

## Whittier College study shows that goat-grazing can help prevent wildfires

The joint study by Whittier College and Habitat Authority was published in "The Journal of the Torrey Botanical Society," the oldest botanical journal in the Americas.



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*Botanical Society . (Photo courtesy of Adriana Cox-Gonzalez)*

### Whittier Daily News

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Thanks to a Cal Fire grant, the [Puente Hills Habitat Preservation Authority](#) and [Whittier College](#) have discovered new data on reducing wildfire fuel in the Puente Hills Preserve. They also got published in a renowned scientific journal for it.

Michelle Mariscal, staff ecologist at the Habitat Authority, and Anna Bowen, assistant professor of biology and environmental science at Whittier College, along with three biology students, published the peer-reviewed article in March.

[Their findings](#), featured in “[The Journal of the Torrey Botanical Society](#),” the oldest botanical journal in the Americas, demonstrated that goat grazing leads to a short-term reduction in fuel loads, helping prevent [wildfires](#), and can help reduce the growth of invasive plant species when timed well.

“Publishing our work allows us to add to the growing body of plant science and helps ensure our findings can be used by researchers and land managers working to understand and better protect the environment,” Mariscal said.

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The California Department of Forestry and Fire Protection Fire Prevention Grants Program awarded the Habitat Authority a grant in 2020 to fund activities that would reduce the [wildfire fuel load](#) in the Puente Hills Preserve. The grant paid for two years of goat grazing in Turnbull Canyon, offering an opportunity for local ecologists to dig deeper into the effects of goat grazing.



*Whittier College student Adriana Cox-Gonzalez collects data from vegetation for a goat grazing study the college completed with Puente Hills Habitat Preservation Authority in Whittier. The two groups jointly published a peer-reviewed article in The Journal of the Torrey Botanical Society on their findings. (Photo courtesy of Anna Bowen, PhD)*



Mariscal partnered with Bowen, whose team collected vegetation data before and after goat grazing both years, as well as in adjacent control plots where grazing did not occur. They also collected goat pellets to assess, via a greenhouse trial, the potential for seeds of certain invasive plants to remain viable after passing through the goats' digestive system, which is a concern for the Habitat Authority and other land managers when contracting with goat herds that are moved between different areas.

They found that goat grazing provides short-term reductions in wildfire fuel loads and, when properly timed and managed over multiple years with attention to factors such as rainfall, how many goats are on the land, and active herd management, can reduce invasive plant

cover—contributing to healthier, safer hillsides. Additionally, the study confirmed that seeds in goat pellets have low potential to germinate, meaning grazing does not contribute to the spread of invasive plants, Habitat Authority officials said.

“Goat grazing is a valuable tool alongside other methods to reduce wildfire fuels and manage invasive plants,” Mariscal added. “Although it requires more careful planning, close monitoring, and a longer time commitment than other methods, when these factors are managed well, goat grazing supports both fire safety and ecosystem health without spreading invasive species.”

“The Habitat Authority is committed to fostering strong partnerships with local communities and embracing the lessons offered by nature. Projects like this exemplify how collaboration can create lasting benefits for the entire region,” said Ivan Sulic, chair of the Habitat Authority’s board of directors.

The Habitat Authority was founded in 1994 and is charged with preserving and protecting more than 3,800 acres of natural habitats in the Puente Hills area, including land in [CITIES HERE](#).

“We are grateful for our ongoing partnership with students and professors at Whittier College over the years for valuable learning projects such as this. We are proud of Ecologist Mariscal for dedicating her expertise to this project and making the Preserve a learning resource for us all.” said Andrea Gullo, Habitat Authority executive director.

The three Whittier College students and study co-authors are Adriana Cox-Gonzalez, Fernando Ramirez and Lisa Vela.

The Torrey Botanical Society was founded in 1867 in New York City and its journal publishes research in plant biology, except horticulture, with emphasis on research done in, and on the plants of, the Western Hemisphere.