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# Santa Cruz Sentinel

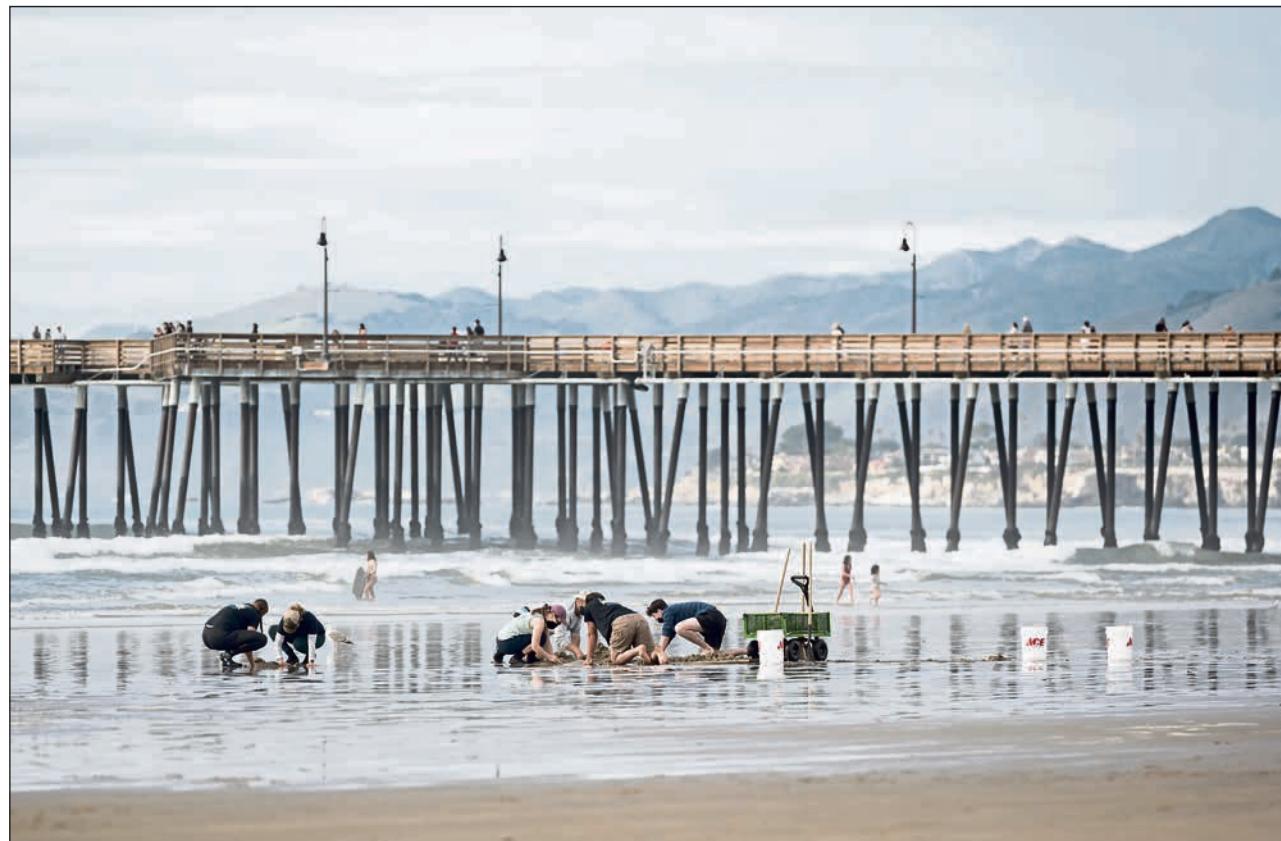
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## ENVIRONMENT

# PISMO CLAMS MAKE A MYSTIFYING COMEBACK



STEPHANIE SECREST FOR THE BAY AREA NEWS GROUP

Cal Poly San Luis Obispo students on Jan. 16 search at low tide for tagged clams they began burying in August as part of a project aimed at bringing sustainable native clams back to Pismo Beach, once called the "Clam Capital of the World."

Cal Poly students try to solve puzzle amid poacher crackdown

**By Graycen Wheeler**  
Correspondent to the Sentinel

**PISMO BEACH** » Once a cherished central California fishery, Pismo clams went missing from their namesake beach for decades.

The treasured shellfish, however, are now making a steady, triumphant return. No one knows exactly why. But Ben Ruttenberg, the director of the Center for Coastal Marine Sciences at Cal Poly in San Luis Obispo, is determined to find out.

In 2014, when the clam



population was still languishing, Pismo Beach city officials asked Ruttenberg if he could find out how to bring the clams back to the city's beaches.

"We said, 'Well, that's a

great idea,'" Ruttenberg recalled. "And then we realized that it was a lot more complicated than the simple question that they were asking."

To truly understand the life cycles and movements of Pismo clams and unravel the mystery of why they're making a surprise comeback, students from his lab are doing monthly clam surveys and also festooning the mollusks with identification numbers, QR codes and metal washers that allow clams buried in the sand to be found with metal detectors.

During the Pismo clams' glory days in the 1950s, marine biologists had come up

with estimates of the growth rates and lifespans of the clams. But Ruttenberg discovered that nobody knew if the estimates still held true for today's Pismo clam population. He also learned that no one had studied how the clams move around throughout their lifetimes.

"We realized that there was this incredible vacuum of information about this cool creature that was so culturally important here," Ruttenberg said.

The QR codes on the buried clams link to a survey, where clam-spotters can report information about the clams' location and well-being. Since Ruttenberg's team

## CHANGING FORTUNES

States,  
cities  
see rapid  
rebound

Many local governments have already fully recovered from pandemic losses

**By David A. Lieb and Camille Fassett**  
*The Associated Press*

State and local governments lost at least \$117 billion of expected revenue early in the pandemic, according to an Associated Press analysis, but many are now awash in record amounts of money, boosted partly by federal aid.

In response to the dramatic turnaround, governors, lawmakers and local officials have proposed a surge in spending as well as a new wave of tax cuts.

"The ultimate effect of the pandemic was a net positive," said Stephen Parker, assistant city manager for the Los Angeles suburb of Upland, where sales tax revenues are soaring. "Isn't that unbelievable? It's just crazy to think of that."

Upland, a city of 79,000, was representative of many cities at the outset of the pandemic. It reported an estimated loss of nearly \$6.1 million in 2020 — the result of a steep but short-lived national recession and what Parker describes as a "generous" Treasury Department method for calculating losses. That figure was the median amount among more than 900 cities that reported their revenues to the department under the American Rescue Plan Act.

Upland's financial situation turned around even before the end of 2020, Parker said. Federal COVID-19 stimulus checks played a role. So did a shift in consumer spending to goods instead

**REBOUND » PAGE 2**

**CLAMS » PAGE 2**

**ROARING OVER RAIL**

## TODAY IN HISTORY

**1820**

King George III died at Windsor Castle at age 81; he was succeeded by his son, who became King George IV.

**1919**

The ratification of the 18th Amendment to the Constitution, which launched Prohibition, was certified by Acting Secretary of State Frank L. Polk.

**1936**

The first inductees of baseball's Hall of Fame, including Ty Cobb and Babe Ruth, were named in Cooperstown, N.Y.

**1963**

The first charter members of the Pro Football Hall of Fame were named in Canton, Ohio.

**1979**

President Jimmy Carter formally welcomed Chinese Vice Premier Deng Xiaoping (dung shah-oh-ping) to the White House, following the establishment of diplomatic relations.

**2002**

In his first State of the Union address, President George W. Bush said terrorists were still threatening America — and he warned of "an axis of evil" consisting of North Korea, Iran and Iraq.

## Birthdays

Feminist author Germaine Greer is 83. Actor Tom Selleck is 77. Talk show host Oprah Winfrey is 68. Olympic gold-medal diver Greg Louganis is 62. Former House Speaker Paul Ryan, R-Wis., is 52. Writer and TV personality Jedediah Bila is 43. Pop-rock singer Adam Lambert (TV: "American Idol") is 40.

## Star report

**Alicia Witt breaks silence over tragic death of parents**

Actress Alicia Witt poured her heart out on Facebook over the death of her parents who died after the heat failed in their Worcester house.

"They were brilliant educators, deeply kind, curious, intuitive, wise, young at heart, funny,

**Clams**

FROM PAGE 1

reburied more than 400 of the QR-coded clams in August and October, beachgoers have found 44 of them.

"It's definitely like a science treasure hunt," said Marissa Bills, a graduate student in marine biology who currently leads the Pismo Clam Project in Ruttenberg's lab. "We know that it's working, which is very exciting for us."

**Back to the sand**

California Department of Fish and Wildlife officers, meanwhile, are aiding in the clams' revival by counting the thousands of clams they rescue from poachers each year. The officers then rebury the mollusks and share their data with Cal Poly researchers.

You couldn't blame visitors to Pismo Beach, a surfing town with retro vibes and broad beaches, for thinking it's still the "Clam Capital of the World," a title the city claimed in 1947. Pismo Beach's three giant concrete clams still greet motorists entering the downtown. And this fall, the town celebrated the 75th anniversary of its annual clam festival, replete with clam costumes, a parade and chowder made from non-local clams.

So it may be easy to forget that overfishing nearly drove Pismo clams away from the area. No one has recorded a clam big enough to legally harvest — 4.5 inches or larger in diameter — at Pismo Beach for almost three decades.

"They used to till up this beach and sell the clams for pig food," said Lt. Matthew Gil, a game warden with the Department of Fish and Wildlife. "Hundreds of thousands of clams! They didn't start regulating until it was way too late."

Some harvestable Pismo clams can still be found in a smattering of places on the California coast, including the Monterey Bay area. But when Ruttenberg's team began conducting clam surveys on Pismo Beach in 2014, he said, "we would



PHOTOS BY STEPHANIE SECREST FOR THE BAY AREA NEWS GROUP

Cal Poly's Olivia Ross, from left, Robert Moon, Marissa Bills and Tommy Gray dig by hand to find Pismo clams that students began tagging and burying last summer.

spend four hours digging and find nothing."

But two years later, the team began noticing something remarkable: More and more Pismo clams were turning up on their digs.

The clam population continued on a promising trajectory over the next five years. And then last summer, Ruttenberg and Bills saw the clam population explode.

"There are more Pismo clams on the beach right now than there have been in any of the years that we've been monitoring them," Bills said.

No one knows exactly how many clams now call Pismo Beach home, but judging by the number confiscated from poachers of late, it could be in the hundreds of thousands or even millions. Bills is currently crunching the numbers to develop an informed estimate.

Despite the return of the natives, Gil said, the clams remain under threat from humans.

**Problem continues**

Poaching has always been a serious problem in Pismo Beach, but the pandemic made it much worse when cooped-up Californians flocked to the town and found it studded with tasty-looking clams.

Gil said 2020 was the worst clam poaching year on record. Fish and Wild-



Cal Poly students use glue and nail polish to affix yellow QR codes, small metal washers and an identification number on freshly gathered clams in Pismo Beach.

life officers seized more than 25,000 clams along a three-mile stretch of Pismo Beach. Last year was better, but poaching is still the biggest threat to the clams' recovery, Gil said.

"I used to write a citation and think, 'What difference did I make for that species?'" he said.

So now his department doesn't just track the citations it issues.

In addition to counting and reburying seized clams, the agency has also begun collecting the ZIP codes of poachers. That will allow the state and the Cal Poly team to create and test outreach efforts to discourage poaching.

The department's new signs in Pismo Beach share facts about the clams' biology, list clamping regulations and demonstrate cor-

rect reburial techniques in both English and Spanish.

"The last two years, we've

been going out on the beach and actually talking to families and kids," said Claudia Makeyev, an environmental scientist who coordinates outreach and education in the department's Pelagic Fisheries and Ecosystem Program.

"They have no idea that there's even regulation, let alone a size limit, let alone that you have to rebury them," said Makeyev, who noted that kids are usually happy to make a game of reburying the clams.

The biggest threat, Makeyev said, comes from those poachers who are less susceptible to outreach.

"Really serious poachers who are willfully ignoring the rules and regulations — those are the ones that are

**PISMO CLAM FACTS**

- Clams can live for decades. In 1964, a surveyor found a 53-year-old Pismo clam — the oldest on record — on Malibu's Zuma Beach.
- When banks were shuttered during the Great Depression, some Pismo Beach businesses scrawled IOUs on clam shells to use in place of currency.
- Clams eat by filtering plankton and tiny bits of plants out of the water. Each clam filters about 16 gallons of water a day.
- Seabirds love to snack on unburied clams. To help an exposed clam, you should bury it in the sand, placing the clam's hinge side down or facing the ocean.

doing the most damage," she said.

**Looking for poachers**

Fish and Wildlife has increased the number of dedicated patrols of Pismo Beach, keeping an eye out for premeditated and organized poaching. Initial fines can be as high as \$100,000.

Gil said it's been heartening to see Pismo Beach residents talking to fellow beachgoers about the clams and discussing how to protect them.

"I never thought I'd see a clam comeback in my lifetime," said one excited older man who recently approached Gil on the beach. "We used to come here with buckets to collect clams."

The Cal Poly team has been met with similar excitement. "Every time we're out doing a survey, there are older community members that come over, and they are just fascinated by what we're doing," Bills said. "They all remember clamming when they were children."

While the clams will need years to bloom into a sustainable population at Pismo Beach, Fish and Wildlife officers are optimistic that the erstwhile Clam Capital will one day reclaim its title.

"It's a win for the public because they're getting fewer tickets," Gil said. "It's a win for us because we're protecting a resource. And it's a win for the clams."

**Rebound**

FROM PAGE 1

of services. That lifted city revenues, Parker said, because services often are exempt from sales taxes, while goods are not.

The pandemic relief law championed by Democrats and signed by President Joe Biden last March included \$350 billion in aid

The department used lost revenue to determine how much flexibility to give governments in spending the aid. Under guidelines issued last May, governments that showed a loss were free to spend an equal amount on almost any government services, including roads and other projects not otherwise allowed under the rules.

A final rule released earlier this month expanded

consumers also had more to spend because of the stimulus checks. A strong stock market drove up capital gains taxes. And an early pandemic rise in unemployment spared many higher earners, who shifted to working from home while continuing to pay income taxes.

For governments that already were financially strained, the pandemic deepened their losses but

Department's formula. It's getting more than \$20 million from the American Rescue Plan. Though the relief money cannot be used to wipe out the deficit, the city plans to make major improvements to parks and swimming pools, in-

cluding a complete rebuild of a run-down bathhouse that has been relying on portable toilets.

"These are things that

would not have been within the city's ability to take on

were it not for the COVID relief money," Nelson said.

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