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Abstract

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Air quality regulation

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Microclimate regulation

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Acknowledgement

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Ecosystem services and valuation of urban forests in China

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Abstract

Urban forests are integral components of urban ecosystems, which could generate significant ecosystem services, such as offsetting carbon emission, removing air pollutants, regulating the microclimate, and recreation. These ecosystem services contribute to improving environmental quality, quality of life, and sustainable urban development. Despite a long history of inserting vegetation in human settlements in China, modern scientific study of this natural-cum-cultural resource did not start until the 1990s. Specifically, the identification and valuation of ecosystem services provided by urban forests are relatively new but fast growing research fields. This paper reviews studies on the major ecosystem services provided by urban forests in China, including microclimatic amelioration (mainly evapotranspiration-cooling effects), carbon dioxide sequestration, oxygen generation, removal of gaseous and particulate pollutants, recreational and amenity. Various valuation techniques have been applied, most of which are still at the embryonic stage. There are rooms to improve the research scope and methods. Some pertinent research gaps and implications on current and future development of urban forestry in China were distilled from the research findings.

Keywords

Urban forest; Ecosystem service; Economic value; Contingent valuation; Hedonic pricing; Recreation value; Amenity value; China

