

KENTUCKY'S BEARS

IN 1894, NORTH CAROLINA pharmacist Lunsford Richardson blended menthol, eucalyptus, camphor and petroleum jelly into an aromatic salve whose vapors were designed to open the airways of people suffering from croup and pneumonia.

Little did Richardson know that a century later, his Vick's VapoRub elixir would play a role in the rebirth of Kentucky's missing black bear population.

It was the winter of 1996. Researchers from the University of Tennessee and National Park Service had sedated and radio-collared several female bears in Great Smoky Mountains National Park with plans to move those bears to the Big South Fork National River and Recreation Area, a rugged 125,000-acre expanse of the Cumberland Plateau straddling the Kentucky-Tennessee border.

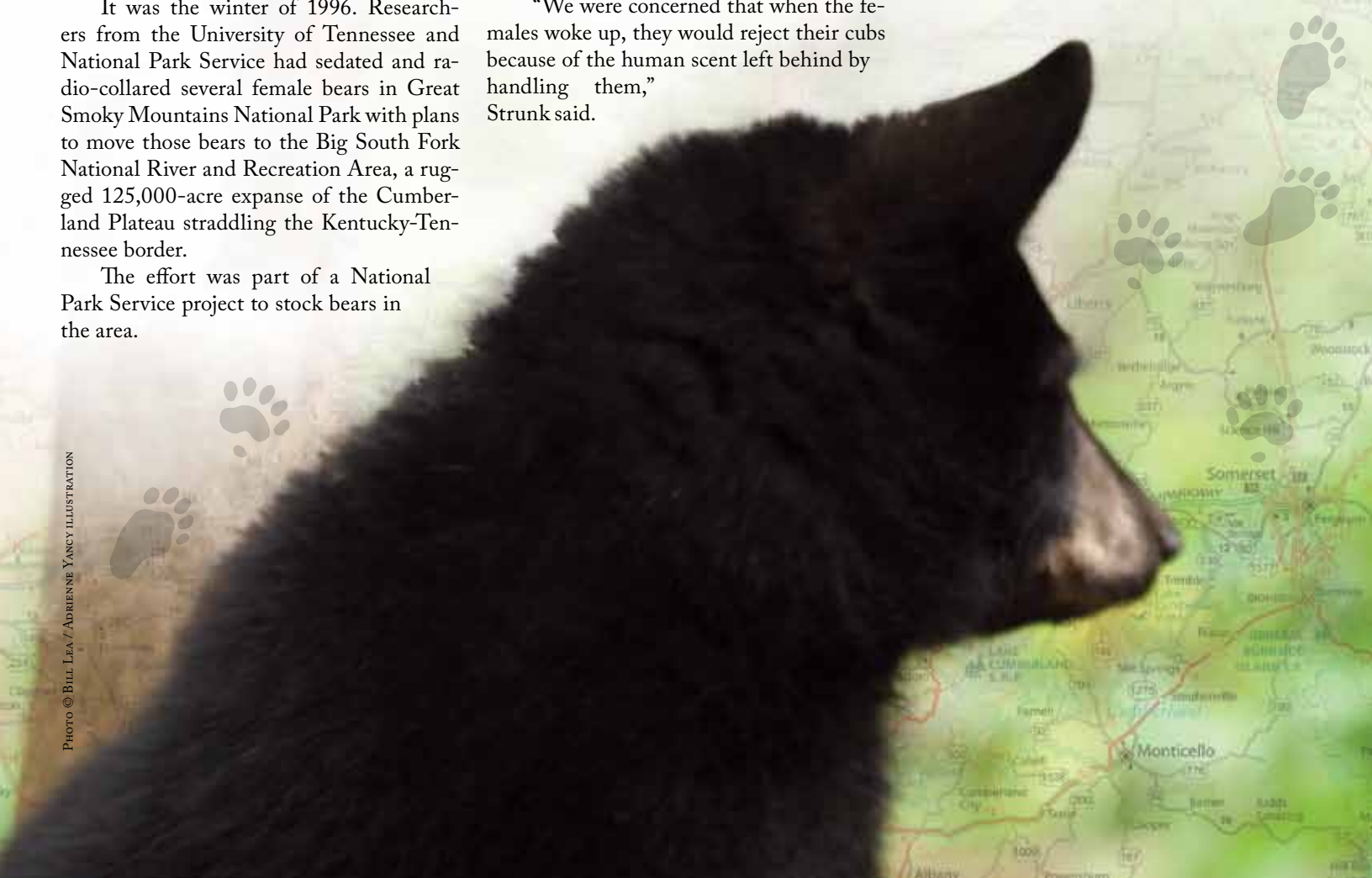
The effort was part of a National Park Service project to stock bears in the area.

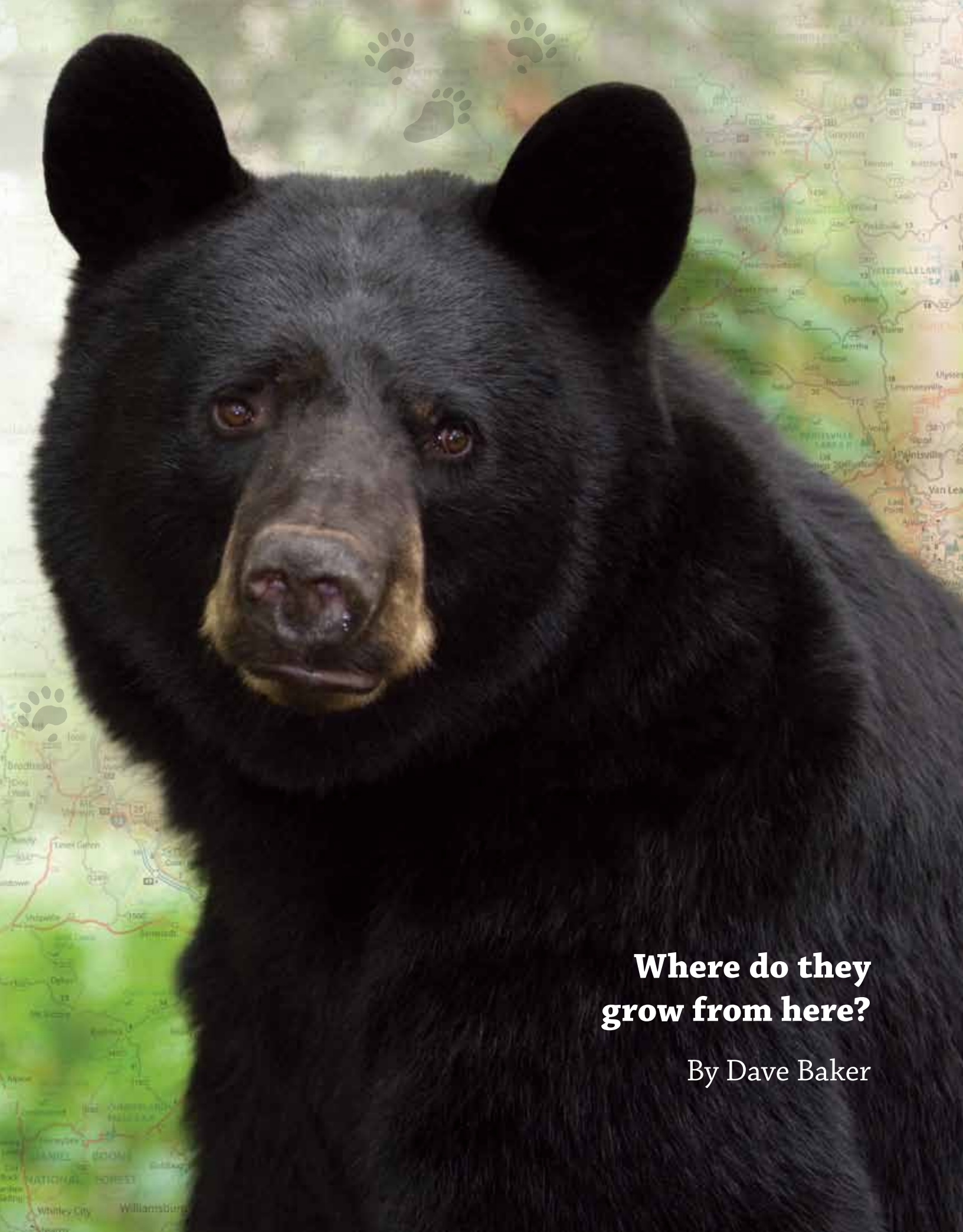
Among the volunteers for the effort was Mike Strunk, who would later become Kentucky Department of Fish and Wildlife Resources' southeast regional wildlife coordinator. Because of their size and age, the cubs that accompanied those female bears were not sedated. Volunteers like Strunk held each cub to keep them warm while the mother was transported about 150 highway miles to the Big South Fork area.

"We were concerned that when the females woke up, they would reject their cubs because of the human scent left behind by handling them," Strunk said.

"So we rubbed the cubs down with Vick's VapoRub. The hope was that the female would try to remove that from the cubs, and in the process, remove the human scent as well. You can imagine how much Vick's it took to rub down three cubs."

From 1996-97, 14 adult female bears along with their 13 cubs were relocated to areas around the Kentucky-Tennessee line in the Big South Fork.





**Where do they
grow from here?**

By Dave Baker



JOHN HAST PHOTO

Researchers use antennas to track the radio collars of bears. Collars change signals if a bear does not move in four hours, indicating death or denning.

The stocking was part of an effort by various state and federal government agencies to leap-frog the inherently slow natural range expansion of bears by moving animals from the Great Smoky Mountains, Shenandoah National Park in Virginia and Monongahela National Forest in West Virginia to areas around Kentucky's border.

Offspring from those stockings now reside primarily in eight counties in Kentucky: McCreary, Harlan, Bell, Letcher, Wayne, Perry, Pike and Whitley. An undetermined number of bears reside in the outlying areas.

By 2009, Kentucky's bear population had grown enough that bear hunting was allowed for the first time in a century. Kentucky Fish and Wildlife now allows Kentucky residents to harvest bears within a 16-county zone in the southeastern portion of the state.

Within that zone are four reserve areas where bear hunting is not allowed.

Outside of these reserves, Kentucky limits the harvest of female bears and does not allow hunters to take cubs. These regulations help ensure the persistence of bears in Kentucky and allow continued population growth.

While hunting is not the solution for dealing with nuisance bears, it is one way to sustainably slow population growth of these animals. To date, Kentucky's conservative hunting quotas have not stilted the bears' expansion deeper into the state.

In 2008, the year before hunting opened, female bears roamed five counties in the state, according to Jayson Plaxico, the department's long-standing wildlife biologist based in Prestonsburg. Plaxico estimates at least 15 counties now have female bears.

The overall number of bears in Kentucky is increasing as well.

Sean Murphy, who studied Kentucky's bear populations for his master's and doctorate at the University of Kentucky, estimates Kentucky's bear population is growing at a rate of 3 to 7 percent a year.

EXPANSION BEYOND THE BEAR ZONE

Biologists believe that 39 counties in eastern Kentucky's Cumberland Plateau may now have at least a few resident bears. This area is roughly east of a line drawn from Clinton County to Lewis County.

Bears also have wandered beyond the plateau in recent years, such as 2015, when Kentucky Fish and Wildlife received bear reports from 45 counties. A poor mast crop of acorns and hickory nuts that year sent the bears roaming far in search of food.

In 2016, bears were spotted around Danville, Bardstown and Elizabethtown. Hast suspects there were only three bears involved, one of which crossed the Ohio River from Kentucky into Indiana. The passage created a stir in Indiana, as it was only the second bear seen in that state since 1871.

Biologists now say that isolated bear sightings are possible anywhere in the state

east of Henderson County. The exception is the urbanized northern Kentucky area which includes Boone, Campbell and Kenton counties.

Murphy expects bear densities to swell in the Daniel Boone National Forest in the coming decades, with female bears being seen on a regular basis. "Bears from the Big South Fork are already in the Stearns Ranger District," he said. "We've had male bears from the Big South Fork popping up in Pulaski and Laurel counties. Bears are also expanding from the eastern population into Clay, Perry and Leslie counties."

Strunk noted bears are already using the branches and main stems of the Rockcastle and Cumberland rivers as travel corridors into Pulaski, Wayne, Laurel and Whitley counties.

"Every year, we typically have one to three bears hit on I-75 in Whitley County," Strunk said. "A few years back, we had a research bear show up at the Corbin hospital. It had spent its whole life in the Beaver Creek Wildlife Management Area. One day, it just decided to go east. I'm not sure why - I guess it just liked the smell of something there."

In 2006, the U.S. Forest Service issued new bear-related food storage requirements for the Stearns Ranger District, a 171,000-acre area in four counties of southeastern Kentucky. The requirements included new rules for storing food inside vehicles, using bear-resistant containers and hanging food

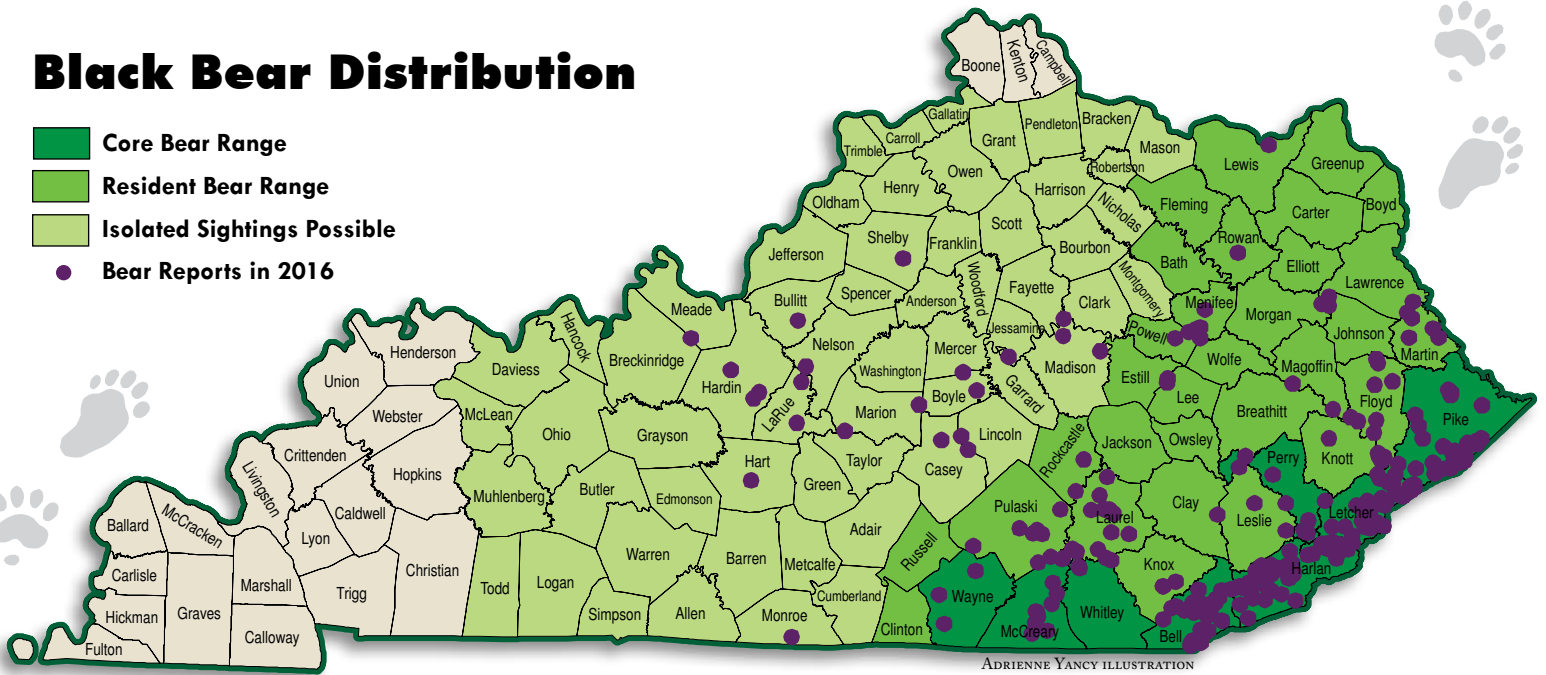


WES HODGES PHOTO

Biologists used culvert traps to capture nuisance bears raiding garbage cans at Kingdom Come State Park in Harlan County. Bear-resistant cans later solved the problem.

Black Bear Distribution

- Core Bear Range
- Resident Bear Range
- Isolated Sightings Possible
- Bear Reports in 2016



out of reach of bears. The district lies in the Big South Fork region.

The forest service expanded the restrictions to the Red River Gorge Geological Area in 2010. Hast said he now receives gorge-related bear reports nearly every week in summer. Forest officials have since extended the restrictions forest-wide, significantly reducing bear complaints.

Bears are appearing near the northern end of the forest as well, traveling the Licking River corridor and winding up at Morehead State University.

Rockcastle County has experienced an influx of bears as animals from McCreary County make their way up the Rockcastle River. Bears are also following forested corridors into Casey County.

Bears wandering up the Kentucky Riv-

er corridor are now showing up in northern Madison County. Biologists are keeping an eye on the biggest chunk of potential bear habitat in all of Madison County: the 8,000-acre Berea College Forest, the oldest privately managed forest in Kentucky.

Hast expects future bear colonization to continue into Monroe, Cumberland, Barren, Metcalfe, Adair, Taylor, Casey, Marion and Lincoln counties.

Biologists say they would not be surprised if bears one day traveled the river corridors to the Bluegrass region. But the visitors would likely be young male bears on a walkabout, rather than females establishing territories.

“Population growth will not likely impact central Kentucky in the next decade because it is farther away from the core bear areas,” Hast said.

Hast is skeptical that bears will take up residence in the Inner Bluegrass in the coming decades. “It doesn’t have the habitat that bears prefer,” he said. “It’s an area with a lot of people and a lot of roads crisscrossing the landscape. It takes a lot for a bear

to live in more urban environments. People also have to be willing to accept them.”

Wildlife Division Director Steve Beam views the Knobs, the hilly range bordering the Outer Bluegrass Region to the south, as another potential area for bear range expansion. He cited as an example the new Rolling Fork Wildlife Management Area in LaRue and Nelson counties, which lies along the Knobs. “If you take a look around there, it just looks like perfect habitat for bears,” he said.

Bernheim Arboretum and Research Forest in Bullitt County marks the western terminus of the Knobs region. In 2016, a



JOHN HAST PHOTO



STEVEN DOBEY PHOTO

Left: Researchers use GPS-enabled collars to help them track bear movements. Right: Trapping is not a good solution for nuisance bears, as they will typically return to the original site.



EARL BROWN PHOTO

Above: Biologists and volunteers load an immobilized female bear onto a UTV for relocation into the Big South Fork. Right: Biologists Jayson Plaxico (shown) and Becky Littleton documented successful bear reproduction in the area in 1999.



BECKY LITTLETON PHOTO

young male black bear took up summer residence in this 14,000-acre, privately-owned forest.

Bernheim officials embraced the occurrence, using it to tout their habitat work and educate the public about bears.

TWO POPULATIONS TO MEET

Experts agree that Kentucky's bear populations will likely grow significantly along the state's border with Tennessee in coming years as the two distinct populations – one centered around the Letcher-Harlan-Bell counties area and the other at Big South Fork National River and Recreation Area – converge in prime unoccupied habitat.

"We expect expansion will likely occur first along the southern border of the state," Hast said. "There's excellent habitat through there and bear populations are already growing that direction in Tennessee."

Murphy's data-driven colonization models also predict the two bear populations will converge in the coming years. "The most likely place for the two bear populations to intermix is in Tennessee, just to the southeast of Big South Fork," he said. "Bears in the eastern population will be coming down Cumberland and Pine Mountains, following the natural linear corridor."

Cumberland Mountain is a continuous ridge that extends 131 miles from Norton, Virginia, to Caryville, Tennessee. Pine Mountain forms a parallel 125-mile ridge which begins near Jellico, Tennessee, and continues to Elkhorn City in Kentucky.

Steven Dobey, Kentucky Fish and Wildlife's former bear program coordinator, noted the area near Big South Fork in Tennessee also supports enough bears that an archery-only season now exists there. "That population is part of the group that will be moving east," he said.

HOW DID BEARS GET HERE?

Unregulated hunting and habitat destruction eliminated bears from Kentucky by the early 20th Century. As the forests grew back, habitat conditions improved to the point where bears could thrive in Kentucky once again. But the nearest bears were remnant populations far away.

Murphy's research showed efforts to restore bears to vacated areas began more than 40 years ago.

From 1970-1984, the Virginia Department of Game and Inland Fisheries relocated 300 bears from the Shenandoah National Park to the George Washington National Forest near the Virginia-West Virginia

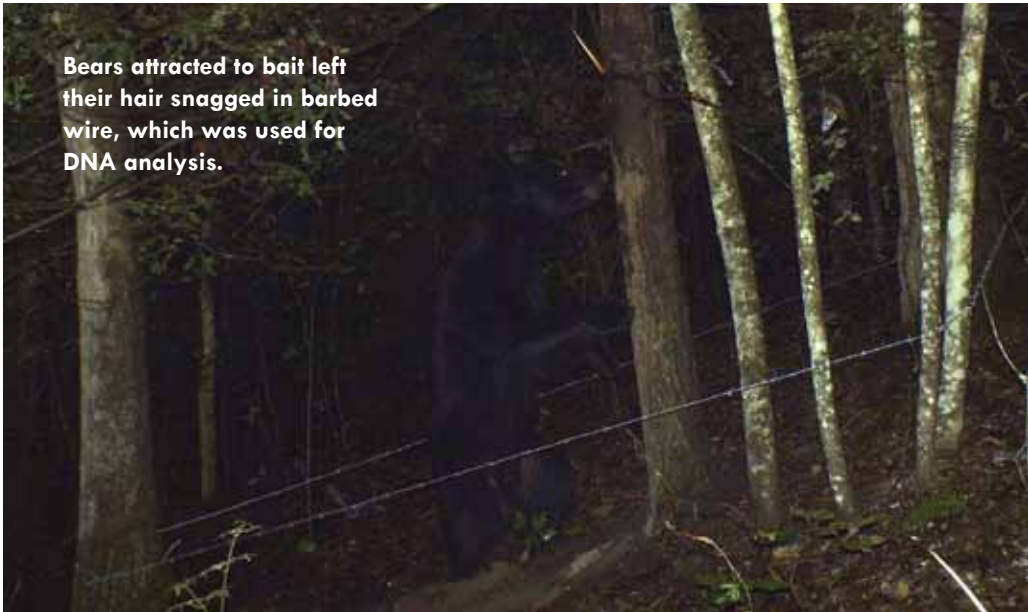
border.

A second effort followed from 1987-1992, as 221 bears were captured at Shenandoah National Park and relocated to the Mount Rogers National Recreation Area, located in the southwestern part of Virginia.

In the 1980s and 1990s, the West Virginia Division of Natural Resources relocated an unknown number of problem bears from east-central West Virginia to an area near the state's southern border with Kentucky.

From 1990-97, Virginia biologists released 55 bears from Shenandoah National Park to areas near the Kentucky border. As part of his master's research, Hast set up barbed wire "hair snares" across known bear areas. Using genetic testing on bear fur snagged by the barbs, Hast, Murphy and other University of Kentucky researchers determined bears in the eastern Kentucky population are descendants of the previous relocations along the Kentucky border from Virginia and West Virginia.

Similar bear hair sampling in the Big South Fork revealed these bears had the same ancestry as the population in the Great Smoky Mountains in Tennessee, where the original 14 females and their 13 cubs were sourced from.



Bears attracted to bait left their hair snagged in barbed wire, which was used for DNA analysis.

STEVEN DOBEY PHOTO

Kentucky's bear population grew slowly at first. In 1985, Plaxico said, a male black bear was killed on the road in Knott County. The bear, likely a relocated animal, is the first bear confirmed by Kentucky Fish and Wildlife in modern times.

In 1991, a female bear with two cubs was spotted at Cumberland Gap National Historic Park near the Bell-Harlan county border. Biologists believed it was one of the Virginia bears released along the Kentucky border. It marked the first time a bear with cubs was seen in Kentucky since the early 1900s.

RELOCATION CHALLENGES

Relocating a bear is not as simple as moving it to a new location. "Bears instinctively try to return home to the area in which they were trapped," Hast said. "The more roads they have to cross to get there, the higher the chances they'll be struck by a car or truck."

Dozens of bears from Virginia's first two releases died – many being run down on the road – as they tried to return home. Those bears were simply let go in new areas without an acclimation period, a technique that biologists refer to as a "hard release."

While some bears in the Big South Fork relocations of 1996-97 were hard released, researchers used the opportunity to pioneer a new "soft release" method. With a soft release, female bears with cubs are released at potential den sites during the winter to get them used to the area.

"They tried bringing in females with

their cubs, hoping the motherly instinct would outweigh the bear's homing instinct," Strunk said. "The thought was the bears would stay. It worked."

Biologists brought each sedated female bear in a truck, then placed the animal onto a sleeping bag perched on the back of a utility vehicle. Volunteers kept the cubs warm in the meantime. "We would load the female bear onto a stretcher, then snake it underneath the cliffs to a rock shelter," Strunk recalled. "Once she was secure, we would put the cubs down with her and sneak back out of there."

No male bears were brought in to serve as mates, however. Researchers believed that if they brought in females, the males would find them. If that didn't happen, the male cubs would reach sexual maturity within three years and begin reproducing, which is exactly what occurred in the Big South Fork.

"At the time, no one had a clear handle on whether or not the winter soft-release method would even work," Murphy noted. "But it proved highly effective in the Big South Fork and has since been used to help recover the federally threatened Louisiana black bear, restore black bears to other parts of the southeastern U.S., and reestablish brown bear populations on the other side of the world."

As for greasing the cubs with VapoRub, Kentucky's bear researchers figured out that it really wasn't necessary.

Back in 2010, Hast and Murphy put this theory to the test while trying to save an orphaned bear cub. A trail camera placed near the cub revealed the mother had not returned after a couple of days.

Hast knew of a nearby bear den on Black Mountain and figured he had nothing to lose.


"I knew where it was because we had a denning female in there with a GPS collar. She was about a week away from coming out of the den," he said.

Murphy took the cub and "rolled it like a hand grenade into the den," Hast said. "Well, she batted that cub back out and started huffing at him. He tossed the cub back in again. This time, she kept it."

Hast was left to wonder whether the cub would survive, or whether it would be accepted into its foster family. He got his answer a few months later.

University of Kentucky graduate student Ben Augustine was checking GPS collar signals when he spotted a mother bear in a coal mine's dumpster. Augustine looked closer and saw its cubs, all similar sized.

Then another cub showed itself. It was far larger than the others – obviously the once orphaned bear. Hast had his answer. ■



This mother bear adopted an orphaned cub.

BEN AUGUSTINE PHOTO