Environment

The Seattle Times

Cascade critter crossings: How I-90 became safer for wildlife, drivers

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1 of 3 | A coyote crosses the Keechelus Lake Overcrossing. (Courtesy of WSDOT)

By Vonnai Phair
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Interstate 90 fractures the spine of the Cascades at its midpoint.

For wildlife that once freely roamed the region from Canada to Oregon, the highway was an impassable barrier — until the Washington State Department of Transportation started building wildlife crossings in Snoqualmie Pass 15 years ago.

The structures now help thousands of animals each year cross the state's busiest east-and-west artery and one of the nation's busiest mountain highways. By 2031, the 15-mile, $1 billion project will feature 16 more crossings.

For wildlife that once freely roamed the Cascade crest from Canada to Oregon, Interstate 90 was an impassable barrier. Now, with wildlife crossings over and under the highway, thousands of animals can safely traverse the interstate. Watch elk, martens, coyotes, moose and more run, play and graze through these crossings. (Courtesy of WSDOT and Conservation NW, edited by Lauren Frohne / The Seattle Times)

“These animals have life functions that occur across the landscape, and if they are not able to get around, it affects their ability to thrive in this environment,” WSDOT biologist Mark Norman said.

“We’re doing what we can to help facilitate them.”

A connected, protected ecosystem

Snoqualmie Pass once was a patchwork of sorts, a checkerboard of nearly 45,000 acres owned by railroads and timber companies before state and federal agencies and conservation groups started managing the land a couple of decades ago.

But for the thousands of species that call the Cascades home, the old-growth forest ecosystem, from the lowland woods to the alpine lakes and glaciers, has only one border: I-90.

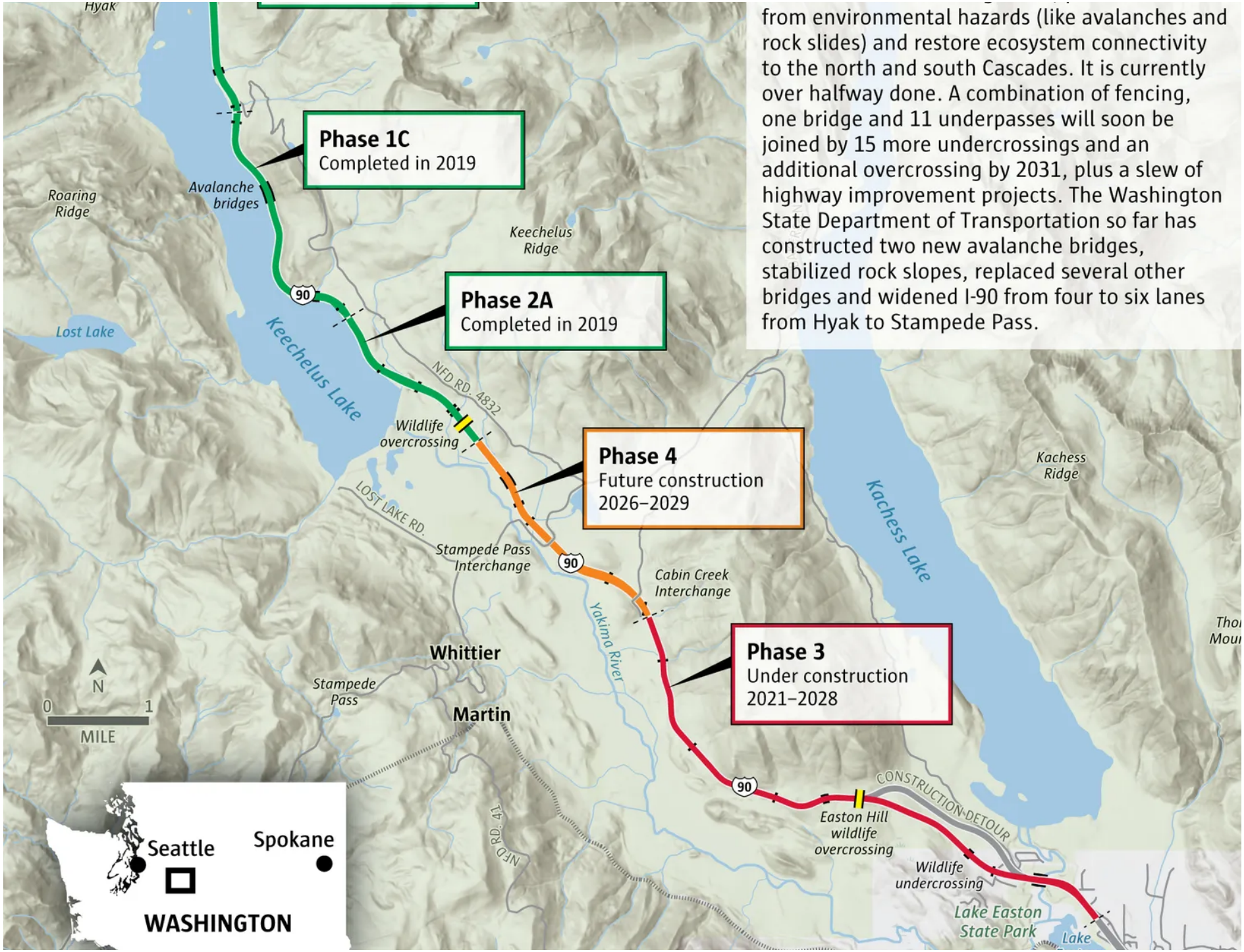
“Put yourself in a bobcat’s paws,” said Jen Syrowitz, with Conservation Northwest, the group that bought the land from private companies and donated it to the federal government.

As linear infrastructure slices access to the food, water, shelter and space needed for long-term survival, viable populations and the diversity of species in the Cascades, especially those with home ranges that stretch from the Columbia River Gorge to the North Cascades, are threatened. Animals’ health declines and populations shrink, she said.

“We know that the smaller a population gets, you can go down a road to extinction,” she said.

By the 1990s, traffic on I-90 between Hyak and Easton had already swelled. The road, also plagued by avalanche closures during winter, was becoming dangerous for drivers and animals alike.

In 1999, WSDOT launched the Snoqualmie Pass East Project to make the highway safer and alleviate congestion. Prodded by the U.S. Forest Service, which owns the surrounding land, WSDOT also sought to restore ecosystem connectivity in the Cascades.


from environmental hazards (like avalanches and rock slides) and restore ecosystem connectivity to the north and south Cascades. It is currently over halfway done. A combination of fencing, one bridge and 11 underpasses will soon be joined by 15 more undercrossings and an additional overcrossing by 2031, plus a slew of highway improvement projects. The Washington State Department of Transportation so far has constructed two new avalanche bridges, stabilized rock slopes, replaced several other bridges and widened I-90 from four to six lanes from Hyak to Stampede Pass.
Hyak
Phase 1C
Completed in 2019
Avalanche bridges
Roaring Ridge
Keechelus Ridge
90
Phase 2A
Completed in 2019
Lost Lake
Keechelus Lake
NFD RD. 4832
Wildlife overcrossing
Phase 4
Future construction
2026–2029
Kachess Ridge
LOST LAKE RD.
Stampede Pass Interchange
90
Cabin Creek Interchange
Kachess Lake
Yakima River
Phase 3
Under construction
2021–2028
Whittier
Stampede Pass
Martin
N
0
1
MILE
CONSTRUCTION DETOUR
90
Easton Hill wildlife overcrossing
Wildlife undercrossing
NFD RD. 41
Lake Easton State Park
Lake
Seattle
Spokane
WASHINGTON

Sources: Washington State Department of Transportation, Esri FIONA MARTIN / THE SEATTLE TIM

The project required a coalition of dozens of conservationists, government agencies and construction crews whose work does not typically intersect — from the United States Forest Service to Kittitas County, the state Department of Fish and Wildlife to the Federal Highway Administration. Their work together began in the 1990s and continues today.

Across the state, the same collaboration can be found on Highway 97, with work to add crossings and fencing, and Interstate 5, with work to connect habitat in the Cascades to the Olympics.

How does a critter cross the road?

For years before construction began, WSDOT and a team of partners focused on finding where exactly wildlife crossed I-90 — or tried to cross and then turned back. They evaluated the highway's existing culverts and bridges to see what could easily be tweaked to accommodate wildlife. They monitored on-the-ground movement and tracked roadkill statistics to determine where to place each crossing, both big and small, under and over the highway.

Completed in 2019, Washington's first highway overcrossing mimics the smooth curve of forested hills and arches over the concrete tubes of I-90.

Located just east of the Keechelus Dam and named after Price Creek, the overcrossing spans 150 feet wide and stretches 60 feet into the air, with 8-foot walls bordering the bridge along its crest.

WSDOT placed many crossings near streams, as infrastructure was already in place to allow water to flow freely beneath the highway, according to agency biologist Norman, who has worked on the project since 2006.

As for the existing Price Creek Sno-Park and rest area, "the disturbance was already there," Norman said, which, with the overcrossing, WSDOT incorporated into a restored habitat.

The project's second overcrossing, which is currently being constructed, will be near Easton. WSDOT expects it will attract a similar suite of species as the Price Creek overcrossing, with the addition of mountain goats, which travel up to I-90 from the Green River area.

WSDOT also built 11 undercrossings beneath I-90. Often unnoticed by drivers, these structures help shyer animals move across the landscape. The structures also help reconnect streams and wetlands, critical for aquatic species such as bull trout and coastal giant salamander.

The project's largest undercrossing is a 1,100-foot-long bridge completed in 2013 at Gold Creek, right after Hyak, that re-connects Lake Keechelus with wetlands previously cut off by I-90.

Only a few animals could navigate the embankments surrounding the old 150-foot-long Gold Creek bridge. Now, the creek flows freely, teeming with fish swimming upstream and animals traveling through the flood plain of the lake.

The project has additional undercrossings in the works, like a pair of 300-foot bridges that "will just be massive," Norman said.

Thousands of volunteers with groups like the U.S. Forest Service and Conservation Northwest worked to revegetate the current crossings. They planted 80,000 plants — like red elderberry, western sword fern and Douglas fir — in the surrounding landscape to make the crossings more natural and attractive to wildlife.

A woven metal funnel of fencing surrounding the crossings helps guide animals to them. The fencing reduces collisions between vehicles and large animals (mainly elk, deer and moose) by 80% to 99%, according to WSDOT.

Over and under

The Snoqualmie Pass East Project is currently over halfway done.

A combination of fencing, one bridge and 11 underpasses will be joined by 15 more undercrossings and an additional overcrossing by 2031, plus a slew of highway improvement projects. The agency so far has constructed two new avalanche bridges, stabilized rock slopes, replaced several other bridges and widened I-90 from four to six lanes from Hyak to Stampede Pass.

But even halfway through, the project has already left plenty of marks.

By the end of 2023, WSDOT recorded the 25,716th safe wildlife crossing in the project zone, which included 13,525 by deer, 7,967 by elk, 3,216 by coyote and a handful by rarer species like moose, cougar, American marten, fisher and American pika.

These animals otherwise would have had to try to dodge the 27,000 cars that travel on I-90 through Snoqualmie Pass every day. In reality, the highway "is just untenable for animals to get across safely," Norman said.

Some animals still cross right through the highway the old way. WSDOT removes about 10 animal carcasses each year from Hyak to Easton. Still, the crossings reduced that number, the agency said.

Coyote and deer — which "basically use any structure they can fit their body through," Norman said — began using the crossings almost immediately after they were constructed, even weaving around construction equipment.

Other species were reluctant to use the structures, like elk, which were not observed until three years after the first structures were completed, and carnivores like mountain lions, which didn't use the crossings until 2020.

WSDOT says there are more than 5,000 animals using the crossings each year, as tracked by researchers at Central Washington University since 2008. The number doesn't include small mammals and low-mobility species often missed by cameras, like the northern flying squirrel, Pacific tree frog, banana slug and coastal giant salamander.

Tracking them "would be really tough, especially since a lot of these are actually living in the structures," agency

biologist Josh Zylstra said.

Economical, not just ecological

The benefits of the crossings are not just ecological.

A study found there were one to three fewer collisions involving wildlife per mile each year at 13 Washington wildlife crossings.

The study, published in the Transportation Research Record by Washington State University economics doctoral student Wisnu Sugiarto, found the reduction in collisions saves Washington drivers in total $235,000 to $443,000 annually in damage and repair costs per structure.

Sugiarto noted similar evidence of the benefit of wildlife structures has been found by studies in North Carolina, Utah and Wyoming. Abroad, studies have shown wildlife crossings save money and lives, both human and animal, including saving jaguars in Mexico and wallabies and bandicoots in Australia.

A network of wildlife crossings in strategic locations across the state will soon join the crossings of the Snoqualmie Pass East Project as part of a statewide effort to increase habitat connectivity in Washington.

The Washington Habitat Connectivity Action Plan, which the Legislature funded last year, will place decades of science and data built up in Washington into action.

Syrowitz, with Conservation Northwest, said the plan, set to be completed in June 2025, will increase the number of wildlife crossings in strategic locations across the state, while promoting land-use planning and acquisition to conserve and restore habitat.

With any number of the state's current wildlife connectivity projects, the vision is the same, Syrowitz said: "A fisher, a wolf or any number of species moving through these spaces, finding all that they need in the environment to thrive."

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