**In Minnesota, wildlife experts campaign for copper bullets**

* Article by: TORI J. MCCORMICK , Special to the Star Tribune
* Updated: October 2, 2014 - 3:34 PM

Wildlife experts think hunters should consider nontoxic copper bullets when heading for the deer woods this fall.

Last November, Dr. Brian Hiller was sitting in a deer stand on private land near Bemidji, hoping to kill his first deer in Minnesota with a rifle.

“The little buck settled in about 50 yards from me,” said Hiller, 40, who has been an assistant professor of biology at Bemidji State University since 2012. “My bullet hit about 2 inches in front of the left shoulder and it immediately collapsed. It never twitched or moved. It was a clean, humane kill.”

The “clean kill” pleased Hiller because he was using nontoxic copper bullets and wanted to ascertain their effectiveness in his rifle compared to traditional lead ammunition — a mainstay for rifle deer hunters in Minnesota and elsewhere for decades because of its affordability, availability and effectiveness. However, lead is also a poisonous neurotoxin, with “no safe exposure levels,” according to Hiller.

“There’s always been this question among hunters if copper kills as effectively as lead. When you put the shot where it belongs, copper does the job very quickly and very effectively,” said Hiller, who is also chair of the Wildlife Toxicology Working Group for the Wildlife Society, an international association for wildlife professionals. “I was extremely satisfied with it. I also didn’t have to worry about a bald eagle scavenging my gut pile and getting lead poisoning, or having any lead particles show up in my venison.”

In August, the Minnesota Chapter of the Wildlife Society held its first “copper bullet demonstration” for deer hunters who wanted to test the performance of their own lead ammunition against copper bullets, which were provided free in several popular calibers. The demonstration, held at Wealthwood Rod and Gun Club in Aitkin, Minn., was part of a larger Wildlife Society campaign to educate hunters and anglers about the effects of lead ammunition and lead fishing tackle.

“The primary push behind the bullet demonstration was to give hunters hands-on, direct experience with both lead and copper bullets so they can compare and contrast them and make their own decision on what they want to use.” said Hiller. “The weather was poor that day, so we only had four or five hunters participate. But most were surprised by what they saw.”

**Copper vs. lead**

According to Hiller, two target demonstration sites were set up — one for lead bullets and one for copper. Each consisted of 8-gallon milk jugs that were filled with water and placed (in a straight line) into a 5-gallon drum (which was laid on its side on a table). The “water traps,” as Hiller calls them, captured the bullets as they passed through the jugs.

“The copper bullets held together and mushroomed nicely … and penetrated, generally speaking, more milk jugs than the lead bullets,” said Hiller. “The lead bullets fragmented into many, many pieces and shards. Some of it was basically lead dust; it reminded me of fine, fine sand. The differences caught the eye of the participants. At least two said there were going to switch to copper bullets as a result.”

**Concerns about lead**

Carrol Henderson, supervisor of the Nongame Wildlife Program for the Minnesota Department of Natural Resources, who also attended the event in Aitkin, wasn’t surprised by what he saw at the demonstrations. In fact, Henderson, who is an avid hunter and birder, says there’s a growing body of evidence that “lead bullet fragments create a toxic hazard to wildlife that scavenge unretrieved game animals and deer gut piles left in the outdoors.”

As evidence, Henderson points to a 2012 report by the Raptor Center at the University of Minnesota. The report relied on data from 1,277 bald eagles admitted to the center from 1996 to 2009. It showed, Henderson said, that 334 (26 percent) of the eagles had lethal lead levels and that 80 percent of the remaining eagles had elevated lead levels. The study, Henderson said, was correlated with the month of admission (mainly during the fall firearms season) and within the northern rifle zone.

“Those remains, in Minnesota or in other states, not only can poison bald eagles but vultures, California condors and other birds,” said Henderson, noting that the state of California has approved legislation requiring a change to nontoxic ammunition for all hunting by 2019. “Will the number of eagles dying from lead poisoning in Minnesota be enough to cause the population to decline? No. But that misses the point. The continued mortality of eagles is avoidable and doesn’t portray hunters in a positive light to the non-hunting public. We want to preserve the image of hunters as conservationists and wise custodians of nature. That’s why these copper bullet demonstrations are important. They show hunters they have an alternative to lead. In no way is this an anti-hunting effort. It’s about educating hunters.”

Henderson, Hiller and others say lead bullet fragments in venison also pose an avoidable health risk to humans. Lead in the United States, they say, has already been eliminated in paint, gasoline and children’s toys. “To me, it’s common sense,” said Henderson said. “We shouldn’t eat toxic metals.”

To date, according to the Minnesota DNR, no illnesses have been linked to consumption of lead particles in hunter-harvested venison.

“Plain and simple, lead is harmful,” insisted Hiller. “Pregnant women and young children are especially sensitive to lead exposure. Copper bullets might be a little more expensive, but it’s worth it to me. The demonstrations clearly show that lead particles are fine enough where you wouldn’t even be able to feel them, see them or taste them in your venison.”

**Industry perspective**

Ryan Bronson, conservation manager for Federal Premium Ammunition in Anoka, said his company has been manufacturing copper bullets since 2000. He said Federal’s goal is to give hunters as many ammo options as possible and that deer hunters need to understand that copper bullets perform differently than lead bullets.

“Copper is popular with guys who hunt moose, bear and elk because copper retains bullet weight, stays together and penetrates deeply,” said Bronson, who said the company’s Trophy Copper bullets were originally designed for moose and other big game. “A bullet primarily kills from trauma. When a lead bullet hits the vitals or ‘boiler room’ of a deer, it expands and inflicts a lot of trauma. There are instantaneous blood pressure changes inside the animal and that causes the brain to shut down. It’s a clean, quick kill like you want.

“You have to remember with deer that, from shoulder tip to shoulder tip, they’re 10 inches or less — far smaller than elk or moose,” Bronson added. “When hunters have expressed frustration with copper, it’s because the bullet doesn’t expand and can pass through a deer very quickly and put a lot of energy behind the animal. Copper bullets kill effectively, but you have to make sure you have the right shot placement on the animal you’re hunting.”

Bronson says accuracy with copper bullets varies from rifle to rifle. Copper bullets are also more expensive than lead bullets. “We always advocate sighting in your rifle before the hunting season and whenever you switch bullets — whether they’re lead or copper,” he said.

**More demonstrations planned**

According to Henderson, the Legislative-Citizen Commission on Minnesota Resources (LCCMR) has tentatively approved a $130,000 partnership initiative to provide information to Minnesota deer hunters “about the relative benefits and characteristics of lead and copper ammunition used for deer hunting.” The partnership includes the DNR, the Minnesota Chapter of the Wildlife Society, the Minnesota Deer Hunters Association and other groups.

“We’re hoping to have many more demonstration clinics next year,” said Henderson.

Added Hiller: “The goal is the education of deer hunters so they can make informed decisions. It’s not about banning lead, it’s about a voluntary phase-in. The best way to advocate for change is by hunters talking to other hunters. Word-of-mouth is a powerful way to educate.”

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**Next copper bullet demonstration**

Littlefork Gun Club (near International Falls)

October 19, 2-5 p.m.

Free and open to the public. Preregistration not required.

More information: [www.wildlife.org/minnesota](http://www.wildlife.org/minnesota).