

How elephant declines are affecting African forests

29 August 2019, by Tim Lucas



A new NSF grant will fund research into the effects of declining elephant populations on Africa's forests. Credit: John Poulsen

John Poulsen, assistant professor of tropical ecology at Duke University's Nicholas School of the Environment, has received an \$848,000 grant from the National Science Foundation (NSF) to study the effects of declining elephant populations on Africa's forests.

Poaching and [habitat loss](#) have reduced [forest](#) elephant populations in Central Africa by 63 percent since 2001.

Past studies led by Poulsen have suggested these declines pose dire consequences not only for the species itself, but also for up to 96 percent of the region's forests. That's because the elephants help create and maintain those forests by dispersing tree seeds and recycling and spreading nutrients in their dung, and by eating vegetation and trampling or uprooting [small trees](#), allowing more sunlight to penetrate to the forest floor.

Poulsen's new five-year NSF CAREER grant will enable him and his students to investigate if the

loss of these ecological engineers will change the forests and alter the vital ecosystem services such as timber, medicine and food that they provide.

He and his team will also investigate whether alternative plant predators, including smaller mammals, insects and fungi, might more strongly determine the diversity and distribution of tree species that grow in the forests in the elephants' absence.

The team's findings, though specific to Central Africa, could provide new insights into the impacts of other megafauna species in closed canopy forests worldwide.

CAREER grants are among the most prestigious and competitive awards presented by NSF to early-career faculty who have demonstrated outstanding potential in fields of critical importance and a commitment to integrating teaching, outreach and student training into their research projects.

Provided by Duke University

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