

## Speaking of Science

# Climate change may have driven dog evolution

By [Rachel Feltman](#) August 19

It's possible that a shifting climate millions of years ago helped make dogs what they are today.

In a [study published Tuesday in Nature Communications](#), researchers report that based on the analysis of wolf and dog remains dating back to 40 million years ago, it's likely that the animals developed their unique approach to hunting in response to changes in their habitat.

Forty million years ago, dog ancestors living in what's now North America (continents were a lot cooler at the time) looked more like mongooses than our modern pets. In fact, [the group that would one day schism](#) into cat ancestors and dog ancestors had yet to truly split. These animals were well-suited for a warm, heavily wooded climate — which was the climate of North America at the time.

But things were changing.

The planet [started to warm rapidly at this time](#), and eventually the lush forests of the region gave way to open grasslands.

According to the new study, wolf ancestors developed an important adaptation — a change in their elbows, which turned them from predators that relied on the element of surprise to predators that could chase down their prey with endurance running — along the same timeline as the habitat changes caused by global warming.

"It's reinforcing the idea that predators may be as directly sensitive to climate and habitat as herbivores," study author [Christine Janis](#), professor of ecology and evolutionary biology at Brown University, [said in a statement](#). The influence of climate change on herbivores — prey animals — has been well documented, and it makes sense that predators would adapt as well. But based on the timing of the adaptations, the researchers say, it seems likely that wolf ancestors were responding directly to the environment, as opposed to responding

to the adaptations of their prey.

"There's no point in doing a dash and a pounce in a forest," Janis said. "They'll smack into a tree."

In wolf ancestors, the elbow changed from allowing paws to swivel — which is important for grabbing and tackling prey — to keeping the paw more stable, which is important for long-distance running.

Meanwhile, cats maintained their tried-and-true method of ambushing prey, using quick bursts of sprinting to tackle startled beasts.

Since the domesticated dog doesn't spend much time fending for itself out in the wilds of North America, it is of course unlikely that human-driven climate change will make any notable change to them — elbows or otherwise. But for the wolf, that remains more of an open question.

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Rachel Feltman runs The Post's Speaking of Science blog.

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