

Study suggests active restoration of damaged ecosystems not always better than nature

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An international team of researchers has found evidence that suggests human efforts to restore damaged ecosystems are not always better than simply letting nature take its course. In their paper published in *Proceedings of the Royal Society B*, the group describes analyzing over

400 studies documenting ecosystem recovery efforts and reports their findings.

As humans have realized that [natural areas](#) on the planet are a limited resource, attempts have been made to repair the damage. Forests are replanted, for example, or dams are demolished—such efforts often include the reintroduction of plants and animals threatened by [oil spills](#). But the researchers with this effort wanted to know, whether or not such efforts are better than simply allowing nature to take its course. To find out, they pored over papers and other documentation materials created by others who studied individual ecosystem recovery efforts.

The researchers conclude that ecosystem recovery efforts are a mixed bag—some do appear to restore areas to their natural states in a relatively short amount of time. But others seemed to do no better than nature—and some did not seem to succeed at all. Planting trees in areas where they have been cut down is clearly faster, they note, than letting seedlings find their way across vast stretches of barren land. But simply removing a dam may not be enough to return a river system to its prior state—in some cases, animals may have gone extinct, for example.

The team also used data from the documentation to produce statistics on ecosystem recovery, such as the speed at which different types of systems recover. They found, for example, that on average, [ecosystems](#) recovery rates ran from 1 to 10 percent per year, and that marine systems and wetlands tended to recover faster than lakes and forests. They also noted multiple instances in which ecosystems never recovered completely.

The researchers conclude their analysis by suggesting that rather than dash in with a plan for ecosystem restoration, planners should take more time to study the unique areas they are dealing with and then decide if their efforts will reap the desired rewards.

More information: Holly P. Jones et al. Restoration and repair of Earth's damaged ecosystems, *Proceedings of the Royal Society B: Biological Sciences* (2018). [DOI: 10.1098/rspb.2017.2577](https://doi.org/10.1098/rspb.2017.2577)

Abstract

We collated information on how fast and how completely ecosystems recovered from large-scale disturbances (agriculture, nutrient pollution, hydrologic disruption, logging, mining, and oil spills) and compared measures of recovery in ecosystems recovering without extra human assistance and in ecosystems that were actively restored. We find ecosystems are headed toward recovery in all cases but almost never recover completely. Active restoration does not speed or result in more complete recovery than letting ecosystems recover on their own. We encourage innovative partnerships between local communities, governments, and stakeholders to develop restoration techniques that are economically, socially, and ecologically sound.

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