

UNPOPULAR ANIMALS

Many species of animals are unpopular, for a variety of reasons. How we feel about a nonhuman animal may be based on their usefulness to us, whether we consider them intelligent, responsive, and lovable, cute or ugly, safe or dangerous, important or unimportant. Our attitudes may also be based on how much they are like us. People tend to feel a greater connection with other mammals than with fish, insects, or reptiles, for example. A particular animal species may be popular because we are familiar with it, but our culture and experience also play a role. In some cultures, dogs are considered part of the family, while in others, they are slaughtered for food and fur, or thought of as pests to be exterminated.

Our emotional responses to different species influence how these animals are treated in society and whether or not they are given legal protection. Nonprofit organizations appeal to our emotions by using images of popular or cute animals to raise awareness about habitat destruction and other animal issues. People tend to speak out more to preserve wilderness areas if doing so will protect large mammals as opposed to insects, rodents, or birds. Most people do not object to using rats and mice in medical experiments, but they strongly oppose experimenting on dogs and cats. Although rats and mice have highly developed nervous systems, feel pain, and suffer stress in confinement, they have no protection under the U.S. Animal Welfare Act.

Following are some myths vs. facts about a few of the many less popular species. Other such species deserving of study include ants, bees, alligators, boars, skunks, coyotes, and wolves.

BATS

Bats, the only true flying mammals, account for almost one quarter of the entire number of mammal species. There are nearly 1,000 different species of bats. Of the 45 species found in the U.S., six are endangered.

Myth

Bats have a reputation as vampires who will get caught in our hair, bite us, and transmit rabies.

Our Language

We say that someone is "blind as a bat."

Fact

Bats are timid creatures who avoid contact with humans. They clean their wings and teeth daily. Bats' exceptional ability to precisely echolocate objects and their flying agility make it highly unlikely that they would fly into someone's hair, unless they are sick and disoriented. One study showed that Big Brown Bats, for example, can detect cricket frogs and katydids hundreds of meters away. Another showed they can detect spheres just 19 mm in diameter over 5.1 meters away and 4.8 mm spheres 2.9 meters away. In addition to echolocation, bats use vision and sound. Their visual ability varies between species, but unlike humans, they can see ultraviolet rays.

A small percentage (less than $\frac{1}{2}$ of 1%) carry rabies. Of the 1,000 known species of bats, only three species consume blood. These are found in Mexico, Central America, and South America. Of these three species, two feed on the blood of birds and only one, the common vampire bat, feeds exclusively on mammals. Goats and other farmed animals are at far greater risk than humans, but as with any wild animal, humans should not handle bats.

Abilities and Contributions

It takes the 20 million Mexican Free-tailed bats in Bracken Cave, Texas, three hours to fly out every night, and when they do, they form a column so thick it shows up on the radar at a nearby airport. They fly up to approximately 100 kilometers per hour (60 miles per hour) and as high as airplanes — up to approximately 3000 meters (10,000 feet). Each night, they eat 250 tons of insects.

Most bats eat insects and fruit. A single Little Brown Bat can eat about 1,000 mosquitoes an hour. A colony of 150 Big Brown Bats protects farmers' crops by eating enough cucumber beetles in one summer to prevent 33 million root-worm larvae from emerging.

Many plants depend on bats for pollination and seed dispersal, including bananas, bread-fruit, mangoes, cashews, dates, and figs. Nectar-feeding bats are the primary pollinators of giant desert cacti. Bat droppings in caves support entire ecosystems, including bacteria useful in detoxifying wastes, improving detergents, and producing antibiotics.

RATS

Myth

Rats are dirty creatures who are blamed for spreading the Black Plague in the Middle Ages. In fact, fleas on their bodies spread it, as did infected corpses, both rat and human. Television and films have depicted rats as vicious killers ready to attack humans at the slightest provocation. Is it any wonder many people fear and dislike rats?

Our Language

When we call someone a rat, we mean an informer or a betrayer, or someone who will work during a strike. It can also refer to someone worthless or contemptible.

Fact

Rats are very clean creatures who groom themselves daily, and they prefer order and routine. The sign of a healthy rat is a clean, well-groomed coat. Rats are survivors. They originated in Asia and spread throughout the world as humans migrated between continents. Many people live with rats as companion animals and find them to be social, playful, and extremely intelligent. In some cultures or religions, rats are revered as sacred. At a temple in India, rats are worshiped and cared for.

Abilities and Contributions

Glands on the bottom of rats' feet allow them to leave a wet scent trail with every step. Their tails help them maintain balance and regulate their temperature, and they are used to communicate with others of their species.

Many predator species depend on rodents for food. Barn owls, for example, can eat 5–6 rodents a night. The Giant Kangaroo Rat, native to California, is a keystone species — one on which other species depend. This rat helps provide habitat and food for plants and other animals by eating and disbursing seeds and by cutting grass. The cuttings are piled in almost perfect circles at the entrance to their many-roomed burrows to dry in the sun. Acting like a compost pile, they enrich the soil with nutrients. When plants like the California jewelflower grow where stacks have been, they are five times more prolific.

Once the clippings have dried, they are stored or cached. Rodent caching helps certain plant and tree species germinate. Cutting the grass also controls weeds and the short vegetation creates an ecosystem preferred by certain other animals, including the kit fox, antelope squirrel, and blunt-nosed leopard lizard. Unfortunately, the Giant Kangaroo Rat has lost 90 percent of its habitat to agriculture.

SHARKS

Myth

Sharks are one of the most misunderstood creatures on the planet because the media has portrayed them as vicious creatures with a mouthful of razor-sharp teeth and a propensity to stalk and attack people.

Our Language

When we call someone a shark, we mean they are ruthless, greedy, or dishonest.

Fact

Most of the over 375 shark species are small and harmless, and few have been implicated in deliberate attacks on people. Worldwide, the number of fatal shark attacks annually averages between 5 and 15. These numbers have risen over the past several decades, not because sharks have become more aggressive, but because humans have taken to coastal waters in increasing numbers. Human exploitation of sharks, by contrast, has reduced the shark population by approximately 80 percent over the past 20 years, and 30 percent of shark species are threatened with extinction.

Most of the deaths are caused by shark finning – removing a shark's fins and discarding the remainder of the live shark at sea. Unable to swim, the shark slowly sinks toward the bottom, where it is eaten alive by other fish. Shark finning is done at sea so fishermen only have to transport the fins, which are sold for large sums. Shark flesh is considered to be of low value and not worth the cost of transporting. Sharks are taken regardless of age, size, or species. Shark finning is illegal in many countries, including in the U.S., but the laws are poorly enforced.

Abilities and Contributions

Sharks' senses, including sight, touch, hearing, and scent, are very sharp. They are able to detect as little as one part per million of blood in seawater, and they can smell a drop of blood from up to a kilometer (over half a mile) away. By comparing the intensity of a scent between their left and right nostril, or merely by turning into the current, a shark can quickly locate injured prey, potential mates (by their pheromones), or anything unusual. Tiny receptors around their heads can detect electric fields and any changes in them made by food or mates. Sharks' brains are so well developed, they are often called swimming computers. Their skeleton is made from cartilage, rather than bone, which makes them so flexible, they can twist 360 degrees to pursue and capture prey. Sharks are very social and have been observed playing games in a group.

Shark populations are directly related to plankton balance. Seventy percent of the air we breathe comes from the ocean and is produced by plankton. Too little plankton causes carbon dioxide levels to increase and oxygen levels to decrease. Too much plankton leads to red tides (a toxic accumulation of algae which destroys coral reefs). Some species of sharks filter and eat plankton. Other species eat the animals that eat plankton. When shark populations decline, the plankton balance is disrupted.

SNAKES

Like cows, rats, monkeys, and dogs, snakes are respected and even revered in some cultures, consumed or despised in others. Our reaction to snakes is influenced by our cultural myths and biases and lack of understanding. In many cultures, snakes are powerful religious symbols. The ancient Aztecs worshipped a mythical "plumed serpent" as the "Master of Life." Some African cultures worshipped rock pythons, and killing one was a serious crime. In Australia, the Aborigines associated a giant rainbow serpent with the creation of life. Other cultures associated snakes with medicinal powers or rebirth. In India, cobras were seen as reincarnations of important people. Our modern medical symbol of two snakes wrapped around a staff is based on an ancient Greek myth in which Aesculapius discovered medicine by watching one snake use herbs to bring another snake back to life.

Judeo-Christian culture has been less kind to snakes. Tales of the Garden of Eden and the serpent's role in "man's fall from grace" have contributed to a negative image of snakes in Western culture. Among Catholics, Saint Patrick is credited with ridding Ireland of snakes, an accomplishment celebrated by many as positive.

Myth

Many people think of snakes as huge, poisonous, and slimy. Rattlesnakes have a reputation as vicious attackers.

Our Language

When we call someone a snake, we mean a treacherous person or a sneaky enemy.

Fact

Snakes are almost always described as being larger in size than they really are, a reflection of our fear. Only about 10 percent of snake species worldwide are poisonous. Snakes are shy creatures who avoid humans. Approximately 20 percent of all adult rattlesnake bites are "dry" (no venom). Although snake scales appear to be wet because they are shiny, snake skin is actually smooth, satiny, and dry. Snakes are intelligent creatures, and snake mothers are very protective of their young.

Abilities and Contributions

Snakes are found from the equator to the Arctic Circle. The smallest is around 5 cm (2 in.) in length, the largest just over 10.7 m (35 ft.). Snakes are completely deaf, but instead of hearing sounds, they can sense vibrations of sounds. To smell, they flick their tongues. The forks in their tongues allow them to tell which direction the smell is coming from, making it easier to detect prey. Snakes benefit the ecology and the economy and help maintain ecosystem balance by controlling rodents and insects, and they do so without polluting the environment with chemicals. Species such as the milk snake and black rat snake help farmers by consuming large numbers of rodents. Garter, redbelly, and brown snakes frequently eat garden pests such as slugs and certain insects. Indiscriminate killing of snakes has caused extreme imbalances in rural and urban settings.

SPIDERS

Spiders are arachnids, but not all arachnids are spiders. Arachnids are members of a class of animals that includes spiders, scorpions, mites, and ticks. What they all have in common—and what distinguishes them from insects—are four pairs of legs (insects have three pairs of legs) and no antennae or wings (many insect species have wings).

Myth

Spiders are scary looking and will bite and even kill humans, especially at night when we are asleep.

Fact

Almost all spiders carry venom, but they use it to stun or kill insects, not to attack humans. Over 41,000 species of spider have been identified worldwide, but scientists believe that many more exist in places like rainforests. In the U.S., only two species have been associated with significant disease and extremely rare reports of death — the brown recluse and the black widow. Widow spiders and brown recluse spiders are very timid and have no instinct to bite humans. Both will attempt to escape rather than attack.

Abilities and Contributions

Spider web silk is so strong, scientists are studying ways to create it synthetically. Some silk made by orb weaver spiders is as strong as steel and would be more effective than Kevlar in bulletproof vests. Hummingbirds collect spider web silk to line their nests.

Spiders help maintain a balanced ecosystem by eating insects, and a few of the larger species eat frogs, fish, lizards, snakes, and birds. Even a vegetarian species has been found. Most spiders can eat up to two times their body weight in insects daily. The typical orb weaver eats approximately 2,000 insects within the single year of its lifecycle. Multiply this by the hundreds or thousands of spiders found in well-managed woods, and it is easy to see how spiders contribute to balancing ecosystems. Farmers around the world are increasingly turning to these creatures as beneficial predators. Where no harmful chemicals are used, spiders will remove 60–80 percent of the insects in a garden.

Rather than killing spiders because they look "scary," it makes more sense to leave them in peace and let them control insects such as termites that damage property. If spiders must be removed from a building, it should be done as gently as possible and the egg sacs should be taken outside along with the spider.

Resources

Fact Sheets:

Animal Experimentation and Xenotransplantation
Natural World Chart

Lesson Plans:

A World Without
Loving the Nightlife

Websites:

Bats

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