

Studies show integrated strategies work best for buffelgrass control

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Buffelgrass is a drought-tolerant, invasive weed that threatens the biodiversity of native ecosystems in the drylands of the Americas and Australia. Unfortunately, though, land managers trying to control the weed often experience mixed results.

To shed new light on buffelgrass and the best techniques to use for its control, researchers from the University of Arizona conducted a literature review that is featured in vol. 12 issue 4 of the journal *Invasive Plant Science and Management*. The authors synthesized the results from 229 studies conducted on several continents and in a variety of ecosystems. Among their findings:

- The most effective buffelgrass control is achieved when multiple techniques are used in tandem and when follow-up treatments are applied. For example, fire might be used to destroy adult [plants](#), followed by herbicide applications or the manual removal of new seedlings.
- Buffelgrass takes advantage of environmental conditions to compete against native species. For example, it can

access water deeper in the soil profile for longer into the dry season and can take advantage of nutrients and space made available after wildfires or other disturbances. As a result, [land managers](#) may want to focus on restoration of drought-tolerant native species that can compete effectively under the same conditions.

- The long-term impact of buffelgrass treatments on native plants and [ecosystems](#) is poorly understood. The authors suggest the need for additional research to explore the issue.

"Our review highlights the value of integrated [weed](#) management programs," says Hannah Farrell, Ph.D. student and lead author. "Herbicides or other treatments used in isolation are uniformly less effective in controlling buffelgrass than those used in tandem with other approaches."

More information: Hannah L. Farrell et al, *Pennisetum ciliaris*: a review of treatment efficacy, competitive traits, and restoration opportunities, *Invasive Plant Science and Management* (2019). [DOI: 10.1017/inp.2019.28](https://doi.org/10.1017/inp.2019.28)

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