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Wolves make few unnecessary elk kills, study says Wapiti tend to stay on Gros Ventre feedgrounds during attacks.

By Cory Hatch, Jackson Hole, Wyo.

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A multiyear U.S. Fish and Wildlife Service study of wolves in the winter in the Gros Ventre drainage shows they rarely kill more than they need to eat and do not prey on moose in excess, researchers say.

The as-yet-unpublished study also shows that most elk tend to stay on feedgrounds in the Gros Ventre drainage during wolf attacks. The research comes as Wyoming Game and Fish Department wildlife managers and local outfitters express concerns about the impact of wolves on elk populations, especially in the Gros Ventre drainage, where calf/cow ratios have dropped below levels some experts consider necessary to sustain herds of the ungulates.

To get the data, researchers followed wolf tracks to ungulate carcasses and examined the remains, determining the type of prey and its age, gender and physical condition. Researchers also used radio collars to study movements of elk when wolves killed on feedgrounds.

During the study period – from 2000, when reintroduced wolves from Yellowstone National Park first found their way to the Gros Ventre drainage, to 2007 – researchers examined the remains of 320 carcasses. Of those, researchers say, wolves killed 15 elk in so-called “surplus killings,” instances when wolves killed multiple elk and did not feed extensively on the carcasses. Five instances of such killing occurred in 2002 and two instances occurred in 2007.

Mike Jimenez, the U.S. Fish and Wildlife Service’s Wyoming wolf management project leader, called the low incidence of such killing “surprising.” He released highlights of the study to the News&Guide on Monday.

“We thought if there is ever a place you would document surplus killing, these feedgrounds would be the spot,” he said. “To us, what was surprising was we just did not document it that often.”

Jimenez said instances of wolves killing more than they needed to eat were difficult to measure accurately, because some wolves tended to abandon carcasses that were disturbed by humans.

“Some wolf packs, if we messed with the carcass at all, they’d never come back,” he said. “Some wolf packs [couldn’t] care less.”

One trend researchers did notice about surplus killings is that they tended to occur in late winter, when wolf pups are getting big enough to make kills on their own, and when elk health, even on feedgrounds, tends to decline a bit.

“All the cases were in March or late February,” he said. “That coincides [with] pups right when they become yearlings. They’re coming into their own.”

In the study, elk calves comprised 49 percent of kills, while cows comprised 46 percent and bulls 5 percent. Wolves killed 66 percent of prey on native winter range

and 34 percent on feedgrounds.

Jimenez said wolves are good at sorting out inexperienced or unfit elk.

"They clearly go after calves because they're inexperienced," he said, explaining that cow predation is also high because cows are more abundant. "When you look at the numbers, they go after older cows and young calves. And they do go after bulls, but bulls are not [as] available on feedgrounds."

On native winter range, Jimenez said, the percentage of bull elk killed might go up to 20 percent, in part because bulls are more abundant and also because they are weakened by the rut and don't have supplemental feed to hold them over until spring.

The researchers say the species breakdown of ungulates killed was 89 percent elk, 9 percent moose, 1.5 percent mule deer and 0.5 percent bison. Jimenez said the low percentage of moose killed in the Gros Ventre drainage comes as no surprise, because wolves tend to key in on elk feedgrounds.

"They kill what's available and what's vulnerable," he said. "What's available in this neck of the woods is elk."

The researchers also looked at how radio-collared wolves affected 292 locations of radio-collared elk on the three feedgrounds in the Gros Ventre drainage. During wolf attacks on elk, the elk stayed on the feedground 79 percent of the time, left the area but returned within three days 14 percent of the time and gathered in larger herds on adjacent feedgrounds 7 percent of the time.

"When wolves made a kill on the feedground, surprisingly ... elk stayed on those feedgrounds almost 80 percent of the time," he said. "Sometimes they'll scatter them and they'll stay away for a few days. [Sometimes] they'd all en masse go to one feedground. Is that really a problem? Who am I to say? If you're trying to feed elk, that becomes a problem."

Researchers tried to determine the condition of the elk killed by looking at the bone marrow, where mammals store their last fat reserves. The bone marrow data wasn't conclusive, because elk tended to stay in good condition on feedgrounds, he said.

While the Gros Ventre study occurred during a long-enough period and the sample size was big enough to give a good picture of some aspects of wolf predation on elk, Jimenez said it has limitations.

The study does not, for instance, tell researchers much about the impact of wolves on the overall number of elk. Wolf predation could be compensatory, meaning that the predators are killing animals that would die during the winter anyway, or additive, meaning wolves are taking additional animals out of the population. Factors such as snowpack, precipitation, forage and other predators confound such calculations.

"The answer is we don't know," Jimenez said, explaining that the results are also site specific, especially because of the presence of feedgrounds. "These predator-prey systems are very complicated. They don't have a simple cause and effect answer."

Chris Colligan, Wyoming wildlife advocate for the Greater Yellowstone Coalition, called the study fascinating. "This is the kind of research and data that wildlife advocates, hunters, biologists and wildlife watchers should be really excited about," he said. "I think there's a lot of misperceptions out there that this may dispel, hopefully with good solid data rather than anecdotal evidence."

"I feel that surplus killing gets undo hype, and this data suggests that," Colligan said.

Colligan said there are a "whole host of ecological benefits that could be taking place"

the study doesn't address, such as the impacts of overgrazing by ungulates on willow and aspen communities.

"The question it brought up to me is what the role of human disturbance and unnatural conditions at elk feedgrounds is playing in limiting the role of wolves from carrying out their ecological role as a keystone predator," he said.

B.J. Hill, a Kelly-based outfitter who has advocated for hunting wolves, said he agrees with some of the findings but has problems with some of the conclusions on moose predation and surplus killing.

"That's all fine and dandy, but we're down to five moose licenses in the Gros Ventre and we used to get 75," he said. "We've literally lost that moose segment up there."

Hill pointed to several instances when wolves have killed large numbers of domestic sheep and said the same thing could happen to elk under the right conditions, such as deep snow with a thick crust.

"Those wolves can run on top," he said. "[If] they happen to catch a little group of elk that are falling through, they could literally kill them all."

"If you get them weak, I think [wolves are] going to whack them," Hill said. "I think the winter range elk are taking a thrashing."

Hill questioned the motives of the U.S. Fish and Wildlife Service researchers, saying he'd rather trust data from the Wyoming Game and Fish Department.

"I personally feel ... that it could be distorted a little bit," he said. "I think they're trying to make this wolf sound as good as they can. They do not portray what this killing machine is really about. We outfitters feel that with the feds and the environmental groups it's half truths and half lies."

U.S. Fish and Wildlife researchers and Grand Teton National Park are conducting a similar study on two wolf packs that winter around the north end of the park. The first year's data is available at www.fws.gov/mountain-prairie/species/mammals/wolf/wyomingstatus2010/04092010.html. Researchers caution that the data in the Grand Teton study is preliminary and based on only one year's observations.

Jimenez did not know when the study on Gros Ventre predation would be released. Those interested may contact him at mike_jimenez@fws.gov.

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