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Contacts:

Makensie Brown, Wildlands Network, makensie@wildlandsnetwork.org

Emily Diamond-Falk, The Pew Charitable Trusts, ediamond-falk@pewtrusts.org

Christine Gianas Weinheimer, Center for Large Landscape Conservation, christine@largelandscapes.org

Kyle Kissock, Jackson Hole Wildlife Foundation, kyle@jhwildlife.org

Stephen Sautner, Wildlife Conservation Society, ssautner@wcs.org

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Experts agree on the need for climate-informed wildlife crossings

They call for action and share recommendations for how infrastructure can help nature adapt to a changing climate now and in the future

Washington, DC – More than a dozen climate, wildlife, and road ecology experts from across the country wrote a [consensus statement](#) urging government officials at all levels to consider climate change when planning and constructing structures that help fish and wildlife cross under and over highways. As the [appetite increases](#) for solutions that improve wildlife migration and movement while reducing wildlife-vehicle collisions, there is a heightened need and opportunity for designing infrastructure that is sited and designed in ways that accommodate the current and anticipated impacts of climate change.

“If we don’t consider the currently changing climate and its impacts at ecologically relevant scales when designing roadway mitigation for wildlife, then we risk missing an important opportunity to plan synergistically, addressing multiple environmental threats at the same time,” says Renee Seidler of the Jackson Hole Wildlife Foundation.

The consensus statement can be found [here](#).

Climate-informed wildlife crossings, including fish passage, would help both people and nature adapt to climate change. For instance, upsizing stream culverts under our roadways would protect infrastructure and communities during extreme flooding, while also allowing both fish and wildlife to successfully migrate.

The “Joint Statement Regarding Climate-Informed Wildlife Crossings” was first envisioned in November 2022, when leading experts met to discuss how wildlife crossings can serve as an important tool in addressing climate change and bolstering the resilience of ecosystems and infrastructure. The outcome is a set of recommendations for incorporating wildlife crossings as a critical element of community and government climate response strategies.

The experts cautioned in the [statement](#),

“As effective as wildlife crossings can be, their siting and design too often fail to account for climate impacts. Incorporating these considerations is increasingly important to support climate-driven wildlife movements and range shifts.”

The experts’ statement urges decision makers to use a strategic and collaborative approach when planning for and building wildlife crossings. It also includes a call to action and recommendations for implementing climate-informed wildlife crossings that will enhance ecosystem resilience and facilitate adaptation. Indeed, one of the [most effective strategies](#) for protecting biodiversity in the face of a changing climate is to ensure wildlife habitats are connected on a landscape scale.

Wildlife crossings save lives and money by dramatically reducing wildlife-vehicle collisions. They also enhance the resilience and adaptive capacity of ecosystems by giving animals the ability to safely travel throughout their annual migration routes. Yet climate change is causing species to shift their ranges. The statement emphasizes that wildlife crossings could provide an even greater mitigation value if decision makers account for range shifts when planning new infrastructure.

Additionally, wildlife crossings have an exceptionally high return on investment, [yielding annual benefits of \\$250,000 to \\$443,000](#) per structure. For example, the Lava Butte underpass near Bend, Oregon reduced wildlife-vehicle collisions by more than 85%, and Utah saw a [98.5% reduction in deer mortalities](#) when it built two animal underpasses on a stretch of highway that blocked traditional migratory routes. Additionally, crossing projects in other states are projected to pay for themselves over a [relatively short period of time](#).

Some states, such as [California](#), are looking for opportunities to simultaneously address the climate-related vulnerabilities of their transportation systems and improve habitat connectivity by incorporating wildlife crossings into planned infrastructure upgrades. This allows state agencies to address adaptation priorities for both transportation assets and ecosystems, thereby leveraging infrastructure investments for multiple benefits to communities and nature.

If policy makers and agencies adopt climate-informed planning for wildlife crossings, the result will be a modernized and cost-effective transportation network that saves human and animal lives, enhances the resilience and adaptive capacity of ecosystems, and improves infrastructure durability in the face of climate impacts.

Quotes for media from Consensus Statement authors

“As Federal, Tribal, State, and local decision makers begin to replace their highest priority transportation assets over the next decade-plus, they will be presented with opportunities to improve those facilities in ways that enhance terrestrial and aquatic connectivity, while at the same time making them more resilient and sustainable in the face of our changing climate and increased risk of extreme weather. This coming wave of infrastructure investment offers a once-in-a-lifetime opportunity to prototype and integrate the next-generation of climate-smart wildlife crossings into America’s 21st century transportation network.”

- Renee Callahan, executive director of ARC (Animal Road Crossing) Solutions, an interdisciplinary partnership working to reweave habitats severed by roads

“With the increasing frequency of extreme weather events that overwhelm and damage highway drainage culverts and small bridges, oversizing such structures to better accommodate future flooding events can also present opportunities to create cost-effective wildlife passage structures that promote habitat connectivity and climate change resilience for wildlife and highway infrastructure alike.”

- Norris Dodd, wildlife connectivity specialist and practitioner with AZTEC Engineering Group

“Wildlife crossings are a proven solution that enhance the resilience and connectivity of both transportation and ecological networks. By planning and constructing these structures with climate change in mind, we make smarter infrastructure investments. Adopting these expert recommendations will ensure species can move safely across landscapes and drivers can move safely across highways for generations to come.”

- Anna Wearn, director of government affairs at the Center for Large Landscape Conservation

"The last two decades have seen amazing advances in our understanding of how animals move across the landscape and how wildlife populations are shifting in response to climate change. With guidance from the new expert recommendations, decision makers and planners can harness this wealth of information to ensure our road networks support rather than disrupt these critically important ecological processes."

- Dr. Justin Suraci with Conservation Science Partners

“With the recent infusion of federal infrastructure funding we have a once-in-a-generation opportunity to upgrade the nation’s transportation systems to be resilient and durable. These recommendations provide the specific guidance for making strategic investments in climate-informed infrastructure with long-lasting benefits for wildlife and ecosystems as well as human communities and economies.”

- Julia Kintsch, principal and senior ecologist at ECO-resolutions

“Decision-makers now have important building blocks to develop appropriate policies and funding streams for wildlife-friendly infrastructure that can help adapt to migration pattern changes caused by climate change.”

- Matt Skroch, project director with The Pew Charitable Trusts’ U.S. public lands and rivers conservation project

"Plants and animals have been moving across the landscape to adapt to changing climates for millions of years. By building wildlife road crossing structures the right way in the right places, we can make sure that successful climate migration continues into the future, so we don't lose species that run into otherwise lethal highway barriers."

- Dr. Ron Sutherland, chief scientist at Wildlands Network

“The good news is there are ways to strategically design crossing structures to provide safer passage for drivers as well as fish and wildlife in the face of a changing future. For example, replacing poorly functioning culverts with ones designed to accommodate bigger and more frequent floods will protect infrastructure and people while also allowing fish to migrate safely.

Similarly factoring future climate conditions and wildlife movement needs into the design of all transportation infrastructure will lead to more durable outcomes for both nature and people.”

- Dr. Molly Cross, director of science for the Wildlife Conservation Society's Climate Adaptation Fund

“Leaders and practitioners can work to identify the areas where wildlife and fish need to move that are bisected by roads, and where those movements will be critical to adapting to climate change. Our efforts to create a more resilient transportation system in the face of climate change work hand and hand with creating a more connected natural world that too can withstand future changes.”

- Dr. Patricia Cramer, director of the Wildlife Connectivity Institute

“Wildlife crossings are a win-win for people and nature - they help restore the ability of wildlife to move freely across the landscape while keeping motorists safe from collisions. Incorporating climate change considerations into the design of these structures is another win-win, helping ensure our infrastructure investments are resilient to climate impacts while accounting for the even greater movement needs of wildlife as they adapt to rapidly changing landscapes.”

- Dr. Meade Crosby, senior scientist at the Climate Impacts Group, University of Washington

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