

# BEFORE THEY'RE GONE

*A study in Jackson looks at moose movements around the busiest two-lane highway in the state as the population dwindles.*

Story by Christine Peterson | Photos by Mark Gocke

A moose negotiates traffic during a winter snowstorm near Jackson.

**T**he cow moose knobby knees, big body and all stood on a porch tucked away in one of Jackson's residential neighborhoods. She'd spent weeks in the area, moseying down streets and creeping ever closer to houses as record snowfall piled higher.

When Wyoming Game and Fish Department biologist Alyson Courtemanch saw her, she figured a porch was as good a place as any to dart a moose. The moose didn't agree.

"When she got darted, she turned around and pinned her ears back and came running at us," Courtemanch said.

The drama didn't last long before the cow slowed, woozy with anesthesia, and laid in the snow-covered lawn. She snored for 10 minutes as biologists took blood to test for infectious diseases and placed a GPS transmitting collar around her neck to collect critical movement data.

That cow, darted in late March, is a member of Jackson's dwindling town moose herd, part of the overall Jackson herd. The population spends much of its time munching leaves in people's yards in the fall, ambling along plowed highways in the winter and even giving birth in backyards in the spring. Its numbers have suffered along with most moose in North America from a mixture of disease, predation, habitat loss and climate change. But unlike many other herds, this symbol of the Jackson Valley faces one more dilemma: traffic.

"We're questioning the future sustainability of the herd, especially this segment of the moose herd that lives close to roads," Courtemanch said.

So Courtemanch and Thayne Wildlife Biologist Gary Fralick spent weeks in March collaring 10 cow moose to learn where and when they cross highways. The information will help the Wyoming Department of Transportation determine where to install underpasses during an



upcoming highway renovation in an effort to save the iconic moose herd from becoming nothing more than a long-legged story from the past.

**Two highways, one problem**

The traffic problem for the town moose herd centers largely around two highways: state Highway 22 from Jackson over Teton Pass to Driggs, Idaho, and state Highway 390 from the Snake River to Teton Village. Moose crossing those two highways are the ones known for living in Jackson subdivisions and even its downtown.



A bull moose ambles through Jackson. The town and much of its associated roadways and development falls within historic moose winter and summer range.

Highway 22 has more traffic than any other two-lane highway in the state, said Keith Compton, district 3 engineer with WYDOT. During peak tourism, the lines of cars, trucks, vans and campers that wind along the river bottom and over the mountain pass are thicker than even the four-lane Interstate 80 between Rock Springs and Green River. As Jackson expands and more people commute from neighboring

Idaho, traffic on Highway 22 increases. Traffic on Highway 390 is steadily increasing too, taking people to ski in the winter and to Grand Teton National Park and other recreation in the summer.

And it's only getting worse. Yellowstone National Park officials recorded more than 4 million visits in 2018 compared to 3.5 million in 2014. Grand Teton reported almost 5 million visits in 2017, up 1 million visitors from 2012. Many of those people are using highways 22 and 390 to access the parks and surrounding areas.

This means more vehicles are on the road in an area already known for moose-vehicle collisions. Nearly 100 moose have died in vehicle collisions within 2 miles of the intersection of state highways 22 and 390 in the past 20 years, according to data collected by the Jackson Hole Wildlife Foundation. It's a significant portion of a herd segment that only numbers around 70 individuals on any given year.

In the winter of 2010-11, 15 moose were killed in vehicle collisions on Highway 390 headed toward Teton Village. The number was so shocking that area residents began a campaign that led to radar feedback signs alerting drivers to their speeds, a reduced nighttime speed limit to 35 mph from 45 mph, silhouette cutouts of moose and digital message boards.

"The hope is the combination, it's unlikely any one of them in isolation, but the combination is making a significant impact," said Jon Mobeck, executive director of the wildlife foundation.

While signs alerting drivers to moose and asking them to slow down are relatively inexpensive, and will work for short periods of time, they aren't foolproof, said Courtemanch. And even with the visual efforts, five moose were struck and killed on Highway 390 during the 2017-18 winter.

**Moose on the move**

Moose aren't native to Wyoming, not in the same way pronghorn, elk or mule deer are. They wandered from Montana by themselves in the late 1800s and early 1900s, first into Yellowstone and then the Tetons and Jackson. From there they spread south and east to the Wyoming and Wind River ranges and were transplanted by wildlife managers to the Bighorn Mountains and Snowy Range.

But while the transplanted moose herds are generally faring well, the moose that moved into the Jackson region are struggling. A herd that



once contained around 3,000 individuals in the '90s now has about 400, Courtemanch said. The waning town segment is a portion of that overall herd.

The best thing wildlife biologists can do for the herd now, particularly the ever dwindling town segment, is answer some basic questions. Much of what they hope to learn from the 2.5-year study is baseline information like how many moose living in Jackson migrate and where they go, the number of moose that die in car crashes or from winter ticks, parasites or predation and how many calves are successfully delivered each year.

But darting, sedating, testing and collar-ing moose is tricky. They're giant animals that are generally moody, especially in the winter. Capturing them in town adds an entirely new set of problems.

Game and Fish could easily access some stretches of public land along the Snake River, but otherwise, biologists depended on residents to notify them of where the moose were loitering and give permission to allow wildlife officials on their property.

"There were emails that went around neighborhoods that were really helpful asking people if they saw a moose to give us a call," Courtemanch said. "A couple of them we drove around and if

we happened to see a moose in someone's yard, we went up and knocked on the door."

**Constructing solutions**

While Game and Fish has been responsible for field work on the moose study, it wouldn't be possible without the Department of Transportation, Courtemanch said. WYDOT paid \$20,000 for the moose collars, and transportation officials are as eager for the results of the study as anyone else.

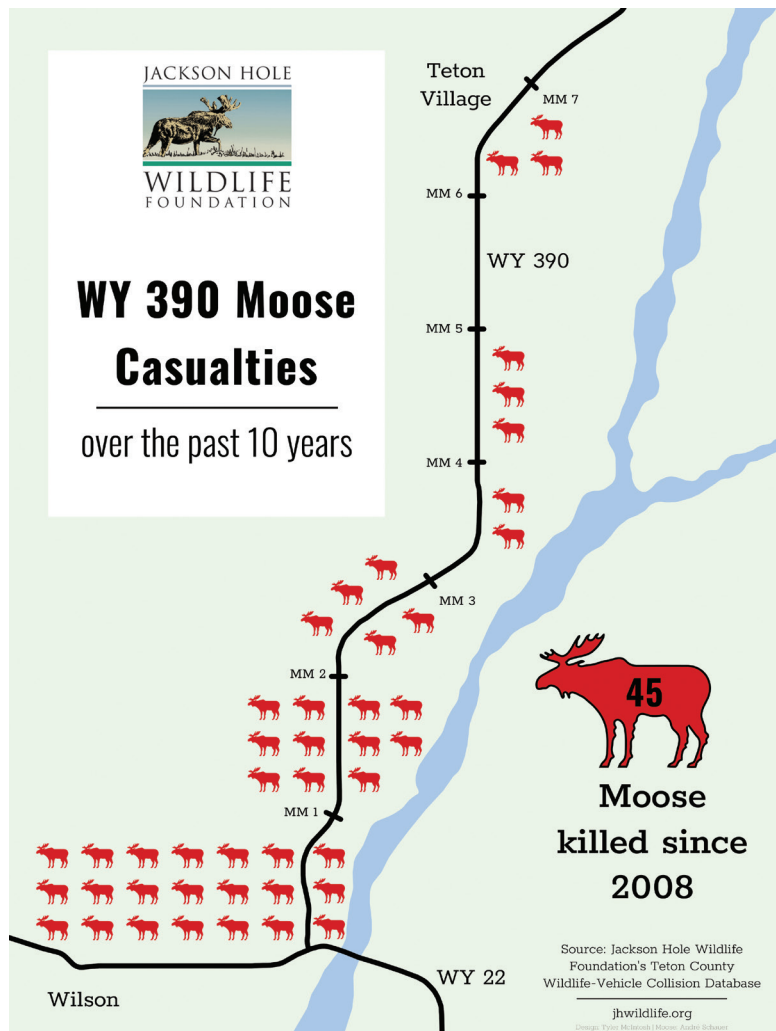
"I'm not a wildlife biologist. We're working really closely with the Wyoming Game and Fish to see what is there and needed and feasible," said Compton.

The Snake River Bridge, a yawning expanse of steel and concrete stretching about 900 feet needs to be replaced, Compton said. As WYDOT began planning for the project, engineers realized it made sense to reconstruct the nearby intersection of highways 22 and 390. At the same time, the Teton County Engineering office completed an unprecedented study of wildlife and roadways in the county, which also identified that area as a top priority. And even though wildlife management certainly doesn't fit under the typical purview of WYDOT or a county engineering office, when wildlife is causing hundreds of vehicle collisions a year, it becomes more important.

Jackson Wildlife Biologist Alyson Courtemanch fits an adult cow moose with a GPS collar while Kate Gersh with the Jackson Hole Wildlife Foundation supports the tranquilized moose's head.

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**Left:** Since 2008, 45 moose have been killed in vehicle collisions along Wyoming Highway 390 as documented by the Jackson Hole Wildlife Foundation. **Right:** Jackson Game Warden Kyle Lash, front, and Thayne Wildlife Biologist Gary Fralick organize the GPS collar, eartags and immobilization drugs as they prepare to dart a cow moose near Jackson.

People are 13 times more likely to die in a collision with a moose than they are in a collision with a deer, according to a recent study in the Journal of the American College of Surgeons. Research in Maine found that 27 people died in about 7,000 collisions with moose compared to 10 people who died in more than 50,000 collisions with deer.

Much of the danger is not only in the size of moose — they weigh anywhere from 800 to 1,300 pounds — but also their height. Grown moose stand at least 5 feet at the shoulder, which means an impact with their legs tends to send their massive bodies into windshields and onto roofs.

Cost is also a factor. The average car collision with a moose runs more than \$44,500 in medical bills and vehicle damage, according to the Center for Large Landscape Conservation. That's almost \$4.5 million spent on moose collisions within 2 miles of the highway intersection in the past 20 years.

The reconstructed intersection and corresponding underpasses and fencing hope to address some of these concerns, said Amy Ramage, Teton

County engineer. What Ramage calls the “Cadillac solution” suggests four underpasses at highways 390 and 22 in addition to the new Snake River Bridge. The underpasses would allow moose the ability to move back and forth without stepping foot on one of the roads.

It sounds ideal, and history in Wyoming shows that underpasses — and overpasses when necessary — work. Thousands of deer and pronghorn use over and underpasses at Trappers Point south of Jackson each year. WYDOT estimates the passes, along with fencing, reduce wildlife collisions by an average of 87 percent. The intersection of highways 22 and 390 is in a complicated location because of development and terrain, which means even underpasses won't work 100 percent of the time, but they will help, Courtemanch said.

They're also not cheap. Each underpass can cost anywhere from \$750,000 to \$3 million, Compton said.

New license plates passed by the Wyoming Legislature in 2018 can help with some of the cost. In just the first five months of the year, the



A cow moose lies dead after being struck by a vehicle along Wyoming Highway 390 between Jackson and Teton Village.

plates raised nearly \$100,000 for highway projects to reduce wildlife-vehicle collisions in Wyoming. But creating the ideal number of passageways for the moose will take fundraising and collaboration, something Mobeck and other area nonprofits such as the Greater Yellowstone Coalition understand.

“There isn't one formula for getting these projects funded,” said Chris Colligan, wildlife program coordinator with the coalition. “They've all been very dynamic.”

### Community involvement

Wilson resident Horton Spitzer helped lead the charge for signs, signals and a reduced speed along Highway 390. He was tired of seeing moose get hit by vehicles and promised an ailing friend that he would do what he could for the valley's wildlife.

“The moose population here on the Village Road is markedly less than 10 years ago,” Spitzer said. “Why, I don't know. It could be the number of kills we've had.”

He says drivers need to keep slowing down. Spitzer nearly hit a moose on Highway 390 one night when it appeared in his headlights. He was traveling 35 mph and managed to avoid it but likely would have collided with the moose if he'd been going 45 mph, the daytime speed limit.

Other Teton County residents have become

more involved. Locals built cutouts of moose covered in bright paint and glitter to alert drivers to the presence of the animals. People have also trimmed bushes on the side of the road to increase visibility.

Spitzer has noticed a change in driver behavior and a drop in moose casualties. But as much as he doesn't want to see millions of dollars go to underpasses, he sees the utility in areas like the Snake River Bridge that are already slated for renovation.

But before plans are finalized, construction begins and moose mosey under the road instead of across it, Game and Fish needs to better understand their movements.

By late-April, one month after that grumpy cow moose was darted on a porch, she had only moved about a mile and hadn't crossed a highway yet. But others crossed highways 22 and 390 between one and five times, and one moose crossed no less than 15 times.

It's that kind of data, Courtemanch said, that WYDOT, Teton County Engineering and Game and Fish need if the iconic herd is going to continue to impress and inspire millions of visitors a year.

— Christine Peterson has spent nearly a decade writing about Wyoming's fish, wildlife, outdoors and environment. She now works from her home in Newcastle.

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