NEARLY 15 YEARS ago, biologists opened the door of a cattle trailer on a remote mountaintop in eastern Kentucky and released the first of more than 1,500 elk trucked in from six western states.

More than a decade later, many questions remain about Kentucky's restored elk herd and the behavior of its bulls. No one really knows the home range of an adult bull elk in Kentucky, or what happens to bachelor groups of adult bulls as the rut approaches.

Answers to these and other questions will be sought in Kentucky's first-ever study of mature bulls.

"There hasn't been a lot of research done anywhere in the U.S. on the life history of adult bulls," said Tina Brunjes, deer and elk program coordinator for the Kentucky Department of Fish and Wildlife Resources. "Most of our research here in Kentucky has been geared towards reproduction and population growth, to find out the answers to such questions as: How many calves are being born and how many grow to adulthood?"

University of Kentucky student John Hast is heading up a four-year research project on bull elk as part of his Ph.D. dissertation. "I like to think of it as a bull elk ecology study because we're trying to learn as much as we can," said Hast. "We'd like to gain some insight into their daily lives."

Research will focus on seasonal movements, habitat use, survival, mortality factors, genetics and even parasites. "For example," Hast asked, "how many adult bulls survive an infestation of brain worm as juveniles?"

Over a two-month period last winter, Hast and Kentucky Fish and Wildlife biologists immobilized 58 bull elk with sedative darts in Knott, Bell, Breathitt and Pike counties. They fitted 24 animals with global positioning satellite (GPS) collars and 34 bulls with collars that emit radio signals for tracking.

Brunjes said the difficulty of working with adult bull elk is one reason so few studies of this kind have been done. "They're big, ornery and hard to handle," she said. "You have to start during the worst winter weather before they drop their antlers, and you need to get within 40 yards for a shot. As you can imagine, after hunting season they're still on edge and can be very secretive."

Hast said the study's bulls range from 3½ to 6½ years old. "The bulls collared had 4x4 to 6x6 antler racks – elk that hunters would consider harvestable – and included a few trophy elk estimated to score over 300 inches," he said.

The GPS-collared elk can be monitored by computer. Location reports come in every two hours. "The GPS collars, which give us 12 locations a day, last about 2½ years before the batteries go dead," said Hast. "We'll get lots of details about the seasonal movement patterns and habitat use."

Hast will use the radio-collared bulls to help study the movements of the animals. He plans to go into the field once a week to see where the bulls are located both early and late in the day. Radio collars have an advantage over GPS collars in that their batteries can last up to four years.

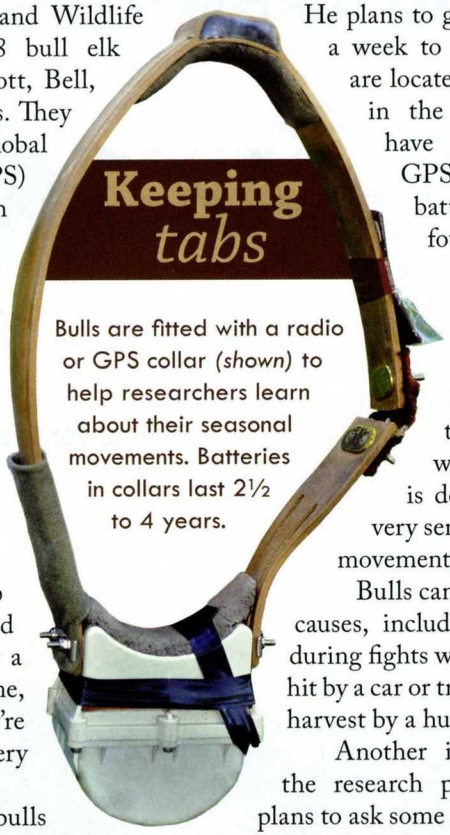
Radio collars also emit a different sounding beep if the animal stays in one place more than four hours. This would indicate the elk is dead. "The collars are very sensitive to the slightest movement," Hast explained.

Bulls can die from a variety of causes, including injuries suffered during fights with other bulls, being hit by a car or truck, and poaching or harvest by a hunter.

Another intriguing aspect of the research project is that Hast plans to ask some hunters to carry GPS units during elk hunts, so he can monitor interactions between predator and prey.

This groundbreaking research will provide new insights into the movement and behavior of bulls in the eastern United States. It could assist wildlife watchers as well as hunters in the field.

Research animals are legal for hunters to harvest. Anyone who takes a collared bull should contact Kentucky Fish and Wildlife at 1-800-858-1549 and ask to speak to the wildlife division. This will allow researchers to recover the collars and record additional information about the bull. ■



Keeping *tabs*

Bulls are fitted with a radio or GPS collar *(shown)* to help researchers learn about their seasonal movements. Batteries in collars last 2½ to 4 years.