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Seasonal Influences Help Guide Cougar Prey Selection

As predators, cougars tend to select prey animals that are weaker and easier to attack during certain seasons, according to results of a new study.

The study is outlined in an article featured in the September 2010 issue of *The Journal of Wildlife Management*, published by The Wildlife Society.

The authors' study of cougar predation from 1998 to 2008 in west-central Alberta, Canada, aimed to answer four questions: How many ungulates, or hooved animals, do cougars kill? How does season influence cougar predation? What effect does cougar population structure have on predation rates? Do cougars target vulnerable prey?

During the study, the researchers immobilized and then fitted cougars with GPS radiocollars for tracking purposes that were programmed to obtain a location at 2- or 3-hour intervals, or 8 to 12 times a day. They used this information to identify GPS cluster sites that also were likely predation sites and then visited the sites to identify any animal remains as predation or scavenging events. This added up to about 3,700 GPS location clusters and more than 1,500 predation events.

"Although previous research has applied GPS telemetry to estimate cougar kill rate, estimates were obtained using models and not continuous monitoring," according to the researchers. "In this study, we attempted to census cougar predation on ungulates over the duration each cougar was monitored."

Potential ungulate prey in the region includes elk, moose, white-tailed deer, bighorn sheep, and mountain goats, while nonungulate prey includes beaver, porcupine, snowshoe

hare, and grouse. The study found that wild ungulates were the most common prey, with white-tailed deer the most common.

"Cougars exhibited significant seasonal shifts in prey composition," they write. "Cougars in west-central Alberta killed primarily female ungulates just before, during, and just after the birthing period (April-June), males just before and during the rut (September-November), and focused predation on juvenile ungulates in spring consistent with the reproductive and juvenile vulnerability hypotheses, reinforcing the notion that cougars select for vulnerable prey."

According to the authors, "Our kill rate estimates indicate that adult cougars are highly effective predators, killing at rates at the upper end of those recorded for wolves in both frequency and biomass."

The authors also note that while cougars are able to kill large prey such as adult moose and feral horses, they often choose smaller animals, probably because of the lower risk of these attacks.

"Our estimates of cougar kill rate and our findings concerning the influence of season, demography, and prey vulnerability on cougar predation patterns can be applied to better interpret and anticipate cougar-ungulate dynamics," the authors conclude. "Our results also have application for cougar harvest management where cougar impacts on ungulate populations are cause for concern."