

Scientists help wildlife parks mobilize against poaching

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Poaching threatens wildlife conservation around the world, and it's a top concern in protected conservation areas and parks, where rangers patrol the wilderness in an effort to deter and document this kind of illegal

activity.

A team of researchers led by scientists at the University of Florida has developed new decision-making tools to help park managers put a dent in the multibillion-dollar [illegal wildlife trade](#) while staying within their budgets.

"Ranger patrols are used in many protected areas around the world as a means to combat illegal activity such as poaching," said Jennifer Moore, a postdoctoral researcher with the UF/IFAS wildlife ecology and conservation department. "Using the tools from this study, the efficiency of ranger patrols can be improved, resulting in further reduction of illegal activity at the same or even lower costs.

When you have hundreds or thousands of square miles to keep an eye on, rangers can't be everywhere at once. Insights from the new study will help park managers strategically deploy patrols.

"Park managers will be able to create maps that show the number of times each area of the park should be patrolled within the course of a year," Moore said. "This helps park managers to plan their patrols and informs where to send rangers."

The researchers developed and tested these decision-making tools with the help of rangers and park managers at Nyungwe National Park in Rwanda.

Analyzing 10 years of poaching data collect by rangers in the park, the scientists arrived at a key insight into how patrols in the park could be reconfigured.

"We found that it is better for ranger patrols to cover more ground than continuously visit the same smaller set of sites," Moore explained.

"Often times sites near ranger posts—where rangers are stationed—are patrolled so often that the amount of poaching in these areas is negligible. Therefore, it is more efficient for the rangers to patrol over a wider area than continuously coming back to these same sites."

Insights like these could help [park](#) managers around the globe direct rangers to where they can do the most to combat illegal poaching and help conserve wildlife. The study also has applications in other areas of natural resources management, the researchers say.

"Our findings are widely applicable to solving special conservation planning problems, for example, to plan patrols of fisheries, control [invasive species](#) or monitor threatened resources such as coral reefs or endangered species," Moore said.

The study is published in the journal *Ecological Applications*.

More information: Jennifer F. Moore et al. Optimal allocation of law enforcement patrol effort to mitigate poaching activities, *Ecological Applications* (2021). [DOI: 10.1002/eap.2337](https://doi.org/10.1002/eap.2337)

Provided by University of Florida

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