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## **CONSTRUCTION OF ECOLOGICAL LANDSCAPE PLANNING MODEL OF TOURIST CAMPS UNDER ECOLOGICAL FOOTPRINT**

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### **Abstract**

This study aims to explore how to optimize sports tourism camping sites through ecological landscape planning to provide a place full of natural environment experience. In order to conduct in-depth analysis and calculation, this paper uses Python programming language and related libraries and GIS (geographic information system) software to clean, process, convert and scale the data. Combined with the online computing platform and the regional ecological footprint calculation method, the ecological footprint of the sports tourism camping site was evaluated and analyzed in detail, and the corresponding footprint index and report were generated. Using satellite remote sensing images and DEM data such as Landsat and ASTER, as well as GIS tools such as QGIS, the terrain and landscape of the area where the sports tourism camping site is located were accurately modeled and analyzed. The entropy weight method was used to redistribute the weights of each factor, more accurately depicting the current status of the ecological environment and its future development trend, and providing a scientific basis for the design and construction of sports tourism camping sites. The optimized wastewater discharge ecological footprint index was reduced from 8.8% to 5.8%, verifying the effectiveness and practicality of the ecological landscape planning model of sports tourism camping sites based on ecological footprint.

**Key words:** ecological footprint, environmental impact assessment, ecological landscape planning, ecological modeling, sports tourism, sustainability, tourism camp

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