

Sonoma County, California



ANNUAL REPORT 2018

With our first Annual Report in 2018 we aim to create a starting place for future reports to build on, while also sharing key points from Sonoma County's progress so far -what it is doing right and its greatest concerns for the environment and sustainable tourism, as well as major developments from the past few years.

Geography & Topography

Sonoma County extends over 1,500 square miles, making it larger than the state of Rhode Island. It is home to 493,285 people, with approximately 33 percent of the population residing in Santa Rosa. Geographically, Sonoma County hosts 55 miles of coastline followed by rolling coastal mountains. A deep, flat valley cuts it through the center, following Highway 101 and housing the bulk of the population and metropolitan centers. Continuing east, there are a series of tall, steep, linear mountain ranges, including the Sonoma Mountains, Mayacamas Mountains, and the Girdle. Beyond that, Sonoma transitions into Napa Valley.

Climate-wise, Sonoma County enjoys a Warm-Summer Mediterranean climate, meaning we get hot, dry summers and wet but mild winters.

As a Destination

Though it is widely promoted as a wine destination, thanks to its size and diverse landscape Sonoma County has a wide range of attractions that bring in tourists from neighboring counties to distant countries. Outdoor enthusiasts have plenty of reasons to visit, with the beautiful Pacific coast, where diving for abalone and lobster is a way of life and redwood trees -the tallest trees in the world- naturally grow. Sonoma County also has an extensive state parks system, with 52 operational parks across the county, where visitors can hike and camp.

Agritourism is popular in Sonoma County which plays host to small scale farms and pastures where fresh fruit, vegetables, and meats can be purchased, right from the source. Farm stands and farmers markets are located in every town and city, with many restaurants stocking directly from these sources, making it easy to get delicious, farm-fresh food.

2017 Recap & Plans for 2018 & 2019

After becoming designated as a Sustainable Tourism Observatory in April of 2017, we spent much of the year preparing to launch into a full tourism observatory, we held many meetings with the aim to put in place a framework for future years to follow.

We held meetings in July and again on February 23rd of this year with our local working group and organizing committee including Norman Gilroy and Alain Pierrat to discuss our organizational development and align with the INSTO framework. The most recent meeting focused on the draft of this report and we discussed the sources, findings, and areas of focus. We also did quite a bit of networking outside our current working group, meeting with various local leaders in the community. We met with the organizer of the Sustainable Enterprise conference, The Farralon Institute, the Mayor of Healdsburg, Slow Food Sonoma, Citta Slow Sebastopol, the Center for Environmental Inquiry at Sonoma State

University, Inquiring Systems inc., a leader in fiscal sponsorships for nonprofits, and finally, we had a long and informative meeting with David Randle and Rebecca Tobias from the Blue Community Observatory after the December INSTO meeting in Madrid.

Our efforts were interrupted by the devastating fires that hit Sonoma and neighboring regions in October, but we remain focused on our planned goals for 2018 and 2019.

Our 2018 Objectives include:

- Continuing to develop a strong organizational base
- Implementing the fiscal sponsorship agreement with Inquiring Systems Inc.
- Holding our first Stakeholders' Workshop
- Attending a meeting with INSTO in Spain or London
- Interviewing approximately 20 sustainable wineries for our planned book
- Keeping the website up-to-date

Our 2019 Objectives are:

- Finish and publish the Sustainable Wineries book
- 2nd Stakeholders' Workshop
- Year Two annual report per new INSTO guidelines
- Conference attendance and networking

Data Collection:

Thanks to the wealth of data gathered by government and monitoring sources in the US – California in particular – we intend to focus on two specifics in our monitoring. First, the recovery efforts regarding the fires and how Sonoma in particular is tackling the issues regarding rebuilding, lack of housing, and the environmental impact the area has experienced. Second, focusing on the tourism aspect here, we are working on a book about sustainable wine practices which will allow us to track progress toward the goal Sonoma County has to become the first 100% sustainable wine area in the US.

October 2017 Firestorm

Around 10 o'clock pm on October 8th, 2017, in the midst of powerful winds and following the heels of a hot and dry summer, a series of fires broke out across Sonoma, Napa, and Lake counties. Within hours the fires had reached catastrophic levels, aided by hurricane force gusts of wind that could carry live embers for miles. Before dawn had broken, the fires had made it into populated residential areas, including downtown Santa Rosa, prompting evacuations on a scale never seen in California before.

The fires continued to rage for more than a week, mostly in uninhabited natural areas, but smoke pollution kept schools closed and people indoors, all the way into the South Bay. When all was said and done, 245,000 acres had been burned, 8,900 structures destroyed, and 43 lives tragically lost.

There is no doubt that Sonoma County will be dealing with the environmental and economic repercussions of this disaster for years to come. Through the rainy winter season concerns about landslides, polluted runoff, and contamination of waterways were raised. With approximately 100,000

people displaced, the already tenuous housing market is left with a lack of supply.

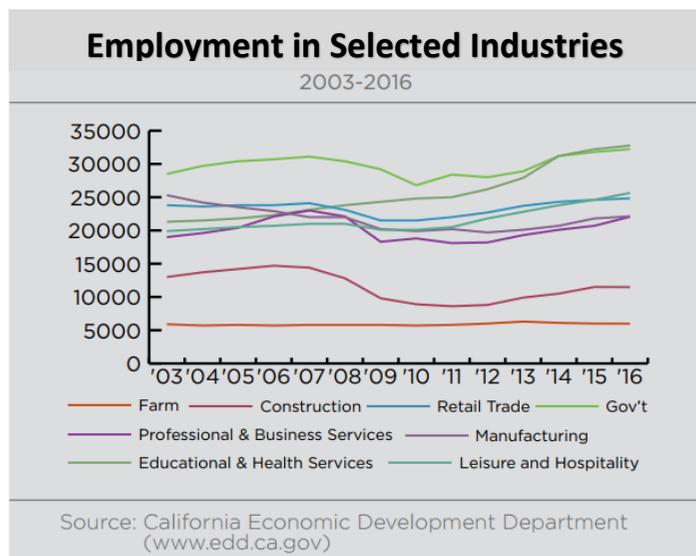
We will be tracking the various measures that will be taken in the wake of these fires to lessen future wildfire risk to the area and mitigate the scale of damage. Sonoma County has the means and the desire to rebuild in a way that not only protects the community, but also protects the environment. Sonoma will be actively learning from other areas around the globe such as Australia, where firestorms are regular occurrences that must be planned for and lived around.

Our community has come together, in person, with donations, and on social media with the hashtag #SonomaStrong. Many of the efforts by local organizations including many conservation minded non-profits are focused on making the future of Sonoma as sustainable as possible.

9 Mandatory Issue Areas

Employment

Employment in Sonoma County is driven by a few factors, from the strong wine growing, production and tourism industries to the budding tech centers to proximity to the city of San Francisco. Travel supports 20,410 jobs across a variety of industries, including accommodations & food service, arts, entertainment & recreation, retail, and ground transportation. That means approximately 15% of working age adults in Sonoma County are employed in the tourism industry.



Compared to California as a whole, Sonoma has the fourth lowest unemployment rate, at just 3.9% in October of 2016, as compared to 5.3% in the whole of California.¹

Destination economic benefits

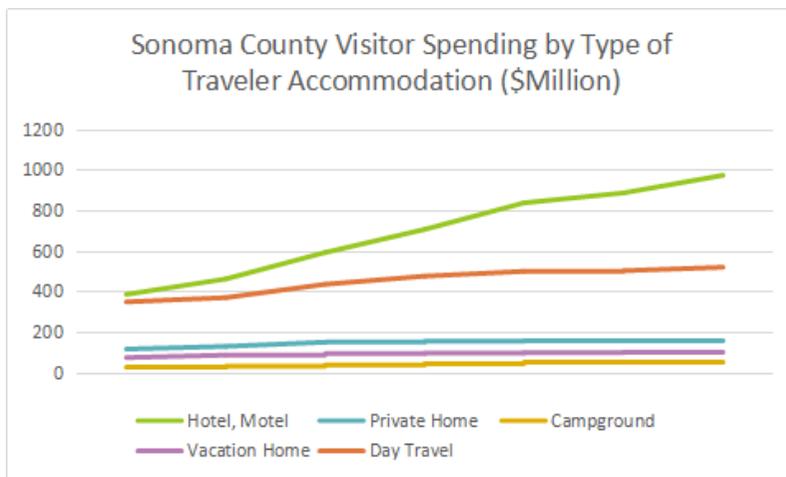
Tourism is one of the biggest drivers of Sonoma County's economy, which in 2015 brought in \$9.24 million in taxes from the Transient Occupancy Tax, and \$1.82 billion from direct, visitor spending -of which 27.7% came from just food & beverage services. The taxes collected from the Transient Occupancy Tax are discretionary, meaning that the Sonoma County Board of Supervisors may direct use of these funds for any legitimate county expense.

Over the past two years, spending related to travel has increased by nearly 10% (9.92%) and increased by 6.4% in just the last year. Since 1994, which is as far back as we currently have data for, travel spending has increased by 160%, as Sonoma dedicated itself to becoming a destination.

¹ From <California Economic Development Department (www.edd.ca.gov)>

Visitors traveled to California in record numbers in 2015, and tourism spending in the North Bay grew 4.3 percent. In 2016, Sonoma County made \$1,934,000,000 from direct spending in the county by travelers. Both local and state government benefits from travel-related expenditures as well, having made \$158,000,000 in 2016 alone from taxes.²

Tourists spent \$5.09 billion in the North Bay in 2015, up from \$4.88 billion in 2014, according to the annual economic impact report released May 2 by Visit California, the state’s official tourism booster. For the six-county region, Sonoma County had the largest amount of travel spending — \$1.82 billion — followed by Napa County, with \$1.27 billion, according to the 168-page report by Dean Runyan Associates.



Local satisfaction with tourism

This is a very complicated issue, and as far as we can tell, residents of Sonoma County are divided on this issue. On the one hand, tourism draws in much revenue, creates jobs, and sustains businesses. On the other hand, it creates traffic, pollution, brings about more noise complaints, etc. As mentioned under “Employment”, more than 10% of residents rely on tourism for employment, allowing them to live in this affluent area, but there are vocal groups calling for a slowdown of tourism development for the sake of keeping neighborhoods rural and quiet.

Healdsburg and Cloverdale are two cities being particularly impacted by rapid growth. Many of the residents of northern Sonoma County moved there 20-30 years ago when that part of Sonoma was still very rural. Since then, as more traffic has come in, the towns have suburbanized or urbanized, leading to farms being lost, homes being built closer together, more pavement, wider roads, etc. From 2002 to 2014, grazing land decreased by almost 5,000 acres, and harvested acreage in Sonoma County decreased between 2006 and 2015, from 42.2 percent to 39.7 percent.

Tourism seasonality

According to the California Wine Institute, 20 million people visit California's 2,843 bonded wineries for tastings and tours each year. Tourism in the county is year-round in the wine areas, with the vast majority of visitors coming May-October, especially during the grape harvest in September/October. Tourism at the coast is more seasonal. Events like fires, floods, earthquakes, algal blooms, etc. affect seasonality as well, with a substantial drop in visitors after any such event.³

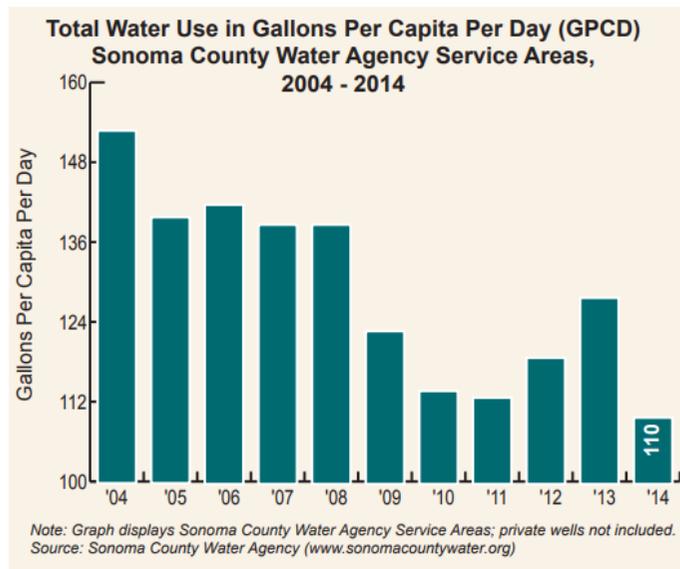
² From <<http://www.sonoma-county.org/tax/tot/>> & <Source: Dean runyan>

³ From <<http://www.sonomavalley.com/about/visitor-information/faqs/>>

Water management

This is perhaps the greatest issue facing Sonoma County and California as a whole. In the years since the drought first took hold of California in 2013, the entire state has responded with action. After a mandatory 25 percent reduction in water use, Californians stepped up to meet the challenge, cutting consumption 26 percent from June to November 2015.

Water use in Sonoma County decreased by 9.9% from 2014 to 2015, following a 14% decrease from 2013 to 2014. We await the next water agency report for 2015's statistics.



For more information of the drought climate of Sonoma County and California as a whole, see *Water Scarcity in a Drought-prone Region*.⁴

Energy management

The Geysers - As one of the largest producers of Geothermal energy in the world, the Geysers is an invaluable asset to the North Bay and the counties it supplies with electricity. Located in the Mayacamas mountain range on the border between Lake, Mendocino, and, Sonoma counties, and covering more than 45 miles (approx. 72 km), The Geysers is one of only two locations in the world where a high-temperature, dry steam resource that can be directly used to move turbines and generate electricity is found.

Running commercially since 1960, The Geysers current output at about 835 megawatts of electricity, accounting for 20% of the renewable power generated in California, which includes wind, solar, biomass and small hydroelectric sources.

Because the Geysers natural water supply is limited, operators have had to recycle as much as they could with two methods. The first is by condensing the steam after it passes through the turbines and then pumping it back underground, while the second is by piping in additional water, which is used to replenish the steam reservoir. The water used for this is treated but nonpotable wastewater, brought in from the towns around Clear Lake starting in 1997, and from Santa Rosa in 2003. Each time steam reaches the surface, some water is lost to the atmosphere, making it necessary to add new water to the system. This is called an “enhanced geothermal system”, and does not contribute to the water crisis in this area by making use of treated waste water.⁵

⁴ From <file:///C:/Users/Jessica/Downloads/2016-Unabridged-Indicators.pdf> & <<http://www.scwa.ca.gov/current-water-supply-levels/>> & <<http://drought.ca.gov/about.html>>

⁵ From <<http://www.energy.ca.gov/tour/geysers/>> & <<http://www.power-technology.com/projects/the-geysers-geothermal-california/>>

Landfill Gas Power - Located in Petaluma, methane from buried garbage at this former active landfill site is collected and converted into 3 MW of electrical energy, or enough to power a community of 7,200 people. At its peak in 2005 -the year it stopped landfilling at that location- the Landfill Gas Power Plant produced 7.5 mega-watts (MW) of renewable electrical energy 24 hours/day, seven days/week, which was enough to power a community of 18,000 people.⁶

Waste water (sewage) management

Sonoma County treats its wastewater with four steps to turn sewage into tertiary recycled water: primary treatment, biological treatment (secondary), filtration and disinfection (tertiary). Once treated, that water goes to a variety of uses, including irrigation, landscaping, and the Geyser Recharge Project. Recycled water is actually preferred for much irrigation, given the nutrients found in it, which include:

- up to 32 pounds of nitrogen per acre foot of recycled water delivered, which will offset 35% of the total nitrogen needed for turfgrass
- up to 6.8 pounds of phosphorus per acre foot of recycled water delivered, which will offset 20% of the total phosphorus needed for turfgrass
- up to 33 pounds of potassium per acre foot of recycled water delivered, which will offset 35% of the total potassium needed for turfgrass

By making use of tertiary recycled water, Sonoma has been able to extend the lifespan of its limited water resources, helping to offset increases in water use by tourists.⁷

Solid waste management

Taken directly from CalRecycle because they say it clearly and concisely. "Since 2005, Sonoma County consistently exhibits lower waste per capita rates than the state average. While waste disposal per capita in Sonoma County decreased since 2003, the County experienced a considerable uptick in the last year (and a lesser increase in the previous year), from 3.6 pounds per person per day in 2014 to 4.3 in 2015. This increase puts waste disposal per capita at its highest rate since 2008 (4.7). Solid waste relates to economic activity. As labor markets, real estate markets, construction activity, and broader economic conditions continue to improve, solid waste generation will continue to grow. The strong increase from 2014 to 2015 corresponds to a stronger economic recovery over that time frame."⁸

Governance

The United States governance system is multi-tiered, including Federal, State, County, and City level agencies. Each tier has a Tourism Bureau or equivalent department which manages anything from taxes to restrictions on hospitality properties. At the federal level we have the International Trade Administration, which operates under the Department of Commerce. At the state level, the California Travel Association regulates travel and tourism for the whole of the state of California.

⁶ From <http://www.recyclenow.org/disposal/landfill_gas.asp> & <<http://sonomacounty.ca.gov/General-Services/Energy-and-Sustainability/>>

⁷ From <<https://srcity.org/Faq.aspx?QID=374>>

⁸ From <CalRecycle (www.calrecycle.ca.gov)>

At the county level, Sonoma County Tourism describes itself as "the official destination marketing organization for California's Sonoma County. SCT is a private, non-profit marketing and sales organization dedicated to promoting overnight stays and creating a sustainable hospitality economy in Sonoma County, California." Additionally, most cities in the county operate a tourism board and/or web page, such as <http://www.sonomacounty.com/>.⁹

Sonoma's Four Tourism Pillars

To help us organize the content of this document, we have divided Sonoma County up into its four main tourism areas, Wine and Viticulture, Parks System, the Coast, and Farms & Agritourism. Each of these areas has found ways to be and stay successful, with sustainability in mind. Because Wine Tourism is what this region is most known for we will devote more to that section.

Wine & Viticulture:

Sonoma County is known as a wine & viticulture region, and indeed, wine tourism is a major driver in bringing visitors into the county. Travelers come from both the surrounding areas -for instance the SF Bay area or the Palo Alto/Silicon Valley area- and from international locales. Wine tourism alone generates an impressive \$1.2 billion in spending in Sonoma County, while 1 in 4 jobs and 54,000+ Full-time employees work in the wine industry. The US retail value of wines produced in Sonoma County is approximately \$8 billion US dollars.¹⁰

Perhaps the most popular wine area in Sonoma County is Sonoma Valley, located eastward, near Napa County, but wine grapes are grown throughout the county, from Healdsburg and Cloverdale down through Petaluma, even ranging westward toward the coast.

One of the biggest problems created by having an economy dominated by wine agriculture is that some levels of employment are seasonal. Grapes must be carefully tended and require up to 13 human actions each year to get a good crop (depending on which technique is used), which requires a large workforce of people doing manual, hard labor. The seasonality issue crops up here, when plants are resting during the raining season - post harvest- meaning there is little for the work crew to do during these off months. Additionally, Sonoma County suffers from a long-time housing shortage, especially in affordable housing, which has been further complicated by the fires of 2017 when approximately 5,700 homes were lost. This is one of the key issues facing the tourism and hospitality industry going forward, and one which we will be monitoring in the wake of the disaster.

In January 2014, Sonoma County Winegrowers committed to becoming the nation's first 100% sustainable winegrowing region by 2019, a move no other region has yet made. As of 2015, 64% (37,392 acres) of Sonoma County's 58,280 vineyard acres have been sustainably self-assessed; 48% (27,761 acres) of Sonoma County's vineyard acres have been certified sustainable by a third party auditor; and 313 Sonoma County Sustainable vineyard signs were distributed and are now displayed in vineyards

⁹ From <<http://www.sonomacounty.com/about-sonoma-county-tourism>>

¹⁰ From <<http://sonomawine.com/wine-community-impact/>>

across the county. More than 162,340 pounds of vineyard material was recycled by growers in 2015.¹¹ There are many methods used in sustainable agriculture, especially in viticulture. Growing techniques, water conservation, and certifications and standards are all present in Sonoma, in one form or another.

Growing techniques:

Cover crops & Living mulch - Cover crops protect soil from erosion and increase infiltration of water, while simultaneously cutting evaporation and restoring nutrients.¹²

In-house composting - In an effort to get away from commercial fertilizers, many vineyards are composting their own green waste and directing those nutrients back into the soil.

Water Conservation:

Dry Farming - The practice of watering crops exclusively with naturally-occurring rainfall. This practice requires planting vines with deep root systems into soils that trap moisture. Dry farming can save as much as 16,000 gallons of water per acre annually. However, California doesn't receive reliable levels of rainfall each year, with virtually no rain falling in the summer months, making Dry Farming difficult.¹³

Sap-Flow Monitors - A tool for measuring the speed and amount of water -in the form of sap- traveling through a plant, in real time, ensuring administration of just the right amount of water via irrigation.¹⁴

Standards & Certifications:

Stellar Organic Certification

Founded in 2002 and one of the oldest organic certifiers in the nation, Stellar Certification Services provides individualized attention and deep agricultural expertise to our members nationwide.¹⁵

Demeter Biodynamic Certification

Demeter USA is the only certifier for Biodynamic farms and products in America. It is part of a world-wide organization, Demeter International, that was first formed in 1928 to advocate Biodynamic agriculture and to certify Biodynamic farms. Demeter remains the oldest ecological certification organization in the world, active in fifty countries around the globe.¹⁶

California Certified Organic Farmers (CCOF)

United States Department of Agriculture (USDA)-accredited organic certifying agency and trade association, located in Santa Cruz, California. Formed in 1973, CCOF was the first organic certification entity in the United States.¹⁷

¹¹ From <<http://sonomawinegrape.org/press-release/>>

¹² From <<https://www.practicalwinery.com/septoct04/septoct04p22.htm>>

¹³ From <<http://www.winespectator.com/drvinny/show/id/40451>>

¹⁴ From <<http://www.northbaybusinessjournal.com/>>

¹⁵ From <<http://www.demeter-usa.org/certification/>>

¹⁶ From <<http://www.demeter-usa.org/certification/>>

¹⁷ From <<https://www.winesandvines.com/features/article/161456/What-It-Costs-to-Be-Certified-Organic-or-Biodynamic>>

Post Fires Addendum:

It seems this year's vintage will be up to snuff, despite the fires. We had an especially warm August/September, leading to an early harvest. About 90% of grapes were harvested prior to the fires and are therefore unaffected. The remaining grapes were, for the most part, Cabernet Sauvignon, which vintners believe can withstand smoke in the short-term thanks to their tough-skins.¹⁸

Parks System:

After being run by the government since their creation, facing the threat of being closed down after the Great Recession, Jack London State Historic Park and Sugarloaf Ridge State Park in Sonoma County, California (USA) moved to a non-profit run management model. Now funded mainly by revenue from parking, gift shops, events, and donations, the two parks are thriving, and welcoming more visitors than ever before.

Background

In 2011, four years after the Great Recession, the California Parks Department was still struggling. Due to budgetary changes the department was left on shaky ground: the parks remained open, but many were not maintained. The effects of scaled-back services, shorter public hours, skimpy staffing throughout the state's parks system have been felt throughout California and in Sonoma County which is home to more than 50 state and regional parks. These issues prompted the state legislature to start looking for new sources of income to off-set state budget shortfalls and anticipated staff cuts, and keep the parks' in all their glory.

The passage of AB42, introduced by Assemblyman Jared Huffman, allowed non-profit groups and community organizations to take over park operations. The following two parks have found a way not just to survive, but to thrive in the post-recession world, in part due to this new piece of legislation.

Jack London State Historic Park

In May of 2012, Jack London State Historic Park became the first to contract with a non-profit in an operating agreement with the state of California. Jack London Park Partners (JLPP), with the help of volunteers, private donations, park fees, and revenue from events hosted there, now run the park, while collaborating with the State Parks department, who continue to be responsible for the park's sewage system, natural resource protection and water treatment. Certified and highly trained state staff monitor and appropriately treat the water supply and run the sewage plant, and the state still pays for scientific experts (ecologists, archaeologists, historians, archivists, etc.), also all law enforcement is still the primary responsibility of state park peace officers.

Thanks to its historical designation, Jack London State Historic Park is a protected area, making it rich with life and biodiversity. The Park is also home to a beautiful mixed forest of oaks, madrones, California buckeye, Douglas fir, and Coastal Redwoods, ferns, manzanita, and a wide range of other shrubs and small flowering plants such as the Indian warrior, hound's tongue, buttercups, and poppies thrive in this area along with many kinds of birds and other forms of wildlife. The Park is also home to

¹⁸ From <<http://sonomawine.com/2017/10/sonoma-county-2017-vintage-expected-showcase-exceptional-quality/>>

the following endangered species: the California Tiger Salamander (*Ambystoma californiense*), Myrtle's Silverspot Butterfly (*Speyeria zerene myrtleae*), California Freshwater Shrimp (*Syncaris pacifica*) as well as more common but still threatened creatures including the Gray Fox, Black Bear, Deer, and Coyotes. The Park also provides critically important arboreal habitat for the Great Horned Owl, falcons and eagles, including the Peregrine Falcon, and dozens of other birds. Because the park connects with other state, local, and regional preserves and conservation areas, it provides an important corridor for the many species whose habitat is threatened by ever increasing human occupation levels.

Sugarloaf Ridge State Park

Like Jack London State Historic Park, Sugarloaf came under private management by Team Sugarloaf, a group formed by the Sonoma Ecology Center, but unlike Jack London, Sugarloaf has no big name or celebrity association to help bring in tourists. Relying primarily on its natural attributes to attract visitors, it too has proven successful. June 1, 2012 marked the date that Team Sugarloaf took over operations, and like its cousin down the valley, the park's past five years are a success story.

By hosting events like Robert Ferguson Observatory monthly 'Star Parties', Brunch on Bald Mt. Fundraising Hike, 4th of July Fireworks Viewing Hike, Easter egg hunt in the campground, and various nature hikes which focus on things like wildflowers, mushrooms, history, and geology they've been able to keep community involvement high, and income robust.

The community involvement has helped Sugarloaf spike in terms of visitors. The last year that the state alone ran the park, it saw 4,093 overnight campers and 5,858 day-users. Five years later, the park hosted 7,600 overnight campers and daily visitors had risen to 15,560 - a 165% increase. It should be noted that the state parks system as a whole has seen an uptick in visitation in the last five years as well.

Unfortunately, the recent fires in Sonoma County did damage the park, leading to the temporary closure of the park. As of February of 2018, the park is re-opened, with a few of the hardest hit areas still closed.

The Coast:

With an expansive 55 miles of relatively undeveloped shoreline at its western edge which serves as tourism attraction and as wildlife sanctuary, the Sonoma Coast is speckled with small towns, preserves, beaches, and cliffs. The towns of Bodega, Jenner, and Timber Cove are all nestled right by the ocean and as such, they face danger from rising sea level, higher-than-average-tides, tourism impacts, and thanks to their position at the mouths of rivers, pollution from farming and sediment.

The California North Coast is characterized by tall, steep cliffs, often with narrow, sandy beaches below. Just about all of Sonoma County's coastline bears this topography, with few deltas and esteros along the way. The water here is cold but nutrient-rich, thanks to the coastal upwelling that occurs from northern Oregon to central California.

Despite the cold waters, the oceans here are home to a multitude of unique and beautiful plants and animals, and to protect that life, California passed the Marine Life Protection Act. This act establishes Marine Protected Areas (MPAs) and aims to protect California's natural heritage and our ocean, by

creating a statewide network to, "conserve biological diversity, provide a sanctuary for marine life, and enhance recreational and educational opportunities".¹⁹

Sonoma County features no fewer than ten MPAs, and is home to endangered species like the Steller Sea Lion, California Sea Lion, and Harbor Seals. By protecting these areas, many populations which were devastated by the fur trade 100+ years ago are now rebounding, even flourishing, in the San Francisco Bay Area.²⁰

One of the biggest draws to the coast region -other than the seashore- is the fishing and diving opportunities here. Red Abalone, Dungeness crab, rockfish, perch, salmon, halibut, cod, tuna, and steelhead are all caught here, with many requiring licenses to dive or fish for. Fishing and diving licenses brought in \$65,490,959 to the state in 2016.

Boating and whale watching are popular tourism drivers as well, bringing visitors here in March and April to see the Pacific gray whale migration north.

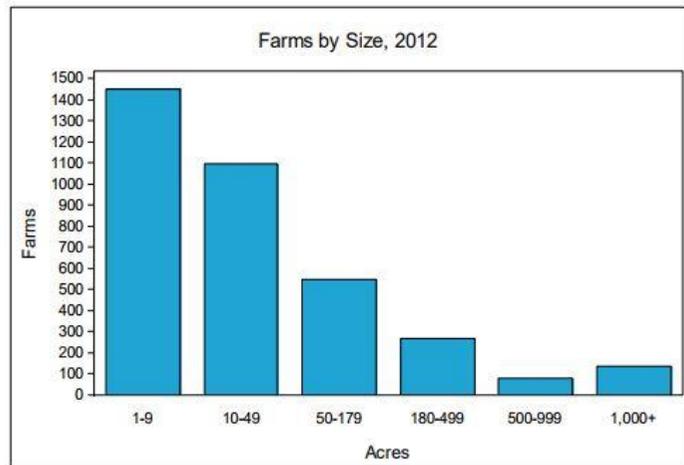
The Sonoma Coast is also home to The Sea Ranch, a small, environmentally-planned private community located at the northern end of the Sonoma County coast. By planning the community to work with the natural landscape and without fences or street lights present, the 50 year-old community has become a part of the land, with many native animals thriving amongst the population of 1,300. We intend to take a closer look at The Sea Ranch for the next report.²¹

Rural Tourism:

Viticulture may be what Sonoma County is known for, but with more than 3,500 farms covering 589,771 acres²², as of 2012's Farm Census, many come here regularly for the farm-fresh foods. The reported total value of crops in Sonoma County for 2016 was \$898,125,200, which represents a 17% increase from the 2015 value of \$766,271,000²³.

The vast majority of farms in the county are small-scale operations, and Petaluma, Sebastapol, Santa Rosa, and up into Healdsburg and Cloverdale all have farms open to the public for farm tours, tastings, and a chance to interact with the animals.

Geared more toward families, rural tourism fills a niche that wine tourism cannot. It is also more seasonal, tied to things like crop harvest, holidays, and when the baby



¹⁹ From <<https://www.wildlife.ca.gov/Conservation/Marine/MPAs>>

²⁰ From <<http://www.fortross.org/marine-mammals.htm>>

²¹ From <<https://www.sonomacounty.com/cities/sea-ranch>>

²² From <https://www.agcensus.usda.gov/Publications/2012/Online_Resources/County_Profiles/California/cp06097.pdf>

²³ From <<http://sonomacounty.ca.gov/Agriculture-Weights-and-Measures/Crop-Reports/>>

animals are born. 70 farms are listed as open to the public for visits on Sonoma County's website, although some only tour during the peak season and it's recommended to call ahead.

Dairy farming is common here, with around 17 cheese makers or creameries scattered across Sonoma. The California Cheese Trail is a statewide network for cheese makers to connect to, with maps and resources available for visitors to easily plan a trip.

Taking advantage of the other kinds of tourism, many farms have established farm stands along popular beach or wine routes, allowing visitors to purchase farm-fresh food on their way to their main destination. 17 stands can be found around Sonoma County, according to the Sonoma County website.

Farmers' markets flourish here, with 23 during the peak season and 5 operating year-round in the major cities. Many restaurants source their food from farmers' markets, bringing the local flavor of Sonoma to their food.²⁴

Biggest Issue for Sonoma County

Water Scarcity in a Drought-prone Region

Background:

California is a state with water issues. Most of the water here comes from water stored during the rainy winter months, snowpack melt from the Sierra Nevadas, groundwater stores, and rivers that flow through. Most of the water is transported through a complex aqueduct system, and is usually transported from north to south or east to west.

California is the most populated state in the US, but most of its population lives in the southern half of the state, where it rarely rains and has little groundwater. California is also an agricultural mecca, with 54% of its water going to crops in the central valley.

In December of 2011, Governor Jerry Brown announced that California was in a drought. 3 years later, it had reached extreme to exceptional drought conditions.

After a particularly rainy winter in 2017, Gov. Jerry Brown declared “this drought emergency is over, but the next drought could be around the corner – conservation must remain a way of life.” Thus, water conservation requirements are still in place per the Governor’s ongoing drought declaration.

Lost Gross Revenues (in millions) due to Water Shortages, Sonoma County

Industry	Water Shortage Percentage		
	10%	20%	30%
Construction	\$24,186	\$48,374	\$308,151
Wineries	\$21,380	\$42,420	\$270,308
Real estate	\$2,686	\$5,513	\$67,237
Wholesale trade	\$3,101	\$6,252	\$49,798
Restaurants	\$1,706	\$3,541	\$34,724
Car Repair	\$1,524	\$3,104	\$27,288
Hospitals	\$1,430	\$2,959	\$27,263
Medical Offices	\$1,415	\$2,944	\$26,884
Telecommunications	\$955	\$1,953	\$20,772
Investment Banks (Brokerages)	\$859	\$1,776	\$20,566
All Other Industries	\$68,234	\$140,267	\$1,879,811
Totals	\$127,476	\$259,103	\$2,732,802

²⁴ <https://www.sonomacounty.com/sonoma-listings/farms-farmers-markets>

Subsidence and wildfires are problems caused by drought which we will take an in-depth look at in future reports.

Sonoma County, as a wine and agriculture area and tourism hub with 111,000 acres of protected land, has been very affected by all drought-related issues. During the past 7 years, Sonoma has experienced water shortages, wildfires, and new groundwater legislation aimed to prevent overpumping.

Positives/Solutions:

Starting in wine country, Sonoma has dedicated itself to becoming the nation's first 100% certified sustainable wine region by 2019, following water conservation best practices, including water reduction, keeping water quality good, soil moisture monitoring, deficit irrigation, etc.

Fortunately, grapes are very efficient crops and do not require much water. In fact, grape irrigation uses only 3-6 inches per year in Sonoma County, with many growers near Green Valley, Mill, Dutch Bill and Mark West creeks volunteering to participate in a 25% water reduction program in partnership with State Water Resource Control Board and California Department of Fish and Game. Currently, 68 parcels representing approximately 2,000 acres of land have enrolled in this voluntary water reduction plan.

Making use of recycled water has helped preserve fresh rainwater for drinking or groundwater recharging and helps to naturally filter the tertiary-treated water further. Use of drip irrigation ensures every drop counts and prevents overwatering and loss of water to evaporation.

Grape growers have made a significant investment in wind machines to protect their vines from the threats of frost. This practice drastically conserves water and reduces the reliance on diversions of water from streams.

Numerous programs and initiatives exist in Sonoma County to help save water, like the Sonoma-Marín Saving Water Partnership, which aims to identify and recommend implementation of water conservation projects and to maximize the cost-effective projects for residents of both areas.

<http://www.savingwaterpartnership.org/about-us/>

For more northern residents, the Russian River Drought Relief Program includes two opportunities for eligible customers to reduce their water use in both the City of Cloverdale and the City of Healdsburg.

<http://www.scwa.ca.gov/drought/>

Reservoir Innovation

Sonoma has also started looking into a new approach to reservoirs. Because Sonoma and California in general gets most of their rain in the winter but use the most water in the summer, they've developed an intricate network of reservoirs to hold the water through the year. During periods of drought, these reservoirs become even more important, storing and distributing water for years.

Because Sonoma gets intense winter storms that dump tons of water onto the area, reservoirs are kept at a winter maximum capacity of 60%, so they can act as flood mediators. This means releasing tons of water every year because we don't know which years will get those heavy winter storms -even in drought years.

Marty Ralph, who directs the Center for Western Weather and Water Extremes at UC San Diego, is piloting a more dynamic method of flood management at Lake Mendocino with the Sonoma County

Water Agency. Instead of a maintaining firm limits on reservoir levels dictated by the calendar, managers would use cutting-edge weather forecasts to gauge how much flood space they need.

“Weather predictions have been improving over the last decades, “ said Ralph. “Particularly on the West Coast, we’ve learned about the phenomenon that produces most flood-producing storms. We call them atmospheric rivers.”

Because the largest storms form out over the ocean, dam operators have a few days lead time to release that extra water and get it out of the way. If storms don’t appear, the water would be saved for later in the year.

New weather satellites and more precise forecast models are making predictions more accurate, with researchers

even flying planes into atmospheric rivers to gather information about how they behave. These technological advancements make "forecast-informed" operations now possible and could make Sonoma a pioneer once again in the midst of the water crisis.

Russian River Reservoir Comparison

	Current Storage in Water Supply Pool (acre-feet)	% of Target Water Supply Storage	Reservoir Release (ft ³ /s)
September 02, 2017 - Before any rainfall			
<i>Lake Mendocino</i>	82,196	115.30%	237
<i>Lake Sonoma</i>	225,736	92.10%	103
December 03, 2017 - < 10 inches in the last 3 months			
<i>Lake Mendocino</i>	64,154	111.8%	135
<i>Lake Sonoma</i>	204,712	83.6%	110

Sonoma County Water Agency

<http://www.scwa.ca.gov/files/html/water-supply-data/water-supply.html>