

EFFECT OF REMOVAL OF DAME'S ROCKET (*HESPERIS MATRONALIS*) ON FOREST UNDERSTORY VEGETATION IN NW INDIANA. Noel B. Pavlovic, Stacey Leicht-Young, Krystal Frohnapple, and Ralph Grundel, Ecologist, Ecologist, Biological Technician, and Ecologist, U.S. Geological Survey, Great Lakes Science Center, 1100 N. Mineral Springs Rd., Porter, IN 46304

Invasive exotic plants may often negatively affect native plant species. One approach to determining the potential effect of a given invasive species is by removing this species from the community. We used this removal approach to quantify the response of a mesic woodland plant community to the removal of the invasive plant, *Hesperis matronalis* (dame's rocket). We established ten paired treatment plots in which one plot had *H. matronalis* removed and the other with *H. matronalis* retained as a control. In each of these plots we measured cover for each plant species present. Sampling was done twice each year, once in the spring and once in late summer for three years. We began each survey by evaluating the cover of the plant species present, and then pulling all *H. matronalis* from the treatment plots. Cover of *H. matronalis* did not differ between control and treatment plots prior to removal, declined in the removal plots and remained significantly lower in cover compared to the control plots. Total vegetation cover, however, was not significantly different between treatment and control plots. Removal did not significantly affect species richness and species diversity (evenness, Shannon, and Simpson) at the plot scale but did increase species richness across all treatment plots in the summer of the last sampling year, when compared to control plots. Ordination analysis indicated a significant compositional change in the spring plant composition of plots over the three years, reflecting an increase in the cover of exotic woody species. Exotic woody plants, especially *Rosa multiflora* and *Euonymus alatus*, significantly increased in cover in response to *H. matronalis* removal. In the three years, neither native nor exotic forbs, nor native woody plants, significantly responded to the removal of *H. matronalis*. The apparent positive response of woody invasive plants from the removal of *H. matronalis* shows that removal of one invasive may cause increases in other invasives during restoration of degraded communities.