

Encountering Black Bears in Arkansas

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Introduction

The number of American black bears (*Ursus americanus*) in Arkansas is increasing (Figure 1). Whether you think that is good or bad depends, of course, on your perspective. To some people, the return of black bears to Arkansas is historically significant, symbolizing the revival of wilderness and providing increased recreational opportunities. Other people may fear the return of black bears. Livestock and pet depredation, crop damage and human safety are paramount concerns.

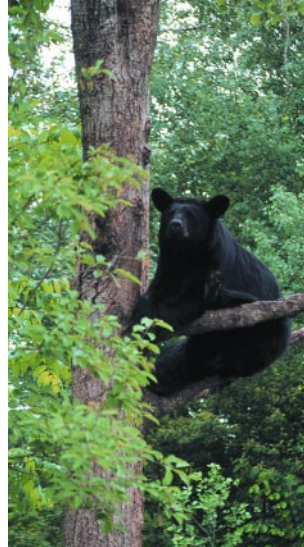


Figure 1.
 The American black bear in a tree and in its den at the White River National Wildlife Refuge.

Where are black bears in Arkansas? How can I manage my land for black bears? What should I do if I see a black bear? How can I prevent or reduce damage caused by black bears to my property, crops or livestock? This fact sheet focuses on these questions about black bears in Arkansas.

The Return of Black Bears to Arkansas

Prior to European settlement, black bears occurred throughout Arkansas. Historically, black bears were so abundant that the unofficial motto for Arkansas was "The Bear State." Black bears became rare in Arkansas after 1850, presumably due to over-harvesting and habitat

destruction. In the early 1900s, much of Arkansas' forestlands were logged and cleared for farmland. By the 1930s, less than 50 black bears were thought to remain in the state, with most residing in what is now the White River National Wildlife Refuge in southeastern Arkansas.

Recovery of black bears in Arkansas represents one of the most successful reintroductions of a large carnivore ever achieved. The Arkansas Game and Fish Commission successfully reintroduced 254 black bears from Minnesota and Manitoba, Canada, into the Ouachita and Ozark Mountains of Arkansas between 1958 and 1968. With the help of regulated hunting and habitat improvements in the Interior Highlands region of Arkansas (Figure 2), black bear populations have increased. Sightings have also increased in adjacent areas of Oklahoma and Missouri.

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Figure 2. The physiographic regions of Arkansas and black bear range.
Paul Medley

Although black bears are difficult to count in forested habitats, the black bear population in Arkansas is currently estimated at over 3,000 animals. Black bears are prized game animals. About 200 are legally harvested annually in Arkansas. Besides using the fur, bear meat is considered highly palatable by many wild-game fanciers. Black bear hunting license and harvest information can be found at www.agfc.com or contact your local Arkansas Game and Fish Commission office.

Restoration Efforts

While self-sustaining bear populations currently exist in the Interior Highlands and Delta regions of Arkansas, the West Gulf Coastal Plain region (Figure 2) has few bears. In 1998, the Arkansas Game and Fish Commission began studying management options and public support for restoring bears to the West Gulf Coastal Plain. They decided to translocate bears from the White River National Wildlife Refuge to the Felsenthal National Wildlife Refuge, which was within historical black bear range. While occasional bear sightings occurred in the Felsenthal area, for decades there had been no confirmed reports of female bears with cubs, indicating a nonreproducing population. Occasional bear sightings were likely subadult males which dispersed into the area looking for their own home range.

The primary impetus for restoring bears to the Felsenthal National Wildlife Refuge was the ecological benefit of linking fragmented, isolated bear populations in Louisiana and Arkansas. Black bears are considered a keystone species, meaning they influence other forms of life within an ecosystem. The role bears play in ecosystems is not well understood;

however, we do know that bears can be important seed dispersers. Undoubtedly, reestablishing black bears to the Felsenthal National Wildlife Refuge will contribute to a more naturally-functioning ecosystem. Also, restoring bears to Felsenthal will provide increased wildlife viewing, photography and hunting opportunities. However, bears can also cause problems when encountering people, which is discussed later in this fact sheet.

Restoring a bear population is not an easy task. Adult bears display strong affinity to their home ranges, especially adult females. It is doubtful that bears would colonize the West Gulf Coastal Plain region on their own for at least several decades, because female bears lack the dispersal abilities required for colonizing new habitats. Range expansion by subadult males is more common because young males are forced by older males to disperse. Conversely, subadult female bears typically reside within a portion of their mother's home range, thereby limiting dispersal pressures for females. The limited dispersal capabilities of bears, coupled with the isolated nature of most bear populations, makes colonization of recovered habitats difficult at best.

Bears from the White River National Wildlife Refuge were identified as the ideal source population for capture and relocation to the Felsenthal National Wildlife Refuge for several reasons. First, the bear population at the White River refuge is experiencing growth and expansion and bears can be safely removed without adversely affecting population viability. Second, bears at the White River refuge are the best available genetic match to those bears that originally inhabited the Felsenthal area. Third, White River bears are adapted to the habitat and seasonal flooding that occurs at Felsenthal.

Historically, black bear restoration programs have been hindered because black bears have well-developed homing abilities. (Homing is the ability to return to a location when removed from it). Bears can travel hundreds of miles to return to their original home range after translocation. Biologists in Arkansas implemented an innovative technique to translocate bears from the White River to the Felsenthal National Wildlife Refuge. Adult female bears with newborn cubs are being removed from their winter dens, translocated and placed in artificial or natural den sites at the release site. This relocation technique works because a female black bear's maternal instinct is thought to be stronger than her homing instinct. The mother bear tends to remain in the new den to care for her young cubs rather than returning to her former home range. The time spent in the new den acts as an acclimation period and helps suppress the homing instinct. When the female and cubs emerge from their den in the spring, the cubs are too small to

travel long distances. Black bears translocated in this manner tend to remain in the vicinity, although they may move around before establishing a new home range.

All bears translocated to the Felsenthal National Wildlife Refuge are fitted with collars containing radio transmitters. Biologists frequently locate each collared bear to determine habitat use, movement patterns, survival and reproductive success. Black bears will continue to be translocated into Felsenthal until a self-sustaining bear population is established.

Finding Bear Sign

Without actually seeing bears, you can determine if bears have been in a particular area by the sign they leave behind. Paw prints in mud or sand are relatively easy to identify. The toe pads on the forepaw of a black bear form an arch over the much larger footpad (Figure 3). The hindpaw print, which can be as much as 9 inches long, resembles a human footprint.



Figure 3. Bear paw prints. Forepaw (left), hindpaw (right).

Bear scat (feces) is another field sign that a bear has been in an area. Its appearance depends on what the bear has been eating. If the bear has been gorging itself on young succulent vegetation, the scat will appear as an amorphous pile of partially digested plant material. If the bear has been eating dryer plant material, such as leaves or acorns, however, the scat will be cylindrical and about 1 1/2 inches or so in diameter.

Claw marks on trees and ripped-open logs are good field signs indicating bears are around (Figure 4). Insects are an important food to black bears and they rip open logs with their claws and teeth to reach them. Look for claw and teeth marks on the log and for paw prints and scat on the ground around the log. Claw marks on tree trunks are thought to be a means of communication between bears, and will be about 3 to 6 feet off the ground.



Figure 4. Bear sign on log and tree trunk.

Food Habits

Before discussing where bears live, it is important to understand what bears eat. The digestive system of a black bear is essentially that of a carnivore with modifications to their dentition. For example, black bears have relatively long, flat molars with grinding surfaces that allow them to grind up plant material. Even though black bears have solved the mechanical problem of preparing plants to swallow, they have not solved completely the chemical problem of being able to digest coarse forage, especially forage high in dietary fiber. Bear stomach fluid acidities are too low for the propagation and maintenance of micro-organisms that can digest plant cell walls (plant cell walls are high in dietary fiber). Thus black bears rely on new, actively growing plants as food in spring and early summer.

Young, succulent grasses and herbs are highly digestible and comprise the majority of a bear's diet. These plants are adequate for maintaining weight, but their high water content and limited energy content are not satisfactory for building fat reserves needed during winter. Bears in Arkansas quickly shift their diet from grasses and leaves to soft mast (wild fruits and berries) as soon as it becomes available during summer. Acorns (hard mast) and shrub and tree-borne fruits become important to black bears in Arkansas as grasses mature and dry out.

In late summer and early fall, the metabolism of bears changes. They increase their feeding effort (a behavior called hyperphagia) and are capable of gaining 1 to 2 pounds per day. By November or December a bear can weigh 30 to 40 percent more than it did the previous spring. High-energy foods include carrion, ants and acorns. Because carrion is often limited in supply and ants require a lot of foraging effort, acorns are the "food of choice" for black bears in Arkansas. Other important bear foods in Arkansas include hickory nuts, blueberries and pokeberries. Black bears do not eat fire ants. Bears drink frequently and are usually found in the vicinity of water.

Habitat Preferences

For those wanting to see, photograph or hunt black bears, or manage for bears on their property, the key is maintaining or creating good bear habitat. In Arkansas, black bear habitat is predominately found in the oak-hickory forests of the Interior Highlands and in bottomland hardwood forests of the Delta and Mississippi Alluvial Floodplains (Figure 2). Good black bear habitat consists of relatively inaccessible terrain, thick understory vegetation, abundant sources of soft and hard mast and secure denning areas. Inaccessible, thick understory vegetation is important because it provides protection from poaching and other sources of harassment. Adequate and secure denning areas include dense vegetation, tree cavities, downed timber, brush piles and rock crevices. In Arkansas, black bears generally do not excavate earthen dens as frequently as black bears in the western United States.

Few individuals own enough property to contain an entire black bear population, or even a single bear for that matter. In Arkansas, the home range of adult black bears varies from 5 to 30 square miles, depending on food availability and abundance, climate and other factors. Adult males generally have home ranges that are two to four times larger than adult females. The home range for female bears declines when they have cubs, but increases as their offspring mature, presumably to meet their increased nutritional demands.

Despite these large home ranges, landowners who manage their property for black bears may be rewarded with occasional sightings or bear signs. Some general guidelines include 1) protecting present and potential cavity trees for denning sites, especially large (36 inches dbh) bald cypress, overcup oak and tupelo gum; 2) providing thickets for security cover and limiting vehicular access to minimize disturbance to bears, especially during winter; and 3) in forested areas, creating and/or maintaining openings within large timber stands to stimulate early successional food plants. Specific land management practices follow.

Upland hardwood forests. Schedule tree harvests to create a maximum diversity of hard and soft mast-producing shrubs and trees. Mast production declines in oak trees older than 120 years; therefore, you should develop a rotation strategy of timber harvest that enhances oak regeneration, especially in older stands. Maintain wide corridors (> 200 yards) between open areas, and manage corridors by selective harvest that favors mast-producing and cavity trees.

Bottomland hardwood forests. Large tracts of mixed tree species normally provide good to excellent bear habitat. Stand diversity can be improved if an

uneven-aged management system is used with single-tree selection, group selection or small-patch harvest cuts to enhance regeneration of shade-intolerant oaks and increase early successional foods such as dewberry, blackberry, elderberry and pokeberry. Minimally, rotation length should be 50 years, with 70 to 100 years preferred for hard-mast production. Intermediate cuts should be performed at 5 to 15 year intervals to remove poor-quality trees, promote regeneration of desirable trees, increase food production and increase security cover for bears.

Pine plantations. Harvested stands should be irregularly-shaped to promote edge habitat. To ensure a constant supply of soft mast, make sure there is at least a 7-year difference in age classes between two adjacent regeneration areas. Thin even-aged pine stands to allow sunlight to reach the forest floor and promote the growth of soft mast-producing shrubs. Prescribed fires can be administered on a 3- to 5-year rotation, with the first burn when pines are 7 to 10 years old. Avoid burning during the black bear denning season to prevent disturbance of females with newborn cubs. Leave hardwood mast producers along streambanks. When feasible, leave slash and tree tops for bedding/den sites. Also, leave snags and fallen trees; these sites provide habitat for insects and foraging and denning sites for bears.

Mixed pine-hardwood forests. Forest management activities should favor oaks and other hard mast species. Provide open canopies where soft mast and thick brush will grow. The management recommendations for upland hardwood forests also apply to mixed pine-hardwood forests.

Agricultural lands. Leave strips of unharvested corn, sugarcane and winter wheat near forested areas. Provide wide corridors where bears can travel between blocks of forest.

Bears and People

Most bears are extremely shy and elusive, and usually avoid direct contact with humans. Incidents of black bears attacking people have been reported, but are extremely rare. In fact, a person is 180 times more likely to die from a bee sting, or 160,000 times more likely to die in a traffic accident than die from a bear attack. There have been few reported bear attacks on humans in Arkansas in recent history. In the rare event an attack does occur, it is usually made by a bear that has fed on garbage, been hand-fed or approached by humans or was in extremely poor physical condition due to old age, disease or wounds.

Despite the extreme rarity of bear attacks on people, always be alert to dangerous situations when in bear habitat. **Be bear aware.** Look for bear signs

including tracks, claw or bite marks on trees, droppings and evidence of digging.

If confronted by a black bear, what should you do? Each bear encounter is unique. No hard and fast rules can be applied when dealing with an animal as intelligent as a bear. As a rule, however, confrontations can be classified as either surprise encounters (also called defensive encounters) or predatory encounters. The type of encounter determines what you should do to decrease your chances for injury.

A surprise encounter occurs when you surprise the bear, the bear surprises you or both. Here are a few recommendations if you find yourself in this situation.

- Stay calm and stand your ground (or move slowly away). Try to intimidate the bear by shouting, banging objects together or hitting it with a rock or stick.
- Do not run, as the bear may chase you. Though bears may appear slow and awkward, they have been clocked running at speeds of up to 30 miles per hour, or about 44 feet per second, over short distances. For comparison, a world-class Olympic sprinter under ideal conditions can run only about 33 feet per second for very short distances.
- Unless an attack is imminent, playing dead is not recommended.

A surprise encounter with a female and her cubs increases the likelihood for conflict. Be particularly cautious in this situation, as parental protection of cubs is legendary. A female with cubs may snort or false charge (rush toward you, stopping short of physical contact), but you should stand your ground. Back slowly away in a nonthreatening manner. Never approach lone cubs. Do not assume cubs have been abandoned – the mother is probably nearby and ready to defend her cubs if you approach them. Move slowly away from cubs, possibly in the direction you came.

A predatory encounter occurs when you are being hunted as a potential food source. The most effective strategy in this situation is to fight back as aggressively as possible. Yell, scream and strike the bear in the eyes and snout if possible. Obviously, playing dead would worsen the situation.

For close encounters, capsaicin spray has been used effectively to deter black bears. Although the spray range is often less than 30 feet, consider purchasing bear spray when it is likely you will encounter bears. Never apply bear deterrent sprays to tents, vehicles, around campsites, etc. Research and experience has shown that bear sprays applied in this manner will attract bears. Bear sprays should

only be applied directly to the bear and in its face if possible. Sprays are available from camping suppliers.

Preventing Bear Problems

Most conflicts between humans and bears can be avoided. The best strategy for preventing problems with bears is to simply avoid close contact. Don't create situations where bears can become accustomed to people. Most bears involved in human attacks were habituated to humans, usually by feeding on garbage. Habituation is defined as a decline in an animal's response following repeated exposure to a stimulus. Their natural fear of people can be eroded over time as bears learn to associate people with food. A bear that has lost its natural fear of humans is a dangerous animal. Follow these guidelines when in bear habitat.

- Never get close to black bears and don't let them get close to you. Watch them from a distance. If in a vehicle, stay inside. As a rule, avoid getting closer than 100 yards to a black bear. There is no guaranteed minimum safe distance, however.
- Keep garbage, pet foods, bird feed and other foods away from bears. Remember, bears that feed on human foods can quickly lose their natural fear of humans. We want bears to be afraid of us. Don't feed them.
- When hiking in bear habitat, make noise to avoid surprising a bear. Talk, whistle or sing to alert bears to your presence. Leave your dogs at home. Dogs can antagonize bears and cause an attack. If a bear chases your dog, you can probably guess where your dog is going to run for safety.
- When camping, keep your campsite clean. Keep food out of your tent. Store food in airtight or bear-proof containers and lock food in the trunk of your vehicle, or hang food in a tree 15 feet off the ground and 8 feet away from the tree trunk. Wash dishes when finished eating. Cook food away from where you sleep. Do not sleep in the same clothes you cooked in. Burn trash and garbage if allowed. If you can't, hang garbage with your food. Never bury it.

Nuisance Bears

In their pursuit of food, some bears damage beehives, trample vegetable gardens and crop fields, damage cabins and raid campsites. They scavenge pet food and garbage cans, eat entire corncobs, claw high-grade forest-production trees and break the limbs of orchard trees to reach their fruit. In Arkansas, nuisance bears are trapped, tattooed and ear-tagged and relocated by biologists from the

Arkansas Game and Fish Commission. The process of tagging and relocating nuisance bears is expensive and time-consuming. Before calling a wildlife biologist and asking them to remove a nuisance bear, first try these strategies for reducing or preventing bear damage to your property.

Human dwellings and other structures. The key to keeping bears away from your house and other buildings is to make the immediate surroundings unsuitable for bears. This involves removing all hiding cover from around buildings for at least 50 yards. It also involves handling your food and garbage carefully. Garbage should be stored where bears can neither smell nor gain access to it. Put out the garbage only on the day it is scheduled for pick up (or burn it immediately and completely if you do not use a refuse disposal service). Smelly trash left out overnight gives bears time to locate it and get into it. This food reward will encourage them to revisit the site, eventually causing problems.

If bears have found your garbage, what should you do? Remove the attractant immediately. It is much more difficult to deter a bear that has used a garbage feeding site repeatedly than to stop a single instance. Bears will normally leave if no food reward is available. When bears become habituated to human foods, they usually have to be trapped and relocated; they may even have to be killed.

Livestock and pets. Occasionally bears prey on livestock. Usually one or two individual bears are the cause and the problem is resolved by their removal. Confine livestock in buildings and pens at night, especially during lambing or calving season. Promptly dispose of carcasses by rendering or deep burial. If possible, food should be stored inside a sturdy building that bears cannot enter. Reduce spillage of oats and pellets by feeding from containers. Do not leave livestock food out over night.

Pens and/or doghouses for pets should be placed at least 50 yards from wooded areas. Keep the pens clean and do not leave pet food out over night.

Crops. Plant away from wooded areas. Devices intended to frighten bears, such as night lights, strobe lights, loud music, pyrotechnics, exploder canons and scarecrows, can be effective. If used, they should be moved or the type of device changed frequently so that bears will not become habituated to them.

Fruit trees attract bears, especially in years when wild foods are scarce. Pick all fruit from orchard trees as soon as possible. Do not leave fruit on trees through the fall. Electric fencing is the most effective way to keep bears out of an orchard.

Apiaries. Place bee hives at least 50 yards from wooded areas. (Black bears are creatures of the forest. Although they occasionally venture into fields to forage, usually at night, they prefer forested environments.) Electric fencing is recommended for keeping bears from beehives. Bury four corner posts 1 foot deep around your hives and attach guy wires for support. Attach insulators to the inside of each corner post and stretch four strands of electroplastic wire around the posts at intervals of 6, 16, 26 and 36 inches from the ground. Drive support posts at 12-foot intervals with insulators on the outside of the posts. Electrify the fence using a 12-volt fence charger with a 12-volt deep cycle battery or solar charger. The charger should yield at least 3,000 volts. Keep vegetation from contacting electric wire by clipping or applying herbicide.

An alternative to fencing is raising the hives 15 to 20 feet above ground on elevated platforms. Support poles should be at least 6 inches in diameter and wrapped in 4-foot-wide galvanized sheet metal about 6 to 7 feet above ground to prevent bears from climbing the poles.

Concluding Remarks

Black bears have been a part of the natural fauna of Arkansas for thousands of years. They play important roles in the ecosystems in which they occur and provide valuable recreational opportunities. In order to keep bears in Arkansas, careful consideration must be given to their habitat needs and how we handle garbage. Protecting existing bear habitat, modifying land management practices to accommodate the needs of bears and eliminating bear access to human foods are the primary means by which we can ensure that present and future generations of Arkansans can enjoy one of nature's most spectacular animals.

For more information about black bears in Arkansas, refer to *Black Bears: Biology and Habits* (FSA-9086) or check out the Arkansas Game and Fish Commission's website at www.agfc.com.

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