

Construction of Guizhou natural protected area system Subject inquiry with sustainable development - National park creation

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Abstract

A national park, dedicated to preserving the environment and biodiversity while fostering sustainable development, is a global imperative. Playing a pivotal role in ecosystem protection, economic sustainability, and public service provision, national parks are crucial worldwide. This paper explores the definition and value of national parks, analyzing their impact on environmental, economic, and social sustainability in Guizhou. Focusing on Fanjingshan National Park and Southwest Karst National Park, proposed in Guizhou, this study underscores the region's unique karst mountain landscape and rich biodiversity. Positioned in the Yunnan-Guizhou Plateau, Guizhou's commitment to establishing a natural protected area system with national parks at its core is integral to ecological protection. The establishment of national parks in Guizhou emerges as a pivotal measure for the safeguarding, restoration, and sustainable development of the ecological environment.

Keywords

National park, nature conservation, system construction, sustainable development.

1. Introduction

A national park is a nature reserve established by the State, a geographical area established and managed in accordance with national legislation or management policies, and the natural environment and biological diversity are specially protected. National parks generally have a vast geographical area and contain various types of ecosystems and biomes, as well as important natural resources and cultural values. [1] The National Park is considered one of the most protected areas on Earth, rich in natural and heritage resources. At the same time, education and recreation places are provided for the public. Guizhou is rich in ecological resources, including forests, wetlands, grasslands, wild animals and plants [2]. In recent years, with the support of GuOFA-2 document, Guizhou has actively promoted the creation of national parks to protect the natural environment and ecosystem and promote sustainable development. Since the 1950s, China began to build nature reserves, and after years of development, a relatively perfect system of nature protected areas has been gradually established. Especially since 2013, it has clearly proposed to "establish a national park system", which has opened a new starting point for the construction of national parks in China. Up to now, the country has officially approved the establishment of five national parks, namely: Sanjiangyuan National Park, Giant Panda National Park, Northeast Tiger and Leopard National Park, Hainan Tropical Rainforest National Park and Wuyi Mountain National Park [3]. According to the Spatial Layout Plan of National Parks issued by The General Office of the State Council and the National Forestry and Grassland Administration (National Park Administration), there are 49 candidate national park areas (including the five national parks that have been officially approved for establishment). These include two candidate areas in Guizhou Fanjingshan National Park and Southwest Karst National Park. As an ecological province in southwest China, the construction

of natural protected area system is of great significance to its ecological environment protection. At present, the province has established a total of 340 natural protected areas of various types, covering all levels of nature reserves, forest parks, scenic spots, natural heritage sites, wetland parks and geoparks [4] (Fig. 1). These natural protected areas cover most of the ecologically fragile areas and areas rich in biodiversity in Guizhou, and play a key role in protecting the ecological environment and natural resources of Guizhou.

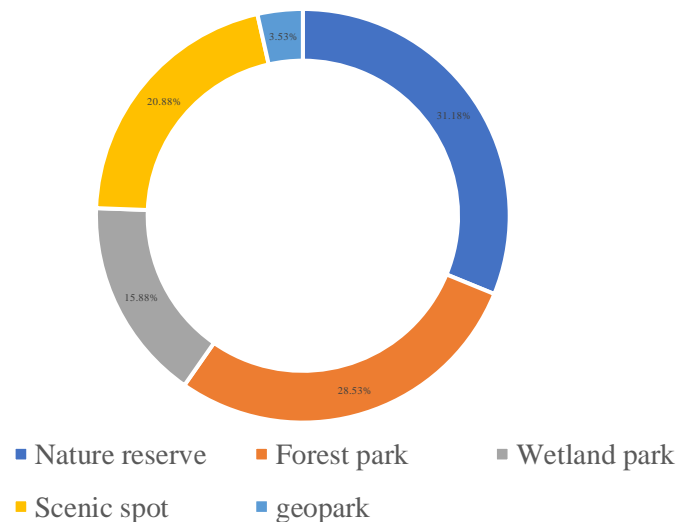


Fig. 1 Proportion map of nature protected areas in Guizhou

2. Development status of the National park

The construction of National parks in the world began in the mid-19th century, and its development history can be traced back to the establishment of Yellowstone National Park in the United States [5]. Since then, the concept of national park has gradually spread around the world, becoming an important way to protect natural resources and cultural heritage. From the mid-19th century to the early 20th century, the construction of national parks was concerned around the world. During this period, countries such as the United States and Canada began to establish national parks to protect natural landscapes and wildlife resources. From the beginning of the 20th century to the middle of the 20th century, the construction of national parks began to prevail, and many countries began to establish national parks to optimize the integration of natural resources. At the same time, UNESCO and the International Union for Conservation of Nature have also begun to pay attention to the construction and management of national parks. From the middle of the 20th century to the 21st century, the construction of national parks began to become diversified, and the management model was further enriched and improved. Some achievements have been made in protecting the natural environment, cultural heritage and ecosystem services. Since the beginning of the 21st century, under the influence of globalization and digitalization, the construction and management of national parks have gradually moved toward digitalization and globalization. International cooperation and exchanges have become more frequent, learning from each other and successful experience management [6].

The construction of China's first national nature reserve began in 1982, and the first national nature reserve - Zhangjiajie National Forest Park (now Zhangjiajie National Forest Park Scenic Area) was established in Hunan [7], which marked a new starting point for the construction of national parks in China. After more than ten years of development, the first pilot national park

system protection area was established in 2000 - the Three Rivers Parallel Flow Protection Area in Yunnan Province (now Sanjiangyuan National Park) [8], which is a domestic attempt to learn from the international concept of national parks and successful management experience. In 2005, the pilot work of the national park system was officially launched, and began to explore the pilot work of the national park system, and a number of national park pilots were set up in key regions across the country. With the comprehensive promotion of the national park system pilot, the ecological civilization concept of "Building a beautiful China" was put forward in 2013, and the reform of the national park system was advocated. In 2015, the Central Committee of the Communist Party of China and The State Council issued the Guiding Opinions on Comprehensively Strengthening the Reform of Natural Resource Assets Protection, which clarified the goals and paths for implementing the reform of the national park system. In 2018, the first batch of national park system pilots were approved and established, and then the National Park Law was formally promulgated, providing a legal basis for the construction and management of national parks [9].

Under international and domestic influence, Guizhou has also begun to promote the construction of national parks since 2015. On January 18, 2022, The State Council issued Opinions on Supporting Guizhou to break new Ground in the Development of the West in the New Era (Guofa [2022] No. 2), proposing to "study the establishment of Fanjingshan and Damaomaoshan National parks"; On September 17, 2022, The State Council approved the "Spatial Layout Plan for National Parks", and Guizhou and Guangxi provinces and regions jointly created the "Southwest Karst National Park (formerly Damaomaoshan National Park)". In just a few years, Guizhou officially began to build Fanjingshan National Park and Southwest Karst National Park. At present, all the work in the early stage of Fanjingshan National Park is in an orderly way, and evaluation materials such as basic investigation and scope zoning demonstration have been completed and submitted to the National Forestry and Grassland Administration (National Park Administration) for evaluation and review. The establishment of these national parks is of great significance to the protection of Guizhou's natural environment and ecosystem, the establishment of a natural protected area system with national parks as the main body, the protection of the world's unique karst landform and ecosystem, the construction of an important ecological barrier in the south of China, and the promotion of harmonious coexistence between man and nature. It also provides nature education and recreation for the public.

3. The value of national parks

3.1. Ecological protection value

The primary role of a national park is to safeguard ecosystem stability and preserve biodiversity. These areas maintain relatively pristine habitats, offering extensive, uninterrupted spaces for rare flagship plant and animal species. Crucially, national parks protect the survival environments of native, rare, endangered, and threatened species. Additionally, they play a vital role in maintaining water, soil, and air quality, safeguarding natural heritage, and preserving geological and geomorphic landscapes. By effectively shielding concentrated, original, and stable ecosystems at the same latitude, national parks contribute significantly to global environmental conservation, embodying complete geological evolution and rich biodiversity [10].

3.2. Sustainable development value

The establishment of the national park is a further step in the systematic improvement of natural environmental protection and sustainable development, and provides employment opportunities for local communities to jointly build public management. For example, in

national park community development, forest ranger and ecological public service positions can be provided. It is also an important driver of tourism, attracting domestic and foreign tourists to visit and experience the beauty of nature. The ecological benefits can be used to maintain and build the infrastructure of the national park and promote the development of the local economy.

3.3. Value of education and research

National parks can provide the public with the opportunity to learn and study the natural ecological environment, and visitors can visit and experience the evolution of natural ecosystems. In addition, scientists and scholars can use national parks as research objects to carry out basic research. Such as biodiversity conservation, climate change and environmental impact assessment. At present, many schools, research institutes and educational institutions choose national parks as practice and research bases, setting up laboratories and bases. Through the construction of the national park system, teaching is closer to nature, and these educational and research values are conducive to the study of environmental protection policies and management practice strategies.

4. Challenges and development of Guizhou National Park creation

In 2013, in the "Decision of the Central Committee of the Communist Party of China on Several Major Issues concerning Comprehensively Deepening Reform", it was proposed to "establish a national park system", starting from the policy support for the construction of national parks, after seven or eight years of development, starting from the pilot of national parks, China officially approved the establishment of the first batch of national parks on October 12, 2021. The protected area covers about 230,000 square kilometers, covering about 30% of the national key protected wildlife resources [11] (Table 1). At this point, our country's national park system has been preliminarily formed. Although the national park has made remarkable achievements in environmental protection and sustainable development, the current national creation work in Guizhou still faces some challenges, with a lack of experience and cases in the creation process, and many basic data sources are few. Since construction of the national park began in 2015, it has yet to be officially created. First, in mountainous plateaus like Guizhou, the impact of human activities on national parks is an important issue, and the excessive influx of tourists and irresponsible behavior may cause damage to the natural environment. Second, the government and civil society organizations need to work together to strengthen the management and supervision of national parks to ensure their sustainable development. To address these challenges, the development of national parks requires the collaboration of governments, scientists, and communities. Formulate clear management policies, laws and regulations, strengthen protection measures, and enhance public awareness and responsibility for the natural environment. At the same time, national parks also need to invest significant resources in scientific research and educational activities to increase public awareness and understanding of protecting the natural environment.

Table 1 Basic information on the first batch of national parks to be established

National park names	Competent department	Approval date	Approved area (km ²)	Core value
Three-River-Source National Park	National Park Administration	September 9, 2021	123 100	China Water Tower, a typical representative of alpine ecosystem, alpine biological germplasm resource bank
Giant Panda National Park	National Park Administration	September 9, 2021	27 134	Wild giant panda core distribution area, global biodiversity hotspot, rich unique natural and cultural

				landscape
Northeast China Tiger And Leopard National Park	National Park Administration	September 9,2021	14 065	The wild population distribution area of the Siberian tiger and the Northeast leopard is a typical representative of the temperate forest ecosystem
Wuyishan National Park	National Park Administration	September 9,2021	1 280	Typical representative of island tropical rain, treasure house of tropical biodiversity and genetic resources, ecological security barrier of Hainan Island
National Park of Hainan Tropical Rainforest	National Park Administration	September 9,2021	4 269	Typical representative of subtropical forest ecosystem, Southeast flora and fauna treasure house, world cultural and natural heritage

5. Conclusion

As the cornerstone of nature protection and sustainable development, national parks assume pivotal roles in ecological and environmental conservation, sustainable development, nature education, and scientific research. They represent our shared natural heritage and resources, safeguarding the integrity of original ecological environments. The establishment and growth of national parks necessitate collaborative efforts from all segments of society to create demonstration areas for ecological civilization, promoting green and sustainable development. Situated on the Yunnan-Guizhou Plateau, the network of natural protected areas is rapidly evolving. Viewing nature reserves and natural heritage sites as the highest and strictly protected geographical areas, their growth dynamics are relatively stable, gradually reaching saturation. While notable progress has been made in constructing protected natural areas, optimizing Guizhou's distinctive geographical features, karst landforms, natural landscapes, and biological resources is imperative. Enhancing protection and management efficiency is crucial, and proactive steps should be taken to establish Fanjing Mountain and Southwest Karst National Parks, aligning with the spatial layout plan for national parks. The GuOFA-2 document emphatically endorses Guizhou's strides in ecological civilization construction. As an experimental pilot for ecological civilization, the creation of a high-quality national park embodies a tangible implementation of ecological civilization and new development concepts. It stands as a significant measure to fulfill the political responsibility outlined in the national ecological security strategy, contributing to the establishment of a natural protection area system with national parks as its core. This endeavor holds profound significance in fostering a sustainable and harmonious coexistence between human activities and the environment.

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