

Investigation into changes to the green peafowl's habitat in Yunnan province

From April to June 2017, Greenpeace East Asia used field surveys, satellite mapping and remote-sensing analysis to assess the status of Yunnan's green peafowls, especially those in Shuangbai County's Konglong River Nature Reserve and Xinping County's Shiyang River valley. The results confirm that mining activities and hydropower construction have occurred in the core area of Konglong River Nature Reserve. There should be no delay in the drawing of "ecological red lines" to protect the habitat of China's last green peafowls.

In China, the green peafowl (*Pavo muticus*) can be found only in Yunnan province. With fewer than 500 green peafowls estimated to be left in the wild in China, it is one of China's most endangered species.¹ Since 2016, ecological surveys and images of the rare birds have shown some to be living outside the protection of nature reserves.² But before these newly discovered habitats have been able to be systematically studied, they have been encroached upon by hydropower development, road construction, and other threats that could lead to the fragmentation, or even the complete loss, of the green peafowl's home. The animal's numbers are already dwindling and its distribution is very limited — it is categorized as a "species with an extremely small population" by the Yunnan Forestry Administration³ and the loss of any single habitat could threaten the species' survival.

1. Main findings

Whereas the green peafowl had been widely distributed across western and southern Yunnan in the 1990s, Greenpeace's latest study shows that the peafowl's last remaining habitat in China is along the Shiyang River in Shuangbai and Xinping counties and in other tributaries in the upper reaches of the Red River basin. This last habitat faces numerous threats. Greenpeace's analysis of land use change in this area found illegal mining, road construction, hydropower station construction, flooding as a result of river water storage, and agriculture to be the main human disturbances to the green peafowl's home. Greenpeace also found that even in the core area of Konglong River Nature Reserve, there has been a series of mining and hydropower activities that are legally suspect.

Greenpeace used data from field surveys⁴ in Yunnan's cities and counties to map the estimated distribution of the green peafowl. For areas with a green peafowl population, Greenpeace analyzed changes to the vegetation cover over 15 years. The results showed that in the 15 years between 2001 and 2015, the natural forest cover in

¹ Wen Yunyan et al., "Analysis of Green Peacock in the Konglong River Nature Reserve", "Forestry Investigation Plan", Vol. 41, No. 4, August 2016.

² New green peafowl habitat found in Xinping county, Yunnan. http://yuxi.yunnan.cn/html/2017-03/23/content_4768080.htm

³ Conservation plan for extremely small population species in Yunnan 2012-2030 <http://cncbc.mep.gov.cn/zlxdjh/sjxd/jz/201506/P020150615499846662801.pdf>

⁴ Survey by Wild China in April 2017. https://mp.weixin.qq.com/s/3898spXMJPSWA_uBg7bJMw

these areas fell by 85,619 hectares, or approximately 2.7%. The rate of natural forest loss was lowest in Nanjian (0.44%), followed by Nanhua (0.58%), Shuangbai (1.04%), Yongde (1.12%), and Xiping (1.16%). Shuangbai and Xiping counties have seen less human disturbance and are home to the largest undisturbed habitat area, making them possibly the most intact habitat for green peafowls in China.

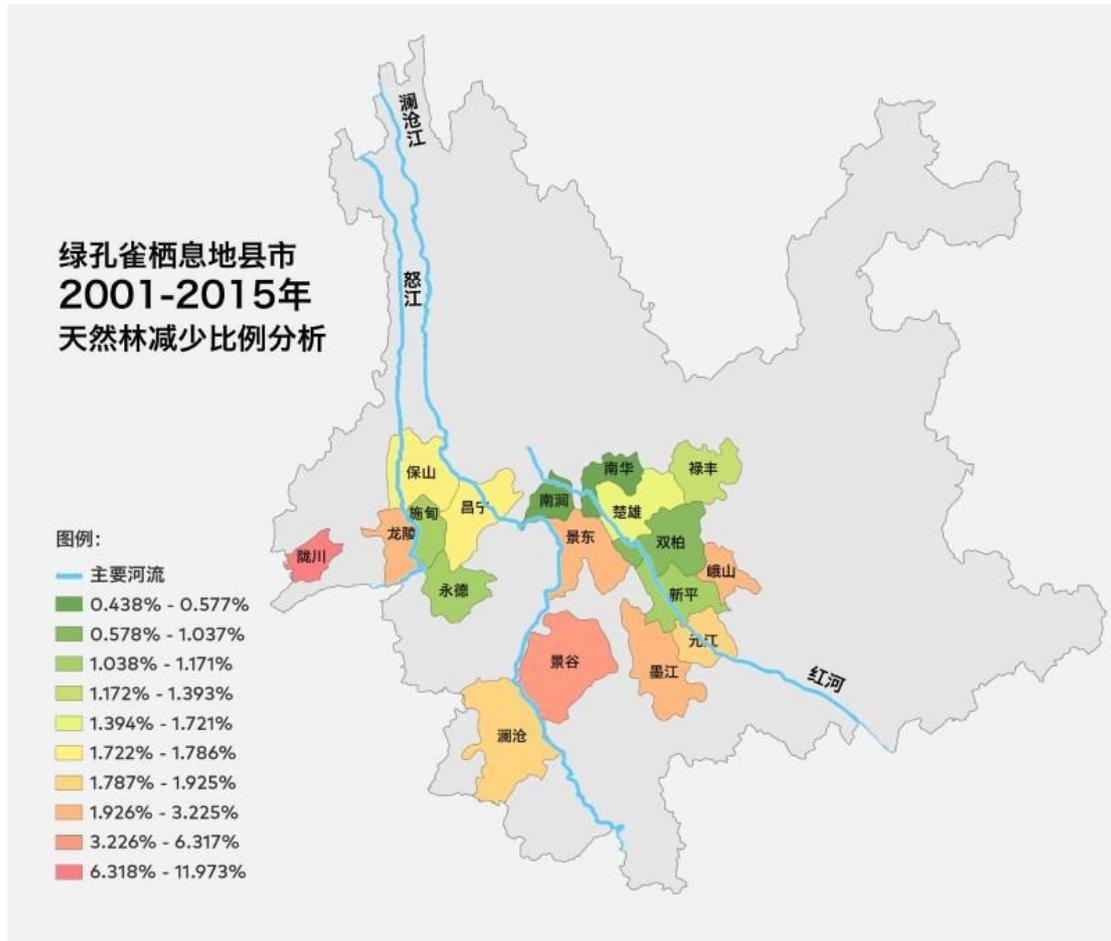


Figure 1: A map of natural forest loss from 2001 to 2015 in counties with a green peafowl population
Copyright: Greenpeace
Source: Natural forest data from the eighth national survey on forest resources by Global Forest Watch/National Geomatics Center of China's forest loss administration unit and water unit

Illegal construction activity has posed the biggest threat to environmental protection of the peafowl habitat. The borders of the reserve have shrunk three times to allow for economic development projects in the area, and the reserve is now at 91.6% of its initial size.⁵ Greenpeace analyzed satellite imagery from April 2017 and found that mining activities and hydropower construction have occurred along the banks of the Xiaojiang River valley, which is inside the newly redrawn borders of the reserve's core area—where such activity is illegal.

[For details on specific cases, please see section three of the report.]

⁵ Protection of Green Peacock in Dinosaur River Nature Reserve, Xie Yichang, Forestry Investigation and Planning, December 2016

1. Satellite imagery shows that the natural environment is comparatively pristine north of the Konglong River Nature Preserve—in Shuangbai County’s Lishe River valley—and in Xiping County’s Shiyang River valley in the east. Like the government-protected zone, these valley rainforests are home to green peafowls. But without government protection, the green peafowl habitat is highly vulnerable to damage from road construction, large hydropower projects, agriculture, and other human intrusions.
 - a. In 2015, construction of the Dawan Power Plant caused flooding along a large area of the Lishe River valley. As of 2017, major construction was underway at the Jiasajiang Level 1 Hydropower Station at the end of the Shiyang River valley. Large areas of riverbank and low-altitude valley forest will be submerged along the upper reaches of the Shiyang and Luzhi rivers once the construction is complete. As power stations are built, the last remaining habitat of the green peafowl in China is disappearing.



Figure II: A visualization of flooding (blue area) in the valleys of the Shiyang and Xiaojiang rivers after routine storage operations of the Jiasajiang Level 1 Hydropower Station
Copyright: Greenpeace

- b. Large areas of Shuangbai and Xiping counties’ forest farms are being replaced with orange trees, which currently have a higher rate of return on the market. During this replanting process, large sections of the original cultivated forest are being clear-cut — activity that threatens the green peafowl’s habitat.
2. Overview of major cases

Case 1: Illegal mining in a nature reserve

In the second half of 2013, Shuangbai County Yinyang Mining Company was granted two mining permits for the Shiyang location.⁶ Using spatial analysis, Greenpeace confirmed that the exploration occurring under the two permits took place in large part within the core area of Konglong River Nature Reserve. After obtaining the rights, the company built roads, excavated mines, stored explosives, and engaged in other mining activities in the core area of the Konglong River Nature Reserve. Yinyang Mining Company is suspected of violating the Regulations of the People’s Republic of China on Nature Reserves and the Administrative Regulation of Yunnan

⁶ http://www.mlr.gov.cn/kyqsc/zrgs/tkzrgs/201308/t20130829_2476146.htm;
http://www.mlr.gov.cn/kyqsc/zrgs/tkzrgs/201310/t20131008_2627316.htm

Province of PRC on Natural Reserve, and it has caused irreversible damage to the core area of the reserve.



Figure III: A map derived from remote-sensing data showing the spatial relationship between Yinyang's mining activities and the nature preserve
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At the end of 2016, these two mining permits were renewed but their scope was constricted. Two weeks later, the Shuangbai County government organized onsite

auditing and rectification meetings at the Shiyang site, arranging for the closure of units that had violated laws.⁷



Photos dated June 14, 2017 show Yinyang's mining activities in the core area of Konglong River Nature Reserve. The company's construction of roads and mine shafts not only violated the law but also caused serious damage to a prime habitat of the green peafowl.

Copyright: Aaron, Li Wei/Greenpeace

A search on the mining rights and information system of the Ministry of Land and Resources revealed that Yinyang's two mining permits expired in February 2017 and March 2017 and had not been renewed as of this report's writing. Greenpeace's field survey in June 2017 also indicated that mining activities in Konglong River Nature Reserve were currently on pause, though it remains to be seen whether Yinyang will shut down the operations completely and begin work on restoring the ecology.

1. Case II: A small hydropower operation in the core area of a nature reserve

To the south of the Xiaojiang River valley, two roads servicing a hydropower project have been built in Konglong River Nature Reserve, and one extends into the reserve's core area. In 2017, environmental group Wild China and researchers discovered a small hydropower project under construction in the Xiaojiang River valley.⁸ This structure is very close to the core area of the nature reserve and—as can be seen in satellite imagery—it is also the endpoint of the road that runs through the core area. This 5- to 6-meter wide path runs west to link Xiaojiang River's Level 1 and Level 2 hydropower plants to the new hydropower project, and it heads east to connect to existing roads outside the nature reserve. Although the construction project may not fall within the redrawn borders of the core area, its transport network does cross into it, in what is a suspected violation of the law.

⁷ http://www.yn.xinhuanet.com/csg/2016-12/28/c_135939110.htm

⁸ <http://mp.weixin.qq.com/s/pOXqslq8P-YXX0zk0ZRV2w>

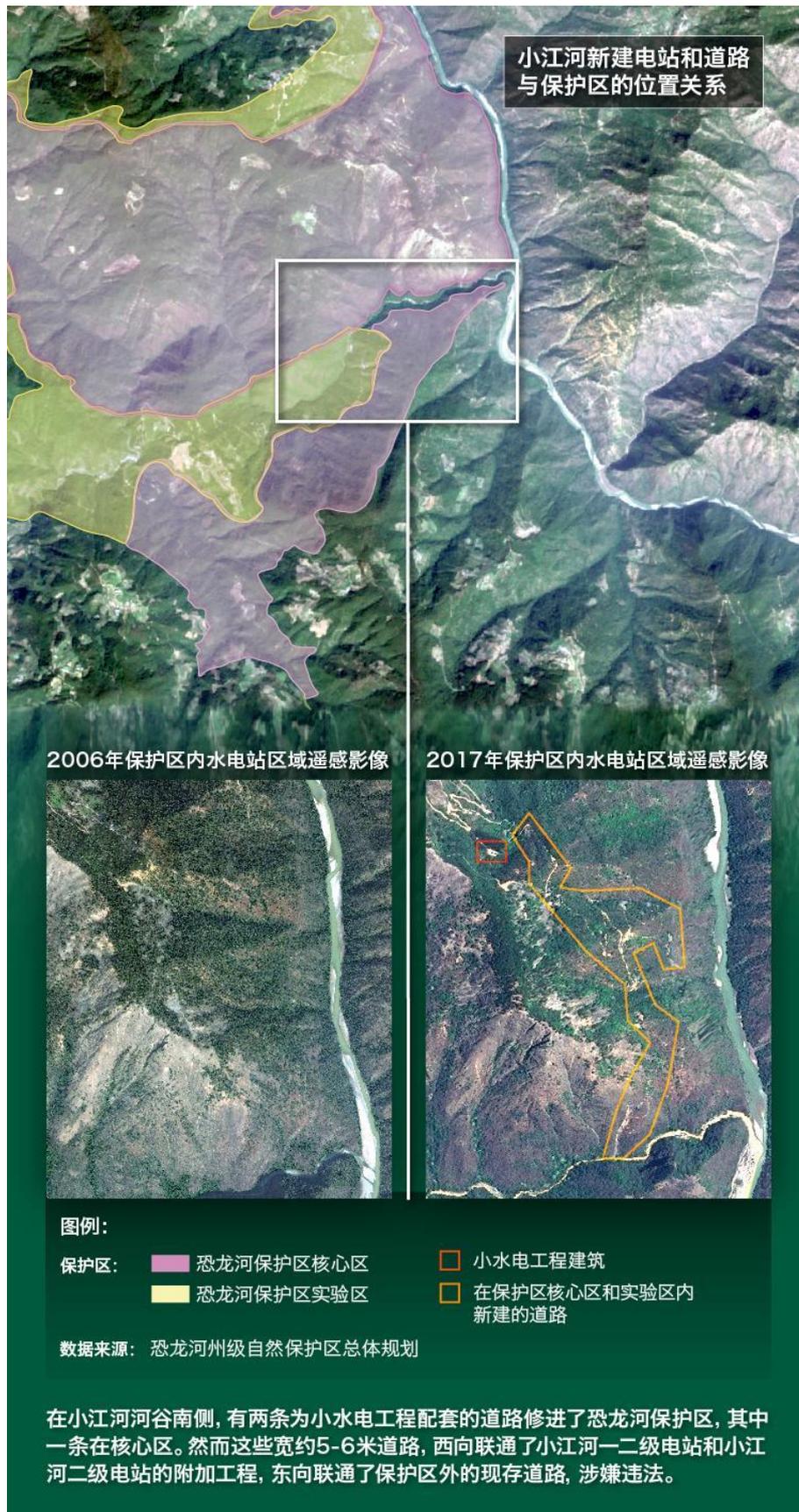


Figure IV: A map derived from remote-sensing data showing the spatial relationship between Xiaojiang River's new power station and the nature reserve
Copyright: Greenpeace



Left: June 17, 2017. A new power station is in the valley of Xiaojiang River, a tributary of Shiyang River. This construction project abuts the nature reserve, and the roads that it uses cuts into the core area of the reserve.
Copyright: Li Wei, Greenpeace

Right: June 17, 2017. Abandoned infrastructure that was used to support power plant construction along Xiaojiang River in Yunnan's Xiping County.
Copyright: Xiao Shibai, Greenpeace

3. Greenpeace's recommendations

- The Yunnan provincial government should investigate illegal development and construction activities within Konglong River Nature Reserve and conduct ecological restoration.
- Yunnan authorities should salvage what remains of the green peafowl's habitat by surveying their habitat in Yunnan and using the results to clearly define a zone in which development and construction activity is strictly forbidden.
- Yunnan authorities, when planning the province's conservation zones, should follow the Ministry of Environmental Protection's guidelines on "ecological red lines" by factoring in the habitats of the green peafowl. For the green peafowl, which has an extremely small population, the province should conduct a habitat survey and draw an ecological red line that can keep hopes for the species' survival alive.

[Note]

For more information, see the Greenpeace report, [Green or gold? An investigation into changes to the green peafowl's habitat in Yunnan province.](#)

Appendix 1: Laws and regulations pertaining to this study

1. Species with an extremely small population

A species with an extremely small population refers to a wildlife species with a narrow or sparse distribution. Long-term disturbances from external factors cause the continual degeneration and dwindling of its population, whose individual numbers are already below the minimum viable population, so that the species could become extinct at any time. A species with an extremely small population is an endangered species that is seriously influenced by human disturbances and is characterized by a narrow distribution. (“An outline of Yunnan province’s 2010–2020 protection plan for species with an extremely small population.”)

2. Ecological red line

In February 2017, the Chinese Communist Party Central Committee and the State Council jointly published the “Opinions on Defining and Protecting Ecological Red Lines,” which directs local governments to define ecological red lines by the end of 2018 and establish a system to protect them by the end of 2020. Each province is to establish these so-called red lines based on the importance of the ecology in an area, as well as the ecology’s vulnerability and sensitivity. Besides the preexisting nature reserves, forest parks, scenic areas, and other types of protected areas, there are many other spaces with important ecological functions or that are ecologically sensitive or fragile, and the “ecological red line” plan offers these areas a chance at protection. The green peafowl is a species with a very small population, and its habitats are an important ecological area that should be protected by a red line. Once included, the zone would be managed in the way of reserves that are off-limits to construction so as to ensure that the wildlife population inside it does not drop, the area of the zone does not shrink, and the nature of the ecology does not change.

3. In the Ministry of Environmental Protection’s guidelines on “ecological red lines” the following articles pertain to species with an extremely small population.

Article 7.4 Other

Other areas not already covered by the above, but that have important ecological functions, sensitivity, or fragility, include ecological forests, important wetlands and grasslands, and the habitats of species with an extremely small population.

7.4 其他

其他未列入上述范围、但具有重要生态功能或生态环境敏感、脆弱的区域包括生态公益林、重要湿地和草原、极小种群生境等。

Article

8.1.4

(3)

Based on an evaluation and classification of biological functions, areas that are crucial for maintaining biodiversity are to be incorporated into the protected area. As for wildlife outside of nature reserves—including Class I and II protected plant species, species with an extremely small population, and other rare and endangered wildlife not yet placed on a protection list—can use a species distribution model to predict the wildlife distribution. By using that data along with the available data on actual distribution, authorities can draw a red line to ensure the long-term survival of a species.

8.1.4(3)

依据生物多样性保护功能评估与分级结果将生物多样性极重要区划入生态保护红线。针对尚未纳入自然保护区的国家一、二级保护动植物、极小种群以及未纳入保护名录的其他珍稀濒危物种采用物种分布模型预测可能分布范围结合物种实际分布情况最终划定确保物种长期存活的保护红线。

Regulations of the People's Republic of China on Nature Reserves

《中华人民共和国自然保护区条例》

Article 27

Entering the core zone of a nature preserve is prohibited. If one needs to enter the core area to conduct scientific observations or surveys, one must submit a plan to the nature reserve's administration, as well as be approved by the nature reserves unit of a government department above the county level. Anyone entering a national-level nature reserve must have the approval of the responsible department within the State Council.

第二十七条

禁止任何人进入自然保护区的核心区。因科学研究的需要必须进入核心区从事科学研究观测、调查活动的应当事先向自然保护区管理机构提交申请和活动计划并经省级以上人民政府有关自然保护区行政主管部门批准其中进入国家级自然保护区核心区的必须经国务院有关自然保护区行政主管部门批准。

Article 32

No infrastructure for production may be built in the core and buffer areas of nature reserves.

第三十二条 在自然保护区的核心区和缓冲区内不得建设任何生产设施。

The Administrative Regulation of Yunnan Province of PRC on Natural Reserve

《云南省自然保护区管理条例》

Article 14: Nature reserves can be divided into the core area, the buffer area, and the experimental area.

No individual or agency is allowed to enter the core area of a nature preserve. If, due to scientific research, one needs to enter the core area, entry must be approved by the administrative department of the nature reserve. No infrastructure may be established in the core area unless it is for the purpose of environmental protection.

第十四条 自然保护区可以分为核心区、缓冲区和实验区。

核心区禁止任何单位和个人进入。因科学研究确需进入的应当经同级有关自然保护区行政主管部门批准不得建设与保护无关的任何设施。