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Incorporating Ecosystem Services Into Economic Assessments of Restoration Projects

By L. Allen Torell, Gregory L. Torell, and Rhonda K. Skaggs

On the Ground

- Rangeland restoration projects have defied quantitative economic assessment because of a lack of data and information that document benefits.
- From the literature, we assess the potential benefits of rangeland restoration efforts undertaken in New Mexico under the Restore New Mexico Project and conclude that the economic value of some of the goods and services generated are substantial, but little economic value exists for some of the ecosystem services used to justify the conservation effort.
- Given the complexity in measuring changes in ecosystem services following restoration efforts, we are pessimistic about the potential of placing a quantitative economic value on many rangeland ecosystem services. Identifying the expected direction of change and relative magnitude of change may be more useful and feasible.

Keywords: benefit–cost analysis, valuing rangeland ecosystem services, conservation and restoration practice benefits, range improvement economics, Restore New Mexico.

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Economic evaluations of range improvements have traditionally valued the additional livestock capacity and beef production that can be obtained, but that production value usually justifies only 50% to 80% of the total range improvement cost on many western rangelands.¹ Failure to include a measure of other environmental, ecological, and societal benefits of range improvements, beyond livestock production, implicitly assigns

a value of zero to those outputs in the traditional economic assessment. This has led some to conclude that cost share programs for range improvements should be eliminated.² A contrary view held by many rangeland managers is that it is morally, ethically, and professionally right to institute management practices that stop erosion, grow quality forage and vegetation, and improve rangeland conditions. Many rangeland managers holding these beliefs are of the opinion that conservation practices should not have to be economically justified.³

The general inability to measure and quantify the environmental and ecological benefits of range improvements and restoration efforts has meant economics has a minimal role in range-improvement project-implementation decisions on public lands.⁴ As a current example, with restoration and rangeland health as justifications, the New Mexico Bureau of Land Management (BLM) and other collaborative cooperators take great pride in the restoration of more than 1.8 million acres of degraded rangeland to a healthy ecological state.⁵ About \$41 million dollars were spent on the New Mexico rangeland restoration effort since 2005 (D. Ellsworth, personal communication, May 2012). Other similar federally funded restoration efforts are in progress in other states.^{6,7} Economic evaluations are not included in project justifications, although there is an apparent increased awareness of the need to determine the value of ecosystem services economically in land management planning efforts. As noted in the 2011 Restore New Mexico newsletter, (Fig. 1)⁸:

[BLM is] confident that Restore treatments are creating tremendous benefits for the land and wildlife habitat across the state. We've got countless before and after photos, testimony from our partners, and the impossible-to-deny reactions among the many visitors who have toured restored sites. Though we can see the success with our own eyes, this isn't enough. We want hard scientific data to support our efforts as well. (p. 1)

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