

RECENT ADVANCES IN VISITOR MONITORING: GPS TRACKING AND GIS TECHNOLOGY

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Recent advances in the monitoring of visitors and their infrastructure include the implementation of GPS tracking and GIS technology. This technology is used to capture data on the spatio-temporal behaviour of visitors in a level of detail and reliability that is unprecedented via conventional visitor monitoring techniques. A variety of devices is available for tracking visitors including standard handheld or wristband GPS units as well as GPS tracking apps in mobile phones. GPS tracking and GIS technology pose new challenges for the researcher. These include the choice of the most effective and accurate GPS tracking device, the most appropriate analytical procedure ranging from simple visual exploration to sophisticated spatial analysis, and the optimal data management and processing of massive datasets. The technology can be integrated into both an observational and experimental context in urban as well as natural recreation settings. For example, it has been used to examine general patterns in the spatio-temporal behaviour of visitors to cities and national parks, and the effectiveness of visitor management actions to increase visitor compliance or enhance visitor interpretation. It provides practical information on the small to large scale movements of visitors within and between visitor sites, travel preferences and sequences, and the variation in the visitor usage intensity in relation to visitor characteristics such as demographics, travel motivations, activities, and management actions as well as landscape characteristics and features such as terrain, natural attractions and visitor infrastructure. The latter itself can be subjected to GIS analysis to inform modelling approaches to travel route planning and management of park facilities. This information guides decision-making by park agencies and other tourism professionals on the extent to which visitor movements behave in a predictable and desirable way, the extent to which changes in visitor management have the desired effect, and on the monitoring of social and environmental impacts in relation to visitor usage patterns.