

Study shows importance of tailoring treatments to clearly defined weed control objectives

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A new study in the journal *Invasive Plant Science and Management* shows that working smarter, not harder, can lead to better control of invasive weeds. And the first step is to clearly define your weed control objectives.

Do you want a quick, short-term reduction in a weed population or long-term control? Is your weed problem limited to a specific area, or are you also concerned about adjacent fields?

"Answering such questions can help you select the most appropriate management options and eliminate wasted effort," says Katriona Shea, a researcher at Pennsylvania State University.

To illustrate the importance of upfront decisions, researchers conducted a two-year study involving invasive thistle, a weed often found in pasturelands and rangelands. Mathematical models were used to determine which of 14 mowing strategies would best support each of three different management

objectives: reducing the density of an existing thistle infestation, decreasing long-term population growth and limiting the [weed](#)'s spread.

Contrary to [conventional wisdom](#), researchers found that fewer, well-timed mowing events were more effective than mowing as often as possible—making it possible to produce a better outcome with less effort.

Intense mowing both before flowering and during the peak flowering period, for example, produced the best long-term control of invasive thistle and reduced both its abundance and its spatial spread. A single, intense mowing during the peak flowering period was the most effective approach for short-term management, which is good news for land managers with limited time and resources.

More information: Rui Zhang et al, Working smarter, not harder: objective-dependent management of an invasive thistle, *Carduus nutans*, *Invasive Plant Science and Management* (2019). [DOI: 10.1017/inp.2019.18](https://doi.org/10.1017/inp.2019.18)

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