



Modelling the influence of urban environmental conditions on CO₂-uptake

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The role of urban green is more and more in the centre of attention of urban climate studies. First of all, that is due to its potential to mitigate extreme heat and remove air pollutants which improves the climatic conditions of a city. Another aspect is the role of urban green (esp. forests) in the carbon cycle and its ability to sequester and store carbon. The Federal Agency for Nature Conservation of Germany supports a project that deals with urban forests especially in relation with urban restructuring. The project areas (approx. 5.5 ha and 4 ha) are within the city of Leipzig (Germany) with 500 000 inhabitants. In this study, various aspects of urban forests and green (e.g. effects on biodiversity) are addressed along with their potential to store and sequester carbon. A critical evaluation will be given and special problems will be pointed out concerning the estimation of carbon storage. The suitability of biomass equations found in literature and derived for managed forests is questioned for urban conditions. The second part encompasses modelling studies of CO₂ uptake of an urban forest. Here, special urban environmental conditions which differ from environmental conditions of typically managed forests are assessed (e.g. diurnal course of atmospheric CO₂-concentration). These results are evaluated in comparison to standard conditions.