



Number of twins forecasts Alaska's moose health

In most parts of the state, twinning rate is 20 to 30 percent; the highest is 70 percent

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By Tim Mowry | **Fairbanks Daily News-Miner**

FAIRBANKS - The Togiak National Wildlife Refuge is heaven if you're a cow moose.

In an average year, it's estimated that about seven out of every 10 cow moose that give birth on the 4.7 million-acre refuge in Southwest Alaska have twin calves. In most parts of Alaska, the twinning rate is 20 to 30 percent.

"That's really amazing," state wildlife biologist Rodney Boertje said of Togiak's high twin count.

The secret to Togiak's high twinning rate is that moose are relatively new to the landscape and there is plenty of food to go around, he said. Moose didn't move into the area in any appreciable numbers until the early 1990s and have had the benefit of an all-you-can-eat buffet for the past 20 years, Boertje said.

"They're living high on the hog down there," he said.

Of all the information biologists collect regarding moose in Alaska, the percentage of cows that give birth to twins each year tells them more than anything else. There are other indexes that provide insight to the condition of moose, such as weights of yearlings and age of first reproduction - but it is twinning rates that are the best indicator of a moose herd's general health.

"If you had to have one that would be the best one," said Boertje, who has studied moose for almost 30 years for the Department of Fish and Game and published a scientific paper on moose nutrition in Alaska.

Each year in late May immediately after moose calves are born, biologists take to the skies to gauge the health of moose herds around the state by counting the number of twins they can see from the air. What they see gives them a good idea of how much food the moose have to eat. Low twinning rates - below 20 percent - usually mean that moose are scrounging for food. High twinning rates, such as those on Togiak, indicate that there is plenty to eat.

"You can pretty much track the nutritional status of a population by looking at its twinning rate," said Kris Hundertmark, the resident moose expert at the University of Alaska Fairbanks.

Studies of both captive and wild moose have shown that producing twin calves requires a cow moose to be in top physical condition. In Alaska, biologists have measured rump fat on moose and used ultrasounds to determine whether they are pregnant with twins. Only the fattest moose carry twins, Boertje said. Likewise, studies of penned moose in Alberta, Canada, more than 30 years ago showed that twinning rates could be manipulated by culling or adding moose to the population.

"Moose have just evolved that way; it's a genetic thing," Boertje said. "It's a switch they can turn on

when they need to build up their numbers when the food is good and they can turn that switch off when they need to survive and not raise twins."

It's that biological switch that sets moose apart from caribou, Alaska's other predominant ungulate, Hundertmark said.

"Caribou either have a calf or they don't," Hundertmark said. "Moose can have zero, one, two and in some extreme cases, three calves. All of that seems to be tied to the health of the mother."

The Tanana Flats south of Fairbanks has the lowest twinning rate in the state - 7 percent - which is one of the main justifications the Department of Fish and Game has used to allow large-scale cow moose hunts in parts of the Interior, a controversial management practice that has divided the Fairbanks hunting community in some cases.

Hunters have killed more than 2,000 cow moose in Unit 20A in the past four years as a result of the liberal cow hunts, but so far biologists have yet to see an increase in the twinning rates.

"I'm not surprised we haven't seen anything yet," Fairbanks area biologist Don Young said. "When you look at the historical data of twinning rates after the population crash in the '70s, there was a multiple-year time lag before twinning rates started to go up."

Twinning rates on the Tanana Flats skyrocketed to 40 percent in the late 1970s and early '80s following a population crash in the early '70s due to a series of harsh winters and poorly timed, liberal cow hunts, Young said. It will likely be a few more years before twinning rates increase, he said, assuming that the population doesn't grow.

High twinning rates are usually found in areas with low moose populations because the more moose there are, the less food there is. The Yukon Flats north of Fairbanks, for example, has one of the lowest moose densities in the state and one of the highest twinning rates at 64 percent.

Predators - black bears, grizzly bears and wolves - keep the moose population knocked down to a minimum and there is an unlimited food supply for what moose do survive, Boertje said.

"You can barely find a browsed twig out there," he said.

Likewise, the twinning rate in Denali National Park and Preserve, where you're apt to see more grizzly bears than moose, is 44 percent. The moose that don't get eaten by bears have plenty of food to produce twins, even if chances are good those twins will be eaten.

The department would like to see a twinning rate of about 30 percent in Alaska, Boertje said.

"If you have three (sets of twins) in every 10 (births), that's good," he said. "That means they're getting a lot to eat."

In Togiak, the moose population continues to grow at an alarming rate. In 1995, refuge wildlife biologist Andy Aderman counted an estimated 136 moose on the refuge. Last winter, he counted 1,060.

"Once the moose got established, they've really just taken off," Aderman said.

But things are slowly beginning to change, he said. The number of wolves in the refuge is increasing, and biologists are beginning to see browse that is "broomed," a term used to describe willows that have been topped and are mushrooming, Aderman said.

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