EGU21-1042
https://doi.org/10.5194/egusphere-egu21-1042
EGU General Assembly 2021

Environmental and socio-economic factors influencing the use of urban parks in Coimbra (Portugal)

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Urban green spaces (UGS) are considered by the United Nations a fundamental component to achieve some of the United Nations sustainable development goals (SDGs), namely good health and wellbeing (Goal 3) and sustainable cities and communities (Goal 11). Urban parks, a type of UGS, provide a large and diverse number of regulating, provisioning, and cultural Ecosystem Services (ES), particularly relevant to face emerging challenges driven by increasing population and climate change. Furthermore, the cultural ecosystem services (CES) provided by urban parks can have a positive impact on human health and wellbeing. This study aims to identify the most relevant environmental and socio-demographic factors influencing the use of different urban parks in the city of Coimbra, Portugal. Five parks with different biophysical characteristics (e.g. park size, location within the city, tree coverage, available sport and social facilities) were selected for the study. Data were collected through personal interviews which took place in August 2020, performed on working days and weekend days. The activity performed by respondents was recorded, as well as its relevance for the user (in a 5-point Likert scale) and the associated perceived value of its benefits, regarding physical and emotional wellbeing and social interactions. Several motivation options were assessed, as well as the user perception of a set of possible disservices. Socio-demographic data were collected, including age, gender, education level, average monthly income, visitation frequency, mean of transportation to the park, and distance traveled to reach the park. Activities performed by respondents were aggregated into three groups of cultural ecosystem services: Physical interactions, Aesthetical and experiential interactions, and Social interactions. The results showed that physical interactions (e.g. walking, running, biking) dominate CES use identified in all the parks. A factor analysis was performed to investigate the association between the different variables. Perceived physical and emotional wellbeing benefits were always associated with the relevance of the activity attributed by the users, which is common to all the parks. Differences between parks emerge regarding both socio-demographic and motivation variables. Tranquility of space and landscape beauty form detached groups of variables in three of the five parks, with two of them with similar size and including the presence of a water element. Age group, average monthly income, and frequency of visits tend to

be associated in three of the parks. Such is also the case of transport type and distance to park, which form clear groups in two of the parks. As for perceived disservices, no relevant limitations were considered by the users, with plagues (e.g. mosquitoes) and dangerous animals being the only ones registering average concerns (the latter associated with dogs without a leash). Findings can help UGS managers to better understand users' needs and expectations, with potentially positive implications for UGS design and management.