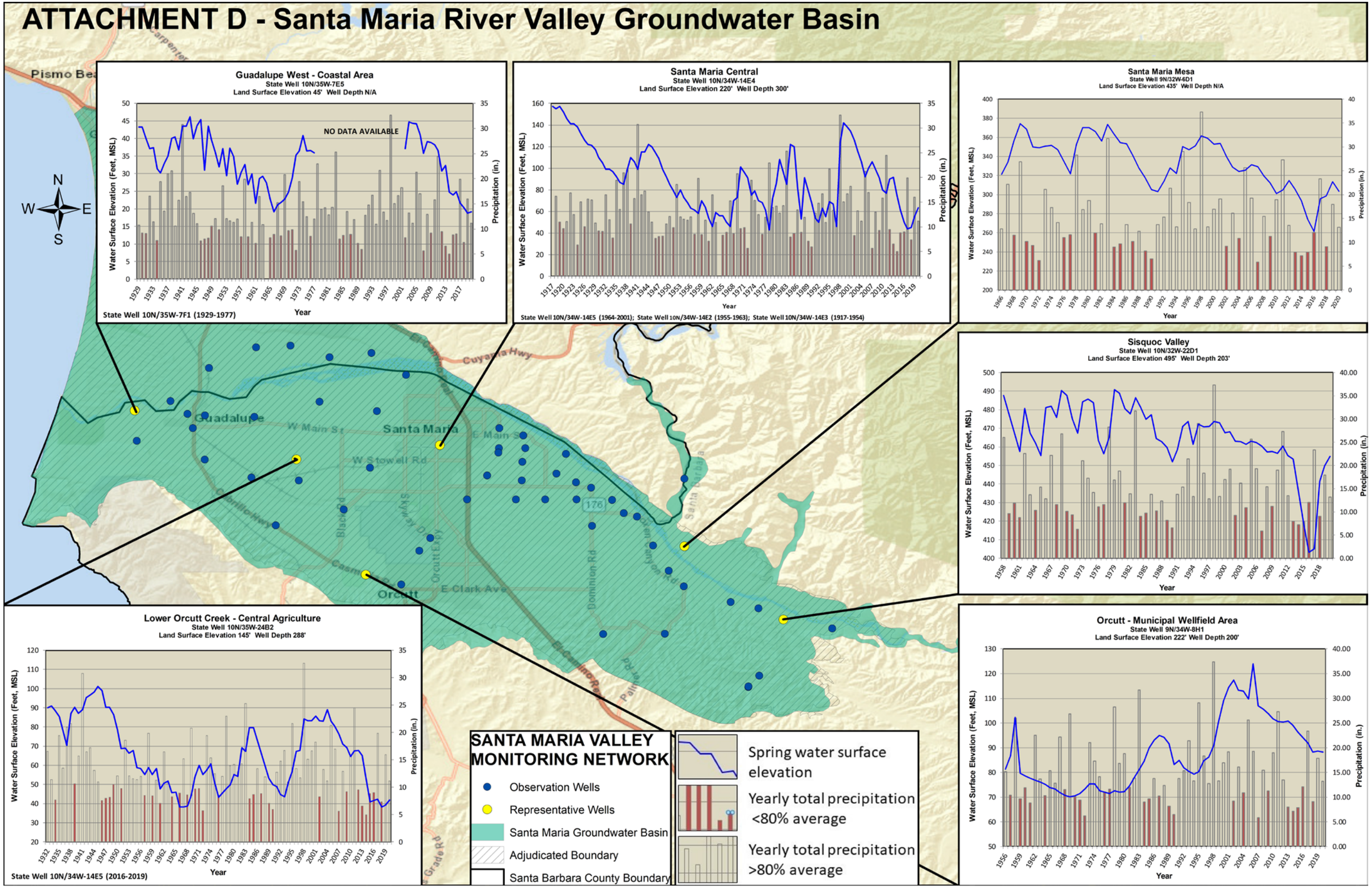
Yearly total precipitation >80% average







ATTACHMENT D - Santa Maria River Valley Groundwater Basin



Guadalupe West - Coastal Area
State Well 10N/35W-7E5
Land Surface Elevation 45' Well Depth N/A

State Well 10N/35W-7F1 (1929-1977)

Santa Maria Central
State Well 10N/34W-14E4
Land Surface Elevation 220' Well Depth 300'

State Well 10N/34W-14E5 (1964-2001); State Well 10N/34W-14E2 (1955-1963); State Well 10N/34W-14E3 (1917-1954)

Santa Maria Mesa
State Well 9N/32W-6D1
Land Surface Elevation 435' Well Depth N/A

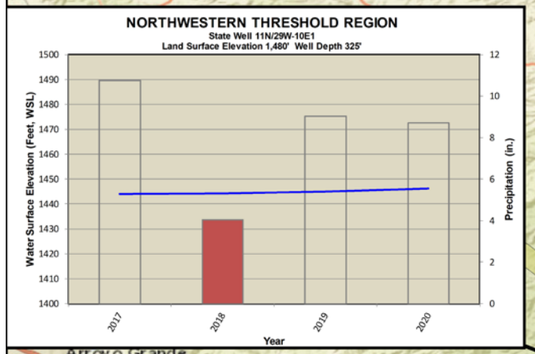
Sisquoc Valley
State Well 10N/32W-22D1
Land Surface Elevation 495' Well Depth 203'

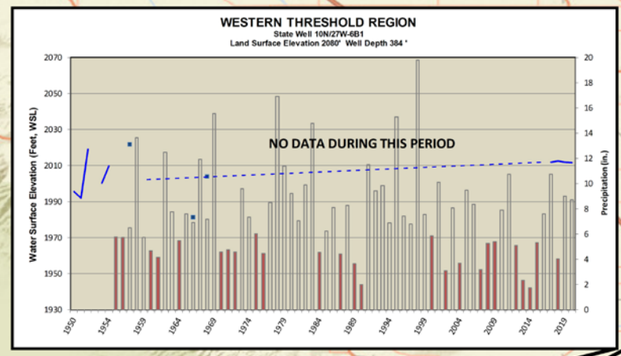
Lower Orcutt Creek - Central Agriculture
State Well 10N/35W-24B2
Land Surface Elevation 145' Well Depth 288'

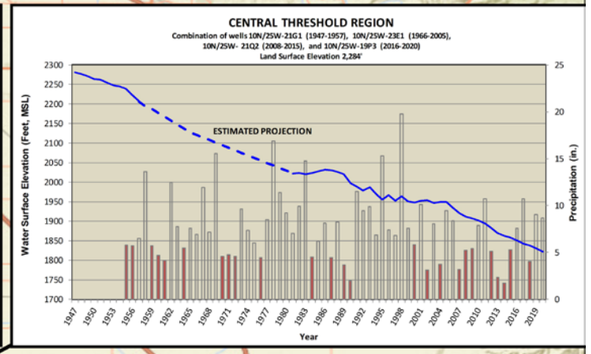
State Well 10N/34W-14E5 (2016-2019)

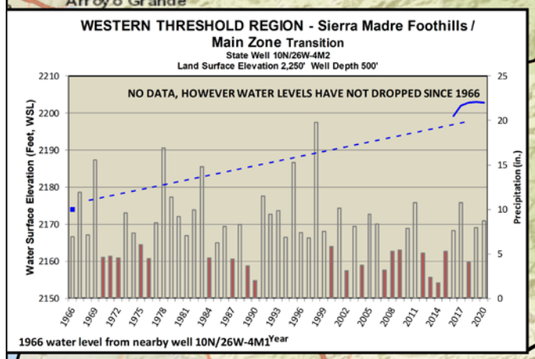
Orcutt - Municipal Wellfield Area
State Well 9N/34W-8H1
Land Surface Elevation 222' Well Depth 200'

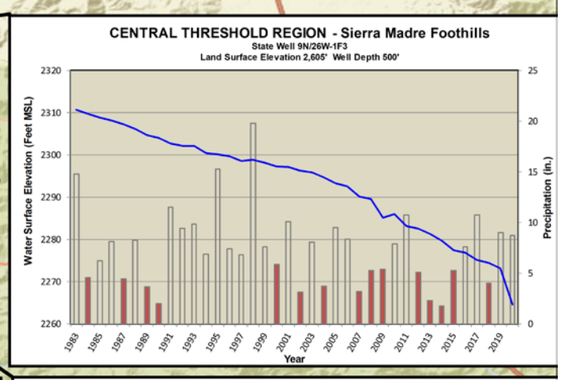
ATTACHMENT E - Cuyama Valley Groundwater Basin

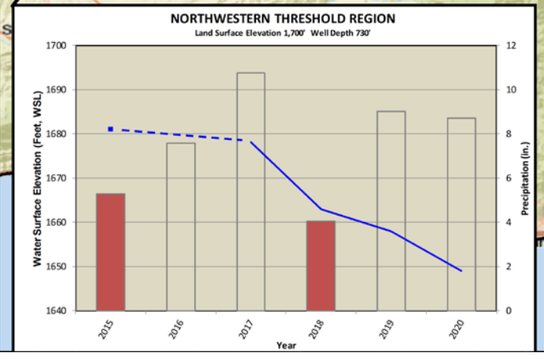


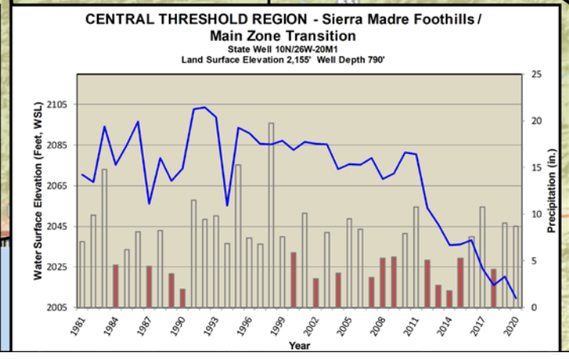


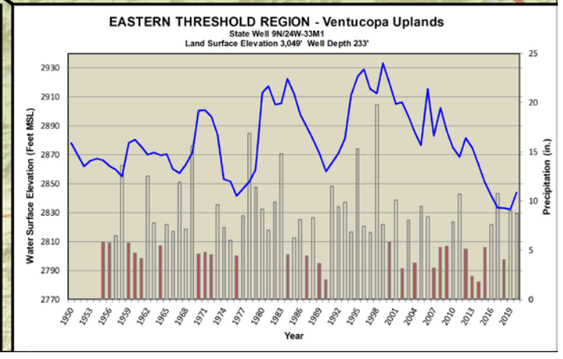












Attachment F - PUBLIC ONLINE GROUNDWATER DATA RESOURCES

California Statewide Groundwater Elevation Monitoring

The California Statewide Groundwater Elevation Monitoring (CASGEM) program was developed in 2009 by the Department of Water Resources to track and record groundwater level data and trends in basins throughout California. Designated monitoring entities are responsible for data collection and submittal within each of these basins. Groundwater level data used to populate the *Historical Groundwater Level Data* portion of this dataset was extracted from other resources such as the National Water Information System. The following web addresses will provide access to water level data in Santa Barbara County through the use of interactive maps and direct query:

- Interactive map illustrating groundwater basins and monitoring entities throughout California.
- CASGEM Water Data Library to find monitoring stations for a specific area.
- Select groundwater station retrieval parameters within the County of Santa Barbara by well name, well number, or basin.
- A quick guide to locating water level data in the CASGEM database.

Groundwater Watch

The California Active Water Level Network is hosted by the USGS and currently lists 273 groundwater monitoring locations in Santa Barbara County. Data are available for both continuous real-time water level elevation and discrete measurements. The network available on this interactive map includes wells measured at least once within the last 13 months by the USGS or by USGS cooperative agencies following USGS approved equipment and measurement protocols.

- Groundwater Watch, Santa Barbara County

National Water Information System

The National Water Information System is hosted by the USGS and contains an extensive database of USGS approved water level data. These data were collected by USGS personnel or by cooperative agencies familiar with the protocols and techniques used by the USGS.

- NWIS - USGS Groundwater Data for California
- Table of all groundwater level data for 4,291 sites within Santa Barbara County
- NWIS groundwater data tutorial for accessing historical and current data.