# 嘉道理农场暨植物园简介
# Introduction to Kadoorie Farm & Botanic Garden (KFBG)

嘉道理农场暨植物园是香港的一所慈善机构，早在 1951 年，嘉道理家族的两兄弟，罗兰士与贺理士，创办本园以推行农业辅助计划，帮助从大陆移民来香港的贫困农户自力更生。该计划帮助了超过三十万名农民改善生活。两兄弟于九十年代先后辞世，但其家族传统仍延续下来。嘉道理慈善基金会为中国和东南亚地区内服务贫困社群的计划提供资助，而嘉道理农场暨植物园则因应香港社会的转型，现已建成为一所自然教育与保育中心，并根据 1995 年通过的香港法例成为一家公益事业公司。我们的任务是"提高人们关注我们与自然环境的关系"。本园现推行的计划有野生动植物保育、可持续农业和环境教育等等。

Kadoorie Farm & Botanic Garden (KFBG) is a charity based in Hong Kong, with a tradition of agricultural aid dating back to 1951, when the two brothers Lawrence and Horace Kadoorie began a self-help scheme for poor immigrant farmers from China. This scheme was to help over 300,000 Hong Kong farmers to achieve a good standard of living. Both brothers died in 1990s, but the family's philanthropic activities continue. The Kadoorie Charities fund projects throughout China and the South East Asia region. KFBG, in response to changing priorities in Hong Kong, has become a centre for environmental education and conservation, enshrined by a Government Ordinance in 1995 as a public corporation. The Mission Statement of the KFBG is "TO INCREASE THE AWARENESS OF OUR RELATIONSHIP WITH THE ENVIRONMENT". KFBG now has thriving programmes in wild plant and animal conservation, sustainable agriculture, environmental education and other areas.



封面及背景照
Front cover and background photos

云南龙陵县小黑山保护区的村民的日常生活需倚靠天然资源。
Local villagers collecting natural resources for subsistence in Xiaoheishan NR, Lougling County, Yunnan.

**封面照由周锦超拍摄。**
**Front page photo - by Lawrence Chau.**
**背景照由李国城拍摄。**
**Background photo - by Lee Kwok Shing.**

# 目录
# Contents

# 编辑的话
# Editorial

上一期《森林脉搏》曾进行问卷调查，部分读者已作回应，我们谨此致以由衷的谢意，你们的宝贵意见将影响本刊未来的发展动向。至于尚未交还问卷的读者朋友，你们仍可在十月底前把已填妥(或部分填妥)的问卷交回本园，让我们可于下期刊登调查结果。问卷现可于本园网址 www.kfbg.org(华南项目－出版)一栏下载。我们对区内保育官员的意见尤感兴趣，这些意见对从事同类工作的编者与读者均有启发作用。不论本刊对你造成正面或负面影响，都请如实告知，使我们可以从善如流，日后好好发挥本刊作为资讯支援的作用。

本期以「中国西南保育的社区力量」为题，风格与前期略有不同。社区保育之声常有听闻，实际上它是如何运作的呢？为飨读者，我们请来在云南及贵州从事社区保育工作的中坚分子分享这些方法及进展，本园执行董事查敏立则从全球保育观点，浅谈对社区保育的看法。除此以外，本刊亦报导了华南保育研究的最新动态与保育资讯，同时亦重新整理「近期刊印出版物」的栏目，加插精选文献摘要，以加深读者对保育刊物内容的认识。我们戮力如斯，全为使读者阅毕后能有所启发。

A warm thank-you to those readers who returned the questionnaire in the previous issue – your views will be pivotal in guiding the future development of the magazine. To those who didn't get around to it, it's not too late. We ask you to send us your completed (or part-completed) forms by the end of October, so we can bring you the results, and conclusions, next time. Forms are also available on the Internet at www.kfbg.org, under "South China – Publications". We are particularly keen to hear from government officials involved in conservation in the region, as your perspectives are of key interest to editors and other readers alike. If we interest you or help your work, tell us how; if we bore you, bother you or baffle you, let us know how we could do a better support job on these pages.

The present issue is already a slight departure from its predecessors, as it has a unifying theme: Community Power in Southwest China Conservation. Community-based conservation is an approach we often hear about, but how does it actually work? We hear reflections on approach and progress from those centrally involved in such projects in Yunnan and Guizhou, seasoned with a global perspective from our Executive Director Manab Chakraborty. We also hear updates from biodiversity research in South China, news and notices, and a revamped recent-publications section, with summaries of select papers. Hope you find something you didn't know before.

| 第五期《森林脉搏》勘误 | Erratum *Living Forests* 5 |
|---|---|
| **第三十五页** | **Page 35** |
| 错: 图 1. 豹猫 *(Felis bengalensis)* 本园山坡 | Wrong: Fig. 1. Leopard Cat *(Felis bengalensis)* KFBG hillside |
| 对: 图 1. 豹猫 *(Prionailurus bengalensis)* 本园山坡 | Correct: Fig. 1. Leopard Cat *(Prionailurus bengalensis)* KFBG hillside |
| 错: 图 3. 豪猪 *(Hystrix hodgsoni)* 本园山坡 | Wrong: Fig. 3. Chinese Porcupine *(Hystrix hodgsoni)* KFBG hillside |
| 对: 图 3. 豪猪 *(Hystrix brachyura)* 本园山坡 | Correct: Fig. 3. Malayan Porcupine *(Hystrix brachyura)* KFBG hillside |
| **第四十五页** | **Page 52** |
| 错: 黎母山林场软体动物悃森林蜗牛 *Pupina falva* | Wrong: Limushan Forest Farm Molluscs – *Pupina falva* |
| 对: 黎母山林场软体动物悃黄蛹螺 *Pupina flava* | Correct: Limushan Forest Farm Molluscs – *Pupina flava* |
| * 此种并非海南特有种，广东鼎湖山，肇庆等地也有此种标本。 | * This species is not endemic to Hainan, specimen can also be found in Dinghushan and Zhaoqing of Guangdong |

## 中国项目正式启动

为保护华南地区珍贵但脆弱的生物多样性及生境，嘉道理农场暨植物园组织了一群富野外考察经验的生物学家，于一九九八年初开展**华南生物多样性保育计划**。计划的初期目标有：更新及搜集生物多样性资讯、推动区内保育网络、为科研人员、保育学者，特别是青年野外工作者、保护区主任及管理员进行培训，并提高群众的保育意识。

透过与区内的保育人士、科学家、政府官员及当地人民的通力合作，华南生物多样性保育计划自1998至2002年间调查了约60个位于广东、广西及海南的自然保护区。除印制一系列的野外考察报告，我们亦出版了通讯刊物—*森林脉搏*、筹办生物多样性奖学金计划、资助环境教育、保育、野外研究及社区发展的小型项目，并参与全球及国家的保育行动。

鉴于华南生物多样性保育计划已开展多年，本园便于2002年进行策略性筹划，回顾本计划在过往数年积累的工作经验与成果，同时为日后投身国内保育工作订下新的方针。此策略性筹划要求我们在中国履行本园的整体宗旨—「提高大众对人与自然环境关系的认识」，本园董事会在2003年4月采纳了该项建议，华南生物多样性保育计划亦正式改组为中国项目，采纳比前更全面、更广阔的视野。今后，中国项目的工作将集中在四大领域上，包括：一)扭转天然林生态系统的损耗及退化局面；二)保护极危的动植物种群；三)促使农业的可持续发展；及四)推动可持续的生活模式。

中国项目协调办公室已在筹组当中，刘惠宁博士已于7月出任中国项目经理一职，与此同时，前身兼任该职的周锦超博士，亦已返回原来的工作岗位，全职担任植物保育部经理，继续进行香港及区内的植物保育工作。

刚筹组的中国项目凭藉现时成员及快将加入的新成员的努力，将会与你携手合作，为中国创建更美好的环境。有你不断的支持，本项目定能有更佳的发展。

***周锦超博士***
*嘉道理农场暨植物园*
*(华南生物多样性保育计划经理)*

***刘惠宁博士***
*嘉道理农场暨植物园*
*(中国项目经理)*

## ANNOUNCEMENT OF THE NEW CHINA PROGRAMME

In order to save the rich but rapidly vanishing biodiversity of South China and the habitats that it depends upon, a group of field biologists was gathered to start the **South China Biodiversity Conservation Programme** (SCBCP) at KFBG in early 1998. The initial objectives were to update and collect biodiversity information, facilitate a conservation network in the area, help build the capacity of researchers and conservationists and especially young field biologists, reserve managers and park wardens, and to increase public awareness.

Through collaborative effort with many partners in the area, including conservationists, scientists, government officials and local people, SCBCP surveyed some 60 nature reserves in the three southern provinces, Guangdong, Guangxi and Hainan, from 1998 to 2002. In addition to publishing field survey reports, we have produced the newsletter '*Living Forests*', launched the KFBG Biodiversity Studentships and supported a number of small projects in environmental education, conservation, field research and community development, as well as contributing to global and national conservation initiatives.

As the programme developed, KFBG conducted a strategic planning (SP) exercise in 2002 to review the experience and achievement of the SCBCP and to set a new direction for our future involvement in China. This SP called on us to pursue KFBG's broader mission – increasing the awareness of our relationship with the environment - in China. It was accepted by the Board in April 2003 and a new China Programme was launched to bring a more holistic perspective to the old SCBCP. There are four focal areas under the new Programme, namely: a) Reverse Loss and Degradation of Natural Forest Ecosystems, b) Protect Critically Threatened Species and Populations of Fauna and Flora, c) Make Agriculture Sustainable and d) Promote Sustainable Living.

A new China Programme Coordination Office is being formed to manage the Programme and Dr. Michael Lau has taken up the full-time Programme Coordinator position in July. At this time Dr. Lawrence Chau, formerly part-time coordinator of the SCBCP, switched back to become full-time Head of the Flora Conservation Department and continues to work on plant conservation in Hong Kong and in the region.

With the help of existing members and a few new recruits to cover the new focal areas, the new China Programme will continue to work with you towards a better environment in China. Your continued support to our Programme is much needed and will definitely help us do better.

***Dr. Lawrence Chau,***
*(Coordinator, SCBCP)*
*KFBG*

***Dr. Michael Lau,***
*(Coordinator, China Programme)*
*KFBG*

## 《植物保育策略》

生物多样性公约秘书处于 2002 年出版了《植物保育策略》，为缔约国制订全球性的目标。2010 年之全球目标如下所列，长达 13 页的策略亦附上相关词汇及技术依据。下列目标以 2010 年为限，与公约之策略计划同步落实。

**(a) 了解及记录植物多样性**

i. 建立可广泛阅览的已知物种工作名录，作为编写完整的全球植物志的第一步

ii. 在国家、区域与国际层面上，初步评估已知物种的保育现况

iii. 按研究与实践经验，建立植物保育与可持续利用的典范及其守则

**(b) 保育植物多样性**

iv. 有效保育全球各生态区最少 10% 的土地；

v. 保护半数的植物多样性重要区域；

vi. 以符合保育植物多样性的管理模式，管理最少 30% 的生产土地

vii. 就地保育全球 60% 的受危种；

viii. 迁地保育全球 60% 的受危种，以于原产国家实施为宜，当中 10% 包括在物种恢复与复修项目

ix. 保育 70% 的农作物及其他具社会经济价值的主要植物的遗传多样性，与及维持相关的传统及当地知识

x. 制订有关最少 100 个威胁植物、植物群落及其生境与生态系统的主要入侵种的管理计划

**(c) 可持续利用植物多样性**

xi. 国际贸易不得致使野生植物濒危

xii. 采用可持续管理方法生产 30% 的植物制品

xiii. 遏止植物资源进一步减少，以及阻止能支持可持续生活模式、当地粮食供应及医疗保健的知识、创意与方法的衰落

**(d) 提倡植物多样性的教育及意识**

xiv. 在传播、教育与公民意识项目中融入植物多样性的重要性及其保育的讯息

## A STRATEGY FOR CONSERVING PLANTS

In 2002 Global Strategy for Plant Conservation was published, by the Secretariat of the Convention on Biological Diversity. It sets targets to be achieved globally by Parties to the Convention. The global targets for the year 2010 are as follows, and their terms and technical rationale are appended to the 13-page Strategy. The date of 2010 has been used to sychronise the Strategy with the CBD's Strategic Plan.

**(a) Understanding and documenting plant diversity:**

i. A widely accessible working list of known plant species, as a step towards a complete world flora;

ii. A preliminary assessment of the conservation status of all known plant species, at national, regional and international levels;

iii. Development of models with protocols for plant conservation and sustainable use, based on research and practical experience;

**(b) Conserving plant diversity:**

iv. At least 10% of each of the world's ecological regions effectively conserved;

v. Protection of 50% of the most important areas for plant diversity assured;

vi. At least 30% of production lands managed consistent with the conservation of plant diversity;

vii. 60% of the world's threatened species conserved *in situ;*

viii. 60% of threatened plant species in accessible *ex situ* collections, preferably in the country of origin, and 10% of them included in recovery and restoration programmes;

ix. 70% of the genetic diversity of crops and other major socio-economically valuable plant species conserved, and associated indigenous and local knowledge maintained;

x. Management plans in place for at least 100 major alien species that threaten plants, plant communities and associated habitats and ecosystems;

**(c) Using plant diversity sustainably:**

xi. No species of wild flora endangered by international trade;

xii. 30% of plant-based products derived from sources that are sustainably managed;

xiii. A halt in the decline of plant resources, and associated indigenous and local knowledge, innovations and practices that support sustainable livelihoods, local food security and health care;

**(d) Promoting education and awareness about plant diversity:**

xiv. The importance of plant diversity and the need for its conservation incorporated into communication, educational and public-awareness programmes;

(e) **植物多样性保育的培训**

xv. 根据国家需要增加参与植物保育工作单位的受培训工作人员，以达到本策略的目标

xvi. 在国家、区域及国际的层面上，成立或加强植物保育活动网路

为使目标能如期达成，欢迎读者就其进展、挑战与障碍发表意见。

如欲获取《全球策略》之印刷本，可透过 http://www/biodiv/org 与生物多样性公约秘书处或 www.bgci.org.uk 与植物园保护国际组织联系。

## 危在旦夕的苏铁

最新的苏铁现况调查与行动保育计划指出世界上最古老的种子植物—苏铁，现已跻身为最受危的植物之一。国际自然保护联盟物种生存委员会辖下的苏铁专家组就全球苏铁物种编撰的报告指出中国的 21 个种中有 3 个极危种: 德保苏铁 *Cycas debaoensis*, 灰干苏铁 *C. hongheensis* and 南盘江苏铁 *C. szechuanensis*、4 个濒危种及 6 个易危种。其中一些如攀枝花苏铁 *Cycas panzhihuaensis* 及灰干苏铁因被过度采集用作园林美化而受危。此计划呼吁制订物种保育行动计划、进行更多的分类研究、把所有苏铁物种纳入保护区及实施迁地保育等。深圳仙湖植物园内的苏铁别具发展迁地保育的潜力，因而被特别提及。

行动计划亦吁外界仿效墨西哥，于村寨建立苏铁苗圃，以抵消过度采摘的威胁。为培育在广西新发现的、仅有 500 株个体的德保苏铁，华南植物园的刘念教授组成保育小队前往广西试办苗圃。在与苏铁种群为邻的村长达成协议后，他们得以在村内建立苗圃，并与村民合力发展保育项目。苗圃须装置灌溉用的小水塔及喉管和进行员工培训，方可正式运作。所有野生植株的位置会标示在地图上，并加上标记，以监测种群变化与繁殖状况、并厘订可持续收成与保育成果，此项目亦会进行市场发展。

行动计划已于世界自然保护联盟书局有售。网站：http://www.iucn.org/bookstore、电邮：books@iucn.org、电话：+44 1223 277894 及传真 +44 1223 277175。

**(e) Building capacity for the conservation of plant diversity:**

xv. The number of trained people working with appropriate facilities in plant conservation increased, according to national needs, to achieve the targets of this Strategy;

xvi. Networks for plant conservation activities established or strengthened at national, regional and international levels.

Readers are invited to comment on these targets, including the progress, challenges and obstacles to meeting them on time.

To obtain copies of the *Global Strategy* contact the CBD Secretariat, http://www/biodiv/org or Botanic Gardens Conservation International, www.bgci.org.uk.

## CYCADS AT RISK

The new Cycad Status Survey and Conservation Action Plan (http://www.iucn.org/themes/ssc/news/cycadsap.htm) warns that cycads, the oldest seed plants on earth, are now also among the most threatened. All species are reviewed in the report, compiled by the Cycad Specialist Group of IUCN's Species Survival Commission. Of 21 species in China, three (*Cycas debaoensis, C. hongheensis* and *C. szechuanensis*) are considered Critically Endangered, four are Endangered and six Vulnerable. Cycads such as *C. panzhihuaensis* and *C. hongheensis* are threatened by collection from the wild for use in landscaped gardens. The Plan calls for species-based conservation plans, further taxonomic studies, the inclusion of all species in protected areas, and *ex situ* conservation efforts; the collection at Fairy Lake Botanical Garden in Shenzhen is given special mention for its potential role.

The Plan also calls for application of the village nursery model, first used in Mexico, to counter the threat of collection for horticulture. A team including Prof. Liu Nian of South China Botanic Garden is applying the model for *Cycas debaoensis*, a newly discovered species in Guangxi with a population of only 500 individuals. Negotiations with the headmen of the village closest to the cycad population have led to a tentative agreement for the establishment of a nursery and cooperation in a conservation project. The nursery will require a small water tower and pipes for irrigation, and the training of workers. All wild plants will be mapped and tagged to monitor population change and reproduction, to help determine the sustainable harvest and the success of the conservation effort. Market development is also part of the project.

The Action Plan can be purchased in hard copy from the IUCN World Conservation Bookstore http://www.iucn.org/bookstore; Email: books@iucn.org; tel: +44 1223 277894; fax +44 1223 277175.

## 兰花在线

兰花专家组(OSG)推出新的网页(http://go.to/orchid-specialist-group)设有兰花保育的理论依据、策略、专家名录及活动简介。兰花专家组倡议整合生境管理、可持续利用、种子贮存及物种重引等就地与迁地的方法，进行兰花保育。向兰花爱好者及公众教导滥采对兰花的威胁及解决方法是促使保育项目成功的关键。(另可参阅萧丽萍与 Sheila Kell 于《森林脉搏》第四期第 14-17 页撰写的文章)

## ORCHIDS ON THE WEB

The Orchid Specialist Group (OSG) has launched its new site (http://go.to/orchid-specialist-group) which provides details of the rationale of the OSG, its strategy, membership, and activities. The OSG advocates an integrated approach to orchid conservation, using both *in situ* and *ex situ* methods, including habitat management, sustainable utilisation, seed banking and reintroduction. Educating the orchid community and the general public about the threats to orchids and viable solutions is also considered critical to the success of conservation projects. (See also article by Gloria Siu and Sheila Kell, *Living Forests* 4: 14-17.)

## 生物多样性奖学金消息

一如以往，嘉道理农场暨植物园都会颁发奖学金于从事华南生物多样性野外工作的研究生。2003 年度生物多样性奖学金的报告会及面试已于本年八月二十五至二十七日假广州圆满进行。本年我们从 28 名申请者中甄选出 13 名作个别面试，涉猎题材广泛，如濒危物种保育、植林与天然林之比较都在研究之列。五名获发奖学金的学生已顺利诞生，其研究题目如下：

## KFBG BIODIVERSITY STUDENTSHIPS NEWS

In 2003, as in last years, KFBG is granting studentships in taxonomy and field biology to postgraduate students in South China. The presentations and interviews were successfully conducted in Guangzhou on 25-27 August 2003. This year we received 28 applications, and 13 students were selected for interview. Their research ranges from the conservation of endangered species to the comparison of natural forest with plantations. Five outstanding candidates were eventually selected to receive the studentships. Their research topics are as follows:

| 姓名 Name | 教育程度 Degree | 就读学院 Institution | 研究课题 Project title |
|---|---|---|---|
| 恭世平<br>Gong Shiping | 博士研究生<br>Ph.D. | 北京师范学院<br>Beijing Normal University | 海南岛淡水龟类地理分布规律、濒危现状及保育研究<br>Research on the distribution, endangered status and conservation of freshwater hard-shelled turtles in Hainan Island. |
| 宋妍婧<br>Song Yanjing | 博士研究生<br>Ph.D. | 中国科学院动物所<br>Institute of Zoology, CAS | 海南岛洞穴无脊椎动物的多样性及其保护<br>Invertebrate animals in caves of Hainan Island. |
| 张璐<br>Zhang Lu | 博士研究生<br>Ph.D. | 华南农业大学林学院<br>College of Forestry, South China Agriculture University | 广东第一峰石坑崆森林群落物种多样性的垂直格局研究<br>Altitudinal patterns of species diversity in the forest communities of Shikengkong, the highest mountain in Guangdong province. |
| 吴捷<br>Wu Jie | 硕士研究生<br>M.Phil. | 中国科学院动物所<br>Institute of Zoology, CAS | 中国热带森林倒木昆虫生物多样研究 — 筒隐翅虫亚科<br>Saproxylic insects and their biodiversity in tropical forests in South China - Osriinae (Coleoptera, Staphylinidae) as bioindicators and a thorough investigation into their taxonomy. |
| 田怀珍<br>Tian Huaizhen | 硕士研究生<br>M.Phil | 中国科学院华南植物所<br>South China Institute of Botany, CAS | 广东南岭兰科植物物种多样性及其保育研究<br>Study on the diversity and conservation of orchid species in Nanling, Guangdong. |

报告会亦安排在面试前举行，以提供历届奖学金得主与面试学生一个交流经验的机会。本年毕业的学生全都是 2000 年度的奖学金得主，分别有赵亚辉先生 (广西十万大山地区鱼类物种多样性及演化形成机制的研究)、银海强先生 (莽山与八宝山陆生蜗牛的生物多样性研究)、曾志锋先生 (瑶山鳄蜥的生态、现况与保育)、李志伟先生 (人为活动及干扰对广东省森林土壤无脊椎动物群多样性之影响)及戴强先生 (广西蝙蝠的多样性保育状况的调查)，而另一名 2000 年得主 —硕士研究生严岳鸿先生现转攻博士，继续进行其广东蕨类的研究。我们衷心恭贺上述各人顺利完成学业，希望他们日后能在生物多样性保育上继续努力。

**吴狄姬**

*(嘉道理农场暨植物园，中国项目)*

Presentation sessions were also organized to provide a platform for the exchange of experience between past studentship holders and new applicants. This year's graduating students included Mr. Zhao Yahui (species diversity and evolution mechanism of fish in the Shiwandashan region of Guangxi), Mr. Yin Haiqiang (biodiversity study of land snails in Mangshan and Babaoshan), Mr. Zeng Zhifeng (ecology, status and conservation of Crocodile Lizard *Shinisaurus crocodilurus*), Mr. Li Zhiwei (effects of human activity and disturbance on forest soil invertebrate communities and biodiversity in Guangdong Province) and Mr. Dai Qiang (survey of the diversity and conservation status of bats in Guangxi). All were 2000 studentships holders. Another 2000-awarded M.Phil. student, Mr. Yan Yuehong, has switched to a Ph.D. to further his studies on ferns in Guangdong. We sincerely congratulate these graduates for the completion of the studies and hope they will continue their efforts in contributing to biodiversity conservation.

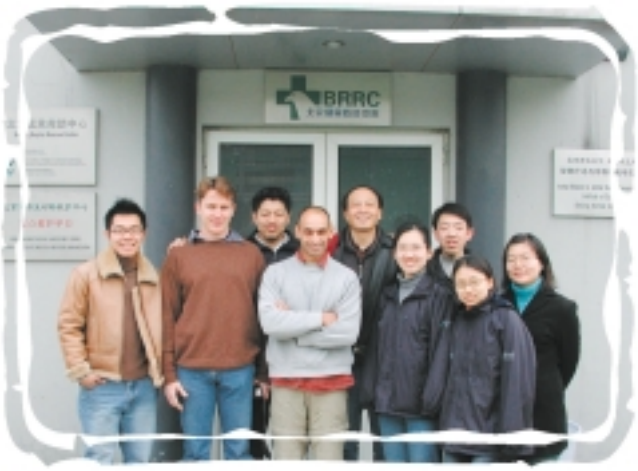
***Norris Ng***

*(China Programme, KFBG)*

## 为国内提供野生动物康复技术训练

为秉承促进技术交流、与国内野生动物救助中心紧密合作的宗旨，本园动物保育部在二零零三年分别为两所野生动物救助中心的工作人员提供野生动物康复训练。

二零零三年二月，来自粤北韶关市林业局辖下的野生动物救护中心的两位职员到本园接受为期四天的培训。课程内容既有理论，亦有实践，本园的保育主任除了向参加者讲解野生动物收容指引、康复放归技术与基本急救程序，更示范血液收集、输液治疗与医护受伤动物等技巧。学员接触了适用于哺乳类、爬虫类及鸟类的多种不同技术。本园期望与韶关野生动物救护中心维持友好的夥伴关系，并筹划于秋季再派员到韶关作进一步的技术交流。



照片由作者提供 Photo by author

同年三月，本园高级保育主任 Rupert Griffiths 先生及高级兽医范礼文先生(Nimal Fernando)拜访了由国际爱护动物基金会与北京市野生动物自然管理保护区管理站共同建立的北京猛禽救助中心。该中心于二零零一年成立，位处北京师范大学校园。此行主要参观新落成的中心设施，并替当地职员温故知新，讲述基本的兽医护理及猛禽康复技术。我们在中心讲学、参与课后讨论，更评估一些鸟类的健康状况，而当地职员亦向我们讲解该中心的日常运作及放归白尾海鸥的经过。

此行促成了北京救助中心开办切合员工需要的猛禽康复技术训练课程。该中心的两名员工在同年四月到本园参加为期五天的野生动物康复技巧训练课程，预计同类课程将于本年再度开办。

国内的野生动物康复中心与本园均认为这样的交流为双方带来莫大裨益。我们期望与这两所中心维持友好的合作关系，并乐意与其他单位共谋未来的合作大计。

***Rupert Griffiths***

*(嘉道理农场暨植物园，动物保育部)*

## Wildlife Rehabilitation Skills Training in China

As part of the KFBG Fauna Department's mission to share knowledge and collaborate with rescue centres in China, we have been busy during 2003 providing wildlife rehabilitation training to two centres.

In February 2003 two staff from the **Shaoguan Wildlife Rehabilitation Centre**, run by the Shaoguan Forestry Department, in northern Guangdong, visited KFBG for a four-day training course. The course content included theory sessions on protocols for animal admission, rehabilitation and release techniques, and basic first-aid, and also practical sessions including fluid re-hydration therapy, blood collection techniques and animal handling. Overall the visiting staff members were exposed to a great variety of techniques used for mammal, reptile and bird rehabilitation. We hope to carry on our friendship with the Shaoguan Centre and plan to send staff there this autumn to continue the exchange of techniques and skills.

In March 2003, Senior Conservation Officer Mr Rupert Griffiths and Senior Veterinarian Mr Nimal Fernando visited the **Beijing Raptor Rehabilitation Centre** (BRRC). The centre was established in 2001 on the campus of the Beijing Normal University as a joint project between the International Fund for Animal Welfare and Beijing Wildlife Conservation and Nature Reserve Administration. The purpose of the visit was to assess the facilities of this newly-built centre and provide a refresher course in raptor rehabilitation techniques, including basic veterinary care. During the visit, the KFBG staff presented lectures, participated in discussion sessions and carried out some veterinary assessments of birds. They were also introduced to the normal operational procedures of the centre including the release of a White-tailed Eagle *Haliaeetus albicilla*.

The visit to the BRRC in March facilitated the formulation of a Raptor Rehabilitation Technique Training course specifically fitting the needs of the BRRC. This five-day course was run at KFBG in April 2003 with two attendees from the BRRC, and covered a wide range of rehabilitation techniques. It is due to be repeated with two more attendees from BRRC later this year.

These exchanges of knowledge between KFBG and wild animal rehabilitation centres in China have proved very beneficial for all parties involved. We hope to continue these relationships and would also like to hear from representatives of other wild animal rescue centres in China to discuss the possibility of future collaboration.

***Rupert Griffiths***

*(Fauna Conservation Department, KFBG)*

# 从村社方法到周边地区方法：云南森林保护与社区发展

# From Village Approach to Buffer-zone Approach: Forest Conservation and Community Development in Yunnan

*Marlon ten Hoonte, Henry Bartsch,* ***徐昀，吴训锋 翻译：易绍良；中荷合作云南省森林保护与社区发展专案，昆明***

***Marlon ten Hoonte, Henry Bartsch, Xu Yun and Wu Xun Feng; translation Yi Shaoliang; FCCDP, Kunming***

## 序言

中荷合作云南省森林保护与社区发展专案（FCCDP）于1998年4月开始实施，为期5年，专案区在云南省的5个地州的6个自然保护区及其周边地区实施。云南省位于中国西南地区，面积约38万平方公里。由于其纬度跨度和相对高差都比较大，形成了明显的水平和垂直气候带，涵盖了从寒温带到热带、从湿润到半乾旱的各种气候类型，其植物多样性居全国之冠。全省已知有大约14,000种高等植物，占中国高等植物种类的一半左右。此外，在云南省还分布著大约250种哺乳动物和760多种鸟类。因此，云南获得了*“植物王国”*、*“动物王国”*和*“中药之乡”*[1]等众多美誉。

照片由作者提供 Photo by author

意识教育
Eco balance web

FCCDP是在中国前外经贸部、中国国家林业局、云南省林业厅和荷兰王国驻中华人民共和国大使馆的领导下实施的。专案办公室设在云南省林业厅。专案的长期发展目标是保护云南省的亚热带和热带森林和生物多样性资源。专案活动多半带有示范性质，以期专案成果特别是专案方法在得到认定以后能够被云南省林业厅及其下属机构采纳。

本文介绍了专案利用参与式方法[2]对保护区周边地区[3]的发展与保护活动进行规划的过程。在该过程中，专案经历了从“村社方法”到“周边地区方法”的转变。利用周边地区方法有助于实现专案的下列具体目标：1）

## Introduction

The Forest Conservation and Community Development Project (FCCDP) began implementation in April 1998 for a period of five years, operating in six nature reserves in four different prefectures of Yunnan Province. The province, located in Southwest China, covers a total area of 380,000 km$^2$. Its great range in latitude and altitude encompasses climates from cool-temperate to hot and from humid to semiarid, and it holds first place in China for its richness in plants. There are about 14,000 higher plant species, accounting for half of the species in China; meanwhile there are some 250 mammal species and 760 bird species in Yunnan. All this lends Yunnan a reputation as *“Kingdom of plants”*, *“Kingdom of animals”* and *“Hometown of medicinal herbs”*[1].

FCCDP's leading agencies are the Ministry of Commerce (MOC), the State Forestry Bureau (SFB), the Yunnan Department of Forestry (YDoF), and the Royal Netherlands Embassy. The Project Management Office (PMO) is established within YDoF, Kunming. The project's development objective is to conserve the sub-tropical and tropical forest and biodiversity resources in Yunnan Province. The project activities are experimental in character; it is the aim that they will be taken over by the YDoF and relevant offices, after validation and approval.

In this article, we describe the participatory planning[2] of development and conservation activities in the adjacent areas[3] surrounding the nature reserves, during which the project switched from a ‘village approach’ to an ‘adjacent area approach’. The chosen

加强云南省林业厅极其下属机构的能力，以提高其保护云南省的森林资源的能力；2）实现社区社会经济的可持续发展；3）对保护区周边地区的林地实行可持续的、参与式的管理；4）保护自然保护区及其周边地区的动植物资源及生态系统。

## 利用“村社方法”开展参与式规划

在把保护区附近的社会经济发展和自然保护联系起来的过程中，很多援助组织都采用通过参与式手段如森林管理部门与当地村社签订自然资源可持续利用协定等来开展村社规划活动[4]。FCCDP也采用了同样的思路。专案在保护区及其周边地区选择了一些村寨，利用参与式乡村评估（PRA）等手段实施村社规划。该过程侧重于对村民的问题、状况、需求和愿望等进行分析，并在自然保护区综合管理计划的框架内寻求最合适的解决方案。通过参与式方式制订出的村社发展规划中详细列出了需要开展的社区发展活动，以图通过这些活动实现减少人类对保护区及其周边地区的森林资源的压力的最终目的[5]。从1999年到2002年间，专案区的2008个自然村中有136个村子制定了村社规划，而且这些规划中的大部分活动已经实施完毕[6]。

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参与式制图
Participatory mapping

村社发展规划中设计的一些主要活动包括：推广和使用节柴技术、发展经济林、通过制定村规民约等改善森林管理、引进林业技术等。在实施专案活动的每个村子，村民与保护区管理部门签订了协定，对保护区及其周边地区的集体林和国有林进行可持续管理，并成立了森林共管委员会。

不过，在实施过程中发现，规划中的一些活动不在保护区管理部门（负责专案实施的技术部门）的许可权和职责之内，而是属于当地林业局和政府的管辖范围。FCCDP认识到自己只是专案区的一个临时的利益相关群体，因此，必须发挥作为当地永久利益相关群体的当地政府及其职能部门的重要作用。必须使专案活动成为当地人自己的活动，让政府在参与式规划和实施中起主导作用，专案活动的可持续性才能够得到保证。除了政府部门以外，其他许多利益相关群体也参与实施了有关村寨的发展与保护活动。“减少当地社区对自然保护区

approach contributes to the achievement of the following specific project objectives: (1) institutional support to improve the ability of YDoF and relevant offices to conserve the forests in Yunnan; (2) sustainable socio-economic community development; (3) sustainable and participatory management of nature reserves and adjacent forestlands; and (4) protection of plant and fauna and ecosystems in and around the nature reserves.

## Participatory planning through a village approach

In their efforts to link socio-economic development and nature conservation in the immediate vicinity of a protected area, many projects from various development organisations focus on village planning by means of participatory tools, making agreements between forest agencies and villages on the sustainable use of natural resources[4]. FCCDP followed a similar line; the project applied village planning in selected villages in and around the nature reserves, making use of Participatory Rural Appraisal (PRA) tools. This process aims at analysis of problems, conditions, needs and wishes of the villagers and at the identification of the most suitable solutions, within the limits set by the nature reserve's integrated management plan. The resulting village plan details the community development activities to be carried out, with the ultimate aim to reduce the human pressure on the forests in and around the nature reserve[5]. From 1999 till 2002, village plans have been prepared and almost completely implemented in 136 of the 2008 villages in the project area[6].

Main activities included in the village plans are: firewood-saving technologies, establishment of economic forests, improved forest management through formulation of village rules and regulations for forest use, and the introduction of specific forestry techniques. In each of the villages, agreements were made between nature reserve and villagers on sustainable management of the collective forests and state forests (focused on decreasing pressure) in the adjacent area and nature reserve, and Forest Co-management Committees were set up.

However, part of the planned activities proved not within the mandate of the nature reserves, technically responsible for the project implementation, but within the mandate of the local forestry bureaus and government departments. FCCDP is only a temporary stakeholder in the area, and as such recognises the important role of the local government and its technical departments, being permanent stakeholders.

的压力”可以通过改善社区的社会经济状况来实现，而改善社区的社会经济状况不仅涉及到单个村社，还必须考虑各个村社之间的相互关系(见下列框图)。

例如，村民们经常提到的一个问题是“产品销售难”。“产品销售”取决于市场基础设施状况、当地的交通条件和市场信息的通畅程度等：所有这些因素都与宏观的区域规划有关，并涉及到许多部门。县乡政府等多边利益相关群体之间密切合作是保证满足上述基础设施的政策到位、活动和资金落实的前提条件。农业、通讯、交通等技术部门在提供必要的基础设施和服务方面起著十分重要的作用。

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问题分析
Problem analysis

基于上述认识，从2001年开始，专案对实施方针进行了适当的调整，让更多的利益相关群体参与了社区发展与保护活动，实施村社也由原来的部分村社扩大到整个周边地区。

## 利用“周边地区方法”开展参与式规划

周边地区管理计划[7]的目的是让“保护区周边地区和实验区的多边利益相关群体就如何对森林和生物多样性资源进行可持续的管理、如何实现当地社区的社会经济发展等交换意见、达成共识”。在编制规划的过程中，要求所有利益相关群体积极参与和合作，就周边地区和实验区的一些重要问题（如潜在的冲突等）进行讨论。

周边地区管理计划的设计和实施特别强调县乡政府的领导和协调作用和所有利益相关群体的参与。作为多利益相关群体中的一员，自然保护区管理部门（“项目实施单位”）在FCCDP的协助和资助下与其他利益相关群体合作开展周边地区的发展与管理示范活动。

Sustainability, through institutionalisation of project activities, can only be assured if the governments take the lead and full responsibility for participatory planning and implementation. Besides government departments, many other stakeholders are involved in the implementation of development and conservation activities in the villages concerned. *'Reducing pressure on the nature reserves'* might best be achieved by an improvement of the socio-economic situation, which often goes beyond the scope of the village and needs to take into account the interrelationships between villages (see Box).

One example of a frequently-met problem in village planning was the *difficulty of marketing products*. Effective marketing depends on the availability of the market infrastructure, good roads in the region as well as access to market information: all factors requiring good planning for a larger geographical area and dealing with various sectors. Collaboration between multiple stakeholders such as township and county governments is a prerequisite for appropriate policy development, priority-setting activities and for funding to realise the necessary infrastructure. Technical departments such as the agriculture, communication and transportation departments have important roles to play in providing the necessary infrastructure and services.

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群体访谈
Group interview

For these reasons, in 2001 the project reoriented its policy to achieve broader stakeholder participation in community development and conservation initiatives and to cover the entire adjacent area, instead of a limited number of selected villages within the zone.

## Participatory planning through an adjacent-area approach

The objective of an adjacent-area management plan[7] is 'to reach common understanding and agreement between multiple stakeholders in the experimental and adjacent areas of the nature reserve on how to conserve and manage the forest and biodiversity (resources) in a

照片由作者提供 Photo by author

村民大会
Village meeting

在每个周边地区，专案对各利益相关群体开展成人学习法、协助技巧和PRA技术等的培训。这些接受过培训的人员两人一组，到保护区及其周边地区的社区开展意识教育活动，弄清周边地区的利益相关群体（以便在PRA 活动中让这些群体参与）[8]

然后，由跨部门、跨学科工作小组到周边地区部分村子开展3天半PRA活动。通过在村子为开展的PRA以及对其他利益相关群体进行的访谈，工作小组对整个周边地区的情况有了比较全面的认识。

随后，专案在各县组织了由所有的利益相关群体的代表参加的会议，以上述PRA活动收集的资料为基础进行讨论。在此次会议上，选举了周边地区管理委员会，由主管林业的副县长担任主任，成员由各利益相关群体的代表组成。周边地区管理委员会成立以后， FCCDP组织随即在当地组织了逻辑框架研讨会，由委员会根据PRA活动收集并经过利益相关群体会议认可的资料开始制定周边地区管理计划。由于该计划是由当地政府主导并由当地的各利益相关群体的代表（周边地区管理委员会）制定的，所以它是一个地道的当地人自己的计划。利用该计划，周边地区管理委员会不仅可以同 FCCDP就计划的实施进行协商，还可以用它来争取国家、非政府组织等其他渠道的援助。 FCCDP 还尽力促成各专案、机构和政府间的合作，以便协调各家在周边地区开展的社会发展与自然保护活动，使周边地区成为政府的一个特殊规划带[8]。

2001年，专案在菜阳河自然保护区对新的方法进行了测试，随后在总结经验的基础上于 2002 年至 2003 年间在其他几个保护区（涉及 11 个县）展开。专案将于 2003 年至 2004 年二期活动开始前对周边地区方法进行评估。

sustainable manner, and on the identification of activities and measures to be undertaken aiming at the socio-economic development of the local communities'. The process of designing the plan includes discussing all the important issues in the zone, including the (potential) conflicts, and requires active participation and collaboration of all stakeholders.

Design and implementation of an adjacent-area management plan requires the leading and coordinating role of the county and township governments and the involvement of all stakeholders with an interest in the use of natural resources in and around the nature reserve. The nature reserves (the 'project units') are assisted by FCCDP in fulfilling their role as one of those stakeholders and in collaborating with all the others, in order to experiment with the adjacent area development and management

In each adjacent area, the project trains stakeholder groups in adult learning approaches, facilitation techniques, and PRA tools. In pairs, these trained groups facilitate awareness-building activities in all villages in the nature reserve and the adjacent area, and identify the stakeholders with an interest in the adjacent area and to be contacted during the PRA procedure[8].

Small multi-disciplinary teams conduct three-and-a-half day PRAs in a selected number of villages in the adjacent area. PRA in these villages together with interviews with non-village stakeholders provided a good overview of the situation in the entire adjacent area.

The draft PRA report on the adjacent area is subject to a meeting at county level in which all stakeholder groups are represented. The meeting elects an adjacent area management committee, representatives of all stakeholder groups and is chaired by the county vice-governor. In a Logical framework Approach (LFA) workshop, organized by the project, the committee starts designing the plan, based on the data in the PRA report, as approved by the stakeholders meeting. The plan, property of the committee, serves as a base document for negotiations on the implementation of identified strategies and activities not only with FCCDP, but also with national projects, NGOs, etc. Where possible, FCCDP facilitates the collaboration between the different projects/ organizations and the government in order to establish an integrated development and conservation programme in the adjacent area, making it into a special planning zone for the government[9].

In 2001, the new approach was tested in Caiyanghe Nature Reserve after which the five remaining reserves (involving eleven counties) were covered during 2002-2003. The adjacent-area approach will be evaluated during 2003/2004 as preparation for the second phase of the project.

## 注 NOTES

1. 云南省林业调查规划设计院。云南省自然保护区（第一版）。北京：中国林业出版社，1989 年。
Preface 'Yunnan Nature Reserve'; China Forestry Press, Yunnan Institute for Forestry Investigation, Planning and Design; edition 01; 1989.

2. FCCDP，(1998)。DGIS 专案启动报告。中国云南省林业厅，荷兰外交部"在林业部门采用参与式工作方法在中国还是新生事物。随著实践的深入，人们逐渐认识到林业中的群众参与并非仅仅是动员群众植树造林，而更主要的是到让农村广大群众参与当地的规划和决策过程。中国的法律和政策框架鼓励和支援引入和使用参与式的森林管理体制"。
FCCDP, 1998. *Inception Report.* Yunnan Provincial Forestry Department, Yunnan China – DGIS, Ministry of Foreign Affairs, The Netherlands. *"Participatory approaches in the forestry sector are quite new to China.* The idea slowly starts gaining ground that participation in forestry means more than motivating people to plant trees, and actually means implying the rural people in the planning and decision making process. China's legal policy framework facilitates the introduction and development of new and participatory forest management systems."

3. 国际上通行的"缓冲区"与中国自然保护区管理中使用的"缓冲区"的内涵有一定的区别。为了避免混淆，FCCDP 建议使用"周边地区"一词来代替"缓冲区"，并采用如下定义："周边地区通常指保护区的周边地区（位于保护区内或保护区外），该地区的管理目标是减少该地区的社区发展和自然保护活动之间的负面影响而加强其积极影响。"
The internationally used term *buffer zone* does not correspond with the meaning of the term buffer zone in China. In order to avoid confusion, FCCDP suggests the term *adjacent area* to be used instead and adopts the following definition: *The adjacent area is 'the area, often peripheral to a protected area, inside or outside, managed with the aim of enhancing the positive and reducing the negative impacts of neighbouring communities on conservation, and of conservation on neighbouring communities.'*

4. 有关案例可参阅下列材料：
Examples of projects and their work in villages in the near vicinity of protected areas are available in various publications, e.g.:

   - Jones, B.T.B., 1999. *Community-Based Natural Resource Management in Botswana and Namibia: An Inventory and Preliminary Analysis of Progress.* International Institute for Environment and Development, London.
   - Makarabhirom, P. and Raintree, J., February 1999. *Comparison of Village Forestry Planning Models Used in Laos.* Report of the Consultants, Lao-Swedish Forestry Program, Department of Forestry, Ministry of Forestry and Agriculture.
   - NTFP Project (not dated). *Steps for Participatory Household and Village Plans at two village pilots - Na Lan and Na Co Villages, Khang Ninh Commune – At "Sustainable Utilization of Non Timber Forest Products" Project Site.* IUCN – The World Conservation Union, Non- Wood Forest Products Research Centre.
   - Shanks, E. and Toai, B.D., 2000. *Field Based Learning and Training in Participatory Approaches to Rural Development. A Decade of Experience in PRA from the Vietnam Sweden Cooperation Program and the Challenge for Formal Education, Research and Donor Organisations.* Resource paper for the Workshop on Changing Learning and Education in Forestry, Theme Three: Change Processes.
   - World Bank, September 1996. *India Ecodevelopment Project.* Project Document, The World Bank, Washington, D.C.
   - Khoi, P.N. (not dated). *Participatory Rural Appraisal (PRA) and PRA Implementation in Vietnam.* Helvetas.
   - Nacionales, L.P. and Wilkie, M.P., 1996. Going to scale: community resource appraisal and planning in the Philippines. In: *PLA Notes, Issue 27, pp. 65-69,* IIED, London.
   - Mukherjee, N., 1996. The rush to scale: lessons being learned in Indonesia. In: *PLA Notes.* Issue 27, pp. 57-60, IIED, London.
   - Poffenberger, M. *et al.*, 1992. *Field Methods Manual Volume II. Community Forest Economy and Use Patterns: Participatory Rural Appraisal (PRA) Methods in South Gujarat, India.* Joint Forest Management Support Program, Gujarat Forest Department, Society for Promotion of Wastelands Development, Ford Foundation.

5. FCCDP，(1998)。DGIS 专案启动报告，中国云南省林业厅，荷兰外交部，p. 3。
FCCDP, 1998. *Inception Report*., Yunnan Provincial Forestry Department, Yunnan China – DGIS, Ministry of Foreign Affairs, The Netherlands, p. 3.

6. FCCDP ，(2002 年 8 月)。2002 年上半年度报告。中国云南省林业厅赵酶外交部， p. 22 。
FCCDP, August 2002. *First Semestriel Report 2002*. Yunnan Provincial Forestry Department, Yunnan China – DGIS, Ministry of Foreign Affairs, The Netherlands, p. 22.

7. ‘周边地区管理计划(AMP)’ ；(见注 2)
‘Adjacent area Management Plan (AMP)’; (see note 2)

8. 所确定的利益相关群体包括林场、移民、糖厂、茶厂、政府及其职能部门等。
Stakeholders included plantations, migrants, sugarcane and tea factories, and government technical departments.

9. FCCDP 正在准备对一些专案经验进行总结并出版; 另外， FCCDP 专案办尚有一些在 2003 年专案成果认定会上准备的关于周边地区方法的背景材料备索。
An FCCDP publication is in preparation; background papers on the approach prepared for the validation conference (May 2003) are available from FCCDP.

# 周边地区管理规划实践

# Adjacent-area management planning in practice

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## 序言

本文介绍了南涧县无量山国家级自然保护区（WNNR）的周边地区*管理规划过程。南涧县是2001年才被纳入FCCDP的专案区的，同年8月，周边地区管理规划工作在该县启动。到2002年6月，当地政府就已经开始利用周边地区管理计划与FCCDP就为部分活动提供资金援助等事宜进行协商。南涧的情况说明，参与式规划过程并不一定需要很长时间，而且能够让所有的利益相关群体都有发言权。

## 无量山国家级自然保护区及其周边地区

无量山国家级自然保护区位于云南省西部。保护区的南部，也是保护区最大的一部分，位于思茅地区的景东县，北部在大理州的南涧县。保护区南涧部分于1995年被批准为省级自然保护区，2000年被升级为国家级自然保护区。南涧县无量山自然保护区管理局成立于1995年[1]。由FCCDP资助制订、主要针对保护区景东部分的黑眉长臂猿行动计划建议将保护区南涧部分也纳入专案区，专案指导委员会于2000年底采纳了该建议。

照片由作者提供 Photo by author

无量山国家级自然保护区及周边地区现状
Photo of WNR Nanjian and the adjacent area.

南涧无量山自然保护区总面积7,580公顷，其中核心区3,990公顷，缓冲区2,790公顷，实验区810公顷[2]。保护区内分布著1,800多种植物和400多种动物[3]，其中

* 见上文

## Introduction

The present article describes the adjacent-area* management planning process in Wuliangshan National Nature Reserve (WNNR) in Nanjian County. The county jointed FCCDP only in early 2001 and in August of that same year the preparations for its planning process were on track. In June 2002, the local government was able to start negotiations with the project for financing some of the identified activities. The Nanjian case shows that the participatory planning process is applicable in a relatively short period and is perceived relevant to the multiple stakeholders involved.

## Wuliangshan National Nature Reserve and its adjacent area

WNNR is located in the west of Yunnan Province, in two different counties: the southern and biggest part of the reserve in Jingdong County, Simao Prefecture, the northern part in Nanjian County, Dali Prefecture. The management office in Nanjian was set up in 1995. The reserve, approved as a provincial nature reserve in 1995, obtained national status in 2000[1]. A 'Black-crested Gibbon Action Plan' initially formulated for WNNR Jingdong County advised including the Nanjian part within the project area, which was approved by the Project Steering Committee at the end of 2000.

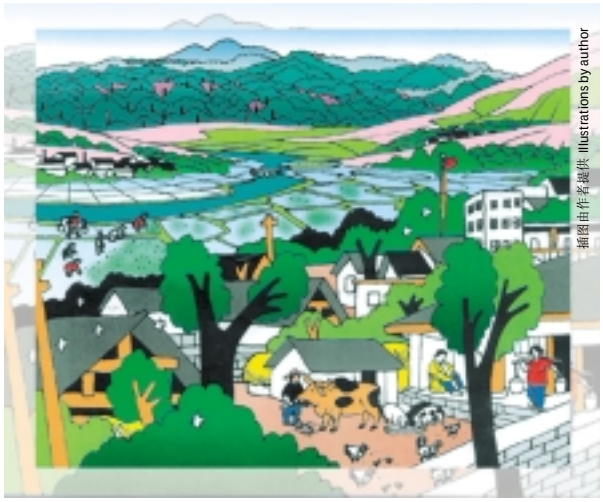
The Nanjian section of the reserve covers a total area of 75.8 km$^2$, divided into a "core zone" (39.9 km$^2$), "buffer zone" (27.9 km$^2$)* and "experimental zone" (8.1 km$^2$)[2]. It harbours about 1,800 species of plant and more than 400 animal species[3]. More than 50 animal species (e.g. Central Yunnan Black-crested Gibbon *Nomascus* (formerly *Hylobates*) *concolor jingdongensis*, Clouded Leopard *Neofelis nebulosa* and Black Bear *Ursus (=Selenarctos) thibetanus* and more than 30 plant species are

* see previous article

包括国家级保护动物50多种（如黑眉长臂猿、云豹和黑熊等）和植物30多种[4]。无量山国家级自然保护区（包括南涧和景东部分）位于无量山山脉的中上部，呈西北—东南走向。保护区山高坡陡，海拔在1,760米与3,000米之间。无量山山脊是澜沧江和元江的分水岭。在保护区的东西坡各有十多条主要的河流分别注入上述两大江河[5]。在行政边界上，保护区南涧部分涉及六个乡镇：宝华、无量、拥翠、碧溪、公郎和沙乐。农业和林业是保护区周边地区主要的土地利用形式，森林包括国有林和集体林[6]。

## 南涧县的周边地区管理规划过程

在与保护区管理人员、专案实施人员和县政府进行了几次商讨以后，专案于2001年8月组织召开了南涧县周边地区管理规划活动启动会。启动会的目的之一是争取当地政府部门参与规划过程。长期以来，当地政府一直希望能够在各利益相关群体的参与下将社会经济发展和保护活动联系起来，但是苦于缺乏必要的手段。FCCDP的周边地区方法为此创造了条件，从而受到了当地群众的热烈欢迎。根据已经掌握的资料，在启动会上大家根据“天然林的多少”、“自然村边界”和“村民对保护区资源的依赖程度”等划定了周边地区的范围。按照上述标准，在保护区周边地区2—3公里范围内，有144个自然村♆，涉及面积14,000公顷。此外，会议还从这144个自然村中选择了40个村子开展参与式乡村评估（PRA）活动，这40个村子基本上均匀地分布于整个周边地区。



插图由作者提供 Illustrations by author

我们的村庄、茶园、工厂、农场、学校、政府机关都与自然保护区紧紧相连，保护区的森林植被像一道天然屏障，护卫著我们的家园。

*Wuliangshan, our home garden, our village, teagarden, factory, farm, school,and government departments are very closely related with the Nature reserve. The forest and vegetation of the Nature Reserve forms a natural barrier, which protects our home garden.*

♆“自然村”为行政管理的一个层次。中国的行政管理分为国家、省（直辖市、自治区）、地（州）、县和乡（镇）等层次。乡镇以下是行政村；行政村一般由多个自然村组成。

on the national protection list[4]. WNNR is located along a mountain range, which has a northwest-southeast orientation. The mountain slopes are steep with heights ranging from 1,760 to 3,000 m above sea level. Wuliangshan mountain ridge divides two watersheds: the Lancang (= Mekong) to the west of the nature reserve and the Yuan Jiang (Vietnam's Red River) to the east. Within each watershed more than ten rivers drain the mountain slopes[5]. Six townships surround the Nanjian section: Baohua, Wuliang and Yongcui on the east side, Bixi on the northeast, and Gonglang and Shale on the west. Agriculture and forestry are the main forms of land use in the adjacent area; the forests are state forests or collective forests managed by the villagers[6].

## The adjacent-area management planning process in Nanjian County

After several meetings with the nature reserve staff, project staff and the county government, the kick-off meeting for the adjacent-area management planning process took place in August 2001, achieving local governments' commitment to the process. The government had long-held ideas on linking conservation and socio-economic development with the participation of various stakeholders, but lacked the necessary means. The opportunity created by the new FCCDP approach to realise the ideas was warmly welcomed. Based on the data available in Nanjian County, the meeting delineated the adjacent area (144 natural villages♆, covering about 140 km² in a 2-3 km belt around the reserve), using the following criteria for inclusion: presence of natural forest, natural-village borders, and villages' dependence on the nature reserve. In addition, 40 of the 144 villages were tentatively selected for Participatory Rural Appraisal (PRA); these were more-or-less evenly spread in the adjacent area.

♆ A “natural village” is a layer of the administrative structure: nation, province, prefecture, county, and township. Immediately under the township is the administrative village, which has (administrative) responsibility for a group of natural villages.

插图由作者提供 Illustrations by author

为了我们的现在和子孙后代的利益，必须保护也我们身边的森林。工作小组的同志会到村来，和我们一起学习，使大家了解我们要做的事情，并且知道怎样来做。
For our benefit at present and for the young generations, we must protect the forest. A working team will come to our village to learn from us and to exchange with us on what we should do and how.

我们可以和工作小组的同志一起讨论，谈出我们的问题，我们希望怎样来解决这些问题。
Photo of WNR Nanjian and the adjacent area. We can discuss together with the team and talk about our problems and the solutions.

保护区周边有很多村寨，还有不同的工厂和人群，大家可能会在保护森林的问题上有一些矛盾，但是我们可以组成不同的小组，通过讨论，形成统一的看法，一起来保护森林。
There are many villages around the Nature Reserve (the adjacent area) and multiple stakeholders, all having different opinions on forest conservation. Working in small groups for discussion, we might reach a common understanding on the situation.


当地政府、其他部门和ＦＣＣＤ专案达成协定，成立周边社区管理委员会，负责指导计划的编制，争取多方面的经费支援，并解决实施过程中的问题。
The local government, their departments and FCCDP will agree on the establishment of an Adjacent area Management Committee which will play a key role in designing the plan, in fundraising and in implementation of the plan.

一个月以后，专案对从周边地区各利益相关群体（包括政府部门、教育局、妇联、共青团、村民委员会和乡政府等）中挑选出的75名代表进行了培训，这些被培训人员将在随后开展的周边地区管理规划意识教育活动中担任协助者。在培训中，当地政府要求各有关人员和领导要充分重视和认真参与培训和村寨意识教育工作，以便统一认识，增强责任感。培训进行了一周，然后，被培训人员（作为协助者）两人一组奔赴周边地区各自然村开展意识教育活动。每个小组负责几个自然村，在每个村开展1天半左右的活动。大家同当地干部群众一起讨论自然保护与社会经济发展之间的重要关系，向当地群众介绍参与式规划过程，宣传周边地区管理计划。在村寨工作期间，协助者利用张贴画、活页材

One month later, 75 representatives of different stakeholder groups in the adjacent area (government departments, education offices, women's unions, youth league, administrative village committees and township governments) were trained as facilitators for awareness building on adjacent-area management planning. The government emphasised the importance of their staff and leaders' participation in training and fieldwork so as to create common understanding on the process and to guarantee commitment. The training took one week, after which the facilitators spent another week visiting all 144 villages to discuss the importance of the linkage between conservation and socio-economic development and to introduce the participatory planning process. They worked in pairs and spent one-and-a-half days in each village. Dialogue was held with villagers on the past and current living situation,

料和游戏等引导村民对他们过去和现在的生活条件、当地人的信仰和传统资源利用方式等进行讨论和分析，以便让大家共同认识到目前的资源利用方式所带来的后果以及保护与发展协调的重要性。除了讨论和介绍规划过程以外，村民还利用Venn关系图*对周边地区的利益相关群体及其关系进行了分析(见框图 1).

**框图 1：村民们确定的利益相关群体（村子裏的利益相关群体除外）**

自然保护区管理局、村委会、乡政府、林业站、水利站、农业推广站、小学、电力公司、能源站、烟叶站、茶厂、茶管办、卫生所、商人、信用社、 FCCDP 等。

虽然当地村民和保护区管理人员之间长期以来一直存在矛盾，但是，在此次活动中，大家努力让保护区管理部门不再以“保护者”的身份自居，而是以周边地区的一个“利益相关群体”的角色出现。由于这种角色的转变，村民都很愿意积极地参加周边地区管理的规划活动。当然，问题不是没有。例如，由于先前在南涧还没有开展过基于成人学习法的意识教育活动，所以，很多协助者不能灵活运用在培训期间所学到的工作方法，因而，有时侯出现说教和单向交流的情况。

同年 11 月份，专案组织了参与式评估培训，上述 75 名意识教育活动协助者中有 40 名参加了这次培训。在此次评估培训班中，当地有些政府部门没有完全按照 FCCDP 的建议派出相应的代表。例如，农业局、水利局和交通局等就没有代表参加此次培训。培训工作结束后开展野外活动。每个野外工作小组中都有一名来自云南省林业规划调查设计院的人员，负责对收集到的资料和资料进行及时整理和录入。参与式评估活动历时 4 周，涉及周边地区的 40 个自然村。

在培训期间，学员们列出了参与式评估活动的话题清单。南涧的评估活动主要涉及下列四个方面的话题，即“社会经济状况”、“土地与水资源利用”、“森林资源和生物多样性”和“利益相关群体”。在村社工作时，大家按照这四方面的话题收集资料，听取当地村民的意见，并按照这几个方面撰写了评估报告。评估报告中，大家利用表格的形式汇报了各村在各方面存在的问题与冲突、机遇（见框图2）和解决办法，并做了简短的分析[7]。

* 一种 PRA 工具，用来帮助人们分析和认识某地区不同利益相关群体之间的关系

local beliefs and traditional resource uses, and, assisted by posters, leaflets and games, a common understanding on the impact of current practices and on the importance of linking conservation and development activities was sought. In addition to the discussions and an introduction to the planning process, the villagers identified (by means of a Venn Diagram *) the various groups and individuals having a special interest in the resources (stakeholders) (see Box 1), as well as their inter-relationships.

**Box 1: Stakeholders identified (besides the stakeholders within the community):**

Nature Reserve management bureau; village committees; township governments; forestry stations; hydrological stations; agricultural extension stations; primary schools; electric and power supply state company, fuel supply corporation; tobacco stations; tea plants/factories; tea management office; clinics; merchants; flagstone tapping plants; credit offices; and FCCDP.

Long-lasting conflicts between villagers and nature reserve staff existed in the area, but open dialogue on the latter's changing role from 'protectionist' to 'stakeholder in the adjacent area' persuaded the villagers into active participation in the process. Of course, problems occurred. For example, since no awareness-building based on adult- or facilitated-learning approaches had been previously carried out in Nanjian County, some facilitators had difficulties with flexible use of the new methods, sometimes resulting in lecturing and one-way communication.

Of the 75 awareness-building facilitators, 40 joined the training on participatory assessment in November. The government did not compose the teams entirely as suggested by FCCDP regarding its multi-disciplinary character, since departments such as the agricultural bureau, hydrological department and transport bureau were not invited. The Yunnan Institute for Forestry Inventory Planning and Design (YIFIPD), charged with compiling the data in the field, completed each of the eight teams with one of their staff members. The participatory assessment was carried out over four weeks in 40 villages using participatory rural appraisal (PRA) techniques.

During training, the trainees composed a checklist of topics for the participatory assessment. In Nanjian, four main topics were identified: 'socio-economic situation', 'land and water use', 'forest resources and biodiversity', and 'stakeholders groups'. The data feedback sessions with the villagers were structured following these themes, guiding in turn the final report writing. For each topic and natural village, the problems and conflicts, opportunities (see Box 2) and proposed solutions regarding the entire adjacent area were presented in the form of tables, accompanied by a text description[7].

* A PRA tool used to get a better insight into the relationships between the different stakeholders in the area.

**框图2：村社评估活动中大家分析出的问题、冲突和机遇等（部分）**

**问题与冲突：**

- 周边地区交通不便，一半左右的村子不通公路，通公路的村子在雨季也无法通车
- 保护区附近的许多村民靠保护区资源为生，造成村民和保护区管理部门之间的矛盾。
- 周边地区人口密度大，加剧了村民对自然资源的依赖，许多村民到保护区放牧和采集非木材林产品
- 野生动物（熊、猴子和野猪等）损害村民的庄稼。

**机遇：**

- 中央政府的天然林保护工程（对于资源保护来说，这是一个机遇，但是工程本身也会带来矛盾）
- 中央政府的西部大开发战略；
- 澜沧江修建电站能促进周边地区的经济，从而改善周边地区和保护区的自然资源管理。

在报告翻译出来并分发到各有关单位以后，专案于2002年4月组织了两个认定会议。在第一个认定会上，除政府部门以外报告中所列的所有利益相关群体的80名代表集中对PRA报告的内容进行进一步核实和认定，并推选了10名周边地区管理委员会成员。在第二个认定会上，当地政府确定了各有关部门在周边地区管理委员会的成员，其中包括有关乡镇的副乡（镇）长各1名、自然保护区管理人员2名、林业局、农业局、计委、水利局、茶叶生产管理办公室、教育局和扶贫办各1名。管理委员会的主任由南涧县副县长担任，于是，政府部门在周边地区管理委员会中共有17名代表。这些人员与第一个认定会上推选的10代表一起组成周边地区管理委员会。

上述利益相关群体会议实际上就是参与式规划过程的开始。参与式规划活动的目的就是让各利益相关群体能够就相关问题达成共识或交流相互的观点。认定会后随即就举行了为期四天的逻辑框架法（LFA）研讨会。周边地区管理委员会的所有27名成员都参加了此次研讨会。会上不仅制定出了周边地区管理计划的逻辑框架，而且，大家还就各种问题充分地进行了讨论[8]。会上还组成了一个由11名成员构成的周边地区管理计划编写小组，负责根据研讨会的结果完成周边地区管理计划的编写工作。计划初稿（见框图3）制定出来以后还徵求了管理委员会各成员的意见。

**Box 2: A few of the problems, conflicts, and opportunities identified during village feedback sessions:**

**Problems and conflicts:**

- Transportation in the adjacent area is poor; nearly half of the villages do not have road access while the roads to the most villages are blocked during the raining season;
- Many villagers living near the nature reserve depend on the reserve's natural resources , causing conflicts between villagers and nature reserve management bureau and stations;
- The high population density in the area increases the villagers' dependence on natural resources even more, resulting in activities such as grazing cattle and collecting non-timber products in the nature reserve;
- A conflict often referred to by farmers is crop raiding by wild animals (e.g. bears, monkeys, wild pigs).

**Opportunities:**

- The logging ban on natural forest (this is an opportunity for resource protection, but it also causes conflicts);
- The national government's West China development initiatives;
- Power stations established on the Lancang River will develop local economics for the adjacent area. This in turn may improve nature resource management in the adjacent area and nature reserve

In April 2002, after translation and wide distribution of the report, two separate validation meetings were organized. On the first day, 80 representatives of all identified stakeholder groups except the government technical departments met to validate the compiled data, and elected ten members for the adjacent area management committee. The next day, the local governments selected the representatives of the technical departments to complete the committee: six township vice-governors, two nature reserve management staff, and one staff member from each of the following: the Forestry, Agriculture, Development and Planning, Water Management, Tea Production Management and Education Bureaus, and the Poverty Alleviation Office. The county vice governor is the chairman coming to a total of seventeen persons. Together with the ten elected persons in the first validation meeting, they form the adjacent area management committee.

The participatory planning process, uniting multiple stakeholders to reach a common agreement or at least a mutual understanding, started in these stakeholder meetings and continued in a four-day Logical Framework Approach (LFA) workshop, held immediately afterwards. All the 27 members of the adjacent area management committee participated. In this workshop not only was a log-frame produced but also different opinions and (potential) conflicts were discussed[8]. A writing team was formed, consisting of 11 people from all technical

**框图 3：逻辑框架法研讨会上确定的管理计划的目标和产出**

**目标 (5 年):**

为村民创造了有利的生活环境，社会经济状况和自然资源条件得到改善。

**产出：**

1) 村民的收入增加，村民对森林和生物多样性资源的压力和依赖降低；
2) 森林消耗降低，植被得到恢复，现存森林得到保护，营造了经济林；
3) 村卫生所条件得到改善或建立了新的卫生所
4) 村民的农村实用技术得到提高。

根据问题分析和目标分析，研讨会确定了4个方面的策略：1)农业、畜牧业和水利管理； 2)林业；3)交通、电力和医疗； 4) 教育、培训和资讯交流。

PRA 报告中共列举了 100 多个问题。在逻辑框架法研讨会上，大家对这些问题进行了进一步的分析，并针对这些问题设计了 36 个活动（见框图4）。计划的预算比较现实，通过当地政府、FCCDP和其他资金来源是可以实现的。虽然计划中大部分的预算都用在了与林业有关的活动上，但是，所有的活动都涉及到多个技术部门。

**框图 4：活动举例**

退耕还林；推广使用绿肥；建立农业专家系统；引进动物新品种；修建节能灶和沼气池；营造竹林，防止水土流失；种植薪炭林和经济林；修建厕所和卫生所；开展意识教育；开展农业实用技术培训；建设广播电视设施，开展意识教育以及使村民及时了解市场资讯。

不过，有些重要问题如“交通不便”、“产品市场不稳定”等的解决已经超出了周边地区管理计划的范围。因而，计划中，将这类问题当作“外部因数”*来处理，需要由政府来解决。

在计划编制过程的前三个阶段中，都是由当地政府来组织和牵头，FCCDP 只是在技术和资金上提供了援助。计划初稿编制出来以后，给各个乡镇政府和行政村都发了一份，县政府还邀请乡镇和村委会代表对计划进行了讨论，并向其他利益相关群体通报了计划的内容。南涧县副县长对计划活动的实施和监测进行协调，并利用该计划同潜在的资助方进行协商。不过，他表示，由于资讯缺乏，政府能够联系的资助渠道不多。在这方

departments in the county, to finalise an adjacent-area management plan based on the workshop results. All committee members kept involved in the process by commenting on the draft plan (see Box 3).

**Box 3: Objective and outputs of the plan as defined in the LFA workshop**

**Objective (five years):**

A favourable living environment for the villagers (including women) is created with improved socio-economic status and natural resource condition

**Outputs**

1) Income increased and the pressure and dependence on forest and biodiversity resources reduced;
2) Consumption of forest reduced, vegetation recovered, existing forests conserved, economic forests established;
3) Village clinics improved or set up;
4) Labour skills in practical rural techniques improved.

Based on the problem- and objective analysis, the planning workshop identified four programmes: 1) Agriculture, animal husbandry, and water-resource management; 2) Forestry; 3) Transport, electricity, and health care; and 4) Education, training, and information exchange.

More than 100 problems were identified during the field appraisal and further analysed in the LFA workshop, for which 36 activities, regrouped under the four programmes, have been proposed (see Box 4). The plan was completed with a realistic budget, likely to be covered by the local governments, FCCDP and eventually other donors. Although a large proportion of the intended investments are allocated for forestry activities, all identified adjacent area activities are spread over different technical fields to *'break the poverty – environmental degradation cycle'.*

**Box 4: A few of the activities proposed:**

Slope land conversion; promoting green manure; setting up a computer-aided agricultural extension system; introducing new livestock varieties; construction of fuel-efficient stoves and biogas pits; planting bamboo as an erosion control measure; planting firewood forests and cash trees; support and construction of toilets and clinics; awareness building; training on practical agricultural techniques; instalment of TV, radio and dish aerials for access to (market) information and support of training and awareness-building activities.

However, the solutions to some important problems in the area were perceived 'beyond the scope of the adjacent area plan' and presented as 'external factors'* to be taken care of by the government, e.g. 'poor transportation conditions' (the problem most often mentioned) and 'unstable market for products'.

* In a logical framework, an external factor is an event, condition or decision which could affect the success of the plan, but which is largely or completely beyond the control of the management.

面，FCCDP能够提供一些资讯，并帮助当地政府同潜在的资助者取得联系。根据计划中列出的需要优先开展的活动和逻辑框架，当地政府和FCCDP已经就专案对计划活动的资助达成了一致意见。

插图由作者提供 Illustrations by author

如果我们不注意保护我们身边的森林资源，会使资源减少和遭到破坏，使保护区成为“孤岛”，最终危害我们的生活。
If we do not pay attention to the forest resources, they will decrease and be damaged; the Nature Reserve will become an 'isolated island', which will cause many problems to our life.

## 结束语

由于当地政府从一开始就表现出高度的主人翁感以及各利益相关群体的积极参与，在逻辑框架法研讨会以后，FCCDP只提供了非常少的一些技术上的援助，当地就制定出了周边地区管理计划。计划制定出以后，由当地政府牵头与利益相关群体进行协商和讨论、寻求资金援助并协调计划活动的实施和监测。总之，当地政府和周边地区管理委员会真正成了计划的主人。

参与式规划过程极大地改善了村民和自然保护区管理人员的相互关系。而且，也有迹象表明，村民和整个行政管理部门的关系也在悄然改变。例如，一些管理干部说：“通过利用参与式过程，周边地区的管理体制都在发生变化：原来我们习惯于保留手中的权利和发布命令，但是，现在我们开始与群众分享权利或责任；我们同村民一同分析他们面临的问题，探讨解决的办法，工作效果比以前好多了”；“我们所学到的工作方法如双向交流、对话和合作等改善了干群关系”；“与中国一般的政府计划不同，周边地区管理计划是自下而上制定的，完全不同于政府命令”。不过，虽然当地政府部门的干部对逻辑框架法研讨会的形式赞美有加，但是，最近到基层考察时，我们发现当地政府在制定该地区的其他发展计划时并没有利用参与式逻辑框架方法。


插图由作者提供 Illustrations by author

政府部门、保护区、林业局和FCCD专案将认真对待大多数人的意见。
The government, the Nature Reserve, the Forestry Bureau and FCCDP will analyze our suggestions.

The local governments organised and took the leading role in the first three phases of the design process, with FCCDP giving only technical and financial assistance. All township governments and administrative village committees received a copy of the plan and were invited by the county government to discuss the contents. The local governments informed the other stakeholders of the plan's contents. The county vice-governor coordinates the implementation of activities and monitoring and uses the plan as a negotiation tool for fundraising with potential donors. However, he mentioned that the government lacks information about possible donors they could contact. Here, FCCDP could play a role by providing this information or being an intermediary between the local governments and potential donors. On the basis of a project priority list and the logical framework, the local governments and FCCDP agreed upon the project's support for various activities.

## Conclusions

Due to the high commitment of the local governments right from the start, and the commitment created among the multiple stakeholders during the process, only minimal technical support from FCCDP staff was needed in the process phases following the LFA workshop. The local governments took the initiative to discuss the plan with stakeholders and potential financiers, and coordinate the implementation of activities and monitoring. In short: ownership by the government and the management committee has been obtained.

The participatory planning process contributed largely to an improvement of the relationships between villagers and nature reserve management staff. Moreover, there are indications that changes have taken place in the relations between villagers and the administration in general, reflected in the words of some (vice-) governors:

*“In using participatory procedures a change took place in the governance of the area: from retaining power and giving orders, we have come to shared power or responsibility; we exchange with the farmers on their problems and try to find solutions with them, which works much better than before”;*

* 专案管理方几乎或完全无法控制的、影响专案成功开展的事件、条件或决定。

在南涧开展的参与式规划过程刚好与当地的行政改革特别是2002年乡、村政府换届选举活动同步进行。参与式规划过程为新当选的干部与时俱进提供了新的、有用的工作方法和手段："通过广播和电视等媒体，村民们在不断获得新的资讯，他们的生活也在不断改变，从而不再盲目地听从上级命令"。新当选的政府干部也更加愿意听取群众的意见；由于引入了选举制度，政府官员和村委会干部必须通过工作来证明它们的能力，以便能够继续当选。


土地养育万物。合理利用土地对人类和森林都同样重要。根据大家的讨论意见，我们要认真做出土地利用规划和森林共管公约。
Land is vital for our living. A proper land use in important for human and forest alike. Based on the discussions we need to design a good land use plan, as well as rules and regulations for co-management.

政府将周边地区作为特殊规划区域来进行管理将大大加强周边地区的可持续管理。要继续发挥周边地区接受过意识教育或参与式评估协助者培训的人员在政府或周边地区管理委员会组织的活动中的作用。

**注：**

1. Meer, P. J. van der. (2002. 9). *无量山国家级自然保护区(南涧): 高人口密度压力下的自然保护，南涧无量山国家级自然保护区深度分析报告*.Wageningen, p.5.
2. FCCDP. *管理评估: 南涧无量山自然保护区管理局*，pp. 4.
3. Meer, P. J. van der. (2002.9). *无量山国家级自然保护区(南涧): 高人口密度压力下的自然保护，南涧无量山国家级自然保护区深度分析报告*. Wageningen, p. 5.
4. FCCDP. *管理评估:南涧无量山自然保护区管理局*, pp. 4.
5. FCCDP. *管理评估:南涧无量山自然保护区管理局*, pp. 1-2.
6. Meer, P. J. van der.(2002.9). *无量山国家级自然保护区(南涧):高人口密度压力下的自然保护，南涧无量山国家级自然保护区深度分析报告*.Wageningen, p. 5.
7. FCCDP正在准备对一些专案经验进行总结并出版；另外，FCCDP专案办尚有一些在2003年5月专案成果认定会上准备的关于周边地区方法的背景材料备索
8. FCCDP尚有供逻辑框架研讨会协助者用的材料备索

*"The methods in which we are trained, two-way communication, dialogue, and collaboration, have improved our relationship with villagers";*

*"Contrary to normal Chinese government plans, this plan is developed from bottom-up, and not a government order".*

But although the LFA workshop was highly appreciated by the participating government members, from our recent field visits we have to conclude that the method has not yet been applied in other governmental planning activities.

It seems that the participatory planning process goes hand in hand with administrative reform, particularly the election of members of the administrative village committees and township governments in 2002. The procedure provided new useful methods and tools to the newly elected representatives to catch up with ongoing changes in society: *"Villagers' lives are changing through new information from TV and radio and they do not automatically follow orders from higher levels".* Also there is much more willingness among the elected government officials to listen to villagers' opinions; due to the introduction of elections, the position of government officials and administrative village committee members is not automatically ensured. They also have to prove themselves in order to be re-elected.

Institutionalisation of the adjacent area as a specific planning zone would greatly enhance the prospects of its future sustainable management. In further activities organized by the government or adjacent area management committee, it would be beneficial to involve the people in the adjacent area who are trained as facilitators in awareness building and/or participatory appraisal methods.

**NOTES**

1. Meer, P.J. van der., September 2002. *Wuliangshan National Nature Reserve (Nanjian Part): Nature Conservation under High Population Pressure, Report of the in-depth study of the Nanjian part of the Wuliangshan National Nature Reserve,* Wageningen, p. 5.
2. FCCDP, undated. *Management Appraisal: Nanjian Management Bureau of the Wuliangshan Nature Reserve,* pp. 4.
3. Meer, P.J. van der, September 2002. *op. cit.*, p. 5.
4. FCCDP, undated. *op. cit.*, pp. 4.
5. FCCDP, undated. *op. cit.*, pp. 1-2.
6. Meer, P.J. van der, September 2002. *op. cit.*, p. 5.
7. A FCCDP publication is in preparation; a background paper on the Nanjian case prepared for the validation conference (May, 2003), are available. This document presents a summary of the data.
8. A facilitators' manual on LFA workshops is available in FCCDP.

# 保护与发展的结合—草海的参与式自然保护

# An integration of conservation and development – Participatory Nature Conservation in Caohai

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贵州称“黔”或“贵”，位于中国大西南东部，是一个特别贫困的省份。在全国的31个省和直辖市中，人类发展指数仅高于西藏，排列第30位。要在这个贫困的地区进行自然保护被证明是极其困难的。直至目前，贵州生物多样性丰富的地方多幸存于偏远贫困的地区。保护区所要保护的物件多为当地居民祖祖辈辈赖以为生的自然资源，当保护区成立后，政府无财力把当地居民迁出或对当地加以补偿，保护区边界的划定和管理措施并未改变当地居民对于野生资源的依赖性。因此，在贵州绝大多数自然保护区中，普遍存在著自然保护和当地社区自然资源利用之间的矛盾。我们常常说，生物多样性保护是为了全人类的利益，但生物多样性保护是需要代价的，但对于一个贫困地区来说，这种代价往往由当地贫困的社区承担。毫无疑问，如果当地社区不参与生物多样性的保护，我们很难达到生物多样性的有效保护。社区参与生物多样性保护的原因是多方面的，但最重要的是社区能从保护中获得利益。

黑片由作者提供 Photo by author

草海保护区中农民管理的水禽繁殖区
Waterfowl Breeding Area managed by local villagers in Caohai Nature Reserve.

在贵州威宁草海簸箕湾村实施的村民建立的水禽繁殖区例子说明了这个道理。草海簸箕湾自然村位于草海国家级自然保护区内的草海湖东侧，全村共有77户人家，人均土地面积为0.5亩左右，粮食不够吃，当地居

Guizhou is one of the poorest provinces located in the eastern part of Southwest China. In terms of HDI (Human Development Index), Guizhou has the second lowest ranking among the 31 provinces and municipalities in Mainland China, with just Tibet below it. Conservation in Guizhou has proved tough. Areas of rich biodiversity are confined to highly inaccessible poverty regions. The targets the nature reserves seek to conserve are also the resources on which poor villagers rely. Once the reserves have been established, local government has been unable to afford implementing either compensatory measures or villager migration. Thus conflict often occurs between nature conservation and resource utilization by local communities in most Guizhou nature reserves, particularly in Southwest Guizhou, making conservation a great challenge. It's well known that biodiversity conservation is beneficial to people, but we have to pay for it but such cost would most likely be borne by local community in poverty regions. Effective conservation can hardly be achieved without community involvement in a poverty region. Community involvement in biodiversity conservation might be induced by various factors, but should at least ensure that the community can obtain benefits from conservation.

The waterfowl breeding area established by villagers' efforts in Bojiwan Village, Caohai is a fine case in point. Bojiwan Village is a natural village located on the east bank of Caohai Lake. With 77 households in Baojiwan village, average land per capita is only 0.03ha, and shortage of food is a major problem. With the largest piece of marshland and grassland, Bojiwan, the

民的生活十分贫困。簸箕湾是草海最大的湖湾，有草海最大的沼泽和草地，是草海水禽最集中的栖息地，常见水禽有黑颈鹤(*Grus nigricollis*)、灰鹤(*Grus grus*)、斑头雁(*Anser indicus*)、针尾鸭(*Anas acuta*)、秋沙鸭(*Mergus merganser*)、斑嘴鸭(*Anas poecilorhyncha zonorhyncha*)、绿翅鸭(*Anas crecca*)及各种鹭类、秧鸡类。其中，黑颈鹤在这裹约有200只左右。簸箕湾是黑颈鹤的主要夜宿地，是留鸟的主要繁殖地。鉴于簸箕湾在生态上的重要性，早在1985年草海保护处成立的初期，保护处就有建立草海水禽繁殖区的打算，但由于和村民的矛盾一直没有实施。在当时，对于簸箕湾的村民来说，获得现金，购买粮食吃饱肚子是当时村民最大的需求。1995年，通过草海国际专案的小额赠款专案（TUP）和村寨发展基金专案(CTF)的实施(国际鹤类基金会和草海保护区管理处利用参与性的做法实施的旨在帮助村民的扶贫专案)，使簸箕湾村的经济得到一定的发展，经济专案的发展，为环保专案在簸箕湾的实施奠定了良好的基础。

照片由作者提供 Photo by author

生活在草海保护区中的孩子
A little girl living in Caohai Nature Reserve.

国际渐进组织是一个国际性的扶贫组织，主要是帮助穷人中的穷人依靠自己的能力摆脱贫困。国际渐进组织的专案（简称渐进专案）的运作方式是：渐进小组是渐进专案的基本单位，每个小组由3-5人组成。国际渐进组织为每个渐进小组提供100美元的小额赠款，赠款分两批提供。通过接受培训，每个渐进小组进行专案选择，填写事业计划书，可得到首批赠款50美元，3个月后，小组成员直接为专案工作达到1,000个小时以上，产生利润并按时填写事业报告书的被视为成功小组。对成功小组再赠送50美元，使之持续发展，小组必须把至少20%的盈利储蓄起来或用于扩大事业。

在草海开展的渐进专案，基本上按照这个模式，所不同的是当渐进小组收到第二批赠款后，同意把其中的25美元捐赠出来，作为村寨发展信用基金。“村寨发展信用基金”把“渐进专案”分散的、扶持贫困户数有

largest bay within Caohai, is also an important waterfowl habitat. Black-necked Crane *Grus nigricollis*, Common Crane *Grus grus*, Bar-headed Goose *Anser indicus*, Northern Pintail *Anas acuta*, Common Merganser *Mergus merganser*, Spot-billed Duck *Anas poecilorhyncha zonorhyncha*, Common Teal *Anas crecca*, egrets and rails are all commonly found here. Some 200 Black-necked Cranes visit each year, making Bojiwan a major roosting site for the species, as well as a key habitat for migratory birds in general. In view of Bojiwan's ecological significance, the Caohai Nature Reserve management office wished to create a waterfowl breeding area at the early stage of its establishment in 1985, but no action was taken due to conflict with local villagers. At that time, sufficient food supply and cash were essential for local villagers.

From 1995, the International Crane Foundation (ICF) and Caohai Nature Reserve management office employed participatory approaches to initiate poverty alleviation projects. The TUP is an international non-profit organization that helps strengthen the poorest to fight against poverty. Trickle-Up projects are initiated by providing conditional grants of US$100 in two installments to a group of 3-5 people. To receive the first payment of US$50, each group is required to prepare a business plan for a specific project with proper training. After three months, the group will qualify for the second US$50 installment, provided that they have (a) invested 1,000 hours of labour, (b) generated a business profit and (c) submitted a business report on time. The group will then be granted an extra US$50 to develop their business sustainably, while at least 20% must be saved or reinvested in the venture.

Caohai Nature Reserve has employed this mechanism. Each group donates half of the second payment to establish a Community Trust Fund, providing long-term support for poverty alleviation and sustainable community development. A series of fund management measures are formulated and agreed among the villagers, boosting their participation in natural resource conservation to achieve the compatible goals of community development and nature conservation. An array of projects are launched to reduce over-reliance on wetlands, with the aims of poverty alleviation and switching over to a new production line. Furthermore, villagers are encouraged to participate in tree planting to increase their conservation awareness. The implementation of TUP and CTF had led to

限的局限性转换成一种长期的扶贫和社区持续发展活动，并通过与村民制定和签定基金管理办法等一系列措施促进村民共同参与保护草海自然资源，达到村寨与自然保护协调发展的目的。在帮助农户脱贫的同时还有意识地帮助农民转产，减少对湿地的过分依赖，此外还要求农民进行一些植树、种草等活动，以增强他们的自然保护意识。

照片由作者提供 Photo by author

1999 年 5 月，在国家环保局的资助下（仅 7,000 元人民币），簸箕湾村民在簸箕湾湿地内建成了一个全封闭式的水禽繁殖区。水禽繁殖区面积为 400 米× 600 米，用水泥桩和铁丝网封闭，由簸箕湾的村民们共同制定管护规定，并由簸箕湾村民们轮流管护，由于不受人为干扰，水生植物生长繁茂，为草海的夏候鸟繁殖创造了条件，当年即见繁殖鸟的巢和卵。簸箕湾的村民认为，簸箕湾是草海水禽的主要集聚地，具有开展生态旅游的良好条件，希望在自发的组织起来，在外界的帮助下，保护好当地的环境，完善生产、生活设施，开展生态旅游活动。因此，水禽繁殖区建成后，在贵州师范大学自然保护与是社区发展研究中心的帮助下，村民申请了香港乐施会的资助，村民自己投工投劳，修建了观鸟台，这是村民进行生态旅游的开始。在发展专案的实施过程中，每一项具体的活动都有村民开村民大会具体选出的管理委员会进行管理。在水禽繁殖区的专案实施过程中，由村民自己选举的委员会进行专案的管理。每项重要活动的开展，都通过召开群众大会进行。水禽繁殖区管理委员会进行具体管理措施的制定，需在群众大会上宣布，由全体村民进行表决认可。

certain economic development in Bojiwan Village, which laid a good foundation for launching environmental protection projects.

In May 1999, with the financial support of RMB¥7,000 from the State Environment Protection Administration (SEPA), villagers used cement posts and copper-wire fencing to build a 400m X 600m enclosed waterfowl breeding area in Bojiwan Wetland. Villagers enforced full protection and took turns to monitor the breeding area; this undisturbed environment supported a luxuriant growth of aquatic plants favourable for breeding migratory birds in summer, whose eggs and nests were seen the same year. Villagers recognise Bojiwan village is an important waterfowl habitat, and believe it has good potential for developing eco-tourism. To pave the way for eco-tourism development, they seek to better preserve the natural environment and improve production and public facilities, through their own endeavours with financial help from outside agencies. To facilitate the first step of eco-tourism development, villagers contributed their labour to build a bird-watching tower using funds from Oxfam International, jointly applied for by Guizhou Normal University and the Community-based Conservation and Development Research Centre (CCDRC). When undertaking either development projects or conservation projects for waterfowl breeding areas, specific activities will be monitored by a management committee elected in village meetings. A consensus is required before commencing any major activities. The management committee of the waterfowl breeding area will announce the concrete management measures during village meetings to gain all villagers' approval by voting.

照片由作者提供 Photo by author

草海保护区村民和保护区管理人员的参与式决策
Participatory decision-making among villagers and NR management officials.

参与式的自然保护说明，我们必须把社区的发展放在与环境保护同样重要的位置，促进村民的能力建设，赋权给社区，让村民有自己管理环境的权利，长远来说，村民应该意识到他们能够从环境保护受益。在国家环保局和贵州省政府的推动和国、内外机构的帮助下，参与式的管理手法已经在贵州省的多个自然保护区得到应用。对于多数保护区来说，没有管理机构、人员缺乏管理能力和经费，保护区的建立在事实上并没有起到保护的作用。如果我们能够促进当地社区的参与，把当地社区的利益与保护结合起来，当地老百姓将有兴趣和动力参加到自然保护中来，甚至可能成为保护的主体。同时，这样的保护方法，能够在很大程度上降低保护的成本。对于贫困地区的生物多样性保护具有重要的借鉴意义。

Participatory nature conservation implies to us that equal consideration must be given to community development and environmental conservation, so as to strengthen villagers' capacity building and empower them to manage the environment. Villagers should, on a long-term basis, recognize that benefits can be derived from environmental protection. With the assistance of SEPA, the Provincial Environmental Protection Bureau of Guizhou, and other domestic and foreign institutions, participatory approaches have been widely applied in many other nature reserves in Guizhou. A lack of managerial body, staff capacity and funding sources often make nature reserves incapable of playing an active role in conservation. If we can enhance community involvement by integrating community benefits and conservation, local villagers will be motivated to participate in nature conservation, and even take the lead. Such an approach can greatly lower the cost of conservation, and has a reference value for other parts of Southwest China and poor regions.

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# 稳健社区的基石
## —记白马雪山社区教育专案
# Strong Roots for Stable Communities

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### 背景

白马雪山国家级自然保护区位于滇西北迪庆藏族自治州德钦县，地处横断山脉中段，与西藏自治区接壤。其海拔6,740米的最高主峰白马雪山被澜沧江与金沙江夹持，形成雪山大江相间的深壑峡谷。保护区内大面积的原始森林植被和较完整的自然生态环境，为野生动物提供了适宜的栖息环境。区内生物多样性丰富，有种子植物922种；野生哺乳动物97种，其中有列入国家一级保护的滇金丝猴(*Rhinopithecus bieti*)、雪豹(*Panthera uncia*)、云豹(*Neofelis nebulosa*)和熊猴(*Macaca assamensis*)等珍稀野生动物。

照片由作者提供 Photo by author

位处白马雪山保护区山谷内的藏族社区。
Local Tibetan communities can usually be found in the valleys between the mountains of BMXS Nature Reseve.

尽管这裏是生物多样性最为丰富的地区之一，但同时，这裏也是中国最为贫困的地区之一。区内散布著众多由藏民组成的村落，由于长期的贫困使得保护区内的居民不得不完全依赖当地的自然资源谋求生计。贫穷、日益膨胀的旅游压力和外界对木材的大量需求等因素加剧了保护区内资源被过度利用，进而造成保护区生态环境严重恶化。

世界自然基金会中国教育项目开展的“白马雪山社区教育专案”旨在：以当地文化和佛教信仰为基础，通过为当地社区进行能力培训，提高村民相应的技能、知识与环保意识，增强当地村民自我发展及资源管理能力；通过各种教育及自然保护活动，提高保护区周边社区及个人的参与能力，使之成为促进当地可持续发展的主要力量，使保护和发展协调统一，从而在持续保护这片独有的美丽家园的同时，当地村民的生活水平也得以改善和提高。

### 专案沿革

“白马雪山社区教育专案”于1996年启动。启动之初，世界自然基金会向肖林和鍾泰两位既具有才干又热心于保护区工作的当地藏族青年提供了教育专款。现为

### Background

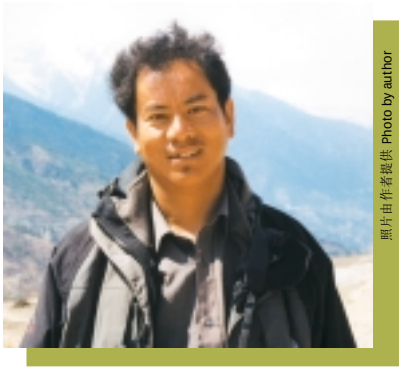
Baimaxueshan in Diqing Tibetan Autonomous Prefecture, northwest Yunnan Province, is a remote area close to the border of the Tibetan Autonomous Region. Here permanently snow-capped peaks rise high above deep river gorges, to more than 6,740 metres above sea level, forming divides between three great Asian rivers: the Yangtze (Jinsha Jiang), Mekong (Lancang Jiang), and Salween (Nu Jiang). Biodiversity within the reserve is rich - 922 species of seed plants provide habitat for 97 species of mammals and many other species. These include several Class I Protected animals, such as Yunnan (or Black) Snub-nosed Monkey *Rhinopithecus bieti,* Snow Leopard *Panthera uncia,* Clouded Leopard *Neofelis nebulosa* and Assam Macaque *Macaca assamensis.* The area is also home to numerous, scattered communities and villages, composed of ethnic Tibetans who are amongst the poorest people in China, living a subsistence lifestyle of agriculture and forestry. Many factors influence environmental degradation in the area, including poverty, pressure from tourism, and high demand for timber from the outside world, causing overexploitation of the region's resources.

The WWF China Education Programme's "Baimaxueshan Community Education Project" aims to build the skills, knowledge, and awareness of individuals along with the capacity of the region's communities, using local culture and beliefs as its foundation, to serve as a counterweight against this overexploitation. Through a variety of educational and conservation activities, people are empowered to become the main force promoting local sustainable development and long-term conservation of this beautiful and unique area.

### History

The Baimaxueshan Community Education Project began in 1996 when WWF awarded education grants to two locals who showed skill and enthusiasm for conserving the area's environment. Angweng Cicheng (Xiao Lin), now Vice-Director of Baimaxueshan Nature Reserve, applied his grant towards an education project in Donzhulin Tibetan Monastery to raise conservation awareness among the local community and school children using Buddhist teachings. Zhong Tai used his award for a three-year environmental course at Southwest Forestry College in Kunming, and became the first college graduate in all of Baimaxueshan Nature Reserve.

# 稳健社区的基石



照片由作者提供 Photo by author

肖林－白马雪山保护区管理局副局长。
Vice - Director of BMXS Natre Reserce – Angweng Cicheng

白马雪山保护区管理局副局长的肖林，当年将这笔资助全用于与东竹林喇嘛寺合作开展的教育项目，希望利用佛教教义来提高当地社区和儿童的自然保护意识；而鍾泰则利用资助，在昆明西南林学院完成了为期三年的环境保护专业的学习，并学成归来，成为保护区首位大学毕业生。

经过多次研讨和磋商，世界自然基金会于 1999 年将专案的重心从单纯提高社区保护意识转移到开展结构更为合理的以社区为本的教育项目上。专案的设计以当地社区的文化和信仰为出发点，立足于村民自身的需求、关注和愿望。这种将专案与当地传统文化密切联系的做法有效地调动社区居民的积极性，提高了他们保护生态环境的主动性、自觉性和责任感。

照片由作者提供 Photo by author

藏族僧侣与学童一同参与白马雪山的植树活动。
Tibefan monks and Schoolchildren during tree-planting event in BMXS.

项目以村民的需求及信仰为出发点，通过教育，与当地社区建立合作夥伴关系，共同探索迪庆可持续发展之路。除开展科研与培养村民的环保意识外，项目亦致力满足村民的需要和迫切关注的事。在社区研讨会上，村民们确定了几个主要问题，其中包括孩子的基本教育、森林的退化、土壤的侵蚀以及家畜生病无法医治等。为此，专案在与村民共同商议后，制订出了一系列解决方案，包括开展：1）在山坡上种植核桃树，既防止土壤侵蚀，同时，还能为村户带来一定的经济收入；2）沿河种植快速生长的树木，以提供薪材；3）采用沼气发酵、太阳能技术以及修建小型水力发电站，以减少薪材的耗用；4）为 24 个自然村提供兽医培训及组织藏语培训班等等活动。

过去，社区群众经常处于一种无力和无助的困境。有这样一个例子：为方便木材运输，开发商在白马雪山丫口和羊拉乡之间的山上修建了一条公路。之后，生活在这条新公路山腰下的村民就经常受到山体滑坡造成的泥石流威胁，村庄多次遭到严重毁坏。村民们对此极为不满，可他们的意见得不到反映，他们的声音无法让政府有关部门听见。结果仅日能一个村，便有四分一的可耕地被泥石流掩埋。

In 1999, after much consultation and discussion, WWF shifted the project's focus from simple community awareness-raising to a more structured community-based education programme, reflecting needs, concerns, and hopes of the local people rooted in their own culture and beliefs. Having a cultural anchor engaged the local communities in the project and gave them a sense of ownership and responsibility for conservation of their environment.

Guided by local needs and beliefs, the project sought to develop a sustainable Diqing in partnership with the local communities through the process of education. Besides conducting scientific surveys and building awareness, the project aimed to meet the needs and concerns expressed by local villagers. At community workshops, residents identified major problems, including inadequate and inappropriate children's education, forest degradation, soil erosion, and a lack of veterinary care for domestic animals. They resolved to plant walnut trees on the hillside to stop soil erosion whilst generating income, planted fast-growing trees by the river to provide fuelwood, adopted biogas digesters, solar energy cells, and small hydroelectric power plants to reduce fuelwood use, requested veterinary training for 24 natural villages, and organized Tibetan-language training classes.

In the past, the communities found themselves in frustrating and often powerless situations. For example, a road was cut along the mountain between Baimaxueshan Pass and Yangla Township to truck timber to the outside world. Villagers living downhill from the new road however had no voice in the matter, though erosion and recurrent landslides severely damaged their communities. In the village of Rinen alone, one quarter of the arable land was buried by scree.

Facing these situations, the villagers organized themselves through a WWF-facilitated "Community Learning Centre" (CLC), eventually setting up four throughout the region. With committee members freely elected by each village, the centres now act as liaisons between the villages, outside world, and government, and also serve as focal points for collective learning through community-initiated activities and events.

照片由作者提供 Photo by author

白马雪山丫口与羊拉乡之间的公路屡屡出现慢蚀。
The mountain road – Subsequent erosion between BMXS Pass – Yangla Township.

面对这些困境，村民们自发组织起来，在世界自然基金会中国教育专案的积极支援下，在保护区周边的四个村子成立了“社区学习中心”(CLC)。学习中心委员会的委员由村民自行选举产生，目前，这些 CLC 不仅成为了乡村与外界和政府沟通的桥梁，而且也成为了社区自主学习和活动的基地。

在已被确认的诸多问题中，村民尤其关注教育。由于学校路途遥远艰险，许多孩子无法上学；再因所接受的教育，从教学的内容、形式和质量方面，都不适合当地实际情况的需要。这使得该问题愈加复杂和严重。家长抱怨说子女在学校不仅没学到有用的知识与技能，反而养成了一些坏习惯——不愿务农，游手好闲，甚至违法犯罪。此外，尽管国家政策明文规定：少数民族应学习他们的母语。但学校却只讲授普通话和英语，使藏语的应用日渐趋微，其传统及信仰也只保留于其文字中。随著学童的日渐长大，对其民族根源、生活的村落及生存的环境越发疏远。为阻止这种事态的蔓延，两名藏族僧侣生出兴办“白马雪山藏族社区学校”的主意，并身体力行。

Among the problems that villagers identified, the highest concern regarded education. Many children had no access to education due to long or dangerous commutes between home and school. Complicating this further was that the type and quality of education they received did not meet the needs of their local situations. Parents complained that instead of learning useful knowledge and skills, their children learned bad habits, were unwilling to work the family farm, or even became gangsters. Additionally, despite central government policy entitling all ethnic groups to learn their mother tongue, only Mandarin and English were taught in schools. As their native Tibetan language disappeared, so did the traditions and beliefs contained within its words. Schoolchildren who grew up alienated from their roots also grew up alienated from their community and environment. Thus emerged the idea of the Baimaxueshan Tibetan Community School, established by two Tibetan monks, which now aims to address these chronic problems.

照片由作者提供 Photo by author

入读东竹林寺附近的藏语学校的孩童。
Students of a Tibetan language school near Dongzhulin Monastery.

**项目结构：**

***项目理念：***

社区参与是社区教育项目成功的前提。而要实现社区有效参与，首先需要深入了解并尊重当地的文化传统和社区群众的信仰，然后通过教育手段将这种深层的文化信仰与保护事业联系起来。

以提高社区成员能力为目的的教育过程是实现社区参与的关键。在这一过程中，社区成员通过学习和讨论，交流各自的想法和愿望并达成共识，最后形成代表社区整体利益的意见。这种集体的声音能帮助社区抵御威胁其生活方式和历史文化传统的现代化潮流。

***项目采用的主要方法：***

白马雪山社区教育项目的目标是保护环境及促进当地社区和文化的可持续发展；达到这一目标的主要途径则为尊重当地群众的文化传统、信仰和知识；并关注他们未来的教育。

项目工作从社区及其成员开始，首先是了解他们的需求和愿望，找出社区最关心的问题和对他们的生活影响最大的事情。

获得这些资讯之后，将群众的需求与愿望同他们自身的教育和能力建设联系起来。与教室中常见的那种被动的师生关系不同，社区教育将文化传统的教育和环境保护相联系， 鼓励参与者身体力行，采用活动式和体验式的方法进行学习。在这种方法中教育的过程与目标处于同等重要的地位。项目的重点不在于“提高意识” 或“改变行为” ，而是在认同，尊重和能力培养上下功夫。在这一学习过程过程中，社区群众通过开诚布公的对话，辩论甚至采用各种艺术形式进行探索；解构现有的知识，重建新的知识。项目强调积极的参与式的学习，强调利用传统和大众的知识来改善当地的生态和经济情况。对乡土知识和大众知识的运用增强了人们对当地丰富的文化内涵的认识，加深了他们对自己的生活传统及周边环境的感情和对之进行保护的愿望。

社区教育还促进了社区的能力建设。这种能力建设包括成员个人的知识，能力和责任感的培养和社区的组织机构的形成。社区当组织机构提供平台和场所，社区成员能表达自身的愿望和要求，经过讨论达成共识后形成一致的意见与外界交流和协商，以此来影响和改变与自身和当地与环境相关的各种事务。这种集体的组织和机构一旦成熟，即可与外界建立合作夥伴关系，扩大影响。项目建立的社区学习中心便是例子。

最近，自身能力得到提高的白马雪山社区已开始和外面的组织和人员进行合作。合作对象包括白马雪山保护区，东竹林喇嘛寺，政府组织(如国家林业局)，高等院校(如位于拉萨的西藏大学)，以及可为项目提供资助的国际组织和人员。

## Project Structure

### *Beliefs*

The cornerstone of the Community Education Project is the principle that conservation cannot succeed without the true and self-motivated participation of the region's local people. This can be most easily achieved by respecting their deep-rooted culture, religion, and beliefs while linking them all to conservation via education.

Community participation can occur through educational processes that first focus on the empowerment of its members. Concentrating each person's hopes and desires into a strong collective voice that can be heard can then counteract threats from modernization that have the potential to wipe out their long-standing, traditional way of life.

### *Key Aspects of the Baimaxueshan Community Education Project*

The Baimaxueshan Community Education Project follows an easy path of logic from a means to an end, the means being respect of indigenous people and their knowledge as well as their further education, the ends being environmental conservation and local community and cultural sustainability. We begin with the community and its individuals, learning ourselves what their needs and hopes are. We ask what are the priorities we must examine first and what are the issues that have the greatest impact on their lives.

Once we know what the community needs, the next step is education pertaining to those needs. But this is not a case of teacher and student in a passive classroom setting. Rather, this is a case of hands-on active experiential learning to link culture, tradition, education and environment, where the educational process itself is stressed and valued just as much as the end product. Instead of "awareness-raising" or "behavioural modification", the focus is on recognizing, respecting, and nurturing. This is a learning process that probes, deconstructs, and reconstructs new forms of knowledge through open dialogue, debate, and even art. Above all, the project stresses active and participatory learning, tapping valuable traditional knowledge to improve the area's ecological and economic situation. In effect, applying this indigenous popular knowledge validates the region's own rich culture, fostering a sense of ownership and stewardship over the people's lives and land.

Feelings of self-ownership then give rise to self-empowerment. This begins at the individual level, where knowledge, skills, and commitment are all stressed. From empowered individuals, an institution can form, organize, and focus itself to make its collective voice heard, to positively influence factors in their environment by making self-decided changes. This kind of collective institution, once mature, can then make partnerships that extend influence beyond the village path as witnessed with the project's CLCs.

Recently, self-empowered communities in Baimaxueshan have begun working together with various outside organizations and people. These include Baimaxueshan nature reserve staff, Dongzhulin Tibetan Buddhist monastery, government organizations such as China's State Forestry Administration, institutes of higher learning such as Tibet University in Lhasa, and international donors for present and future conservation initiatives.

## 专案现状

在白马雪山保护区的大力支持下，社区学习中心自成立以来，组织社区群众进行了封山育林、植树造林、兽医培训、沼气及太阳能示范、藏语培训及开展有助环保、增强自尊、自信和归属感的学校项目等活动。这既改善了社区与保护区的关系，同时又促进了社区对保护区工作的支援。一名乡村负责人说："白马雪山保护区对我们非常好，为了帮助我们保护这片林子，他们不辞辛苦地工作……虽然我们不能报答他们的恩情，但我们已听从他们的劝告，不再滥伐滥采。毕竟这些都是为了我们自己的后代。"为向应森林保护，尼龙堡村已自发地实施封山育林，其他村庄也停止了伐林。

照片由作者提供 Photo by author

东竹林寺的僧侣在2003年春季为山边进行植林工作。
Tibetan monks from Dongzhulin Monastery reforest a mountain side in spring of 2003.

被问到僧侣们对白马雪山社区项目的看法时，东竹林寺的高僧洛桑说："当我们看到外人都对我们如此关注与帮忙时，我们感到自己更应该有义务采取行动，尽一份力。专案使我们联合起来，保护我们的家园、我们的森林及所有野生动物。这与佛经中'天下本是一家，众生皆是一体'的说法相一致，我们应彼此关怀……专案的开展有助于文化的复兴，深受当地社区信赖。

## The Present

The CLCs to date, with the support of Baimaxueshan Nature Reserve, have coordinated tree planting, biogas, and solar energy, veterinary training, Tibetan language courses, and school projects that have helped to protect the environment and to increase self-esteem, confidence, and a sense of belonging. This in turn has enhanced community support towards the work of the nature reserve. One village spokesman said, "Baimaxueshan Nature Reserve has been so nice to us and they work hard to help all of us here to protect the forest. …We cannot pay back their kindness, but we can stop doing (what) they do not want us to do which, after all, will benefit the local communities for generations to come". Nilongbao village voluntarily closed off the community forest plot with the goal of wildlife protection and tree regeneration. Another village stopped their forest cutting altogether.

Lobsang, a high lama of Dongzhulin Tibetan Monastery, said when asked what the Tibetan Buddhist community thought about the Baimaxueshan project: "When we see even outsiders come to help us and show their concern, we also feel the obligation to take action. The project brings us together to protect our own homeland, our forest, and the wildlife in it. This is in line with Buddhist teaching, which believes that all sentient beings are one family where we should protect and care for each other. …Cultural revitalization reached the deep belief system of the community."

## 专案展望

白马雪山社区教育专案将扩大项目现有范围，使更多的社区都能受益。专案未来的计划包括与迪庆藏族自治州政府或香格里拉县合作，协助政府开发《地方21世纪议程》。《地方21世纪议程》的开发过程将是当地各方相关人员学习的过程，它将有助于促进不同利益方为了共同的目的，探索一条实现可持续发展的道路。

项目的另一组成计划是成立“香格里拉社区可持续发展学院”（SISC）。学院由三个方面组成：1) 以白马雪山社区藏文学校为基础，发展中小学项目；2) 建立社区学院；3) 提供短期培训，包括学位证书课程。社区可持续发展学院的主要目的是推动可持续发展在社区，政府以及非政府中的实施。

照片由作者提供 Photo by author

藏族男孩正浇灌松树幼苗。
A young Tibetau boy waters pine saplings.

## 重要讯息

项目最大的收获是我们领悟到教育确实是解决社区问题的有效工具。体会到植根于地方传统的教育，能将人们对环境的关注和欣赏与理解和尊重当地文化信仰相联系，促成专案目标的达成。教育为当地年青人提供了必要而富有价值的能力建设机会，使他们加深了对自己的传统文化的认识，有助于他们将传统文化与外来理论知识结合后应用于生态保护。我们认识到社区群众比任何外来群体更为关心自身的未来。当地的可持续发展关系著社区群众切身利益，只能通过尊重其文化信仰，探求这些传统与环境保护的关系，提高社区对自身当前的地位和在世界上的可能性来实现。

执行专案的另一个重要心得是社区教育讲求实际行动。它旨在培养当地个人与机构的能力，鼓励通过集体行动，共同保护环境,建设可持续的未来。

在与国内外的合作夥伴工作的过程中，专案各方相处融洽和谐，当地居民的本土知识受到珍视和与尊重。一个明显的结论是，当地群众对养育他们的土地具有丰富的知识和深深的关爱，他们所需要的是外界给予的是尊重和一些支援。

正如东竹林喇嘛寺的高僧所言：“即使有外人的帮助，但对我们自己的家，我们应该多出点力。共同的想法把我们相互联系在一起。你问我为何如此关心……？因为这是我自己的家。

*详情可浏览 www.wwfchina.org 的可持续发展教育*

## The Future

Future plans of the Baimaxueshan Community Education Project include expanding the scope to engage communities farther afield. This will likely take the form of a joint project with the government of Diqing Tibetan Autonomous Prefecture (DTAP) or Shangri-La County in the development of a Local Agenda 21 for all of Shangri-La. The development process, serving as an educational process for all the stakeholders of DTAP or Shangri-La County, will help address some of the difficult underlying issues related to the development of an ecologically sustainable, socially-just, and democratic society in this part of China.

Another new component of the project will be the establishment of the Shangri-La Institute for Sustainable Communities (SISC), which has three components: 1) a primary and secondary school programme stemming from the current Baimaxueshan Tibetan Community School, 2) a tertiary programme for higher learning beyond the secondary school level, and 3) short training programmes, including graduate-level certificate courses. The goal of the Shangri-La Institute will be to help institutionalize issues of sustainability within broader communities as well as the country's government and non-government organizations.

## What is the Key Message?

The most important achievement of the project is the realization that education is the solution to tackling issues that local communities care about most. Only education - rooted in local tradition - has the ability to connect environmental concerns to an appreciation, understanding, and respect for a region's culture and people's beliefs to successfully achieve goals. Education provides necessary and valuable skills for young locals to understand their own traditions, helping them to apply these to conservation, while also applying outside academic knowledge. The bottom line is that local communities care more about their own future than any other group of people anywhere else. They have obvious vested interests in sustainably continuing their traditional way of life, which can only be achieved by recognizing cultural and religious roots, stressing their clear links to environmental conservation, and raising community awareness of their own current place and possibilities in the world.

Another important component is that community-based education is action-oriented. It aims at strengthening individual and institutional capacity of the local people and encouraging collective actions to protect the environment and build a sustainable future together.

In facilitating cooperation with partners domestically and internationally, the project brings people together in an atmosphere of non-confrontation, where local people's knowledge is not patronized but respected and valued. It is clearly evident they have deep care for the land and own deep knowledge of it – all they need is a bit of respect and a helpful hand.

As the head monk of Dongzhulin Tibetan Monastery put it, "This is our home (and) even outsiders come to help us. We ourselves should do more. These same thoughts bring us closer to each other. You ask me why do I care…? Because this is my home."

*For more information, please see www.wwfchina.org/english and click on Education for Sustainability.*

# 社区与保育的若干反思

# Some Reflections on Communities and Conservation

**查敏立** *(嘉道理农场暨植物园执行董事)*
***Manab Chakraborty*** *(KFBG Executive Director)*

保育学家一般都对社区抱持强烈的意见，认为它不是问题，便是答案。这种极端的现象很可能是源于他们对社区欠缺认识所致。

社区不断进化发展、教人难以捉摸。社区并非由一群固步自封、与世隔绝而又墨守成规的人所组成的，反之，成员藉著与社会内不同阶层的人士接触、自发建立网络及在媒体的影响下而不断改变。源远流传的本地自决制度往往与资源可持续地管理挂钩(**Brosius & Russel, 2003**)，可是这种过于理想化的制度早已荡然无存。较实际的做法是著眼于制度而非社区本身，即过往或现时一直沿用的规则(**Ostrom 1990**)。社区制度是建构人际沟通的社会概念，包括正式的(如法规)与非正式的(如社会道德、行为守则)和它们的执行特性。

共用资源系统向来缺乏正统制度指导保育工作，在缺乏法则及监管诱因的情况下，人类的滥采滥捕才是真正的威胁，使地球逐步走向 **Hardin** 笔下描述的「公共财产的悲剧」的境地。就共用资源而言，社区保育有助需要由基层做起但涉及多重关系的环境管理及保育行动。

为何保育与环境管理要让各界一起参与？大致可归纳三大原因。第一、「一体适用」的命令式管治制度已经不合时宜。有效的解决方法讲求管理制度的模式与生态系统的模式相互配合，所以基层的参与更有助解决当地的社区问题。若保育议题引申自复杂的体系，那便要同时在不同层次解决问题。跨层次保育需要跟其他组织进行横向（跨地域）及纵向（跨层次）的联系。横向联系的例子包括与当地推动野生动物保育的社区联系，交流经验，取长补短。中国云南省的中荷合作云南省森林保护与社区发展专案(**FCCDP**)及中国世界自然基金会在白马雪山自然保护区开展的社区教育都是当中的佼佼者，此等计划以推动在社区内互相学习及为与保护区为邻的村民寻求另类生计为大前题。跨层次的纵向联系则需要与多个利益相关团体、发展组织、决策机

Conservationists tend to have strong views on communities: they are either part of the problem or part of the solution. This polarity probably stems from a misunderstanding of communities.

Communities are elusive and constantly evolving. A community is not a static, isolated group of people anchored in old fixed concepts. Its members are themselves changing thanks to interactions at multiple levels within the society, voluntary networks, and the influence of the mass media. The romantic ideal, of "coherent, long-standing, localized sources of authority tied to what are assumed to be intrinsically sustainable resource management regimes" (Brosius & Russel, 2003), is long dead. It is more useful to focus not on communities but on institutions, in the sense of the set of rules actually used or the working rules or rules in use (Ostrom 1990). Community-based institutions are social constructs that structure human interaction, made up of formal constraints (rules, laws), informal constraints (social ethics, codes of conduct), and their enforcement characteristics.

Open-access resource systems invariably lack institutions to guide and inform the conservation task. Without enforcement of rules, and incentives to restrain, over-exploitation of resources is a real threat leading to what Hardin described as "the tragedy of the commons". For open-access resources, community-based conservation is a helpful way of shaping environmental governance and conservation action that starts from the ground up but deals with cross-scale relations.

Conservation and environmental management have become participatory for three reasons. First, the old command-and-control-regimes belief of "one size fits all" stands discredited. Effective solution demands that the scale of the management institution must match the scale of the ecosystem. This means local problems are better resolved through grassroots involvement. If conservation issues are complex systems problems, they have to be addressed simultaneously at various scales. Cross-scale conservation requires linking institutions both horizontally (across space) and vertically (across levels of organizations). Horizontal linkages may include, for example, networks of communities involved in community-based wildlife initiatives, comparing experiences and learning from one another. In China, the Forest Conservation and Community Development Project in Yunnan and WWF's community education in Baimaxueshan Nature Reserve are fine examples of initiatives building on community learning and searching for alternative livelihoods of villagers living closer to nature reserves. Linkages across levels of organizations require sharing of conservation management responsibilities between multi-

构及当地村民共同分担保育管理的责任。中央官僚架构是较为不檀于为当地与较高阶层联系，故难以实现纵向整合所带来的利益。

第二、保育规划的关键取决于怎样取用和管控天然资源。研究显示若要人民自愿投身保育行列，当地的财产分配及社会制度必须要让人民，特别是穷人得以掌握自己命运、保障生计及公平获取应得利益。人人平等(均分利益)及权力下放的观念，往往与保育及社区发展融和为一。一个好的保育项目应有助推进涵盖式的、具问责性的决策过程，并竭力营造更大的利益，并确保各利益相关者都得到公平的待遇。

第三、发展中国家的政府机构向来积弱，任凭培训不足的官员及装备匮乏的部门管理保育事业。成功的管理规划看来是要分配权力至多个组织，向社区组织借力弥补官方系统的不足。

社区保育并不应被视作灵丹妙药，社区亦只不过是复杂体系里的一环，单凭它的力量，并不能产生效用，但若能与政府及其他利益相关者相互结合，便能汇聚成一股强大的保育动力。

stakeholder bodies, development organizations, policy groups and local people. Centralized bureaucracies are less adept in linking local and higher scales to realize the gains from vertical integration.

Second, access to and control of natural resources is critical in conservation planning. Research shows that where property regimes and social institutions provide a process through which people, and especially poorer people, are enabled to exert control over their own lives, secure a better livelihood and a fair share of benefits, they are willing to participate in conservation. Equity (fairness in distribution of benefits) and empowerment fuses with conservation and development. Smart conservation projects are helping to implement decision-making processes that are inclusive, accountable, and strive to make the benefit flows bigger and more equitable for all the stakeholders.

Third, in developing countries government agencies tend to be weak, leaving conservation to ill-trained officials and ill-equipped agencies. Successful management designs here seem to distribute authority across multiple institutions, with community organizations forming a vital complement to the official system.

CBC should not be seen as a panacea. Communities are only one level in a complex system. Alone they are ineffective, but together with government and other stakeholders, they are a potent force in conservation.

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# 广西桂林市旅游区洞穴蝙蝠保护现状调查

# Investigation on Diversity and Conservation Status of cave-dwelling bats in Guilin City Tourism District, Guangxi

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桂林是中国的旅游名城，城区遍布风景名胜，更有大量溶洞分布，其中大型溶洞均已作为旅游资源开发。广西是中国蝙蝠物种丰富度的地区之一，而溶洞又是蝙蝠的重要栖宿环境。因此了解桂林市区旅游洞穴中的蝙蝠种类、数量、分布以及人为活动对他们的干扰对蝙蝠保护有著重要的意义。为此，我们于2001年7－9月对桂林城区主要旅游洞穴的蝙蝠种群进行了调查，并分析旅游活动对其影响。

照片由作者提供 Photo by author

溶洞中栖宿的小菊头蝠（*R. blythi*）（摄于龙脊洞）。
*Rhinolophus blythi* at Longjidong

本次共计调查了桂林区城7个旅游洞穴。这7个洞穴周围的植被环境类似，主要由平地的园林和山坡的阔叶林、灌丛组成。其中七星岩和元风洞同位于七星公园内，穿山岩和月岩同位于穿山公园内，白龙洞和龙脊洞同位于南溪公园内，而芦笛岩位于芦笛岩公园。夜间通过鸟网捕捉蝙蝠并鉴定种类，在此基础上白天进入洞内直接计数调查种群数量。部分洞穴过于高大，小型蝙蝠难以直接计数统计，这类小型蝙蝠的数量则通过洞口网捕数量统计。

**描述洞穴环境的生态因数包括：**

1. 洞穴深度：洞口到洞底的距离，而非洞穴旅游路线长度。
2. 洞高：洞穴最高处的高度
3. 洞穴底面积
4. 洞穴中彩灯照明状况：分为长期开放、偶尔开放、无3等个等级。
5. 洞口大门是否适合蝙蝠通过：完全封闭洞口的洞门，或者洞穴栅栏门的缝隙过窄，都不适合蝙蝠飞行通过的。
6. 游客活动区域

Guilin in Guangxi is famous for its fascinating scenery and historical relics. This tourism hotspot is endowed with many spectacular karst caves, most of which have already been opened up as show caves. But Guangxi is also a region with many bat species, and karst caves are important bat roost sites. A good understanding of the species, abundance and distribution of bats in the tourist caves of Guilin, and of human disturbance to them, are of prime importance for bat conservation. We undertook a survey of the cave-dwelling bat population in Guilin's main tourist caves from July to September 2001, and analysed the impact of tourism on bats.

Seven tourist caves were surveyed. The vegetation surrounding them had similar components: parks on the flat ground, with native broadleaf trees and shrubs on the slopes. The seven caves are in four parks: Qixingyan and Yuanfengdong are in Qixing Park, Chuanshanyan and Yueyan in Chuanshan Park, Bailongdong and Longjidong in Nanxi Park and Ludiyan in Ludiyan Park. At night in the entrance of caves, bats were caught using mist nets and then identified. The bat population was counted in the caves in the daytime. Since the huge size of some caves made it difficult to directly count the small bats, the number caught by nets at cave entrances was used to indicate their population size.

**The following ecological attributes of the cave environment were described:**

1. Depth: Furthest distance into the cave (following the direction of the cave tunnel) from the entrance (not the length of the tourist route).
2. Height: The highest point of the cave roof
3. Ground surface area of the cave
4. Frequency/duration of illumination of the cave: day-long; occasional; no illumination
5. Suitability of cave entrance for bat access (neither fully-enclosed cave entrances nor narrow railings across the gateway are suitable for bats flying in and out)
6. Extent of tourist zones.

我们对桂林城区 7 个旅游洞穴进行了调查，结果如(表一)所示。虽然位于繁华的城区，但桂林的旅游洞穴中仍然有极为多样的蝙蝠物种和较大的蝙蝠种群。这可能与桂林城区中尚保留有大量林木，城区附近还有大量农田，为蝙蝠提供了较为适合的取食生境有关。同时，旅游区的安全管理也防止了捕猎行为出现。

照片由作者提供 Photo by author

穿山岩的不适合蝙蝠穿行的大门。
Entrance gate unsuitable for bat access at Chuanshanyan

由于各个洞穴均位于桂林市区，部分洞穴还彼此比邻，周边植被环境类似。因此洞穴中栖宿蝙蝠的种类数量和种群大小差异不太可能是周边植被因素造成的。从表一中可以看出，洞穴高度、深度、面积和栖宿蝙蝠的种类数量和种群大小关系存在一定关系，大型洞穴中能够容纳更多的蝙蝠。但是，尽管芦笛岩和穿山岩的面积很大，洞穴也较深，但是由于洞门结构不适合蝙蝠进出，洞中却完全没有蝙蝠栖宿。七星岩洞门为低矮的栅栏，白龙洞、龙脊洞、月岩则是在洞口周边修建围墙，围墙上设置进出大门，蝙蝠可以从门或围墙的上方通过；元风洞虽然有大量蝙蝠栖宿，但是洞口的栅栏门缝隙偏窄，如能改造（如将纵行的栅栏改为横行的栅栏），将更利于蝙蝠通行。

在调查过程中还发现，洞中长期有直接彩灯照明的区域均没有蝙蝠栖宿，而偶尔的灯光照明也会使部分蝙蝠离开原来的栖宿点，对蝙蝠的休息造成影响。

由于长期缺乏针对蝙蝠的保护宣传，洞穴旅游开发过程中没有考虑到蝙蝠的保护问题，因此各个旅游洞穴均存在或多或少的不利于蝙蝠保护的因素：部分洞穴的大门不适合蝙蝠通行，所有洞穴中均没有特意为蝙蝠规划出禁止灯光和游客活动的保留区域。为保护蝙蝠，建议对不适合蝙蝠通行的洞门进行改造；其次，如果能在洞穴中设置一定范围的没有灯光和游客的保留区域，将利于蝙蝠栖宿。

城区中栖宿如此丰富的蝙蝠物种，在全世界也是罕见的，这是桂林市宝贵的生态财富。在旅游建设的同时兼顾蝙蝠保护，这无论对动物保护事业还是建设生态城市和生态旅游都有著重大的意义。而随著旅游业的发展，全国范围内难以避免的会有更多的洞穴被开发。在国内，洞穴长期以来并没有被人们当作野生动物的栖息地来对待。如果能够制定一套考虑到蝙蝠保护的洞穴开发建设制度，至少可以将旅游业对蝙蝠的负面影响降低一些。

The survey results (Table 1) show that the 7 tourist caves in Guilin, though in a busy urban area, still have diverse and abundant bat populations. One helpful factor has been the preservation of substantial forest and farmland in the vicinity, which have provided bats with a favourable foraging environment. Meanwhile, the security measures of the tourist zones have helped curtail hunting activities.

Due to the similarity of vegetation surrounding the caves surveyed, the observed differences in bat species number and population size are unlikely to be due to vegetation factors. As shown in Table 1, there is a correlation with the height, depth and area of the cave, larger caves normally containing more bats as might be expected. However Ludiyan and Chuanshanyan, two of the larger and deeper caves, had no bats roosting inside, primarily due to a gate structure unsuitable for bat access. A low fence was installed at the cave entrance of Qixingyandong, while a wall was erected outside the entrance of Bailongdong, Longjidong and Yueyan, each providing adequate flight space above for bats. On the other hand, Yuanfengdong, despite having a roost with many bats, has a gate design not favourable for bats owing to the narrow railings across the gateway. Appropriate modification of grills (such as modifying vertical fencing into horizontal) would further enhance the cave's value as a bat habitat.

The survey also found that no bats were found roosting in the parts of a cave that are directly illuminated by colourful lights. Even occasional illumination has led to desertion of roosting sites and adversely affects bat behaviour/resting patterns.

Due to a lack of education and awareness, it is evident very little consideration has been given to bat conservation when developing cave tourism. To conserve bats, it is recommended to modify all unsuitable gateways and designate unlit areas with restricted tourist access to favour bat roosting.

To have a diverse resident bat community in an urban district is unusual, and can be counted among the ecological treasures of Guilin. Bat conservation associated with tourism construction can play a vital role in the city's endeavour to develop into an ecological city, as well as attracting ecotourism and protecting its wildlife. In China, more and more caves will inevitably be explored and developed for tourism, but up to now people have never treated caves as wildlife habitats. If a set of detailed guidelines on tourism development in caves can be drawn up, the adverse impact on bats can be lessened to a certain extent.

**表一.** 桂林城区旅游洞穴生态因数与蝙蝠统计
**Table 1.** Physical attributes of tourist caves in Guilin and details of bats recorded

| 洞名 Caves | 洞深 (米) Depth(m) | 洞高 (米) Height(m) | 洞穴底面积 (平方米) Ground surface area($m^2$) | 种群数量 Total number of bats | 彩灯状况 Frequency/duration of illumination with coloured lights | 洞口大门设计 Suitability of entrance for bat access | 游客活动区域 Tourist zone | 蝙蝠种类 (数量) Bat species (population) |
|---|---|---|---|---|---|---|---|---|
| **七星岩 Qixingyan** | 1,100 | 20 | 17,500 | >980 | 长期开放 Day-long | 适合通过 High | 全洞 Whole cave | 15 种 species: *Rhinolophus rouxi* (4), *R. rex* (15), *R. blythi* (25), *R. pearsoni* (4), *Hipposideros larvatus* (350), *H. armiger* (130), *H. pratti* (80), *Myotis ricketti* (500), *M. myotis* (2), *M. siligorensis* (16), *Myotis spp.* (2), *Nyctalus noctula* (6), *Miniopterus schreibersi* (26), *Ia io* (2), *P. pipistrellus* (3). |
| **元风洞 Yuanfengdong** | 250 | 24 | 1,945 | >1,521 | 无 None | 不完全适合 Medium | 洞口 Cave entrance only | 11 种 species: *R. rouxi* (3), *R. blythi* (31), *R. macrotis* (27), *R. pearsoni* (1), *R. sedulous?* (11) *H. larvatus* (500), *M. ricketti* (800), *M. siligorensis* (13), *Myotis spp., N. noctula*(1), *Pipistrellus spp.* (1). |
| **白龙洞 Bailongdong** | 500 | 20 | 1,828 | >700 | 偶尔开放 Occasional | 适合通过 High | 全洞 Whole cave | 3 种 species： *R. rex* (5), *H. armiger* (49), *T. melanopogon* (700) |
| **龙脊洞 Longjidong** | 228 | 30 | 1,500 | >300 | 偶尔开放 Occasional | 适合通过 High | 全洞 Whole cave | 2 种 species：*R. blythi* (2), *T. melanopogon* (300) |
| **穿山岩 Chuanshanyan** | 500 | 30 | 9,600 | 0 | 长期开放 Day-long | 不适合 No | 全洞 Whole cave | 无 None |
| **月岩 Yueyan** | 100 | 15 | 1,000 | 475 | 无 No | 适合通过 High | 全洞 Whole cave | 2 种 species: *R. blythi* (25), *T. melanopogon* (450) |
| **芦笛岩 Ludiyan** | 240 | 18 | 14,900 | 0 | 长期开放 Day-long | 不适合 No | 全洞 Whole cave | 无 None |

# 海南岛蕨类植物调查

# A survey of the pteridophytes of Hainan Island, China

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海南岛是我国第二大岛，也是我国面积最大与最典型的热带地区，它蕴藏著我国将近2/3热带生物资源[1]。因其丰富的生物多样性，海南岛与其邻近的中南半岛，被认为是全球25个生物多样性最为丰富的“热点地区”之一[2]。但是，就如何认识和保护海南岛的蕨类植物多样性而言，尚有大量工作要做，例如，一些疑难类群的分类有待解决，不少地区缺乏深入的野外调查，许多蕨类植物因人为干扰或环境变化而濒临灭绝，有关这些珍稀濒危蕨类植物的资料，如生物学特性、种群大小、分布、生境等，亟待调查收集。

自2001年6月，我们著手海南岛蕨类植物区系的分析研究，并于2002年3月至5月，实地考察了海南蕨类。在这次野外调查中，我们发现了海南蕨类新分布14种：布朗卷柏（*Selaginella braunii*），高雄卷柏（*Selaginella repanda*），薄叶阴地蕨（*Sceptridium daucifolium*），网脉海金沙（*Lygodium subareolatum*），爪哇鳞始蕨（*Lindsaea javanensis*），三轴凤尾蕨（*Pteris longipes*），翠绿凤尾蕨（*P. longipinnula*），毛叶粉背蕨（*Aleuritopteris squamosa*），台湾车前蕨（*Antrophyum formosanum*），光脚短肠蕨（*Allantodia deoderleinii*），淡绿短肠蕨（*Allantodia virescens*），岭南铁角蕨（*Asplenium sampsoni*），黑足鳞毛蕨（*Dryopteris fuscipes*），黑鳞剑蕨（*Loxogramme assimilis*）。这14个种中，布朗卷柏，网脉海金沙，毛叶粉背蕨，岭南铁角蕨，黑鳞剑蕨等5种为中国南部和西南特有种，高雄卷柏，薄叶阴地蕨，爪哇鳞始蕨，三轴凤尾蕨，翠绿凤尾蕨等5种为亚洲热带成分，其他4种，即台湾车前蕨，光脚短肠蕨，淡绿短肠蕨，黑足鳞毛蕨为东亚成分。这14个种的植物地理成分，反映了海南蕨类区系与华南及西南、亚洲热带以及同东亚蕨类区系的联系。这些新分布的发现，使海南现有蕨类达到56科134属约430种（采用秦仁昌1978年系统[3]），分别占中国蕨类植物区系科的89%，属的61%，种的17%。

根据文献统计，海南有11种国家重点野生保护植物。我们在本次调查中发现了其中的8种：苏铁蕨（*Brainea insignis*）、水蕨(*Ceratopteris thalictroides*)、金毛狗(*Cibotium barometz*)、海南白桫椤(*Sphaeropteris hainanensis*)、刺桫椤(*Alsophila spinulosa*)、阴生桫椤(*A. latebrosa*)、黑桫椤(*A. podophylla*)和大叶黑桫椤(*A. gigantea*)，它们都属于国家二级保护植物[4]。苏铁蕨现仅知分布在尖峰岭海拔为1,410米的峰顶，其种群很小，只有10株左右，生于山顶灌丛中。水蕨也很少见，我们只在三角山西面的山脚下（海拔220m）

Hainan, the second-largest island in China, has the country's largest area with a tropical climate. It possesses two-thirds of China's tropical biota[1]. Because of its rich biodiversity, Hainan Island and neighbouring Indochina are considered one of the world's 25 biodiversity hotspots[2]. As regards pteridophytes of Hainan, however, there is still a lot of work to be done, and knowledge gaps to be filled, in order to understand and conserve this biodiversity. Some taxa await taxonomic clarification; some places have not been intensively and systematically surveyed for pteridophytes. While many species are thought to be threatened with extinction by human disturbance and environmental change, vital information on their biology, population size, distribution and habitat requirements is still lacking.

We began to study the pteridophyte flora of Hainan Island in June 2001 and conducted a field survey from March to May 2002. Fourteen species collected in this exploration turned out to be new additions to the fern flora of Hainan. Of these *Selaginella braunii, Lygodium subareolatum, Aleuritopteris squamosa, Asplenium sampsoni* and *Loxogramme assimilis* are endemic to South and Southwest China; *Selaginella repanda, Sceptridium daucifolium, Lindsaea javanensis, Pteris longipes* and *P. longipinnula* are tropical Asian species; *Antrophyum formosanum, Allantodia deoderleinii, A. virescens* and *Dryopteris fuscipes* are East Asian elements. The biogeography of the 14 new additions reflects the affinity of Hainan's fern flora to those of South and Southwest China, tropical Asia and East Asia. They bring the total number of pteridophytes known from Hainan to approximately 430 species in 134 genera and 56 families, accounting for 17%, 61%, and 89% of China's pteridophyte species, genera and families respectively (according to the classification system of Ching 1978[3]).

Eleven species of nationally Protected fern species have been recorded in Hainan. Of these we found eight species in our exploration: *Brainea insignis, Ceratopteris thalictroides, Cibotium barometz, Sphaeropteris hainanensis, Alsophila spinulosa, A. latebrosa, A. podophylla* and *A. gigantea*. These eight species are all under Class II National Protection[4]. The only known location of *Brainea insignis* in Hainan is the top of Mt Jianfengling where it was found in shrubland at 1,410 m. Its population is very small, consisting of about 10 individuals. *Ceratopteris thalictroides* is also rare. Only two populations have been found: one with only a single individual in the western foothills of Mt Sanjiaoshan (220m); the other with less than ten individuals east of the office of the Wuzhishan Nature Reserve (750m). Both populations were found among grass along small

见到 1 株，在五指山自然保护站东侧（海拔 750 米）发现一个不足 10 株的种群，它们都生于林缘水沟旁的草地中。而金毛狗和 5 种桫椤在保护较好的林区内比较常见，在坝王岭、尖峰岭、吊罗山和五指山海拔 500-1,200 米的林缘及林间隙均有发现。

此外，我们在调查中还发现了 17 种极为珍稀的蕨类：带状瓶尔小草*(Ophioderma pendula)*、显脉尖嘴蕨*(Belvisia annamensis)*、硬叶槲蕨*(Drynaria rigidula)*、雨蕨*(Gymnogrammitis dareiformis)*、海南条蕨*(Oleandra hainanensis)*、棱脉蕨*(Schellolepis persicifolia)*等 6 种附生于林中树干上；松叶蕨*(Psilotum nudum)*、琼崖舌蕨*(Elaphoglossum mcclurei)*、华南舌蕨*(E. yoshinagae)*等 3 种生于林中石上；尖叶原始观音座莲*(Archangiopteris tonkinensis)*、燕尾蕨*(Cheiropleuria bicuspis)*、细辛蕨*(Boniniella cardiophylla)*、海南卷柏*(Selaginella rolandi-principis)*、海南节毛蕨*(Lastreopsis subrecedens)*、多羽瘤蕨*(Phymatosorus longissimus)*、黑心蕨*(Doryopteris concolor)*、网脉海金沙*(Lygodium subareolatum)*等 8 种为林下陆生植物。根据最新的 IUCN 红色名录等级及标准[5]评估，这些蕨类都属于海南极度濒危（CR）或濒危物种(EN)，它们的个体数都很少，现存分布地点数一般只有一个，所幸的是，除黑心蕨外，其他各种都生于自然保护区以内，已得到初步保护。在海南，现知黑心蕨仅分布于昌江县王下乡，生于次生林下石隙中，数量很少，很容易受人为干扰。

在海南，现有蕨类植物中的大多数都生于原生林中，而海南现有的原生林一般都分布在 600 米以上的中高海拔地段，处于保护区以内，因而，生于原生林中的蕨类植物都得到了有效的保护。但那些生于保护区以外，以及分布在低海拔的蕨类，则容易受人畜破坏。目前，海南有不少蕨类是海南受威胁物种，导致这些蕨类受威胁的原因，除了人为直接干扰，植物地理分布的限制之外，主要是海南全岛的天然林被大面积砍伐，植被和土壤涵养水分的能力降低，生境趋于乾旱化。

我们计划于 2003 年作进一步的野外考察，结合标本研究与室内实验，解决一些疑难类群的分类问题，全面评估海南岛蕨类植物的多样性与保育现状，提出保护对策。


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streams at the forest edge. *Cibotium barometz* and the five Cyathaceae species are comparatively common in well-protected forest areas. They often occur at forest edges or forest gaps at elevations from 500 m to 1,200 m in Wuzhishan, Diaoluoshan, Bawangling and Jianfengling.

In addition, 17 other very rare and threatened pteridophytes were found in our expedition. Six of them *(Ophioderma pendula, Belvisia annamensis, Drynaria rigidula, Gymnogrammitis dareiformis, Oleandra hainanensis* and *Schellolepis persicifolia)* are epiphytes on trees in forest. Three species *(Psilotum nudum, Elaphoglossum mcclurei* and *E. yoshinagae)* are lithophytes in forest. The remaining eight species are terrestrial in forest: *Archangiopteris tonkinensis, Cheiropleuria bicuspis, Boniniella cardiophylla, Selaginella rolandi-principis, Lastreopsis subrecedens, Phymatosorus longissimus, Doryopteris concolor* and *Lygodium subareolatum*. These species have a small population and are mostly known from a single locality, and hence should be considered Critically Endangered or Endangered in Hainan Island, according to the latest IUCN Red List Categories and Criteria[5]. Fortunately, most of the localities are in nature reserves, hence these threatened species, with the exception of *Doryopteris concolor*, are under protection. In Hainan *D. concolor* is now found only in Wangxia, Changjiang County. It occurs among dry rocks in secondary forest with few individuals and is threatened by human activities.

In Hainan Island, most of the extant pteridophytes live in primary forests, which are generally distributed in mountains above 600m where nature reserves have been set up, so a large proportion of the pteridophytes in Hainan are under protection. However, the pteridophytes outside nature reserves and those distributed in lowlands are subject to disturbance by humans and domestic animals. Some pteridophyte species are presently threatened. Besides direct human disturbance and their small global ranges, the main threat to these species has been the large-scale destruction of primary forests throughout the island several decades ago, which resulted in the drying out of vegetation and soil.

Further fieldwork, as well as study of specimens and some experiments will be done in 2003. We will try to settle some taxonomic problems, evaluate the diversity and conservation status of the fern flora of the whole island, and put forward some measures to protect the threatened species.


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# 十万大山地区的鱼类多样性、动物地理学分析和鱼类资源保护

# Biodiversity, Zoogeographical Analysis and Conservation of the Fish Fauna of Shiwandashan, Guangxi, China

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十万大山地区位于广西壮族自治区西南部，为一条东北-西南走向的山脉，东北起自钦州市的贵台，西南至中越边境，因其山脉连绵、峰峦重，故称“十万大山”。所属行政区包括钦州、防城、上思和宁明等市县。整个区域约位于北纬21°38'-22°10'，东经107°25'-108°20'之间；全长100km多，宽30-40km，总面积约2,600km$^2$，平均海拔700-1,000m。总体山势西高东低[1]。

照片由作者提供 Photo by author

河流沿山地两侧发育，形成典型的梳状水系，但南北坡河流各有特点。北坡河流主要是明江（为西江支脉，隶属珠江水系）上游的南侧支流。南坡河流多，但彼此多不交汇贯通而相对独立，大多独流入海，以北部湾为其归宿；相对较大的河流有北仑河、防城江、钦江、茅岭江等。这些独流入海的河流多数河道短小。

The Shiwandashan (literally “a hundred thousand great mountains”) are located in the far southwest of Guangxi Zhuang Autonomous Region, China. The mountain range stretches from Guitai of Qinzhou County in the northeast to the border with Vietnam in the southwest, from 21° 38'N, 22° 10'E to 107° 25'N, 108° 20'E; the range stretches over 100 km with a width of 30-40 km, covering about 2,600 km$^2$. Because of its vast size, administration is shared by Qinzhou, Fangcheng, Shangsi and Ningming Counties. Altitude of the mountains averages 700-1,000 m above sea level; the terrain is generally higher towards the western part of the range[1].

The northern slope of Shiwandashan is a major watershed in Southern Guangxi and the southern slope receives higher rainfall than the north. The streams on the northern slope are mainly upstream tributaries of the Ming Jiang (Ming River), and are part of the Zhujiang (Pearl River) drainage system. On the southern slope there are many distinct streams, running close together but discharging independently into the Beibu Wan (Gulf of Tonkin). These southern streams are generally quite short and narrow.

Due to the complicated geographical and geological conditions of Shiwandashan, the fish fauna of this area is very diverse. From the spring of 1998 to the autumn of 2001 we collected 84 fish taxa (species and subspecies) in the area, while another 18 taxa have

由于十万大山地区复杂的地质地史情况，使得该地区的鱼类物种多样性十分丰富。我们在这一地区两年间共采集到 84 种和亚种的鱼类，加上 18 种过去文献曾经记载过的种类[2,3]，共有 102 个种和亚种的鱼类在这一地区分布，分别隶属于 6 目 18 科 65 属，其中自然分布的纯淡水鱼类共计 4 目 16 科 61 属 97 种。鲤形目共有 63 个种和亚种，占本地区鱼类总数的 64.95%；鲈形目鱼类 18 种，占 18.56%；鲶形目 15 种，占 15.46%；而合鳃目只 1 种，占 1.03%。显然，鲤形目鱼类构成了“十万大山”地区鱼类区系的主体。

照片由作者提供 Photo by author

不同水系鱼类组成的平均相似性分析表明在十万大山南北坡之间鱼类区系成分有较大差异。北坡的明江干支流有纯淡水鱼类 60 种，南坡各河流分布有纯淡水鱼类 78 个种和亚种，鱼类种数明显多于北坡。共有种 40 种，种级水平上的平均相似度为 59.6%；与海南岛比较，纯淡水鱼类共有种有 60 种，平均相似度为 67.8%。分析表明，海南岛尽管与“十万大山”有北部湾相隔，但是从鱼类组成和平均相似性上来看，两者之间的关系更为接近，超过南北坡之间的关系。推测十万大山南坡和海南岛的这种鱼类区系组成上的相似性和冰期时的环境变化有关。依有关研究结果[4-8]，冰期时该地区海平面下降可达 150 米，现在的北部湾等广大地区在当时都是出露的陆地，“十万大山”南坡与海南岛各水系之间的鱼类曾存在著广泛的交流机会；受“十万大山”分水岭的阻限作用，分布于南坡的某些鱼类未能扩散到北坡的珠江水系。这导致了“十万大山”南坡的鱼类区系与海南岛有更大的一致性。

就整体而言，“十万大山”地区的淡水鱼类区系在地理分布区划上应划归东洋界的华南区；而就亚区的划分来说，北坡应属华南区的珠江亚区，南坡则应划归华南区的海南亚区。

照片由作者提供 Photo by author

previously been recorded[2,3]. The 102 recorded fish taxa belong to six orders, 18 families and 65 genera. Ninety-seven taxa are native pure freshwater fishes; of them 63 taxa (64.95%) are Cypriniformes; 18 species (18.56%) belong to Perciformes, 15 species (15.46%) are in the Siluriformes and one species (1.03%) is in the Synbranchiformes. Cypriniformes fishes are thus the main component of the fish fauna in Shiwandashan.

An analysis of average faunal resemblance (AFR) among the different river systems indicates a great difference in freshwater fish fauna between the southern and northern slopes. Sixty taxa have been found on the north and 78 on the south; 40 taxa occurred on both slopes and AFR between the slopes is 60%. Sixty taxa found on the southern slope also occur in Hainan Island and AFR between these two areas is 68%. The analysis indicates that the fish fauna on the southern slope of Shiwandashan has a closer relationship to that of Hainan Island than to the northern slope despite being separated by the Gulf of Tonkin. It is presumed that the similarity of fish fauna between southern Shiwandashan and Hainan is related to the change of environment during the Ice Age of the Quaternary. According to some references[4-8], the sea level dropped about 150 metres during this time and the continental shelf was exposed, allowing an exchange of freshwater fish fauna between Hainan and the south side of Shiwandashan.

While the fish fauna of the whole of Shiwandashan belongs to the South China Region (SCR) of the great Oriental Region, the fish fauna of the southern slope belongs to the Hainan Subregion of SCR and that of the northern slope to the Pearl River Subregion.


照片由作者提供 Photo by author

十万大山地区的小水利设施。
A small dam at Shiwandashan.


照片由作者提供 Photo by author

分布于十万大山地区的美丽小条鳅。
The loach *Micronemacheilus pulcher* from Shiwandashan.

另外，中小型鱼类成为这一地区鱼类资源的主体成分。近年来鱼类资源和鱼类多样性都呈现出比较明显的下降趋势。导致这一结果的原因可能包括有害的捕捞方式和过强的捕捞密度、小水利设施和外来种的入侵。可以通过加强宣传力度、强化渔政管理；开发其他副业，努力提高当地居民收入和生活质量；拆除废弃的小水利工程；加强对人工养殖引入鱼种的管理，开展入侵种对土著种影响的科学研究等手段，对十万大山鱼类资源和鱼类多样性加以保护。

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Today most of the wild fish in the area are small or middle-sized. Fish populations and species richness have clearly decreased in recent years. Possible reasons for this decline include harmful methods and the extreme intensity of fishing, dam construction and invasion of non-native species. Enhancing education, strengthening fishery management, developing alternative livelihoods, demolishing disused dams, reinforcing the management of introduced aquaculture species and conducting research on the impacts of non-native species are all important approaches to protect the fish diversity of Shiwandashan.

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# 可持续发展之『道』

# The *Tao* of sustainable development

……研究大自然之道的这些道教哲学家，可以说是“在骨子里”就感到(因为他们从未能予以充分表达)要是对于人类社会以外和超出人类社会的大自然没有更多的知识和了解，就不可能像儒家所力求做到的那样去治理人类社会。他们攻击“知识”，但他们所攻击的是儒家关于封建社会的等级和礼法的学究式的知识，而不是关于大自然之道的真正的知识。儒家的知识是一种男性的阳刚知识，道家谴责这种知识；道家追求一种女性的阴柔知识，它只能来自对自然界的观察采取一种被动的和顺从的态度。

……从历史上来看，近代科学和近代民主显然是同时发展起来的，它们是包括文艺复兴、宗教改革和资本主义兴起在内的那场伟大的欧洲发展运动的组成部分。现在我们对它可以再补充一个从中国科学技术的根基上所得出的新的类似情况。但更有趣味的则是理论上的、甚至是心理上的关系，在这方面我要提到以下两点。第一、自然界是不考虑人的。一个观察者只要有能力，他的身份是与我们今天所说的年龄、性别、肤色、信仰或种族等等无关的。古代中国人就理解到这一点。权威—即使是作为封建中国的一国之主 — 是不够的。武力达不到目的。君主和圣贤都不能违抗或逆转大自然的“道”。《吕氏春秋》说：

> “如果你强使一个人笑，他不会由此感到愉快；如果你强迫一个人哭，他并不会由此感到悲伤。……如果你用猫去引诱老鼠，用冰去引诱苍蝇，你只会自找苦头，而肯定不会成功，……诱饵不能用以驱走东西。当桀、纣这些暴君试图用恐怖来统治人民的时候，他们可以随心所欲地把刑罚制订得无比严酷；但这没有好处。在寒冷的季节，人民力图使自己温暖；而在酷热的季节，他们则寻求凉爽。……凡是想做这个世界的统治者的人，如果不考虑人民行事所依据的原理，就会失败。
>
> 〈强令之笑不乐，强令之哭不悲。……以狸致鼠，以冰致蝇，虽工不能。……以致之之道去之也。桀纣以去之之道致之也，罚虽重，刑虽严，何益？大寒既至，民暖是利；大热在上，民清是走。……欲为天子，民之所走，不可不察。〉

……第二，科学的产生要求把学者和工匠之间的差距弥合起来。这一点我们还将回过头来讨论，但这里必须提一下，因为儒家完全站在士大夫一边，对工匠艺人和体力劳动者缺乏同情。道家则不然，正如我们前边已看到的，他们和上面说的那些人有著密切的联系(这是和前苏格拉底时期的自然哲学家又一个相类似之点)。道家的这种态度贯穿于其后的全部的中国历史中 。

还可以提出一些其他的有关之点，但这里所说的足以表明；古代道家既和早期的中国科学技术有关，也和前封建的中国古代平等主义的社会理想有关，这或许并非偶然。

选自由王铃协助、李约瑟于1956年撰写、摘录科学出版社、上海古籍出版社出版，何兆武等翻译的《中国科学技术史》第二卷 科学思想史 (第十章 道家与道家思想)。

…the philosophers of the Tao of Nature may be said to have felt 'in their bones', for they could never fully express it, that human society could not be brought into order, as the Confucians strove to bring it, without a far greater knowledge and understanding of Nature outside and beyond human society. They attacked 'knowledge', but what they attacked was Confucian scholastic knowledge of the ranks and observances of feudal society, not the true knowledge of the Tao of Nature. Confucian knowledge was masculine and managing: the Taoists condemned it and sought after a feminine and receptive knowledge which could arise only as the fruit of a passive and yielding attitude in the observation of Nature.

… Historically, it is evident that modern science and modern democracy grew up together, as parts of that great movement in European development which included the Renaissance, the Reformation and the rise of capitalism. We can now add to it a new parallel drawn from the roots of Chinese science and technology. But more interesting are the theoretical and even psychological connections, among which I may mention two. First, Nature is no respecter of persons. The status of an observer, if competent, as to age, sex, colour, creed or race, is, as we know today, irrelevant. This was appreciated among the ancient Chinese. Authority, even that of the lord of a State in feudal China, is not enough. Force will not accomplish its end. Neither kings nor sages can withstand or reverse the Tao of Nature. The *Lu Shi Chhun Chhiu* says:

> "If you were to force someone to laugh, he will not thereby be amused; if you force someone to weep, he will not thereby be sad… If you try to attract mice with a cat or flies with ice, you may give yourself much trouble but you will certainly not succeed…[while] bait cannot be used to drive things away. When tyrants like Chieh and Chou tried to govern the people by terror, they could make the punishments as draconian as they liked; it was no good. In seasons of cold, the people try to warm themselves; in seasons of heat they seek for coolness… Whoever wishes to be a ruler of this world will fail if he does not consider the principles on which the people move."

…Secondly, the birth of science requires the bridging of the gap between the scholar and the artisan. It is a point to which we shall return, but it must be mentioned here, for the Confucians were entirely on the side of the literate administrators, and lacked all sympathy with artisans and manual workers. The Taoists, on the other hand, were, as we have seen, in close contact with them (here is another parallel with the pre-Socratic Greek nature-philosophers). These attitudes run through all later Chinese history.

…Other points of connection might be raised, but enough has been said to indicate that it was probably no coincidence that Taoism in its ancient form was connected both with the earliest Chinese science and technology, and with the ideals of ancient equalitarian pre-feudal Chinese society.

Excerpted from *The Tao Chia (Taoists) and Taoism*, Chapter 10 in *Science and Civilisation in China, Volume 2: History of Scientific Thought*, by Joseph Needham with Wang Ling. Cambridge at the University Press, 1956.

## 社区环境项目基金倍增
## GEF to double funding available to NGOs for community-based environmental projects

全球环境设施基金(GEF)于2003年7月1日公布，将透过辖下的小额赠款计划向非营利与社区组织增拨多于一倍的小额资助基金。全球环境基金的小型赠款计划，对每项专案提供最多5万美元的资助，帮助全球环境与发展中国家的社区。从近期获批的工作计划看来，小额赠款的财政预算由2003年的3千万美元飙升至2005年逾6千万美元，全球环境基金将因此得以批出更多小型赠款，让更多国家受惠。小型赠款专案由联合国开发计划署代表全球环境基金执行实施，每个参与国均会成立一个全国性指导委员会，甄选赠款项目，并为项目提供全面指引与策略方向。

The Global Environment Facility (GEF) announced on 1 July 2003 that it will more than double the amount of small grant funding available to nongovernmental organizations (NGOs) and community-based organizations through its Small Grants Programme. The GEF Small Grants Programme, which awards grants up to US$50,000 each, supports projects that simultaneously benefit the global environment and local communities in developing countries. According to the recently approved GEF business plan, the GEF small grants budget is projected to increase from US$30 million in 2003 to more than US$60 million in 2005. The increase in funding would allow GEF to award more small grants and increase the number of countries participating in the programme. The Small Grants Programme is administered on behalf of the GEF by the United Nations Development Programme (UNDP). In each participating country, a broad-based national steering committee provides overall guidance and strategic direction for the programme and screens and selects projects for grant awards.

*http://www.gefweb.org/Outreach/Media/Press_Releases/070103SGP.pdf*

## 森林管理综合模型
## Integrated forest management models

二零零二年十一月，国际热带木材组织批准拨款54,000美元，拟定中国可持续热带林业发展的综合模型示范建议书。为此，中国林业科学院会先进行深入调查，再按调查所得，编写国内现有的综合森林管理模型，并探讨其发展潜力与环境规限。根据上述资料与分析，归结出中国热带林区的现况报告及项目建议书。国际热带木材组织基金来自日本与澳洲政府。

In November 2002 the International Tropical Timber Organization (ITTO) approved a US$54,000 ITTO grant for formulating a proposal on demonstration of integrated models for sustainable tropical forestry development in China. Conducted by the Chinese Academy of Forestry, this pre-project will compile existing integrated forest management models in China based on an intensive survey and carry out a diagnosis of local potentials and environmental constraints. Among the main outputs will be a report on the current status of the tropical forest zones in China and a project proposal. ITTO funds have come from the Japan and Australia Governments.

*ITTO Newsletter http://www.itto.or.jp/newsletter/v13n1/8.html*

## 中国环境教育研讨会
## Workshop on environmental education in China

由中国科学院与国际植物园保育协会(BGCI)合办的全国第一届生物多样性保育与环境教育研讨会于二零零二年十一月假北京植物研究所举行。世界各国及本地的讲者及教授均有参与，约五十个中国植物园亦有派代表出席。*详情请与Anle Tieu (BGCI中国部项目天主任)联系 anle_tieu@bgci.org.uk*

The first National Workshop on Biodiversity Conservation and Environmental Education was held at the Institute of Botany (Beijing) in November 2002, in collaboration with the Chinese Academy of Sciences and Botanic Gardens Conservation International (BGCI). Various international and national tutors and speakers took part, and about 50 Chinese botanic gardens were represented. *For further details contact: Anle Tieu, BGCI Project Officer for China (anle_tieu@bgci.org.uk).*

*Roots* (BGCI Education Review) 25, December 2002, p.8

## 木格错在呼救
## Mugecuo Lake calling for help

一座30米高的大坝、水库和电站将要在木格错湖(也称野人海)的上游建起。木格错湖是川西最大的冰湖，位于四川省甘孜藏族自治州贡嘎山国家级风景名胜区(约1万多平方公里)的核心，景区一向以拥有全国最高的冰瀑布、宏伟奇特的冰川景观，极为丰富生物多样性包括超过30种杜鹃花和各种珍禽异兽而闻名。中科院生态专家印开普预计钢筋混凝土水坝将淹没20万公顷原始森林，令其他湖泊及下游很多山溪、温泉、小河乾涸。另一个问题便是大坝的安全性问题。水坝选址在横断山脉鲜水河地震带上，且距离康定城仅21公里。

开发商说工程能给非常贫穷的当地政府每年带来六七千万元的财政收入，而且这裹属于高寒地带，游客远比九寨沟那些地方少，他们是为了帮助藏族同胞脱贫。

两年前，木格错工程通过了立项审批和环境评估。曾赴成都参与审批这一工程的生态专家唐学山教授、陈安泽研究员等专家一直都挂念著木格错，他们很欣慰今时今日，中国公众特别是当地群众对生态保护的认识极大地提升了，川西北高原举世瞩目的生态价值被充分地认知，要求保护景区生态，反对修建水库的人多起来。

A 30m-high dam is to be built at Mugecuo Lake, the largest icy lake in western Sichuan. The lake, at the centre of (>10,000 km$^2$) Gongga Shan National Scenic Area, is renowned for its spectacular frozen landscape and rich biota including over 30 species of azalea. According to ecologist Yin Kaipu of the Chinese Academy of Sciences, the dam would inundate 2,000 km$^2$ of ancient forest, and cause other lakes and rivers to dry up. Another concern is dam safety. The dam site is on the fault line of Xianshui River, a quake alert zone, and only 21 km from Kangding town.

The dam developer noted the area, cold year-round, received far less visitors than other scenic areas such as Jiuzhaigou. He said the project would bring up to 70 million yuan per year to the local government, to help them alleviate the ethnic Tibetans' poverty problems.

" Two years ago, the Mugecuo project's feasibility study and environmental impact assessment were approved. But Prof. Tang Xue-shan and Chen Anze, who took part in the process, do not support the outcome. They were encouraged that today more people including local people are aware of the ecological value of the northwest Sichuan highlands, and opposed the dam project.

*中国青年报*
*China Youth Daily*
*2003.05.28*

## 云南、四川与贵州的社区林业策略规划研讨会
## Symposium on Community Forestry Strategic Plans in Yunnan, Sichuan and Guizhou

一个有关省级社区林业策略计划研讨会于2003年2月假贵阳召开。亚太区域社区林业培训中心、西南林业学院、社区发展研究中心、云南省生物多样性和传统知识研究会、云南大学、四川省林业厅、四川社会科学院、四川扶贫办公室、四川农业大学、贵州省林业厅、贵州林业大学及贵州日报、林业与社区网络及福特基金会等均有派员出席。与会人士讨论了社区林业实务与中国林业政策的关系、探讨以金字塔式的策略规划作为判断与规划的工具，分析其发展规限。会上制定了初步发展方针及未来五年在云南、四川及贵州开展的社区林业活动，以供相关省级部门讨论及开发个别项目的策略规划。

In February 2003 a symposium was held in Guiyang on provincial Community Forestry Strategic Plans. RECOFTC, Southwest China Forestry College, Center for Community Development Studies, Center for Biodiversity and Indigenous Knowledge, Yunnan University, Sichuan Forestry Department, Sichuan Academy of Social Sciences, Sichuan Poverty Alleviation Office, Sichuan University of Agriculture, Guizhou Forestry Department, Guizhou University and Guizhou Daily, Forestry and Society Network and the Ford Foundation were represented. The symposium discussed the practice of community forestry in relation to China's forestry policies, and explored pyramid strategic planning - a diagnostic and planning tool - to analyse constraints on its development. The meeting formulated preliminary development objectives and future activities in community forestry for the next 5 years in Yunnan, Sichuan and Guizhou, for discussion with relevant provincial departments and development of their respective strategic plans.

*林业与社会 XI (1), 2003*
*Forestry and Society XI (1), 2003*

## 西南地区的参与式开发及创新研讨会
## Symposium on the Development and Innovation of Participatory Approaches in the Southwest Region

研讨会于2002年12月假昆明举行。与会者主要包括来自云南、贵州、四川及其他地区从事参与式农村评估的网络成员、基层人员与及多个国际非营利组织与外资项目办公室的代表。代表团回顾过往十年在中国开展的参与式农村评估的情况，特别是农村扶贫、天然资源管理及农村医疗保健等项目。参加者强调参与式农村评估需要营造轻松愉快的气氛及简单灵活地实施，促使村民积极参与，避免繁复的程序与规则。与会者建议包括：把参与式农村评估应用在天然林保护工程等多个大型项目中、将这概念引进政府决策；而参与式农村评估网络应侧重行动与开发，超越以往一味学习、交流与评估的模式。

This symposium was held in Kunming in December 2002. Present were PRA Network members and grassroots staff from Yunnan, Guizhou, Sichuan and other regions, and various international NGOs and foreign aid project offices. Delegates reviewed a decade of application of Participatory Rural Appraisal (PRA) in China, especially in projects of rural poverty alleviation, natural resource management and rural health care, even expanding into urban areas. They stressed the need in PRA to maintain an easy and warm atmosphere, conducive to people's participation, and simple and flexible application, avoiding complicated procedures and rules. Among the meeting's recommendations were: to explore application of PRA in a number of large-scale projects, such as the Natural Forest Protection and Grain for Green Programmes; to explore how to introduce PRA into government decision-making; and to shift the emphasis of the PRA Network from learning, exchange and evaluation to action and development.

*林业与社会 XI (1), 2003*
*Forestry and Society XI (1), 2003*

## 六保育项目获发中国世界自然基金会2003物种保护小型专案基金
## WWF China awards six Species Conservation Small Grants for 2003

2003年1月，中国世界自然基金会与中国科学院植物及动物研究所的专家从三十多份的项目建议书中，甄选出六个资助项目，包括：珠江三角洲中华白海豚的保育策略、开发保育贵州参 *Camellia luteoflora* (小黄花茶)、新疆塔里木盆地白尾地鸦的状况与保育、北京芦苇湿地的生物多样性调查与鸟类生境保护、交配季节的黑脸琵鹭之觅食地研究及河北平山县的黑鹳小型保护区的有效管理。"中国珍稀物种保护小型基金"自2001年设立，申请专案所涉及的物种包括世界自然保护联盟（IUCN）"濒危物种红皮书"、濒危物种贸易公约，中国I、II类国家级保护等却未受广泛关注的动植物物种。直至2002年为止，该基金已成功资助13个项目，活动区域覆盖了全国10多个省区。*详情可与中国世界自然基金会物种项目联系。jwei@wwfchina.org*

In January six new projects were selected to receive support from WWF's Species Conservation Small Grants Fund for 2003. Experts from WWF China and the Institutes of Botany and Zoology of the Chinese Academy of Sciences selected 6 projects from over 30 proposals. The projects to be sponsored are: a Conservation Strategy for Chinese White Dolphin in the Pearl River Estuary; Conservation and Development of *Camellia luteoflora* in Guizhou; Status and Conservation of the Ground-jay in Xinjiang's Talimu Basin; Biodiversity Investigation and Bird Habitat Protection in the Yangzhen Reed Wetlands of Beijing; Research on the Feeding Grounds of the Black-faced Spoonbill During the Mating Season; and the Effective Management of the Small Protected Area for Black Storks in Pingshan County, Hebei. WWF's Conservation Small Grants Fund, launched in 2001, focuses on lesser-known plants and animals that are either on the IUCN (World Conservation Union) Red List or are Nationally Protected. Up to the end of 2002 the fund had supported 13 projects in 10 provinces of China. *For further information: Wei Juan, Species Program Associate, WWF China Programme. jwei@wwfchina.org*

http://www.wwfchina.org/english/loca.php?loca=151

## 猛禽栖息地受到保护
## Raptor rest point safeguarded

马六甲政府宣布今年不会把丹都亚发展为沙滩渡假村。丹都亚是马来西亚硕果仅存、尚未开发的沿岸山地雨林之一。对经常飞往该处越洋迁徙的东亚猛禽来说，实是重大的决定。丹都亚沿森美兰与马六甲边界的海滨渡假村延伸，是凤头蜂鹰、灰脸鵟、日本松雀鹰、赤腹鹰及黑冠鹃隼等逾100,000只猛禽，于春季迁往中国、蒙古及西伯利亚繁殖地的必经之地。大型雀鸟不能倚靠地面上升的暖流辅以飞行，所以往往需要较大的力气才能越洋过境，马六甲海峡便为它们提供了最短途的越洋路线，因此丹都亚是很多候鸟在飞离苏门答腊后稍事停留的第一站。每逢春季，马来西亚自然学会都会举办猛禽观赏活动(http://www.mns.org.my/raptor2003)，吸引数千名世界各国的人士前来观鸟。正因为这个一年一度的节目如斯受欢迎，丹都亚才得以免遭开发。

The Malacca government announced this year that Tanjung Tuan, one of the last remaining coastal hilly rainforests in Malaysia, will not be developed as a beach resort. The decision is of great importance to many East Asian raptors which migrate through the area. Tanjung Tuan is one of the last remaining undeveloped beaches along the popular seaside resort stretch of the Negeri Sembilan-Malacca state boundary. Over 100,000 raptors, including Oriental Honey-Buzzard *Pernis ptilorhynchus,* Grey-faced *Buzzard Butastur indicus,* Japanese Sparrowhawk *Accipiter gularis,* Chinese Sparrowhawk *Accipiter soloensis* and Black Baza *Aviceda leuphotes,* use the site in the spring migration to breeding grounds in China, Mongolia and Siberia. Flying across the sea requires more energy for large birds, as they cannot rely on the thermals from the heating landmass. The Straits of Malacca provide the shortest sea crossing, and for many Tanjung Tuan is the first stop after Sumatra. Each spring the Malaysian Nature Society organises a Raptor Watch (http://www.mns.org.my/raptor2003), attracting thousands of people from many countries to see the birds arrive. This event has helped save Tanjung Tuan from development.

*ASEAN Review of Biodiversity and Environmental Conservation (ARBEC)* website, 22 July 2003, from a *Straits Times* article, 5 March 2003.

## 国家出台优惠税收政策鼓励科普
## Tax incentives for science communication

为促进科普事业发展，中国在六月一日实行优惠税收政策。该项政策的主要内容为：对科技馆、高校实验室及科研机构等公众开放的科研场所免征进口税和增值税。对科技报的出版社和音像制品，实行免徵增值税，同时亦免徵科学馆门票收入的营业税。 这是中华人民共和国成立以来制定的首个鼓励公众积极支持和投入科普事业的优惠税收政策。我国共有400多个科学馆，其中有三分之二都来自发展先进的东部地区。为促进西部的科普教育，政府计划藉二零零四年五月举行的科学周，鼓励学术机构向青少年、政府官员及占全国大部分人口的劳动农民宣扬科学知识。

China has introduced tax breaks for organisations that promote science communication. Under new legislation introduced on 1st of June, science museums, college laboratories and research institutions that regularly open their doors to the public will be exempt from import duties and value-added tax (VAT). Publishers of scientific and technological newspapers and radio and video products are also now exempt from VAT, and science museums will no longer be required to pay business taxes on income from entry ticket sales. This is the first time the People's Republic of China has implemented a preferential tax policy to enhance the public involvement and understanding of science. China has more than 400 science museums, two thirds of which are found in the more developed eastern areas of the country. The government plans to promote science communication in the west of the country through an annual science week in May 2004, and by encouraging academic institutes to disseminate scientific knowledge to teenagers, government officials and farmers, the latter makes up the bulk of the population.

*新华网*
*SciDev.Net, 2003.07.09*

## 娃娃鱼“从娃娃抓起”珍稀物种大鲵全人工养殖成功
## Successful artificial breeding of Chinese Giant Salamander

由于过度捕杀和生态的破坏，娃娃鱼的存量正在急剧衰减。据中国野生动物保护协会统计，中国野生大鲵数量到2000年已减少到5万尾。

上海水产大学与珠海市斗门金鲵野生动物养殖有限公司和中国水产科学院等自1995年开始合作组成课题组，通过对水温、鱼饵的调整，终于攻克了雌雄大鲵性腺发育不同步的难题，使娃娃鱼的受精率达96%，孵化率15%，亲鱼产后存活率100%。

Excessive poaching and habitat destruction have led to the rapid decline of *Andrias davidianus* (Chinese Giant Salamander). The China Wildlife Conservation Association estimated that only 50,000 remained in the wild by 2000. Efforts to breed the species in captivity have been hampered by asynchronous gonad development in the two sexes. In 1995 a Salamander Reproduction Task Force, co-organized by Shanghai Fisheries University and Chinese Academy of Fishery Sciences with a wildlife breeding company in Zhuhai, Guangdong, overcame this problem by regulating water temperature and diet. To date researchers report a 96% insemination rate, 15% incubation and 100% survival of adults after reproduction.

*新民晚报*
*Xinmin Evening News*
*2003.06.11*

## 三峡工程使泰国流域受灾
## China impacts Thailand's rivers

按中国与大湄公河次区域的领导人于2002年11月签订的协议，预料连接32个水电堤坝的电源输送网络将于2019年竣工。环境学家恐怕工程会严重影响泰国下游流域。单是炸毁湄公河上游(澜沧江)的礁石与加深水道，已酿成泰国水流剧变。一个由中国、老挝、缅甸及泰国共同协定，一连三日截流炸毁11段湄公河急流的计划，已对捕渔或采摘水草植物维生的村民造成严重影响。

Following an agreement in November 2002 endorsed by leaders from the Greater Mekong Sub-region and China, a power-grid of some 32 hydropower dams is scheduled for completion by 2019. Environmentalists fear for the ecological impact of this construction. Already blasting of rapids to expand and deepen the upper Mekong (Lancang) River has caused severe changes to river flow in Thailand. A scheme to clear around 11 rapids, agreed by China, Laos, Myanmar and Thailand, which involved cutting the river flow for three days at a time to blast shoals and submerged rocks, has seriously affected fishermen and collectors of Mekong waterweed.

*Oriental Bird Club Bulletin* 37: 75; *转载自* original stories in *Bangkok Post*, 2002. 11. 10 *及* 2003. 03. 05

## 我国将开展林业有害生物普查
## Nation wide Forest pest survey

从2003年6月1日起，国家林业局组织全国31个省(区、市)的林业行政主管部门对辖区内开展规模最大的一次林业有害生物普查。普查重点各省确定的林业重点保护区域、有害生物易发生区域和过去普查涉及不多的区域。此次普查旨在掌握外来林业有害生物及本土危害严重的森林病虫害的危害情况，今后加强区域间联防联治、制订预警方案及为危险性病虫害资料奠定基础，提供科学资料。

On 1 June 2003, SFA initiated the largest - ever survey of forest pests in China, involving 31 provincial (regional or municipal) forestry departments. The survey will cover key protected forests, areas vulnerable to pest damage and areas not thoroughly surveyed previously. The survey sets out to clarify the current impact of native and exotic forest pests, lay the foundation for a scientific database enhancing prevention and control, and formulate precautionary measures.

*人民日报*
*People's Daily 2003.06.03*

## 我国拟修改《野生动物保护法》规定禁食野味
## Revised law to stamp out wild animal consumption

国家林业局法规司正起草修订现有「野生动物保护法」，禁止人民食用疑传播非典型肺炎的野生动物。中国全国人民代表大会正就有关方面收集专家意见，以修订法例。广东是发现首宗非典型肺炎个案的地区，野生动物贸易在当地一直非常猖獗。本年四月，公安在九千多个箱子中检获 930,000 多只野生动物及其产品，其中包括 40,000 只受保护动物。本年五月，广东省政府在法规中加入一项新条款，劝吁公众禁食野味，却未有禁止贩卖野生动物。

The Department of Laws and Regulations in the State Forestry Administration is drafting amendments to existing wildlife laws to forbid people eating wild animals, an activity suspected of spreading SAR diseases from animals to humans. The National People's Congress, China's top legislative body, has been collating the views of experts on the revision. The trade in wildlife has been rampant in Guangdong, where SARS was first discovered. In April, more than 930,000 wild animals and products, including more than 40,000 protected animals, were siezed by police in more than 9,000 boxes. A new clause was added to Guangdong's provincial regulations in May, saying people should not eat wild animals, but did not specifically ban the activity.

*人民日报*
*China Daily 2003.05.30*

## 张家界的“学费”还要交多久
## More controversial tourism plans at Zhangjiajie

由于张家界近几年的游客量已稳定在 600 万人次的水平，超过了旅游环境的容量，张家界市有关部门近日决定投资 1.8 亿元在天门山修建一条世界第二长的游览索道，游客从山脚到山顶的时间将从三四个小时减少到 24 分钟。

作为世界自然遗产，张家界在 1998 年，由于在景区内大建高档宾馆，受到联合国教科文组织世界遗产委员会的“警告”，只因及时拆除了总价值达两亿多元的宾馆并恢复地表原貌，才保住了世界自然遗产的称号；2002 年，由于兴建观光电梯，再次受到世界遗产委员会的批评，耗资巨大的观光电梯最终停止运营，成为闲置资产。《湖南省武陵源世界自然遗产保护条例》明文规定：“在保护区内，不得新建扩建污染环境、破坏景观、妨碍游览的建设专案和设施。”然而这样的工程项目却可以一路畅通无阻地通过审批。

Zhangjiajie of Hunan receives some 6 million visitors a year, has again come under fire for controversial tourist development plans. Zhangjiajie is to build the world's second-longest sightseeing cable-railway at Tianmenshan to spare tourists the 3-4 hour hike. In 1998 Zhangjiajie received a warning from the World Heritage Committee of UNESCO over the large-scale construction of high-class guesthouses. To retain its World Heritage status, the city had to pull down the RMB¥200 million guesthouses and restore the landscape. But criticism was again invited in 2002 over construction of a sightseeing escalator, whose operation was eventually stopped and which is now idle. Under the Hunan Wulingyuan World Natural Heritage Protection Ordinance, activities harming the environment and landscape are prohibited in the world heritage site. But such extensive projects have repeatedly been approved and initiated.

*中国青年报*
*China Youth Daily 2003.06.04*

# 近期刊印的出版物
# A selection of recent publications

**Golding, J.S. & Timberlake, J., 2003. How taxonomists can bridge the gap between taxonomy and conservation science. *Conservation Biology* 17(4), 1177-1178.**

- 促请分类学家联同考察伙伴及保育专家，从事以下工作，包括：集中研究对特有种及受胁种具重要影响的分类群、邀请保育学家与其他使用者一同评论、使分类学达致一定水平的稳定性及统一性、提供简易的鉴定手册及编制数据库的目录，并收集有关分类学修订的状况与生态资料。
- Calls on taxonomists to: pursue fieldwork partnerships with conservationists; concentrate on taxonomic groups important for endemic or threatened species; involve conservationists and other users in peer-review; achieve taxonomic stability and consistency; produce user-friendly identification guides and inventory databases; and include information on status and ecology in taxonomic revisions.

**IUCN Cat Specialist Group, 26 May 2003. Saving the South China Tiger. *Cat News* 38, 9.**

- 猫科动物专家组对中国政府与英国非政府组织合办的「拯救华南虎」计划存有保留。是项计划把人工饲养的华南虎幼虎送往南非繁殖、饲养及训练它们在野外捕猎，为日后放野中国做好准备。然而，专家组则认为该项计划应在中国的天然生境进行，按照国际自然保护联盟(IUCN)重引专家组的指引，因为对生境及猎物的适应程度，是恢复华南虎的重要因素。此外，亦应评估华南虎的猎物据点(猎物主要为鹿及野猪)及恢复森林生境的大片土地。建议更新及实施现有整体规划，以此管理量少且高度近亲的人工饲养种群，而不是把个体迁移。
- The Cat Specialist Group has reservations regarding a plan of the China Government, with UK-based NGO "Save China's Tigers", to transfer some captive South China Tigers *Panthera tigris* to South Africa for breeding, rearing cubs and training them to take wild prey in preparation for release to the wild in China. The Group considers a programme to prepare the animals for reintroduction should be conducted in their natural habitat in China, and in accordance with IUCN Reintroduction Specialist Group guidelines; familiarity with habitat and prey could be an important factor in successful restoration. Assessment of the Tiger's prey base (mainly deer and Wild Boar *Sus scrofa*) is needed, and restoration of a substantial area of forest habitat. The small, highly inbred captive population should be managed by updating and implementing the existing master plan, rather than removing individuals.

**Lien, V.V. & Yuan D., 2003. The differences of butterfly (Lepidoptera, Papilionoidea) communities in habitats with various degrees of disturbance and altitudes in tropical forests of Vietnam. *Biodiversity and Conservation* 12, 1099-1111.**

- 调查取样自越南北部的参岛国家公园，发现低海拔地区(200-250m)的蝴蝶种类比高海拔的(950-1,000m)为多，尤以混生、开阔生境的蝶类多样性最为丰富。然而，具保育价值的物种则只出没于较少被干扰的森林内。
- Surveyed transects in Tam Dao National Park, northern Vietnam. Found higher richness and abundance at lower (200-250m) than higher (950-1,000m) altitudes, and highest diversity in mixed open habitats. But species of conservation concern were associated with less disturbed forests.

**Mo J., Brown, S., Peng S. & Kong G., 2003. Nitrogen availability in disturbed, rehabilitated and mature forests of tropical China. *Forest Ecology and Management* 175, 573-583.**

- 鼎湖山生物圈保护区的实验显示林底植物及落叶层会阻碍植物吸收与矿物质。只有林底植物及落叶层不存在时，严重退化的土地才能于五十年或更长的时间内恢复土壤里的氮。
- Experiments at Dinghushan Biosphere Reserve suggest that harvesting of the forest understorey and litter impede the uptake of mineral nitrogen. Severely degraded lands can recover their soil nitrogen availability over a period of 50 years or so, but only if understorey and litter are not harvested.

**Pearce, D., Putz, F.E. & Vanclay, J.K., 2003. Sustainable forestry in the tropics: panacea or folly? *Forest Ecology and Management* 172, 229-247.**

- 综览在热带地区进行可持续森林管理的可行性及可取之处 (如林内物种繁多，林冠内可开辟开阔的冠孔隙)。因传统木材的利润普遍较高，如要经营可持续森林管理，非要额外诱因不可。然而，上述内容却与Scientific American 273 (1997), 34的报导有所出入，该杂志指出可持续木材管理对森林的损害比传统伐木更为严重。外界寄望新设的碳交易市场及木材认证制度，令可持续森林管理更具竞争力。
- Reviews the evidence regarding the viability and desirability of sustainable forest management (which involves the harvesting of many species and creation of large gaps in the canopy) in the tropics. Finds conventional timber harvesting is generally more profitable, implying that additional incentives are required for sustainable management. But the evidence contradicts an earlier claim [Scientific American 273 (1997), 34] that sustainable timber management is more damaging to forests than conventional logging. New carbon markets and timber certification are expected to make sustainable management more competitive.

**Wang Z. & Young, S.S., 2003. Differences in bird diversity between two swidden agricultural sites in mountainous terrain, Xishuangbanna, Yunnan, China. *Biological Conservation* 110, 231-243.**

- 采用样线法比较哈尼族及基诺族的休耕地、传统经济林及天然林的鸟类状况。调查发现在勐宋哈尼族区的鸟类比基诺族多，尤其是经济林一带的区域。作者指出基诺族的森林景观大致退化，传统体系已荡然无存。一些在勐宋沿用的方法如藉吸引播种鸟推动森林再生的措施，便应予以重视及仿效。
- Uses line transects to compare the avifauna in fallow fields, traditional economic forests and natural forests in two areas, used by Hani and Jinuo minorities. The Hani region of Mengsong supported more bird species than the Jinuo region, especially in economic forest. The authors point to overall forest landscape degradation in the Jinuo area, and the breakdown of traditional systems. Some practices at Mengsong, such as attraction of seed-dispersing birds to assist forest regeneration, should be respected and emulated.

**Reid, W.V. & Mace, G.M., 2003. Taking conservation biology to new levels in environmental decision-making. *Conservation Biology* 17(4), 943-945.**

- 探讨把动植物研究纳入全球保育政策的成功要诀。千年生态系统评估项目试图把上述方法引用在生态系统与生物多样性的保育工作上，并附合拟定的准则。
- Discusses the successful translation of research into global policy. The Millennium Ecosystem Assessment (http://www.millenniumassessment.org) attempts this for ecosystems and biodiversity, and appears to meet the criteria.

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Since 2001 Kadoorie Farm and Botanic Garden has published (in English) reports on the following areas of South China, based on rapid biodiversity assessments conducted since 1998. Copies of these reports are available from the China Programme coordination office.
嘉道理农场暨植物园于2001年开始出版自1998年起在华南地区进行的快速生物多样性评审报告(英文版)，本项目备有下列各期报告。
(**NR** = 保护区 **N**ature **R**eserve; **NNR** = 国家级保护区 **N**ational **N**ature **R**eserve.)

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|---|---|---|
| 广东省 | **GUANGDONG** | |
| 广东西北部 | NW Guangdong: 南岭 | **Nanling NNR** (#29, 48pp.); |
| 广东中部 | C Guangdong: 观音山 | **Guanyinshan NR** (#30, 23); |
| 广东北部 | N Guangdong: 石门台 | **Shimentai NNR** (#31, 25pp.); |
| 广东东北部 | NE Guangdong: 车八岭 | **Chebaling NNR** (#32, 35pp.); |
| 江西省 | **JIANGXI** | |
| 江西南部 | S Jiangxi: 九连山 | **Jiulianshan NR** (#33, 23pp.) |
| 广西省 | **GUANGXI** | |
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# 投稿须知

Author Guidelines

## 《森林脉搏》投稿须知:

### 范畴

《森林脉搏》由嘉道理农场暨植物园中国项目出版，每年两期，为致力从事华南地区自然保育人士报导环保资讯，提供讨论及交流渠道，藉以启发读者。《森林脉搏》的内容题材包罗森林和生物多样性各个保育范畴，尤以改善资源管理与减少威胁为报导主题。凡从事相关保育的工作者、森林管理人员、科研人员及顾问等都欢迎投稿。

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## Author Guidelines of Living Forests:

### Scope

*Living Forests* magazine is published twice a year by the China Programme, Kadoorie Farm and Botanic Garden. It aims to inform, inspire and serve those dedicated to nature conservation in the South China region, providing a platform for discussion and information exchange. *Living Forests* publishes material on all aspects of forest and biodiversity conservation, particularly with the potential to improve management and reduce threats. We welcome submissions by forest managers, researchers, advisers and practitioners with related objectives.

### Content

1. ***Articles***
   Feature articles (1,000-1,200 words) and Short articles (500 words), with photographs, are invited on topics relevant to the magazine's focus in South China.
2. ***Letters***
   Contributions (generally <500 words) in response to material published in previous issues of the magazine.
3. ***Notices***
   Items (generally <500 words) concerning recent developments in conservation or important announcements, other than from published sources. Other items of interest include news of the availability of grants or funding opportunities, and announcements of relevant meetings, workshops and conferences.
4. ***Recent Publications***
   Brief announcements of new publications and book reviews. Authors and publishers are invited to send publications to the Editor for potential review. Reviews of recent books are also welcomed; prospective reviewers are advised to consult the Editor in advance.

### Preparation of Manuscripts

Contributions can be in English or Chinese or (preferably) both. Electronic submissions in either Word or Rich Text format are acceptable. The **cover page** should contain the title, corresponding author's full postal and email address (as applicable) and names and addresses of any additional authors. All pages should be numbered consecutively. **Tables** should be self-explanatory and each with an appropriate caption. The first time a species is mentioned, its scientific name should follow. Where necessary, the basis used for **nomenclature** of taxa should be indicated in the methodology.

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Manuscripts should be sent either by post or email to the Editor (address below). A covering letter or email note must confirm that (1) submitted manuscripts have not been published or submitted for publication elsewhere (or, in exceptional circumstances, that permission for republication has been acquired), and (2) all authors have agreed to the submission of the manuscript. If there is overlap with other publications, including any in press or in preparation, this should be stated and the papers concerned sent to the Editor. For **articles** a minimum of two (preferably colour) photos in JPEG format and captions should be attached separately with the body text. Authors may also submit one or more high quality colour slides or photos related to their submission for consideration as a photograph for the front cover.

### Review and editing

Manuscripts are subject to review by an editorial Committee; if appropriate external reviewers may be consulted. After acceptance, manuscripts may be edited to enhance clarity; such editing will not be sent to the author unless substantial changes have been made or additional information and clarification is needed.

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