The Buzz

Advocates *for* Snake Preservation

Changing how people view & treat snakes

2024 • #12

Male Panamint Rattlesnakes spar in a popular basking area while a female observes in the background.

The Art of Gentle Combat

Understanding the Non-violent Sparring of Panamint Rattlesnakes

It's sometimes difficult to distinguish between mating, sparring, and basking, but easy to tell that relationships between male rattlesnakes are beyond my ken.

Continued inside...

Musings from Melissa

Last year was one of unexpected changes and delightful returns. My partner Jeff embarked on a new journey as manager of the Muleshoe Ranch Preserve in southern Arizona. We fell in love with this place when we lived and worked here more than a decade ago. It's where the idea for ASP came to life, and what inspired us to leave the city for rural life in the Sky Islands of the Southwest. We never forgot Muleshoe, so when an opportunity to return appeared there wasn't really a question of whether or not we take it.

Returning to a place we've known for so long has given us new insight into one of the most frequent and surprisingly tricky questions we get about snakes. Jeff tackles this one in *Snake Longevity — The Age-Old Old-Age Question*. And we've sprinkled stories of snakes we've known for 10 years or more throughout this issue (*Old Friends*).

Melissa watching Bluto the Gophersnake cruise by — see *Gophersnakes Play Rough* for the story.

Have you heard the legend of *Snakes From a Plane*? Not the cheesy movie, but the dropping of real snakes from planes? Whether this is new to you or you've always wondered about its origin, I think you'll enjoy Alex's article — the only thing more unusual than this legend is how stories like this originate.

Most folks are surprised to learn that rattlesnake fights are largely ritualistic and not violent. But even if that is not news to you, you might be surprised to learn just how gentle they can be. Ceal shares her insights from a community of Panamint Rattlesnakes she knows very well in *The Art of Gentle Combat*.

It is not uncommon for me to find myself in tears the second weekend in March, when the Sweetwater Rattlesnake Roundup is held. But last year was different: I cried tears of joy instead of sadness (for the most part, anyway). Reading just a few of the nearly 1000 Rattlesnake Love Letters sent to residents of Sweetwater, Texas gave me hope, and I think they may do the same for you. Get ready to be inspired by this issue's *Snake Heroes*.

Finally, we share the results of our new study evaluating how different messaging strategies can improve attitudes about rattlesnakes. What's more likely to change someone's mind: learning that snakes are caring parents or efficient predators? The answer is… it depends. Learn more in *Education Enhances Attitudes About Rattlesnakes*.

I hope you enjoy this issue of The Buzz as much as we enjoyed putting it together for you. Let me know what you think! Really, I love hearing from y'all. And please keep sharing with your friends, neighbors, and family — spreading positive messages is like a superpower, turning 'EEK!' into 'AWW!' when it comes to snakes. Together we can keep the peace between humans and snakes, and that's seriously awesome.

THANK YOU, for all you do for snakes, every day!

Melissa Amarello (she/her), Executive Director
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The Art of Gentle Combat

Each spring, after six months of cold weather in the southwesternmost Great Basin Desert, Panamint Rattlesnakes emerge from rocky dens and knot together in the sun to bask, spar, and mate. And each spring, when I observe sparring or "combat rituals" between male Panamint Rattlesnakes, what strikes me most is how gentle such "combat" is. It's sometimes difficult to distinguish between mating, sparring, and basking, but easy to tell that relationships between male rattlesnakes are beyond my ken.

Panamint Rattlesnakes in my region engage in "communal hyperfidelity." They gather in specific places — near or in large outcrops or slabs of stone — during essential parts of their life cycles. They gather together to overwinter. (Great Basin winters can be brutally cold and snow-filled.) Many remain together after they emerge in spring, a time that overlaps with mating season. Females may then linger to gestate. (Large slabs of stone offer thermal mass, storing daytime warmth and nighttime cool. Females who lie on those stones or in their shade can maintain more stable temperatures in low-humidity climes, where temperatures change rapidly with sunlight.) Altogether, Panamint Rattlesnakes here may spend more than half their lives in others' company. "Together" may be their default condition.

In spring, large adult male Panamint Rattlesnakes engage in combat near basking areas. When males spar, they rise up together as parallel columns of snake. The lower halves of their bodies may entwine, or not. They may face each other, or they may point their noses in the same direction and curve themselves in parallel Cs. Eventually, they clinch and try to wrestle each other to the ground, but usually they anticipate each others' movements so well that their upper halves might not meet for some time.

If you haven't seen a rattlesnake combat ritual, imagine a thumb wrestling match in which each thumb tries to pin or overturn the other thumb. Imagine the thumbs are intelligent, long, flexible, graceful, preternaturally capable of anticipating each other, and — although they

A frowsy male rises out of bitterbrush on the veranda, awoken by another male who climbed over his head through the bushes, apparently to avoid him and the second snake he is with. (A large whipsnake, whose blurred coils are on the upper right, has joined the rattlesnake males on the veranda.)

are entirely independent of hands — perfectly choreographed.

Eventually, one rattlesnake wraps around the other and brings him down. The "winner" might remain in place or head for the nearest snake gathering. The "loser" might leave. If no one definitively won, both snakes might sink down again and coil together in bitterbrush until another snake goes past and startles them.

That's all. No slashes, bites, or head butts. The consequences of defeat seem to be exhaustion or temporary exile.

Why are sparring matches so gentle? *Why spar at all?*

If they survive, rattlesnakes take years to reach reproductive age. En route, they learn how to navigate, how to hunt, when to hide and when to rattle. They evade freezing, overheating, and armadas of predators, from roadrunners working in pairs to red-tailed hawks plunging from the sky.

Most female rattlesnakes who reach adulthood reproduce only every other year. They gestate for months, bear their young live, and care for them after birth. For females, mating and reproduction represent careful investments.

The Art of Gentle Combat *(continued)*

In turn, for males, chances to court and mate are rare and valuable.

Good, stable homes for Panamint Rattlesnakes are also a limited resource. Such homes usually offer: overwintering chambers lying at manageable angles deep in rock piles, in places sheltered from rain, floods, ice, snow, or exposure to dangerous predators; seasonally warm surfaces that snakes can reach easily from overwintering chambers; and abundant hiding places.

To avoid mating with close relatives, males have to travel between such homes. Enterprising males arrive early enough to maximize chances of meeting a breeding female but not early enough to freeze.

In early spring, at one particular site in my region, rattlesnakes of all ages and sizes emerge from an overwintering slot deep in the rocks and bask together on a stone shelf adjacent to the slot. To leave or return to the basking shelf and the den, most snakes crawl along a narrow corridor to a wider, bitterbrush-shaded ledge — a site I call the veranda. During peak commuting hour, at sunset, snakes may accumulate on the veranda while waiting to crawl single-file back to the den for the night.

The basking shelf can be crowded with juveniles, uninterested females, and even occasional whipsnakes. A would-be paramour can avoid those throngs by waiting on the veranda to meet snakes commuting from the den. Each spring, large male rattlesnakes stack up together like innertubes in bitterbrush on the veranda. Sometimes, they appear when snow patches still dot the ground, before anyone emerges onto the shelf.

Although large male rattlesnakes sometimes gain the basking shelf and spar there while other snakes look on (or flee the fuss), most males accumulate on the veranda, where they rest and spar together among other males doing the same. Most sparring seems to happen there, in the "waiting" zone, often without females present. A male rattlesnake who loses at the veranda or on the basking shelf still has chances to mate; I've observed matings off-shelf and off-veranda. But males on the veranda and shelf have higher chances.

That's not the whole story. Rattlesnakes who reach adulthood might live for decades. They have limited ranges, and they're likely to encounter the same individual snakes, or at least their scent trails, more than once. Like other long-lived social animals, rattlesnakes can distinguish between other individuals and choose to spend their time in the company of only some. In stressful situations, they're more secure in others' company. They don't seem to be able to communicate across long distances, but their chemical signals and sensitive sense of smell do allow them to communicate across time to other rattlesnakes who arrive later. And thus, when we see solitary rattlesnakes, we don't see the whole snake, a snake who navigates complex landscapes in difficult weather in anticipation of breeding, hunting, or overwintering. We don't detect scent signals they leave for others; we don't know what roles they play in their communities. We witness only fragments of their lives.

After waking, the frowsy male in the previous photo begins to spar again with another male with whom he was previously resting.

The Art of Gentle Combat *(continued)*

Chances to court females are valuable, but not necessarily worth dying for. Past a certain age, a male rattlesnake who loses in combat might have higher cumulative chances of mating success in the future than he does in the present — the sum of all future mating opportunities as an older, wiser, and potentially stronger male versus the chance of mating this year. For a winning Panamint Rattlesnake, incurring a painful or fatal injury that endangers his breeding success right now isn't worthwhile in the short- or long-term. Sparring offers an honest way to determine which males can remain close to concentrations of females without incurring permanent or fatal injuries.

An earlier view of the snakes in the cover photo. In this view, the female is resting her head on one of the males. (I'm hoping that's not because she was worried about me. She started out behind the others, then moved forward, and then retreated to her original position soon after.)

Panamint Rattlesnakes may also benefit from recognizing others and remembering stronger or more skillful opponents. In a study of captive South American Rattlesnakes, "subordinate males avoided the dominant male throughout the austral autumn" and "were never seen courting captive females." It's helpful to avoid sparring twice with someone who recently defeated you.

Male rattlesnakes who spar in a way that doesn't allow cheating but does allow victors and losers to remember each other, avoid injuries, and live to mate again another day are likely more successful rattlesnakes. Gentle sparring makes sense after all.

- Written and photographed by Ceal Klingler

Gophersnakes Play Rough

Not all snake combat is as gentle as that of the Panamint Rattlesnakes described so beautifully by Ceal above. In May 2011, we stumbled upon a Gophersnake love triangle and were shocked by their rough and ruthless tactics.

We noticed a long, dark form on the dirt road from afar. We approached to find a Gophersnake (Bluto), whose chocolate-colored blotches contrasted against a pale yellow background. Bluto headed directly to a juniper at the road's edge. By the time we drew our cameras, he had vanished into a burrow. Our lamentations of his disappearance were short-lived, because in an adjacent sagebrush we discovered not one, but TWO more Gophersnakes. Given the season and the apparent amorous nature of their entanglement, we surmised they were a male and female pair (Popeye and Olive Oyl).

Popeye courting Olive Oyl (Gophersnakes), in a brief moment of tenderness amidst all the fighting and chasing.

The couple soon tired of our presence and retreated into a burrow on the opposite side of the sagebrush. Rather than try our patience against reptiles, we explored the area and returned an hour later. We spotted Olive Oyl meandering through the roadside vegetation, then she turned and moved slowly from the

Gophersnakes Play Rough *(continued)*

road. Minutes later, Popeye came cruising through the same grass she'd just passed. He made several wide loops, even coming within a couple yards of her before turning away. When he finally located her, he grasped her with his mouth behind her head. Perhaps because of our looming presence, Olive Oyl slowly wormed to the cover afforded by a small shrub.

Bluto entered the stage from the same direction as the other two on vaguely the same path. He looped and circled, at times retracing his own path in reverse. He approached Popeye and Olive Oyl within a couple yards several times before his search was finally over.

Bluto immediately began biting Popeye, which eventually induced Popeye to release his grasp of Olive Oyl. Without delay she fled. Although Popeye flinched and squirmed with apparent discomfort from Bluto's biting, he did not retaliate in kind. Instead, he escaped the assault by disappearing into a nearby burrow. Bluto, not noticing that Popeye had escaped, actually bit himself a couple times by mistake. Finally realizing that his competitor was sidelined, Bluto resumed his search for Olive Oyl.

Bluto was hurried; he flicked his tongue almost continuously, halting almost imperceptibly several times a second to deliver particles into his mouth. Undoubtedly, Bluto was following traces of Olive Oyl, but her trail was not clear. He traveled in wide loops, backtracked, and even ascended into a tree.

Popeye could wait no longer. He emerged from the burrow, located Olive Oyl's scent trail, and headed off in her direction. He appeared to be more careful than Bluto, pausing to hone in on the path ahead. He passed

Bluto bites Popeye during combat over Olive Oyl.

Bluto and found Olive Oyl first, more than 100 yards from the road, and resumed courting her. Moments later, Bluto found the pair, Olive Oyl slipped away, and his assault on Popeye began anew.

This sequence played out several more times over the next hour: Popeye would find and court Olive Oyl only to be interrupted by the latecomer, Bluto. Olive Oyl would flee, and Popeye would once again slip away from Bluto's onslaught.

Bluto on the hunt.

We don't know what happened after they all disappeared into a burrow, but we wonder how this cycle might have been broken. Like rock-paper-scissors, the success of a given strategy depends on context. For these Gophersnakes, a new factor, like a predator drawn to commotion, or perhaps the confined space of a burrow, could be enough to settle the outcome. But, from what we witnessed, the whole affair seemed violent, drawn-out, and risky, making rattlesnake combat appear quite sophisticated by comparison!

— Melissa Amarello & Jeff Smith, ASP co-founders

Snake Longevity — The Age-Old Old-Age Question

How long do they live? is one of the most common questions we get from the public about snakes. It might *seem* simple to estimate, but lifespan is influenced by many factors. I love this question because it is a good lead-in to ecological concepts and, of course, stories of individual wild snakes. And as we all well know, stories are a great way to relate to other beings.

I usually start with differentiating *how long do they live* from *how long can they live*. *Can* implies a maximum potential age, whereas *do* suggests a typical lifespan. Unlike humans, most snakes do not even survive to maturity, let alone old age. The hazards are many; smaller snakes are assumed to have more predators, and juveniles usually have weaker defenses and less knowledge of their landscape (*e.g.*, good places to hide and hunt; it also helps explain why young snakes are often so quick to react to threats). Some young snakes may be instinctively driven to disperse into distant terrain, a risky endeavor that has a tiny chance of a big reward — outbreeding, say, or perhaps even colonizing an available niche.

To persist into adulthood, snakes usually need to be well-attuned to their particular home and its prevailing conditions. And when something works, there is little reason to change tack — adults have pretty stable home ranges across years, returning again and again to favored spots to hunt, shed, overwinter, and find others of their kind, all while avoiding or defending against attacks from mortal enemies. This simple recipe for longevity is probably best served in relatively stable environments, where prey and mates can be reliably encountered. (But as weather variability and landscape alteration increase, past experience may become a poor guide for long-term survival.)

There are thousands of snake species, ranging from about a gram to 100 kilograms, and old age for one might be when another is just getting started! And although longevity *roughly* scales with body size, other ecological factors and ancestry can be significant influences.

Old Friends: Double Y, a male Red Diamond Rattlesnake, was first observed in 1993, when he was at least three years old. He was seen 11 times over the next 23 years, most recently in 2016, when he was nearly 30 years old!

- Photo and data courtesy of John Porter

At the "fast" end, some species that reach maturity at one year might be considered old at, say, five. Data for longer-lived species are much harder to come by, as they require tracking individuals over decades. These data often come from captives, but occasionally a field study turns up an individual marked or recognized from many years before (see *Old Friends* throughout this issue of *The Buzz*). Individuals of many species have lived to thirty years, and there are suggestions that some, like Rubber Boas and Timber Rattlesnakes in their high-latitude forest habitats, could survive to fifty! There is no doubt that new records will build our knowledge of how long snakes *can* live.

Age is just a number, as they say. But behind that number is a lifetime, one filled with triumphs and narrow escapes, comforts and even delights. When I come across an old snake, whether I've seen her before or not, I wonder about her adventures and ordeals, the stories behind her scars or missing tip of her tail. I wish her luck in the future that lies before her, that her wiles may guide her safely to fulfill her humble needs, and maybe, just maybe, I'll see her again.

- Jeff Smith, Co-founder, Treasurer, ASP

Snakes From A Plane: The Legend Of Airdropped Rattlesnakes

Do state game agencies really introduce rattlesnakes by tossing them out of aircraft? Three experts weigh in on the facts, origin, and future of the enduring story.

Throughout a herpetology career that has spanned more than 25 years at the Kentucky Reptile Zoo, biologist Kristin Wiley has heard one particular reptile fable crop up repeatedly.

"All of New England, Ohio, Indiana, Illinois, Missouri, Kentucky, Tennessee, both Carolinas, Virginia — essentially the entire northeast part of the United States — I have had someone claim that it had happened there," she said. "And it's always the same story, which is interesting."

That would be the legend of rattlesnakes raining from the sky, introduced to an area via airdrop from helicopters or planes. If it sounds hard to believe, there's good reason.

"Definitely there are never, and never have been, any rattlesnakes intentionally released out of a helicopter or an airplane to repopulate or additionally populate an area," Wiley said. "That is not a thing."

Timber Rattlesnakes with parachutes dropped from an airplane? Illustration by Emma Hsiao.

Wiley explained that while the stories tend to be similar, the rationale varies — people think the serpents' numbers are being boosted, or they're being used to control turkey populations, or keep people from wandering off-trail.

"I think that it's just gotten warped from some other stuff being mashed together," she said of the tall tale. "It's a game of telephone, right?"

"It's a very strange, bizarre myth that people have," said Kevin Oxenrider, Amphibian and Reptile Program Leader for the West Virginia Division of Natural Resources. "I've received so many emails from people angrily telling me that they watch us doing it."

"We're not. I can promise you we're not doing it."

"You've got to read between the lines"

In folklore terms, airdropping rattlesnakes is not actually a myth — it's a legend. Myths are more centered around creation stories and happen in the distant past, while legends take place in the present, said Stephen Michael Lochetto, a doctoral student in American Studies at The Pennsylvania State University. His work overlaps with folklore and anthrozoology, the study of human-animal interactions, and he also serves as an associate professor at Delaware County Community College.

Legends often reflect something about the people who believe them, Lochetto said. "You've got to read between the lines, essentially. There's more going on than just what the story is talking about. A lot of these legends about snakes, for example — they reflect what's called human anxieties."

Snakes are often maligned in news stories and have a bad reputation in religious tradition, Lochetto said, adding that studies show humans have a brain-based mechanism to detect the slithery creatures much quicker than other species. This doesn't mean humans are afraid of

Snakes From A Plane *(continued)*

them, he noted. "It just means we have a greater sensitivity to what a snake looks like."

If snakes actually were falling from the sky, they wouldn't be the first creatures to do so. In 1948, in a bid to alleviate human-animal conflict, the Idaho Fish and Game Department relocated beavers into rural parts of the state via parachute. Today, aircraft are used to stock fish like trout, and Wiley thinks the legend of rattlesnake airdrops might have started there, when people conflated the practice with research studies that transported rattlesnakes short distances.

Oxenrider theorized the falling fish had something to do with it, as well. He also suggested that when people are confused by helicopters completing forestry work — like removing trees or dispersing invasive species treatment — and spot a rattlesnake afterwards, they assume a connection between two things they find odd.

"A lot of the times when we get them, that's exactly what it is," he said. "'We saw this helicopter and then a week later, we saw two rattlesnakes within a week, and that's just so strange, we've never seen them before, and did you release these rattlesnakes?'"

Lochetto thinks the legend could stretch back a couple of decades. It's very difficult to pin down where a legend originates, he said, and no academic study of the story exists to his knowledge. "A lot of these stories have some kernel of truth," he said. "There has to be something that made someone think this, and from there, imaginations can go wild with things."

"Dropping them anywhere is not necessarily going to mean success"

The logistics of a rattlesnake airdrop would be nightmarish. Individual parachutes wouldn't be feasible, since snakes would wriggle out of a strap, Wiley said, and if you instead stashed the snakes in a container that hit the ground with

Timber Rattlesnakes do not eat Turkeys, but they may be eaten by Turkeys. Especially little ones like this baby; photo by Marisa Ishimatsu (stonepinestudios.com).

enough force to break open, "you really haven't solved the problem of the rattlesnake not hitting the ground very hard."

Couple that with the fact that state agencies don't have much money for nongame programs, according to Oxenrider — "I don't think people realize how expensive getting a helicopter and renting a helicopter is," he said — and the chances of taking to the sky with rattlesnakes look slim.

Even putting methods aside, moving animals to a new place can present challenges. "Reintroduction is not easy to do," Oxenrider said. "It's not as simple as like, I just put this thing out there and it's going to persist."

For rattlesnakes in particular, a new home would mean several problems. They need to find places where they can spend the winter and will sometimes reuse sites, Oxenrider said. He explained that in many places around the country, snakes need to overwinter in specific areas, so "just dropping them in the middle of nowhere, dropping them anywhere, is not necessarily going to mean success. Because if they can't find some place to overwinter, get down below the frost line, they're going to die."

Rattlesnakes would also struggle to find food and water in a new location, Oxenrider said, and individuals take a hefty 7 to 12 years to reach sexual maturity.

Snakes From A Plane *(continued)*

Despite these challenges, certain states have considered trying to reestablish populations where rattlesnakes once lived, he said — a move that comes with a sizable public outcry.

Wiley said most government agencies would be extremely reluctant to move rattlesnakes, and even if there was significant benefit to a longer-distance trip, the serpents' stigma would make it "very uncommon."

"Because people are not going to be happy about it."

"People like good stories"

A lot of legends survive because they act as coping mechanisms to help people deal with what's going on around them, Lochetto said. Many think legends are old-fashioned, he added, but a good number can probably be found in a digital context.

"Legends are alive and well, and a lot of people don't realize that," he said.

Lochetto suggested a large part of the airdrop story's durability could be due to the subject species — the idea of dropping squirrels from airplanes doesn't have the same effect as venomous serpents, he said. But stamping out this legend might not be as simple as singing snakes' praises: changing someone's mind requires a connection, Wiley said.

The airdrop story's durability could be due to the subject species — the idea of dropping squirrels from airplanes doesn't have the same effect as venomous serpents.

"Unfortunately, if it were true that you could just give someone a really great explanation and they would believe you, I think the world would be a lot different than it is currently," she said. "But that is not how things work."

Wiley suggested talking with children, arguing the need for a shift in how humans look at the planet and its resources — something she said most adults are probably too stuck in their ways to do.

The younger generation may usher in a future where rattlesnake airdrops are no longer believed a real occurrence. But for now, the legend lives on, and Oxenrider doesn't believe it will ever disappear. "I just think it sounds fun," he said, submitting that the tale persists "because people want it to continue."

"I think it's just a good story," said Wiley. "People like good stories. It's got humor, it's got something surprising, it's got a rattlesnake in a helicopter in it."

"What more do you want from a story?"

- Alex Megerle, ASP Volunteer

Old Friends: This North American Racer was first caught and marked in 2010 as a small juvenile that likely hatched the year before. We didn't see her again until 2014, when she showed up as an adult, 1.3 km away from her initial capture location. We sporadically recaptured her at different traps on the same hillside that appeared to be her chosen home range until 2021, at which point she had grown into one of the largest racers we have seen on site at 1 meter in total length, and was 12 years old. Despite heavy scarring and her old age, she appeared very healthy and was hopefully gearing up towards reproducing later in the year.

- Photo and data courtesy of Elliot Schoenig, USGS

Education Enhances Attitudes About Rattlesnakes

In a research project led by Masters student Erin Allison, we evaluated how different messaging strategies can improve attitudes about rattlesnakes.

We used an online survey to evaluate the perceptions of a diverse group of 1,182 US adults before and after they watched a video with one of two different messages about rattlesnakes. The relational video showcased rattlesnakes as creatures with complex social behaviors, emphasizing their roles as caring mothers and their interactions with other snakes. The instrumental video, in contrast, highlighted the role rattlesnakes play in the environment and the ecosystem services they provide.

Read the paper and watch the videos used in our study.

Both videos positively influenced people's perceptions of rattlesnakes.

However, the instrumental message resulted in a larger improvement in perception compared to the relational message, which significantly affected only females, agnostics, Baby Boomers, and Generation-Z. Emphasizing the ecological importance and practical benefits of rattlesnakes may be the most effective approach to improve their reputation for most audiences.

Our findings highlight the vital role of education in improving attitudes toward maligned animals and the importance of understanding audience demographics when developing communication strategies for wildlife conservation. We also provide valuable insights for developing targeted message strategies to enhance public perceptions of rattlesnakes and other less popular wildlife species.

EB Allison, EN Taylor, ZA Graham, M Amarello, JJ Smith, ZJ Loughman. 2024. *Effects of relational and instrumental messaging on human perception of rattlesnakes*. PLOS ONE 19: e0298737. bit.ly/3Qherj2

Old Friends: We first met a clearly pregnant Arizona Black Rattlesnake, TWA, in the spring of 2011 at the outset of our study of their social behavior. She was the biggest, oldest mom that year — and every year we visited since. Nearly as large as any adult male in that population (males of this species are usually larger than females), her long, non-tapering rattle indicated she stopped growing long ago.

TWA often shares her nest with younger moms and, as is usually the case, sticks them with the child care duties. In fact, in 2011, 2013, and 2015, we never observed her with her kiddos. They were always with the babysitter. But on our last day at that site in 2019, we finally saw TWA with one of her babies (pictured above).

Based on what we've learned about this population, TWA was (*at least*) in her early teens when we met her in 2011, so she was pushing 20 years old in 2019 and still producing big, healthy litters.

Snake Heroes

Rattlesnake Love Letters

Nearly 1000 residents of Sweetwater, Texas received handwritten letters from children, asking them to transform their rattlesnake roundup into a no-kill, educational festival that celebrates local wildlife instead of slaughtering them.

> *"Rattlesnakes are really shy creatures. Their rattle sound is not one of ferociousness but one of screaming."*
>
> Cielo, a student at Aldo Leopold Middle School in Silver City, New Mexico

In early 2023, ASP and Team Rattlesnake Rebrand, a Cal Poly SLO honors class led by our board member Emily Taylor, PhD., provided lesson plans and materials on rattlesnake ecology and wildlife advocacy to teachers, scout leaders, and parents across the United States. Through this program, hundreds of children expressed their concerns for rattlesnakes in letters sent to the residents of the town hosting the world's largest rattlesnake roundup. They asked them to urge the Sweetwater Jaycees to transform their roundup into a no-kill, educational festival.

"This is our home too!" says the rattlesnake on this poster made by Girl Scouts, hanging in the East Bay Vivarium.

At these annual roundups, thousands of wild rattlesnakes are captured from their native habitats to be displayed and publicly slaughtered. Professional collectors receive cash prizes for bringing in the most and largest snakes.

Rattlesnake roundups are not only cruel, but unnecessary and likely damaging to the ecosystem. Snake populations are controlled by natural processes such as food availability, predation, and disease, so human intervention is not needed. There is also no evidence that rattlesnake roundups reduce human-snake conflict. Most snakes are caught by pouring gasoline into their winter dens, polluting surrounding land and water and impacting up to 350 different wildlife species.

> *"Rattlesnakes actually control rodent populations; they reduce the spread of disease. I write to ask you to reconsider attending the rattlesnake roundup this year for the sake of these amazing creatures!"*
>
> Maya, a high school student in Apison, Tennessee

Snake Heroes

Rattlesnake Love Letters *(continued)*

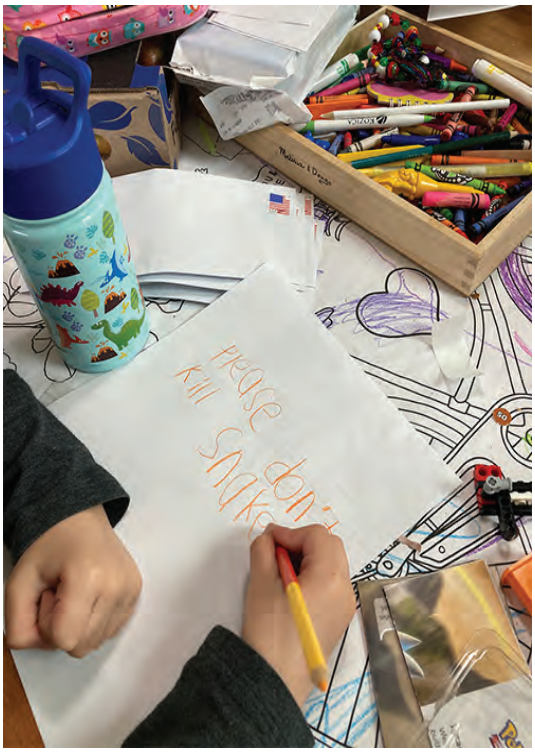
Children participating in this program learned about rattlesnakes, roundups, and how to advocate for issues they care about. Their passion was evident in their letters asking for compassion towards rattlesnakes by transforming the roundup into a no-kill, educational festival, as many communities have done.

While community festivals are significant for local culture and economy, many areas have rightly moved past rattlesnake roundups. The success of festivals that now celebrate, instead of slaughter, native wildlife shows that we can maintain our festivals and the income they generate while protecting our natural heritage.

You can read more inspirational *Rattlesnake Love Letters* online at: www.rattlesnakeroundups.com/love-letters.

"I am writing to you because I am worried about rattlesnakes; please support making rattlesnake roundups no-kill events!"

Madeline, an elementary school student in Seattle, Washington



A kindergartner gets straight to the point: "Please don't kill snakes" (photographed by their mother).

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100% of proceeds fund our work.

2023 The Year in Snakes

1 **Decade of Demystifying Snakes!** ASP turns 10 on 16 May 2024.

4 **Old Friends**: snakes sighted more than 10 years after we first met them!

Hello! Thank you for your help this evening!

Turns out the Rattlesnake in our yard is Harvey, who we've seen 3 times in the past week. We're so happy to have him.

That's so neat! Hi Harvey! I think he likes the photo op!

903 Residents of Sweetwater, Texas received handwritten *Rattlesnake Love Letters* from children asking for a no-kill roundup.

17 In-person presentations & displays

1,400 Folks in rural southwest New Mexico and southeast Arizona learned about snake natural history, behavior, and how to safely coexist with them.

4 Online classes & workshops

15 Hotline calls & texts — just a few facts, a name, and a story can turn *EEK!* into *AWW!*

563 Hours watched on our YouTube channel

Our most popular video on YouTube in 2023 was *Snake Peeks 10: Dig it! Western Patch-nosed Snake Going After a Rodent*. This classic short from 2015 was viewed more than 55,000 times last year! Check it out at bit.ly/wps-digs.

243,390 People learned about snakes and threats to them by visiting our websites

YOU made this possible, by donating the most for snakes ever: **$31,817**

Advocates for Snake Preservation

Just before founding ASP, Jeff and Melissa worked at a nature preserve full of snakes. Most visitors came for birds or butterflies, but left with a new appreciation for snakes. We introduced a couple who "hoped not to see any snakes during their visit" to Porter, one of our resident Black-tailed Rattlesnakes, and shared her story with them. They returned from their hike excited to share photos of the "cute snake" they spotted and wanted to learn more. Another time, we spoke with a scout leader who routinely killed any rattlesnake that showed up in his yard. He decided to reconsider his behavior after hearing about the protective behavior of mama rattlesnakes in our study. *Stories engage people in a way that simply stating facts and figures do not.*

In 2014, we founded ASP to change how people view and treat snakes. We use storytelling to make snakes more familiar and less scary. To minimize human-snake conflicts and ensure safer coexistence with venomous snakes, we recommend changes to landscapes and our own behavior. While education and changing attitudes are the heart of our work, we also take action and advocate on pressing issues that impact snakes.

Two male Rock Rattlesnakes lounging at the entrance to their den.

As we celebrate ASP's tenth anniversary, we are grateful that you are on this journey with us. Without you, we wouldn't have:

- Killed the Arizona snake-shooting bill;
- Changed the conversation on rattlesnake roundups;
- Organized the first symposium on coexisting with snakes;
- Sent nearly 1000 *Rattlesnake Love Letters* to residents of Sweetwater, Texas; and
- Reached tens of thousands of people annually, on and offline, with our multimedia snake stories.

Supporters like YOU make this happen — not grants, not megadonors. We genuinely mean it when we say we couldn't do this work without you. Thank you!

Who We Are

- Melissa Amarello, Executive Director
- Jeff Smith, Co-founder, Treasurer
- Steve Marlatt, Chair
- Jesús A. Rivas, PhD, Vice-Chair
- Emily Taylor, PhD, Secretary
- Gordon M. Burghardt, PhD, Director

Donate online at: www.snakes.ngo/give

The Buzz

is published by ASP for our supporters. We welcome your questions and suggestions: info@snakes.ngo • 575-956-5231.

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Read more snake stories on our website:
www.snakes.ngo/stories

The Buzz

Advocates *for* Snake Preservation

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Willie, male Western Black-tailed Rattlesnake, hunting against an ancient Cottonwood Tree, May 2023.

Old Friends: We first met Willie, a Western Black-tailed Rattlesnake, in June 2012, hunting on a massive downed Cottonwood Tree (photo at right). We didn't handle or mark him, but Jeff got excellent photographs. Black-tailed Rattlesnakes have unique head patterns that can be used to identify individuals and Willie also has two blotches on his back that are connected. Last May we ran into him again, hunting against an ancient Cottonwood Tree (photo above). Those blotches caught our eyes and we soon

Willie, male Western Black-tailed Rattlesnake, hunting on a giant Cottonwood log, June 2012.

matched that head pattern to our friend from *11 years ago*. Willie was a large adult in 2012, so he's likely in his 20s now, *at least*! Willie was in excellent condition last May, which made us wonder: *how many other decades-old rattlesnakes have we met?*

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When you're done, please leave *The Buzz* where others can read it and learn to love snakes too.

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