



# LIME KILN CHRONICLES

Newsletter of the Friends of the Cowell Lime Works Historic District  
University of California, Santa Cruz

## *The Cowell Reservoir*

By Frank Perry

At least a dozen places in Santa Cruz County bear the Cowell name. Some are well known, such as Henry Cowell Redwoods State Park and Cowell College at UCSC. Others are lesser known, such as Cowell Mountain near Big Basin. A few were very well known historically, but have since sunk into obscurity. A good example is the Cowell Reservoir, so named because the site was purchased from Henry Cowell. In the 1890s and early 1900s, much of Santa Cruz's water supply came from this reservoir, so it was a name very familiar to the citizenry.

Readers who have visited the UC Santa Cruz Arboretum have probably walked right past the old reservoir site and did not even realize it. The area is now heavily vegetated, with a succulent garden and aroma garden growing on the earthen dam. Like so many things connected to the Cowell family in Santa Cruz, the reservoir has a fascinating albeit controversial past.

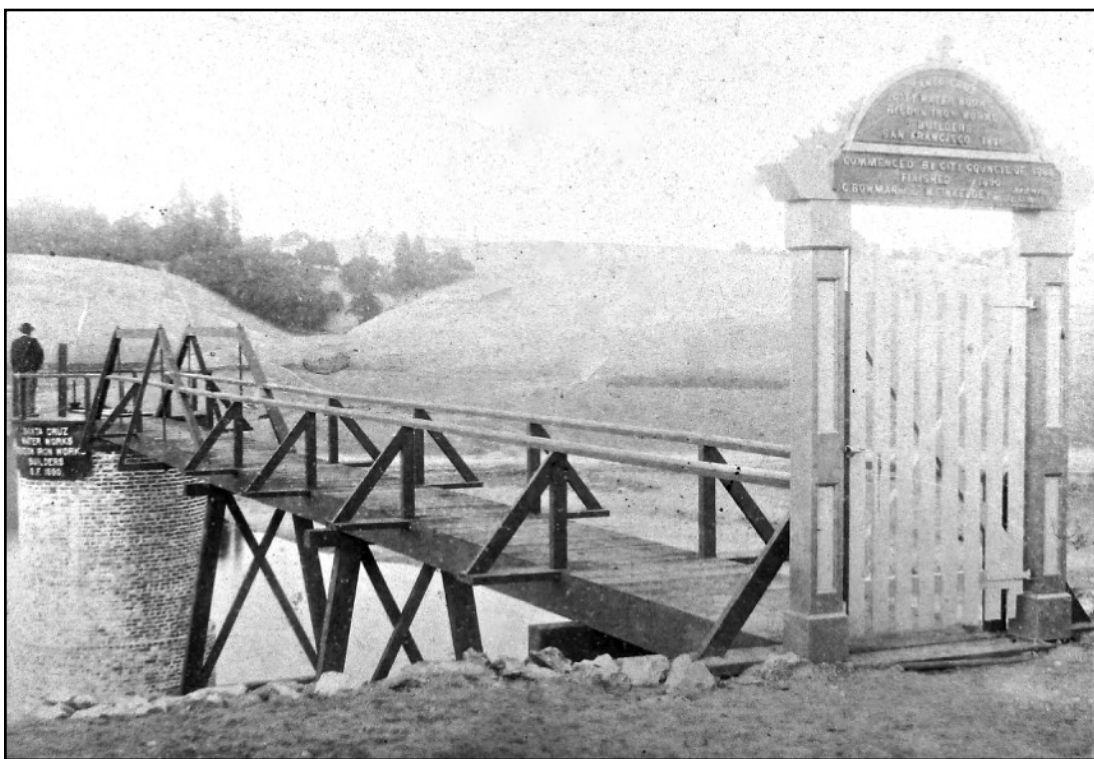
Its story begins in the late 1880s when Santa Cruzans voted to fund construction of a municipal water system. Prior to that, water for the town was supplied by two private companies.

In 1889, the city bought the water rights to Laguna

Creek on the North Coast. A contractor (Risdon Iron Works in San Francisco) was hired in December of 1889, but work on the dams and pipelines did not commence until early 1890. Workers built a dam on the creek to collect the water, laid several miles of pipeline to Santa Cruz, and built the Cowell Reservoir to store the water 450 feet above the town. The cleverly designed system operated on gravity, thereby avoiding the cost of water pumping machinery.

In March of 1890 the City formally accepted a deed from Henry Cowell conveying the reservoir site to the City for the price of \$1,000. As part of the agreement,

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Early-day view of the Cowell Reservoir, at one time Santa Cruz's primary water storage facility. The walkway provided access to the outlet tower (left), which had valves for regulating the release of water from the reservoir into an underground main to supply the town.

## Visions for the South Campus

By Jolie Kerns,  
Director of Physical and Environmental Planning,  
UC Santa Cruz

In Fall 2021, the UC Santa Cruz campus charged the Historic District and Campus Gateway Visioning and Advisory Task Force to assist in developing a vision for the Cowell Lime Works Historic District and campus gateway. The Task Force will build on previous planning work to include all buildings in the historic district, including those in current use: Theater Barn (former Horse Barn), Cookhouse, Cooperage and associated kilns, Worker Cabins, Hay Barn, Blacksmith Shop, Powder House, Entry Gate and Landscaping, the Cardiff House (former Ranch House), Barn G, Barn H, and Carriage House. It will also look at potential development sites and circulation patterns, within the district.

The task force is charged with guiding the general purpose and objectives of the study, including articulating a set of planning principles to guide the process of effectively using the buildings in the historic district; using a broadly consultative process with stakeholders; making recommendations regarding the types of activities and improvements that could be accommodated; and identifying considerations for implementation.

The south campus region is an important locus between the main campus and surrounding community. Most importantly, a majority of the buildings and structures are part of the Cowell Lime Works Historic District. The Friends of the Cowell Lime Works is an important stakeholder group for this process. In light of the success of the Hay Barn renovation, this task force will focus on the vision for the historic district from a broad multi-disciplinary and multi-functional perspective. The work of the Task Force will be shared publicly in the Spring 2022, for feedback from the campus and community. It will evaluate a range of options to transform the base of campus into a cohesive and welcoming campus gateway, and is anticipated to conclude with a set of recommendations at the end of the 2021-22 academic year.

## Roll Out The Barrels

In March, board members Frank Zwart, Cynthia Mathews, and Frank Perry cleaned and relocated UCSC's historic lime barrels to a new storage site. The barrels are made of redwood and each would have held about 150 pounds of lime. The staves for the barrels were made at a stave mill near the Stonehouse. That building burned in the 1950s.

Cowell last made lime in 1946, so these barrels would date at least back to then. That was when the Rincon plant closed. More likely, however, these ones date back to the 1920s when lime was last made at the kilns in what is now the Historic District. For many years these barrels were stored in the old cooperage building at the latter location.



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(Spring and Fall) by the  
Friends of the Cowell Lime Works Historic District



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## More Than Lime

In the 1920s Cowell's retail store on Pacific Avenue in Santa Cruz sold many different products, as revealed by these newspaper advertisements. The store was located at the lower end of Pacific Avenue near Beach Hill.



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## About the Friends and the Lime Kiln Chronicles

The Cowell Lime Works was at one time the center of the most important lime manufacturing region in California. The local limerock was heated in kilns, and the finished lime was shipped in barrels up and down the California coast and even to Hawaii. It was mostly used to make mortar, plaster, and whitewash.

The Friends of the Cowell Lime Works Historic District was founded in the fall of 2008 with the goal of preserving this important history. We work to save the historic lime kilns, buildings and other structures within the district and bring the site's rich history to life through tours and other educational programs. By involving both UCSC students and community members, we strive to foster a positive relationship between town and gown.

This is the 27th issue of the *Lime Kiln Chronicles*, which is published in April and October of each year. Issues highlight district happenings, list accomplishments by The Friends, and showcase original articles based on the latest historical research.

The Friends receives its non-profit status through the UC Santa Cruz Foundation, so donations are tax-deductible to the extent allowed by the law. We are an all-volunteer organization. Our board of directors is a working-board, with members donating time to various projects as well as attending board meetings.

A major part of our funding comes from memberships. There is still plenty we want to accomplish, so please encourage your friends to join and help preserve this fascinating chapter of central California history.

## Walking Tour May 21

The Friends will be conducting a walking tour of the district for members and interested persons on Saturday, May 21, 9:30 to 11:30 a.m.. Meet at the Barn Theater parking lot. Friends President Frank Perry will present an overview of the district history, explain the process of making lime, and share some newly-discovered images and information. The walk is about one mile and some of it is up and down hills, although these are gentle. No sign-up necessary. The event is free, but donations are welcome. Free parking is available at the Cookhouse, Granary, and Barn Theater lots. Be sure to read signs carefully.



## New and Renewing Members

Our sincere thanks to these new and renewing members. Your donations enable the Friends to continue its mission of education and historic preservation.

Anonymous	Jean Nilsson
Jim Burns	Alverda Orlando
Neal Coonerty	Patricia Paramoure
Lee Duffus	Joan Parsons
Joe Hall	Lisa Pauken
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Alisa Klaus	Alec Webster
Donald Lauritson	Mary Wells
Craig Miller	Frank Zwart



This new interpretive sign will soon be placed at the Cardiff Shed and is one of seven funded by donations to the Friends.



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Cowell was entitled to free water from the reservoir for “lawn, garden, and domestic purposes” and to also use any “surplus or overflow” water. Cowell also had the right to stock the reservoir with trout—with all fishing privileges reserved for Cowell. The City agreed to fence the site and bury the pipes deep enough so that they would not be struck by plows.

It was not until October 18, 1890, that workers laid the last pipe and water began filling “the great reservoir above Cowell’s.” By November, the “pure waters” of Laguna Creek flowed through pipes on “every street.” The *Santa Cruz Surf* newspaper wrote romantically of the grand accomplishment, even publishing a poem in celebration of the event. It begins:

In the lengthening redwood shadows,  
As the hours grow to close of day,  
We gather around the workers  
As the last joint of pipe they lay.  
’Tis a link that binds together  
The consummate work of years;  
’Tis the crowning golden moment  
That banishes all our fears.

Unfortunately, the Cowell Reservoir never fully lived up to expectations. It was supposed to hold 60 million gallons (about 221 acre feet), but never had more than 45 million gallons. The problem lay in the porous nature of the limerock on which the reservoir was located. The only lining to “seal” it was clay. At first the reduced capacity was not an issue, but as the town grew and the demand for water increased, the reservoir’s shortfalls became more worrisome. There were also claims that Cowell was using more than his rightful share of the water—a claim he denied.

In 1921, famed San Francisco city engineer Michael M. O’Shaughnessy (who developed the Hetch Hetchy water system for that city) was hired as a consultant to evaluate the Santa Cruz system and determine what studies were needed. By this time, the population of the town had grown to 14,000, almost three times the number when the reservoir was constructed. Liddell, Major’s, and Branciforte Creeks were also being tapped for water, though apparently not very efficiently. Much water was said to be lost at the sources.

O’Shaughnessy noted that many cities across the nation now used pumps rather than gravity systems and that Santa Cruz should investigate pumping more water out of the San Lorenzo River so the town would have



This portion of the Official Map of Santa Cruz County, 1906, is one of the few maps that shows the Cowell Reservoir. See also map on page 8.

additional water, especially in the summer. In 1924 the Bay Street Reservoir was constructed and a pipeline built so it could hold San Lorenzo River water. By the summer of 1932, a pumping plant at the San Lorenzo River was pumping 5 million gallons per day of river water to the Bay Street Reservoir.

A study found that leakage at the Cowell Reservoir started occurring when the reservoir held more than 25,540,000 gallons. Talk of repairing and enlarging the reservoir continued on through the 1930s. One idea was to line it with bitumen (a natural mixture of tar and sand that was mined locally; see LKC Spring/Summer 2013) or to line it with cement. It was estimated that it could hold as much as 100 to 150 million gallons if enlarged and properly sealed.

Leakage wasn’t the only challenge. There were times when the water took on a peculiar taste and smell. Once it was supposedly because the water level was particularly high, flooding the grassy pasture up slope. More often the odd taste was blamed on algal blooms.

In 1932 a controversy erupted over the issuing of permits to the reservoir for fishing. Mayor Fred Swanton said that he should be able to issue passes, while city commissioner Alvin Weymouth said that only he had the right to give out passes. “I am responsible for the sanitary conditions at the reservoir and consider it my business to keep a careful watch on who goes there,” he said. It is not clear how the issue was resolved. Apparently by this time fishing rights were no longer restricted to the Cowells.

An article from 1934 said that “a few years ago” someone introduced crayfish into the reservoir. “In the

(continued on p. 6)

Photo by Brett Hall



The outlet tower as it looks today.

seclusion of their quiet pond shut off from the general public by a high fence, the crustaceans found little to occupy their attention besides the pursuit of edibles and the raising of families. They attended to the latter so well that today they are literally millions. . . .” Interestingly, crayfish were harvested commercially there into the 1940s, with large quantities sold to local and San Francisco markets.

Despite more complaints of leakage, little was done to remedy the situation and much water continued to be lost. On one occasion, a hole 28 feet deep suddenly opened up in the bottom. The head of the water department speculated that the leaking water was helping feed the springs in the Westlake District. This was certainly possible, given the mysterious interconnections of the region’s limerock caves and fractures.

By 1947, the 57-year-old reservoir was losing a half million gallons per day. It was finally taken out of service the following year. Two large Army-surplus water tanks were installed nearby. Water from the North Coast was piped directly to the Bay Street reservoir, and water from Bay Street was then pumped into the tanks to serve the nearby Westlake neighborhood.

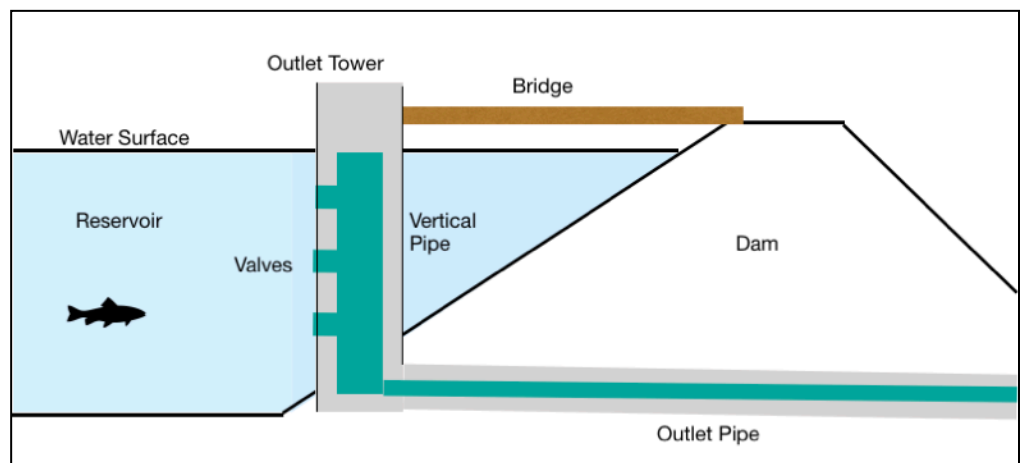
Rather than try to repair and reuse the Cowell facility, attention soon turned to building a new and much larger reservoir on Newell Creek near Ben Lomond. Completed in 1960, it was named Loch Lomond and is today the primary source of water for the City of Santa Cruz.

In the early 1960s, the Cowell Reservoir property became part of the new UCSC campus. In 1964 the campus arboretum was founded on land that included the old reservoir site.

Today the historic site can be seen by visitors to the arboretum. According to Brett Hall, long-time arboretum staff member, visitors are welcome to stroll around the edge of the site and view various plantings, including a collection of California conifers. As previously mentioned, the succulent and aroma gardens are located on the south slope of the dam, opposite Norrie’s Gift Shop. The site is rich in wildlife, including mountain lions, bobcats, coyotes, and many kinds of birds. Not long ago a weasel was sighted according to Brett—quite unusual. The reservoir still collects a small amount of water from winter rains, but this dries up in the summer. Nevertheless, it is home to the California Red-legged Frog, a threatened species. This species is also California’s official state amphibian.

The arboretum entrance is located off Empire Grade. Visit the website for hours and admission information. <https://arboretum.ucsc.edu/visit/index.html>.

This schematic diagram shows a typical outlet tower in cross section. Such towers are constructed near dams, with a bridge to provide access to the top of the tower (see photo on page 1). From there, workers can control valves that draw off water from different levels and regulate the flow through the outlet pipe which supplies water to the town.





## *In the Newspapers, 100 Years Ago . . .*

**January 6, 1922.** "Warning. Hunting and trespassing on property of undersigned positively prohibited. Persons found hunting or trespassing will be prosecuted the full extent of law. Henry **Cowell** Lime and Cement Company."

**January 6, 1922.** "Another of the respected old residents of Santa Cruz joined the silent majority this morning when Parker M. Hibberd passed away shortly before 12 o'clock at his home. . . . He was a cooper by trade and for many years was in the employ of the **Cowell** Company."

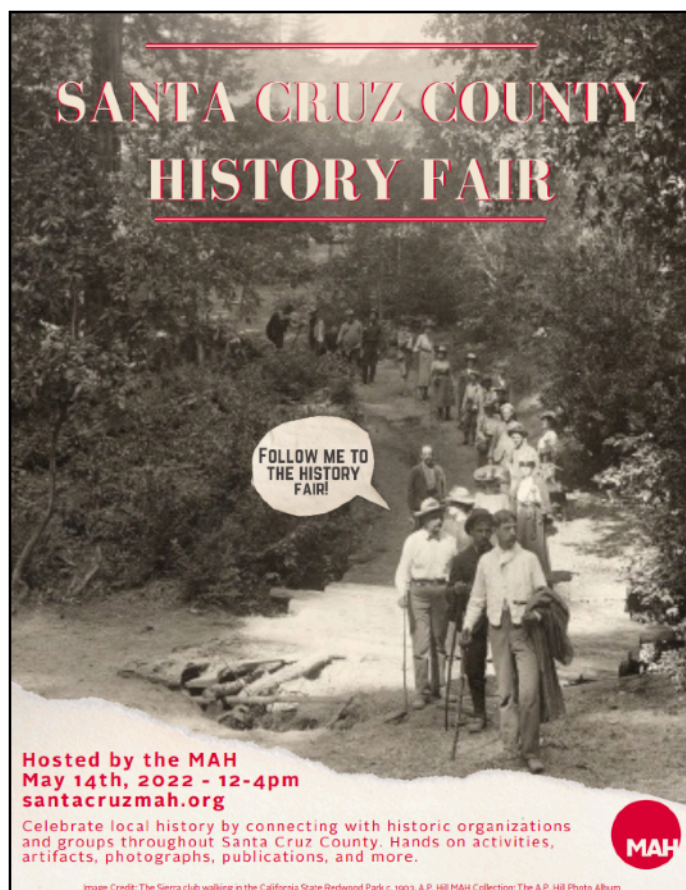
**February 11, 1922.** "Owing to slides on the Big Tree Road, travel to the San Lorenzo Valley section is now being routed via the Scotts Valley highway and Mt. Hermon. Slides are in evidence between the **Cowell** kilns at Rincon and the old No. 6 tunnel."

**March 3, 1922.** "Several flocks of quail are daily seen on the upper portion of Bay Street leading to High Street and help to contribute an added feature to the **Cowell** zoo, which includes deer, elk, buffalo, peacocks, and other species of game life."

**March 4, 1922.** "The Northwestern Lumbermen's Association, representing seventy-five members, arrived on their special train at 5:30 over the mountain division and remained for a period of four hours. A stop over was granted them at Big Trees, giving opportunity for a general inspection of both the **Cowell** and Welch portions of the grove."

**April 10, 1922.** "Sycamore flat, comprising twenty-five acres of natural beauty and running parallel to the San Lorenzo Valley highway just outside the city limits, is to be converted into a modern auto camping park site. Announcement of this important fact was made by . . . Philip Fridley, who has completed negotiations with Henry **Cowell** for the lease of the property. . . ."

**June 23, 1922.** "Honors won by high school graduates . . . The **Cowell** scholarship to Thomas Harris, \$150 yearly for four years." [This was at Santa Cruz High School.]



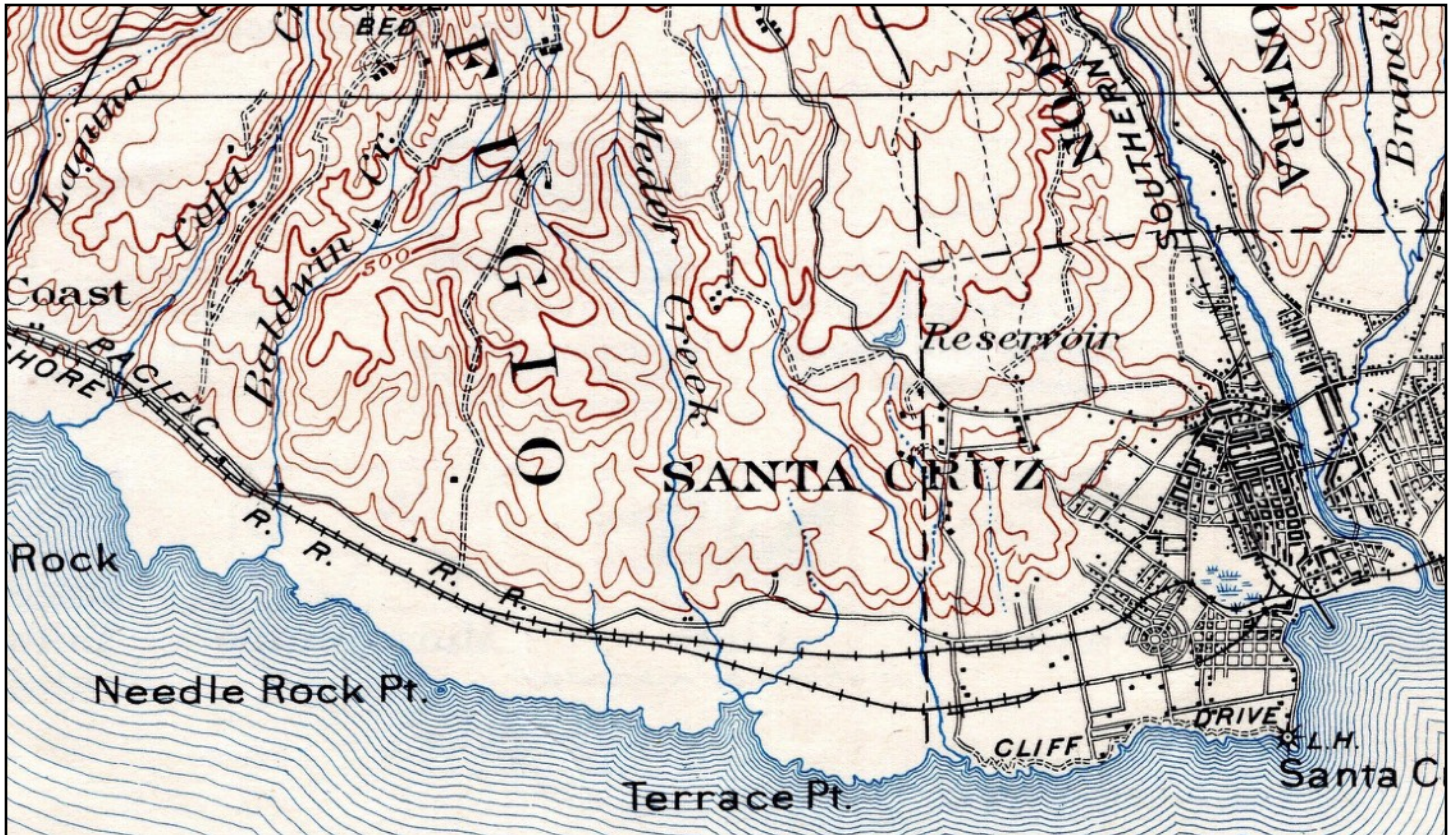
## *History Fair May 14th*

Be sure to stop by the Friends table at the Santa Cruz County History Fair, May 14th, 12 to 4 p.m. Historical organizations from around the county will showcase artifacts, photographs, publications, and have hands-on activities.

The first of these fairs was organized by the Friends in 2015. The Friends hosted a second one in 2016, and the Capitola Historical Museum hosted one in 2019. This year's fair will be an indoor/outdoor event at the Santa Cruz Museum of Art & History, 705 Front Street, Santa Cruz. Admission is free, but donations are welcome.

These history fairs have proven to be very popular. It is always amazing to see how much interest there is in Santa Cruz County history and the large number of organizations involved, including museums, libraries, societies, book publishers, and parks. The fair is basically "one-stop shopping" for local history.





This US Geological Survey map of the "Santa Cruz Quadrangle" from 1902 (reprinted 1946) shows the Santa Cruz area topography, streets, water courses, and buildings. In the center and slightly to the right is the Cowell Reservoir. In the upper left is Laguna Creek, which supplied the water. The pipeline connecting the two is not shown.

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