

Can ecotourism save endangered species?

February 18 2016



Griffith University researchers, from left, are Dr Guy Castley, Dr Clare Morrison and Professor Ralf Buckley. Credit: Griffith University

Ecotourism can provide the critical difference between survival and extinction for endangered animals, according to new research from Australia's Griffith University.

Using population viability modelling, the Griffith team of Professor Ralf Buckley, Dr Guy Castley and Dr Clare Morrison have developed a method that for the first time quantifies the impact of ecotourism on threatened [species](#).

Their findings are published in the journal *PLOS ONE*.

"We know that ecotourism is increasing on a global scale, with visitor numbers to many protected areas expanding each year. We also know that such activities can have negative as well as positive impacts," said Professor Buckley, Griffith's International Chair in Ecotourism Research.

"Until now, however, there has been no way to evaluate the net effect of ecotourism in increasing or decreasing the risk of extinction for endangered species, which is the key parameter for conservation efforts."

Population viability models are widely used in practical wildlife management. They estimate cumulative population changes by simulating births and deaths iteratively, one generation at a time. Final predictions are based on thousands of repeated simulations.

The Griffith scientists used the models to calculate future population changes for nine threatened species for which data exists—the orangutan, hoolock gibbon, golden lion tamarin, cheetah, African wild dog, New Zealand sealion, African penguin, great green macaw and Egyptian vulture.

"We converted all ecotourism effects—positive and negative—to ecological parameters and found that for seven of the species involved, ecotourism provides net conservation gains through factors such as private reserves, habitat restoration, reduction in habitat damage,

removal of feral predators, anti-poaching measures or captive breeding and food supplementation," said Professor Buckley.

Dr Castley, from Griffith's Environmental Futures Research Institute, said the research demonstrates how the net effects of tourism differ among species and sub-populations and that these effects are influenced by local circumstances.

"For example, they depend on the scale and intensity of ecotourism, the size of initial populations, rates of predation and on the impacts of other industries such as fishing and logging," he said.

"Other factors, including poaching, are also important."

Griffith School of Environment's Dr Morrison said the research confirms that ecotourism is not always successful.

"In a few cases, this can have a net negative effect on threatened species," she said.

"However, for most of the rare and endangered bird and mammal species analysed, [ecotourism](#) makes the critical difference between survival and extinction."

Provided by Griffith University

Citation: Can ecotourism save endangered species? (2016, February 18) retrieved 19 April 2024 from <https://phys.org/news/2016-02-ecotourism-endangered-species.html>

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