

Road may disrupt migration, ruin Serengeti, study finds

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Building a highway through Serengeti National Park may devastate one of the world's last large-scale herd migrations and the region's ecosystem, according to new research by an international team of ecologists, including a University of Guelph professor.

The study by John Fryxell, a Guelph [integrative biology](#) professor, and four other scientists from the United States and Canada appears in a recent issue of [PLoS ONE](#), a peer-reviewed international journal published by the Public Library of Science.

The researchers studied the effects of a proposal by the Tanzanian government to build a road that would bisect the northern portion of Serengeti National Park.

The Serengeti is one of few remaining places where large-scale migrations still occur, with nearly two million wildebeest, antelope and zebras looping the plains from Tanzania to Kenya and back each year.

The researchers found that the road may cause a 35-per-cent reduction in wildebeest herds, plus direct and indirect effects on many other species and ecosystem processes.

The study did not consider other potential negative effects, such as car accidents, development or increased poaching, which would reduce herd numbers even further.

"This project has the potential to transform one of the greatest wonders in the world and one of the world's most iconic national parks," said Fryxell, who worked on the study with lead author Ricardo Holdo from the University of Missouri and professors from the University of British Columbia, Princeton University and the University of Florida.

The researchers used simulation models of wildebeest movement and [population dynamics](#) to predict the effects of the proposed highway, which could block the northern part of the [migration route](#) and access to water in the dry season.

Fryxell said that fragmenting the landscape disrupts movement patterns and the wildebeest's ability to track changes in forage resources across the landscape. The effect would be a one-third reduction in herd size.

"The wildebeest migration plays an important role in a number of key ecological processes, so this finding has important ramifications for ecosystem biodiversity, structure and function," Fryxell said.

Fryxell has studied migration for more than 30 years. Last fall, his research was featured in National Geographic's epic Great Migrations. The seven-part series took three years to produce and was filmed in 20 countries on all seven continents. Fryxell appeared in a segment on the science of [migration](#) that included his extensive footage shot in the Serengeti.

Provided by University of Guelph

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