ENCONTROS SCIENTIA

CAN GEOCACHING BE A PROXY FOR CULTURAL ECOSYSTEM SERVICES? THE CASE OF THE PORTUGUESE MONTADO

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The savannah-like cork oak and holm oak woodlands, constitute the traditional Portuguese "montado" landscape, a unique agro-silvo-pastoral system that combines economical profit with high biodiversity. "Montados" result from traditional land use management practiced for centuries, and its long-term subsistence depends on the maintenance of those management practices. However, there are several drivers of change that threaten its continued profitability and are of major concern.

Cultural Ecosystem Services (CES) can be a novel way to maintain the economic viability of the "montado" and promote its sustainability. However, CES suffer from poor quantification and are seldom considered by land managers. The increasing interest for outdoor activities and the emergence of several sources of nature-related big data offer opportunities to assess CES. In this study we focused on geocaching, an outdoor game that uses Global Positioning System (GPS) enabled devices to find hidden containers (geocaches). Geocachers sign the logbook to record every finding and publish the corresponding coordinates in the official geocaching website, which accumulates almost 3 million active geocaches and over 15 million geocachers worldwide. We used these data and related it with land cover maps to unravel preferences of geocachers for different land uses.

Our analysis revealed that geocachers prefer aquatic habitats and open areas. Although caches distribution per land use shows a high variability, with those located at "montado" being less than 4% of the caches located in forests or shrublands, the number of visits per day is quite similar among these three land uses. Among forested habitats, the "montado" stands out - this is the type of forest that people rank with higher quality, where more pictures are taken and where the average size of the logs (personal reports) is longer.

Views of nature, with natural elements such as trees and particularly open landscapes are known to be preferred by humans. The "montado" is an open landscape with scattered trees fitting this description. Also, other elements, such as shrubs, flowers (during spring), or the varying colours of crops according to seasons, are "montado" features of high aesthetic value.

Big databases available on-line are valuable sources for research, usually less expensive and using fewer resources than other data sources. Furthermore, the accuracy of the estimations of public preferences with enquiries can be biased by different factors, and thus the validation of these results with methods that assess revealed preferences can help to clarify the reasons of people's choices.

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FCUL (Building C2), 12h00-13h00, room 2.2.14

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