Animal diversity key to ecosystem restoration, study shows

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(A)


(B)

Ranger Uranium Mine near Jabiru in Australia's Northern Territory (A), and the dominant savanna woodland in surrounding Kakadu National Park (B). Photo credits: Mike Saynor, Australian Government's Supervising Scientist Branch (A) and Alan Andersen (B). Credit: *Restoration Ecology* (2022). DOI: 10.1111/rec.13735

A Charles Darwin University (CDU) study shows for the first time how animal biodiversity can be measured for assessing how well an ecosystem has been restored.

According to CDU Research Institute for the Environment and Livelihoods ecologist and lead author of the study, Professor Alan Andersen, specific standards are required for assessing how well animal communities have been restored.

"Animal biodiversity is critical if the goal is full ecosystem restoration," Professor Andersen said. "Typical land restoration criteria have focused on vegetation and soil, often with little consideration of animal diversity.

"It is important to include a wide variety of animals, not just because of their intrinsic biodiversity value but also because of the many ecological roles they play in restoration processes. However, up until now there has been no framework for doing this."

The new framework covers which animals to measure, how they should be measured and how similar they should be to a completely restored ecosystem. The study, "Faunal standards for the restoration of terrestrial ecosystems: a framework and its application to a high-profile case study," was recently published in the journal *Restoration Ecology*.

The framework was applied to Ranger Uranium Mine, which has a restoration program aiming to return the site to an environment similar to that in surrounding Kakadu National Park—akin to "full recovery" based on the standards set forth by the Society for Ecosystem Restoration.

But Professor Andersen said the assessment framework can be applied to any ecosystem worldwide.

"Specific standards of evaluating returning animal populations can be set to suit any level of restoration, no matter where it is," he said.

More information: Alan N. Andersen et al, Faunal standards for the restoration of terrestrial ecosystems: a framework and its application to a high-profile case study, *Restoration Ecology* (2022). DOI: 10.1111/rec.13735

Provided by Charles Darwin University