IMPACT OF CHINESE PRIVET AND ITS REMOVAL ON POLLINATOR DIVERSITY AND ABUNDANCE

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ABSTRACT

Chinese privet (*Ligustrum sinense*) was introduced into the United States in 1852 as an ornamental shrub, and by 1932 was established throughout the Southeast. In the 1990s privet occurred on 2.9 million acres of forest in the Southeast. More specifically, it covered 59 percent of our study area, the Upper Oconee River floodplain in north Georgia in 1999. The objective of this research was to evaluate the effect of privet removal techniques on various components of the forest community including understory plants and insect pollinators (mainly bees).

Treatments were applied in autumn 2005 and consisted of: 1) an untreated control; 2) removal of privet with a rubberized track mounted chipper (gyrotrac) followed by herbicide treatment of the stumps; and 3) standard chainsaw felling followed by herbicide treatment of stumps. To sample pollinators we used pan traps (Solo™ brand bowls) in both blue and yellow since these colors have proven successful at attracting pollinators in previous studies. Ten pan traps (five trapping stations, each with one blue and one yellow trap) were placed randomly throughout each 5-acre plot. We collected samples seven times from March-October 2006 and 2007. Traps were operated for 7 days each time we sampled. Bees were sorted and stored in ethanol until they could be mounted and identified.

Removal of Chinese privet resulted in an approximately tenfold increase in bee abundance and fourfold increase in bee richness. Each treatment saw significantly higher bee abundance and richness when compared to control plots in 2006 and 2007. The method of removal had no effect on pollinators. Abundance and richness were higher in both treatments the second year. Despite our encouraging results, these methods are not practical over large areas, so other controls are needed. There are no native *Ligustrum* spp. in the U.S., which makes Chinese privet an excellent target for biocontrol. We are currently evaluating a leaf beetle (Chrysomelidae) from China as a possible control agent. It will likely take an integrated approach in the future to control Chinese privet—a step definitely worth taking in order to restore native communities.