

# The Buzz

Advocates *for* Snake Preservation



Changing how people view & treat snakes

Summer 2022 • #10

## Snakes Are Good Neighbors

The sound of domestic cats fighting is probably familiar to many readers. Like most predators, cats defend their turf and the resources within. Prey is often scarce and starvation a real possibility, so it makes sense to fight for access to these resources.

But even amongst those who spend their lives observing vipers, it is rare to see a snake fight. Why? Unlike most predators, vipers are not territorial, only males fight, and only for access to females.

Vipers don't need to eat as often as endothermic (warm-blooded) predators that feed on similar-sized prey; they can go weeks or even months without food, while many birds and mammals eat daily. If prey is not limiting, why waste energy fighting over it?



Jaydin fights Marty over Persephone (Western Black-tailed Rattlesnakes: *Crotalus molossus*).

**\*Vipers** are a family of venomous snakes that includes Copperheads, Cottonmouths (Water Moccasins), and Rattlesnakes in North America.

Not only may vipers not view their neighbors as competitors, their presence may actually increase their hunting efficiency! Vipers use chemosensory cues to select hunting sites and preferentially choose sites where conspecifics (other members of their species) have been successful. We have also observed different viper species using the same hunting sites, so the presence of other viper species may increase hunting effectiveness as well.

Another important resource for vipers and other ectotherms (cold-blooded) is an appropriate over-wintering shelter (den). In this situation, vipers are also tolerant of others. Vipers often share their dens with conspecifics and many other species too. In some climates dens are a limiting resource, which can explain this behavior. But that is not always the case; some vipers are social and choose to aggregate.

Vipers' home ranges overlap with many conspecifics, as well as other snake species. Even male vipers tolerate others in their territory outside the breeding season and encounters between them don't usually end in a fight. Being good neighbors enables them to live in higher densities than mammal and bird predators.



Allison, female Western Diamond-backed Rattlesnake (*Crotalus atrox*), swallowing a rodent.

*Continued inside...*

## Snakes Are Good Neighbors *(continued)*

In some cases, vipers may be 100-1000 times more abundant than their mammalian competitors!

But vipers need less food, so do these facts cancel each other out? Turns out they have a few other tricks up their sleeves.

Vipers can fast for long periods, so if prey populations crash, viper populations do not necessarily follow. Moreover, since most vipers give birth every two to three years, prey population crashes may not have an immediate effect on their reproduction. When other predator populations have crashed (for example, classic predator-prey models like lynx and hares), and prey populations start to increase again, vipers are waiting for them.

**Vipers can have a greater impact on prey populations than bird or mammal predators.**

Perhaps this could change the tune of those who think the only good snake is a dead snake?



Western Diamond-backed Rattlesnakes (*Crotalus atrox*) often share their dens with other animals, including Gila Monsters (*Heloderma suspectum*), photographed by Jeff Smith.

- Jeff Smith & Melissa Amarello, Co-founders, ASP

References and videos available at [www.snakes.ngo/good-neighbors](http://www.snakes.ngo/good-neighbors)

## World Snake Day is July 16!

World Snake Day is an opportunity to celebrate snakes and raise awareness about their preservation! In this issue we're highlighting just a few cool and helpful things snakes can do, along with a few ways we can help snakes. Please share with your family, friends, and neighbors!

### *Did You Know... Some Snakes Can Change Color?*



At left is Glendy, a male Arizona Black Rattlesnake, at his darkest and lightest. Like many snakes, Arizona Black Rattlesnakes (*Crotalus cerberus*) undergo morphological color change as they age. What is illustrated here is rarer in snakes; physiological color change is probably most well-known in chameleons, but Arizona Black Rattlesnakes can do this too!



*What's the difference?* Morphological color change is a gradual process where the number or quality of cells that produce color (chromatophores) changes; it can take years. Physiological color change is a rapid shift due to the movement of pigment within chromatophores – dramatic changes in color can happen in minutes or even seconds! Arizona Black Rattlesnakes can change from their darkest to lightest color in minutes. Not quite as rapid as chameleons, but still impressive.

It's looking like another spectacular monsoon here at ASP headquarters. We got nearly seven inches of rain in June, which is usually one of the driest months of the year. I gaze at the beautiful storm clouds building outside with cautious optimism; in our short time here climate chaos has brought both abundant rain and hard times for our wild neighbors.

As we discuss in the cover story, snakes are resilient. Their ability to withstand the hard times and capitalize on the good not only supports their survival, but may also help stabilize food webs by tempering explosive population growth of their prey. But climate chaos will challenge all of Earth's creatures by serving up conditions that haven't been seen for millennia. This, on top of other existing challenges – emerging infectious diseases, habitat degradation, etc. – will mean that wildlife will need all the help they can get. Get outside and see what we have to lose, then do what you can to inspire others to keep our planet wild and rich.

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

*Melissa Annarello*

Executive Director, ASP



Melissa admiring a Western Diamond-backed Rattlesnake, photographed by Jeff Smith.

## How to Help Snakes and other wildlife too!

- Don't use bird netting
- Avoid glue traps and poison
- Shoot snakes with a camera
- Share positive stories about snakes
- Keep pets indoors or under control
- Drive carefully, watch for small animals
- Appreciate wildlife from a distance
- Make adoption the first option for your next pet
- Don't buy wild-caught animals or collect wildlife
- Say defensive or scared, not aggressive or scary
- Coexist, modify your yard; don't relocate wildlife
- **Support Advocates for Snake Preservation**

*Got this? Pass it along to a friend!*

[www.snakes.ngo](http://www.snakes.ngo) · [info@snakes.ngo](mailto:info@snakes.ngo)

## Be a Snake Hero!

Snakes deserve a voice and together we give them one. **Your gift brings us closer to a world where snakes are respected and appreciated instead of feared and hated.**

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A Western Diamond-backed Rattlesnake (*Crotalus atrox*) resting inside a small cave.

## Advocates *for* Snake Preservation

*uses science, education, and advocacy to promote compassionate conservation and coexistence with snakes.*

### 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

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[www.snakes.ngo](http://www.snakes.ngo) • [@SnakeAdvocate](https://twitter.com/SnakeAdvocate)

[info@snakes.ngo](mailto:info@snakes.ngo) • 575-956-5231

## Please Share!

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

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Persephone, female Western Black-tailed Rattlesnake (*Crotalus molossus*), often climbed up into a tree when a monsoon storm was brewing.