

# Lack of large-scale experiments slows progress of environmental restoration

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A new study finds that environmental restoration research using large experimental tests has been limited. The study, published in *Restoration Ecology*, maintains that for restoration to progress as a science and a practice, more research should be done on whole ecosystems with large experiments.

"Very few restoration ecologists are taking advantage of large restoration sites by conducting large-scale experiments," says Joy B. Zedler of the University of Wisconsin- Madison. "Most people wouldn't buy a new shirt without trying on several different kinds to see which fits best and looks right. It's similar with restoration; we want to find the best fit between the methods we use and the outcomes we want."

Most often, one restoration method is used throughout a site, making it difficult to "learn while restoring." Zedler believes that researchers should establish large field experiments, comparing several methods at once and watching carefully to see which method achieves the goals most rapidly. She believes that this process, called "adaptive restoration" would allow researchers to take greater advantage of large restoration sites to test their ideas for improving restoration effectiveness.

As an example, if 3-4 replicate areas were sown densely and 3-4 other areas were sown sparsely, it would be possible to compare differences in plant establishment with seeding density.

There are many reasons that have been given for not conducting large

experiments. These include: level of difficulty, cost, lack of funding and coordinating the availability of researchers with sites that are ready for restoration. Zedler agrees with these constraints, and has experienced them, but believes that these obstacles can be overcome.

"Without large-scale experiments, we lose significant opportunities to learn how to recover populations, community structure and ecosystem processes, and we limit our ability to document variability and whole-system responses," says Zedler.

Zedler hopes that more scientists will view restoration projects as suitable places to conduct experiments and assess all aspects of ecosystem development--more than just the establishment of plants. Ultimately, the goal is for restoration efforts to be able to sustain more of the natural biodiversity of each region.

Source: Wiley

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