

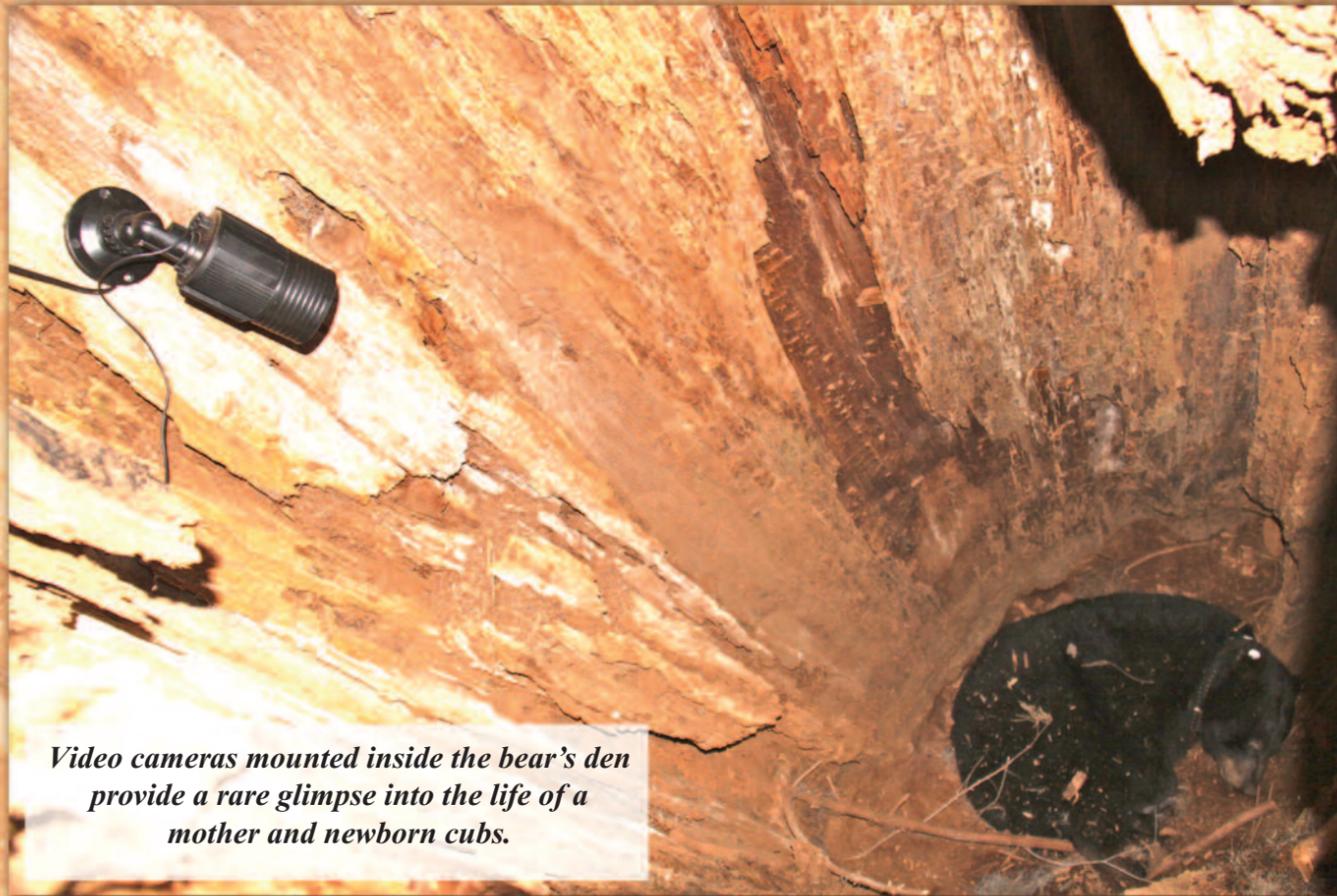
Into the Bears' Den

By Brad Young
Photography by Casey Hubbard

Very few wild animals in Mississippi hold such a deep fascination for people as the black bear. From the early days of the Native American culture to the settlement period, the black bear was revered for its adaptability and intelligence. Though greatly reduced in numbers and now listed as an endangered species, black bears still inspire awe and wonder as a symbol of wild Mississippi.

One of the most interesting aspects of black bear behavior is what is commonly called “denning” which occurs during late winter and early spring. Denning is often referred to as hibernation although that is not an entirely accurate description of what is

actually taking place. Both denning and hibernation are ecological adaptations to a lack of food among mammals. During winter months when food sources are scarce, many mammals retreat to dens or burrows for long periods of sleep. Smaller mammals such as bats and chipmunks exhibit drastic reductions in heart rate, metabolism, and body temperature which allow them to conserve energy until spring when food becomes more plentiful. These animals can actually be handled by researchers during this time without being aroused from their deep slumber. Thus, biologists classify these animals as the “true hibernators” of the animal world.



Video cameras mounted inside the bear's den provide a rare glimpse into the life of a mother and newborn cubs.

Black bears exhibit many of these same characteristics during their denning period (also called *carnivorean lethargy* or *torpor*) but to a much lesser degree. During this time, bears reduce their body temperatures by roughly 10 degrees while metabolism and heart rates are essentially cut in half. This allows the bear to conserve precious energy reserves while still being alert enough to sense if danger is near. Another adaptation that allows bears to preserve energy by remaining in their dens is the fact that bears do not eat or drink during this time and can recycle all waste products internally. Essentially, if you're a bear, you'd better make sure you eat your fill and then “go” one last time before you crawl into the den for the winter.

So where does a bear choose to den for the winter? While most people may answer “anywhere the bear wants to,” the fact is that each bear has his or her own preferences. In the lowlands of the Mississippi Delta, many

bears find large trees (typically cypress or overcup oak) with cavities to protect them from the elements. These can be hollows at the base of the tree or cavities high up in the tree caused by broken limbs or lightning strikes. At higher elevations, some bears choose to build “nests” in briar or cane thickets by raking leaves into piles around themselves. Scientists have even recorded bears clipping palmetto fronds with their teeth and creating a mattress of sorts at the den site. Still other bears choose to dig large holes under logs or into earthbanks or tunnel their way into fallen treetops or logging slash piles. Whatever the den type, one thing is certain, they are almost always in inaccessible areas to avoid disturbance by outsiders – particularly people.

Black bears in the Southeast typically have shorter denning periods than bears in more northern climates. This is primarily due to greater food availability during winter

months. In fact, some bears may choose not to den at all and might simply take a few extended naps for a week or so at a time. Recent research conducted by Mississippi State University showed that the average male bear in Mississippi denned from Jan. 17 until Mar. 12 in a given year. In contrast, female bears entered dens far earlier (December 3) and emerged later (March 18) than their male counterparts. Researchers also found that many radio-collared bears throughout Mississippi stayed on the move during the winter of 2011-2012. This can primarily be attributed to the very mild winter and the abundant acorn crop of last year.

Despite the natural fluctuations in denning periods among bears, there is one group of bears that are required to den no matter what the weather or food situation might be. For pregnant females, denning provides a safe environment to give birth and nurse cubs without being disturbed. Cubs are born in the den typically in late January and weigh

only 8 to 12 ounces on arrival. They are very helpless and rely on their mother for warmth and nourishment during this critical time. Pregnant females are always the first bears to den during the winter and are typically the last to emerge in the spring with their newborn cubs.

What Bears do When No One is Around

In early March, biologists perform den checks on female bears to determine if they have newborn cubs. These den checks allow biologists to estimate population growth and to determine survival rates of the cubs in future years. The mother is first tranquilized and her radio collar is replaced so that she can be monitored in the upcoming year. While she is sleeping soundly, her cubs are weighed, measured, and tagged for future identification. Once all the data is recorded, the cubs are returned to the den and the family

unit is left as they were found. But then what happens?

Because of the remoteness of these dens, it has been impossible to observe these family units of bears after the den check was performed. Photographs taken during the den checks prompted comments about how great it would be if more people could witness such an event. This year, MDWFP experimented with video surveillance equipment that records what happens inside the bear's den with minimal intrusion to the bear's behavior. Small, motion sensitive cameras are placed at the edges of the den so that mother bears and cubs can be recorded in their natural state. One camera was placed in a hollow cypress tree den in Issaquena County and another was placed in a ground den in Bolivar County. The cameras captured some truly amazing footage of interactions between mothers and cubs that would have gone unseen to us otherwise. Recorded footage showed the mothers rolling onto their sides to allow the cubs to nurse, mothers corralling cubs that wandered too far from the nursery group, and one mother who left the cubs sleeping while she walked out of the den to "stretch her legs" in the warm sun. Selected video clips are currently available for viewing on the MDWFP Black Bear Program Webpage at www.mdwfp.com/bear.

The MDWFP Black Bear Program is making plans to place more cameras at different den sites next year. Future plans include developing a live video feed where viewers can simply log on to our Website and view a bear den in real time. We hope to provide all Mississippians a glimpse into this secret world to foster a sense of awe and wonder for one of Mississippi's rarest animals.

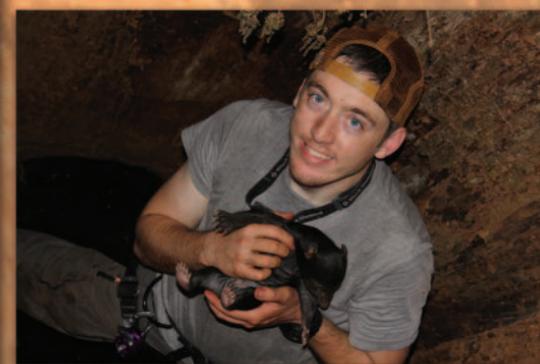


DIRECT TO SITE

Brad Young is MDWFP Black Bear Program Leader.



Following data collection, the cubs are returned to their mother in the den. Information collected is important to black bear research and conservation.



Hidden video cameras capture rarely seen images of a female black bear and her cubs.

