Analysis of Yunnan Province's Water Resource Management Policy Based on Aquatic Biodiversity Conservation

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Objectives

Yunnan, one of the most biodiverse provinces in China, also stands as one of the 34 globally recognized biodiversity hotspots. While Yunnan Province has introduced policies, regulations, and development plans pertaining to water resources management, there still exists a discernible gap in fully integrating aquatic biodiversity conservation.

This study aims at analyzing the existing shortcomings in water resources management policies concerning aquatic biodiversity conservation at the policy level. It seeks to provide policy recommendations that will serve as a foundational research basis for incorporating aquatic biodiversity protection into water resources management efforts.

Methods

This study involves a comprehensive review of the current water resources management policies, plans, and regulations in Yunnan Province, focusing on aspects related to the conservation of aquatic biodiversity. Through a policy-level analysis, the existing gaps in aquatic biodiversity conservation within the current water resources management policies are examined.

Recommendations will be presented to enhance the macro-policy environment, aiming at facilitating the integration of aquatic biodiversity conservation within the broader context of water resources management.

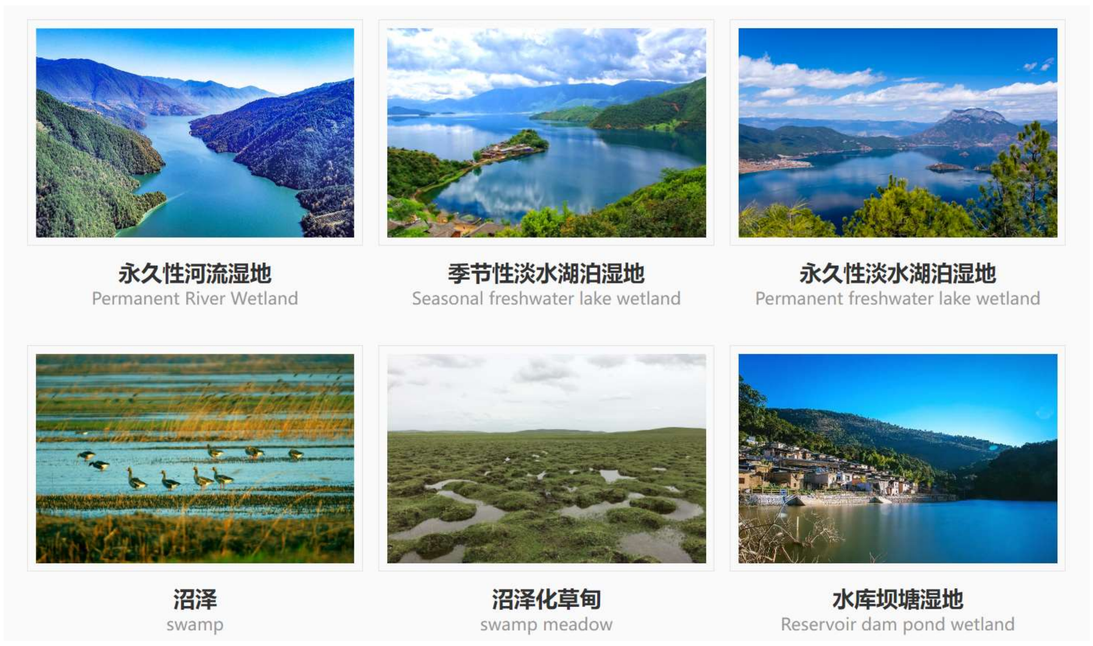

Figure2: Aquatic ecosystem in Yunnan Province
Source from: http://www.ynbioonline.com/EcosystemDiversity

Figure1: Protection regulations of nine major plateau lakes in Yunnan province
Source from: https://www.sohu.com/a/362534652_120207611

Results

Yunnan as a province rich in biodiversity, there remains a discernible gap compared to the evolving requirements of biodiversity conservation in the current landscape. This gap is particularly evident in the following three aspects:

- **Incomplete Regulatory Framework.** Some regulations have been revised without due consideration for the requirements of aquatic biodiversity conservation. At the provincial level, there is a lack of dedicated legal regulations for watershed management and aquatic ecosystem compensation.
- **Insufficient Watershed Protection and Governance System .** While Yunnan Province boasts numerous rivers and lakes, the supporting regulations and institutional structures for watershed protection and governance are lacking. This has resulted in an inefficient mechanism for watershed management.
- **Limited Capacity for Aquatic Ecological Protection and Restoration.** Deficiencies exist in various aspects, including the establishment of standards for aquatic ecological protection and restoration, the translation of research outcomes into practical applications, the construction of monitoring and evaluation systems, and adequate funding.

In response to the above problems, four measures have been proposed：

- Strengthen legal protection, and incorporate the whole process of aquatic biodiversity protection into water-related laws and regulations;
- Improve the system construction, and build a water ecological management system with the river basin as the unit;
- Adhere to the planning guidance, improve the basic research capacity of water ecology, and scientifically plan the conservation of aquatic biodiversity;
- Relying on river length system, establish a long-term mechanism of aquatic biodiversity protection.

Conclusions

The study has uncovered deficiencies in the current water resources management practices, specifically concerning aquatic biodiversity protection. These deficiencies encompass an incomplete regulatory framework, an insufficient watershed protection and governance system, and limited capacity for aquatic ecological protection and restoration. To address these issues, improved policy suggestions have been proposed. The outcomes of this study can serve as a foundational basis for strengthening the conservation of aquatic biodiversity in future water resources management endeavors.