

Linking ecosystem services and subjective well-being in rapidly urbanizing watersheds: Insights from a multilevel linear model

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In rapidly urbanizing watersheds with conflicts between socioeconomic development and ecological protection, understanding the relationship between ecosystem services (ESs) and human well-being is important for regional sustainability. However, quantifying their relationship over multiple scales remains challenging. We selected a typical rapidly urbanizing watershed, the Baiyangdian watershed in China, and used surveys and a multilevel linear model to analyze the influence of regional ESs and individual characteristics on subjective well-being (SWB). Our results showed that the multilevel linear model could effectively capture the influences of regional ESs on the residents' SWB. For the watershed, 95.9% of the total variance in the residents' SWB was attributed to variation between individuals, and the remaining 4.1% was attributed to variation between regions. The SWB of rural residents was more likely to be affected by regional ESs than urban residents. In the Baiyangdian watershed, which has a water supply shortage, the SWB of low-income and elderly residents in the rural areas was more sensitive to water retention services, and the association was significant. The results suggest that in rapidly urbanizing watersheds, government should pay attention to maintaining and improving key regulating services to effectively maintain and promote the SWB of rural residents and regional sustainability. © 2020 Elsevier B.V.

Ecosystem services assessment

Multilevel linear modelling

Perceived well-being

Regional planning

Urban sustainability