

ENSURING RESILIENT ECOSYSTEMS THROUGH WILDLIFE CORRIDOR PROTECTION

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EXECUTIVE SUMMARY

Wildlife corridors, or connections between patches of important habitat,¹ protect public health,² reduce wildlife-vehicle collisions,³ allow wildlife to move to more suitable habitats, and make our state more resilient in the face of a changing climate.⁴ Protecting wildlife corridors helps to keep our ecosystems intact. Virginia's General Assembly took great steps forward in 2020 and 2021 passing bills like the Wildlife Corridor Action Plan⁵ that will improve the identification of wildlife corridors and develop a coordinated strategy to protect them. However, there remains much work left to do.

CHALLENGE

Virginia's current road infrastructure does not meet the needs of aquatic and terrestrial wildlife, and it is not resilient in the face of a changing climate. Over 70,105 miles of roads carve Virginia's land into pieces.⁶ Only 41% of the natural land area in the United States retains enough connectivity to facilitate species traveling to their preferred climate conditions.⁷ This vast network of roads creates barriers to safe passage for terrestrial and aquatic species and poses a threat to the safety of human communities. Virginia is considered a "High Risk" state for wildlife/vehicle collisions according to State Farm collision data; the 12th most dangerous state in the nation. Drivers on Virginia roads had a 1-in-72 chance of an animal vehicle collision in 2020.⁸ More worryingly, we know that there are many more unreported wildlife/vehicle collisions on our roads.⁹ A better system to track the true scale of the problem is needed.

Over 70,105 miles of roads carve Virginia's land into pieces.

Aquatic organisms suffer from our vast network of roads. Undersized culverts can block the

movement of aquatic species, damage roadways, erode streambanks, and restrict spawning migrations of culturally significant species like shad and river herring. Two assessments of road-stream crossings in Virginia found 54% of crossings in Blue Ridge headwater streams and 58% of crossings in the coastal plain were impeding fish movement.^{10,11} Because climate change is expected to increase the frequency and intensity of flooding,¹² there is a clear need for additional assessments of aquatic passage and improving culverts throughout the state.

SOLUTION

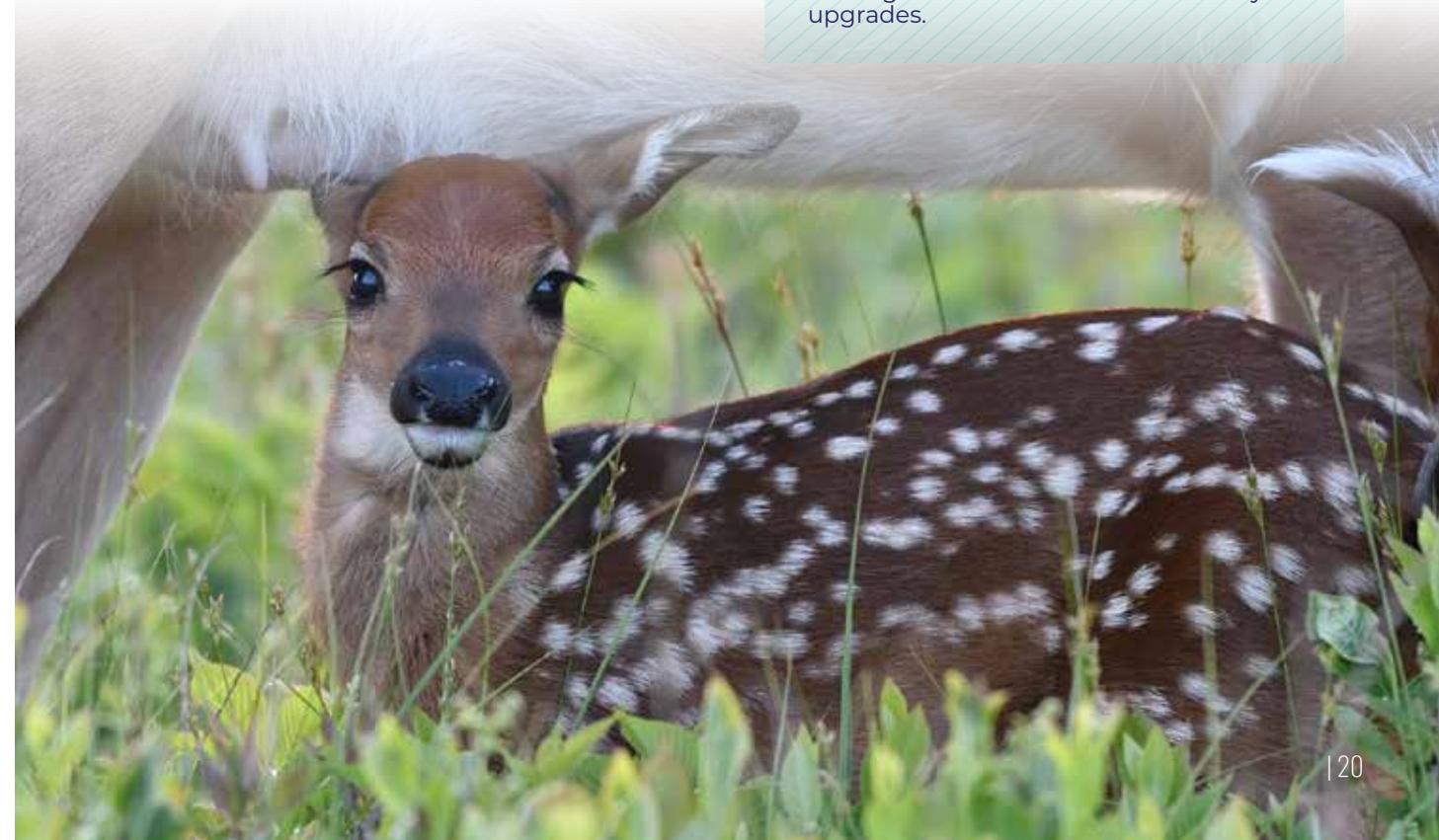
Wildlife crossings, which are overpasses or underpasses that allow wildlife to cross above or below a road, have decreased wildlife/vehicle collisions in Virginia up to 92% when combined with exclusionary fencing.¹³ Crossings make roads safer for both citizens and wildlife and reduce costs associated with wildlife collisions. The General Assembly passed excellent bills in the last two years that began the work of protecting wildlife movement, but funding is still needed to support the agencies, partners, and private landowners who must all work together to truly protect and restore wildlife corridors and create safe passage for our terrestrial and aquatic species. In addition, immediate changes to current policy and funding criteria are needed to allow easy and cost-effective solutions like adding exclusion fencing along roadways where culverts or other underpasses already exist. These solutions should proceed as safety fixes under VDOT's current routine building program without the delays and the local match required for Transportation Alternatives Program (TAP) grants. Virginia Transportation Research Council (VTRC) research has already demonstrated a greater than 90% reduction in collisions where fencing is added to existing safe crossings.¹⁴ We must also allocate the funds needed to

incentivize landowners to protect and restore wildlife movement corridors.

An accurate understanding of the scale of wildlife-vehicle collisions is also critical to the success of the Wildlife Corridor Action Plan. VDOT must standardize its methodology of recording and analyzing animal carcass data, and make these data publicly available. Similarly, much more data is needed to fully identify and prioritize barriers to aquatic organism passage (AOP) throughout Virginia. While there have been a handful of regional initiatives to survey road crossings for their impacts to aquatic life, there has been no statewide effort. A coordinated survey effort is needed. VDOT must also determine AOP status of a road-stream crossing prior to replacement/repair projects and update its design standards to ensure habitat connectivity and resiliency for all road-stream crossing projects.

Protected Under Mother's Shadow White-Tailed Deer Fawn (*Odocoileus virginianus*)

Image credit: Larry W. Brown



POLICY RECOMMENDATIONS

Direct VDOT to systematically collect wildlife carcass removal data across Virginia and make that data publicly available.

Provide incentives for landowners to protect and restore wildlife corridors.

Provide resources to the Department of Wildlife Resources and partners to launch a statewide effort to assess barriers to aquatic connectivity and make the data publicly accessible.

Direct VDOT to determine the Aquatic Organism Passage (AOP) status of a road-stream crossing prior to replacement/repair projects and update design standards to ensure habitat connectivity and resiliency for all road-stream crossing projects.

Direct VDOT to include exclusionary fencing in annual allocations for safety upgrades.