A tough riddle: Where does the wildlife cross the road?

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By ROB CHANEY of the Missoulian

For every deer in the headlights, there's probably a half-dozen more in the roadside bushes.

That's the tale of the tracks along Highway 83 north of Seeley Lake, a road notorious for white-knuckle deer-dodging. A few days after every snowfall, Condon resident Adam Leiberg checks the barrow pits for prints of potential crossers.

“The wildlife tend to hold up right before the highway,” Leiberg said. “A lot of times, you'll only see one animal crossing. But if you go just into the forest, you see all kinds of animals working around back there.”

Leiberg is a project manager for NorthWest Connections in Condon, and has been spending the past three winters cataloging animal activity along Highway 83 for the Montana Department of Transportation. Along with deer, he's found sign of everything from shrews and weasels to moose and bear. In one stretch north of Seeley Lake, he found the trifecta of Montana feline predators: mountain lion, bobcat and lynx prints.

The goal is to improve on the old “leaping buck” deer crossing signs. Finding where animals cross and better understanding their crossing behavior helps highway engineers design safer roads.

You might think a simple body count would solve that puzzle: Mark where the animals get hit and put signs there. But MDT biologist Pat Basting said it's not so easy.

“There may be areas where they aren't getting hit and are crossing successfully,” Basting said. “But should traffic patterns change, the whole movement pattern could change on you. And changes are occurring on the landscape so fast, it's tough to keep up with them.”

For example, deer and elk in the Seeley-Swan Valley are sensitive to snow depths. In winter, they funnel through a few low-elevation places where snow is lightest. But in the rest of the year, they might cross anywhere along the highway where the timberline gives them enough security.

Add in a new vacation home or livestock operation, and a formerly quiet stretch of pavement can become uncomfortable to wildlife. So the critters pick a new crossing, and present new hazards.

Signs have limited benefit. Basting said if a warning sign prevents one accident, it's paid for itself. But as a wide-area defense, there's limited effect.

“You might as well have something underneath that says ‘next 43 miles,' he said. “Drivers' attention spans just won't go that far. People might be alert for the next half-mile or mile, but they just keep driving.”

The next step is to come at the problem from the animals' perspective. Research such as Leiberg's indicates wildlife like a good amount of cover in which to hide while they summon the courage to cross highways. So tinkering with the tree line along roads can discourage them from using places that are especially risky for motorists, like curves or dips.

Beyond that, matters get expensive. U.S. Highway 93's reconstruction sports about 15 miles of new fencing between Evaro Hill and Polson. A similar amount is appearing between Missoula and Hamilton.

The 8-foot-high barriers guide deer and elk to underpasses that provide safe crossings without ever getting in the way of drivers. Should a critter end up between the fences on the roadway, there are "jump-out" ramps that let them exit.

"It's pretty incredible," Basting said. "Some animals started using the underpasses even before we had the fences buttoned up."

Such fences cost $26 to $40 a meter for construction. Depending on materials and size, the underpasses can run several hundred thousand dollars for basic large-opening culverts to $15 million for landscaped overpasses like Canadian highways use.

Highway consultant and retired Forest Service biologist Bill Ruediger has been working on several animal crossing projects with between $100 million and $200 million in built features. Despite the eye-popping price tags, he said they pay for themselves quickly in accident reductions.

"Far more people are killed hitting whitetail deer than die in all air accidents, private and commercial," Ruediger said. "Yet we put huge amounts of resources into air safety. And tort claims have hit DOTs (departments of transportation) for millions, because they didn't fix these problems."

While the science is pretty sound showing that such crossings work, each one must be adapted for the local animal population. A misplaced bit of shiny metal or a squeaky joint can scare critters off. Migratory herds may take a few seasons to learn locations of crossings, while local deer may start using them, as Basting said, before they've finished construction.

Then there's the question of who uses them. While deer and elk are the most common roadside suspects, predators like bears and lions use them as well. Effective crossings can have a biological benefit by helping endangered species mingle between population centers.

"Those Trans-Canada highway crossings are as much for the Americans to preserve our wildlife as for the Canadians," Ruediger said. "Look at the grizzly. It's a very low-density species and there's not many of them. If a population is connected from Yellowstone to the Continental Divide, you've got 800 to 1,000 individuals. Each ecosystem alone would be half that or less."

Car collisions have killed three federally protected grizzlies in the Seeley-Swan recently. Researchers like Leiberg never see the hibernating bears' prints in their snow surveys, but they know the predators like to prowl the barrow pits in spring and fall, looking for roadkill.

"Walking that on foot, you can see what a daunting task that is for any critter to try and cross," Leiberg said. "It's hard to judge how fast these cars are coming at you. It didn't take me long to realize driving Highway 83, if you want any chance to stop when a deer jumps in front of you, you need to drive 55 mph. And the speed limit's 70."
