



PS04

Linking emerald ash borer to changes in ecosystem function: how changes in litter quality may influence leaf decomposition and invertebrate growth

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The invasion by emerald ash borer (EAB; *Agrilus planipennis*) of black ash wetlands will lead to changes in the plant community and leaf litter inputs. We conducted two experiments to examine how changes in the quantity and quality of allochthonous inputs could alter ecosystem function. The first experiment tested how changes in forest structure following EAB might affect the decomposition of leaf litter. We placed litter bags containing black ash (*Fraxinus nigra*), swamp white oak (*Quercus bicolor*), and lake sedge (*Carex lacustris*) in either control or clear-cut plots (cut to mimic EAB induced die-offs). We found that leaves decomposed faster in intact black ash wetlands and that black ash decomposed faster than swamp white oak or lake sedge. For the second experiment, we tested how caddisfly larvae feeding and growth responded to different species of leaf litter. We fed caddisflies one of six species: black ash, swamp white oak, lake sedge, balsam poplar (*Populus balsamifera*), American elm (*Ulmus americana*), or speckled alder (*Alnus incana*) for 14 days. We found that caddisflies had higher survival probabilities and faster growth when fed ash or alder; caddisfly larvae consumed ash and alder at faster rates than other leaf litter species. These results suggest that loss of ash might alter ecosystem processes and food web structure via changes in nutrient cycling and caddisfly (and potentially other shredder invertebrate) biomass production.

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