

WATER

FROM A1

the majority of the ash is flowing from, Provo River and American Fork River were also affected by the fires.

Abbott called last year's fires, which burned approximately 300 square miles of forest, "megafires." But not all wildfires are bad for the environment, he said, as they can lead to diverse habitat in the landscape.

"That wildfire, sure, it does kill the plants in that one patch, but then it lets other organisms and species and other kinds of ecosystems develop in that place," he said.

Without wildfires, certain species wouldn't exist, as they could be taken over by another species, according to Abbott.

Abbott said smaller fires, which have been historically part of the local ecosystem, are critical for the forest and for the river to renew itself, as well as several species that are adapted for those natural disturbances. But megafires are different and affect a much larger area.

"You can imagine with a megafire it's wiping out a whole mountain all out once," he said. "The trees recover more slowly, it's harder for animals, especially small things like fish, invertebrates, insects and crustaceans moving through the river system."

Abbott said the wildfires killed off a large portion of fish in the Spanish Fork River system.

"It killed the invasive species that were there, so maybe this will be an opportunity for native fish to recolonize those rivers and streams," he said.

Doctoral student Erin Jones, the lead researcher of the group, said there hasn't been much scientific study conducted on how wildfires affect lakes with algal blooms.

The study was first sparked by Jones, who had already been collecting water samples before the fires, when she looked at the weather forecast and learned that remnants from Hurricane Rosa were going to bring rainfall.

"We had been measuring the water quality in some of these streams for about a year and a half," she said. "It's not very often that you have a dataset before the natural disaster happens."

She said the fires, combined with rain from Hurricane Rosa, caused a lot of erosion to travel from rivers and streams and into Utah Lake.

She said the day the storm was expected to hit, her team installed robots to collect samples each hour throughout the rainstorm to see all the sediment, nutrients and different kinds of pollution that were coming off the landscape.

"Because this wildfire and the water chemistry are such a unique phenomenon ... it's really hard to say what is going to happen and what the water quality impacts will be from larger fires and more spiky precipitation events," she said.

She predicts that the ash could potentially decrease the algal growth, especially at the mouth of the rivers that flow into Utah Lake, but algae might increase in the long term.



LAURA SEITZ, DESERET NEWS

A plate containing a filter cake of algae and cellulose is pictured on Wednesday in the greenhouse at UVU in Orem.

"We might see fewer (algae) this year. But then next year it will be even worse," she said.

Abbott noted that while the Spanish Fork River "looks like chocolate milk" due to the ash, the Provo River is running clear.

While standing at the edge of Provo River, Abbott pointed out that the water there shouldn't run so clear this time of year. The reason it does is because Deer Creek and Jordanelle dams have trapped the sediment. "Sometimes we're tempted to think if the river is muddy, it's unhealthy. And that simply isn't the case," he said. "That's part of the natural disturbance cycle of the river, and there are lots of organisms in the river that depend on that material. So when you put a dam that makes the water clear and takes out all of that sediment, that can have a negative effect on the river."

Abbott said the state of Utah Lake's water is important because when its water evaporates it feeds the snowpack in the winter that fuels the ski industry.

"One of the ecological laws is that everything is connected," Abbott said. "Whenever we are degrading the soil, air or water it has a direct impact on society."

To prevent or mitigate harmful algal blooms in Utah Lake, UVU chemistry professor Kevin Shurtleff and his team of undergraduate researchers began developing the pilot project for the algae-harvesting boat in 2016.

"A lot of other researchers have been trying to understand what's causing the algal blooms. I kind of skirted that and I want to find a solution to prevent them or end them," he said.

The algae-harvesting boat is expected to be 21 feet long and 8½ feet wide and would be able to filter 600 gallons of lake water per minute. The cost of the boat is \$75,000, and larger boats can cost upward of \$200,000. Currently, UVU is in the process of patenting the boat.

Prior to their final design, researchers tested seven different methods for removing algae from water. Of those seven, a technique called a "plate and frame

filter press" worked the best and has been used for other purposes like removing yeast from beer or cleaning fracking water.

Shurtleff found success when he added cellulose, a crushed natural wood fiber, to the process to allow for the algae to be caught while preventing the algae from clogging the filters.

He said the reason why it's challenging to filter algae, or cyanobacteria, out of the lake, is because it measures 3 to 6 micrometers in diameter, compared to human hair, which is 100 micrometers in diameter.

Shurtleff and his students conduct harvesting tests in a 40-gallon algae tank inside UVU's greenhouse facility. After filtering out the algae, what he calls "filter cakes" are created, which he hopes to turn into fuel.

"That's the advantage of having a mobile system is that we can drive the boat to the (affected) areas," he said.

Shurtleff said his method is environmentally friendly and won't cause harm to June suckers, an endangered species of fish native to Utah Lake.

If Shurtleff's proposal is approved this month, his team could begin assembling the boat and have it operating in Utah Lake by mid-July when algal blooms are expected to hit their peak.

"Ultimately, what we'd like to see is a fleet of these algae-harvesting boats," he said.

His team hopes to target areas that have toxic levels of algae like Sandy Beach, Lincoln Beach, Provo Bay and the marinas where people station their boats.

Shurtleff said groups from Martha's Vineyard in Massachusetts, where their own algal bloom affects the local shellfish industry, and Upper Klamath Lake in California have come to him for advice.

"I really hope we get funded here. ... It will show that the technology really does work," he said.

If his method is a success, Shurtleff said it's possible that he could use the technology in other watersheds across the country that are experiencing harmful algal blooms.

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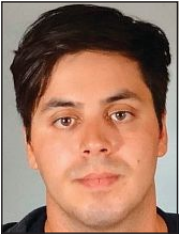
L.A. County deputy shot in off-duty attack at fast-food restaurant dies

■ ASSOCIATED PRESS

LOS ANGELES — A Los Angeles County sheriff's deputy who was shot in an off-duty attack at a fast-food restaurant died Wednesday, the sheriff announced. Joseph Gilbert Solano, who had been on life support, died Wednesday afternoon, Sheriff Alex Villanueva.

Medical staff worked around the clock for two days "trying to do a miracle but unfortunately that didn't come to pass," he said.

A man walked into a Jack in the Box in suburban Alhambra on Monday and shot Solano in the head as he was waiting for his food order at the counter, authorities said.



Rhett Nelson

"The deputy was alerted in the restaurant that someone was following him and that's when he turned to confront it and that's when the shooting happened," the sheriff said. "But a motive or rationale from the suspect, that's the million-dollar question."

Rhett Nelson, 30, of St. George, Utah, was arrested Tuesday on suspicion of the

Solano was out of uniform and there's no indication that the gunman knew he was a deputy, Villanueva said.

killing after he called his father in Utah from a Long Beach church to say he had killed someone. Nelson's family has said he suffers from mental illness and an opiate addiction.

Investigators said Nelson also is suspected of shooting a 30-year-old man standing on a Los Angeles street about an hour before Solano was killed.

Meanwhile, the San Diego Police Department, the San Diego County Sheriff's Department and the Carlsbad Police Department issued a news release Wednesday saying that Nelson is being investigated in connection with a series of five armed robberies of convenience stores that occurred in the area June 7 through Sunday.

ANTITRUST

FROM A1

But Reyes' deputy and antitrust specialist David Sonnenreich said the analysis and discussions did not target any particular company and were intended to be a "call for recalibrating the way we look at antitrust and big tech."

He also noted that dated antitrust rules fail to address issues that have come to the fore with the advent of big tech platforms.

"(One) problem that we've identified is that very specialized sets of go-to tools for ... brick-and-mortar businesses don't work as well in the digital world," Sonnenreich said. "Tech just operates differently. ... It's amorphous or chameleon-like."

Sonnenreich also noted the way some tech platforms function reflects that the real commodity, for the companies, is the data that's gathered about the individual users.

"Most of these services are either free or nominally priced in terms of cash," Sonnenreich said. "It makes it hard for consumers to evaluate product A versus product B, when the cost is zero."

"We all value our privacy ... but have to recognize that privacy is, in many ways, compromised by the digital world in which we live."

While state agencies ponder individual or collective next steps, federal law and rules enforcers are laying the groundwork for moving antitrust actions forward.

Under an agreement recently struck between the U.S. Department of Justice and the FTC, the agencies split potential investigative duties aimed at big tech platforms. Per the agreement, the DOJ now has authority over any potential antitrust investigation into Google parent Alphabet Inc. and Apple, while the FTC has oversight of Facebook and Amazon.

Close behind that bifurcation, Republican Utah Sen. Mike Lee linked arms with

Minnesota Democratic Sen. Amy Klobuchar on Wednesday in announcing a July hearing at which a Senate subcommittee will have the opportunity to learn more about any pending, or active federal investigative actions targeting big tech on antitrust issues.

Lee noted concerns that splitting responsibilities between two agencies may not be the most efficient path forward.

"As the Federal Trade Commission and the Department of Justice's Antitrust Division are apparently poised to begin investigations into possible antitrust violations by the tech industry, I am interested to learn more about the conduct the agencies will examine and the resources they will require to carry out this mission," Lee said in a statement.

"I also intend to explore how and why the agencies are splitting the review of these tech firms between the two agencies."

"Given the similarity in competition issues involved, divvying up these investigations is sure to waste resources, split valuable expertise across the agencies, and likely result in divergent antitrust enforcement," Lee said.

Conn Carroll, Lee's spokesman, said his boss also stands behind state-level efforts to probe potential antitrust issues as they relate to big tech.

"Sen. Lee believes state (attorneys general) should investigate all antitrust concerns but they should only prosecute meritorious cases," Carroll said.

Klobuchar underscored that her antitrust concerns go beyond big tech platforms.

"In the wake of multiple reports that the Justice Department and the Federal Trade Commission may finally be initiating antitrust investigations into the largest tech firms, it's critical that we and the American people have a good sense of what the agencies are actually doing

to protect competition in this important part of our economy," Klobuchar said.

"But it's not just about the tech industry. Protecting competition is vital to the future of every sector in our economy in every state across our country. The state lawsuit challenging the merger of two of the four nationwide cell-phone carriers shows that."

"We need antitrust enforcement that meets the demands of the 21st century economy and enforcement agencies that have the resources and the will to undertake aggressive enforcement whenever and wherever competition is under threat. I look forward to discussing these matters with agency leadership on July 23," she said.

Jason Oxman, president and CEO of the Information Technology Industry Council, a tech advocacy group, responded Wednesday urging policymakers to "avoid harmful unintended consequences" as they consider antitrust questions.

"Consumers have access to numerous tools to improve their lives, work, and society because of technology. The entrepreneurs that make up the tech industry are constantly innovating to promote the well-being of their customers and maintain the ability to create the technologies that individuals, businesses, and governments demand."

"As policymakers and government officials explore the current state of competition in U.S. markets, it is critical that they recognize that antitrust law protects competition, not competitors, and avoid harmful unintended consequences, especially those that could hurt the American economy, stifle American companies' ability to innovate, and cede U.S. technological leadership."

The Information Technology Industry Council counts Amazon, Apple, Facebook and Google among its member companies.

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United States Environmental Protection Agency

NOTICE OF AVAILABILITY OF ADMINISTRATIVE RECORD

THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (EPA) ANNOUNCES THE AVAILABILITY FOR PUBLIC REVIEW OF THE ADMINISTRATIVE RECORD FOR THE OGDEN SWIFT SITE EMERGENCY RESPONSE ACTION IN OGDEN, UT

The Administrative Record (AR) for the Ogden Swift Building Site Emergency Response includes all information used during the decision-making process that led to the environmental response at the site, including the selection of the Response Action. EPA's response actions consist of clearing safe pathways and work areas within the buildings, removing large amounts of highly volatile and explosive chemicals found in the building, and properly treating and/or disposing of hazardous materials found at the site. EPA will properly dispose of all debris and hazardous materials at a registered landfill or other appropriate facility.

Other documents, including the comments received on the Administrative Record and EPA's response to significant comments, may be added at a later date.

The administrative record and more information about the Emergency Response may be viewed online at: response.epa.gov/OgdenSwiftBuilding. If you cannot access the record online, please contact Katherine Jenkins for other available methods.

The Administrative Record is also available at:

EPA Records Center
Region 8
1595 Wynkoop Street, Denver, CO 80202-1129 • 800-227-8910
Monday – Friday • 8am – noon, 1pm – 4pm
By appointment only

Questions on the Administrative Record may be submitted to:

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