

Research and practical application of key technical measures for comprehensive management of water ecosystem.

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Objectives

Adhering to the concept of ecological priority and green development, with the restoration of the beautiful environment and good ecology of the Dianxi River as the main goal, the landscape ecology as the core, and the keynote of "seeing the mountains, seeing the water, and remembering homesickness". The Dianxi River will be built into a natural ecological space with international landscape vision, regional recognition, flood prevention and drainage as the background, water system connection, water quality improvement, ecological restoration, rainwater absorption, wetland protection, pastoral scenery, cultural display, tourism, and leisure. Comprehensively drive the development of business and economy along the river, and ultimately achieve the overall goal of "water control, pollution control, ecology, tourism, landscape, and culture."

Methods

The main technical route for water ecosystem governance is to start from the overall situation of the water ecosystem, identify the key issues, determine long-term governance goals, select appropriate measures, implement them step by step, and ultimately achieve sustainable development of the water ecosystem. Specifically, it is necessary to fully explore and extract the connotation and characteristics of the project from various aspects, such as nature, ecology, society, economy, culture, tourism, etc. And use engineering measures to build a complete ecosystem with diverse landscapes, abundant species, and suitable for biological habitat and reproduction. It integrates water and the evolution of natural elements, water and economic and social development, water and human cultural development, and water and human needs for a better life. It can not only meet the needs of human and animal activities but also drive the comprehensive development of the project area and surrounding areas.

Results

Through the management of the Dianxi River, it has become clear, shaded by green trees, with the fragrance of birds and flowers, and beautiful scenery along the banks. It is like poetic and picturesque scenery, a natural oxygen bar, and a good place for leisure and entertainment. It has become a comprehensive riverside green development space with international landscape vision, regional identification function, flood control and drainage as the background, ecological protection, rainwater absorption, river and lake connectivity, green island health, cultural display, business tourism, leisure and recreation, and other functions. The cultural connotation and taste of water conservancy have been significantly improved, and the cultural charm of modern water management and revitalization has been fully demonstrated. This has driven the all-around development of the surrounding businesses in the project area, achieving the organic integration of water ecology, water environment, water culture, and economic and social development, and becoming a practical model for fully implementing the concept of ecological civilization.



Conclusions

The management of the river water ecosystem needs to consider various aspects, such as terrain, river regime, floods, water logging, pollution, ecology, landscape, economy, nature, society, human activities, and species diversity, which is a very systematic project. Therefore, it is not enough to simply solve a prominent problem at present but to fully consider the natural attributes of the river, the coordination between the river and local development, the ecological environment and the cultural environment, the relationship between the river and environmental protection, and ecological balance. Reduce disturbance to the river ecosystem, and improve it to form a complete ecological system architecture, promoting its sustainable development relying on its own.

