Bird Conservation for Economic Growth and Science Popularization for Public Appeal[1]:

Exploration of the cooperative model between nature conservation communities and nature science popularization and education institutions in Wuyuan County (Jiangxi Province)[234]

Abstract: As an important supplement to the biodiversity conservation network, community-level nature reserves play a vital role in protecting scattered populations of rare and endangered wild animals and plants, as well as typical plant communities in China. However, their sustainable maintenance urgently requires further efforts to mobilize more resources and social forces and translate ecological dividends into people's well-being. Wuyuan, Jiangxi Province, has explored a cooperative model of resource complementarity between community-level nature reserves and

[1] Case provided: Policy Research Project Group of the "Governance System for Harmonious Coexistence between Humans and Nature" of the International Cooperation Council

[2] Domestic News Department of Xinhua News Agency; Jiangxi Branch of Xinhua News Agency. The Blue-Crowned Laughingthrush: Rediscovered After Disappearance [EB/OL]. 2023-10-15. http://society.people.com.cn/n1/2023/1015/c1008-40095502.html.

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institutions of nature popular science education. Focusing on the habitat conservation of the blue-crowned laughingthrush (*Garrulax courtoisi*)—a species endemic to China and Jiangxi Province—the county has not only created a stable home for the bird through scientific planning and ecological restoration, but it has also driven the development of the birdwatching economy. Meanwhile, relying on facilities, such as the reserves' laboratories, it carries out nature education and popular science activities, attracting a large number of tourists and jointly promoting the improvement of ecological conservation awareness and the collaborative development of the "conservation-education-economy" model. This practice provides a reference for a sustainable conservation model featuring ecologically beautiful landscapes and prosperous people for biodiversity conservation in mountainous cities and counties.

Keywords: Natural conservation communities; natural science popularization and education institutions; blue-crowned laughing-thrush; biodiversity conservation

I. Background

The natural conservation zones in Wuyuan focus on protecting local rare species and, especially, building a suitable ecological home for the blue-crowned laughingthrush, which is endemic to

China and Jiangxi. The blue-crowned laughingthrush has strict requirements for its habitat: dense arbor forests surrounded by streams. The natural conservation communities provide a stable living environment for the bird by demarcating exclusive protected areas, implementing vegetation restoration, and conducting ecological monitoring. The population of the blue-crowned laughingthrush has gradually recovered, becoming a landmark achievement of ecological protection in Wuyuan.

Figure 1 Natural conservation communities in Wuyuan

Credit: China Environment News.

The natural science popularization and education institutions located in Wuyuan aim to inherit the spirit of natural science and provide public education and outreach activities for local people. The institutions are equipped with facilities, such as biological exhibition zones, professional laboratories, and green spaces. With

rich science popularization resources, they have become a landmark for natural education in Wuyuan, attracting a large number of students and visitors to participate.

Figure 2 Wuyuan natural science popularization and education institutions investigating a cave ecosystem

Credit: China Youth Daily.

II. Main Practices

(1) Safeguarding Rare Species Through a Multi-Actor Approach

In view of the habits of the blue-crowned laughing-thrush, the natural conservation communities have demarcated core protected areas, implemented projects—such as closing mountains for forest and wetland restoration—and planted native plants that the blue-crowned laughing-thrush likes to eat to enrich its food sources. The communities have established a regular monitoring mechanism, enabling them to track the population size and activity trajectories

through infrared cameras and regular inspections by professional teams. They have also carried out the restoration of habitat connectivity to reduce human interference and create a safe breeding environment for the blue-crowned laughing-thrush, gradually improving its population stability. Currently, 193 natural conservation communities have been built, with a total area of 109,800 hectares. The number of wild birds in Wuyuan has increased from 286 species in 2012 to 356 species in 2024; since the blue-crowned laughing-thrush was rediscovered in 2000, the population has increased to 600 as of 2024.

With the support of the Wuyuan County Forestry Bureau, the Urban Management Bureau, etc., the natural science popularization and education institutions independently carry out temporary wildlife rescue (e.g., receiving injured “three-haves” protected animals such as the *Macropisthodon rudis* from villagers), develop artificial breeding technology for local rare butterflies, and they have built the first butterfly conservation green space in Wuyuan. They focus on assisting in the protection of biodiversity across the region, complementing the protection of the blue-crowned laughing-thrush in the natural conservation communities.

(2) Encouraging Local Citizens to Participate in Conservation Actions Through Awareness-Raising Activities

Based on the protection case of the blue-crowned laughing-thrush, the natural conservation communities carry out themed campaigns, the Guardians of Rare Birds. They set up science popularization display boards in surrounding communities and hold bird-watching activities to introduce the ecological value and protection significance of the blue-crowned laughing-thrush, guiding residents to actively participate in the maintenance of the surrounding environment and reducing interference with the habitat.

The natural science popularization and education institutions design differentiated science popularization content and carry out public lectures in addressing local issues, such as the invasion of alien species and the prevention and control of agricultural pests and diseases. For example, in 2022, 12 lectures on the ecological hazards of *Pomacea canaliculata* were held, mobilizing nearly a thousand participants in the removal action. At the same time, through the science popularization of native species, such as the blue-crowned laughing-thrush, they enhance the public's attention to rare species, forming a dual awareness-raising approach that combines professional institution science popularization and conservation

community demonstration.

(3) Activating the Value of Research Tourism and Cultural Tourism Through Distinctive Biodiversity Attractions

Relying on the scarcity of the blue-crowned laughing-thrush, the natural conservation communities attract bird-watching enthusiasts and photography teams, driving the development of supporting industries, such as homestays and catering, in the surrounding areas and forming a characteristic bird-watching economy value chain, which enables local residents to directly benefit from ecological conservation. The annual income of ecological tourism where the conservation communities are located can reach RMB 3.5 million.

The natural science popularization and education institutions independently carry out research tourism and cultural tourism activities. In the past 3 years, they have provided public science outreach services to an average of 12,000 participants annually and hosted around 13,000 students for educational programs each year. Working with 17 villages, they have established field research camps and, in the past 3 years, hosted more than 2 million bird-watching and research tourism visits, driving 50 households to increase their income by nearly RMB 2.9 million in total. Through natural

education and community cooperation, they have achieved the coordination of science popularization value and community livelihood improvement.

III. Insights

(1) The Collaboration Among Independent Actors to Mobilize Conservation Synergy

The natural conservation communities focus on species habitat protection, and the natural science popularization and education institutions focus on science popularization and education. Although they have different advantages and focuses, they form a closed loop of conservation practice and public awareness and successfully provide an effective model for inverse independent entities to collaboratively conduct biodiversity conservation.

(2) Empowering Conservation with Science Popularization, Strengthening Public Participation

The natural science popularization and education institutions activate the public's ecological awareness through public outreach and education. Their experience shows that professional science popularization institutions can effectively connect scientific research with society and shift the public from bystanders to participants.

This model has enabled these institutions to serve as the first batch of natural education schools (bases) in Jiangxi and win the Jiangxi Forestry Science Popularization Award. It serves as a demonstration for other education institutions at home and abroad to expand natural science popularization activities.

(3) Transforming Ecological Value and Achieving Sustainable Development

The natural conservation communities drive the growth of the bird-watching economy through the protection of the blue-crowned laughing-thrush, and the natural science popularization and education institutions promote community income increase through research tourism activities. Both prove that based on local species resources, combining ecological protection with economic development is a feasible path for mountainous counties to achieve beautiful ecology and prosperous livelihoods. This approach provides a replicable model for biodiversity governance in mountainous regions at the city and county levels.