Changing Climate is Baking Moose to Death

By ERIC ORFF
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If you plan to be one of the 13,000 applicants in the late-May New Hampshire moose lottery draw, you might be thinking of
baked moose as a delicious recipe if you are successful in the draw and on your hunt.
But that is not what New Hampshire moose biologist Kris Rines described at the March Fish and Game Commission meeting. For her, our too-warm winters and way-too-hot summers of late have been a recipe for a disaster for our moose. In fact, our changing climate is baking our moose to death. That's right. In just the past five years, due to unseasonably warm temperatures in both winter and summer, moose numbers have plummeted some 40 percent, from more than 7,500 moose to about 4,500 today. And along with the moose, moose hunters have taken a hit too, with moose hunting permit numbers ratcheted down from 675 in 2007 to just 275 in 2012. That's a 60 percent reduction brought on by the declining moose numbers. Rines looked the commissioners in the eyes at the conclusion of her presentation and said, "You can expect a dramatic further cut in moose hunting permit numbers for next year, given the current situation."

Rines had explained to the commission just how complex a situation a warming New Hampshire presents to our moose. It really is a threefold disaster. First, the too-hot summers are causing our cow (female) moose to feed less. Summer temperatures above 57 degrees begin to stress moose. They begin panting at 68 degrees and stop feeding and lie down at 79 degrees. This has led to underweight moose numbers increasing the past five years at the biological check station each fall. Yearling moose, first-time breeders, must be at least 440 pounds to successfully bare calves the next spring.
Adults, two years and older, typically give birth to twin calves if their fall weights are at least 550 pounds. Many of our cows have been under these weights the last few falls. So our moose cows are producing fewer calves than they did a decade ago. Second, our too-mild winters are devastating our moose with a spike in winter tick numbers. As Rines put it, "If a female winter tick ready to lay her eggs falls off the moose in April on top of snow, the ticks don't survive. But if they fall onto bare ground, they thrive." So it is the length of time snow is on the ground going into spring that determines the tick load of the moose the next winter.
Now, take the winter of 2010, which was mild with an early spring. Rines figures that in the following, more normal winter, with extremely high tick numbers, all the calves born the previous spring died and at least 40 percent of the adults died due to an extremely high tick infestation. So we now have a double-barreled loss of calves: fewer being born and an extremely high mortality following a mild winter. Lastly Rines talked about the mild winter weather causing an increase in deer numbers, which brings about more moose mortality in the form of brain worm disease. You see, deer survive just fine with brain worms, but the disease is fatal to moose. So warmer winters means more deer, resulting in still fewer moose. And this is happening all across North America, Rines explained. From New Brunswick and Nova Scotia to the east to Michigan, Minnesota, Ontario and out west to Utah, moose are on the decline due to a warming world. Most of us think of climate change as something someone else is going to have to worry about in the future. For the moose, that future began five years ago. (Eric Orff of Epsom is the New Hampshire Fish and Game commissioner for Merrimack County and a consultant to the National Wildlife Federation.)