

TOUGH TRAIL:
Mule deer cross Pine
Creek in Wyoming.

THE LONG HAUL

The discovery of a record-breaking migration could help protect a western icon

Back in 2011, biologist Hall Sawyer was asked to study the movements of mule deer in a region of Wyoming called the Red Desert. Government officials wanted to balance the animals' needs with other land uses, like building houses. Sawyer put GPS tracking collars on 40 deer that January.

At the time, everyone assumed the deer spent all year in the Red Desert. So Sawyer was surprised that spring when his team picked up signals from far to the northwest, in the Hoback Basin (*see Migration Route, right*). When the deer returned to the Red Desert the following winter,

Sawyer realized he had stumbled upon a previously undiscovered long-distance migration.

In late March, more than 500 mule deer begin a 150-mile journey from the Red Desert. Fifty miles north, they merge with thousands more deer from the foothills of the Wind River mountains. Along the way, the animals must skirt sand dunes, swim across rivers, cross roads, and jump fences to reach their preferred summering grounds, the lush mountain meadows of the Hoback Basin. They're

there by early June. They leave the basin in mid-October and arrive back in the Red Desert by late November.

It turns out the mule deer's trek is the longest known land migration in the continental U.S. (Alaska's caribou hold the world record, covering 2,400 miles round-trip.)

"Mule deer have been making this migration for hundreds of years, and nobody had put the pieces together," says Matthew Kauffman, director of the Wyoming Migration Initiative at the University of Wyoming.

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MIGRATION**



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7 SWEPT AWAY: A helicopter allows scientists to reach deer in remote areas. The researchers tie up and blindfold deer before taking them to a field station for health testing and GPS collaring.

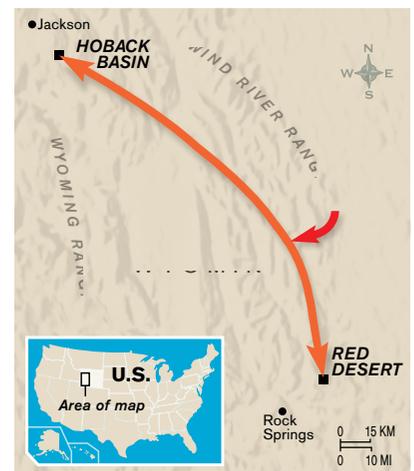


8 HEADING HOME: A mule deer is released after collaring.



MIGRATION ROUTE

About 500 mule deer journey from the Red Desert to Hoback Basin each spring (orange). Thousands more join from the Wind River Range (red). They return south before heavy snow falls.



SPREADING THE NEWS

Mule deer are brownish-gray *ungulates*, or hoofed mammals, native to western North America. They're about the same size as white-tailed deer, which are common east of the Rockies. Mule deer are named for their large, mule-like ears.

The species is an iconic animal of the American West, but its numbers

have been declining since the 1970s because of habitat loss, drought, and other factors. Sawyer wanted to get the word out about the newfound migration—not just because it was record-breaking, but because he knew the deer could use some help.

To build up fat to survive the winters, mule deer eat only the most

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 **DEER CROSSING!** Vehicle traffic is one of the many challenges migrating deer face.



nutritious plants and plant parts. For this reason, they can thrive only in areas with the proper food.

The newly discovered migration highlights the animals' need to travel—sometimes long distances—to survive. Roads, highways, fences, homes, natural gas developments, wind farms, and mining operations can interfere with or block migration paths. That can be a big problem for mule deer.

The deer that Sawyer tracked feed on small, hardy plants called desert sagebrush in winter—but in the summer, they fatten up on the more nutritious grasses and flowering plants on the mountain meadows of the Hoback Basin. They can't stay, though, because the snow gets too deep to walk through in the winter. They must return to their wintering grounds before the heavy snows fall. "Mule deer can't make a living by staying in just one habitat year-round," says Kauffman.

PARTNERS IN PROTECTION

Ever since his discovery, Sawyer has been working to raise awareness and keep the migration route accessible for the deer. First he partnered

with wildlife photojournalist Joe Riis to produce a traveling photo exhibit and a short video on the migration, which received millions of views online. Then he teamed up with Kauffman and the Wyoming Migration Initiative to assess the 10 biggest challenges for the deer along the migration route, which takes the animals through a patchwork of land owned by the federal government, state government, and private owners. "Figuring out how to get everybody on the same page and accommodate the animals is the biggest challenge," Sawyer says.

All the stakeholders are starting to come together on solutions. One organization, the Conservation Fund, purchased land where the deer cross a stream. It had been slated for housing development, but the group plans to safeguard the stream. This way the deers' migration through this area won't be disrupted. And the U.S. Bureau of Land Management is

considering ways to protect the deers' migration route from energy development on federal land.

Meanwhile, scientists are working to learn more about mule deer. Kauffman is collecting health data like body fat and pregnancy status from a group of migrating mule deer. A few times a year, his team shoots nets from helicopters to capture the collared animals. They draw blood and measure fat before releasing the deer. "We can keep tabs on how they're doing in terms of foraging and fat gain—things that determine their ability to survive

and produce the next generation," he says.

Sawyer is optimistic that the discovery as well as ongoing research and advocacy will make a difference for migrating animals across the West. "Mule deer and other big game populations are a national treasure just like Old Faithful or Yosemite," he says. "That's something that people should care about." ❁

—Jennifer Abbasi



CORE QUESTION

What obstacles do mule deer face along their migration route, and how are conservationists helping? Summarize in your own words.