A two-year hidden camera investigation helped wildlife researchers uncover the priva

Secrets of the Lodge

Story and Photos By
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Ever wonder what goes on inside those secret lodges where ancient rituals are conducted?

Craig Bloomquist wondered, so one day in 2004 this Southern Illinois University (SIU) graduate student slipped an infrared spy camera inside one of those fortress-like lodges and left it running.

The camera operated continuously for dozens of 30-hour sessions, quietly documenting every movement inside the secret lodge. On various days of the week, Bloomquist would drift near the device again to change batteries and videotapes, then slip away unnoticed. As spy operations go, it was a textbook undercover case.

After two years and almost 2,000 hours of clandestine footage, Bloomquist and his superiors broke the news about the hidden life of what insiders know as *Castor canadensis*.

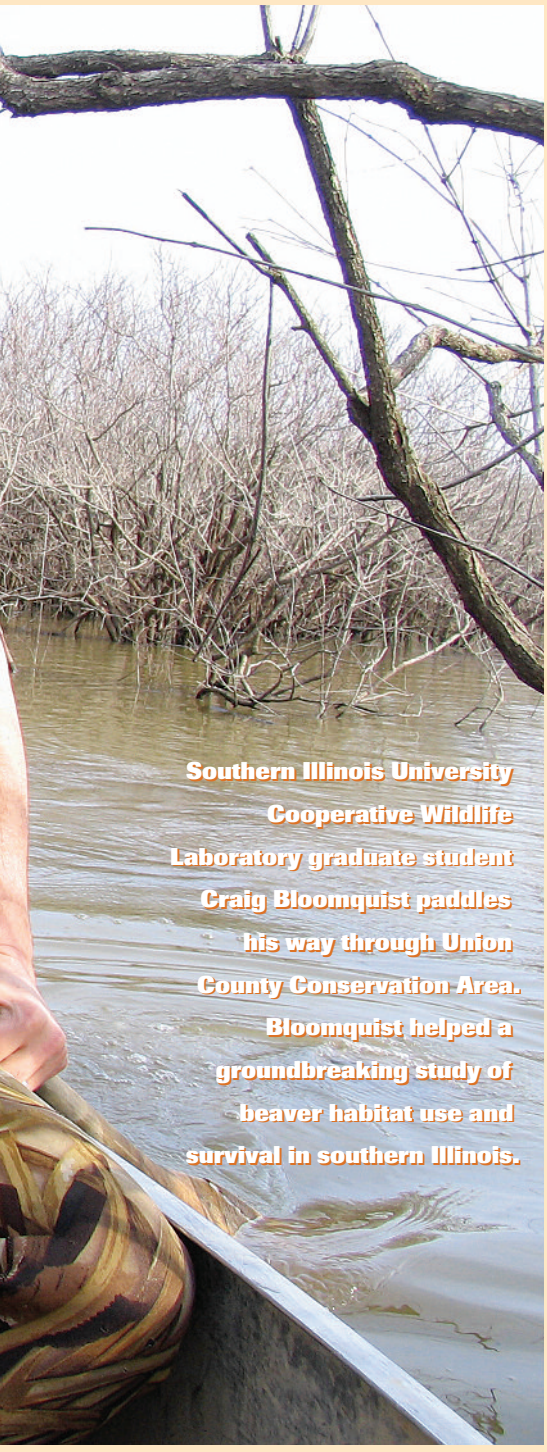
"I saw a muskrat inside of the lodge at the same time a beaver was inside," Bloomquist said recently.

Shocking news. Or, interesting anyway.

"That's never been documented before," Bloomquist added.

Wildlife researchers who'd previously

te world of island communities.



Southern Illinois University Cooperative Wildlife Laboratory graduate student Craig Bloomquist paddles his way through Union County Conservation Area. Bloomquist helped a groundbreaking study of beaver habitat use and survival in southern Illinois.

studied beaver lodges sometimes observed muskrats swimming around the log-pile structures. But there'd never been evidence the two mildly competitive species would actually crowd into the same lodge—without fur flying. But that wasn't all the researchers learned during the two years spent in the wetlands around Union County Conservation Area.

For example, the secret camera showed that adult beavers seem to pay little attention when they flop down to sleep inside a lodge; young kits might actually find themselves literally smothered by a mother's presence.

"On one of the tapes we saw a kit desperately struggling to crawl out from under the mother after she went to sleep," Bloomquist reported. "When beavers are about ready to sleep, they don't circle around like a dog. They just plop down."

Bloomquist's life as a private investigator of beaver behavior was part of a Department of Natural Resources-funded study to gather previously undocumented information about these famously busy mammals.

Dr. Clay Nielsen of SIU's Cooperative Wildlife Research Laboratory, the lead researcher on the project, said the North American beaver (*Castor canadensis*) has been the subject of extensive research elsewhere. But those studies were always limited by technology.

"Although beavers have been studied throughout their range," Nielsen explained, "most studies have not had the technological advances we are able to utilize today. Using remote videography has given us a glimpse into beaver behavior that has rarely been observed in the wild."

The overall purpose of the study: learn the behavior and habitat use of beavers in southern Illinois. In doing so, mortality rates of juveniles and adults were investigated—as well as previously undocumented behavior inside the lodge.

Also, researchers wanted to know how beaver populations responded to localized removal. That is, how quickly will a new beaver move to claim vacant habitat? When a beaver must be removed from a pond or waterway, or when trapping is conducted during regular trapping season, how quickly will a new beaver move in? That information contributes to sound management practices.

The trouble was, nobody had yet devised a simple and effective way to electronically track beavers. Radio transmitter collars placed around necks slipped off, and surgically implanted transmitters weren't exactly ideal.

Finally, a transmitter system was created for the large tail. And it worked. Beavers in study areas were live-trapped, then fitted with a battery-powered transmitter that followed the beavers wherever they swam and walked. Eventually, researchers began to understand how and to where young disperse from a colony, and what hap-

Thanks to an infrared camera probe, researchers were able to observe movements inside a beaver lodge.

Electronic technology fared surprisingly well outdoors as researchers monitored juvenile beavers (known as kits) rarely observed inside their protective lodge.

pens when a beaver is removed from a study area.

"Using tail-mounted radio transmitters allowed us to understand survival and home ranges in a way that few others have," Nielsen added.

And the study didn't track just a few animals; some 62 individual beavers were live-trapped and tagged between 2004-05, and nearly all of the handling of these toothy herbivores went according to plan.

"Only one person was bit on the project," Bloomquist reported.

Among the beneficial findings: Researchers learned that beavers don't move quickly to exploit vacated habitat. The home range of any beaver remains the same even after neighboring beavers disappear or get captured.

That's encouraging news for managers of sites where nuisance beavers must be removed.

"It's nice to know that if you have nuisance beavers, you won't have neighboring colonies moving into your place right after you take out the nuisance beavers," Bloomquist said.

As for the hidden camera, the footage helped reveal what wildlife officials never knew for certain: how many kits were born and survived among southern Illinois populations. Without the insider's view of life inside the secret lodge, early mortality could never have been documented.

"We were a bit surprised that the beavers themselves rarely tampered with the equipment," Nielsen said. Indeed, just a few nibble marks were noted on the plastic pipe which tunneled into the lodge. And only one instance or wiring failure occurred.

Other data collected during the project helped researchers understand causes of early beaver mortality.

"Past studies suggested about 57 percent of mortality occurs before 8 months of age," observed Bob Bluett, a Department of Natural Resources furbearer biologist. "That's huge compared with mortality rates at later ages and begs the question, 'What happens to these young kits?' The camera gave us a good chance to look into their lives without a lot of disruption or possible effects on survival."

Bluett also was impressed by the ability of Bloomquist to pull off the spy operation without getting soaked.

"It takes someone special to load two deep-cycle batteries, a platform and camera equipment in a canoe and paddle through a swamp in August," Bluett said. "We're fortunate to have cream-of-the-crop research institutions right here in Illinois."

Different-shaped tail tags helped researchers identify the various beavers which might appear on video footage.