

# NEWS CLIPS

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**Resource Conservation and Public  
Outreach**

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## SCIENCE FILE

# Winter is shorter, and that's a problem

It poses serious risks for the state, including greater flood risk and a longer fire season.



**TIOGA LAKE, near Yosemite National Park, is fed by snowmelt. A recent study finds that snowpacks in the Western U.S. have begun melting away earlier in the year, a change that could jeopardize water resources, flood control, fire management and winter recreation. (Mark Boster Los Angeles Times)**

DEBORAH SULLIVAN BRENNAN

LA Times 1/11/2019

Across the mountains of the West, the landscape of winter is changing.

Deep snowpacks that held fast through winter, then melted in a torrent each spring, are instead seeping away earlier in the year. The period of winter weather is shrinking too, with autumn lasting longer and spring starting earlier.

The findings by Amato Evan, a professor of atmospheric and climate science with Scripps Institution of Oceanography, show changes to Western hydrology that could jeopardize water resources, flood control, fire management and winter recreation.

His results were published last month in the Journal of Applied Meteorology and Climatology and presented at the American Geophysical Union Fall Meeting in Washington.

Aerial photos and snow surveys illustrate how levels vary from year to year. But Evan's study looked not only at how much snow there is, but also how it accumulates and then runs off.

Climate models have predicted the snowpack would diminish earlier in the season and melt more gradually as the planet warms. Evan affirmed those projections through an analysis of data from 1982 through 2017.

"There are theoretical models that say as the planet continues to warm, this is what should happen; snow melts earlier in the year, and doesn't melt as fast as it does in the springtime," he said. "We went back to the mathematics, and said, that's actually exactly what we're seeing."

The readings come from 400 snow telemetry sensors across the West. They're made of cushions filled with antifreeze that compress and expand as snow accumulates and melts, and sensors that record the changes. The data are hard to work with, though, because there's so much day-to-day variation in storms and snow levels at each site.

"If you're interested in climate, all those little blips obscure how that is changing over the last four decades," Evan said.

To address that, Evan devised a mathematical formula to cut through the noise of the data and reveal trends in snowfall and melting. The calculations showed how the whole system was shifting because of higher temperatures.

"If we use the mathematical analysis, it tells you more about physical processes," he said.

Dan Cayan, a Scripps researcher who studies climate effects on water, wildfire, health and agriculture and was not involved in the study, said those changes could upend water management systems in the West.

"Of course snowpack has traditionally been used as an extra reservoir in the Western states, and particularly in California," he said. "It has some really nice properties, in that it doesn't melt off until the latter spring and early summer, when there are a lot of water needs, particularly with our agricultural landscapes."

Moreover, he said, California's water system is designed to harness powerful storms that pose both risks and benefits.

"Water resources and water hazards are intimately tied together in California," Cayan said.

Western mountains have historically released their water after winter storms have passed, but with snowmelt and storms occurring at the same time, the risk of floods increases. The near collapse of the Oroville Dam in February 2017 illustrates the kinds of dangers California could face with earlier runoff.

"We're getting snowmelt at a time when a big storm which has both rain and snow could happen, and could overwhelm the flood control capacity of a given reservoir in that earlier season," he said. "So that's a feature of climate change that is really a threat, that water managers are going to have to contend with."

Catastrophic wildfires are another peril of the changing regimen. Snowmelt dampens the risk of wildfire for California's forests during spring and early summer. If it runs off sooner, that could leave those woodlands parched and fragile.

"When snow melts earlier in the year ... that means the soils dry out earlier in the year," Evan said. "That means those forest ecosystems become drier. So in a sense, we can lengthen the fire season."

Early snowmelt also poses problems for tourism, particularly for mid- and lower-elevation ski resorts, and threatens part of the state's natural heritage, Cayan said.

"The snowpack is such an iconic feature, for many reasons," he said.

The study's findings show that the pace of climate change is now catching up to projections, and can be seen on the ground, Evan said.

"Some of these results really have only been seen in modeling studies," he said. "The fact that we can see them now in observations means that climate change in the Western U.S. is not something we will see in the next 50 years. It's something that's happening now. We can see it right now."

Brennan writes for the San Diego Union-Tribune.



**A SNOWY ROAD leads to the lake at South Lake Tahoe, Calif. Snowmelt is a vital California resource. (Gary Coronado Los Angeles Times)**

# Camp fire's rubble needs a resting place

Millions of tons of debris will require a permanent home after being processed, but nobody wants it.

By Laura Newberry  
LA Times 1/11/2019

The long road to recovery in the town of Paradise starts with removing millions of tons of charred rubble left in the Camp fire's wake.

But the question remains: Where will it all go?

Disaster officials are scrambling to secure a place to sort and process the remnants of nearly 19,000 structures destroyed in the wildfire that began on Nov. 8 and killed 86 people.

The mammoth undertaking has been slowed by staunch opposition from nearby communities eyed as potential sites for a temporary scrapyard, which would receive 250 to 400 truckloads of concrete and metal each day.

First it was Chico, where in late December residents persuaded the Federal Emergency Management Agency and the California Office of Emergency Services — the agencies responsible for the cleanup — to look elsewhere.

Now officials are considering Oroville, where they've proposed opening a scrapyard at a Superfund site near Highway 70 that served as the Koppers wood treatment plant for decades. Federal officials argue that, after years of soil and groundwater cleanup, the land is safe enough for industrial use. The site would be open for at least a year.

But some residents do not trust that the land is as clean as the U.S. Environmental Protection Agency says it is and worry that such intense operations could kick up toxic dust and damage local roadways.

"We've been through enough already," Oroville Councilwoman Linda Draper said. "We're hoping that they will listen to our concerns and think about putting it elsewhere."

The proposal to open a scrapyard at this particular site has struck a nerve. At a town hall meeting in December, residents spoke of losing family members who worked at the Koppers site to cancer. (State health officials tried to determine a decade ago why the number of pancreatic cancer cases in Oroville unexpectedly doubled in 2004 and 2005, but results were inconclusive.)

And residents are still reeling from the Oroville Dam's spillway failure in February 2017, which turned the small city into a bustling construction zone, deteriorating roadways and intensifying traffic. Butte County filed a lawsuit against the state Department of Water Resources in August, seeking compensation for its damaged streets.

Officials have investigated more than 50 sites within a 30-mile radius of Paradise, including quarries and concrete recycling facilities, as potential depositories for the fire debris.

The 200-acre Koppers site was identified as an ideal location based on a few factors, according to Mike Petersen, spokesman for the U.S. Army Corps of Engineers, which is tasked with developing the debris removal plan.

The Superfund site is close to Paradise and a rail spur, he said, and the area already is zoned for industrial use. It's also half a mile from the nearest home.

Officials collected public comments through Jan. 3 and hope to make a decision soon about the site, Petersen said.

It was during the public feedback period in December that Chico residents made a case for why the fire rubble should not be processed next to the Barber Yard neighborhood on the south side of town.

Officials ultimately abandoned the proposal after determining that roads in the residential area were not built to withstand the weight of industrial trucks and equipment, and that the activity could affect traffic to nearby businesses.

In both Chico and Oroville, environmental concerns have trumped all others, including noise and traffic. Though only nontoxic concrete and metal would be processed at the site — hazardous waste such as car batteries, electronics and asbestos will be sent to designated landfills in California and Nevada — residents worry that toxic dust could blow off the debris and compromise air quality.

At the Koppers site, protective geotextile fabric would be placed on top of the existing soil to prevent any contaminated ground from being disturbed, according to an environmental assessment by the Army Corps of Engineers. Contractors would be unable to draw water or dig at the site, and materials would be rinsed of ash and oils before arriving in Oroville.

But such assurances are not enough for Oroville resident and local environmental activist Bill Bynum. Through his work with the Butte Environmental Council, he's raised concerns about the possible health effects of two large fires at the Koppers site, one in 1963 and another in 1987.

According to the county, the fires may have caused an airborne release of dioxins. Those chemical compounds are known to cause cancer as well as reproductive and developmental problems.

Bynum said the Koppers site should not be reopened for industrial use until the potential hazards are fully understood over time.

"We don't see this as an emergency," said Bynum, 72. "We're wondering, why the rush? Why aren't they doing the sorting in Paradise?"

The debris can't be processed in Paradise itself, officials say, because such a large operation would impede reconstruction efforts there. And time is of the essence: The sooner the rubble is removed, the sooner residents can begin to rebuild or, at the very least, move trailers onto their properties.

Most of the nonhazardous concrete and metals recovered from the wildfire will be recycled and used in reconstruction efforts, Petersen said.

For all the opposition it faces, the Oroville proposal has seen some support. Oroville Mayor Chuck Reynolds said he understood the concerns; his uncle, who worked at the Koppers plant, died of cancer.

But Reynolds said he trusted federal officials when they said the land was safe for industrial use, and Oroville — which has a median household income of around \$35,000, according to the U.S. census — could use the contracting jobs tied to such a large project.

"We can't just leave it vacant forever," Reynolds said of the Koppers site.

"At some point, we have to move on."



Las Virgenes Municipal Water District Board of Directors inducted members **Jay Lewitt** of Agoura Hills, **Lynda Lo-Hills** of Calabasas and **Lee Renger** of Calabasas to take the oath of office to begin new four-year terms. Renger has served on the Board since 2005, Lewitt since 2014 and Lo-Hill replaced Glen Peterson who retired from the Board after 32 years. At the same December 7 meeting, Jay Lewitt was elected as President of the Board, Len Polan as Vice President, Charles Caspary as Secretary and Lynda Lo-Hill as Treasurer in which each office will be for two year terms. Shown above left to right are Len Polan, Jay Lewitt, Lee Renger, Lynda Lo-Hill and Charles Caspary.



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Las Virgenes-Triunfo Joint Powers Authority



## ‘Survivalist’ hunted humans, officials say

Anthony Rauda is charged with murder in shootings that terrorized hikers and campers in Malibu.



**MEMBERS of the Los Angeles County Sheriff's Department search Malibu Creek State Park in connection with the arrest of 42-year-old Anthony Rauda. (Carolyn Cole Los Angeles Times)**

By James Queally  
LA Times 1/08/2019

For the better part of two years, Anthony Rauda could be found sleeping in or around Malibu Creek State Park, one of any number of people who chose to spend their nights dozing near the popular hiking trails.

But while the campers used the beach-adjacent recreation area as a quick getaway, Rauda stayed. Prosecutors say he was using the park and the surrounding area for a different purpose: as a hunting ground.

In November 2016, a man who was sleeping outside while hiking the Backbone Trail awoke to a loud bang and said he felt a “burning sensation” in his arm. He looked down to find pellets from a shotgun blast embedded in his skin.

The hiker was the first of 11 people to find themselves in Rauda's sights over the next two years, prosecutors said Monday. Rauda, 42, allegedly opened fire on campsites

and cars seven times between November 2016 and last July, when a rifle blast killed 35-year-old Tristan Beaudette as he camped with his daughters.

Rauda was charged Monday with one count of murder and 10 counts of attempted murder, a move that brought some relief to residents whose neighborhoods were scarred by a wildfire and who'd become panicked at the idea that a sniper was stalking one of L.A.'s most idyllic locales.

"Our community, the greater Malibu community, is still coping with the loss of those in Thousand Oaks followed by the loss of all the homes and three people in the fire," said Malibu City Councilman Skylar Peak, referring to the mass shooting at Borderline Bar and Grill and the eruption of the Woolsey fire a day later. "It has just been a really tough, tough end to 2018, that I feel a lot of people are looking to put behind them."

Rauda was arrested near Malibu last October in connection with a string of burglaries, but news that he was carrying a rifle at the time of his capture led to speculation that he might have been the gunman connected to the sporadic shootings. Forensic tests confirmed that the rifle he was arrested with was used in several of the shootings, said two law enforcement officials who spoke on condition of anonymity in order to discuss the case candidly.

Investigators do not believe Rauda knew any of the individuals he allegedly fired on. The attacks were "all random, targets of opportunity," Los Angeles County Sheriff Alex Villanueva said.

Rauda was restrained in a chair and said little during a brief court appearance in Van Nuys on Monday. His bail was set at \$1.1 million. Rauda did not enter a plea and his hearing was continued until Jan. 22. Deputy Public Defender Max Fantozzi declined to comment after the hearing.

Beaudette's killing in July was the last in Rauda's alleged series of attacks, and it left residents of the greater Malibu area unnerved and frustrated. As investigators with the Sheriff's Department struggled to come up with a motive or suspect, news of other shootings dating to 2016 began to surface, leading to speculation that a sniper was stalking the area. Unsubstantiated reports of shootings and gunfire — some of which were dismissed as residents responding to the sound of a transformer explosion — began pouring into the Lost Hills sheriff's station last summer.

The attacks also became something of a political football, as Villanueva sharply criticized then-Sheriff Jim McDonnell's handling of the case during the waning days of his 2018 election bid to oust the incumbent. Echoing concerns raised by some residents, Villanueva questioned why the Sheriff's Department had not publicized the potentially related shootings earlier. Discussing those comments Monday, Villanueva said the issue had been handled internally and he praised the investigators who captured Rauda.

“It represented a challenge in many regards: the sheer logistics of it, the fact that there was a time period of almost two years that we had to backtrack and figure out what his activities were,” Villanueva said.

According to the criminal complaint filed Monday, Rauda was linked to seven shootings between November 2016 and Beaudette’s death last year. The first took place on Nov. 3, 2016, when James Rogers says he was shot in the arm as he was sleeping in Tapia Park, just south of Malibu Creek State Park. Rauda allegedly shot at three cars in the area in 2017, and prosecutors have charged him with five counts of attempted murder in connection with those incidents, according to court records.

Rauda opened fired on a Tesla in June of last year, just four days before Beaudette was killed, prosecutors said. Rauda was also charged with two counts of attempted murder in connection with Beaudette’s death, as the victim’s young daughters were sleeping nearby.

Prosecutors also accused Rauda of breaking into commercial buildings owned by the Las Virgenes Water District, Spectrum Building Development and the Agoura Hills/Calabasas Community Center five times between July and October of last year, court records show.

Several law enforcement officials, speaking on condition of anonymity, said Rauda was a “survivalist” who often slept outside in the Malibu area and other coastal sections. During the break-ins, he stole food and other items that would help foster his outdoor lifestyle, instead of valuables, the officials said.

The suspect’s weapon of choice also changed over the course of his alleged attacks, the officials said. He employed a shotgun in the 2016 shootings but began using a rifle afterward, they said.

Sheriff’s investigators had been closing in on Rauda in the weeks leading up to his capture, Villanueva said. Detectives found video footage of him committing a burglary in the area, and captured images of him carrying the rifle he was later arrested with, the sheriff said.

Rauda has a lengthy criminal record, including multiple convictions for illegal weapons possession in Los Angeles and Ventura counties, court records show. He previously lived in Florida and Texas, where he was convicted of assault, according to court records.

Sgt. Eric Buschow, a spokesman for the Ventura County Sheriff’s Office, said Rauda had been arrested several times in their jurisdiction and was once found illegally carrying a handgun. Investigators there also noted that in 2010, a woman was injured near the Los Angeles-Ventura county border when someone shot at her car from a distance while she drove along Thousand Oaks Boulevard, though Buschow said there is no definitive link between Rauda and that case.

Peak, the Malibu councilman, said that although he's happy a suspect is in custody, he still often thinks of Beaudette's family.

"Hopefully, we can put this thing to rest and people can rest easy at night. It was a real difficult thing for everyone in the area," he said. "My heart still goes out to the widow and the children ... this was an unimaginable crime."

Times staff writer Richard Winton contributed to this report.



**TRISTAN BEAUDETTE** with his wife, Erica Wu, and daughters. In July, a rifle blast killed the 35-year-old as he camped at Malibu Creek State Park.



( ) RAUDA, who also lived in Florida and Texas, has a long criminal record. (Inform )

# PCH remains closed as more showers are forecast

Mudslide buried part of road after heavy rain. Light storms are expected this week.

By Laura Newberry  
LA Times 1/07/2019

A stretch of Pacific Coast Highway in Malibu was expected to remain closed until at least Monday as crews continued to clean up mud and debris on the roadway after a winter storm moved through the region over the weekend, bringing heavy rain to some burn areas.

The highway between Encinal Canyon Road in Malibu to Las Posas Road in Ventura County was closed late Saturday and all day Sunday after a mudslide, according to the California Department of Transportation. The roadway was covered in debris and up to 4 feet of mud in some areas, temporarily trapping some motorists.

“It’s safer to keep the road closed and monitor the area as rain keeps falling,” Caltrans spokeswoman Lauren Wonder said.

After a lull in the rain throughout much of the day, light showers were expected to hit Southern California late Sunday and continue through Monday morning, according to the National Weather Service.

About one-tenth of an inch of rain was expected to fall along the coasts and valleys, with higher amounts in the foothills and mountains, forecasters said.

A more intense rainstorm struck Saturday night, dropping half an inch to 1 1/2 inches of rainfall throughout the L.A. area. The storm triggered a mudslide on PCH and prompted flash flood warnings overnight in burn areas in Los Angeles and Ventura counties.

The Woolsey and Hill fires burned more than 100,000 acres in November, destroyed about 1,600 structures and killed three people.

More light showers are expected Wednesday night into Thursday morning, according to the National Weather Service. There’s potential for a bigger storm associated with a cold front moving into the weekend.

“We’ve got a pretty good surge of storms coming through,” said Kathy Hoxsie, a meteorologist with the weather service.

A moderate El Niño weather pattern brewing in the eastern tropical Pacific Ocean is bringing more precipitation to some regions of California. The outlook for the next several weeks indicates above-normal precipitation; in the next few months, the odds are looking good for above-average rainfall, experts said.

# 'Humans don't have water to drink'

Prolonged drought in a corner of Pakistan produces a hunger crisis



**ABDUL HAMEED** stands on a dry reservoir near his village in Pakistan's Baluchistan province, where most of the children suffer some degree of malnutrition. (Rabia Bugti For The Times)

By Shah Meer Baloch  
LA Times 1/05/2019

QUETTA, Pakistan — Abdul Hameed walks along the edge of the Chiltan dam's dry reservoir to a hut, where he spends his days watching for passing animals that could be threatened by hunters. Lately, the provincial wildlife ranger says, the beasts have been scarce.

"There used to be ibex, markhor goats, other wildlife," said Hameed, 49. "But they are migrating from the Chiltan because most of the ponds have gone dry."

It is a common lament here in Baluchistan, Pakistan's most expansive but poorest province, which is suffering from a prolonged drought so dire it has triggered a health crisis. Since the 1960s, residents have had one main demand from every provincial government: Give us water.

In 2013, the government optimistically built the Chiltan dam outside Quetta, the provincial capital, to provide water for villages like Qilli Haji Ishaq Khan, where Hameed lives. But with little rain since then, the dam has been of scant value.

Hameed's family is so tied to his village in the mountains outside Quetta that it is named for his elder brother, Haji Ishaq Khan Sumalani. They and other Sumalani tribespeople have lived in this dry area for 150 years, once bringing in water on camelback and building a pond in the early 2000s to collect rainwater.



Now that pond is dry. Out of the 50 families that once lived in the village, 20 have left because of the water crisis and settled in other villages, Hameed said.

“Humans don’t have water to drink here,” Hameed said. “I doubt if we can stop the migration of wildlife, because as human beings, we are thinking of leaving to live in a place where we have water.”

Baluchistan, which covers 40% of Pakistan’s land area, has long suffered from poverty, official neglect and separatist violence. Despite large stores of natural gas and mineral resources in the province, United Nations figures say that 71% of its 12 million people live in poverty.

Five years ago, officials announced plans to build 100 small dams to divert water to towns and villages, but few have been completed. Amid years of scarce rainfall blamed in part on climate change, wells are running dry and most residents must purchase water to drink and bathe.

According to the provincial government, 62% of Baluchistan lacks safe drinking water and more than 60% of its land is not cultivable.

As the water crisis has worsened, so has the hunger rate in Baluchistan, with provincial health ministers declaring a malnutrition emergency in late November.

Officials estimate that 16% of the children here suffer from acute malnutrition and that 40% under the age of 5 are underweight. More than half suffer from stunted growth and face vitamin deficiencies.

Provincial health minister Naseebullah Marri said Baluchistan officials have pressed the federal government in Islamabad for urgent help to battle the drought and nutrition crisis.

But provincial Assembly member Sanaullah Baloch said that “nothing has been done.”

“The government thinks that they can end drought by distributing some food,” Baloch said. “The government needs proper planning, policies and execution of those policies — in which the Baluchistan government lags behind.”

Haibat Khan Marri, a 40-year-old security guard in Quetta who is not related to the health minister, said five of his eight children were deemed to be malnourished during a recent health screening.

He lives in a neighborhood called New Kahan Marri, where 60% of the children are listed as being malnourished — the highest rate in the province.

On his \$170 monthly salary, Marri said, he can’t afford to buy meat or other protein for his family. His wife, who is pregnant, has not been able to breastfeed their youngest children, so he has to buy infant formula, which they mix with packaged water.

For malnourished children, the government has provided emergency food supplements. But some experts say the government needs to do more.

“It is a multi-sector issue which only can be tackled when the government resolves poverty, the water crisis and drought-related issues” together, said Faisal Muhammad, a nutrition expert at UNICEF.

Many in New Kahan Marri opposed the Pakistani government in the 1970s and left for Afghanistan, returning after a military coup and the execution of Prime Minister Zulfikar Ali Bhutto. Asked why the current government hadn’t done more for New Kahan Marri, the health minister dismissed the residents as migrants and terrorists.

In September, newly elected Prime Minister Imran Khan, who ran on a populist platform, said at a meeting of provincial leaders that he would resolve the water crisis in Baluchistan and neighboring Sindh province. But so far there is little to show for Khan’s pledge.

Many experts believe that funds intended for health emergencies have been squandered to corruption. While officials have banned residents from drilling their own wells in Quetta — to prevent a worsening of the water shortage — some people have drilled unlicensed wells while authorities look the other way, said Imran Alyani, chief engineer with the provincial public health department.

Hameed, who has eight children, now buys water to survive. Of his \$200 monthly salary, he estimates he spends more than one-third on water.

“We have submitted a letter to every government for providing us water,” Hameed said. “We demand a well that can meet our water needs, but the government never listens to weak voices.”

Baloch is a special correspondent.



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