

Research on Landscape, Forest, Field, Lake and Grass Based on CNKI Database Summary

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Abstract

General Secretary Xi Jinping put forward the principle of "landscapes, forests, fields, lakes and grasses are a community of life", emphasizing that landscapes, forests, fields, lakes and grasses are a community of life. Through a systematic review of the research on "landscapes, forests, fields, lakes and grasses", this article comprehensively sorts out the scientific connotation, main research content, theoretical support system, and pilot models of "landscapes, forests, fields, lakes and grasses", hoping to be the "landscapes, forests, fields, lakes and grasses" field. Provide reference for further research.

Keywords

Landscape; Forest; Field; Lake and grass; CNKI; Review.

1. Introduction

The social contradiction in the new era is the contradiction between unbalanced and insufficient development and the people's increasingly beautiful life. Along with this situation, the contradiction between the ecological environment and human beings is also intense. After the Industrial Revolution, human beings "crazy" to acquire various resources, and various environmental problems are more and more [1]. General Secretary Xi Jinping pointed out that "the mountains, rivers, forests, fields and lakes are a community of life, and a department should be responsible for the overall management of the control of all spatial uses within the country, and to carry out unified restoration and unified protection of mountains, rivers, forests, fields, lakes and grasses" The new concept of ecological protection [2, 3]. The report of the 19th National Congress of the Communist Party of China further pointed out that it is necessary to treat the ecological environment like life, build a variety of systems, and systematically manage various fields and links of the ecosystem, especially the overall and systematic management of "landscapes, forests, fields, lakes and grasslands".

At present, various scholars have also carried out related research on "landscape, forest, field, lake and grass", and their research mainly focuses on the interpretation of the principle and connotation of the "landscape, forest, field, lake and grass" system and the diagnosis, identification and practical application research of ecological restoration and management.[2-7]. The conditions of mountains, rivers, forests, fields, lakes and grasslands in key areas such as the Loess Plateau, Qilian Mountains, Beijing-Tianjin-Hebei, Taihang Mountains and Taibai Mountains were discussed [8-12]. Although scholars from all walks of life have carried out certain researches on mountains, rivers, forests, fields, lakes and grasses in different fields, they lack a macro summary of their research status. Therefore, this paper makes a comprehensive

introduction to the related research on mountains, rivers, forests, fields, lakes and grasses, and provides a theoretical reference for the further research of "landscapes, forests, fields, lakes and grasses".

2. Data Sources and Research Methods

2.1. Data Sources

In order to ensure the reliability of the original data, the data in this article are selected from the Chinese core journals and master and doctoral dissertations of the China Academic Journal Network Publishing Database (CNKI). The retrieval time was June 2020. An advanced search was conducted with the theme of "Landscape, Forest, Field, Lake and Grass", and a total of 77 literatures related to "Landscape, Forest, Field, Lake and Grass" were screened, including 72 core journals and 5 master's and doctoral dissertations.

2.2. Research Methods

The papers downloaded from the CNKI database are saved in Endnote format, and converted into RIS format after being processed by Endnote software. The literature visualization software VOSviewer [13-18] of knowledge graph is used to visualize the literature, which intuitively shows the current situation. research content. And use the literature method to summarize the current research content.

3. Result Analysis

3.1. The Scientific Connotation of "Landscapes, Forests, Fields, Lakes and Grass"

Scholars generally believe that the life community of "landscapes, forests, fields, lakes and grasses" is an organic whole composed of five elements, including mountains, water, forests, fields, lakes, and grasses. They are related to each other and rely on each other. The elements of the "landscape, forest, farmland, lake and grass" ecosystem influence each other and have certain connections, so they cannot be managed separately [19,20]. The core of the concept of "community of life with mountains, rivers, forests, fields, lakes and grasses" embodies the ecosystem view composed of life (organism) and the environment [20]. The management of ecosystems needs to start from a global perspective, based on the relevant spatial influence scope and element function connections, Looking for a systematic solution and implementing separate management can easily lead to the destruction of ecosystems and natural resources [26]. Some scholars have added the concept of people on the basis of "landscapes, forests, fields, lakes and grasses", arguing that the life community of "landscapes, forests, fields, lakes and grasses-people" reveals the interaction of various elements of the natural ecosystem and the synergy pattern between man and land. A natural ecosystem consisting of a human-centered social and economic system and natural resources such as mountains, rivers, forests, fields, lakes, and grasses is formed through synergy in a specific area, and together constitute a complex system of symbiosis, coexistence and sharing between humans and nature, that is, nature-society. composite ecosystem. It holds that the lifeline of man is in the field, the lifeline of the field is in the water, the lifeline of the water is in the mountain, the lifeline of the mountain is in the soil, and the lifeline of the soil is in the tree and grass[21-23], the field produces grain, and human beings rely on it to maintain life; Moisturizing the fields and making them sustainable; the mountains condense water and conserve the soil.

3.2. The Main Content of the Study on "Landscape, Forest, Field, Lake and Grass"

Co-occurrence and cluster analysis were carried out on the keywords of 77 research documents related to "Landscape, Forest, Field, Lake and Grass" using VOSviewer. Since there were few articles, the threshold was set to 1 to obtain the knowledge map.

A total of 27 clusters were formed in 77 articles, of which the subject words such as "ecological restoration", "ecological protection and restoration", "community of life", and "ecosystem services" were the key research contents of "landscapes, forests, fields, lakes and grasses". This shows that based on the analysis of the existing literature, the current research hotspot is the ecological restoration of "landscapes, forests, fields, lakes and grasses", the comprehensive definition of its ecosystem service function, and the meaning and theoretical basis of its community of destiny. Using VOSviewer to derive the table of co-citation frequency and total connection strength of the keywords "Landscape, Forest, Field, Lake and Grass" (Table 1). Similarly, we can see that the keywords most closely related to "Landscape, Forest, Field, Lake and Grass" are "community of life", "ecological restoration", "ecological restoration", "ecological protection and restoration", "ecosystem services", "ecological security pattern".

From this, it can be seen that the research contents of "landscapes, forests, fields, lakes and grasses" mainly focus on three aspects: ecological restoration, construction of life community, and definition of ecosystem service functions.

Table 1. The co-citation frequency and total connection strength of the keywords "Shanshui, Lintian, Hucao"

Key words	Total connection strength	Co-citation frequency
mountains, rivers, forests, fields, lakes, grass	99	26
community of life	47	13
Ecological restoration	37	10
Ecological protection and restoration	34	9
Ecological security pattern	22	6
ecosystem services	26	6
Ecological Civilization	17	5
Landscape, forest, farmland, lake and grass life community	13	4
Ecological Protection and Restoration	13	4
Xi Jinping Thought on Ecological Civilization	11	3
land consolidation	18	3
landscape, forest, lake	10	3
Construction of ecological civilization	12	3
ecosystem	12	3
ECO development	14	3

3.3. Theoretical System for the Study of "Landscapes, Forests, Fields, Lakes and Grass"

The realization of ecological protection and restoration of mountains, rivers, forests, fields, lakes and grasses is of great significance for improving the regional ecological environment and building an ecological security pattern. However, the ecological protection and restoration projects of "mountains, rivers, forests, fields, lakes and grasslands" generally have problems

such as complex content and huge engineering volume, including mine ecosystem restoration and management, comprehensive water environment management, farmland improvement, degraded and polluted land restoration, forest and grassland. Ecosystem restoration and conservation of biodiversity, etc. A systematic theoretical system is the premise of carrying out ecological protection and restoration projects of mountains, rivers, forests, fields, lakes and grasses. Su Chong, Fang Ying, Song Wei and others believe that accurate diagnosis of problems is the key to repairing problems, and the premise of diagnosis is to determine the "ecological source". Su Chong determined that the "ecological source area" adopted a comprehensive index system method, and selected five ecosystem services, such as carbon fixation, soil conservation, food supply, water production, and habitat maintenance, for ecological importance assessment; Fang Ying integrated landscape connectivity. Based on the In VEST model, the area with high ecosystem service value was selected as the ecological source by the granular inversion method. These two methods are more scientific than direct identification, that is, selecting the spatial range included in the core areas of nature reserves and scenic spots as the ecological source; Song Wei, Han Ji and others believe that it is necessary to formulate diagnostic indicators according to local conditions. , and selected nine diagnostic indicators for the restoration of the "mountain, water, forest, farmland, lake and grass" ecosystem in Shaanxi Province. From the literature, we can see that the diagnosis of key areas of ecological protection and restoration of "mountains, waters, forests, fields, lakes and grasses" lies in the selection of rational and scientific evaluation indicators. Other scholars have conducted research on the construction of the restoration framework of "landscapes, forests, fields, lakes and grasses". Wang Jun and Zhong Lina constructed a cognitive framework for the relationship between ecological protection and restoration projects of mountains, rivers, forests, fields, lakes and grasses and ecosystem services at different temporal and spatial scales based on the main line of "pressure-state-response". On the basis of the social-ecological system (SES) framework proposed by Ostrom, Ye Yanmei, Lin Yaoben and others constructed a social-ecological system (SES) conceptual framework integrating human activities, watersheds and land through empirical analysis. Based on the concept of life community of mountains, rivers, forests, fields, lakes, and grasses, Kong Lingqiao proposes a governance framework for landscapes, forests, fields, lakes and grasses from the perspective of ecosystem services. The construction of the ecological protection and restoration framework of "landscapes, forests, fields, lakes and grasses" is a bridge between the diagnosis and restoration pilot projects, and it is the core step of organically integrating different natural ecological environment elements in governance and restoration projects. At present, scholars have not studied it deeply enough.

3.4. Research on the Pilot Mode of "Landscape, Forest, Field, Lake and Grass"

The ecological protection and restoration of mountains, rivers, forests, fields, lakes and grasses is guided by the concept of community of life. According to the special planning of ecological protection and restoration and national land space planning, the purpose of ensuring the safety and health of key ecological functional areas and the national ecological barrier is to ensure the safety and health of key ecological function areas. From the perspective of landscape scale, Consider together above and below ground, above and below mountains, land and sea, and upstream and downstream watersheds. At the same time, the ecological protection and restoration project of mountains, rivers, forests, fields, lakes and grasses should also take into account the ecological protection and restoration of urban areas and the ecological protection and restoration of rural areas. Network, the fourth is to protect the ecological space within the city. my country has started related projects since 2016. Up to now, three batches of pilot projects have been carried out for systematic restoration projects, involving 24 provinces. The first batch of 5 pilots was approved in 2016, namely Loess Plateau in Shaanxi, Qilian Mountains in Gansu, Hebei Tianjin-Hebei Water Conservation Area, southern Jiangxi and Qilian Mountains in Qinghai. The second batch of six pilots was approved in 2017, namely Mount Tai in Shandong,

Zuoyoujiang River Basin in Guangxi, Changbai Mountain in Jilin, Minjiang River Basin in Fujian, Huaying Mountain in Sichuan, and Fuxian Lake in Yunnan. The third batch of 14 pilots was approved in 2018, and they are the middle and upper reaches of the Fen River in Shanxi, and the Wuliangshuai Basin in Inner Mongolia and the Xiongan New Area in Hebei. The differences between different regions determine different ecological and environmental problems in each region, which also means that different regions should adopt different comprehensive management models. Yu Zhenrong et al. took the "landscape, forest, farmland, lake and grass" pilot project in the southern Taihang area of Henan Province as the research area and concluded that the comprehensive renovation model in the Taihang Mountains is based on management and control, mountain repair, water control, canal protection, land preparation, re-greening and humidification. Focus on the implementation of management and control, mountain repair, and water control projects, which are mainly divided into five categories and twelve sub-categories, including mine environment management, water ecological environment management, ecosystem protection, land remediation and pollution restoration, and technological innovation projects. Based on the Three Gorges area in Hubei Province, Li Tao et al. proposed comprehensive improvement of soil erosion and ecological restoration of polluted land, abandoned mines, the shoreline of the Yangtze River, and rivers, lakes and reservoirs. Taking the Lhasa River Basin as an example, Wang Zhenbo et al. comprehensively reviewed the major ecological protection and restoration projects in the basin, summed up the technical methods for ecological restoration and protection of mountains, rivers, forests, fields, lakes and grasses on the Qinghai-Tibet Plateau, and discussed this typical plateau ecologically fragile area. The cross-regional comprehensive cooperation and linkage management mode of mountains, rivers, forests, fields, lakes and grasslands has finally formed a multi-department cross-region, multi-element integration, multi-channel cooperation, and multi-objective coupling linkage management mode through empirical research. To sum up, the implementation of the "landscape, forest, farmland and grass" project should follow the concept of "landscape, forest, farmland, lake and grass are a community of life", comprehensively consider its protection and governance from multiple perspectives and in an all-round way, and choose a governance model according to local conditions. The integrated governance is the future direction of development.

4. Outlook

By combining qualitative and quantitative methods, this paper comprehensively sorts out the related researches on "landscape, forest, farmland, lake and grass", and believes that further research on "landscape, forest, farmland, lake and grass" should break the restrictions of administrative boundaries, and take natural river basins as a unit to analyze its "landscape, forest, farmland, lake and grass". Comprehensive management of forests, fields, lakes and grasses. "Landscape, forest, farmland, lake and grass life community", "ecological protection", "ecological restoration", "ecological service function", "land remediation", etc. are still the hotspots and priorities in the future research field of "landscape, forest, farmland, lake and grass". In the research process, how to scientifically and reasonably establish the evaluation index system, construct the evaluation model, and obtain the evaluation data according to local conditions is still a difficult problem.

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