The Effects of Cauterization on Nandina domestica and Ligustrum sinense

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Chinese privet and nandina are aggressive invasive species that have spread throughout Hot Springs National Park. Herbicide is not environmentally friendly or able to be used in parts of the national park for fear of damaging native vegetation, so a non-herbicidal treatment needs to be found. Previous testing supported that cauterization (burning the stump of a cut plant) was a potential alternative to herbicide on privet. This experiment tested cauterization, herbicide, and cutting on potted Chinese privet and nandina plants as well as Nandina domestica field plants. It was hypothesized that cauterization and glyphosate would perform similarly to each other and better than the cut treatment for all studies. There were 10 plants per group for each study. Plants were randomly assigned to groups and then treated once. The pot study plants were washed, dried, and had their initial masses recorded before repotting. After 3 months, final masses were recorded for the pot study and final observations of physical changes were made for the field plants. Physical changes on the field plants included things such as discoloration, missing bark, and regrowth. There was much less regrowth on the cauterization and herbicide field plants than the cut field plants. Cauterization and herbicide had greater mass percent decreases than the cut group for the potted privet plants, however there was no difference between the groups for the potted nandina plants. These results further support that cauterization is an alternative management method for privet, but are inconclusive in regards to nandina.

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