

WHAT DOES “LOCAL” FIREWOOD BUY YOU? MANAGING THE RISK OF INVASIVE SPECIES INTRODUCTION

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ABSTRACT

Firewood can serve as a primary vector in the transport of non-native species, particularly of wood boring insects that can be transported surreptitiously in firewood. State and Federal governments have enacted limitations on the movement of firewood as a means to limit accidental introduction of invasive species. However, it can be challenging for governments to determine an allowable distance for moving firewood, such as for recreational camping use, and regulations vary from state to state. We were motivated by this challenge and explored the risk associated with moving firewood for recreational campground use. We quantified the number of campgrounds at varying distances from a hypothetical range of a non-native species. We did this by developing a simulation model using ESRI ArcObjects to randomly select 2, 4,

8, 16, or 32 spatial locations, or “infested sites,” in Wisconsin, Illinois, Iowa, and Minnesota. The number of campgrounds within a 10-, 25-, 50-, 100-, or 200-mile radius of each infested site was determined, and we used a bootstrap method (500 replications) to estimate the mean and 95-percent confidence intervals of the number of campgrounds by the number of infested sites and radius. The mean number of all campgrounds, publicly owned campgrounds, and privately owned campgrounds increased nonlinearly within each radius relative to the number of infested sites for the four-state region. When considering a state-by-state simulation approach, an allowable radius of 100 miles for moving firewood encompassed almost as many campgrounds as a 200-mile radius when the number of infested sites > 8.