

The Greatly Misunderstood One-of-a-Kind ‘Living Fossil’

Many consider these critters loathsome, dirty and disease-ridden, but nothing could be further from the truth. Rather, they provide many benefits, as they are pros at making ticks, slugs and snakes vanish. The next time you see one in your neighborhood, I invite you to view it with different eyes.

Analysis by Dr. Karen Shaw Becker

STORY AT-A-GLANCE

- Opossums have an entirely undeserved reputation as dirty, disease-ridden critters, when in reality they're clean, disease-resistant, non-confrontational animals and a tremendous asset to our environment
- Opossums aren't rodents, as many believe, but marsupials; Virginia opossums, aka "living fossils," are the only marsupials in North America
- Opossums are very beneficial to have around because they eat lots of things no one else will
- Due to their indiscriminate eating habits, opossums are also very effective at pest control — they happily Hoover up everything from slugs to snakes, and are especially efficient at making ticks disappear

According to contributing writer Traci Howerton in an article for NOLA.com about one of my favorite animals:

"Opossums are perhaps one of the most misunderstood animals. They're often viewed as dirty creatures that usually end up as roadkill — or pretend to be roadkill. However, possums are smarter, cleaner and more beneficial to humans than many other wildlife species."¹

I couldn't agree more with Traci. Opossums are considered by many to be a loathsome species right up there with snakes, bats, and vultures. People think they're dirty or disease-ridden or ugly, especially their tails.

As a wildlife rehabilitator for the last 30+ years, I feel it's very important to understand that while every species of animal may not be appealing for some reason, each is deserving of respect. Every species on planet earth plays a role in the balance of the ecosystem. I hope people will think twice about the treatment some species suffer simply because of appearance or misconceptions about them.

The Virginia Opossum: A ‘Living Fossil’

Contrary to what many people believe, opossums aren't rodents. They're marsupials, relatives of kangaroos and koalas, with built-in pouches to carry their babies after they give birth. Virginia opossums hold the distinction of being the only marsupials in North America.

Virginia opossums have been on earth for millions of years. They're referred to as "living fossils" because they're the oldest mammalian species on the planet. They have humanlike hands, and each back foot comes equipped with a thumb.

Opossums are adaptable and can live wherever there's food, water and shelter. They're pacifists and non-confrontational. Sadly, they don't live long — only two to four years.

Opossums are a solitary, nocturnal, nomadic species and can be found throughout the U.S. They are climbers and swimmers but travel mostly on the ground. They'll eat almost anything — carrion, snails, bugs, amphibians, fruits, overripe veggies, leaves, grass, eggs. Pretty much anything they come across in their travels will be sampled to see if it's edible. In fact, most of the opossum's waking hours are spent finding food. Once he's met his calorie requirement, it's time for a snooze.

'Playing Possum' Is an Actual Thing

Opossums have two very interesting defense mechanisms. If you happen upon one, the first thing he'll do is hiss and growl. Then he'll open his mouth wide and show you all 50 of his teeth. Next, he'll drool and froth as though he's rabid, which is odd since opossums are one of the few mammals that do not readily transmit rabies — their natural body temperature is too low to host the virus.

If this ferocious display doesn't frighten you off as intended, defense device number two kicks in. The opossum will faint dead away right in front of you, which is where the phrase "playing possum" comes from. These little animals despise confrontation to the point of literally fainting from fear when they sense danger.

Now that he's fainted, he'll be out anywhere from 30 seconds to hours, depending on how much adrenaline he releases. Apparently, this is a pretty good protection system since it's been used for millions of years. Unfortunately, it has also resulted in the occasional opossum being eaten by a predator while unconscious.

While they're not a hibernating species, opossums tend to be less active during the colder months of the year. All in all, opossums are well adapted to get by in the world, as long as they're left alone by predators, including the human variety.

Nature's Garbage Disposals

Opossums are nature's clean-up committee. They often eat leftovers that most other animals won't consume. If you leave pet food or edible human food outside and there are opossums in the neighborhood, they'll gladly gobble up the leftovers.

Opossums also aren't picky when it comes to sleeping arrangements — any available open building, car or tree is suitable. People often encounter possums in the garage. If this should happen to you, just leave a door to the outside open, remove any source of food, and she'll leave on her own.

Opossums Offer Pest Control Services Free of Charge

When it comes to pest control, opossums are quite handy to have around. They eat slugs and other pests that damage plants, and believe it or not, they also eat snakes — even the poisonous varieties. In fact, opossums are known for their ability to withstand the bite of almost any kind of snake, and scientists have managed to isolate a protein from opossum blood samples that shows promise as an anti-venom.²

Venom-exposed mice given the opossum peptide showed no ill effects from the poison, whereas untreated mice died within a matter of hours. It appears the venom given the treated mice was completely neutralized by the opossum peptide. The mechanism by which this peptide acts against snake venom isn't fully understood. Most snake venom contains more than one toxin, so it seems unlikely the peptide works by binding to a single toxin. It could be the venom protein binds to the opossum protein, rendering it no longer toxic.

Opossums also provide excellent tick control. A 2009 study found that more than 96% of ticks that attempt to feed on opossums do not survive, as the animals consume them during grooming.³ Opossums act as “ecological traps” for larval ticks, hosting perhaps more than 5,500 in a season and consuming the majority of them before they reach maturity.

Opossums are often compared to vacuum cleaners due in part to their voracious appetite for ticks. According to study co-author Rick Ostfeld, author of a book on Lyme disease ecology and a senior scientist at the Cary Institute of Ecosystem Studies:

*"[M]any ticks try to feed on opossums and few of them survive the experience. Opossums are extraordinarily good groomers it turns out — we never would have thought that ahead of time — but they kill the vast majority — more than 95% of the ticks that try to feed on them. So these opossums are walking around the forest floor, hoovering up ticks right and left, killing over 90% of these things, and so they are really protecting our health."*⁴

As for why opossums consume so many more ticks than other animals, study co-author Felicia Keesing, Ph.D. suggested in an interview with VPR (Vermont's NPR news source) that they may be more sensitive to the feeling of ticks on their bodies, allowing them to notice when they attach and easily pinpoint their locations for quick removal.⁵

I've had the honor of caring for two opossums who were unable to be released in the wild, and I can confirm they are the most sensitive creatures I have ever encountered. They can detect when they have foreign hairs stuck on them (like dog hair) as well as other tiny fibers (like cobwebs) that most creatures would not be sensitive enough to detect. I think this profound skin sensitivity contributes to their ability to detect ticks on their bodies.

Another interesting feature, according to Keesing, is that of the ticks that do successfully feed on opossums, very few pick up the bacteria that cause Lyme disease.

*"Having ticks feed on opossums is really good for us because those ticks are really unlikely to become infected when they next take a meal, which could easily be on us or one of our pets ..." Keesing said, "so opossums are helping us twice over because they're killing a lot of ticks ... and of those that do manage to feed on opossums, those come off as almost certainly harmless to us."*⁶

Making Peace With Opossums

Opossums are among the gentlest and most beneficial animals in the forest, and even when they live in urban areas (which they adapt to quite well) add value to the ecosystem, posing little risk of harm to humans and pets. Opossums consume many pests besides ticks, including rodents, insects and carrion.

Their foraging helps to keep grounds clean and free of food that might attract other less desirable creatures. If you see an opossum living in your backyard, please don't attempt to kill it or relocate it (which may leave the animal with little chance of survival).

Left alone, the opossum doesn't attack pets or wildlife; he doesn't chew your utility wires, spread disease, dig up your garden or overturn your garbage cans. On the contrary, he's an expert at pest, venomous snake and rodent control, and asks nothing in return. If one comes too close to you or accidentally finds herself in your garage, it's easy to convince her to move along.

*"The next time an opossum makes his presence known or you see one walking along the fence, just ignore him," writes Howerton. "He is not out to cause trouble, and may actually be useful to have around."*⁷

Sources and References

^{1, 7} [NOLA.com, August 13, 2020](#)

² [Chemistry World, March 23, 2015](#)

³ [Keesing, F. et al. Hosts as ecological traps for the vector of Lyme disease. Proc Biol Sci. 2009 Nov 22; 276\(1675\): 3911-3919](#)

⁴ [Cary Institute of Ecosystem Studies News Release, July 23, 2012](#)

^{5, 6} [VPR, June 6, 2017](#)
