



Sonoma Valley  
Groundwater  
Management Program

## 2014 Guide to Groundwater in Sonoma Valley

Five Year Review Update

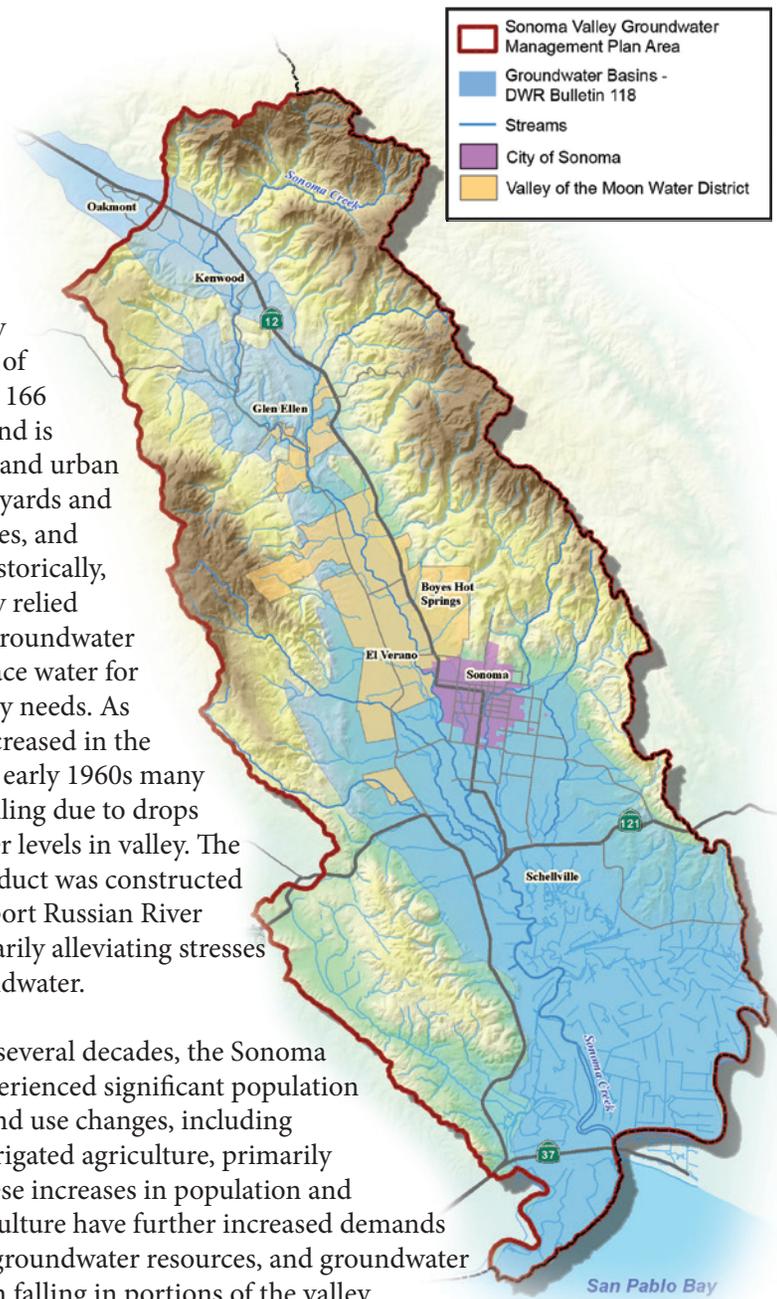
Thank you for taking the time to read this important brief on Sonoma Valley's groundwater resources. Monitoring of groundwater levels over time indicates that groundwater depletion and associated groundwater level declines are occurring in wells in Sonoma Valley.

The recent drought is likely to worsen already declining groundwater conditions, requiring urgent action from all residents of Sonoma Valley to decrease water use by implementing efficiency measures. It is equally important to address the long-term depletion of our local groundwater resources by implementing long-lasting conservation measures and exploring integrated water management programs that protect groundwater quantity and quality.

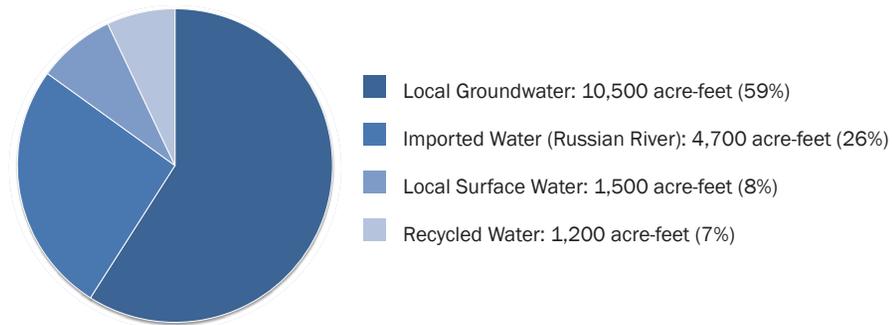
This brochure provides updates on groundwater conditions and ongoing and planned efforts by local stakeholders to better manage and sustain groundwater resources in Sonoma Valley. Keep reading to learn what you can do as a community member to help, and to find helpful information on what the groundwater level declines may mean to you.

Sonoma Valley covers an area of approximately 166 square miles and is home to rural and urban residents, vineyards and wineries, dairies, and businesses. Historically, Sonoma Valley relied primarily on groundwater and local surface water for its water supply needs. As population increased in the late 1950s and early 1960s many wells began failing due to drops in groundwater levels in valley. The Sonoma Aqueduct was constructed in 1963 to import Russian River water, temporarily alleviating stresses on local groundwater.

Over the past several decades, the Sonoma Valley has experienced significant population growth and land use changes, including increases in irrigated agriculture, primarily vineyards. These increases in population and irrigated agriculture have further increased demands on water and groundwater resources, and groundwater levels are again falling in portions of the valley.

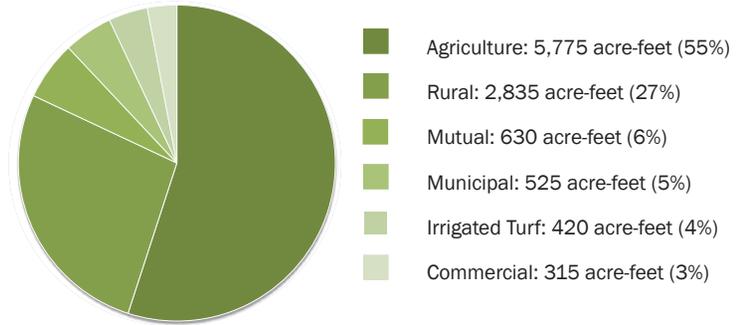


### Sonoma Valley 2012 Water Demands by Supply Sources



The Sonoma Valley contains approximately 2,000 domestic, agricultural, and public supply wells, and the primary source of community water supply is groundwater, making up nearly 60% of the supply. Another major source of water in Sonoma Valley is imported Russian River provided by the Sonoma County Water Agency (Water Agency) and delivered to the City of Sonoma and Valley of the Moon Water District customers. Other sources of water supply in Sonoma Valley include recycled water that is treated and supplied by the Sonoma Valley County Sanitation District and local surface water.

### Sonoma Valley Groundwater Use



Of the total estimated 10,500 acre-feet of groundwater pumped in 2012, agricultural irrigation was the largest use of groundwater in Sonoma Valley. An acre-foot is the amount of water that would cover an acre with one foot of water, approximately 325,600 gallons. Rural domestic pumping (from individual private wells) constituted the second largest groundwater use in Sonoma Valley, followed by Municipal, Small Commercial Systems, and Mutual/Private Systems uses, and irrigation of golf courses and parks.

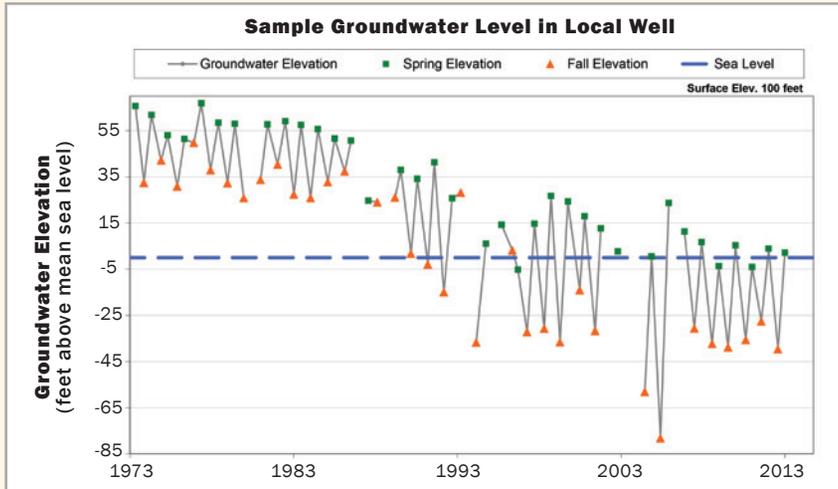
# The Status of Groundwater in Sonoma Valley

## THE BASIN

The Sonoma Valley has complex geology consisting of very old marine rocks that have been overlain by volcanic flows and alluvial gravel, sand and clay. Many of the geologic formations have undergone tectonic alterations which can change how groundwater moves. The complexity of the subsurface geology in the Sonoma Valley means that groundwater conditions and water levels in wells can be highly variable over very short distances.

## GROUNDWATER LEVELS

Groundwater in Sonoma Valley generally occurs in shallow aquifers (layers of permeable sediments and rocks that contain groundwater less than 200 feet deep) and deeper aquifers (greater than 200 feet deep), separated by relatively thick clay beds. Groundwater levels within the shallow aquifer are generally steady, with the exception of the El Verano/Fowler Creek area, where localized declining trends are observed.

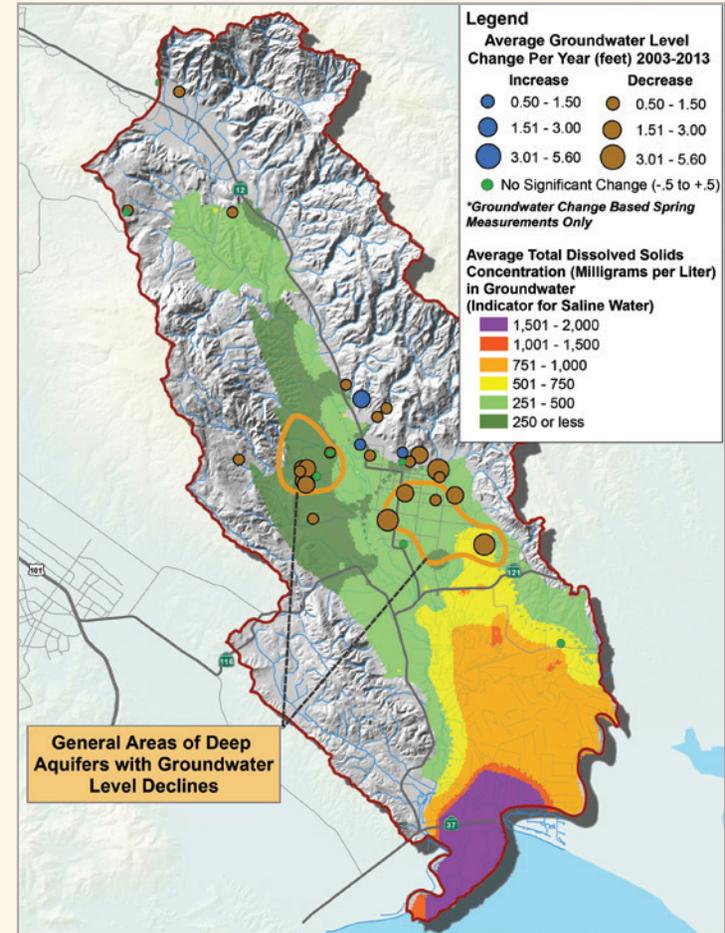


Deep zone groundwater level declines are present primarily southeast of the City of Sonoma and in the El Verano/Fowler Creek area. The two areas of decline have persisted for several decades or more, and appear to be expanding and deepening. These deep zone declines indicate that groundwater withdrawals are occurring at a rate that exceeds natural recharge.

Groundwater levels in many wells in these two areas are declining at rates of several feet per year and have fallen well below sea level. The main uses of groundwater in these two areas are agricultural irrigation, rural domestic usage, and golf course irrigation (in the case of the El Verano/Fowler Creek area).

## GROUNDWATER QUALITY

While groundwater quality is generally fairly good within Sonoma Valley, some naturally occurring elements do pose problems in certain areas. Of most concern is the presence of brackish or salty groundwater beneath the southernmost Sonoma Valley, generally south of Highway 116, which has historically affected wells located in southern Sonoma Valley. The continued declining trends of groundwater levels to the north of Highway 116 could draw the brackish groundwater further north, potentially affecting more northern wells and rendering groundwater unusable.



## WATER SUPPLY AND CLIMATE CHANGE

Studies of potential climate change impacts on the San Francisco Bay Area indicate summers are likely to be longer and drier than in the past and rainfall is likely to be more variable. These conditions could decrease the reliability of our future water supply, and lead to increased water needs to cope with extended warmer summers.

# What's happening to Improve Water Supply Conditions in Sonoma Valley?

## SONOMA VALLEY GROUNDWATER MANAGEMENT PROGRAM

The current trend in declining groundwater levels were recognized in a study completed in 2006 by the U.S. Geological Survey, which was funded by the Sonoma County Water Agency. Using data and information from this study, the Sonoma Valley Groundwater Management Program (GMP) and Plan were developed by the Basin Advisory Panel. The Panel is a collaborative and diverse group of 20 stakeholders, including the Sonoma County Water Agency, the Valley of the Moon Water District (VOMWD), the City of Sonoma, local agriculture, dairies, private business enterprises, environmental groups, and domestic well users.

### MEETINGS

The Technical Advisory Committee (TAC) meets the second Wednesday of the month from 9:00 to 11:00am at the Valley of the Moon Water District Office, 19039 Bay Street, El Verano.

**Both meetings are open to the public. Find out more online at [www.sonomacountywater.org/svgw-meetings](http://www.sonomacountywater.org/svgw-meetings)**

The Sonoma Valley Groundwater Management Plan aims to locally and voluntarily manage, protect, and enhance groundwater resources for all beneficial uses, in a sustainable, environmentally sound, economical, and equitable manner for generations to come.

Since adopting the GMP in 2007, the Water Agency has applied for and received over \$7 million in grants for: water conservation (\$200,000), installation of monitoring wells and recharge mapping (\$418,000), stormwater detention and recharge (part of \$1.9 million grant), and recycled water (\$5 million).

Since the GMP has been implemented a number of studies have been completed, and coordinated groundwater level monitoring has expanded from 60 to 140 wells with 80 voluntary wells added. This extended monitoring network has refined our understanding of the areas of declining groundwater levels in Sonoma Valley (a summary of these findings can be found in the Five Year Review Report here [www.scwa.ca.gov/five-year-review](http://www.scwa.ca.gov/five-year-review)).

## THE GMP AND GROUNDWATER DEPLETION

The Plan identifies a range of water management options, including groundwater recharge, increased conservation, and greater use of recycled water to help balance water demand with water supply. All four methods are needed to achieve a sustainable water supply for Sonoma Valley.

### Increase Water Conservation and Water Use Efficiency

- City of Sonoma, VOMWD and Water Agency have established programs to promote water use efficiency and conservation
- In addition to local efforts regional programs are available through the Sonoma Marin Saving Water Partnership, the Master Gardeners, and others.

### Increase Use of Recycled Water to Offset Groundwater Use

- Recycled water has been expanded for agricultural irrigation and will continue to expand over the next several decades

### Groundwater Banking with Russian River Water

- A feasibility study was completed in 2013 and pilot project plans are being developed in 2014

### Stormwater Capture and Recharge

- A \$1.9 million grant from the California Department of Water Resources for a multi-benefit project is being evaluated for the Sonoma area. The project could reduce the risk of flooding while allowing for groundwater recharge.

The Basin Advisory Panel has recommended exploring alternative options for addressing groundwater depletion in Sonoma Valley, including potential additional technical solutions, planning and legal options, institutional and funding approaches.

*Congressman Mike Thompson visits the Napa Sonoma Salt Marshes, where a new pipeline delivers recycled water to Southern Sonoma Valley*



**Sonoma Valley currently meets more than half its water demand with local groundwater resources, and groundwater levels are declining in many areas.**

# We need your help!

## COMMUNICATE

Express your concerns and wishes to your elected officials and provide input at Panel and community meetings.

## PARTICIPATE IN ALTERNATIVES ANALYSIS

Contact the Water Agency to participate in evaluating alternatives for addressing groundwater depletion.

## CONSERVATION

Everyone can save water using simple steps. Inside your home fix drips and leaks, take shorter showers, and install water efficient fixtures (check with your water contractor for rebate programs). Landscape irrigation uses more than half the water in most settings, so consider replacing high water use landscaping (such as lawns) with native, drought resistant plants.

## MONITORING

If you are a well owner or user, consider determining the depth of your well, well pump intake depth, and depth to water in your well. Contact the Water Agency to have your well monitored for the water level – this information can help you avoid being surprised in the future and possibly expand the monitoring network.



## MORE INFORMATION

For more information on groundwater in Sonoma Valley, upcoming GMP meetings and resources for well users visit [www.sonomacountywater.org/svgroundwater](http://www.sonomacountywater.org/svgroundwater).

For information on local and regional water use efficiency programs visit the Sonoma Marin Saving Water Partnership website at [www.wateroff.org](http://www.wateroff.org).