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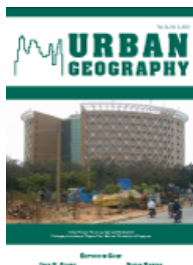
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Applicability of Citygreen Urban Ecosystem Analysis Software to a Densely Built Urban Neighborhood

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Abstract

In efforts to increase greenspace in cities, planners have relied on a series of arguments about the benefits of parks and other greenspace, including their economic value. The commercially available software program, CITYgreen 4.0, an extension of ArcView, calculates economic values for this purpose. The software evaluates the benefits of trees and other landscape features for energy use, stormwater runoff, air pollution, carbon sequestration, and wildlife habitat. While many examples are available of the use of CITYgreen in suburban morphologies, we set out to evaluate the applicability of CITYgreen for assessing these effects in a densely populated urban neighborhood. We inventoried 146 acres of urban land uses (commercial, residential, and institutional) in a Los Angeles neighborhood. CITYgreen does not calculate energy savings for structures larger than single-family residences, reducing its utility in densely built urban environments. The stormwater runoff reduction module works well when the field data themes were clipped so that the highest canopy (i.e., trees, shrubs, grass, or impermeable surface but no combination thereof) was recorded in every part of the study area. Carbon sequestration and air pollution removal modules worked well, but do not incorporate the best available science. Wildlife analysis falls short of its potential, given the extensive field data collected to use the program.

Keywords

urban ecosystem analysis, GIS, urban forestry

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