

## Teddy Bear

# REVIVAL

## Rebuilding Black Bear Populations in Louisiana

By Kyle Van Why

Photos courtesy of Author

You are going where? To do what? That's how my family responded when told they I was going to Louisiana to study black bears for my Master's work. They wondered why a biologist from eastern Pennsylvania, where bears abound, would venture to the Deep South where bears are a scarce resource. To my friends and family (even my wife), it was news that bears actually occur in Louisiana. Little did they realize how much they already knew or suspect how much there was to learn, respect, and do about the Louisiana black bear, *Ursus americanus luteolus*.

### Louisiana Black Bears, Then and Now

The black bear has a very rich and important history in the lower Mississippi Alluvial Valley. In Louisiana and Mississippi, black bears roamed with the Florida panther (*Felis concolor coryi*) and the red wolf (*Canis rufus*). Early settlers hunted bears, wolves, and panthers for sport, food, and to collect bounties placed on the head of these nuisance animals. Additional impacts resulted from the harvest of bottomland hardwood timber and conversion of forest areas to agriculture. Unlike the wolf and panther, bears hung on in this region, but by the turn of the 20th century their populations were noticeably reduced. Hunting in northern Louisiana, Theodore Roosevelt noted "the black bear, which until a very few years ago, was extraordinarily plentiful in the swamps and canebrakes on both sides of the Mississippi, and which is still found here and there, although in greatly diminished numbers" (Roosevelt 1908). This land is where the beloved story of the teddy bear originated, and it is the story of the Louisiana black bear.

Historically, black bears occurred throughout the southeast, and the Louisiana black bear is believed to have ranged from eastern Texas to southern Mississippi. Despite the declines, black bears persisted in Louisiana along the Mississippi River and in coastal areas. By the 1960s, breeding populations were reduced to three isolated areas in Louisiana, one in the Tensas River Basin, and two in the Atchafalaya River Basin. One of the Atchafalaya populations was along the coast, and the other was inland between the Atchafalaya and Mississippi Rivers (Black Bear Conservation Committee 1997). Bears were so few throughout the southeast, that something had to be done.



A team of Louisiana Department of Wildlife and Fisheries, U.S. Fish and Wildlife Service, and Black Bear Conservation Committee members carrying a female bear to a new den.

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## Bolstering Bear Populations

Managers decided that releases were needed to bolster dwindling populations of Louisiana bears. A similar program in Arkansas released more than 300 bears over 11 years and is considered to be the most extensive and eventually successful bear restoration ever undertaken (Smith and Clark 1994). Starting in 1964, bears were moved from Minnesota and Canada to Louisiana in hopes of sustaining bear populations in the state. Over 3 years, 131 bears were released into the Inland Atchafalaya River Basin population, and 30 into the Tensas River Basin population (Taylor 1971). Dispersal and mortality of the released bears were high and the effort was believed to have little effect on the native bear population. More significant gains were realized through habitat conservation and restoration efforts aimed at the Louisiana black bear. In the 1990s, research prompted by the bear's listing as threatened under the Endangered Species Act provided information on population densities, ecology, habitat use, movement, and genetic diversity (Black Bear Conservation Committee 1997, Weaver 1999). However, the Louisiana black bear faced a long and winding road to recovery. Researchers shared the good news that bears were dispersing to restored habitat outside of the three subpopulations. The bad news was that the majority of dispersing bears were male. It turned out that females remain close to their natal home range once they reach adulthood, which slows the recolonization process. So, although male bears were occupying new territory, very little reproduction was occurring outside the three remnant areas.

## New Techniques Bring New Hopes

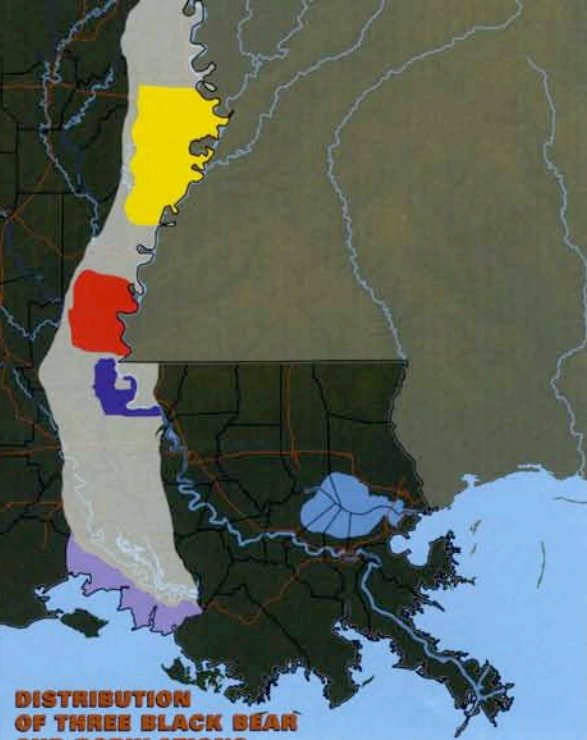
Managers sought new techniques to increase site fidelity of released bears. Earlier restoration efforts often focused on moving adult bears during summer, with many programs utilizing nuisance bears for restoration purposes. These projects had been hampered by low site fidelity and high dispersal and mortality rates among released individuals. Bears exhibit amazing homing abilities and many restoration programs found that released individuals turned tail within days of release and attempted to return to their point of capture (Shull et al. 1994). What if female bears were transplanted with their newborn cubs to new areas? Might this naturally restrict their movements and help them acclimate to the release area? Once these released females established home ranges, the flow of dispersing males through their areas would provide a supply of sires to seed future generations.

Female black bear in an artificial den with its cubs.

BOTTOM: A cub from one of the relocation areas.



This technique showed promise when used in a few other states such as Pennsylvania, Tennessee, and Arkansas (Eastridge and Clark 2001). But would it work in Louisiana, where unique problems had to be addressed? The first problem was the federal status of the black bear as threatened in Louisiana. Second was the necessity of only using females from the Louisiana subspecies, so as to maintain genetic integrity. This precaution decreased the number of females available for the study. And third, the fragmented condition of bear habitat in Louisiana posed a number of concerns. Very few large patches of contiguous forest remain, and most of the state consists of small forest stands connected by waterway corridors surrounded by extensive agriculture. Because bear movements can be extensive after release, there was a need to find a release site with enough forested habitat and corridors to potentially establish a bear population. Such a site exists between the inland Atchafalaya and Tensas units of remnant bear range, at the confluence of the Mississippi, Red, and Atchafalaya Rivers. The area includes five state Wildlife Management Areas and three National Wildlife Refuges located close to one another.



## DISTRIBUTION OF THREE BLACK BEAR SUB-POPULATIONS

- Tensas River Basin
- Proposed Red River Complex
- Inland Atchafalaya River Basin
- Coastal Atchafalaya River Basin
- Mississippi Alluvial Valley
- Major Roads

## Bears on the Move

The challenge of relocating bears to unoccupied areas within Louisiana is multifaceted. The first objective is to create an additional subpopulation at the restoration complex, located between two of the remnant subpopulations. If successful, this will expand bear use into suitable habitat and hopefully lead to increased black bear numbers in Louisiana. Creation of an additional subpopulation should also lower the risk of extirpation.

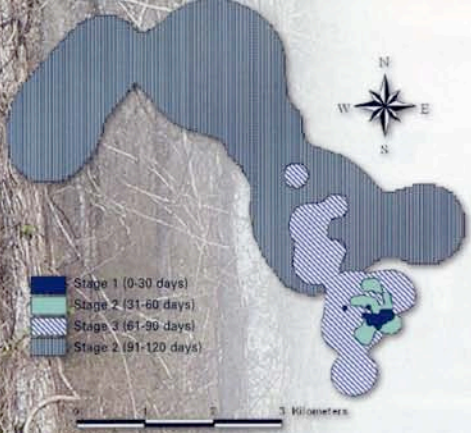
Once the new sub-population has been established, natural dispersal and range expansion should link it with an existing subpopulation and eventually create a corridor of occupied bear range along the Mississippi River. This will increase the amount of gene flow within the population of Louisiana black bears. By linking the subpopulations, managers hope to achieve delisting of the Louisiana black bear from the Endangered Species List.

Given this prospect, how could I pass up the opportunity to participate in the program?

## Walking with Bears

My research began on a crisp March morning in 2003, with the capture of an 11-year-old female with 3 newborn cubs. This





Home range (95% kernel estimate) of female 980 and three neonatal cubs relocated to Red River Wildlife Management Area, Concordia Parish in 2001, during four cub developmental stages.

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family was moved to the Red River Wildlife Management Area, the largest and most isolated part of the release complex. The mother was fitted with a new radio-collar and placed in an artificial den (picture a large doghouse).

Her three cubs, about a month old, were placed in the "den" with her. Over the next three weeks, more females were relocated in the same manner, for a total of four adults and nine cubs. Two bear families came from the Tensas River Basin, and two from the Atchafalaya coastal area.

I began monitoring the females as soon as they were released, and continued for two years. Carrying radio and antenna, I tracked these families in their new home every day for three months, and observed them intensively for the first year. This close study of released bears taught me a great deal about bear behavior and revealed the release method as a successful management approach. One factor in this success was the small body size and mobility of the cubs at the time of release. This appeared to limit the mother's movements during the initial release period, providing a natural period of acclimation to the site. As the cubs grew and became more mobile, the mothers were able to travel farther from the den and to explore the restoration area. Such movements are necessary by summer, when additional food sources must be found to meet increased energy demands of growing cubs.

I found that the mother bears had restricted home ranges during the first two months after release. They remained relatively close to the artificial den where they were released. But as spring progressed, the mother bears expanded their home ranges and exploited more of the restoration area,

all the while remaining close to their release site on the Wildlife Management Area. Females moved between public and private lands during the summer in the course of exploring their home and locating key resources. Crops of corn, milo, and wheat on the private lands, in addition to natural resources on the adjacent public land, meant that plenty of food was available to the bear families.

By fall of the release year, females had established their home ranges and showed signs of denning during the next two winters. These selected den sites were close to the point of release; some were on private lands and others on the public wildlife management units. Most female bears in Louisiana have smaller home ranges than black bears in other parts of the southeast (Weaver 1999). I found that first-year home ranges of relocated females were much larger than other studies in this region have found. However, movements were more restricted during the second year of monitoring. This inflated home range size may reflect the females' unfamiliarity with the surrounding habitat and the need to locate key resources (seasonal foods, den sites, and travel corridors).

**A Promising Outlook**

My data indicates that the technique of releasing female bears with newborn cubs can be effective in the fragmented landscapes of Louisiana. Requiring only a small number of colonizing individuals, the method has great potential for use with this threatened population. I also found that this method creates a natural period of range restriction during the first few months after release, thereby increasing the time that mother bears have to acclimate to the area and develop site fidelity.

My research also addressed habitat use and suitability at the release site, and public attitudes toward the restoration program. High-quality habitats supplied a variety of abundant hard and soft mast (nuts, acorns), as well as agricultural foods and den sites. My survey of hunters who use the release area indicated that public attitudes were very positive. There was considerable support for releasing bears into the area.

The outlook for the Louisiana black bear is improving. Subsequent releases to other parts of the restoration complex have met with success. Thanks to conservation efforts by private individuals, sportsmen, conservation organizations, and state and federal agencies, the bears made famous by Theodore Roosevelt may once again roam the region in "extraordinarily plentiful" numbers. ■