

Beyond the bite: Finding respect for snakes

ASU researcher Owen Bachhuber studies our fear of snakes, and how overcoming it can boost conservation

By Dolores Tropiano, ASU News
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Snakes will never win a popularity contest.

The low-profile reptiles have amassed a following of haters that dates back to Biblical times. The “serpent” is often associated with deception, danger and evil.

Owen Bachhuber wants to know why.

The Arizona State University doctoral student and ophiophile studies the relationship between people and snakes, exploring how fear, experience and culture shape the way humans interact with one of the world's most misunderstood animals.

He believes that beneath the scaly skin, slithering gait and sometimes fatal bite are creatures that play a critical role in the environment.

"Snakes are important for our environment as predators and prey for a variety of animals," said [Bachhuber](#), a graduate teaching assistant in ASU's [School of Geographical Sciences and Urban Planning](#). "They are a valuable food source for animals like hawks, bobcats and badgers. Most snakes eat rodents and reduce disease spread and crop damage by controlling their populations. By eating rodents, snakes also disperse seeds from native plants and fertilize them when they defecate."

And yet, "they are one of the most widely feared animals and one of the most widely persecuted animals," he said. "So helping people safely coexist with them is important to their conservation, as well as to our well-being as a society."

Bacchuber's work is particularly important in Arizona, where residents regularly encounter rattlesnakes in neighborhoods, parks and desert preserves — especially during the summer months. The Grand Canyon State is the rattlesnake capital of the country, with 13 distinct species of rattlesnakes and 20 venomous snake species.

In recognition of World Snake Day on July 16, we're sharing some of the more striking points of Bachhuber's research, which suggests there is far more to rattlesnakes than their reputation.

Through field studies, public outreach and educational programs, Bachhuber is working to understand how people form attitudes toward snakes — and how those attitudes can change.

(Video: <https://www.youtube.com/watch?v=FxtwjXKeSf4>)

Understanding fear

Bachhuber, who led a global study examining attitudes and behaviors toward snakes, believes that a fear of snakes is a learned response rather than an innate one.

Children often take cues from parents and other adults, he said. Cultural stories, religious symbolism and media portrayals can reinforce the idea that snakes are dangerous or malicious.

That attitude can lead to risky actions.

“Our attitudes about wildlife and what we know about them are really important for predicting our behavior,” he said. “Lots of people who are afraid of snakes might try to kill them, but trying to kill a snake actually puts you in more danger ... because you’re approaching the animal and putting yourself in close contact with it.”

“Your risk of a bite increases when you try to kill a snake,” he added. “Encouraging people to find safe alternatives for making their yards and homes less appealing to snakes can reduce those encounters. We also encourage safer behaviors, such as calling a relocation service.”

Bachhuber says that humans are naturally good at noticing snakes, an idea supported by decades of research and known as the Snake Detection Theory.

But noticing a snake is not the same thing as fearing one.

“We’re already predisposed to have heightened attention to them,” he said. “That attention can shift into fear and disgust, or it can shift into fascination and appreciation.”

Snake appeal

From a young age, Bachhuber was fascinated by snakes.

“To me, they’re beautiful and elegant,” he said. “They don’t have any legs and they’re a long tube of a body, but they can do so many cool things with that.”

As an undergraduate and later as a graduate student at Cal Poly San Luis Obispo, Bachhuber studied rattlesnake behavior through Project RattleCam, which uses livestream cameras placed at wild rattlesnake rookeries where females gather to give birth.

The cameras allowed researchers to observe snakes without disturbing them. He was particularly interested in the social relationships among snakes.

What Bachhuber found challenged common assumptions.

The snakes frequently interacted with one another. Researchers observed prairie rattlesnakes making unusual head-twitching motions when approaching each other face-to-face. Bachhuber believes that behavior was a form of communication, perhaps a greeting.

His research also found that snakes have social preferences, spending time with certain snakes more often than others. Female snakes appeared to be more social than males.

Perhaps most surprising was the care adult snakes showed toward their young.

“We saw adults guarding and protecting the pups,” Bachhuber said.

Coexisting in Arizona

Today, Bachhuber is interested in snake conservation and passionate about connecting people with animals through online community science platforms, zoo and museum exhibits and public presentations. He has even developed a rattlesnake-based science curriculum for elementary school students and worked with ASU undergraduates to analyze the impact of that curriculum.

“I am interested in education,” he said. “Thinking about ways to educate people and help them understand and appreciate snakes is really important to me.”

Bachhuber explains why ASU is a natural fit for expanding that work.

“The obvious reason is that we live in a place that has a lot of snakes,” he said. “And ASU's resources, along with the diverse perspectives and researchers we have here, have been incredible. Being able to work across many departments with different collaborators has been amazing.”

He was also drawn to ASU by the opportunity to work with his advisor, Professor [Kelli Larson](#), one of the few researchers studying human relationships with snakes and other wildlife.

Ultimately, Bachhuber hopes to make a difference in people's attitudes toward snakes.

And while they are unlikely to top anyone's list of favorite animals, he believes people can develop a greater acceptance — and perhaps even appreciation — for the role that snakes play on the planet.

“I used to think that human well-being and animal well-being were separate things, and I was really focused on the conservation and animal side of things,” Bachhuber said. “But I've grown to see that those things are so interconnected, and really one and the same. Our values, what we think is important and how we treat others, extend between people and animals.”

This story originally appeared on [ASU News](#).

Main image



ASU doctoral student Owen Bachhuber with his 22-year-old Solomon island tree boa named Priscilla. Bachhuber is expanding research on human-snake interactions in Arizona. Photo by Charlie Leight/ASU News

Text image(s)



Doctoral student Owen Bachhuber poses with his 18-year-old Australian woma python named Wanda at Coor Hall on the Tempe campus. Photo by Charlie Leight/ASU News