

# MYTH BUSTING ABOUT WILDLIFE AND FIRE: ARE ANIMALS GETTING BURNED?



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**E**motions run high and perceptions diverge from reality when most people imagine wildlife encountering fire. A generally accepted belief that fire poses a danger to animals has been unwittingly reinforced by 65 years of Smokey Bear, a singed cub turned fire prevention icon, and more than 50 years of Disney's Bambi and friends running in fear from fire. Without being balanced by factual information, the influence of these familiar characters mixed with

Scientific studies and anecdotal evidence indicate:

- Fire does not negatively impact wildlife populations,
- Wildlife respond and adapt to fire in a variety of ways, and
- Many wildlife species benefit from fire, directly and indirectly.

## Focus on Populations, Not Individuals

Successful wildlife management focuses on health of animal populations, not individuals. Wildlife

managers have been using fire since the 1930s to improve habitat conditions, even at the risk of harming individual animals. While wildlife mortality in any fire event is possible, the overall impact on wildlife populations is considered minimal. Fire will kill a few *individuals*, but not entire *populations*. This is the case even with rare populations in isolated geographic areas.

An example is the Jemez Mountain salamander, found only in the moist microclimates of the Jemez Mountain Range in New Mexico. In 2001, fire swept through all known sites inhabited by this amphibian. Biologists discovered that many of them survived because the natural

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strong public support for protecting wildlife fosters counterproductive sentiments about fire.

Public discomfort with fire, including prescribed burning, bolsters the exclusion of wildland fire from natural areas. The avoidance of fire inadvertently leads to overgrown vegetation, which generates more hazardous conditions and more dangerous wildland fires. It also continues to increase risk and decrease benefits to both wildlife and people.

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*Snow geese flock near Marsh Master vehicle during a prescribed burn, Pea Island National Wildlife Refuge, NC. Photo: U.S. Fish and Wildlife Service.*

*Deer stands in the black on China Ten Fire, Nez Perce National Forest, ID. Photo: U.S. Fish and Wildlife Service.*



areas used by the species, usually under logs or rocks, did not carry the full heat of the fire. While a few succumbed, the entire population did not, and the species continues to thrive. In fact, there is no known case of an entire wildlife population or species being destroyed by fire. In many cases, the short- and long-term effects of fire are positive for wildlife.

## No Strangers to Fire

Available data and many first-hand accounts from the fireline paint a picture of wildlife reacting in ways very different than in *Bambi*. Wildlife species have evolved with fire in natural areas and know how to respond to it. Animals, like people, know all the ways in and out of their homes and have a range of reactions to fire. An animal's response to fire depends on the species, its habitat, and the fire's behavior.

Most animals have the ability to move away from fire if necessary. Birds fly. Land mammals walk and run. Amphibians and reptiles retreat into wet areas, burrow under logs or rocks, or escape to underground burrows.

Wildlife don't always flee from fire, however. Slow-creeping ground fires actually provide an opportunity to forage and hunt. Elk, deer, and bobcat have been seen returning to burned areas minutes after a fire has passed. Bear and raccoon will scout along an active flame front for snakes and other small animals that are moving ahead of the fire. Raptors typically circle over fires looking for mice exposed on the ground or insects caught up in a smoke column. Fire crews have observed these predators catching and killing prey—in some cases, only a few feet from a fire's edge.



*Moth lands in burned area on Harris Fire, San Diego National Wildlife Refuge, CA. Photo: U.S. Fish and Wildlife Service.*

*Endangered whooping cranes forage on a prescribed fire burned area, Matagorda Island Aransas National Wildlife Refuge, TX. Photo: U.S. Fish and Wildlife Service.*



*Elk seek out new green shoots in Northern New Mexico on the Ponil fire, 2002. Photo: Brent Woffinden, U.S. Fish and Wildlife Service.*

When fire is excluded from natural areas, overgrown vegetation creates a greater risk of wildlife being burned in large, damaging fires.

Some species of wasps, wood-boring beetles, and flies, attracted by chemical compounds in smoke, will search out fires. They seek trees weakened by fire as a source of food, a rallying point for mass mating, or a place to lay their eggs. After the fire passes, these same insects play an important role in the recovery process by attracting predator species. Shortly after a fire, armadillos and birds will return to the burned area in search of these insects.

## Healthy Natural Areas

Fire generally increases biodiversity and strengthens the health of natural areas by attracting a variety of fire-seeking insects and predators, creating a mosaic of burned and unburned landscapes, and stimulating new plant growth. By exposing reliable sources of prey and creating new nesting areas, fire benefits and helps sustain wildlife.

The elimination of naturally occurring wildland fire due to fire

suppression and fragmentation of the landscape by agriculture and urban development has led to a decline in diversity, abundance, and nutritional value of habitats. The overgrowth of brush and trees in natural areas and the increased likelihood of large, damaging fires have the potential to do substantial harm to wildlife. Fast-moving fires can overwhelm or trap younger and slower animals, just as these fires pose a great threat to human life and property. High-intensity fires may decimate plants serving as food sources and delay repopulation of wildlife in burned areas.

Fire remains a critical tool for the management of wildlife habitat. Fire managers plan prescribed burns that cleanse and rejuvenate natural areas and present less of a threat to wildlife than large, fast-moving, high-intensity wildland fires. Prescribed burns can be designed to burn slower and at lower intensity than wildland fire. Prescribed burns also ensure escape routes for wildlife and can be timed to avoid mating and nesting seasons.

## The Bottom Line

While some individual animals perish during wildland fires, most remain unharmed and many benefit. More animals are burned in large, fast-moving, high-intensity wildland fires than during slow-moving ground fires or prescribed burns. Whether by using their speed, ability to fly, or other means to escape, or by taking advantage of opportunities to hunt, mate, lay eggs, or nest, wild animals are no strangers to fire.

Although fire sometimes kills individual animals, it doesn't destroy populations or species. Most wild-

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life survive fire and enjoy improved living conditions afterwards. When we exclude fire from natural areas, we put animals and people at increased risk. Only by raising public comfort with fire can we hope to sustain long-term, ecologically sound, and fiscally responsible fire management.

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