

CONNECTING WILDLIFE HABITATS FOR RESILIENT COMMUNITIES

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WHY IT MATTERS

Wildlife crossings are infrastructure, such as overpasses, underpasses, culverts, or fencing, that allow animals to move between habitats. Properly built crossings make our roads safer for wildlife and people, enhance our resilience to climate change, and protect disadvantaged communities.

More wildlife will move across roads as human development increases and animal populations migrate to adapt to changing climates. Virginia is already ranked the 9th worst state in the U.S. for deer-vehicle collisions, worsening from 15th in 2022, with over 60,000 accidents annually costing \$41,000 per collision.^{1,2,3} Most of our existing underpasses lack simple fencing that could significantly reduce wildlife-vehicle conflict.³

Virginia's existing road infrastructure is not prepared to withstand the expected increased flooding as single rainy days and days with heavy rainfall are becoming more frequent in Virginia.⁴ For instance, over 50% of Virginia's culverts block aquatic organism passage and are unprepared for increased flooding, posing significant risks to wildlife.⁵ Properly constructed stream underpasses follow the "geomorphic simulation approach" that allows for "natural system processes including flood resilience and aquatic organism passage." Virginia's culverts and bridges need improvements to be wide enough to maintain the natural stream bank, facilitating the passage of terrestrial organisms, and deep enough to preserve the natural stream channel, ensuring safe passage for aquatic organisms. This thoughtful design not only supports diverse wildlife movement but also accommodates increased flooding, providing a comprehensive solution that benefits both ecosystems and human communities.⁶

Increased flooding and improperly designed infrastructure also impact human communities, especially already overburdened and underfunded communities. Governor Youngkin highlighted this pressing reality in his 2022 Flood Awareness Week proclamation: "Low-income neighborhoods and communities of color are disproportionately affected by flooding events and have a more difficult road to recovery."⁷

CURRENT LANDSCAPE

Connected habitats allow wildlife to move and adapt to changing conditions, yet current Virginia environmental action plans intended to improve climate resilience fail to integrate connectivity and animal passage efforts. For instance, planning documents

like the 2021 Coastal Resilience Master Plan and VDOT's Resilience Plan do not address wildlife passage needs despite emphasizing "the construction of features that replicate or enhance natural conditions and ecosystem services."^{8,9}

Even with recent laws aimed at enhancing connectivity, like the recently released 2023 Virginia Wildlife Corridor Action Plan (WCAP), state agencies are still not required to address barriers to wildlife movement and climate resilience on road projects. The WCAP identifies areas of high wildlife-vehicle conflict yet merely encourages the consideration of wildlife crossings with no specific wildlife passage design standards akin to the geomorphic simulation approach mentioned above.¹⁰ Without stronger requirements and design standards, critical wildlife crossings can be overlooked amidst other priorities or built poorly. Also, requiring wildlife passage and flood resilience standards for all infrastructure projects will help secure more federal funding, like how the priorities outlined in WCAP helped VDOT secure \$600K for the federal Wildlife Crossings Pilot Program in 2023.¹¹

In addition to lacking design standards that integrate wildlife movement with climate resilience, state agencies do not have the budget for the research and construction of infrastructure that would benefit ecological and human communities. A dedicated state Wildlife Corridor Fund will fill these budget gaps and give access to federal funding by providing state matches. By establishing such a fund and harnessing climate resilience funds like the \$2B available through the Environmental and Climate Justice Community Change grant program, Virginia could significantly bolster its ability to attract federal resources for wildlife crossings and infrastructure resilience.

OPPORTUNITIES

Incorporating clear requirements for aquatic and terrestrial wildlife passage and provisions for habitat connectivity into road infrastructure planning would enhance the resilience of Virginia's wildlife and communities. Statewide standardized data collection from state agencies, local advocacy groups, and citizen scientists could guide infrastructure development and future planning based on the most accurate data available on wildlife-vehicle collisions and key corridor protection opportunities. Mandating the inclusion of wildlife crossings in all road development projects can boost climate resilience, promote safer communities, and create more connected landscapes for wildlife.¹² Utilizing updated design standards that reflect the latest science on

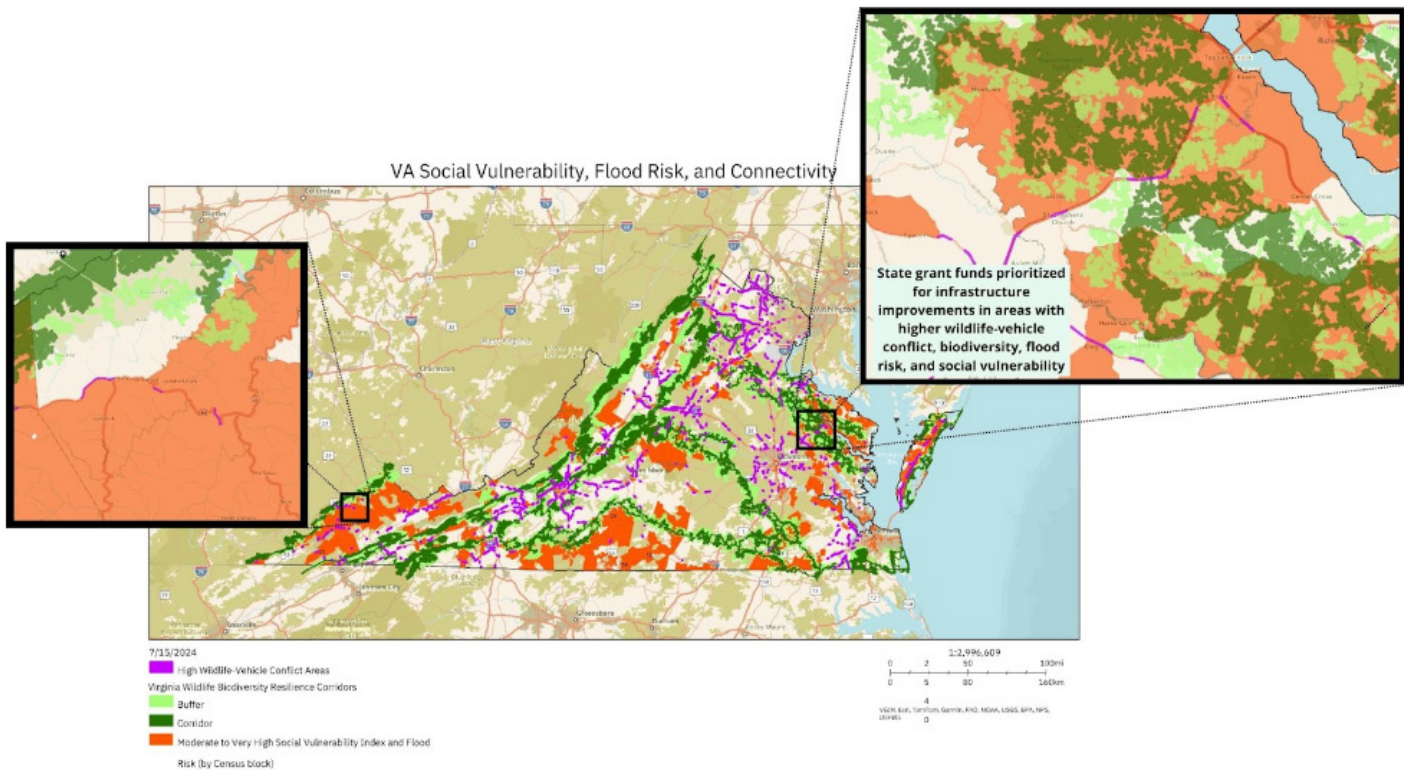
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wildlife movement for crossing ensures infrastructure delivers functional habitat connectivity and increases human safety while fortifying ecosystems against changing environmental conditions.

A dedicated state Wildlife Corridor Fund would allow Virginia to take advantage of any potential required state match to access federal dollars drawn from both habitat connectivity and climate resilience funds. Additionally, allowing state, private, and non-profit partners access to a Wildlife Corridor Fund increases the likelihood of statewide corridor goals being implemented appropriately at local and

regional levels, prioritizing safety, connectivity, and environmental justice. To ensure proper distribution of resources, state agencies could allocate funding based on WCAP priorities with a bulk of the funding for projects in communities overburdened from climate effects and underserved. Lastly, this state fund could also collect and manage private donations to foster public input and long-term enthusiasm for community connectivity efforts. In summary, a state fund would help build state staff capacity and foster public-private partnerships for wildlife crossings, corridor efforts, and landscape-scale connectivity.



Areas (orange) in Virginia where both the Social Vulnerability Index (SVI) and flood risk are relatively moderate to very high. Areas in purple show high wildlife-vehicle conflict and areas in green (dark and light) are Biodiversity Resilience Corridors, i.e., areas of current and future high volume wildlife movement between habitat cores, from Virginia's Wildlife Corridor Action Plan. Image created by Wildlands Network and Wild Virginia with data from U.S. Census Bureau, Virginia's Wildlife Corridor Action Plan, and The Nature Conservancy.

TOP TAKEAWAYS

Virginia is already ranked the 9th worst state in the U.S. for deer-vehicle collisions, but improvements to current infrastructure can lessen wildlife-vehicle conflict while also enhancing flood resilience.

The 2023 WCAP identifies areas of high wildlife-vehicle conflict; however, state agencies are still not required to take action and mitigate barriers to wildlife movement.

A dedicated state Wildlife Corridor Fund would allow Virginia to leverage federal dollars available through habitat connectivity and climate resilience programs.