

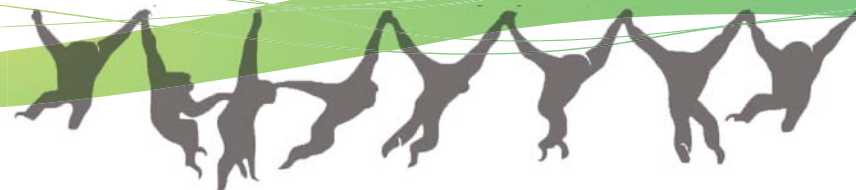
A close-up photograph of a Western Black Crested Gibbon's face, showing its dark eyes, white nose, and thick black fur. The background is a soft, out-of-focus light gray.

The Conservation Action Plan of Western Black Crested Gibbon in Yunnan Province (2012-2015)

Only found in China, Vietnam and Lao PDR

Only 1100 ~ 1400 individuals survive in the wild

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Female gibbon plays with her two kids

©Zhao Chao

Abstract

The Conservation Action Plan of Western Black Crested Gibbon in Yunnan Province is the first action plan for the species' s conservation in Yunnan Province. It was compiled by Yunnan Wildlife and Resource Monitoring Center (YNWRMC) and Fauna & Flora International (FFI), with the support of the Forestry Department of Yunnan Province and funded by FFI, referring to the *Yunnan Biodiversity Conservation Project Plan* (2007-2020), *Yunnan Small Population Wildlife Species Rescue and Conservation Planning Outline* (2010-2020), and *Yunnan Small Population Species Rescue and Conservation Action Plan* (2010-2015) as guidelines.

Western Black Crested Gibbon (*Nomascus concolor*; the WBCG) belongs to the genus *Nomascus* of the family Hylobatidae. It is categorized as a wildlife species under national first class protection in China, and was evaluated as Critically Endangered (CR) by IUCN in its Red List in 2008. Furthermore, WBCG has also been granted protection from international trade under CITES Appendix I. The most recent estimation of the global population of the WBCG is 1,100 to 1,400, of which 1,000 to 1,300 are distributed in Yunnan Province, China. Hence, Yunnan plays a vital role in WBCG conservation.

This action plan shows that habitat loss and habitat degradation are the main threats for the WBCG. Since 2000, Yunnan has been introducing resources from various sectors and carried out activities of population surveys, research on behavioral ecology and publicity and education in the nearby communities. In 2008, WBCG conservation network was set up with the support of FFI. The network includes all WBCG nature reserves in Yunnan, the Forestry Department of Yunnan Province, relevant scientific and research institutes and non-governmental organizations (NGOs). Thereafter, in September 2010 and April 2011, the member units of the network held two workshops for formulation of *The Conservation Action Plan of Western Black Crested Gibbon in Yunnan Province*. During the workshops participants confirmed the information about the distribution of the WBCG and agreed upon the main threats to WBCG, the conservation targets and priority actions in each of the nature reserves. After reviewing the results of discussion from the two participatory workshops, a draft of the action plan was made, and the final version was achieved after a meeting of provincial experts for approval. The plan covers five years, from 2012 to 2015.



The overall goal of this action plan is to make the WBCG a popular species in Yunnan Province in order that the populations and its habitats can be effectively protected. According to the existing problems and the conservation targets, the action plan suggested five main conservation objectives: 1. Conservation capacity building; 2. Conserving the WBCG and its habitat; 3. Filling information gaps through survey, research and monitoring; 4. Establishment of a publicity and education system of WBCG; 5. Strengthening interdepartmental cooperation and coordination. The action plan also identified six corresponding conservation targets, thirteen conservation actions, and the implementation units, the budget and the implementation period for each action. The completion of this action plan will provide valuable guidance for WBCG conservation in Yunnan Province.

*Nomascus
concolor*



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Adult male western black crested gibbon



Coronary Tuft of Hair

Black-brown Coronary Patches

Breast and abdomen remain black patches

Female

Western Black Crested Gibbon

Male

Color Change of Female Gibbon

Color Change of Male Gibbon

Infant

1 years

Adult

Infant

1 years

Adult

Gibbons mainly inhabit tropical evergreen and seasonal rain forest as well as subtropical mid-montane humid broad-leaved evergreen forest in southeastern Asia. Gibbons are small arboreal apes with territoriality. Currently, gibbons are classified into 4 genera with 17 species. China hosts 3 genera with 6 species: *Nomascus concolor*, *N. nasutus*, *N. leucogenys*, *N. hainanus*, *Hylobates lar* and *Hoolock leuconedys*.

Social Structure

Main Habitat

Mid-Montane Humid Evergreen





Ficus Plants

Tetrastigma Plants

Gibbon Food

©Zhao Chao

Clingdong Management Bureau

| Western Black Crested Gibbon | | |
|------------------------------|--|-------------|
| Scientific Name | <i>Nomascus concolor</i> | |
| Taxonomy | Family | Hylobatidae |
| | Genera | Nomascus |
| Protection Status | Wildlife under national first class protection; Critically Endangered (CR) on IUCN Red List; Listed on CITES Appendix I: International trade forbidden | |



Both Monogamous and Polygynous ©Liu Yeyong

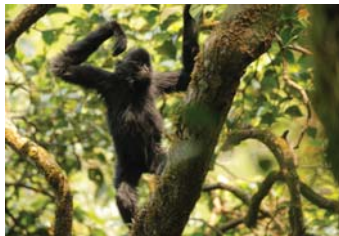
Type

Broad-Leaved Forest



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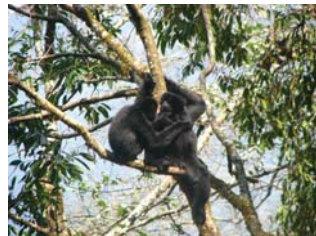
| | |
|-------------------|--|
| Features | Medium size, weight 7 to 10 kg, body length 400 to 550mm. Fore limbs are obviously longer than the hind limbs, no tail. The fur colour of infants is yellow and gradually turns to black at around 1 year of age. The male's fur remains black until adulthood, but the most of the female's fur turns to yellow again when sexually mature (only the top of the head, breast and abdomen retain black patches in the adult female). Adult males have a short erect coronary tuft of hair on the top of head, while adult females have black-brown coronal patches. With aging, the extent of black fur on female' s breast and abdomen gradually increases. |
| Habitat type | Mid-montane humid broad-leaved evergreen forest or semi-humid mid-montane broad-leaved evergreen forest at altitudes range from 1800 to 2870 meters above sea level. |
| Feeding Ecology | Fruits, leaves, buds and flowers. Occasionally eat small animals. The feeding habits vary markedly from day to day. |
| Time Budget | WBCG spend more time resting than any other kind of gibbons studied so far. The time budget of other activities such as feeding, moving, foraging, singing and playing vary significantly in a day. Also, being affected by the food availability and the temperature, the time budget has seasonal variation as well. |
| Use of Territory | WBCG have much larger territory than that of gibbons inhabiting lower elevation habitats (usually 40 Ha in average, not more than 50 Ha normally). According to the tracking survey of two habituated groups in Dazhaizi of Wuliangshan, both of the groups own territory bigger than 150 Ha. The lack of food resource may be an important factor leading to the expansion of territory area. |
| Singing Behavior | Gibbons usually sing before the sunrise or a few hours after sunrise. These songs have complicated structure, and differ between the sexes, among the species, or even among populations. The adult male and female in a WBCG family sing together to make a complicated duet. The male is the leading singer; the female would then sing a so-called 'great call' after which the male adds a coda. Juveniles often join the duet. If two female adults are in the same group they usually will sing together. |
| Sleeping Behavior | After leaving the last feeding place of the day, the gibbon family moves fast toward the sleeping tree and become quiet as soon as they get to the tree. WBCG usually choose tall, strong trees growing on steep slopes as their sleeping place, presumably for protection from predators or humans. Gibbons use the same trees repeatedly without regularity. |
| Social System | A group of WBCG usually consists of an adult couple and their offsprings. The average group size is 4 individuals. Several years of observation prove that the species lives in both monogamous and polygynous groups. |



Upright Walking ©Zhao Chao



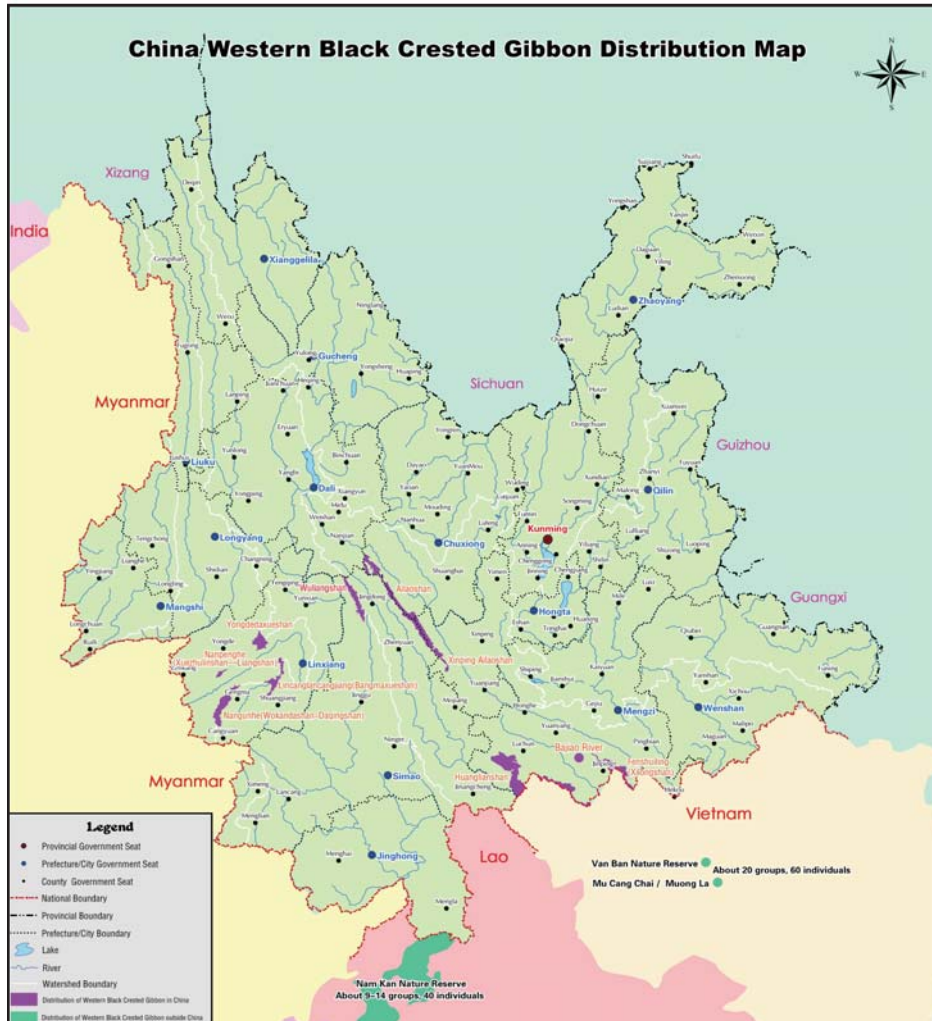
Jumping ©Zhao Chao



Grooming ©Fan Pengfei

Typical Behavior

The Conservation Action Plan of Western Black Crested Gibbon in Yunnan Province (2012-2015)



The WBCG is mainly distributed in Yunnan Province of China with a number of 1000 to 1300 individuals. It is also found in northern Vietnam with 20 groups and approximately 60 individuals, and in northwestern Lao PDR with 4 to 14 groups, around 40 individuals. Thus, Yunnan Province is a key region for WBCG's conservation.

Female western black crested gibbon distributed in Wuliangshan National Nature Reserve



©Zhao Chao

| WBCG Distribution | Protected by which Nature Reserve | No. of Groups | No. of Individuals | Data resources |
|-------------------------|---|---------------|--------------------|--|
| Wuliangshan Nanjian | Wuliangshan NNR | 3 | 350-400 | Jiang et al., 2006 and field survey in 2010 by Nanjian Management Bureau |
| Wuliangshan Jingdong | Wuliangshan NNR | 80 | | Luo Zhonghua, 2011 |
| Wuliangshan Zhenyuan | Outside of Wuliangshan NNR | 4 | | Luo Zhonghua, 2011 |
| Ailaoshan Nanhua | Ailaoshan NNR | 2 | Estimated 10 | Nature Reserve Management Bureau of Chuxiong Prefecture, Nov 2004-Jan 2005 |
| Ailaoshan Shuangbai | Ailaoshan NNR | 25 | Estimated 125 | Nature Reserve Management Bureau of Chuxiong Prefecture, Nov 2004-Jan 2005 |
| Ailaoshan Chuxiong | Ailaoshan NNR | 16 | Estimated 64 | Chuxiong Management Bureau, Dec 2010 |
| Ailaoshan Xinping | Ailaoshan NNR | 124 | Estimated 500 | Xinping Management Bureau, 2011 |
| Ailaoshan Zhenyuan | Ailaoshan NNR | 11 | Not sure | The nature reserve, Sep-Nov 2005 |
| Ailaoshan Jingdong | Ailaoshan NNR | 9 | Not sure | Luo Wenshou, 2007 |
| Lvchun Huangliangshan | Huangliangshan NNR | 1—3 | Not sure | Ni Qingyong and Ma Shilai, 2006 |
| Jinping Xilongshan | Fenshuiling NNR | 1—2 | Not sure | Ni Qingyong and Ma Shilai, 2006 |
| Jinping Bajiaohe | Not in any NR | 2 | 4 | Ni Qingyong and Ma Shilai, 2006 and further study until 2010 by Ni Qingyong |
| Yongdedaxueshan | Yongdedaxueshan NNR | 20 | Estimated 4 | Wang Yingxiang et al., 2000 and field survey in 2010 by the nature reserve and Kunming Institute of Zoology, CAS |
| Bangmaxueshan | Lancangjiang PNR | Not sure | Estimated 16—18 | Yang Dehua, 1998 and Jiang xuelong confirmed WBCG's presence in 2005 |
| Xuezhulinshan-Liangshan | Xuezhulinshan is part of Nanpenghe PNR, Liangshan not in any NR | No data | No data | Interview survey by Jiang Xuelong in 1998 reported the WBCG's presence |
| Wokandashan-Daqingshan | Nangunhe NNR | 23 | Estimated 95—110 | Lincang forestry bureau, 2000-2001 |

The distribution in Yunnan Province is quite dispersed, including in the central (Wuliangshan and Ailaoshan), southern (Huangliangshan, Xilongshan and Bajiaohe) and western (Yongdedaxueshan, Bangmaxueshan, Daqingshan) part of the province, which hosts about 90% of WBCG population worldwide. The population surveys in recent years show that Ailaoshan and Wuliangshan host the largest population and highest density of the species.



The second field survey of western black crested gibbon population and distribution in Jingdong County of Wuliangshan National Nature Reserve © Jingdong Management Bureau



Scientific research on western black crested gibbon in Yongdedaxueshan by the expert from University of Washington © Yongdedaxueshan Management Bureau

Threats and

The main threats to WBCG are habitat degradation and fragmentation, which are caused primarily by grazing inside the nature reserves, deforestation, non-timber forest products (NTFP) collection, tsaoko cardamom plantations and infrastructure construction, such as roads. Besides these threats, the conservation of this species also faces problems like poaching, forest fire, and threats arising from the small size of many subpopulations. Constraints to countering these threats include a lack of financial resources and deficient management systems and capacity.

Conservation Status

■ Ailaoshan of Central Yunnan Province

Geographical Location: Located on the upper slopes of the north-central Ailaoshan ridge in central Yunnan Province. The range stretches across 3 prefectures (cities) with 6 counties: Xiping County of Yuxi Prefecture, Jingdong County and Zhenyuan County of Pu'er, and Chuxiong, Shuangbai and Nanhua of Chuxiong. Ailaoshan has the largest number and population density of WBCG in the world at present.

Conservation Status: Baseline surveys have been conducted in most areas. Shuangbai and Xiping administrative area have started research about the ecology and behavior of this species. However, the lack of a central management bureau in charge of the biodiversity conservation of the whole Ailaoshan National Nature Reserve has increased the difficulties of the coordination and influenced the management of the nature reserve as a whole.

■ Western Yunnan Province

Geographical Location: This range involves Cangyuan, Gengma, Shuangjiang, Yongde, Yunxian, Zhenkang and Baoshanwayao Counties between the Lancang and Nu Rivers.

Conservation Status: At the end of year 2010, distribution and population survey for WBCG in Yongdedaxueshan Administrative Area has been done.



Photos of the threats on gibbon and its habitat

■ Wuliangshan of Central Yunnan Province

Geographical Location: Mostly located in the Wuliangshan National Nature Reserve of south-central Yunnan Province, this range involves Jingdong County of Pu'er and Nanjian County of Dali Prefecture. This is another area which has a very large population and high population density of WBCG.

Conservation Status: Gibbon surveys and continuing effective patrolling and monitoring cover most of this area. Research has been done about the WBCG in Wuliangshan from many aspects such as ecology, behavior, habitats and feeding habits, etc. From 2000 to 2010, relevant training has been organized for the public more than 200 times, and some alternative livelihood projects have been developed in communities.

■ Southern Yunnan Province

Geographical Location: Consists of Lvchun Huanglianshan National Nature Reserve, Xilongshan in Fenshuiling National Nature Reserve and an area of Jinping Bajiaohe outside the nature reserve.

Conservation Status: NI Qingyong of Kunming Institute of Zoology, CAS has conducting a long-term study of 2 groups of WBCG in the area of Jinping Bajiaohe. Jinping Fenshuiling National Nature Reserve has conducted the field survey on WBCG in Xilong Mountain section at the end of 2011. However, due to the small population, scattered distribution and serious human disturbance, it is very hard to take effective measures on conservation.



Group photo of the workshop on conservation action planning for the western black crested gibbon
© Jingdong Management Bureau

By carrying out this conservation action plan, we expect to improve the conservation and management capacity of present WBCG nature reserves, relieve and eliminate the threats to this species and effectively protect the WBCG population as well as its habitat in Yunnan Province.

Our plan aims at making the WBCG to be the flagship species of Yunnan Province and ensuring effective conservation of its population as well as habitats in Yunnan Province. More details about the five main conservation objectives, six conservation targets and thirteen conservation actions of the action plan have been listed below.

Conservation Target



Male western black crested gibbon

© Zhao Chao

The Conservation Action Plan of Western Black Crested Gibbon in Yunnan Province (2012-2015)

| Conservation Objectives - Target - Action - Briefing Table | | | |
|---|--|--|--------------------------|
| Objectives | Target | Action | Province Priority Action |
| Conservation capacity building | Improve the conservation skills for management bureau of the nature reserves by building the conservation capacity | Action1: Carry out training for the nature reserve staffs | √ |
| Conserve the WBCG and its habitat | Restore habitat inside the nature reserves and decrease the threats to habitats outside of the nature reserves, avoid the total populations of the WBCG in Yunnan Province from declining and achieve steady increase in some areas by strengthening the management of habitats inside and outside the nature reserves | Action2: Baseline survey of the current status and distribution of the gibbon habitats | √ |
| | | Action3: Investigate the current status of human disturbance factors toward WBCG conservation | √ |
| | | Action4: Carry out the research on food species, preference and demonstrate experimental habitat restoration | √ |
| | | Action5: Assess the effectiveness of conservation management | |
| Filling information gaps through survey research and monitoring | Complete the field survey of WBCG in Yunnan Province, collect information about the number and distribution of populations, provide a database and baseline for future evaluation of conservation effectiveness | Action6: Supplementary baseline survey of WBCG | √ |
| | Establish a standardized patrolling and monitoring system in the priority conservation areas, collect information on population dynamics of WBCG, provide the scientific basis for the conservation management | Action7: Establish monitoring stations to implement standardized monitoring | √ |
| | | Action8: Assess the existing habitats and predict the potential habitats | |
| | | Action9: The research of the differences of ecology and behavior of different populations | |
| Establish a publicity and education system of WBCG | Reinforce the understanding among the public and government of the importance of the WBCG conservation by publicity and education | Action10: Analyze the genetic diversity | |
| | | Action11: Strengthen publicity and education for public | √ |
| Strengthen interdepartmental cooperation and coordination | Establish a regular communication mechanism with the WBCG conservation network and increase the frequency of experience and information sharing between each member unit | Action12: Conduct community surveys about knowledge, attitudes and perceptions of biodiversity conservation | |
| | | Action13: Reinforce the coordination and cooperation between different governmental departments | √ |



A spectacular presentation by Prof. Long Yongcheng in the workshop on conservation action planning for the western black crested gibbon
© Tang Yun

Conservation Action

During the second workshop on conservation action planning for the WBCG in April 2011, all the nature reserves discussed the current status and problems of WBCG conservation. All the nature reserve management bureaus compared the importance, availability and urgency between different actions and identified the priority action list.

The Conservation Action Plan of Western Black Crested Gibbon in Yunnan Province (2012-2015)

Nature Reserve Priority Action List

| Unit | Priority Actions | | | | | |
|--|--|--|--|--|---|---|
| Ailaoshan-Wuliangshan Jingdong Management Bureau | Establish monitoring station in the eastern Wuliangshan | Demonstrate grazing prohibition in Dazhaizi | Carry out GIS based standardised patrolling and monitoring at 5 sites | Produce high quality educational and publicity film | Conduct wireless video monitoring in Dazhaizi | Establish base for gibbon habitat restoration and food source in Dazhaizi |
| Wuliangshan Nanjian Management Bureau | Establish a monitoring station in Lan'ganqing Wuliangshan | Establish fixed sample plots and transect lines to conduct patrolling and monitoring | Conduct experimental forest restoration in the border region of Jingdong and Nanjian | Build 10 signboards for the gibbon Conservation | | |
| Ailaoshan Xiping Management Bureau | Conduct habituation research of one group in Chamagudao | Conduct gibbon survey in fragmented distribution area | Produce educational film | Training on standardized patrolling and monitoring | Establish fixed sample plots and transect lines for phenology monitoring of food plants | Establish monitoring stations in Chamagudao and Mao'ershan |
| Ailaoshan Shuangbai Management Bureau | Conduct supplementary gibbon survey | Conduct habituation research of one WBCG group in Pinghe | Establish monitoring station in Pinghe | Conduct standardized population dynamics and structure monitoring | Establish fixed sample plots and transect lines for phenology monitoring of food plants | |
| Ailaoshan Chuxiong Management Bureau | Conduct supplementary gibbon survey | Habituation research of one WBCG group Conduct | Establish monitoring station in Gaoshanying | Conduct standardized population dynamics and structure monitoring | Establish fixed sample plots and transect lines for phenology monitoring of food plants | |
| Ailaoshan Nanhua Management Bureau | Conduct supplementary gibbon survey | Conduct habituation research of one WBCG group | Establish monitoring station in Ganlongtan | Conduct standardized monitoring on population dynamics and establish information recording system to provide basis for conservation management | Establish fixed sample plots and transect lines for phenology monitoring of food plants | Conduct habitat restoration for WBCG conservation |
| Yongde Daxueshan Management Bureau | Conduct habituation research of 1~2 groups in Yongde Daxueshan | Establish monitoring station | | | | |
| Nangunhe Cangyuan Management Bureau | Conduct WBCG baseline survey | Establish monitoring station | Establish ecological corridor | Build signboards for the gibbon Conservation | Produce propaganda film | |
| Huanglianshan Management Bureau | Conduct WBCG baseline survey | | | | | |
| Jinping Fenshuiling Management Bureau | Conduct WBCG baseline survey in Xilongshan | Establish monitoring station in Bajiaohe | Conduct habituation research of one WBCG group in Bajiaohe | Establish 4 transect lines to implement plant monitoring | Establish ecological corridor in Bajiaohe | Introduce a male gibbon for mating and keep the small populations from rapid extinction |

Budget Estimate

To implement all the actions in WBCG conservation action plan between 2012 and 2015, approximately 11.2 Million RMB needs to be raised.

Fund Raising

Different channels for fund raising - the suggestions collected from the workshops

- National endangered species conservation projects, such as national wildlife survey and conservation project
- Government finance at different levels
- National and provincial research projects
- Integrated projects, such as China National Forest Resources Conservation Project, Grain for Green Project, Ecological Forest Project and the compensation funds from Forest Fire Prevention System construction and Forest Ecological Benefit Assessment.
- Other sources, such as Jingdong WBCG Conservation Association, Yunnan Green Environment Development Foundation and other domestic or international NGOs

Budget estimation table of WBCG conservation action plan

| Objectives | Budget estimation (RMB: ten thousand Yuan) |
|---|--|
| Conservation capacity building | 50 |
| Fill the information gaps through survey, research and monitoring | 475 |
| Conserve WBCG and its habitats | 435 |
| Establish the publicity and education system of WBCG | 115 |
| Strengthen inter-departmental cooperation and coordination | 50 |
| Total | 1125 |

Acknowledgments

We would like to express our sincere gratitude and appreciation to:

- The guidance and support of the Wildlife Protection Office, Forestry Department of Yunnan Province to the planning of this action plan;
- The information offered by the member units of Western Black Crested Gibbon (WBCG) conservation network and their efforts to revise this action plan;
- JIANG Xuelong, LONG Yongcheng and FAN Pengfei, the primatologists, who acted as science advisors on this action plan;
- HUA Chaolang, YANG Dong and SONG Jinxin, from Yunnan Wildlife and Resource Monitoring Center, who exerted great efforts to compile this action plan;
- The brilliant photographs, maps and hand drawings were provided by ZHAO Chao, LIU Yeyong, TANG Yun and Thomas GESSIMAN;
- William BLEISCH and Paul INSUA-CAO, who helped with the English polishing of this booklet;
- U.S. Fish and Wildlife Service (USFWS) provided funds for the planning and printing of this action plan.

Conclusion and Prospect

The Conservation Action Plan of Western Black Crested Gibbon in Yunnan Province provides

guidelines for the integrated conservation of the species.

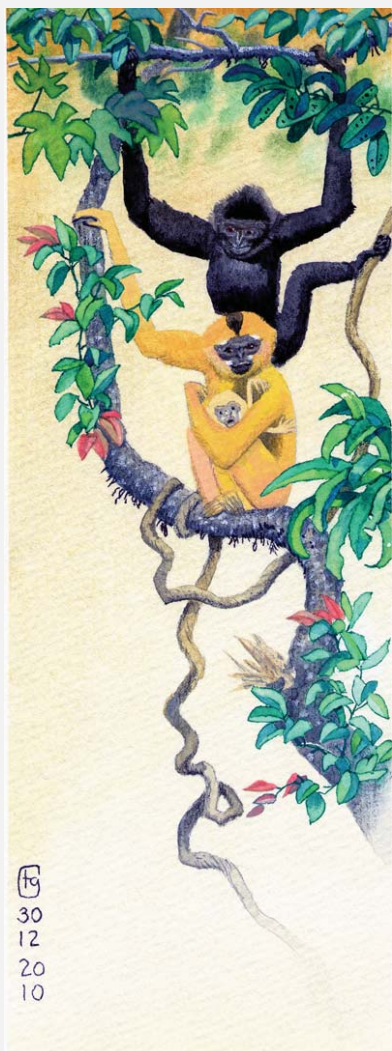
We hope that after five years, when reviewing the achievement of the conservation of the Western Black Crested Gibbon, all the units and individuals involved in this project can make a self-assessments according to the original plan. By this means, we can observe the conservation effectiveness over the past five years and formulate a new action plan for the next stage based on that.

With the support of the Forestry Department of Yunnan Province, after the deliberation

and revision of the management boards of the nature reserves, the local forestry departments and experts, this action plan was finally created with a combination of their efforts. This plan establishes a clear goal and specific actions, based on a thorough analysis of the threats and conservation status of the Western Black Crested Gibbon in Yunnan. We believe that this action plan will undoubtedly play an exemplary role in the conservation of a single species in China, as well as enabling the conservation of the endangered species in Yunnan Province to be widely recognized nationally even internationally.



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Western Black Crested Gibbon Conservation Network

Ailaoshan National Nature Reserve
 Wuliangshan National Nature Reserve
 Nan'gunhe National Nature Reserve
 Yongde Daxueshan National Nature Reserve
 Jinping Fenshuiling National Nature Reserve
 Lvchun Huanglianshan National Nature Reserve
 Lincang Lancangjiang Provincial Nature Reserve
 Nature Reserve Management Bureau of Chuxiong Prefecture
 Forestry Bureau of Lincang Prefecture
 Forestry Bureau of Honghe Prefecture
 Forestry Bureau of Pu'er Prefecture
 Institute of Eastern-Himalaya Biodiversity Research, Dali University
 Kunming Institute of Zoology, CAS
 Beijing Zoo
 Yunnan Green Environment Development Foundation
 Fauna & Flora International (FFI)

Planning: Protection Office of Forestry Department of Yunnan
 Yunnan Wildlife and Resource Monitoring Center
 Fauna & Floral International (FFI)

Editor: Yan Lu, Zhao Tianxiao
 Scientific Advisor: Jiang Xuelong, Long Yongcheng,
 Fan Pengfei

Designer: Zhang Chuan
 Cover photo: Zhao Chao

Donor :

