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Water and Agriculture in the San Diego Region

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Climate Collaborative
SAN DIEGO REGION

WATER AND AGRICULTURE IN THE SAN DIEGO REGION

San Diego Regional Climate Collaborative

AGRICULTURE & HYDROLOGY OF THE SAN DIEGO REGION

The San Diego region is susceptible to drought with little annual precipitation. The rising temperature and changing precipitation is expected to affect the agriculture economy.[1] Classified as having a mediterranean climate, San Diego has hot, dry summers and cooler, wet winters. San Diego's vegetation primarily consists of chaparral communities where you find native plants such as a variety of shrubs that are fire and drought resistant.[2] The interactive drought map created by the National Integrated Drought Information System allows the public to check out current water supply, public health, and agriculture conditions. You can check out current drought conditions in the San Diego region **here.**

The San Vincente Dam, located 25 miles northeast of San Diego. Photo by City of San Diego.

Because of low water supply due to drought conditions, the State of California imports 92% of its water from the Colorado River and the State Water Project (SWP).[3] The SWP is a multi-purpose water storage and delivery system consisting of pipelines, canals, and reservoirs that delivers water throughout the state. During the early 1990's, water supply cutbacks prompted by a five-year drought led the San Diego County Water Authority (Water Authority) to make plans to improve its water supply reliability.[4]

In 1991, the Water Authority sponsored the development of a master plan to secure diverse water supply sources as well as implementing capital improvement projects through the year 2030. Their goal was to diversify their water sources and to reduce the reliance on a single source for the region's water supplies. Today, the San Diego County Water Authority no longer relies on a singular water source, obtaining water resources from diverse sources such as the Pacific Ocean, lakes, dams, and reservoirs.[5] The rising temperature and changing precipitation due to climate change is expected to affect the agriculture economy.[6] Additionally, water stress increases from north to south, reflecting variations in temperature and precipitation, but also the reliance on imported surface water supplies and groundwater increases.[7] California produces 46% of fruit and nuts in the United States, with an abundance of farms located in its Central Valley - but surprisingly, the San Diego region ranks 12th in the sale of agriculture in California.[8] The San Diego region is known for agricultural products such as avocados, lemons, guava, flowers, and strawberries.[9] Five thousand farmers call San Diego home and make their living on 250,000 acres of farmland, with a majority being small-scale farms.[10] The high cost of water and land make farming expensive, and San Diego farms have specialized in integrating agricultural activity and urban living, growing crops that optimize limited acres. Higher temperatures and lower precipitation create a need for proportionately more water to produce crops.

Current products of San Diego which are all experiencing drought include hay, haylage, corn, cattle, and sheep.[11] San Diego is the southernmost region, and because water stress increases as you move southward, it is important to be aware of water usage in the agriculture industry.

The reservoirs across the state account for a large amount of water storage capacity. In San Diego alone, there are 24 reservoirs located in East San Diego used for water storage.[12] Ideally, it would be more beneficial to use local water sources. The Equinox Project's Quality of Life Dashboard provides up-to-date data on water use from the San Diego County Water Authority. You can view water use, supply, and reservoir levels **here**.

INTERSECTION OF EQUITY

Farming faces labor and environmental justice issues with a majority of field workers being of Mexican origin or undocumented, and the working conditions are very dangerous with extreme temperatures, increased risk and frequency of wildfires, and long hours. The sad reality is these workers are paid less than $5 an hour and are not entitled for overtime pay, and workers agree to these harsh conditions because they need money and fear being deported.[12] Workers need to have access to cool environments and water to stay hydrated and in safe, workable conditions. There are no clear rules that state at which temperature heat is hazardous, so businesses are not required to enforce action to ensure workers' wellbeing during extreme heat events.

A small, local farm in San Diego. Photo by University of California Agriculture and Natural Resources.

A growing number of women in California are becoming farmers, and they are having a significant impact on the industry, particularly in the face of crises such as pandemics and climate change. Women-led farms are more likely to take a

Workers picking lettuce on a small farm in Morro Hills. Photo by Charlie Neuman.

community-minded approach and fill in gaps during crises such as recovering from a fire, sharing tips about smart water practices and irrigation efficiency.[13] Women are calling for Congress to provide more support for locally produced fruits and vegetables (specialty crops), rather than heavily subsidized industrial staples in the most current farm bill debate. Additionally, due to redlining and segregation in the San Diego area, communities lack grocery store access and nutrition security. Grocery chains avoid low income Black and Hispanic communities, while dollar stores make up a majority of the businesses in these low income communities. This pattern is present in the San Diego area. The effects of segregation are present in diet related health issues such as diabetes, malnutrition, and heart disease. Nutrition security refers to the consistent access to food that promotes health. Nutrition security is interconnected with poverty. Aspects of race, income, and zip code are just a few contributors to nutrition security. Institutions of segregation in San Diego need to be reformed to create an inclusive community where all have the access to fresh food.

COMMUNITY RESILIENCE SPOTLIGHTS

SAN DIEGO COUNTY FOOD VISION 2030

The San Diego County Food Vision 2030 (Vision) is a plan and movement by the San Diego Food System Alliance for transforming our region's food system over the next ten years. With three goals, ten objectives, and several strategies to inform planning, policy, program, and investment opportunities, the Vision aims to guide collective action toward a healthy, sustainable, and just food system over the next decade.[14] The three goals include efforts to cultivate justice, fight climate change, and build resilience. The ten objectives highlight priority areas in our food system where policy advocacy, programs, and investment are urgently needed: preserve agriculture land and soils and invest in long term food production, increase viability of local farm, fisheries and food business, scale up local sustainable and equitable food value chains, elevate wages and working conditions and improve career opportunities, expand integrated nutrition and food security, improve communities and food environments, scale up food waste prevention and recycling initiatives, increase leadership of people of color across the food system, build a local and sustainable food movement, and plan for a resilient food system.

Campaigning the San Diego County Food Vision. Photo by San Diego Food System Alliance.

The Aquaponics Innovation Center. Photo by ECOLIFE Conservation.

ECOLIFE CONSERVATION

ECOLIFE's use of aquaponics utilizes less water, less land, and feeds more people. Aquaponics is a closed loop system which allows all nutrients to be recycled.[15] This innovative practice raises aquatic animals and uses their waste to grow plants in this nutrient rich water which promotes quicker plant growth. Ecolife has created the Modular Aquaponics Response Kit (MARK) to get underserved communities involved in sustainable food systems and economic opportunities. MARK allows for anyone anywhere to grow nutrient produce and fish to feed local communities.

SOURCES

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The San Diego Regional Climate Collaborative was established in 2011 as a network for public agencies to advance climate change solutions and is currently housed at The Nonprofit Institute at the University of San Diego.

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