DISPERSAL AND SPATIOTEMPORAL DYNAMICS OF ASIAN LONGHORNED BEETLE IN CHINA

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Abstract

We studied dispersal and spatiotemporal dynamics of the Asian longhorned beetle, *Anoplophora glabripennis* Motschulsky (Coleoptera: Cerambycidae), in Gansu Province of north central China. We used mass mark-recapture methods and observed that 98% of beetles were recaptured within 920 m from a release point, while the median dispersal rate for all recaptured adults was 30 m/d. Dispersal potential within the course of a season for males and gravid females was 2,394 and 2,644 m, respectively; however, more work is needed to evaluate the potential of long distance dispersal events to initiate new colonies outside current U.S. quarantine boundary guidelines. Peak population abundance of unmarked beetles (i.e., background populations) in both 1999 and 2000 occurred between 800-900 degree days (base threshold = 10° C) from 1 January. Background populations exhibited local spatial autocorrelation during peak abundance, with ranges of spatial dependence of 229-543 m.