Morawski, Stevia D., Zachary R. Bradford, and James B. McGraw. 2010. Effects of forest edge on American ginseng pollinator activity and identity

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Fragmented ecosystems have a higher proportion of edge exposed areas which experience potentially deleterious abiotic and biotic changes. As suburbanization in Appalachia increases, these ‘edge effects’ are becoming of greater concern. This study investigates how proximity to anthropogenic edge impacts American ginseng (Panax quinquefolius L.), an annually harvested plant species in the region, by quantifying the number and type of pollinators that visit ginseng as a function of distance from the forest edge. Flowering American ginseng plants were planted in transects at logarithmically increasing distances from anthropogenic edge at three sites. Transects were observed for a total of 19 hours over four weeks to quantify pollinator activity. Distance from edge did not have a significant effect on pollinator activity (p=0.8103). However, Syrphid flies were the predominant pollinator active in the transects closest to the edge while Halictid bees were predominant in transects closer to the forest interior. Due to differences in quantity of pollen carried by these two groups, this pollinator guild shift could impact the genetic structure of American ginseng populations in edge proximate areas.