

DEVELOPMENT OF A WEB-BASED TOOL FOR PROJECTING COSTS OF MANAGING EMERALD ASH BORER IN MUNICIPAL FORESTS

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ABSTRACT

City managers faced with the invasion of emerald ash borer into their urban forests need to plan for the invasion in order to obtain the resources they need to protect the public from harm caused by dying ash trees. Currently, city foresters can avoid harm from falling trees by removing, replacing, or treating them with insecticides. Costs for these activities vary widely between municipalities depending on local real estate values, labor costs, and the type and frequency of insecticide treatment. The particular combinations of these tactics that work best for a particular city depend on forest composition, local needs and budgets.

The emerald ash borer cost calculator is a web-based tool that allows municipal arborists use local information to develop a set of management strategies, calculate their projected costs over a 25-year period, and make comparisons. To run the web tool, forest managers need a current inventory of ash trees that details the number present in a user defined set of size classes measured as diameter breast height. They then need to obtain insecticide treatment costs, tree removal and tree replacement costs from in-house cost schedules or as bid from subcontractors. The calculator then uses these costs to estimate expenses of a particular management strategy for a 25-year period. Cost projections are based

on a growth model developed for Indianapolis ash trees during a municipal forest tree resource assessment (Peper et al. 2008). The calculator allows the user to define management strategies by assigning proportions of tree for treatment with insecticides, for removal and replacement, or removal only. Up to three management strategies can be compared at a particular time. Users can specify a discount rate of their choosing to account for the time value of money.

A mock analysis using actual tree inventory data from the city of Indianapolis and maintenance costs was reviewed to demonstrate the potential of the calculator to explore costs of management scenarios over a 25-year period. The calculator is available at the following website <<http://extension.entm.purdue.edu/treecomputer/index.php>>.

Literature Cited

Peper, P.J.; McPherson, E.G.; Simpson, J.R.; Vargas, K.E.; Xiao, Q. 2008. **City of Indianapolis municipal forest resource analysis**. Internal Technical Report. Albany, CA: U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station, Center for Urban Forest Research. 68 p.