我校孟冉教授团队研究论文获研究领域国际学术期刊高质量研究论文奖

2022-10-17 15:19 资源与环境学院 刘婷婷 我要评论 0 扫描到手持设备 字号: T T

核心提示：近日，城市林业与绿化领域期刊——Urban Forestry & Urban Greening年度“McBride Award”奖项评选结果揭晓。由我校资源与环境学院、宏观农业研究院孟冉教授带领的团队发表的研究论文荣获该奖项。

南湖新闻网讯（通讯员 刘婷婷）近日，城市林业与绿化领域期刊——Urban Forestry & Urban Greening（《城市林业和城市绿化》）年度“McBride Award”（McBride奖）奖项评选结果揭晓。由我校资源与环境学院、宏观农业研究院孟冉教授带领的团队发表的题为“Characterizing the provision and inequality of primary school greenspaces in China’ s major cities based on multi-sensor remote sensing”的研究论文，从数百篇论文中脱颖而出，荣获该奖项（全国共评选3篇）。

近年来，由于快速城市化、社会经济发展以及自然环境条件的差异，全球范围内的校园绿地分布不平衡现象引起了广泛关注。然而，当前用于研究植被覆盖度的植被指数等测量指标受到光学遥感信号饱和等因素影响，难以应用于大尺度范围内的校园绿地分布研究中。孟冉教授团队利用多尺度遥感混合像元分解技术与地理信息数据的融合，开发了精准探究大尺度校园绿地分布平衡性的新方法，并以此探究了中国31个主要城市的19681所小学校园绿地分布不均等现象及其背后的驱动因素，为推进我国基础教育资源与环境建设改善提供了定量参考依据。

研究得到中央高校基本科研经费项目、华中农业大学研究创业基金项目、国家自然科学基金项目和遥感重点实验室开放基金项目的共同资助。华中师范大学和北京大学为论文合作单位。

据悉，“McBride Award”是爱思唯尔旗下Urban Forestry & Urban Greening期刊为鼓励中国作者在城市林业和绿化领域发表高质量研究论文而设立的奖项。每年颁发给期刊甄选出的三篇来自中国的研究论文。奖项以美国林学家Joe McBride教授名字命名，以彰显他在促进中美城市林业研究合作和为中国培养研究人才方面的杰出贡献。孟冉教授团队已受邀参加今年11月份在北京举行的颁奖典礼，并作专题报告。

审核人：孟冉

【英文摘要】

Environmental and green justice problems occur globally, especially in cities with unequal access to urban greenspaces. Recently, inequality in school greenspaces has drawn growing attention, given the importance of campus green environments in young students’ health and academic performance. However, the commonly used Normalized Differences Vegetation Index (NDVI) method for measuring greenspace from satellite imagery is hindered by the saturation issue and tend to underestimate greenspace at high vegetation cover areas, causing large uncertainties in greenspace inequality studies at a national scale. Besides, despite the progress on the inequality of public greenspace exposure, our understandings of primary school greenspace provision and inequality, as well as the driving factors, for young students in a developing world (e.g., China) is still limited. To address these issues, we first adapted a spectral unmixing technique based on multi-sensor remote sensing for more accurate measurements of greenspace provision. Then, we evaluated the provision and inequality of greenspace for 19,681 primary schools in China’ s 31 major cities and examined the driving factors using an integrated path analysis. Our findings revealed that: (1) Our proposed multi-sensor remote sensing-based method for greenspace measurement is reliable across our study area with a R2 of 0.81 and RMSE of 0.14; in contrast, the traditional NDVI-based greenspace measurement saturated at the range of 0.7–1.0, leading to much lower accuracy (a R2 of 0.72 and RMSE of 0.24). (2) Most of the cities under study had low to moderate levels of inequality in primary school greenspace (Gini index < 0.5), but the overall greenspace provision was relatively low; Five cities under study facing high inequality in greenspace exposure (Gini index ≥ 0.5) as well as low greenspace provision (mean fraction cover < 0.25). (3) The monthly maximum temperature and the mean cover of greenspace in primary schools were identified as variables directly affecting the inequality in primary school greenspace (R2 = 0.76, p-value < 0.05), whereas the city-level government revenue manifests its effects through the mean

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cover of greenspace in primary schools and city-level mean greenspace cover. By developing a novel framework for examining the provision and inequality of greenspace in all primary schools in China’ s major cities, our study provides valuable insights for designing and evaluating school greening programs in support of healthier learning environment development for next generations.

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