

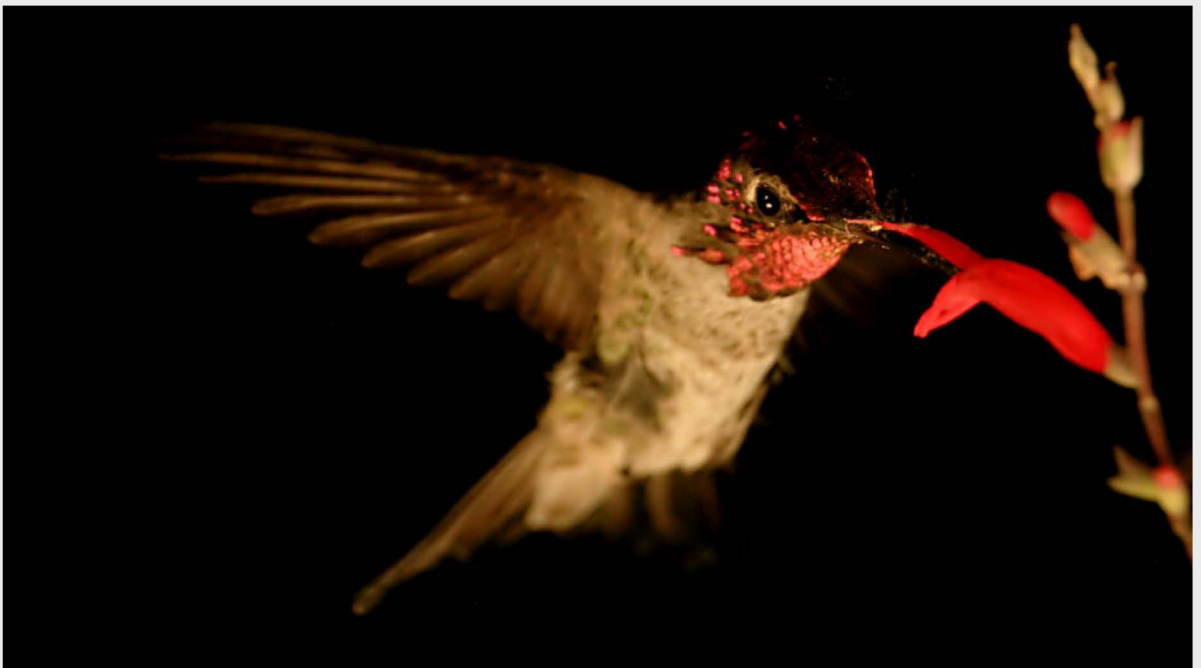


Featured Publication

MVZ Affiliated Professor Robert Dudley, MVZ Professors Rauri Bowie and Jim McGuire, MVZ Postdoc Ammon Corl and MVZ Affiliated Graduate Student Aleksey Maro

[Hummingbird Feeders Provide More than Water](#)

To Professor Robert Dudley a backyard hummingbird feeder is much more than a way to observe wildlife, it's a natural experiment in fermentation. Just as with nectar-filled flowers, yeast settles in and turns some of the sugar into alcohol. "Hummingbirds are eating 80% of their body mass a day in nectar," said Dudley. "Most of it is water and the remainder sugar. But even if there are very low concentrations of ethanol, that volumetric consumption would yield a high dosage of ethanol, if it were out there. Maybe, with feeders, we're not only farming hummingbirds, we're providing a seat at the bar every time they come in." The results of the study published in the journal [Royal Society Open Science](#), demonstrate that hummingbirds happily sip from sugar water with up to 1% alcohol by volume, finding it just as attractive as plain sugar water. "They burn the alcohol and metabolize it so quickly. Likewise with the sugars. So they're probably not seeing any real effect. They're not getting drunk," he added. The research is part of a long-term project by Dudley and MVZ Professors Jim McGuire and Rauri Bowie, seeking to understand the role that alcohol plays in animal diets.



Recent Publication by MVZ Researchers

MVZ Posdoc Christopher Emerling and MVZ Professor Michael Nachman

How Anteaters Lost Their Teeth

MVZ Postdoc Christopher Emerling's recent paper on tooth loss in sloths, anteaters, and armadillos was featured in the August issue of *Science*. Researchers had assumed that dental deficiencies dated back to the ancestor of all three groups of animals, which make up the clade Xenarthra. But a new genetic study, reveals a more complex story. Over millions of years, various xenarthrans gradually lost different genes important for tooth development—a “regressive evolution” that resulted in the variety of tooth structures seen in the creatures today."

This orphaned baby Hoffmann's two-toed sloth (*Choloepus hoffmanni*) in Costa Rica has to contend with weak teeth because of its evolutionary heritage.



MVZ Affiliated Professor Justin Brashares

Wildlife Returns After Devastating Wildfire

During the summer of 2018, the Mendocino Complex Fire ripped through UC's Hopland Research and Extension Center (HREC), transforming the oak-dotted hillsides into an ash-covered wasteland. "It felt like something out of the Lord of the Rings — like Mordor. It was hard to imagine much surviving," said MVZ Affiliated Professor Justin Brashares. But months after the fire, animals were seen returning to the area, spotted by a grid of motion-sensor camera traps that Brashares' lab has operated since 2016. "We were surprised that many species seem to be resistant [to the impacts of the fire]," said Kendall Calhoun, a graduate student in the lab. The lab analyzed more than 500,000 camera grid images taken in the years before and after the fire to understand how the blaze impacted small and medium sized mammals. The study appears in the July edition of [Ecosphere](#), and is one of the first studies to compare continuous wildlife observations made before and after a megafire.



Above: Kendall Calhoun checks a motion-sensor camera trap at Hopland. The team visits the 36 cameras every three months to download new photos, replace broken parts, and clear grass and other debris that may block the view of animals. Below: a mountain lion caught on camera in June 2020.



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Banner Image by Erin Person, 2015.
Spotted hyena cubs at a communal den in the Maasai Mara, Kenya.