

World Natural Heritage Site

State Party: China

State of Conservation report

South China Karst World Natural Heritage Site



National Forestry and Grassland Administration (NFGA)

The People'S Republic of China

October 2022

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1. Executive Summary

The State Party has attached great importance to the conservation of world natural heritage, and hosted the 44th session of the World Heritage Committee in Fuzhou City, Fujian Province of China in July 2021. The seven serial heritage sites of the South China Karst World Natural Heritage Site (hereinafter referred to as South China Karst) have progressively promoted the protection of its heritage sites, and resolute efforts have been made to protect the world heritage and improve world heritage management, so that the outstanding universal value (OUV) of the individual serial sites have been effectively protected.

The State Party has attached great importance on the relevant decisions at the 44th session of the World Heritage Committee. Effective achievements have been accomplished through the concerted efforts of the management institutions of the seven serial heritage sites and the orderly implementation of *The Conservation and Management Plan of South China Karst World Natural Heritage Site* (CMP-SCK). The State Party stated that the Guiyang-Nanning high-speed railway project traversing the buffer zone of the Libo Karst has no impact on the OUV of the Libo Karst, nor on the invasion of alien species. The State Party notes that it will ensure the sustainable development of the tourism industry at property by supporting communities to participate in world heritage sustainable tourism, developing an effective supervisory mechanism, promoting the application of eco-friendly technologies, as well as conducting scientific research exchanges, carrying out publicity and education activities. The State party also indicated that the monitoring and sustained management of the distribution of tourist pressure will be continually carried out. Through projecting the tourist carrying capacity, a monitoring information management system for heritage conservation and tourism impact shall be developed to implement the management of tourist dynamics. The State Party reiterated that, in the case of any future relocations, *The Policy on the Integration of a Sustainable Development Perspective into the Processes of the World Heritage Convention* and relevant international criteria will be observed. The State Party indicates that the relevant planning and development strategies for the sustainable development of South China Karst World Natural Heritage Site will be constantly improved, and expects that the involved consulting agencies shall provide suggestions, support, and assistance in this regard.

2. Response to the Decision WHC/44 COM 7B.181 at the 44th session of the World Heritage Committee (Fuzhou, 2021).

- 2.1 Having examined Document WHC/21/44.COM/7B,**
- 2.2 Recalling Decision 43 COM 7B.4 adopted at its 43rd session (Baku, 2019),**
- 2.3 Welcomes the State Party's continued progress towards an integrated, coordinated management system for the property, including the ongoing implementation of the 2016-2025 Conservation and Management Plan of South China Karst World Natural Heritage Site (CMP-SCK) and the positive results reported to date;**
- 2.4 Notes with appreciation the measures taken by the State Party to address any negative impact on the buffer zone of the Libo Karst component from the Guiyang-Nanning High-speed Railway, currently under construction, but reiterates its request to the State Party to address potential impacts of the project, including invasive alien species, on the Outstanding Universal Value (OUV) of the property;**

Response of the State Party:

As the Guiyang-Nanning high-speed railway passes primarily through the buffer zone of the Libo Karst component by way of bridges and tunnels, it has no affect the outstanding universal value of the property. The State Party has strictly conformed to the approval comments and requirements articulated in *The Environmental Impact Report on the Newly-built Railway of the Guiyang-Nanning Dedicated Passenger Line*, *The Soil and Water Conservancy Plan for the Newly-built Railway of the Guiyang-Nanning Dedicated Passenger Line*, and *The Study Report on the Impact of Constructing the Guinan Railway Project on the Libo World Natural Heritage Site* and so on, and has undertaken multiple measures to protect the OUVs of the Libo Karst component. Those control measures concerning the geology and landforms, ecological environment, and impact on biodiversity, etc. have been addressed in *The State of Conservation Report of South China Karst World Natural Heritage Site (2020)*. In terms of preventing and controlling the invasion of alien species, the measures adopted by the State party are as follows:

2.4.1 Quarantine inspection was carried out, and the management of introduction of alien species was strengthened

Libo County, in accordance with the relevant mandatory requirements, issues the Plant Quarantine Certificates for plants or plant products transported into the local areas after passing strict quarantine inspection control, meanwhile, it is forbidden for any entities or individuals to introduce, release or discard alien species arbitrarily. Comprehensive quarantine inspection processes have cut off the main pathways for the invading harmful alien species.

2.4.2 Contingency plans were formulated and the treatment of invasive alien species was implemented in a timely manner

Rational and operational contingency plans contribute effectively to avoiding the impact of alien invasive species on the OUVs of heritage sites. The Office of Libo County People's Government has issued *The Contingency Plan of Libo County for the Harmful Biological Organisms in Forestry* (hereinafter referred to as *The Emergency Plan*). It clarifies the emergency response measures for treating disasters of organisms harmful to forestry and serves as a guideline document for the management of invasive alien species at the heritage site. In line with *The Contingency Plan*, the management of invasive alien species can be implemented efficiently in a rapid and orderly manner, and their impact on the property's OUVs can be prevented.

2.4.3 Policies and regulations were improved to safeguard ecological security

The Standing Committee of the People's Congress of Guizhou Province adopted *The Regulations of Guizhou Province on the Prevention and Control of Harmful Organisms*. The prevention, quarantine, management, and supervision of invasive alien species at the heritage sites shall be carried out in accordance with the Regulations, which has provided legal protection for the prevention and control of alien species invasion in heritage sites.

2.4.4 The management system for prevention and control was improved and an emergency headquarter was set up.

The emergency responses from the emergency headquarter for disasters of organisms harmful to forestry is an important link in the prevention and treatment of invasive alien species at the property. Libo County has constantly improved the management system for the prevention and control of invasive alien species. By

instituting the emergency headquarter for disasters of organisms harmful to forestry, the institutional mandates and responsibilities are clarified, of which, the Commander position is held by the vice governor of the country in charge of the forestry sector, and the Deputy Commanders by a deputy director of the County Government Office delegated to communicate with forestry work and the director of the County Forestry Bureau. Its members are composed of primary officers of the relevant bureaus.

2.4.5 Publicity and education were carried and an enabling environment for joint community participation was created

Concurrent with the themed publicity activities, including the International Biodiversity Day and World Environment Day, etc., the Internet, mobile terminals, radio broadcast and television, and other media were used to strengthen science popularization to prevent and control the invasion of alien species in Libo County. Meanwhile, publicity leaflets and brochures, such as *A Publicity Leaflet for Law Enforcement in the Inspection and Quarantine of Organisms Harmful to Forestry in Libo County*, and *A Publicity Leaflet for the Prevention and Control of Pinewood Nematode in Libo County*, *The Regulations of Guizhou Province on the Prevention and Control of Organisms Harmful to Forestry*, and others (Figure 1) were compiled and printed for distribution. Publicity and training were conducted extensive which has inspired the awareness of the general public in preventing invasive alien species, and further enhanced the conservation and management capacity at the heritage site. All these efforts have created an enabling environment for the community to participate in the prevention and control of invasive alien species.



Figure 1. Publicity and Education Leaflets and Brochures at Libo Karst

The governments of the State Party will continue to urge the local governments, the relevant institutions and enterprises and their staff, including the world heritage management institutions, the railway construction enterprises, and the operational enterprises. In strict conformity with *The Environmental Impact Assessment Report* during the construction and operation of the Guiyang-Nanning High Speed Railway Project, so as to ensure that the project construction has no negative impact on the OUVs of the Libo Karst.

2.5 Noting that tourism is a major source of income for local communities, including Wukeshu, requests the State Party to ensure the sustainable development of the tourism industry at the property, which mitigates the potential for negative impacts on the property's OUV;

Response of the State Party:

Tourism has become an important part in local community development throughout South China Karst, inclusive of Wukeshu in Shilin Karst. With the increasing popularity of South China Karst, tourism in the seven heritage sites has been developed to a certain extent, and more and more community residents have benefited from the development of tourism in heritage sites. In order to ensure tourism development at the heritage sites, the State Party, in strict conformity with the requirements elaborated in *The Convention concerning the Protection of World Cultural and Natural Heritage*, *The Conservation and Management Plan of South China Karst World Natural Heritage Site*, and *UNESCO World Heritage Sustainable Tourism Toolkit*, has always adhered to the principles of “science-based planning, holistic/unified management, rigorous protection, and sustainable use” in the implementation of science-based protection and rational use of the heritage sites to promote sustainable tourism development in the world heritage sites. Five measures have been implemented: **(1) supporting communities to participate in world heritage sustainable tourism; (2) developing an effective supervisory mechanism; (3) promoting the application of eco-friendly technologies; (4) conducting scientific research exchanges; (5) carrying out publicity and education activities.**

2.5.1 Support to the communities to participate in world heritage sustainable tourism

The communities within the scope of karst landscape resources have been encouraged and supported to participate in tourism industry in a variety of ways

and develop featured country tourism projects, such as sightseeing, folklore, recreation, and other tourism projects with rural characteristics. Activities related to training the job skills of community residents have also been carried out. These efforts aim at guiding the people of the local communities to make rational use of the heritage natural resources to promote sustainable community development.

- Shilin Karst: After the relocation, the Wukeshu villagers participated in a range of jobs and tasks such as clothing rental and photo shooting, tour guides and interpretation, environmental and sanitation management, forest fire prevention, comprehensive management of public security in the scenic area, and greening and landscape maintenance. Also, the first featured auditorium for e-commerce was built in Shilin County where the local products, handicrafts, fresh fruits, and vegetables, etc. of Shilin were marketed online and offline. By participating in the work of sustainable tourism, the income of the Wukeshu villagers is guaranteed. Moreover, Shilin Karst also participated in implementing the Sustainable Livelihood Activities at world heritage site supported by the UNESCO Conservation and Management of World Heritage Sites in China; organized the training workshop on “Brand Building of Sani Embroideries” in Phase IV of the Sustainable Livelihood Project, and the online training at the Shilin pilot site themed “the Culture|2030 Indicators”, which have effectively enhanced the productive capacity of the local community residents.
- Libo Karst: In an effort to strengthen the protection and management of the ecology and environment in the property, through a series of measures, such as employment support, industrial guidance, cultural transmission, business services, and cultural performances, some models of sustainable development have taken shape, including transforming the heritage communities into scenic areas, converting artistry of the ethnic minorities into productivity skills, upgrading traditional residential houses to homestays, transfiguring villagers to performers, and promoting agricultural produce to commodities. These models have not only given full pay to and transmitted the cultures of the ethnic minorities, but also raised the overall income level of the community residents. In 2019 alone, Gaoqiao Village generated over 50 million Chinese Yuan from tourism, making it a “Ten Thousand Million” village known far and near. Environment-friendly community co-management

projects (CCPs) were implemented with the adjacent community residents, in which, the community residents contribute the users' rights of the land and communal forest plots as shares to join in paid business services associated with using the heritage resources; in turn, they will receive a mutually agreed proportional share of the income generated from paid resources use, thus, enjoying the benefits from sustainable heritage use. The local community residents are also encouraged to participate in the protection and management of heritage sites and their buffer zones, and local communities are allowed to provide tourism services to tourists through concession arrangement.

- Wulong Karst: Business areas were designated at the entrance and exit of Tiansheng Sanqiao, the exit of the outcropped crevices of Longshui Gorge, and Furong Cave Ticket Center, where 134 grocery stands were set up and 34 job positions for palanquin riding services were provided. In total, job solutions were provided to 202 indigenous households, each of whom have generated an average increased income of over 10,000 Chinese yuan. Characteristic ecological resources are transformed into poverty alleviation development, and realizes the transformation from a national poverty-stricken county to a tourism area with targeted poverty alleviation through eco-tourism. A law enforcement team was mobilized to secure the business and trade order in the scenic area and the local communities, ensuring a sound living environment for the community residents.
- Guilin Karst: The village name plates (Figure 2) were installed for publicity purposes for the natural villages in the property to guide country tours for tourists. In total 78 village name plates were installed. In the meantime, knowledge about the natural heritage and its conservation were introduced and publicized to tourists and local villagers. During the publicity activities on April 28, 2022, about 2,500 copies of brochures, leaflets, and other publicity media about the conservation laws and regulations were given out. Ten percent of the ticket revenue of the Yangshuo Lijiang Scenic area is used as the ecological compensation fund for the indigenous people in the property, special funds for sanitation and cleaning are also set up, and priorities are given to hire the community residents as raft workers and tourism service personnel, which has provided 1,200 jobs and increased the income of the local villagers.



Figure 2. Publicity board for natural villages in Guilin Karst

- Shibing Karst: Training of community tourism practitioners were organized and carried out (Figure 3). Using an approach of "theoretical elaboration + scenario simulation + case analysis", ecological protection, idea of sustainable development, service skills, etc. were taught and exercised. This has helped to optimize the knowledge composition of practitioners in community tourism, enhanced their service mindset/thinking, and promoted the sustainable and healthy development of the tourism industry.



Figure 3. A training workshop of the community tourism practitioners in Shibing Karst

2.5.2 Formulate plans for sustainable development of tourism at heritage sites

Adhering to the principle of planning first, with the aim of protecting the ecosystem integrity of heritage sites and promoting the sustainable development of tourism, the State Party highlight the outstanding universal value of heritage sites and formulate *The Conservation and Management Plan of Wulong Karst of*

Chongqing Municipality, Tourism Development Plan of Shibing County in Guizhou Province, The Fourteenth Five-Year Plan for All-region Tourism Development of Shilin Yi People's Autonomous County and other relevant plans (hereinafter referred to as the Plan). On the basis of scientific assessment of the environmental carrying capacity of heritage sites, the Plan optimizes the layout of the tourism industry, strictly manages all kinds of construction activities, and resolutely curbs the over-development and commercialization of the rush for quick results and quick benefits. The heritage sites practiced the ecological and environmental protection concept of "lucid waters and lush mountains are invaluable assets" with practical actions, and promoted the green and sustainable development of tourism economy.

2.5.3 Develop an effective monitoring mechanism to ensure the sustainable development of the tourism industry at the property

The State Party has always undertaken the sustainable development of heritage sites and their environment as the goal of developing and managing the tourism resources. An effective supervisory mechanism is the key to the sustainable development of the tourism industry. Since South China Karst was inscribed as world natural heritage, under the framework of *Convention Concerning the Protection of the World Cultural and Natural Heritage, Environmental Protection Law of the People's Republic of China, The Regulations of the People's Republic of China on Nature Reserves, and The Regulations on Scenic and Historic Areas*, a series of relevant laws, regulations, rules, management measures, and other documents (Table 1, Table 2) have been promulgated in

Table 1 Relevant Laws, Regulations, and Statuary Documents of
South China Karst World Natural Heritage

Title	Promulgation entity	Type of document	Date of Enforcement
Measures for the Ratification and Approval for the Planning Compilation of National Scenic and Historic Areas	Ministry of Housing and Urban-Rural Development (MOHURD)	Departmental regulation	2015
Measures for the Nomination and Protection of World Natural Heritage and Mixed Natural and Cultural Heritage	MOHURD	Normative document	2015

response to our needs for sustainable development, which regulate the tourism development activities at the property, promotes tourism development, put forward specific requirements for service-related facilities, equipment and staff, and prohibits all behaviors or activities that may damage the heritage OUVs so as to ensure the sustainable development of the tourism industry at the property.

Table 2. Relevant Local Rules, Regulations, and Statutory Documents of the Individual Property

Property	Title	Promulgation department	Type of documents	Date of Adoption
Shilin Karst	Regulations of Kunming City on the Protection of Shilin Scenic and Historic Areas (SHA)	Standing Committee of Kunming Municipal People's Congress	Local regulations	2008
	Regulations of Yunnan Province on Scenic and Historic Areas	Standing Committee of Yunnan Provincial People's Congress	-Do	2012
	Regulations of Shilin Yi Autonomous County of Yunnan Province on the Protection of Shilin Karst WNHS	Standing Committee of Yunnan Provincial People's Congress	-Do	2016
	Measures for the Implementation of the Regulations on the Protection of Shilin Karst WNHS in Shilin Yi County, Yunnan Province	Shilin Yi Autonomous County Government	Administrative regulatory documents	2021
Jinfoshan Karst	Measures for the Protection of the Jinfoshan Karst WHNS in Chongqing	Chongqing Municipal People's Government	Local Government-al regulation	2016
	Traffic Management Measures of Jinfoshan Scenic and Historic Area	Administration Committee of Jinfoshan Scenic and Historic Area, Nanchuan District, Chongqing	Administrative regulatory documents	2010
	Measures for the Administration of Resource Protection in Jinfoshan Scenic and Historic Area	-Do	-Do	2010
	Measures for the Administration of Tourism Safety in Jinfoshan SHA	-Do	-Do	2010
	Measures for Administration of Environmental Sanitation	-Do	Administrative regulatory documents	2010

Property	Title	Promulgation department	Type of documents	Date of Adoption
	of Jinfoshan SHA			
Wulong Karst	Regulations of Chongqing Municipality on the Management of Scenic and Historic Areas	Standing Committee of Chongqing Municipal People's Congress	Local regulations	2008
	Measures for the Protection of Wulong Karst World Natural Heritage in Chongqing	Chongqing Municipal People's Government	-Do	2010
Shibing Karst	Regulations of Southeast Guizhou Miao and Dong Autonomous Prefecture on the Protection of Shibing Karst WNHS	Standing Committee of Guizhou Provincial People's Congress	-Do	2018
Libo Karst	Regulations of Guizhou Province on the Scenic and Historic Areas	-Do	-Do	2007
	Inspection Mechanism on the Protection and Management of Libo WNHS		Administrative regulatory documents	
	Implementation Plan for the Joint Inspection of Libo WNHS		-Do	
	Ratification and Filing Management System for Projects in Libo WNHS		-Do	
	Interim Measures for the Protection of Old and Famous Trees in Libo SHA (Provisional)		-Do	
Huanjiang Karst	Interim Measures for the Management of Huanjiang Karst World Natural Heritage	Standing Committee of Huanjiang Maonan People's County Congress	Local regulations	2015
Guilin Karst	Regulations of Guangxi Zhuang Autonomous Region on the Management of Scenic and Historic Areas	Standing committee of Guangxi Zhuang Autonomous Region People's Congress	-Do	2010
	Regulations of Guangxi Zhuang Autonomous Region on the Ecological Environmental Protection of the Lijiang River	-Do	-Do	2012

Property	Title	Promulgation department	Type of documents	Date of Adoption
	Watershed			
	Regulations of Guilin City on the Management of Lijiang SHA	Standing Committee of Guilin Municipal People's Government	-Do	2020
	Regulations of Guilin Municipality on the Sustainable Utilization of Karst Landscape Resources	-Do	-Do	2022
	Measures for the Administration of the Concession Rights of Water Sightseeing Projects in Lijiang River SHA in Guilin	Guilin Municipal People's Government	Administrative regulatory documents	2018

SHA: Scenic and Historic Area; -Do: ditto, the same as above.

2.5.4 Continually promote the application of eco-friendly technologies in the path toward sustainable development of heritage tourism to ensure that there is no impact on OUV of the heritage sites

The State Party has progressively promoted the application of eco-friendly technologies, facilities, materials, etc. in the heritage sites. With the help of energy-saving, new technology for environmental protection, and new energy sources, the heritage sites have promoted the transformation and upgrading of tourism industry at the property, and ensure that tourism does not have a negative impact on OUV of World Heritage sites, as follows:

- Shilin Karst: Clean energy is used in the tourist buses in the scenic area which not affect the ecology and environment. The wooden plank paths and tourist trails in the scenic area are constructed with eco-friendly slate and new environment-friendly materials matching the terrain features.
- Libo Karst: A comprehensive smart tourism management platform composed of smart management, smart protection, and smart service systems was built by integrating sustainable tourism development with the application of digital technology. The platform allows for the full coverage, visualized, and dynamic monitoring and surveillance of the heritage site and scenic areas, ensuring the protection of the integrity of the heritage OUVs. One comprehensive platform, two centers (command center and data center), three portals (Internet portal,

mobile Internet portal, and self-media portal), four management systems (management system, marketing system, service system, and protection system) were built, attaining the overall scheduling and management, including scenic area monitoring, vehicle scheduling, passenger flow statistics, passenger source analysis, and emergency dispatching/responses.

- Wulong Karst: A digital operation support platform of culture and tourism industry based on Internet of Things (IoT), cloud computing, big data, artificial intelligence (AI), mobile payment, VR/AR, and other technologies has been built to provide tourists with convenient and green tour experiences.

2.5.5 Build a platform for cooperation and communication, carry out science popularization and education activities, promote the heritage OUVs, and foster the concept of sustainable development of public tourism

(1) Exchanges and cooperation have been actively carried out domestically and internationally to explore the measures for sustainable development of the tourism industry at the property and constantly innovate our own development thinking to institute a sustainable development mechanism with unique features.

- Shilin Karst: Field practicum bases of geography and geology were established in cooperation with Southwest University, Yunnan University, Kunming University of Science and Technology, and other institutions of higher learning, which has built a “Scenic area and university cooperation mechanism”. It has enhanced the influence of these national brands of field practicum and education bases, and promoted tourism for science popularization.
- Libo Karst: From 2016 to 2019, in cooperation with the College of Life Sciences of Guizhou Normal University, the biodiversity monitoring project at Libo World Natural Heritage Site was implemented. The aquatic and terrestrial ecosystems in the Daqikong and Xiaoqikong scenic areas were continuously monitored which has provided good data support to the sustainable development of the property. Thematic baseline inventories of forest vegetables, amphibians, and the rare, valuable, and endemic plant resources in Maolan were carried out in cooperation with Chinese Academy of Sciences, Guizhou Normal University, and other institutes. Six academic monographs, including *Large Fungi in Maolan of China* and *Lycophytes and*

Ferns in Maolan of China, were published which have well exhibited the property's OUVs.

- Wulong Karst: A series of large international and domestic conferences were successively held here, including the South China Karst International Symposium, Forum on the Conservation and Management of World Heritage, and the South China Karst Annual Conference, and so on, which attracted the domestic and foreign scholars of more than 600 people. These academic conferences provided theoretical guidance for the sustainable development of the South China Karst. By forming sister parks with the Mengma Cave in the United States and the Crams Cave in France, and establishing the Bashu World Heritage Alliance, Wulong Karst promoted friendly collaboration between domestic and foreign heritage sites, and learned from the development patterns of other heritage sites to facilitate the sustainable development of world heritage sites.
- Guilin Karst: In 2020, Guilin Karst cooperated with the Institute of Karst Geology, the Chinese Academy of Geological Sciences (CAGS) to carry out research on the conservation of important landscape resources of tourist cave and impacts of human activities such as tourism development on cave site environment. *The Report on the Achievements of the Research Project for the Protection of Important Tourism Resources of Cave Landscape in the Lijiang River Scenic and Historic Area in Guilin* has been formed. Based on the report, the business activities of the business operators of the caves are scientifically guided, which has promoted the scientific protection and sustainable utilization of cave resources.
- Jinfoshan Karst: The National Field Scientific Observation and Research Station of Jinfoshan Karst Ecosystems was established. Karst valley ecosystem was taken as the main observation and research target, the study about assessment of karst ecosystem services and health assessment was carried out, and the sustainable development pattern of karst ecosystem was explored, which provided data and theories support for address the ecological and environmental problems in the karst areas.

(2) A series of publicity activities and training sessions related to the protection and reasonable utilization of the natural heritage were conducted in breadth and depth to better understanding of the heritage OUVs and build

awareness of the general public in ecological protection

In April 2022, the State Party issued a set of seven special stamps titled *World Natural Heritage - Southern China Karst* which adopted the stamp patterns of the Shilin Karst, Libo Karst, Wulong Karst, Guilin Karst, Shibing Karst, Jinfoshan Karst, and Huan Jiang karst. The stamp set directly reflects the characteristics of the landforms and landscapes of South China Karst with a planned circulation of 5.9 million sets to be sold online and offline simultaneously. The State party, by using stamps as a medium to advocate the sustainable development of the property, has made it possible for people all over the country to experience the majestic landscapes of South China Karst, and inspired people's awareness in protecting the world natural heritage and consciously regulate their tour behaviors, so that they may also contribute their own efforts to the sustainable development of heritage tourism.

During the "Cultural and Natural Heritage Day", a series of publicity activities were carried out in villages, communities, campuses and other places through text, pictures, videos, and other materials in South China Karst (Figure 4, Figure 5). In addition, the seven heritage sites have continuously improved the publicity and education system by setting up signs, billboards, interpretation boards and other ways to comprehensively display the natural heritage and its OUVs, protection and management requirements to the public.



Figure 4. Publicity activities in the Cultural and Natural Heritage Day in Guilin karst



Figure 5. Publicity activities in the Cultural and Natural Heritage Day in Shibing karst

- Shilin Karst: The traditional Yi festival celebrations, such as the Torch Festival and the Mizhi Festival, are held to publicize the natural sceneries and traditional ethnic cultures at the Shilin property. Shilin Karst Geological Museum was renovated and upgraded by setting up 10 clusters of schematic miniature models illustrating the development and evolution of Shilin Karst. Through “For Your Appreciation”, “Traveling All Over China” and other programs, publicity was extensively carried out with the help of traditional and emerging media. The official websites of *Shilin Tourism* and *Shilin World Natural Heritage Site* and others are constructed and uploaded online. This allows the public to gain a full understanding of the OUVs of natural resources and the ethnic folk cultures at the property, and will enhance the awareness of the public in ecological and environmental protection.
- Libo Karst: At the 44th session of the World Heritage Committee, Libo Karst presented three successful sustainable development cases including *Poverty Eradication in Libo Yaoshan with Intangible Cultural Heritage*, *A Tourism Management Model of “Grid 4 Mechanism”* and *Libo Poverty Alleviation Industry*, which can provide reference for the sustainable development of other world natural heritage sites. The new edition of *A Publicity Handbook of Libo World Natural Heritage* was compiled, and the *World Heritage of Guizhou* and *Libo Karst World Heritage* were published. We also produced publicity boards and video documentaries of the natural heritage. The popularity of Libo karst has been raised as a result.
- Wulong Karst: The textbook "*Wulong Karst and World Heritage* related to the conservation and management of natural heritage was compiled and printed. The academic journals, including *Karst Confidentiality*, *China National*

Geographic Special Issue, and *Proceedings of the 14th China National Cave Conference*, etc. were published. We participated in shooting the video programs, including *Great China · Cultural and Natural Heritage*, and *30 Degrees North Latitude - China Travel · Amazing Wulong*. Also, a series of activities for celebrating the tenth anniversary of the successful inscription was conducted in 2017. Through an array of means and channels, the heritage OUVs were exhibited to narrow the gap in the knowledge of natural heritage of the general public.

- Guilin Karst: We designated the Lijiang River Protection Day and held Lijiang River Forum where we released the latest achievements in science-based protection of the Lijiang River and displayed the natural scenery of Guilin Karst. All-people reading campaign themed Protection World Heritage, Presenting Magnificence of China was also organized (Figure 6) to publicize the knowledge of natural heritage protection.



Figure 6. Publicity posters of Shibing Karst

- Shibing Karst: We made visits to community families to distribute publicity brochures of *The Regulations of Southeast Guizhou Dong People's Autonomous Prefecture on the Protection of Shibing Karst World Natural Heritage Site*, *Advocacy Letter for Protecting Shibing Karst World Natural Heritage Site* to publicize the knowledge about natural heritage and build the awareness of the general public in voluntary heritage protection. A policy of free access to the scenic and historic area was exercised as means to encourage the public to visit Shibing Karst, to learn about the geological landforms, natural sceneries, biodiversity, and evolution history of the property, and to enhance the public's understanding of the heritage OUVs.

2.6 Also notes with appreciation that a visitor carrying capacity was established for the property and that the operation of the Guiyang-Nanning High-speed Railway will be managed within these limits, also requests the State Party to ensure that the distribution of visitor pressure is monitored and sustainably managed;

Response of the State Party:

The Guiyang-Nanning High-speed Railway traverses the buffer zone of Libo karst by way of bridges and tunnels, which has no effect on the heritage OUVs. In order to promote the sustainable development of the property and protect effectively the authenticity and integrity of the natural heritage, in accordance with the relevant requirements of *The Convention Concerning the Protection of World Cultural and Natural Heritage* and *The Conservation and Management Plan of South China Karst World Natural Heritage Site*, measures to ensure that the distribution of visitor pressure is monitored and managed sustainably are as follows:

2.6.1 The management measures for tourist carrying capacity, norms for civilized tours, and restriction of tourist flow, as well as the contingency plans for treating emergencies were formulated for the property. Different tour routes were planned and visitor redistribution at peak times is enforced, and the monitoring of visitor pressure has started

- Shilin Karst: *An Accounting Report on the Maximum Visitor Carrying Capacity of Shilin Scenic and Historic Area* was formulated, and the route method and checkpoint method were applied to assess the visitor carrying capacity. A comprehensive platform system for Shilin smart tourism was constructed to strengthen the monitoring of visitor pressure in Shilin Karst. The timing of park access and visitor flow information in the scenic and historic area is released in a timely manner using the new technology of digital intelligent terminals. Through intermittent park access, redistribution of peak visitor flow, and touring different routes, etc., the visitor pressure is diverted simultaneously at temporal and spatial magnitude to regulate the number of visitors in tour areas and avert excessive environmental pressure at some localities. By publicity with new media in combination with celebrating the traditional festivals of the Shilin' Yi people, the visitations to the major and minor Shilin Scenic and Historic Area can be appropriately reduced.
- Libo Karst: A five-in-one management and protection mechanism of "the Administration Committee - management station - full time forest ranger

team - community villager groups - ecological forest rangers” was instituted. Patrol, publicity, and inspection activities are carried out at least 15 days per month to ensure visitor behaviors will not pose potential impact on the property. Any entities and individuals engaged in business services in the scenic area must be obtained prior approval from the administration authorities of the scenic area, and business activities are allowed only at designated locations. A smart tourism services platform was programmed to support overall scheduling management, including monitoring of the scenic area, vehicle scheduling, statistical sampling of passenger flow, analysis of visitor sources, and emergency responses. A new model of "grid management" of the scenic area was experimented and practiced and it has upgraded the standard of overall management services and provided solutions to excessive visitor carrying capacity or idled transport capacity at some scenic spots. Visitor transport pressure is relieved and the services, safety, and sanitation conditions are improved in the scenic area.

- Wulong Karst: An automatic real-time monitoring system for cave air environment was installed to carry out regular ecological monitoring. Based on the monitoring data, the researchers can analyze the potential impact of tourism activities on the cave environment in a timely manner and carry out scientific management of tourism activities in the heritage site.
- Guilin Karst: *The Work Plan for Establishing a Monitoring System to Carry Out Heritage Monitoring at the Guilin Karst World Natural Heritage Site* was developed. As required by the *Work Plan*, 15 monitoring stations and spots are constructed, including comprehensive ground monitoring station and monitoring spots targeting at five themes, such as geological landforms, biology and ecology, environmental factors, tourism, and fire prevention. The periodic monitoring reports generated based on continuous monitoring data. The monitoring data and reports will be submitted in time to The Conservation and Management Coordinating Committee of South China Karst as data support for sustainable heritage development.
- Shibing Karst: The property is integrated for monitoring into the visitor flow indicator monitoring system of eco-tourists administered by the National Forestry and Grass Administration (NFGA). Visitor flow is monitored monthly and on holidays to obtain real-time visitor data and analyze visitor sources so that the tour routes can be purposely designed. Under the conditions that the resources are protected and considering the exhibition needs of the property, moderate mass sightseeing tourism will be carried out.

- Jinfoshan Karst: Intelligent monitoring of Jinfoshan karst is implemented with 232 infrared cameras and high-resolution video cameras installed. Also, 10 electronic tree panels and 10 electronic voice poles were anchored. By using the remote surveillance system for forest fire prevention, anthropogenic activities are tracked in real time to ensure that visitor behaviors will not affect the key protected resources, such as groundwater, caves, geological landforms, and biological populations.
- Huanjiang Karst: The opening period of the Gubin River rafting in the property is regulated. Also, the tour routes delineated in the tourism planning is strictly specified to avert impact on the heritage OUVs.

2.6.2 A zoning-based regulation mechanism is exercised at the property to ensure that visitor pressure will not pose any impact on the OUVs of the property

In accordance with *The Conservation and Management Plan of South China Karst (CMP-SCK)*, each heritage site of the South China Karst are demarcated into the strict protection zone (SPZ), heritage exhibition zone (HEZ), and coordinated community development zone (CCDZ). In accordance with *CMP-SCK* and laws and regulations related to protected natural areas of China, strict protection and control were carried out in the three zones, so as to ensure that the OUVs of the heritage sites are not affected.

The protection and control requirements of SPZ: It is prohibited for any entities or individuals to access any SPZ blocks and build hotels, guest houses, resorts, training centers, sanatoriums, recreation parks, cableways, and other structures and facilities that are irrelevant to heritage protection. If it is necessary to conduct related research in the SPZ blocks, applications should be submitted to the administration authority. The protection and control requirements of HEZ: Moderate eco-tourism and sightseeing tours can be carried out. Construction of structures irrelevant to heritage protection is prohibited, except for the necessary tour trails, cruise routes and tourist service facilities. The protection and control requirements of CCDZ: Moderate tourism services can be provided, and the production of tourism products is allowed to drive community economic development. Except for the construction of necessary facilities for heritage protection and tourism services, other infrastructure projects are strictly restricted.

2.7 Also welcomes the efforts to formulate strict working procedures in order to positively engage with local communities during relocation programmes in Wukeshu Village and the State Party's commitment to adhering to the 2015 Policy Document on the Integration of a Sustainable Development Perspective into the Processes of the World Heritage Convention and other relevant international standards in case of any future relocation;

Response of the State Party:

The State Party has formulated strict working procedures based on the principles of "full consultation and voluntary relocation". Before relocation starts, the management authority has communicated proactively with community residents based on democratic consultation, and solicit opinions from them. During the relocation, the principles of openness and equitability have been adhered to, and justifiable compensations were made to the relocated community residents. Meanwhile, special attention is addressed to the protection of the ecology and environment, as well as the traditional cultures at the property during relocation. Furthermore, the entire relocation process is put under disciplinary supervision. After the relocation is completed, production and livelihood support benefits and employment opportunities are provided for the relocated community residents in time. Relevant training activities for employment skills, transmission of traditional cultures, and ecological and environmental protection have been carried out to enhance the capacity of the relocated residents and their awareness for environmental protection. These working procedures takes into full consideration factors as environmental sustainability, inclusive social development, inclusive economic development, and peace and security, have effectively ensured ensuring that the relocation of Wukeshu village is implemented legally adhering to the relevant international conventions and domestic laws.

The State Party pledges a commitment to strictly adhere to *The 2015 Policy Document on the Integration of a Sustainable Development Perspective into the Processes of the World Heritage Convention* and other relevant international standards in case of any future relocation in the property.

2.8 Encourages the State Party to seek advice from the UNESCO World Heritage and Sustainable Tourism Programme and prepare a Sustainable Tourism and Development Strategy for the property, for review by the World Heritage Centre and IUCN;

Response of the State Party:

The State Party noted that, achieving sustainable tourism at South China Karst World Heritage is pivotal in driving environmental sustainability, inclusive social development, inclusive economic development, and peace and security. China is practicing ecological civilization construction, covering political, economic, social, cultural and ecological aspects, which is consistent with the 2015 World Heritage Sustainable Development policy document. In response, the South China Karst World Heritage Site has conducted in-depth research and study on the four aspects of sustainable development policy. The States Parties look forward to conducting extensive exchanges in the future to formulate and implement a sustainable development strategy for the South China Karst World Natural Heritage Site.

3. Any potential major restorations, alterations and/or new construction(s) intended within the property in the future

None.

4. Whether the Report of the State of Conservation should be open to the public

Yes.

5. Official signature