OBSERVATIONS ON ADULT *AGRILUS PLANIPENNIS* ON ASH IN MICHIGAN

D. R. Lance[1], I. Fraser[2] and V. C. Mastro[1]

[1]USDA-APHIS-PPQ Otis Pest Survey Detection and Exclusion Laboratory
Bldg 1398, Otis ANGB, MA 02542

[2]USDA-APHIS-PPQ, EAB Program, 5936 Ford Court, Brighton, MI 48116

ABSTRACT

Observations were carried out on adult emerald ash borers, *Agrilus planipennis* Fairmaire, on ash trees, *Fraxinus* spp., in park-like and field-edge settings in South Lyon, MI. Observations consisted of (1) counting beetles in various microhabitats; and (2) tracking behavior of individual beetles for periods of up to 15 min. Observations were made from the ground with the aid of binoculars when needed. Counts of beetles included 158 counts each of beetles per 100 leaflets, beetles seen on bark during 1-min searches, and beetles observed flying in a fixed field of view over 1 min. These counts were made systematically at different levels of the canopy (lower, middle and upper), aspects (north, south), and times of day. In addition, we made 5-min counts of beetles in the understory beneath the study trees.

The vast majority (>95%) of beetles we observed on trees were on the upper surfaces of leaves. The beetles appeared to be distributed relatively uniformly throughout the canopy, but numbers of flights observed were several times higher at the tops of trees than in lower portions of the canopy. Overall, the beetles were active insects and typically used flight to move from leaf to leaf or even among leaflets of an individual leaf. Beetles on leaves spent about three-quarters of their time resting, with most of the remaining time split relatively evenly between feeding and crawling. After one period of several consecutive cool, overcast days, most of the beetles were found on grass or forbs in the understory. On the next sunny day, these beetles returned to the trees at approximately the time when direct sunlight fell on the portion of the understory where they had been resting. Factors influencing this migration to and from the understory are not well understood.

We observed less mating- and oviposition-related behavior than we had perhaps expected. For example, only 4 percent of the beetles we observed during our counts were paired in such a way to suggest that they may have been *in copula*. These observations were made relatively early in the season (mid June), and it's possible that beetles spend higher proportions of their time engaged in reproductive behaviors later in the season. Still, we observed several occasions when one beetle hovered above another for a short period, then landed very near or directly upon the second beetle. For lack of a better explanation, we assume that this is a form of premating behavior even though we never actually observed the initiation of a confirmed mating.