

TREND OF TWO INVASIVES: THE BANDED AND EUROPEAN ELM BARK BEETLES

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ABSTRACT

The banded elm bark beetle (BEBB) (*Scolytus schevyrewi*) is an invasive beetle from Asia that attacks elm (*Ulmus* spp.) trees and may vector the fungal pathogen causing Dutch elm disease, *Ophiostoma ulmi*. BEBB shares a similar biology to an established invasive, the European elm bark beetle (EEBB) (*Scolytus multistriatus*). However, BEBB seems to attack standing trees more aggressively and appears now more abundant than EEBB in the Rocky Mountain region, suggesting that BEBB may have displaced EEBB and/or is better able to colonize regions beyond EEBB's range. Our objectives were to determine the relative abundance of BEBB and EEBB in seven states and compare how each species locates host elms for attack.

To monitor abundance, a trap Siberian elm log, baited funnel trap, and passive plexiglass trap were set up at four sites in each state and checked from April/May to September. BEBB was less common than EEBB in California (13%), BEBB increased in abundance in Nevada (68%) and Utah (65%), and it was highest in

Colorado (89%) and Wyoming (83%). BEBB populations were minor moving east to Kansas (3.3%) and Missouri (2.7%). This survey suggests that BEBB may be displacing EEBB because EEBB is no longer commonly found in Colorado where it was often found in the past.

Flight toward uninfested and variously infested elm logs was monitored for BEBB in Colorado and Wyoming and for EEBB in California. BEBB responded strongly to elm odors and showed no preference for elm infested with females or males. EEBB responded somewhat to elm odors but more so to pheromones from an elm that was infested by EEBB females for 48 to 96 hours. Colonizing female EEBB required a few days to produce an attractive pheromone. In Nevada, BEBB responded indiscriminately to all elm logs regardless of whether the log was infested with BEBB, EEBB, or both. Thus, when a new elm is available, BEBB may have a competitive advantage attacking first, whereas EEBB may attack in greater numbers later, following pheromone production from the initial attacks of EEBB females