



Assessing Road Impacts and Mitigation Options for Wildlife in Kafue National Park and the Greater Kafue Ecosystem, Zambia

EXECUTIVE SUMMARY

The M9 highway through Zambia’s Kafue National Park is an important route for motorists but for many animals it is also a dangerous barrier. Our assessment set out to understand exactly where and how this road is putting wildlife at risk. By layering maps of movement patterns and mortality records, we uncovered the hotspots where animals are most vulnerable to road impacts—places where they gather to feed, migrate, or find water. With these insights, we can now recommend targeted solutions to make the road safer for wildlife while keeping people moving.

Why Do We Need an Assessment?

Kafue National Park (KNP), Zambia’s largest and oldest protected area, is a biodiversity stronghold hosting elephants, lions, cheetahs, wild dogs, and Africa’s richest antelope community. The park’s wildlife and healthy, functioning natural systems are key parts of the local economy. Since a 2006 upgrade of the M9 highway, which is the main road through the park, increased traffic speed and volume have driven higher rates of wildlife mortality of most species and disrupted their natural movements to find food, water and mates, reducing wildlife populations and challenging their long-term survival.

This project, built on previous studies and partnerships, was initiated to investigate and provide recommendations to protect the ecological and economic value of KNP and surrounding areas and to develop transferable protocols and recommendations for road ecology across Africa.

Impact

The approach used and the recommendations generated in this study are relevant and replicable across Zambia and in the larger region.

The data collection and ongoing monitoring protocols developed for the project are low-cost, high-impact, easy to implement, and leverage existing data that most parks already collect.

This study identified locally relevant, low-cost, high-impact road mitigation recommendations that will improve safe passage for wildlife along the M9 corridor. These recommendations also:

- Can be implemented immediately and inexpensively on the M9
- Are applicable throughout Zambia and surrounding region
- Should be considered in all new road building and road upgrades, and should be instituted and maintained as part of routine maintenance
- Provide a blueprint that can be used to mitigate impacts to wildlife from roads, including funding mechanisms, policies, and procedures for road building and maintenance and in land use planning
- Ensure new road construction protects people and wildlife, some of Zambia's most important resources

Main recommendations

Immediate priorities include speed reduction, combining movable or permanent speed humps with shoulder impediments, enforcement of speed limits (patrols, speed traps, and monitoring of travel times at park gates), and clear signage to support compliance.

Medium-term actions focus on minimizing wildlife attraction near roads by relocating artificial water sources, restricting nighttime truck traffic and systematic speed enforcement (possibly with fines).

Long-term considerations include revisiting the need for dedicated wildlife crossing structures, developing a comprehensive land use plan for the adjacent Mumbwa Game Management Areas to regulate settlement and resource use, and strengthening policy frameworks for funding, effective implementation, and enforcement.



Methodology

- Comprehensive, systematic data collection included roadkill counts and location, live animal sightings near the road, wildlife movement measured by telemetry, and traffic volume.
- Animal species were ranked into groups by their conservation concern status. The data for each group was analyzed separately, then later combined to identify priority road segments for mitigation measures to prevent wildlife-vehicle collisions and other impacts.

Key Findings

- This study recorded 58 species during roadkill and animal count surveys, including lion, hyena, wild dog, cheetah and leopard.
- The road corridor, heavily used by wildlife, is an ongoing risk for the survival of individual animals as well as for whole animal populations.
- Records of roadkill carcasses and live animals are unevenly distributed along the M9 road, concentrating near water sources.
- The study identified priority road sections to apply mitigation measures.

The full report will be available soon to view and download at:

[Largelandscapes.org/kafue](https://largelandscapes.org/kafue)

