

Research, briefly:

Warmer autumns limit rutting movement.



Key takeaways:

Moose move less on warm days, which takes time away from rutting.

Large, adult males are usually top competitors during the rut, but their movement is more affected by heat than small, young males.

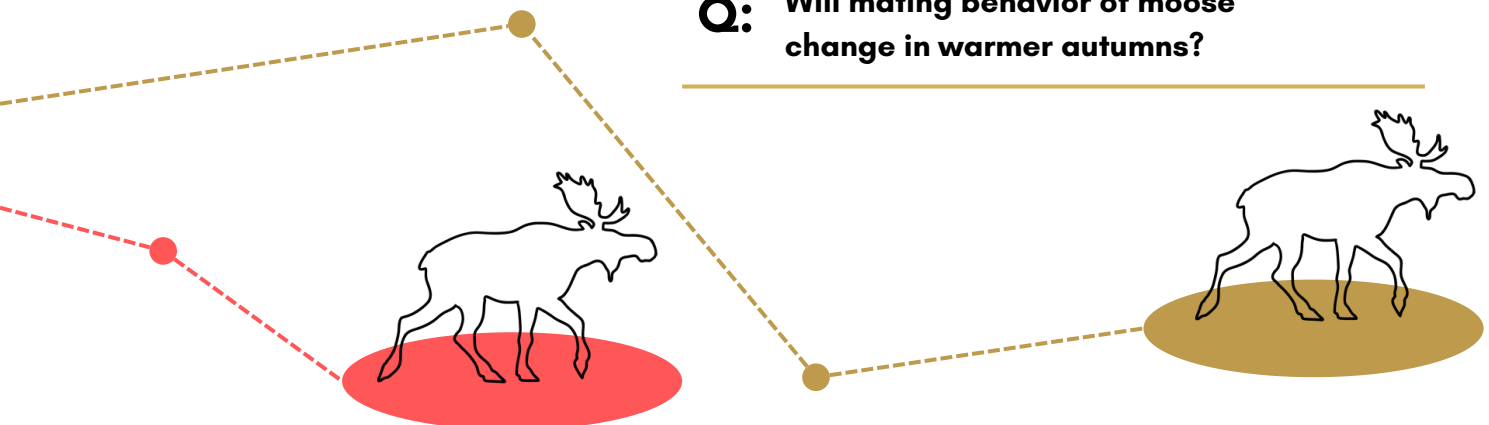
Warmer autumns give young and small males a leg up, which conflicts with normal mating seasons.

Every autumn, male moose lose their minds. Their testosterone production skyrockets; they spar with rivals, search for females, and guard potential mates. Prime-age males even stop eating for two weeks, using up almost all of the fat reserves they built over the previous summer.

In addition to mating, males are balancing multiple other risks. They're trying to retain enough fat resources to help them through the upcoming winter. They're trying to maximize access to females, and avoid interactions with and injuries from other males. And on top of all that: they're trying to not overheat.

Moose are large, have dark hair, and cannot sweat, making them sensitive to heat. When they start to overheat, moose tend to lay down in cool, wet areas. Since there are only so many hours in a day, bedding down to cool off can take away precious time for mating.

Q: Will mating behavior of moose change in warmer autumns?



Heat tips the scales.

Male moose grow large bodies and antlers as they age, which are traits that make them more successful at securing mates. But, being old and large also makes males more sensitive to warm temperatures. The traits that usually make males the 'winners' of the rut could now hurt their chances of mating.

To achieve mating success, all males increase their movement to find and defend females. Old and large males, the typical 'winners,' are most affected by warm days. During warm autumns, the traits that make males successful also mean they move less, which means less effort goes to finding and defending females.

Under normal temperatures, males prioritize mating...



...but they prioritize cooling off on warm days.

Consequences of a disrupted rut.

Changes to who wins and who loses during the rut could cause bigger problems. Since old and large males usually have the highest mating success and are most hindered by heat, warm days are affecting the primary breeders of the population. Warmer autumns could mean that young and small males are reproductively successful, which could create an abnormal breeding situation.

Studying the rut.

In March 2020, we caught male and female moose on the Absaroka Front outside of Meeteetse, Wyoming. Over the next 3 years, we studied where they moved, what habitat they spend time in, and a suite of other factors.



Tracking males and females in the same population allowed us to study how they interacted during the rut. We also collected information like age and antler size to help us understand how these traits change rutting behavior.

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