May 6th, 2019

Dear *Science* Editors

We are pleased to submit the manuscript entitled “Something for nothing: a synthesis of active versus passive restoration in drylands”, co-authored by M. Florencia Miguel, H. Scott Butterfield and Christopher J. Lortie, to be considered for publication as a Report manuscript in *Science*.

Continued land degradation globally demands concrete understanding of ways to remediate these impacts to biodiversity and humanity. One means of remediation is restoration. Dryland ecosystems are an exemplary case study to evaluate the success of restoration practices, as these systems are biodiversity hotspots, and continue to be threatened by land conversion (e.g. to agriculture), land degradation, and climate change. In this manuscript we performed a formal synthesis including meta-analyses to evaluate the success of active and passive restoration practices in drylands globally.

This synthesis includes more than 1400 independent data points from 19 countries, describes almost 25 interventions, and examines outcomes associated with habitat, soils, vegetation and animals. Active restoration practices yielded significant positive outcomes for soils, vegetation, and animals. Passive restoration was a viable option only for limited recovery of vegetation. These findings suggest that direct interventions are critical in many ecosystems especially those experiencing severe anthropogenic pressures and environmental stress.

We have no similar work submitted, in revision, or accepted for publication in any other journal, and this is the first submission we do of these results. Support data and codes will be available at Zenodo.

We appreciate your assistance and look forward to hearing from you.

Sincerely,

Dr. M. Florencia Miguel on behalf of all authors.

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