

History, Ecology, and Management of the Louisiana Black Bear

Black Bear Conservation Committee
American Forest and Paper Products Association
Anderson-Tully Company
Arkansas Game and Fish Commission
Audubon Institute
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Bayou State Bowhunters
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Texas Parks and Wildlife Department
United States Army Corps of Engineers, Lower Mississippi Valley Division
United States Fish and Wildlife Service
United States Forestry Service

United States Forest Service: Southern Hardwoods Laboratory
United States Natural Resource Conservation Service
University of Tennessee: Department of Forestry, Wildlife and Fisheries
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Black bears hold a prominent place in the history and folklore of people in the southeastern United States. During a bear hunting trip around Onward, Mississippi, in the early 1900's, President Theodore Roosevelt refused to shoot a bear that had been captured and tied to a tree. It was a journalist traveling with the hunting party who penned the phrase "Teddy's Bear."

Black bears, once common in the Lower Mississippi River Valley (LMRV), have been reduced to an estimated population of fewer than 500. Since the turn of the twentieth century, bear habitat has been significantly reduced or eliminated throughout much of the LMRV region. Unrestricted and illegal harvests are among the reasons for their reductions.

Many people believe the downward trend in bear population numbers can be reversed, and they are working actively to restore the black bears. The Black Bear Conservation Committee, a broad-based coalition comprised of agencies, industry, academia, and landowners, is increasing awareness regarding challenges and needs presented by the plight of black bears in east Texas, southeast Arkansas, Louisiana, and Mississippi.

Attitudes of people in the LMRV will help determine the black bear's future. If restoration is to be successful, it is because of public and private sectors working toward a common goal of balancing humans and black bears.

History and Current Status

The American black bear (*Ursus americanus*) was once found throughout North America from Alaska and Canada south to northern Mexico; currently, 16 subspecies are recognized. Those animals found from east Texas through Louisiana and southern Mississippi are considered to be the Louisiana black bear (*Ursus americanus luteolus*). The bears in southeast Arkansas in the White River National Wildlife Refuge are genetically similar to the Louisiana black bear. Historic references report bears in the LMRV reached peak abundance and were "widespread and common" in the bottomland hardwoods of the Mississippi and Atchafalaya drainages before settlement by Europeans in the early 1800's. Bears were important to native Americans, explorers, and settlers as a source of food, fur, and oil.

By the 1950's, black bear populations were considered low. In 1959, an estimated 80 to 120 bears were reported in Louisiana but believed restricted to the Tensas and Atchafalaya River basins. In the summers of 1964 to 1967, the Louisiana Department of Wildlife and Fisheries stocked 163 nuisance bears from Minnesota into this area. In the next 3 years, bears possibly dispersing from this release were reported in all adjacent states. Research indicates that the Louisiana black bear genetics were not compromised by the Minnesota bear introduction. Current population estimates for the Tensas are 60 to 100 animals, based on U.S. Fish and Wildlife Service and University of Tennessee data. Sixty-five different animals were captured in

the Tensas by summer 1996. Between 1992 and fall 1996, more than 80 different bears were caught in the Atchafalaya basin.

In Mississippi, a game survey in 1929 reported bears in northeast and north-central Mississippi and along the Pearl River. Statewide protection of bears was implemented in 1932, and at that time, fewer than 12 animals were believed to exist in Mississippi. Three pairs of bears were released in separate localities in 1934-35; this release was determined unsuccessful. In 1976, the last breeding population in the state was documented in Issaquena County. A statewide population inventory by the Mississippi Game and Fish Commission in 1978 reported bears as "uncommon" in 20 counties.

The Mississippi Museum of Natural Science collection includes 14 bears killed in Mississippi between 1972 and 1994. Mississippi Department of Wildlife, Fisheries and Parks estimates 25 to 50 bears are scattered in the Mississippi, Pearl, and Pascagoula drainages. Several bears are regularly sighted in the extreme southwestern part of the state, including Wilkinson County and along the Mississippi River from Rolling Fork to north of Greenville. In Texas, black bears are listed as endangered; some sightings in east Texas have been reported in recent years.

Past management of the Louisiana black bear focused on harvest restriction, restocking, and habitat protection. The last bear-hunting season in Louisiana was in 1988, and in 1991, the civil penalty for killing a black bear was \$10,000, with criminal penalties including possible prison time. In Mississippi, legal hunting of black bears was closed in 1932. In 1974, the black bear was placed on the first list of rare and threatened vertebrates of Mississippi, and in 1984, it was classified as endangered in Mississippi. The civil penalty for violating the state endangered species law is \$1,000 or imprisonment for not more than 1 year, or both.

The Louisiana black bear (*luteolus*) was listed as federally threatened by the U.S. Fish and Wildlife Service in 1992, and although bears in Arkansas north of the Louisiana/Arkansas border were excluded from this list, the historic range of *luteolus* includes southern Arkansas. The bear population in and around the White River National Wildlife Refuge is considered as expanding and healthy.

The decline of black bears in the LMRV region can be attributed to human disturbance, illegal kill, and habitat loss. The original 25 million acres of bottomland hardwoods in the LMRV region were reduced to 5 million by 1980. Because of the low reproductive rate of black bears, the effect of illegal kill, especially of females, is a serious concern.

Ecology

Description

Black bears are black with a brown muzzle, and occasionally will have a white blaze on the chest. Adult males weigh from 200 to 400 pounds, and adult females weigh from 120 to 200 pounds. Body lengths for both sexes vary from 3 to 6 feet from nose to tail.

Bears have good reasoning ability, long-term memory, dexterity and speed, tremendous strength, and are elusive. They are considered to be adaptable animals.

Reproduction

Female black bears typically begin having cubs at the age of 3 to 5 years. Two-year-old bears may produce young where habitat quality and food resources are excellent. Females in poor-quality habitats may not produce young until 7 years of age, and food shortages the previous year may decrease litter size.

Mating usually occurs in summer, with egg implantation delayed for about 5 months following mating. Cubs are born in winter dens in January and February. Twins are most common, but litter sizes may range from one to five. Cubs are helpless at birth, are about 8 inches long, and weigh from 8 to 12 ounces. The sex ratio at birth is usually 1 male to 1 female.

Cubs grow rapidly, and by the time the mother and cubs leave the den in April or May, the cubs weigh 4 to 8 pounds. Cubs stay with the mother for the first year and share a den the first winter following their birth. They emerge with the mother again in the spring and stay together until summer, when the family unit dissolves. In mild winters, the family unit may stay active through the winter. After the family unit dissolves, the female goes into estrus, breeds, and the cycle is repeated.

Denning

Black bears are not true hibernators. They go through a winter dormancy period called carnivorean lethargy or torpor, which includes denning for periods of time in winter, at which time normal body metabolism changes dramatically. This torpor aids in survival during food shortages and severe winter weather conditions. The onset of denning in the Deep South is from late November to early January. Activity and movements decrease greatly during this period, and bears enter "predens" or "nests" or may directly enter the den where they will spend the winter.

Bears do not eat, drink, urinate, or defecate during the denning sleep. Waste products are recycled as a result of unique metabolic and physiological processes. Most bears are easily aroused if disturbed while denning.

Denning activity is influenced by food availability, age, sex, reproductive condition, day length, and weather. Interruption of denning period or changes in den sites during the denning period may be caused by human disturbance, flooding, changing weather conditions, and poor concealment of ground dens.

Bears in the LMRV region are more active in winter months than are the bears found in more northern latitudes. Male bears, in particular, may be more active in winter; some males may bed for a few days or weeks in one area before moving to a new bedding site. Pregnant female bears usually prefer den sites that are secure and inaccessible, and when available, will select large, hollow trees that are dry, insulated, and secure.

Movements

Monitoring bear movements reveals that bears are the most active from dusk through dawn, although daytime activity is not unusual. In forested cover, bears often use "daybeds," which are usually shallow, unlined depressions scratched in the ground or leaves. Mothers with cubs often rest at the base of trees; if disturbed, she can send the cubs up the tree, then climb the tree with them, or leave the area alone. Bears also rest in the crown or lower branches of a tree.

Male bears often move two to eight times the distances that females move. Home ranges, or the land areas used annually or periodically, vary by year and season. Home-range size is influenced by sex, population density, age, food availability, and reproductive status. Male home ranges typically increase during the summer mating season, and in the fall, bears move more often when foraging heavily to build winter fat reserves.

Bear activity and movement center on meeting habitat needs (year-round) and finding mates (breeding season). Estimates of home-range sizes indicate adult males may use more than 40,000 acres, and adult females may use up to 18,000 acres. Older male bears exert social pressure on younger bears, particularly during the breeding season, forcing them to disperse to other areas.

Research indicates that bears frequently use uncleared drains, ditches, bayous, and river banks when moving across open land from one forested area to another. These travel corridors are particularly important to adult and juvenile males that reside in a landscape composed of fragmented forest land and large agricultural fields. Travel corridors of brush and trees as narrow as 50 yards wide have been used by bears to pass through agricultural areas, but the wider the better.

Mobility of bears, particularly young, dispersing males, puts them at considerable risk. Conflict situations often result when bears enter unfamiliar territory and encounter humans. Bears have a homing instinct and will attempt to find a way back to familiar territory; therefore, relocation of nuisance bears is rarely successful. Bears have traveled up to 400 miles from relocation sites. Frequent road and highway crossings, coupled with contact with humans, increase stress and likelihood that bears will not survive relocation.

Food Habits

Black bears are carnivores (meat eaters) but are not active predators of vertebrate animals. They are better characterized as opportunistic omnivores, since they eat almost anything available, including plant and animal matter. Considerable time is spent foraging for food. Feeding signs are usually found where bears are active and may include torn logs, clawed trees, and trampled food plants. Bears locate food by smell and feed at all levels of the forest, from climbing trees for acorns and berries to rooting up grubs in rotten logs on the forest floor. After emerging from the den in the spring, bears may remain in a semifasting state for a short time. With the onset of feeding, bears eat succulent vegetation first, followed by residual hard mast such as acorns and pecans, agricultural crop leftovers, and insects. From late spring through summer, soft fruits such as berries, pokeweed, devil's walking stick, thistle, sassafras, palmetto, persimmons, and wild grapes are important food items. By fall, diets shift heavily to pecans and acorns, which are carbohydrate-rich food sources that build fat reserves necessary for denning. Bears exhibit the greatest weight gain during fall hard-mast consumption. Agricultural crops are important foods year-round and are particularly important where habitat is fragmented and bear densities are high. Bears are attracted to crops such as corn, wheat, and sugarcane and often become attracted to human garbage and pet foods. Where bears are present, take measures that prevent access to these attractive foods.

Habitat Requirements

The Louisiana black bear lives primarily in relatively large, contiguous areas of bottomland hardwood habitat. Habitats must provide escape cover, dispersal corridors, abundant and diverse natural foods, water, and denning sites. Black bears are adaptable habitat generalists, and well-managed, productive forests can provide good bear habitat. With the large home range size needed, it is critical to have large expanses of suitable habitat. Food items must be present in sufficient quantity and quality on a year-round basis. These foods generally include the following items:

Grasses, thistles, and other annual weeds.

Fruiting vines and shrubs.

Hard mast such as acorns, agricultural crops, and forages.

Insects, small invertebrates, and vertebrates found on the forest floor in rotting logs, slash, and snags.

High-quality escape cover is especially important for bears living in fragmented habitats and/or in close proximity to humans. Bears adapt and thrive if provided areas of retreat that ensure little chance of close contact with humans. Thick understory brush or cover found typically in diverse bottomland hardwoods with fairly open canopies and mature trees provide this natural cover. Timber harvest slash and the thick regrowth normally associated with harvest can enhance escape cover quality and provide additional feeding and denning habitats.

Providing a mix of small wildlife openings, interspersed with thick brush cover, mature mast-producing stands, with occasional denning trees and brush piles, meet most bear habitat needs. Travel corridors of timber connecting two separate forest areas may aid in bear movement and dispersal, and if located along drains (streamside management zones [SMZ's]), may help protect stream water quality and also provide den trees.

Movement studies document that bears use heavy cover for daybeds and denning sites. Daybeds often are located in hardwood forests that have been logged within the previous 5

years. Brush pile and ground nests are most frequently used as dens by males, who prefer denning in areas with discarded logs and thick briar and vine growth.

Management

Habitat management practices that benefit black bears also benefit other animals. Landowners and managers who want to enhance their lands for bears can incorporate the following guidelines into existing management strategies.

Natural bottomland hardwood forests

Large tracts of mature bottomland hardwood forests of mixed tree species normally provide good to excellent habitat for black bears and often do not require intensive management to improve or maintain. Landowners can integrate timber harvest with black bear habitat management, and in many cases, improve habitat conditions.

Stand diversity is greater if an uneven-aged management system is used, with single-tree selection, group selection, or small-patch harvest cuts as the harvest options available. Diverse age classes, stand types, and vegetative composition within the forest provide good habitat conditions for black bears.

Rotation length for crop trees should be a minimum of 50 years; 70 to 100 years may be preferred for hard-mast production. Stand thinnings, or intermediate cuts, should be performed on 5- to 15-year intervals. Design intermediate cuts to remove poor-quality trees, promote regeneration of desirable tree species, increase food production, or increase escape cover for bears. Avoid diameter-limit cuts, because they often are detrimental to timber and bear management over the long term.

Concentrate on midstory timber stand improvement through herbicide injections to remove less desirable, noncommercial tree species and species that do not benefit bears. These include American hornbeam, box elder, and eastern hop hornbeam. Leave the bears' beneficial species such as mulberry, swamp dogwood, spicebush, and other fruiting species.

Natural regeneration of desirable hard-mast species such as oaks can be through silvicultural management operations. Group selection, or small patch removals, enhances regeneration of shade-intolerant oaks and increases early successional foods such as dewberry, blackberry, elderberry, and pokeberry.

Hardwood plantations

In hardwood plantations, schedule harvesting operations to create maximum diversity. Do not schedule harvest cuts on adjacent compartments or stands during the same time period.

Maintain corridors as wide as possible between plantation fields, and manage the corridors by selective harvest that favor hard mast species and cavity trees. In intensive, short-rotation plantations, use stump-sprout regeneration, where feasible, to allow regeneration within 1 year of harvest. Leaving clumps of larger standing trees in the harvested stand will increase use of these areas by sows.

Pine plantations and forests

Managers typically use even-aged management strategies to regenerate pine stands.

Regeneration usually falls within two methods--those leaving two to three seed trees per acre for natural regeneration, and harvest cuts, with some form of site preparation followed by planting pine. Make irregular-shaped harvest areas to promote edge habitat.

To create maximum diversity between stands, have at least 7 years' difference in age classes between two adjacent regeneration areas. This ensures a constant supply of soft mast within a relatively small area.

Thin even-aged pine stands as soon as economically feasible (12 to 15 years, depending on site quality). Thinning allows sunlight to reach the forest floor and promote the growth and production of soft mast and low brush. Fire helps maintain the pine ecosystem; burn on a 3- to 5-year rotation, depending on site quality. Planted pine stands may be burned as early as 7

to 10 years old, and within 2 years following intermediate thinnings. Protect hardwood areas from fire.

In pine systems, leave hardwood-mast producers along the sides of streams. SMZ's should be wide and large enough to be separately manageable stands. When feasible, leave logging slash and tops for bedding areas; they are best left unburned. Snags and dead fall trees provide foraging sites for insects.

Upland mixed pine-hardwood

Upland sites where stands of timber are a mixture of pine and hardwood can provide excellent bear habitat. Typically, the hardwood component is composed of hickory, oak, cherry, sweetgum, and beech. Forest management activities should favor the oaks and other hard mast species. Harvest operations should provide open canopies where soft mast and thick brush will develop.

Special considerations

Any forest management plan that includes bears as an objective has special considerations. Identify and protect present and potential cavity trees, especially bald cypress, overcup oak, and tupelo gum. With the federal listing of the Louisiana black bear, you must protect cypress and tupelo gum when they are adjacent to water, with visible signs of defects, and a minimum of 36 inches diameter at breast height (dbh).

Regeneration of cypress and tupelo is generally from stump sprouts of trees up to 14 inches dbh, if sufficient sunlight is available. Total harvest is usually the best method of regeneration for these stands. Regeneration from seed is more complex; cypress need exposed wet soil for germination and continued moisture for about 2 to 3 years for seedling establishment.

Removing trees in permanently flooded areas nearly always results in conversion of forested wetlands to open water. Thinning species can begin by age 20, with regular thinning at 10-year intervals thereafter to remove poorer quality stems.

Provide thickets for escape cover. These can be composed of any species, but in particular, switchcane thickets or brakes historically are associated with the Louisiana black bear. Switchcane can also provide a seasonal food source, and should be favored in hardwood stands. It can be encouraged through removal of overstory trees and can be artificially regenerated by seed or rhizome transplanting.

Logging and access roads that provide a permanent approach to occupied bear habitat should be located a minimum of half a mile apart. Control vehicular access by using gates or permanent road closure after logging to minimize disturbance to bears.

Maintain some forest openings within large expanses of forest, so you can provide early successional fruiting species or planted food crops such as corn in summer and wheat in winter.

Agriculture

Manage agricultural land to improve bear habitat. Agricultural practices beneficial to bears can include proper crop selection, development of travel corridors, or even conversion of agricultural land to forest.

Corn, sugarcane, and winter wheat are better bear crops than soybeans or cotton for food and cover. Locating crops next to forested areas and leaving strips of crops unharvested are positive management techniques. Always use pesticides and herbicides in accordance with label guidelines.

Vegetative buffers left unsprayed next to forest land help prevent drift into the forest edge. For producers participating in acreage-reduction programs, set-aside acreage can be located to create beneficial wildlife habitat. Plant at least 50 percent of the set-aside lands, not to exceed 5 percent of the crop acreage base, to an annual or perennial cover crop by November 1 of each year.

Locating set-aside acreage next to sloughs, SMZ's, and forest land can provide connecting corridors or wider expanses of cover for bears. Fallowed lands grow up into suitable bear cover habitat and allow bear use and movement between fragmented habitats. Make these areas as wide as possible.

Food plantings

Food plantings developed in forested habitats for game species are not necessarily bad for bears. Commonly planted forage species include clovers, wheat, ryegrass, and bahiagrass. Wheat is particularly good when the heads are in the late "milk" stage.

Conservation reserve program

A Conservation Reserve Program (CRP) offers incentives for installation of wildlife habitat practices. The following CRP practices are the most desirable for black bears.

CP-3 Tree Planting (pine)

CP-3A Tree Planting (hardwood)

CP-4B Permanent Wildlife Habitat (corridors, noneasement)

CP-4D Permanent Wildlife Habitat (noneasement)

CP-12 Wildlife Food Plots

CP-25 Rare and Declining Habitat Restoration

CP-4 practices require the landowner to plant at least 30 percent hardwood/shrub, which is Mississippi's policy. CP-4B and 4D require planting a mixture of herbaceous, shrub, and tree species best suited for various wildlife species in the area. A minimum of 30 percent of the acreage must be planted to trees or shrubs, or a combination of the two (no pine).

Hardwood species preferable for black bears include trees (oaks, pecan, hickories), shrubs (blueberries, huckleberries, and other fruiting species), and other mast-producing species. CP-25 requires a site-specific plan to accomplish the intended purpose.

Under CP-12, 5 percent of the acreage, up to 5 acres, can be planted to annual food plots.

Corn is a good first choice for a summer crop and wheat a good choice for a winter crop.

Diversify mast-producing trees and shrubs, where these are planted, and include hard-mast sources such as red oak, white oak, and sweet pecan, and soft-mast sources such as black gum, mulberry, hackberry, persimmon, haws, plums, dogwood, and sassafras.

Even if landowners do not specifically include bear management objectives in reforestation and CRP efforts, bear habitat is usually enhanced from these practices.

Landscape level

Because of the large home ranges of black bears, suitable habitat is seldom owned or provided by one landowner, with the exception of government agencies or industrial landowners. It is important, therefore, to involve multiple adjoining landowners working together at a landscape level in a cooperative effort. Landscape level management objectives include the following situations:

Preventing further habitat fragmentation.

Connecting fragmented habitat with corridors.

Effectively using fragmented resources by integrating management.

Focusing efforts of user groups toward common goals.

Successful management depends strongly on the willingness, ability, and commitment of landowners to work closely together. Ultimately, for the bear, coordinated landscape management may offer the best opportunity for bear restoration and management in the Southeast. One excellent example of how this may be accomplished is exhibited by the Black Bear Conservation Committee. This multidisciplinary group has worked with federal and state agencies to form Bear Management Units (BMU's). Each BMU is coordinated by a team made up of landowners, agency personnel, and local leaders, who provide input into BMU plans.

Human versus Bear Conflicts

Black bears are usually nonaggressive animals and pose a threat to people only when threatened or provoked. Bears and humans can coexist peacefully when high-quality habitat is

available and humans are willing to reduce conflict situations. Conflicts are inevitable, however, even when bear numbers are low; as Louisiana black bear restoration efforts succeed, more conflicts are expected.

Reported conflicts include damage to apiaries and crops, but crop and property damage by bears is limited compared to other kinds of property and crop losses. Damage to beehives, however, locally can be severe.

Black bears have damaged pressure-treated wooden structures such as deer stands, signs, and outbuildings. Occasionally, bears may eat corn from feeders used to attract wildlife, or they may scavenge animals caught in commercially set traps. Bears can become a nuisance around garbage dumps, cabins, and campsites, where garbage or foodstuffs are available.

Livestock predation is not presently a problem in the range of the Louisiana black bear. Attacks on humans are unlikely, because bears are secretive and have a retreating nature.

Landowners, farmers, and others show a high tolerance for bear-caused damage and are likely to accept minor damage as a normal part of business. Beekeepers, however, do not have a high tolerance level and have encountered problems with bears. Continued public education and damage assistance relative to the management of human/bear conflicts are important parts of the future success of the Louisiana black bear restoration.

Human Behavior

Unprovoked attacks on humans are uncommon throughout the species' range. Most attacks occur when humans surprise or otherwise threaten the animals. Avoid bears in all situations. Bears that become tolerant of human activity may become aggressive, especially if a handout is expected. Feeding bears is not recommended in any situation!

Never approach bear cubs; a sow with cubs is defensive and can be dangerously aggressive if she thinks her young are in danger. Be as noisy as possible in bear habitat. When camping, store food and other attractants far from sleeping areas.

Promptly report "friendly" bears. In confrontational situations, identify yourself by making noise and moving upwind of the bear; stay calm and retreat as soon as possible. Bears that confront humans often rear on their hind legs to get a better view or smell; this is a nonaggressive behavior. Do not climb trees. Remember--bears are excellent climbers.

Hunter Cooperation

Hunting clubs should consider incorporating bear awareness and management techniques into their annual activities. Discourage feeding deer unless the hunters are willing to accept foraging bear at their feeders. Hunting dogs may chase bears; where bears are present, control dog running.

Spring running of dogs can adversely stress sows and cubs. In some areas, controlling untamed dogs may be necessary. Always identify hunting targets carefully before firing; black bears may easily be mistaken for wild hogs or Russian wild boars.

Apiaries

A 1994 survey of commercial beekeepers in Mississippi indicated that over the previous several years most respondents had never seen a bear, but some had experienced bear-related damage to their apiaries. Damage to bees and hives is the most costly agricultural problem associated with the Louisiana black bear; bears eat larvae and honey. Beekeepers can initiate prevention strategies that preclude or minimize bear-caused damage.

Locate beehives as far as possible from bear habitat that provides cover and travel areas. Harvest honey as soon as possible after the seasonal nectar flows. Also, move the hives to new locations if you detect bear activity nearby.

Help protect apiaries with electric fencing, bear-resistant platforms, or get professional help. Bear-resistant fence designs are available from USDA/APHIS/Wildlife Services. Beekeepers

may also consider consolidating hives to form the smallest apiary that can be practically managed.

Crops and Livestock

Crops and livestock may occasionally provide food for bears, and like apiaries, do not locate them in or near occupied bear habitat. Protect gardens, small fields, and pastures with bear-resistant fencing, and harvest crops promptly when mature.

Use scare devices such as gas exploders, lights, sirens, and scarecrows to frighten bears temporarily away from crops and fields; these are short-term control measures. Harassment with chase dogs may be effective short term but in most cases is illegal. With livestock operations, take carcasses of dead animals to an approved landfill site or deeply bury or burn the carcass to prevent scavenging by bears.

Structures

Where bears could damage wooden structures, use alternate materials such as steel, aluminum, or fiberglass. Remove from unoccupied buildings and store in bear-resistant containers any foodstuff that attracts bears. These foods may include items such as human foods, pet food, grains, and foods that attract wildlife.

Access Management

Most private landowners control access to their properties by fences, gates, signs, patrol, or by word-of-mouth. Public agencies also control traffic on public properties. Consider bears in any periodic review and adjustment of access control techniques and management.

Roads and Other Hazards

Vehicles kill bears when they cross highways, particularly on roads that cross historic bear travel corridors. Natural resource agencies should assist roadway authorities in identifying these corridors so they can implement collision-prevention methods such as culvert crossings. Drift fences may also be placed to direct bears to culvert entrances and facilitate movement beneath the roadbed.

Preventing human injury or death from collisions is a major priority and concern. Possible accidents may be anticipated and avoided by informed drivers. Informational billboards, bear crossing signs, brochures, and reduced speed limits around crossing areas may help avoid problems.

Garbage/Landfills

Bears like garbage, and those that obtain meals regularly from landfills, dumpsters, or residential garbage cans may soon become a nuisance. This undesirable behavior is almost impossible to change; "garbage dump bears" usually have to be destroyed.

In occupied habitat, enclose landfill perimeters with bear-resistant fences. To reduce odors, maintain only a small exposed area of garbage, and cover fresh-dumped areas with a deep layer of dirt as frequently as possible. Homeowners need to put garbage in closed containers located away from occupied areas. Hunting clubs should dispose of animal offal by hauling it to approved landfills, burying, or completely burning it. Keep skinning sheds and food-handling areas immaculately clean.

Solutions

Restoration depends on the immediate and effective responses by wildlife professionals to reported conflicts. In the past, some individuals have destroyed bears as a means of "conflict resolutions." Help reduce conflicts by managing the animals involved in the conflict, manipulating the resource being damaged, or placing a physical or psychological barrier between the conflicting resource and the bear.

One goal of the Black Bear Conservation Committee is to promote the natural establishment of a viable population of the Louisiana black bear in suitable habitat. Conflict resolution relies on nonlethal damage control techniques such as barriers and resource management strategies. Due to low densities, destruction of offending animals is considered a last resort, unless human health or safety is jeopardized.

Hunting is commonly considered as a damage control tool with many species. Consider legal harvest as a part of the overall management plan in the future, as bear densities increase to a level that will sustain harvest and, thus, reduce conflicts. Live trapping and releasing bears into the same general area after aversive conditioning may alter offensive behavior and resolve some conflicts. However, releasing bears far from the capture site may cause them to roam long distances in search of familiar territory. This increases susceptibility to vehicular collisions or negative human encounters. Leave conflict bears in their established territories whenever possible.

Agency Responsibility

State and federal agencies work cooperatively to develop protocols for addressing conflicts. The responsibilities, relative to conflict management, include the following:

In Louisiana and Mississippi, reported problems are handled by the U.S. Department of Agriculture Wildlife Services program, in consultation with the U.S. Fish and Wildlife Service and the Louisiana Department of Wildlife and Fisheries or the Mississippi Department of Wildlife, Fisheries and Parks.

Texas Parks and Wildlife Department provides assistance to citizens who report problems with bears in Texas.

In Arkansas, the Arkansas Game and Fish Commission handles bear problems.

As with any wildlife population, the objectives and attitudes of landowners, land managers, resource users, and the general public determine if bears are considered an asset or a liability. Continued research and responsible management of bear habitat and populations can result in perpetuation of this wild resource in the Lower Mississippi River Valley region. Public education can provide knowledge to allow people to form unbiased opinions and make informed decisions about the Louisiana black bear.

Assistance Programs

State, federal, and private programs can assist private landowners in implementing timber, wildlife, and conservation programs. Options may include a variety of conservation practices landowners can choose from to meet their needs.

Farm Services Agency Programs

Conservation Reserve Program

The Conservation Reserve Program (CRP) was reauthorized under the 1996 Farm Bill, which is administered by the Farm Services Agency. The program's intent is to protect highly erodible and environmentally sensitive lands by maintaining protective vegetative cover such as trees and grasses. Wildlife considerations are enhanced under the new bill. Cost-share assistance is available to implement conservation practices. Landowners receive annual payments to maintain conservation practices; this is in addition to annual rental payments.

Stewardship Incentive Program

A Stewardship Incentive Program (SIP) is administered by FSA with technical assistance from Mississippi Forestry Commission. It was reauthorized in the 1996 Farm Bill but is not being funded. Cost-share monies are being appropriated.

Natural Resources Conservation Service

Environmental Quality Incentives Program

Another part of the 1996 Farm Bill is the Environmental Quality Incentives Program (EQIP), which combines the functions of the Agricultural Conservation Program (ACP), Water Quality Incentives Program, and other USDA programs. EQIP provides technical assistance, cost-share, and incentive payments for structural and land-management practices to improve water quality on agricultural lands.

Wetlands Reserve Program (WRP)

A Wetlands Reserve Program was reauthorized under the 1996 Farm Bill. The WRP assists landowners in restoring eligible prior-converted cropland and protection of limited amounts of adjacent wetlands.

Wildlife Habitat Incentives Program

Another 1996 Farm Bill provision includes the Wildlife Habitat Incentives Program (WHIP), which diverts \$10 million per year from CRP to cost-share payments to private landowners for

wildlife habitat management plans and improvements. Eligible practices will include management for upland wildlife, wetland wildlife, threatened and endangered species, fisheries, and others.

Forestry Incentives Program

With the 1996 Farm Bill, administration of the Forestry Incentives Program (FIP) shifted from the Farm Services Agency to NRCS, with technical input from state forestry agencies. FIP's purpose is to increase future wood supplies on private nonindustrial forest land between 10 and 1,000 acres. Cost sharing is available for practices such as tree planting, site preparation, and timber stand management.

U.S. Fish and Wildlife Service
Partners for Wildlife

The Partners for Wildlife program provides technical and financial assistance to private landowners to restore and enhance fish and wildlife habitat, primarily historic vegetation and hydrology, which must comprise 70 percent of the project area.

State Incentive Program

Texas and Mississippi are the only two states in the region that provide state-funded incentive programs. These programs are administered by their respective state forestry agencies and are mainly geared to reforestation.

Cooperative Extension Service

The Cooperative Extension Service is a state and federally funded agency that provides research-based educational and informational assistance to landowners, professionals, and the general public. County agents and wildlife specialists provide information through publications, videos, workshops, seminars, and other avenues, along with individual technical assistance on a request basis.

Private Conservation Organizations

Private conservation organizations work with landowners to develop conservation easements on their properties, which may provide federal tax benefits, estate tax savings, or protection of natural areas for future generations.

Summary

Bears in the Lower Mississippi River Valley region have been reduced significantly since the time of early European explorers, but indications are the downward trend is reversible. The decline in forested habitat is leveling off or reversing within the bear's historic range. Attitudes of the general public and landowners are changing toward acceptance of black bears. People are beginning to understand that black bears can coexist and be managed along with other resources such as crops, timber, and recreation. The public is no longer tolerant of the illegal harvest of black bears, and fines and other punitive measures address this concern.

Perhaps the best hope for black bear restoration in the LMRV region rests with the Black Bear Conservation Committee. Representing more than 60 cooperating agencies, companies, universities, and organizations, the BBCC's priorities are to put the resource first, find common ground, build coalitions, avoid confrontation, use credible science, and to have a strong commitment to black bear restoration and management.

Ultimately, acceptance of black bears depends on the attitudes of the people in the LMRV region. Working together, everyone can contribute to the restoration and management of the Louisiana black bear.

Adapted from Black Bear Management Handbook for Louisiana, Mississippi, Southern Arkansas, and East Texas; 2nd. Edition, August 1996.

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