

Abstract
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SUSTAINABLE URBAN FORESTRY SOFTWARE

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ecoSmart and **STRATUM** are newly developed urban forest management software applications. Both rely on green accounting research to quantify the investment value of sustainable landscapes and green infrastructure.

ecoSmart design software is a web-based program (www.ecosmart.gov) designed to evaluate trade-offs between different landscape practices on residential parcels. The interactive program allows the user to reconfigure landscapes and instantly see the environmental and economic impact on fire safety, landscape water use, stormwater runoff, and energy use for heating and cooling. Modules include **Fire**, **Water**, and **Energy**. **ecoSmart Fire** applies physics-based equations to predict if the radiant heat flux from burning trees will ignite a structure. The fire hazard bar changes as users manipulate the parcel. **Water** utilizes a water balance model to allow the user to see the annual effects of implementing best hydrologic management practices. In **Energy**, the user can see how the effect of their tree selection and placement on shade, wind speed reductions, and air temperature modification can influence the building's annual heating and cooling loads. The first version of **EcoSmart** is designed for the Los Angeles area, with **Fire** completed, **Water** due, May 2005, and **Energy** due Oct. 2005.

STRATUM (Street Tree Resource Assessment Tool for Urban Forest Managers) is a computer-based management tool that enables any community to conduct a street tree assessment utilizing a sample inventory or an existing inventory of street trees. Once inventory and annual management cost data are entered, **STRATUM** calculates 1) resource structure, 2) function, 3) value, and 4) management needs. Reports can be obtained citywide, for neighborhoods, or by species. Regional tree growth models and local environmental data and benefit prices are used to provide accurate estimates for individual cities. **STRATUM** is one component of a Forest Service tree inventory and assessment suite called i-TREE, which will be released fall, 2005. More information is available on our web-site <http://cufr.ucdavis.edu>.