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Around the world natural ecosystems are being challenged and altered by invasive species. In particular, invasions of non-native grasses have a substantial impact on the population of native plant species. This study investigated the detrimental effects of an invasive grass, Japanese stiltgrass (*Microstegium vimineum*) on native plant species in central WV. *M. vimineum* is an emerging invasive species in the eastern United States. This stiltgrass is most abundant in highly disturbed areas such as trails and roadsides. Certain environmental conditions, forest feature, and soil conditions promote the growth and spread of the invasive grass. *M. vimineum* effects the soil and tree growth where it invades. While there is substantial information regarding the ecology and spread of *M. vimineum*, limited research has been done to determine the effects of the invasion on native plant communities. Study plots (30 plots (0.5m<sup>2</sup>)) were randomly selected in disturbed, moderately disturbed, and undisturbed locations. Canopy cover was measured at each location. The stems of *M. vimineum* counted and the native plant species were identified and quantified. The relationship between land disturbance and stem count was determined. Stem count of *M. vimineum* was highest in the moderately disturbed area with the lowest average native plant species richness. The second highest stem count was in the disturbed location which had the highest species richness but the lowest diversity. A negative correlation was found between stem count and species richness throughout all plots.