

国家公园生物多样性监测技术概况和提升途径

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摘要(中文): 生物多样性监测是深入了解自然资源的动态变化、把握保护对象的存活状况以及评估保护效果的关键手段, 在国家公园建设和管理中扮演着的核心角色, 其技术水平直接反映了管理能力和科技水平的水平。相对于其他领域, 野生动植物资源监测技术在技术方面存在一定滞后, 这些技术的不足限制了国家公园监测工作的推进。本文主要围绕野生动植物监测技术的发展, 总结和评估了现有技术的缺陷, 并提出了利用信息技术和人工智能技术来增强国家公园监测技术的发展思路。建议将自由定位、空间测量、自动记录和传输等方面作为关键性能和指标。在此基础上, 探讨了现有智能监测技术存在的问题和不足, 介绍了我们团队开发的产品——“监测通”和“植调宝”, 以展示它们在提高数据质量、提高效率以及减轻工作负担方面的创新措施。以期为国家公园的动植物资源监测技术研发提供有益参考, 推动监测工作的有序进行, 促进高质量的发展。

关键词(中文): 生物多样性, 国家公园, 野生动物调查, 植被调查, 监测系统, 移动端应用 App

Overview of Biodiversity Monitoring Technologies in National Parks and Improvement Approaches

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Abstract: Biodiversity monitoring serves as a critical means to gain in-depth insights into the dynamic changes in natural resources, to understand the survival status of protected species, and to evaluate the effectiveness of conservation efforts. It plays a central role in the establishment and management of national parks, with the level of technical expertise directly reflecting the capacity for management and the state of technological advancement. Compared to other fields, the technology for monitoring wildlife and plant resources lags behind to some extent, constraining the progress of national park monitoring activities. This article primarily revolves around the development of wildlife and plant monitoring technologies, summarizing and assessing the deficiencies in existing technologies. It also proposes a development strategy that leverages information technology and artificial intelligence to enhance national park monitoring techniques, suggesting the utilization of features such as free positioning, spatial measurement, automatic recording, and data transmission as key performance indicators. Furthermore, the article delves into the issues and shortcomings of existing intelligent monitoring technologies, introducing our team's developed products, "Jiancetong" and "Zhidiaobao," to showcase their innovative measures aimed at improving data quality, enhancing efficiency, and reducing the workload. We hope that these innovative solutions can provide valuable insights for the development of wildlife and plant resource monitoring technologies in national parks, facilitating the orderly progress of monitoring activities and promoting high-quality development.

keywords: Biodiversity, national parks, wildlife surveys, vegetation surveys, monitoring systems, mobile application