

Snacking snakes act as 'ecosystem engineers' in seed dispersal

February 8 2018, by Linda B. Glaser



Credit: CC0 Public Domain

Despite the bad rap snakes often get, they are more central to ecology than most people realize. New research reveals that snakes might even play a key role in dispersing plant seeds.

It's long been known that some plants disperse their seeds by "hitchhiking" on animals, with the seeds clinging to fur or feathers, or stored in a cheek pouch or a bird's crop. Sometimes, seeds are swallowed whole and survive the gut intact to emerge viable. Such [seed](#) dispersal has been critical to plants throughout their evolution, allowing them to escape competition from nearby plants and to reach safe locations for colonizing distant sites.

Rodents play a critical role in such [seed dispersal](#), since they often have cheek pouches that enable them to transport seeds from source [plants](#) to underground caches. While most of those seeds are eaten by the rodents, the rodents themselves are often eaten by predators, some of which then serve as secondary dispersers of the seeds carried in the [rodent](#) cheek pouches.

It turns out that snakes, too, can be secondary seed dispersers. In "Seed Ingestion and Germination in Rattlesnakes - Overlooked Agents of Rescue and Secondary Dispersal," herpetologist Harry W. Greene, Cornell University professor emeritus of ecology and evolutionary biology and a Stephen H. Weiss Presidential Fellow, reports on his research with Randall S. Reiserer and Gordon W. Schuett showing that seeds survive intact through digestion in rattlesnakes. The work was published in the *Royal Society journal Proceedings B*.

In examining 50 snake specimens, the researchers found rodent remains present in 45, with a total of 971 seeds in the snakes' gastrointestinal tracts. Not only did the seeds survive travel through the entire digestive tract of the snake, the researchers found that the seeds sometimes germinated in rattlesnake colons.

The researchers see rich opportunities for further investigation. Given the more than 3,500 [snake](#) species known, it is likely that many consume prey that transport seeds. Snakes, write the researchers, "thus should be

studied and appreciated as seed rescuers and secondary dispersers, perhaps even ecosystem engineers, in addition to their recognized predatory functions."

More information: Randall S. Reiserer et al, Seed ingestion and germination in rattlesnakes: overlooked agents of rescue and secondary dispersal, *Proceedings of the Royal Society B: Biological Sciences* (2018). DOI: [10.1098/rspb.2017.2755](https://doi.org/10.1098/rspb.2017.2755)

Provided by Cornell University

Citation: Snacking snakes act as 'ecosystem engineers' in seed dispersal (2018, February 8) retrieved 21 June 2024 from <https://phys.org/news/2018-02-snacking-snakes-ecosystem-seed-dispersal.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.