

Limits for mountain trail use identified

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A new study on human impact to wildlife in some of Canada's most popular national parks has identified limits at which trails can be used before ecological disturbance takes place. The study led by University of Calgary Masters graduate, J. Kimo Rogala, is published in the current online issue of the journal *Ecology and Society*. Rogala was a student of professor Marco Musiani in the Faculty of Environmental Design.

The research found that wolves and elk were disturbed away from high quality habitat in Banff, Kootenay and Yoho National Parks in areas where human traffic on trails was monitored. In particular, the study found that wolves and elk avoided areas within 50 metres of trail routes travelled by one person per hour or greater; and up to 400 metres from trails with human activity above two persons per hour. Such avoidance behaviours are consistent with previous scientific research; however, the identification of threshold levels at which this occurs is new.

Partially funded by Parks Canada, the research conducted on wolf and elk distributions in Banff, Kootenay, and Yoho National Parks in Canada between 2005 and 2008 also sheds light on the mechanism by which further [ecological changes](#) may be occurring. Results found that at human activity levels below two persons per hour, wolves avoided and conversely, elk were attracted to, [habitat areas](#) within 51-400 metres of trails. This suggests a refuge zone for elk from key predators, such as wolves.

"The challenge of parks and reserves is finding the balance between long term ecological integrity and providing visitors with quality experiences

and learning opportunities," Rogala said. "This research increases understanding of how humans impact the national park landscape and provides a tool for park staff to better manage sensitive areas such as wildlife corridors and primary habitat."

Another recently-published research paper out of Musiani's lab by PhD graduate Tyler Muhly supports the hypothesis that high [human activity](#) displaces predators, but not prey species, creating a spatial refuge from predation. This research, performed on provincial ranchlands in Alberta, Canada, found that activity greater than 18 humans per day (also approximately one person per hour, as found in [National Parks](#)) had the potential to interfere with predator-prey interactions.

"These two independent publications from a national park area and from a ranchland area both found similar thresholds on wildlife disturbance, suggesting significant ecological consequences," Musiani said. "Nowadays, human influences are everywhere and we should learn to cope with them."

More information: www.ecologyandsociety.org/vol16/iss3/art16/

Provided by University of Calgary

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