

Which ecosystem changes can be reversed?

January 30 2019, by Jenna Marshall



Antelope and zebras in Serengeti National Park, Tanzania. Credit: Joel Herzog on Unsplash

Across the world's ecosystems, from the boreal forests of North America to the savannas of Africa, a host of animals and plants constantly interact: predators fell prey, insects devour plants, epiphytes perched high in their host trees draw moisture from the air. All of these interactions influence animal and plant populations in myriad ways, but researchers are still trying to understand the complex dynamics. A

working group to be held January 29-31 will look at the consequences of the changes in interactions between species—especially how these changes lead to irreversible transitions in the structure and composition of ecological communities.

"Most of the models and most of the theory in ecology is based on the assumption that interaction between [species](#) are constant, at least on the timescale we're observing the dynamics in the community," says Omidyar Fellow Jacopo Grilli, who is organizing the working group with Dervis Can Vural of the University of Notre Dame "On the other hand, there are changing factors—species are evolving and also changing their behaviors. So, if you're a predator, you might switch prey for example. We're looking at how interactions are changing, and how the community changes as a result—and how much the changes in the community are reversible."

Some of the questions the group will explore are: How do interactions between two or more species change over time? How do species interactions lead to ecological transitions? How can ecosystems be fortified against catastrophes? This information could aid [conservation efforts](#)—for example, to help determine whether extinction of a species in a particular area could be reversed through reintroduction or colonization by members of other surviving populations.

Provided by Santa Fe Institute

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