



Vegetation Following Chemical Control of Canada Thistle: Native Recovery or Secondary Invasion?

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Invasive plant control often aims to restore native vegetation. However, the disturbance caused by control actions may provide habitat favorable to other undesirable species - therefore leading to secondary invasion - if these species occur in or near the targeted infestation. I investigated the effects of chemical control of Canada thistle (*Cirsium arvense*) in two habitat types where thistle is common in southwestern South Dakota: prairie dog towns and grassland draws. In 2005, I established eight sites within each habitat type and three plots in each site. At each site, two plots were in a previously untreated thistle patch, while the third plot was a reference (never-infested) plot. In 2005, one thistle plot at each site was treated with picloram and the other two plots were left untreated. Vegetation was measured in 2005-2007. In both habitat types, non-thistle exotic species comprised a substantial portion of the plant community (30-40% cover) in reference vegetation, but their cover was even higher in intact thistle patches. Chemical treatment nearly eliminated thistle in both habitat types. In prairie dog towns, the treatment severely reduced total plant cover to 14% of that in intact thistle and 17% of that in reference vegetation in the first year after treatment, but by the following year, non-thistle exotic, native, forb, and graminoid cover did not differ between treated thistle and reference vegetation. In contrast, chemical treatment in draws did not affect total or plant group cover. Thus, chemical treatment of Canada thistle did not, on average, produce secondary invasions.

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