

Abstract

The acceleration of the processes resulting from the ongoing climate change represents a threat both for the health of terrestrial ecosystems and for human beings. Cities are the main collectors of such reactions, where air pollution, high soil sealing rate and high population density meet. In order to contrast these consequences and reverse the negative trends linked to the aforementioned processes, a valid solution is represented by the restoration of public green spaces: in this regard, the understanding of the mechanisms through which vegetation produces beneficial effects on the surrounding urban environment is important but still first, it is crucial to identify an evaluation method that is as realistic as possible, relevant to the surrounding context without betraying the nature of the processes involved. The purpose of the thesis is to investigate the issue of ecosystem services in urban areas and, specifically, to use an evaluation method that is able to include the different values of which they are constituted.

An assessment of the benefits produced by green areas in urban areas may encounter difficulties, both in terms of methodology, quantification (cultural category) and relevance to the reference context (economic value). Starting from this observation, the first part of the thesis focuses on analyzing the topic from a methodological point of view, identifying a tool that will be implemented and tested along the thesis in its application chapters. Subsequently, a first part of results is presented with reference to parks and urban green areas of different sizes, types and scenarios considered, within the Turin metropolitan area. The theme of ecosystem services is related to the variation of land cover in the city, to the role of green areas to mitigate the effects of climate change and to future territorial planning according to hypothetical scenarios tested through the chosen methodology. In the second part, the scale is expanded to the urban level and the focus is specifically on the role of trees (both belonging to green areas and street trees) in providing benefits to the city of Boadilla del Monte. In this context, the cultural category of ecosystem services is explored through the involvement of citizens: through a questionnaire, citizens collaborated in outlining the main socio-cultural indicators of urban green areas, in defining general knowledge about ecosystem services and in evaluating the effects of climate change in the city.

In short, this thesis contributes to our understanding of: (i) how to deal with ES evaluation and quantification in an urban context, (ii) the role of green areas and trees in the regulation of different phenomena at an urban scale. Furthermore, the methodology applied in the study emphasizes the importance of a transversal approach, characterizing all three spheres of which ecosystem services are composed: environmental, economic and social.