



ENVIRONMENT

Goats clear the way for tiger salamander in Carmel



Tiger salamanders are showing up again at Carmel's Santa Lucia Preserve. (Courtesy of Dr. Christy Wyckoff)

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Carmel >> Nature is full of mutually beneficial relationships: flowers and bees, anemones and clown fish, and, of course, peanut butter and jelly. But this year scientists at Carmel's Santa Lucia Preserve were happy to discover an unsuspected linkage: goats and salamanders.

Baby California tiger salamanders, an endangered species, were missing from the preserve since 2008. Now, thanks to goats that are chewing open once inaccessible habitat, scientists report that the young amphibians are reappearing.

"We started to get concerned that we weren't seeing as many tiger salamanders in the preserve," said Christy Fischer, executive director of the Santa Lucia Conservancy, a conservation group that manages and protects the preserve. "The salamanders were already in peril, and we had real concerns about sustaining their populations."

Fischer's fellow scientists told her that the problem might have stemmed from overgrown grasslands surrounding ponds where the salamanders breed.

"It was becoming too difficult for them to move through the thick thatch and brush to find suitable burrows," said Fischer. "And even when they did find burrows, it was too difficult for them to get back to the ponds. It was getting denser and harder for tiger salamanders to use their habitat."

So she tried something new. She hired 1,400 goats to chew and chomp away the overgrown thatch. As the goats gnawed at the thick blanket of vegetation, they revealed lively green grassland, and Fischer noticed ecological changes blooming.

"Oh my goodness, we were so excited," said Fischer, recalling her joy when she saw not only salamanders but also potentially endangered tricolored blackbirds reappearing in the preserve. "And we have been so excited to watch how quickly the land and wildlife are responding to our management effort."

Fischer explained that the goats fill an empty niche previously occupied by cattle, and before them, native grazers. Tule elk and even grizzly bears once played key roles in keeping grasslands in check.

Now that the thatch is cleared, tiger salamanders are free to show their smiling faces.

"They have broad faces with bright eyes that look up right at you," said Fischer. "And it just happens that their mouth configuration is in a permanent smile. If you're lucky enough to see one up close, they'll often look up at you, smiling, in the most delightful way."

Even the preserve's water quality may benefit from the union between goats and salamanders. Because thick thatch acts like a thatched roof, Fischer said, rainwater wasn't reaching the soil.

"For groundwater recharge and soil health and biodiversity, opening up that thatch so the rain can actually reach the ground is surprisingly important." The preserve's scientists plan to track water quality changes in coming years.

Though this bit of news is good, the tiger salamander is still endangered, Fischer said, and just as deserving of our protection.

"They're a very important part of our ecosystem — just one of those little nuts and bolts that help keep our grasslands and wetlands healthy," Fischer said. "They help support populations of creatures that we all love to see and think about like bobcats, foxes and even eagles. They're an important part of the web of life out here."

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