森林
Living Forests
脉搏

华南生物多样性保育杂志
A magazine for biodiversity conservation in South China

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亚洲蜂猴贸易的执法短训班
Enforcement workshops for the Slow Loris trade

利益相关者为穿山甲保育出谋献策
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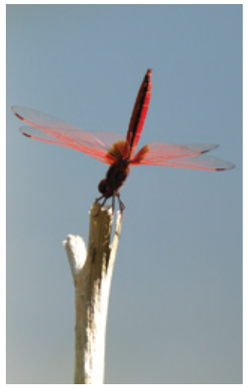
Full table, empty forest:
can the wildlife trade be controlled?



曉褐蜻 *Trithemis aurora* (Crimson Dropwing)

變色樹蜥 *Calotes versicolor* (Changeable Lizard)

关于本园

嘉道理农场暨植物园(本园)位于本港最高山脉大帽山(957米)北坡下。园内清溪汇流，翠林环抱，还有不少果园和梯田，以及各种保育及教育设施。

今天的嘉道理农场暨植物园是一间独特的公私营合作机构。在1995年1月20日，立法局通过嘉道理农场暨植物园公司条例(第1156章)，本园正式成为保育及教育中心。本园虽为公共机构，但经费是来自私营的嘉道理基金。

自1995年起，本园致力于推广香港和华南地区的保育及永续生活，并推行各类计划促进动植物保育和有机农业。

本园的使命是「致力提高大众对人与环境关系的认识，透过保育和教育，积极改善世界」。

中国项目

1998年，本园开展“华南生物多样性保育计划”，悉力保育广东、广西及海南三省幸存的天然林。我们的工作包括在华南60多个森林地区进行快速生物多样性调查，从而更透彻了解众多物种栖息的地方、这些物种如何在现今环境下存活以及它们面对的威胁。只有充分掌握这一切资料，我们才可以更妥善地保护他们赖以生存的土地。

2003年，“华南生物多样性保育计划”正式改名为“中国项目”，工作重点也从资料搜集转化为实际行动。我们从多角度审视问题，采取有效的行动保护自然森林和濒危物种，此外并教育农民有机种植的原理和方法，以及鼓励人们善用大自然慷慨赐予的宝贵资源：永续概念的精髓。

About KFBG

Kadoorie Farm and Botanic Garden (KFBG) is situated on the northern slopes of Hong Kong's highest mountain – Tai Mo Shan (957 metres). Within KFBG are streams, woodlands, orchards and vegetable terraces – together with conservation and education facilities.

KFBG, today, is a unique public-private partnership, incorporated and designated as a conservation and education centre by Ordinance (Chapter 1156) in the Legislative Council of Hong Kong on 20th January, 1995. While KFBG is a public organisation, it is privately funded by the Kadoorie Foundation.

Since 1995, KFBG has focused on promoting conservation and sustainable living in Hong Kong and South China, with programmes on flora and fauna conservation and the promotion of organic agricultural practices.

KFBG's mission statement is "We exist to increase the awareness of our relationship with the environment and bring about positive change in the world through conservation and education".

About the China Programme

In 1998, KFBG started the South China Biodiversity Conservation Programme, focusing on the remaining natural forests of Guangdong, Guangxi and Hainan. Our work included rapid biodiversity surveys of more than 60 forest areas in the region. These have given us a greater understanding of where many species live, how they are surviving in today's world, and what threatens their existence. Only with such understanding can humans take better care of the landscape on which their future depends.

By 2003, the renamed China Programme had shifted its focus from information-gathering to action. Our aim is to minimise the loss of biodiversity and encourage sustainability in China. Taking a holistic view of problems, we act to protect natural forests and endangered species. We also educate farmers about ecological principles and methods, and encourage people to use wisely the bounty of nature: the essence of sustainability.

《森林脉搏》

《森林脉搏》为中英双语刊物，内容环绕华南地区的生物多样性保育。透过不同的新闻与专题文章，推动自然保育人士作经验分享和讯息、意见的交流，尤其是区内关注森林者。

《森林脉搏》内刊登之所有文章，其内容纯属个人意见，不一定反映编委或本园立场。

About *Living Forests*

Living Forests is a magazine in English and Chinese about biodiversity conservation in South China. With news and articles, it encourages the exchange of ideas, experiences, impressions and information among nature conservationists, particularly those concerned with the region's remarkable forest heritage.

Articles in *Living Forests* represent the personal views of the authors and are not necessarily shared by the editors or by KFBG.

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《森林脉搏》已正式上线，网址为：www.kfbglivingforests.org，为节省纸张，如读者能轻易从网上读取资讯，下期起我们将改发电邮通知。印刷本只会应特别要求寄出。请以电邮及邮寄方式反馈(联系方法详见52页)。谢谢赐复。

Living Forests is now online (www.kfbglivingforests.org)! To save paper, hard copies will not be sent to readers who enjoy easy Internet access, except by special request. Please kindly send your feedback by post or email (contact details on p. 52). Thank you and happy reading!

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本期内容

华南地区的国际野生动植物贸易向来是保育界最严重的缺失之一，曾有人形容贸易的破坏力就如一个强大的真空吸尘器，吸掉亚洲森林的动物。本期我们集中探讨这个问题，一起寻找解决的办法。东亚野生物贸易研究委员会的James Compton和Chris Shepherd以正面临灭绝危机的穿山甲为例，突显打击野生动植物贸易的难度，然而随着举办研讨会与成立工作小组作出跟进工作，穿山甲的未来得以重燃希望。至于蜂猴的贸易状况亦同样获得高度关注，Angelina Navarro-Montes、Anna Nekaris和Tricia Parish的创意培训坊就得到一班亚洲执法人员的踊跃参与。非政府组织国际野生生物保护学会对打击国内野生动植物贸易亦不遗余力，该会计划建基于以往针对中国这个主消费国的传统中医药及边境贸易两方面的公众意识推广的工作经验，部署下一步的工作，张明霞代表新成立的广州办公室畅谈未来大计。本园的刘惠宁博士则分析环境教育与执法，望读者能从香港成功管制野味（木材及海洋鱼类贸易仍是大问题）贸易的经验中得到启发。

近年针对野生动植物贸易的消费者态度调查表明：我们若要令公众对保育转投赞成票，必须作出深入的讨论。跟世界上其他地方一样—最大的破坏往往源于受教育程度最高的人士。与此同时，如要让这些被食用野生物种生生不息，执法官员更应按其迫切程度，用所需资源去进行工作。

本期新闻中包括和我们息息相关的气候科学、可持续性及经济的报告内容，也少不了报导中国项目最近的工作近况。嘉道理奖学金得主蒋爱伍会为大家披露一个惊天动地的新发现，一种外表近似于鹩鹛、常在弄岗石灰岩森林的石头间活动的科学新种—弄岗穗鹛。至于珍稀物种小档案的主角是野生贸易的主要受害者—中国穿山甲以及一种来自海南的珍稀兰花。

这期的华南保育先驱与往期有点不同，何华玄教授强调要确保人工生态系统能持续地保持生产力，这亦得从天然林及其生机盎然的土壤取经。这提醒我们必须把保育与迫在眉睫的食物安全的问题整合在一起。Duncan Brown在2003年出版的书籍已提及到廉价石油衍生出来的问题，一个浪费的单向养分流（即施加化肥）已取代了土壤养分的循环流，减弱了全球的复原能力。可是，廉价石油的时代快将终结，这绝对是时候要从生态的角度重新设计我们的食物系统了。

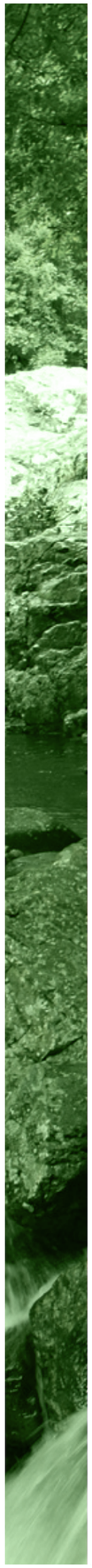
In this issue…

South China's international wildlife trade is the theme in this issue – one of the greatest failures of conservation in the region, and often likened to a gigantic vacuum-cleaner stripping Asia's forests of their animals. What can be done about it? TRAFFIC's James Compton and Chris Sheperd highlight the challenge with reference to the region's disappearing pangolins, finding hope from a major regional workshop and the working group formed to follow up on it. Similarly concerned about the trade in slow lorises, Angelina Navarro-Montes, Anna Nekaris and Tricia Parish find a receptive audience for their creative training workshops among Asia's enforcement officials. The China efforts of another NGO, the Wildlife Conservation Society, are described by Zhang Mingxia of their new Guangzhou office: they plan to build on past work on TCM and transboundary trade with awareness-raising in this "lion's den" of consumption. Michael Lau looks for inspiration to Hong Kong where some ingredients of environmental education, combined with enforcement, succeeded in bringing the trade in forest wildlife (though not yet of timber or marine fish) under control.

From recent attitude surveys, further discussion is needed on how to shift attitudes in support of conservation – as elsewhere in the world, the greatest damage is often done by the most highly "educated". At the same time, if these edible wildlife species are to outlive our own generation, enforcement officials must do their work with the urgency and resources required.

Other news in this issue includes reports on climate science, sustainability and economics with implications for all of us, and the latest from the China Programme. Elsewhere, KFBG Studentship holder Jiang Aiwu tells of the earth-shaking discovery of a new bird species, unobtrusively rock-hopping in the limestone forests of Nonggang. Meanwhile we turn the spotlight on one of the wildlife trade's major victims, the Chinese Pangolin, and one of Hainan's rare orchids.

This issue's Conservation Pioneer is a little different: He Huaxun emphasises making managed ecosystems sustainably productive, but draws lessons from natural forests and their thriving soil. It's a reminder that conservation must be integrated with meeting a looming food-security challenge. As Duncan Brown's 2003 book points out, the cheap-oil era has replaced cyclic nutrient flows with wasteful linear ones, reducing the world's resilience. But the cheap-oil era is drawing to a close – high time we re-designed our food systems along ecological lines.



《华南森林自然保护区管理手册》现已于网上发布

嘉道理农场暨植物园现已在网上推出《华南森林自然保护区管理手册》，为华南自然保护区管理者提供参考指引。本手册旨在激励保护区人员，帮助他们认识生物多样性保育工作和明确工作重点。该书内容复盖面广，包括管理目标、领导艺术与人事管理、调查与监测、解决冲突、区划与制定管理计划、生态系统与物种恢复、公众意识及参与、培训、资金筹集与机构发展等。编者希望手册能对前线保育工作者有参考价值，同时期盼得到读者的反馈，以收集思广益之效，从而使再版或增刊更能切合读者需求。

请阅：费乐思、刘惠宁、吴世捷、陈霏乐、Ramesh Boonratana及薄安哲2008。华南森林自然保护区保护管理手册，香港嘉道理农场暨植物园，136页。

英文版：www.kfbg.org/images/upload/cp_pdf/cp_pdf/Resource_book_Eng_Sept-08.pdf

中文版：www.kfbg.org/images/upload/cp_pdf/cp_pdf/Resource_book_Chi_Sept-08.pdf

为华南自然保护区出谋献策

海南自然保护区人员近月来参加了一系列的培训活动。2008年6月，海南鹦哥岭及同省其它自然保护区和本园中国项目的工作人员一同参观了贵州茂兰国家级自然保护区。参观团在茂兰了解了当地保护区人员监控非法行为以及支持当地社区发展的相关工作。鹦哥岭自然保护区的工作人员对茂兰同行的经验和教训非常认同，还特别感谢他们的开放态度，不少茂兰的工作准则已融入到了鹦哥岭保护区的工作计划中。这次考察在一场精彩的足球赛中圆满结束。

同年11月，鹦哥岭自然保护区的工作人员到香港参加了环境教育和社区工作的培训及交流，培训参与者与本园职员就如何用创新的手法向游客、当地居民和职员宣传环保意识等问题进行了交流。同时，他们还参观了香港几个环境教育中心，并就保护区的教育计划开展讨论。另一批来自东寨港、清澜港及新英等地的海南湿地保护区人员参加了世界自然（香港）基金会米埔自然保护区举办的湿地管理培训课程。

2008年度嘉道理农场暨植物园奖学金

由本园与华南农业大学及华南植物园合作举办的第十一届奖学金活动已于2008年8月在广州顺利举行，除了邀请近年的奖学金得主分享项目成果外，我们亦邀得四位嘉宾作专家报告，分别是华南农业大学的曾玲教授、华南植物园的邢福武教授和陈红锋博士，及本园的陈辈乐博士。今年共收到二十份申请书，经评审商议后，共有四位申请人获奖：

2008年度嘉道理农场暨植物园奖学金获奖名单
The list of 2008 KFBG Studentships Awardees

姓名 Name	学位 Degree	院校 Institution	研究题目 Topic
刘娜娜 Liu Nana	硕士 M.Phil.	南京师范大学 College of Life Sciences, Nanjing Normal University	《金斑喙凤蝶遗传多样性及其濒危机制分析》 Genetic diversity and extinction risk in the butterfly *Teinopalpus aureus*
龙文兴 Long Wenxing	博士 Ph.D.	中国林业科学院 Institute of Forest Ecology, Environment & Protection, Chinese Academy of Forestry	《海南岛山顶苔藓矮林植物多样性调查及评估》 Survey and assessment of the plant diversity of montane mossy dwarf forests in Hainan Island
蔡凤金 Cai Fengjin	硕士 M.Phil.	广西师范大学 College of Life Sciences, Guangxi Normal University	《克氏原螯虾对桂林地区水生动物多样性的影响》 The impact of *Procambarus clarkii* [an American crayfish] on aquatic biodiversity in Guilin
张浩森 Zhang Haomiao	博士 Ph.D.	华南农业大学 College of Natural Resources & Environment, South China Agricultural University	《广东省蜻蜓稚虫的分类研究》 Taxonomic study of dragonfly larvae in Guangdong Province

Sustaining the Pulse online

KFBG's guidelines for nature reserve managers in the South China region, "*Sustaining the Pulse*", are now available online. Intended to assist staff with motivation, understanding and prioritisation of the work of conserving biodiversity, it covers subjects from objective-setting, leadership and personnel, inventory and monitoring, addressing conflicts, zoning and planning, to enabling ecosystem and species recovery, public awareness and community engagement, training, funding and organisational growth. While we hope it will already be of value to those on the 'frontline' of conservation, we are keen to receive feedback so that future editions or supplements can meet user needs.

See: John R Fellowes, Michael WN Lau, Ng Sai Chit, Bosco PL Chan, Ramesh Boonratana and Andy Brown 2008. 'Sustaining the Pulse' – Managing for Biodiversity Conservation in South China's Forest Nature Reserves. KFBG, Hong Kong. 136 pp. www.kfbg.org/images/upload/cp_pdf/Resource_book_Eng_Sept-08.pdf in English; www.kfbg.org/images/upload/cp_pdf/Resource_book_Chi_Sept-08.pdf in Chinese.

Bringing fresh ideas to Hainan's nature reserves

Nature reserve staff from Hainan have taken part in a series of training experiences in recent months. In June 2008 a team from Yinggeling and other nature reserves joined KFBG staff in a visit to Maolan National Nature Reserve in Guizhou. There they learned about the efforts of Maolan staff to control illegal activity and support local community development. The Yinggeling team were keen to absorb the experiences, good and bad, and much appreciated the open spirit of their Maolan counterparts; some aspects of Maolan's working protocols have since been integrated into the Yinggeling work plans. The visit culminated in an enjoyable football match.

In November 2008, Yinggeling staff came to Hong Kong for a training and interflow workshop on environmental education and community work. This followed some discussions with KFBG on creative ways to promote environmental awareness among visitors, residents and staff. They visited several environmental education centres in Hong Kong, and worked on some education plans for the reserve. A second Hainan group – from the coastal nature reserves of Dongzhaigang, Qinglan'gang, Xinying and others – attended a wetland management training course run by World Wide Fund for Nature (Hong Kong) at Mai Po Marshes Nature Reserve.

Studentships 2008

The China Programme's 11th Studentships gathering was held in Guangzhou in August 2008, in collaboration with South China Agricultural University and South China Botanical Garden. Recent KFBG Studentship holders gave presentations, along with keynote speeches by Prof. Zeng Ling from SCAU, Prof. Xing Fuwu, Dr Chen Hongfeng from SCBG and KFBG's Dr Bosco Chan. Following 20 applications for this year's Studentships, four awards were made:

Hong Kong Romer's Treefrog rescue offers hope for threatened amphibians

The successful reintroduction of Romer's Treefrog *Chirixalus romeri* to the wild in Hong Kong, following rescue of an island subpopulation threatened by the construction of Chek Lap Kok airport in the 1990s,[1] offers hope for other highly threatened amphibians worldwide. Such was the conclusion at a recent conference in London on halting the disastrous declines in amphibian species, where delegates heard that the species has established itself in seven out of eight reintroduction sites.[2] The South China-endemic frog is one of just seven amphibian species in the world for which reintroduction from captive-bred population has led to self-sustaining populations in the wild.[3] The Romer's Frog project, begun in the early 1990s by KFBG China Programme head Michael Lau with funding from the (Royal) Hong Kong Jockey Club Charities Ltd., involved collaboration between various organizations including The University of Hong Kong, Melbourne Zoo, KFBG and the Agriculture, Fisheries and Conservation Dept. of Hong Kong Government.

Sources:

1 Banks CB, Lau MWN and Dudgeon D, 2008. Captive management and breeding of Romer's tree frog *Chirixalus romeri*. *International Zoo Yearbook* 42(1): 99-108.

2 http://static.zsl.org/files/amphibian-declines-symposium-abstracts-of-spoken-presentations-619.pdf

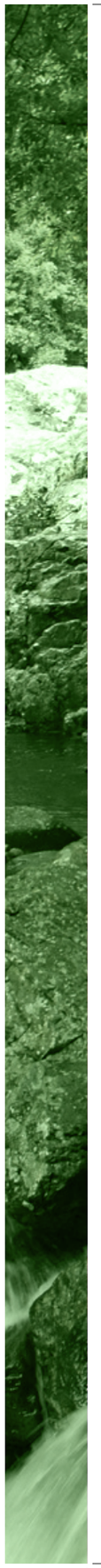
3 Griffiths RA and Pavajeau L, 2008. Captive breeding, reintroduction, and the conservation of amphibians. *Conservation Biology* 22(4): 852-861.

New orchid from Jianfengling

KFBG studentship-holder Tian Huazhen discovered a new *Anoectochilus* orchid during her fieldwork in Jianfengling, Hainan in 2006. The species, *A. hainanensis,* was described in a 2008 paper.[1]

Source:

1 Tian HZ, Li L, Hu AQ and Xing FW, 2008. *Anoectochilus hainanensis* (Orchidaceae), a new species from Hainan, China. *Annales Botanici Fennici* 45: 220-222.



香港卢氏小树蛙成功获救 濒危两栖类动物生存有望

1990年代，卢氏小树蛙种群曾因修建香港新机场而受到威胁，随后树蛙被成功放归到香港野外[1]。这个经验为全世界受威胁的两栖类动物的保育带来希望。最近，在伦敦举办的关于减缓两栖类动物种群数目急剧下降的会议上，报告指出卢氏小树蛙已在八个重引入地点中的七个建立起种群[2]。这个华南特有种是全球仅有的人工繁殖个体在重新引入野外后建立起自我维持种群的七种两栖类动物之一[3]。卢氏小树蛙项目在1990年代初期由本园中国项目主管刘惠宁博士负责，香港赛马会慈善有限公司资助，联合多个机构包括香港大学、墨尔本动物园、本园及香港渔农自然护理署共同合作开展。

资料来源：

1 Banks CB, Lau MWN and Dudgeon D, 2008. Captive management and breeding of Romer's tree frog *Chirixalus romeri*. *International Zoo Yearbook* 42(1): 99-108.

2 http://static.zsl.org/files/amphibian-declines-symposium-abstracts-of-spoken-presentations-619.pdf

3 Griffiths RA and Pavajeau L, 2008. Captive breeding, reintroduction, and the conservation of amphibians. *Conservation Biology* 22(4): 852-861.

尖峰岭录兰花新种

嘉道理农场暨植物园奖学金得主于2006年在海南尖峰岭进行野外考察时发现了一个开唇兰属（*Anoectochilus*）的兰花新种。有关这个新种海南金綫兰（*A. hainanensis*）的发现已在2008年发表。

资料来源：

1 Tian HZ, Li L, Hu AQ and Xing FW, 2008. *Anoectochilus hainanensis* (Orchidaceae), a new species from Hainan, China. *Annales Botanici Fennici* 45: 220-222.

海南动植物折页图鉴

海南保护区的护林员开始使用一套分别以海南受保护及珍稀的兽类、植物和蛇类为主题的折页图鉴。这套折页由本园中国项目和鹦哥岭自然保护区共同编制，包含130个物种的野外鉴定资料，因其简单易用而备受野外工作人员推崇，他们更希望此后能有更多类群的图鉴出版。我们也冀望这套工具能帮助工作人员更有效地记录野外观察。

长臂猿栖息地东迁

霸王岭国家级自然保护区的护林员近月来发现很难跟踪到长臂猿，两个长臂猿社群显然转移了它们的栖息地。2008年11月，保护区人员与本园中国项目的联合调查发现长臂猿长时间在较陡的白沙林段（东部）逗留，但那里的地形不利监测队开展监测。监测队伍很少涉足这片林段，虽然调查结果显示这片森林质量高，可取食树的密度高，有利长臂猿摄食，但此段也与仍然使用山中林副产品的村庄邻近，对长臂猿栖息可能存在潜在威胁，这个发现让大家喜忧参半。除此之外，调查亦传来令人振奋的消息：2009年2月16日，种群B组唯一的繁殖母猿诞下了一只婴猿，为长臂猿种群增加了一个新成员。

鹦哥岭秘闻再被披露

鹦哥岭自然保护区、中国项目及华南农业大学的工作人员一行30人于2009年1月在鹦哥岭中心区进行了四天考察，发现了不少喜人的现象：一是在2007年首次记录鹦哥岭树蛙模式标本的地点，找到了一只年幼的个体，证明此物种在该地持续繁殖；二是2005年首次在鹦哥岭发现的海南新纪录三轮叶树栎证实在保护区中心区非常常见；此外，调查队伍还发现了大量水鹿的痕迹和极少的近期猎人营地，这些都证明保护区正受到有效的保护。

2008年，鹦哥岭记录了一个希弄蝶新种—五斑希弄蝶。标本是2005年本园与海南林业厅的一次调查中由王敏和陈刘生采集。

资料来源：范骁凌，千叶秀幸，2008。中国希弄蝶属 *Hyarotis* Moore 一新种(鳞翅目：弄蝶科)。*华南农业大学学报* 29(2)： 27-29。

中国鸟类学基础研究奖励基金

本园向2008年的“中国鸟类研究奖励基金”评选活动提供了支持和赞助。中国项目的刘惠宁博士应邀担任评选，对推进鸟类学研究的人员进行嘉奖。通过与会代表对全国10多个申报项目的认真审查，共评出5个优秀获奖项目，其中广西大学周放教授的项目《中国境内的中越边境地区一种新的穗鹛物种》荣获特等奖，浙江大学李必成博士的《中国东南部海南虎斑鳽的首次繁殖观察及新的地理记录》获得二等奖，四川大学罗平钊的《中国鸟类一新记录—大长嘴地鹎》、中国科学院动物研究所何芬奇的《虎斑夜鳽的分布现状》以及东北林业大学李枫的《斑背大尾莺*sinensis*亚种的繁殖生物学》等项目获得三等奖。

Hainan's fauna and flora in pictures

Reserve wardens in Hainan's nature reserves have begun using pictorial leaflets illustrating Hainan's protected and rare species of mammal, plant and snake. These leaflets, produced jointly by KFBG's China Programme and Yinggeling Nature Reserve, have been appreciated by field staff for their user-friendly identification information on the 130 species featured, and coverage of other taxonomic groups has been requested. It is hoped the identification tool will help staff to make more informative records of sightings and activities.

Hainan Gibbon groups shift their ranges

Wardens at Bawangling NNR have found it difficult in recent months to follow the Hainan Gibbons, as the two social groups have apparently shifted their home ranges. A concerted joint effort by reserve staff and members of KFBG's China Programme in November 2008 found they were spending more time in the steep Baisha (eastern) part of the forest, where terrain is very difficult for monitoring teams. The monitoring team has rarely visited this section of the forest and the finding was a mixed blessing, as this forest is of good quality with high food tree density, but is bordered with villages that still utilise products from the mountains. On 16 February 2009 the population was boosted by another new infant, born to the single breeding female in Group B.

More of Yinggeling's hidden secrets unveiled

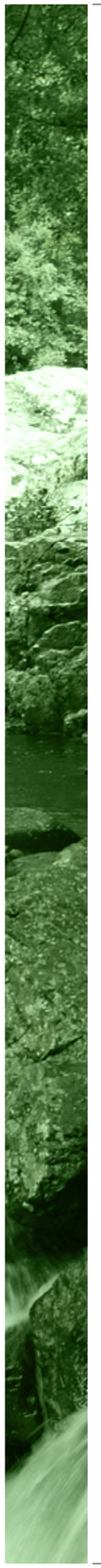
A team of over 30 members from Yinggeling Nature Reserve, KFBG's China Programme and South China Agricultural University spent four days trekking through the forest interior of Yinggeling in January, and came back with some encouraging news. A young specimen of the treefrog *Rhacophorus yinggelingensis*, first described in 2007, was found at exactly the same spot as the holotype, indicating the species continues to breed at the site. A tree, *Trigonobalanus verticillata*, first discovered in Hainan in 2005 at Yinggeling, was found to be plentiful in the central part of the reserve. Other indications of effective protection, such as abundant Sambar *Rusa unicolor* signs and lack of recent hunters' camps, were also in evidence.

In 2008 a new species of skipper (butterfly), *Hyarotis quinquepunctatus*, was described from Yinggeling, collected by Wang Min and Chen Liusheng in 2005 during a KFBG/ Hainan Forestry Department survey.

Source: Fan XL and Chiba H, 2008. A new species of the genus *Hyarotis* Moore (Lepidoptera: Hesperiidae) from China. *Journal of South China Agricultural University* 29(2): 27-29.

China Ornithological Society Awards

KFBG has provided funding and support to the China Ornithological Society's 2008 Awards. The China Programme's Dr Michael Laujoined the judging panel, rewarding advances in bird knowledge. After careful examination of more than 10 candidate projects from throughout China, five were selected. 'A new species of babbler from the Sino-Vietnamese border region of China' by Prof. Zhou Fang from Guangxi University won the special award. Dr Li Bicheng's (Zhejiang University) project 'First breeding observations and a new locality record of White-eared Night Heron Gorsachius magnificus in Southeast China' was awarded second prize. The projects 'A new record of birds in China – *Zoothera monticola*' (by Luo Pingzhao, Sichuan University), 'Geographic distribution of White-Eared Night Heron' (He Fenqi, Institute of Zoology, Chinese Academy of Sciences), and 'Reproductive biology of the *sinensis* subspecies of *Locustella pryeri*' (Li Feng, Northeast Forestry University) shared the third prize



止升回跌：把碳减排到350ppm的水平：

各国政府就温室气体排放量允许升高的幅度展开了磋商，权威气候学家的结论越来越清晰：温室气体排放量必须快速的降低，以避免无法逆转的灾难性破坏[1]。五千万年前二氧化碳的降低导致了温度下降，在二氧化碳下降到450ppm以前，地球基本上是没有冰的。如果政策不迅速改变，二氧化碳在几十年内将会再次升到450ppm。快速地把二氧化碳含量从现时的385ppm降低到350ppm以下将能避免造成全球灾难性的状况。需要的措施包括淘汰煤的使用（除非在有碳收集设施的地方），利用农业及林业作业截存二氧化碳。

两个中国才能满足国民需要

最近一项关于中国生态足印的详细研发现，2003年所得数据显示：中国人均需要1.6全球公顷（全球公顷：中等生产能力的土地或水）才能满足自身需要[1]。这个数字与可持续发展需要的每人“一个地球”的目标接近（远低于大部分西方国家），但增长颇快。中国的密集人口已经造成了巨大的生态赤字。现时需要两个中国的面积才能支持这样庞大的人口。中国对全球资源的压力现在已与美国看齐，各自需要全球21%的生物承载力[2]。

其中部分的生态足印是直接供应自然资源的土地，中国向加拿大、印尼、美国等国家输入了1.3亿个全球公顷，接近整个德国的生物承载力。然而现时大部分的生态赤字来自清除污染物的地区，包括收集中国不断增加的温室气体（根据各省的数据，预计中国的排放量在2010年将已大大超出京都议定书规定的全球减排量[3]。）新出版的报告的关注点之一是人口向城市迁移。现时城市个人生态足印要比乡村的高出2至5个全球公顷。

报告还提倡用“CIRCLE”方式减轻生态足印：

1. **C：压缩化的城市发展**
   （开发地理分布紧凑和具生态功能的城市）；
2. **I：个人行动**
   （关注生态消费模式及提高对生态足印的认识）；
3. **R：减少潜在废物流**
   （如：低效率的开采、加工及生产；不必要的包装；及储存和运输当中的消耗）
4. **C：碳减排策略**
   （包括在生产及消费过程中提高能源利用效率；用生物能源取代化石燃料以减少生态足印；碳收集和储存）；
5. **L：土地管理**
   （保护森林和草地维护生态系统服务，包括水源保护；改善土壤生产力应对1980年以来在同一输入下输出逐渐减少的状况；维持生态系统功能）；及
6. **E：提高效能以达到循环经济－减少从生物圈中攫取自然资源**
   （通过整合种植、牲畜和渔业；循环再用更多材料；发展循环联系的工业系统；鼓励支持实报实销和清洁技术的政策）。

另一项对香港的生态足印研究发现，香港人均生态足印为4.4全球公顷—远远高于中国的平均值[4]。这意味着香港需要超过自身250倍的生物承载力来维持目前的消费，超过3/4的生态足印来自“碳收集站”。香港的报告呼吁必须减少碳排放和使生态赤字恶化的活动，如过度捕鱼。

备注：

1. **全球公顷：**
   对某一年具有生物生产力的土地和水体面积进行标准化，使其具有全球平均生物生产力。
2. **生态赤字：**
   表示在指定一年中，某个地区的人口的生态足印超出该地区的生态承载力。一个国家的生态赤字量度该国生态足印超出其生物承载力的程度。
3. **生物承载力：**
   运用现有的管理方案和提取技术，生态系统生产有用的生物资源，和吸收人类制造废物的能力。
4. **碳收集和储存：**
   是指将大型发电厂产生的二氧化碳收集，并用各种办法储存以避免其进入大气层的技术。这种技术是减慢全球变暖的一种方法。

资料来源：

1 CCICED/WWF, 2008. *Report on Ecological Footprint in China*. China Council for International Cooperation on Environment and Development and WWF, China, 36 pp. www.wwfchina.org/english/downloads/China%20Footprint/chna_footprint_report_final.pdf
2 WWF – World Wide Fund for Nature, 2008. *The Living Planet Report 2008* http://www.wwfchina.org/wwfpress/publication/policyChineseLPR2008.pdf
3 Aufflhammer M and Carson RT, 2008. Forecasting the path of China's CO_2 emissions using province-level information. *Journal of Environmental Economics and Management* 55(3): 229-247.
4 WWF and Global Footprint Network, 2008. *Hong Kong Ecological Footprint Report 2008: Living Beyond Our Means*. http://www.wwf.org.hk/chi/pdf/conservation/livingplanet/2008/Ecological%20Footprint%20Chin_Final.pdf

拨款资助以扭转森林面积减少态势

2008年10月，英国政府发表了瑞典商人艾里亚希(Johan Eliasch)有关雨林保护的独立报告，分析了减少森林消失及相关气候变化所需的国际基金资助情况。现时全球每年砍伐森林导致的温室气体排放数字惊人—相当于美国或中国每年的二氧化碳排放总量。

大部分的这种温室气体由热带地区的森林砍伐造成，数字估计在每年13万平方公里（大于福建的面积）。建模估计：到2100年，每年砍伐森林造成的气候变化的代价为一万亿美金，如果无法解决森林消失的问题，是不可能稳定大气中的温室气体水平的。

The 350 ppm carbon target: what went up must come down

While governments have been negotiating over the amount by which atmospheric greenhouse-gas levels can be allowed to rise, the conclusion of top climatologists is increasingly clear: they must come down, and fast, to avoid irreversible and catastrophic damage.[1] Decreasing CO_2 drove a cooling trend that began 50 million years ago, and Earth was nearly ice-free until atmospheric CO_2 fell below about 450 ppm. Barring prompt policy changes, CO_2 will once again exceed 450 ppm within decades. Quickly returning CO_2 levels from the current 385 ppm to below 350 ppm may prevent the planet from reaching a series of calamitous tipping points. It will call for the phasing out of coal use except where CO_2 is captured, and adopting agricultural and forestry practices that sequester carbon.

Source:

1 Hansen J, Sato M, Kharecha P et al. 2008. Target atmospheric CO_2: where should humanity aim? *The Open Atmospheric Science Journal* 2: 217-231.

China needs two Chinas

A comprehensive new study of China's Ecological Footprint, based on 2003 data, shows each person in China requires 1.6 global hectares (gha: land or water of average productivity) to meet their needs.[1] This is close to the "one-planet" global per-capita target level for sustainable development (and far lower than in most Western countries), but is increasing fast. Already China's high population density means it runs a huge ecological deficit, currently requiring an area twice the size of the country to support it. China now equals the USA in terms of its pressure on the world's resources, each requiring 21% of global biological capacity (biocapacity).[2]

Some of this Ecological Footprint is the area required to directly provide natural resources. China imports resources requiring 130 million gha of biocapacity – nearly equivalent to that of the whole of Germany – from Canada, Indonesia, USA and many other countries. Much of the deficit, meanwhile, is the area needed to absorb pollutants, including the sequestration of China's burgeoning greenhouse-gas emissions. (China's emissions alone are now projected, based on provincial data, to greatly exceed all global CO_2 reductions under the Kyoto Protocol by 2010.[3]) A major concern outlined in the new report is the shift of the population toward urban areas, where individual Footprints can be 2 to 5 gha higher than in rural areas.

The report calls for strategies within a CIRCLE approach:

1. **Compact urban development**
   (with spatially compact, and ecologically functional, cities);
2. **Individual action**
   (with ecologically-sensitive consumption and Footprint-consciousness);
3. **Reducing hidden waste flows**
   (such as inefficient extraction, processing and manufacturing; unnecessary packaging; and losses during storage and transportation);
4. **Carbon reduction strategies**
   (including improved energy efficiency in production and consumption; replacing fossil fuels with biomass energy where this reduces Footprint; and carbon capture and storage);
5. **Land management**
   (maintaining forest and pasture land for ecosystem services including water conservation; improving productivity in response to the steady decline in output for a given input since 1980; and maintaining ecosystem functionality); and
6. **Efficiency increases toward a circular economy – reducing the extraction of natural capital from the biosphere**
   (by integrating planting, livestock and fisheries; recycling more materials; developing circular linked industrial systems; and encouraging policies that promote true-cost payment and that support clean technologies).

A study on Hong Kong's Ecological Footprint, using more refined methodology, finds the per capita Footprint to be 4.4 gha – much higher than average for China.[4] Hong Kong's consumption requires over 250 times its own biocapacity, and over three-quarters of this Footprint is 'carbon uptake land'. The Hong Kong report emphasises the need to reduce carbon emissions as well as activities that deepen the ecological deficit, such as overfishing.

Sources:

1 CCICED/WWF, 2008. *Report on Ecological Footprint in China*. China Council for International Cooperation on Environment and Development and WWF, China, 36 pp. www.wwfchina.org/english/downloads/China%20Footprint/chna_footprint_report_final.pdf
2 WWF – World Wide Fund for Nature, 2008. *The Living Planet Report 2008* www.footprintnetwork.org/en/index.php/GFN/page/living_planet_report/
3 Aufflhammer M and Carson RT, 2008. Forecasting the path of China's CO_2 emissions using province-level information. *Journal of Environmental Economics and Management* 55(3): 229-247.
4 WWF and Global Footprint Network, 2008. *Hong Kong Ecological Footprint Report 2008: Living Beyond Our Means*. www.footprintnetwork.org/images/uploads/Ecological_Footprint_HongKong.pdf

Finance and reversing forest loss

In October 2008 the UK Government released the independent Eliasch Review, which analyses the international financing needed to reduce forest loss and associated climate change. Current annual greenhouse gas (GHG) emissions from deforestation are huge – comparable to total annual CO_2 emissions of the USA or China. Much of this is from tropical deforestation, estimated at 130,000 km^2 per year (greater than the area of Fujian). The annual cost of climate change caused by deforestation is modelled at US$1 trillion by 2100, and stabilising GHGs in the atmosphere is highly unlikely without tackling forest loss.

The current international climate change framework cannot deliver the emissions reductions needed to give even a possibility of limiting global warming to 2°C. The Review concludes firm and urgent action is needed, particularly through the international negotiations under the Bali Action Plan towards a global climate change deal in Copenhagen. A new deal needs to halve deforestation emissions by 2020 and make the forest sector carbon-neutral by 2030. National and international policies will need to shift so that commodities come not from deforestation but from more efficient and sustainable methods.

Central to this shift will be including the forest sector in global carbon markets. Also needed are national governance reforms that incentivise sustainable production (e.g. removing tax breaks and subsidies that encourage deforestation). On the demand-side, policies are needed for the procurement of sustainably-produced products, and for increased consumer awareness.

现时国际的气候变化框架完全不可能达到将全球变暖控制在2°C以内的减排目标。此报告呼吁采取坚决及时的行动，这些行动包括：国际间根据巴厘行动纲领，为争取即将在哥本哈根举行的气候会议上能达成相关全球气候变化的协议而正在开展的磋商和谈判。新的协议旨在于2020年前把因砍伐森林造成的碳排放量减半，并于2030年前达成森林碳平衡。为实现这些目标，各国政府有必要改变国家和国际政策，使消费品不是由伐林而是由更加高效和可持续的生产方式制造出。

这个转变的核心是将森林纳入全球碳市场中，另外还需要包括能鼓励可持续生产的国家政策改革（例如：废除支持伐林的免税和补贴政策），并针对需求方制定，如：采购可持续方法制造的产品的政策，及提高消费者意识等政策。

关于如何利用“收集和销售”的碳贸易系统进行减排正进行广泛讨论，报告建议：如果这个系统设计完备，对于在森林砍伐和退化方面的碳减排（REDD）进行管理，同时加强可持续管理行为，那么，到2030年森林砍伐率将可以减少75%。这个转变加上植树造林和森林修复（ARR），能让林业达至碳平衡。

林业减税的成本跟其它行业的减缓措施相比是比较低的。从2012年开始的过渡阶段，减税将需要从碳市场及其它资源获取资助。报告预期：短期内在40个以林业为支柱的发展中国家将需要40亿美金，在五年的时间里提高自身能力以参与森林信贷方案。

资料来源：Eliasch J, 2008. *Climate Change: Financing Global Forests. The Eliasch Review*. Report to UK Government, www.occ.gov.uk/activities/eliasch.htm

气候谈判中对森林保护的一些思考

离约定达成一份正式气候变化协议的限期还有不到一年的时间了。据称，这份协议将取代京都协议书，2008年12月，《联合议国气候变化框架公约》（UNFCCC）缔约方第十四次会议在波兰西部重镇波兹南拉开帷幕，重点讨论长期合作机制以及2012年以后的行动方案，然而这次会议并未如期解决这些问题，很多内容还有待2009年12月哥本哈根会议上达成协议[1,2]。部分与会代表对制定包括中期和长期的减排目标及财政等关键议题的协议不表示乐观，担心这些协议在2009年可能无法达到。他们将这些出现的问题归咎于缺乏政治领导和决心，也有与会代表对现时的经济危机下，国家抵抗气候变化的决心并没有增强反而有所减弱的趋势表示忧虑。

《公约》下属的科技咨询委员会已计划在哥本哈根会议前召开一个专家会议，集中讨论减少伐林和森林退化的碳排放（REDD）的方法，具体包括如何将减缓气候变化与保育联为一体、可持续森林管理、森林植被改造及增加碳储存量等方面。关于减少砍伐森林和森林退化的碳排放的协商尚面临很多问题[3,4]，如：《联合国气候变化框架公约》没能区分开森林和单一林木种植[5]；没有提供实质措施减少化石燃料使用形成的地上碳储藏[4]；没有区分破坏性种植经济林木和刀耕火种对森林破坏造成的不同影响[6]；对发达国家在砍伐热带森林方面应承担的责任避而不谈[4]；没有清楚区分《公约》为社会精英和穷人带来的裨益有何不同[4]；在不可持续经济发展和人口膨胀的基本性问题上还存在认识上的巨大分歧[3]；以及无法保证碳贸易有利于森林原住民[1,4]。然而，很多专家认为这项协商的成功对于气候和森林至关重要。为了让森林利益相关者了解并比较目前已提交和未来将要提交给《联合国气候变化纲要公约》组织的关于减少伐林和森林退化的碳排放的建议书[7]，查尔斯亲王雨林保育计划和全球森林树冠项目共同编写了《*Little REDD Book*》一书。

资料来源：

1 www.iisd.ca/download/pdf/enb12395e.pdf
2 http://news.bbc.co.uk/1/hi/sci/tech/7781022.stm
3 Clement CR and Clement RC, 2008. *BioScience* 58(8): 677.
4 www.redd-monitor.org/2008/11/18/wrm-from-redd-to-hedd/
5 www.redd-monitor.org/2008/12/17/forest-definition-challenged-in-poznan/
6 www.redd-monitor.org/2008/10/19/woods-hole-research-centre-a-reliable-advisor-on-redd/
7 www.globalcanopy.org/LRB/little_redd_book_dec08.pdf

提升生态系统和生物多样性的地位

受斯特恩（*Stern*）那篇著名的对气候变化经济学评论文章的启发，G8+5国（八国集团+中印五国）环境部长于2007年在德国波茨坦同意开展一项关于生态系统和生物多样性消失的经济学研究。这项研究已有三项前期发现[1]：第一是发现贫穷与生态系统和生物多样性消失之间有着紧密联系：世界上的穷人一半的必需生计来自自然界；第二、传统上，当经济学与现在的价值比较时会把未来的价值打折扣，通常每年至少减少3-5%。但是在评价自然服务的时候，这在道义上是站不住脚的，因为它意味着我们赋予我们孙辈（50年后）的价值只有给予我们自身的七分之一；第三、生态经济学研究的各部分都应以政策订立者、管理者、企业及公民在内的最终使用者为核心，以便他们可以最终利用研究成果。

中期报告指出需要改变与扭转生物多样性降低和相关的生态服务丧失相关的政策（脆弱的生态系统服务功能包括一些对中国至关重要的内容，例如冰川融化提

There is wide discussion of a “cap and trade” trading system to encourage reduction in carbon emissions. The Review suggests deforestation rates could be reduced by up to 75% in 2030 if such a system is well designed to include reduced emissions from deforestation and degradation (REDD), plus additional action on sustainable management. This, alongside afforestation, reforestation and restoration (ARR), could make the forest sector carbon-neutral.

The cost of forest abatement is low relative to mitigation in other sectors. In the transition period from 2012, it will need finance from carbon markets and other sources. In the very short term, developing countries will need capacity-building for entry into forest credit schemes, with estimated costs, in 40 forest nations, of US$4 billion over five years.

Source: Eliasch J, 2008. *Climate Change: Financing Global Forests. The Eliasch Review*. Report to UK Government, www.occ.gov.uk/activities/eliasch.htm

Forests in the frame for climate negotiators

Less than one year remains for a vital agreement to replace the Kyoto Protocol on climate change. The United Nations Framework Convention on Climate Change (UNFCCC) meeting in Poznan, Poland, December 2008, focused on the vital process of long-term cooperation and the post-2012 period, but after the meeting much remained to be agreed by December 2009 in Copenhagen.[1,2] Some delegates were concerned that agreement on the most critical issues, including mid- and long-term emission goals and finance, may not be reached in 2009, and blamed a lack of political leadership and determination. There was concern that countries' determination to fight climate change was not strengthening, as the scientific evidence dictates, but weakening with the recent economic crisis.

The Subsidiary Body for Scientific and Technological Advice (SBSTA) did authorise an expert meeting, to take place before Copenhagen, to focus on methodological aspects of reducing emissions from deforestation and degradation (REDD). These aspects include the relation of climate-change mitigation to conservation, sustainable forest management, forest cover changes and forest carbon-stock enhancement. REDD negotiations face various concerns,[3,4] including a failure by UNFCCC to distinguish forests from monoculture plantations;[5] a failure to address the increase in the above-ground carbon pool arising from fossil fuel use;[4] a failure to discriminate between the impacts of deforestation for destructive industrial plantations and those of local swidden practices;[6] a failure to recognise the roles of developed countries in tropical deforestation;[4] a failure to distinguish between benefits to privileged few and benefits to the poor majority;[4] diversion from the fundamental problems of unsustainable economic growth and high human population;[3] and a lack of guarantees that carbon trading will help indigenous forest people.[1,4] Still, many experts consider it vital to the climate and to forests that REDD negotiations succeed. To allow forest stakeholders to understand and compare current and future proposals on REDD submitted to UNFCCC[7], a guidebook, *The Little REDD Book*, has been compiled by The Prince's Rainforests Project and Global Forest Canopy.

Sources:

1 www.iisd.ca/download/pdf/enb12395e.pdf
2 http://news.bbc.co.uk/1/hi/sci/tech/7781022.stm
3 Clement CR and Clement RC, 2008. *BioScience* 58(8): 677.
4 www.redd-monitor.org/2008/11/18/wrm-from-redd-to-hedd/5 www.redd-monitor.org/2008/12/17/forest-definition-challenged-in-poznan/
6 www.redd-monitor.org/2008/10/19/woods-hole-research-centre-a-reliable-advisor-on-redd/
7 www.globalcanopy.org/LRB/little_redd_book_dec08.pdf

Making ecosystems and biodiversity count

In Potsdam (Germany) in 2007, environment ministers of the G8+5 nations agreed to launch a study on the economics of the loss of ecosystems and biodiversity, inspired by the influential *Stern Review of the Economics of Climate Change*. Three early findings emerge.[1] First is the close linkage between poverty and the loss of ecosystems and biodiversity: the world's poor obtain livelihood flows from nature that comprise at least half of their welfare, and which they would find irreplaceable. Second, while economics conventionally 'discounts' future values in relation to those of the present, typically at 3-5% or more per year, this is ethically untenable in the case of valuing natural services, as it means giving value to our grandchildren (50 years hence) just one-seventh the consideration we accord value to ourselves. Third, every aspect of ecological economics in the study must be focused on the end-user, including policymaker, administrator, corporation and citizen, so that they will make use of the output.

An interim report shows the need for policy changes to reverse decline in biodiversity and related loss of ecosystem services. (Vulnerable ecosystem services include those critical for China, such as water supply from the melting glaciers and its dependent agriculture, and medicinal plants.) Promising policy changes include rethinking subsidies to reflect future priorities; rewarding currently unrecognised ecosystem services; making sure that costs of ecosystem damage are accounted for, by creating new markets and promoting appropriate policy instruments; sharing the benefits of conservation; and measuring the costs and benefits of ecosystem services.

Source:

1 Sukhdev P, 2008. *The Economics of Ecosystems and Biodiversity: An Interim Report*. European Communities, Cambridge, UK. http://ec.europa.eu/environment/nature/biodiversity/economics/pdf/teeb_report.pdf

Status changes: Spoon-billed Sandpiper and China's pangolin closer to extinction

For a number of South China species, global status was revised by IUCN in 2008. Spoon-billed Sandpiper *Eurynorhynchus pygmeus*, a passage migrant through South China, has declined to Critically Endangered (CR) status from Endangered (EN) previously. Factors include habitat loss in its breeding, passage and wintering grounds, compounded by disturbance, hunting and the effects of climate change.

Chinese Pangolin *Manis pentadactyla* is now EN due to heavy ongoing hunting pressure – this is a dramatic deterioration from its former Lower Risk/Near Threatened (LR/nt) status. Eld's Deer *Rucervus eldii* is now EN (formerly Vulnerable, VU) due to hunting in Indochina; the semi-captive herds in Hainan, which are increasing, are excluded from the

供的水源及相关农业，以及中草药植物）。有发展前景的政策改变包括：重新考虑补贴以反映将来的重点；犒赏现时没有认识到的生态系统服务；确保生态系统破坏的代价通过创造新的市场和鼓励合适的政策工具得到补偿；共享保育的成果；和量度生态系统服务的成本和收益。

资料来源：

1 Sukhdev P, 2008. *The Economics of Ecosystems and Biodiversity: An Interim Report*. European Communities, Cambridge, UK. http://ec.europa.eu/environment/nature/biodiversity/economics/pdf/teeb_report.pdf

现状转变：勺咀鹬和中国的穿山甲濒临灭绝

2008年世界自然保育联盟对部分华南物种的全球保育现状作出修订。一种华南过境候鸟勺咀鹬已经由原来的“濒危”跌落到“极度濒危”。威胁的因子包括繁殖、过境及越冬栖地的丧失，加上受侵扰、打猎和气候变化的影响。

穿山甲受长期沉重捕猎的压力现在已变为濒危，跟原来低危/近危相比大为恶化。由于印度支那地区的捕猎，坡鹿现时已为濒危（原为易危）；在海南半圈养的群体数目正在上升，但是并不包括在野外种群状态评估的范围内。海南的冬候鸟青头潜鸭估计由于捕猎和湿地破坏，现也为濒危（原为易危）。

由于数目在其分布范围内广泛下降（尽管在有些地方呈上升趋势），水鹿现被认为易危（原为低危/无危）。小爪水獭现为易危（原为近危），下降原因为栖地丧失和开发。舟山群岛獐原来在华南也有分布，现只在华东分布，由于盗猎和栖地破坏，已转为易危。

豹在其广泛的分布范围数目下降，现为近危（原为无危）；黑龙江豹仍为极度濒危。巨松鼠现为近危（原为低危），它受过度捕猎食用和栖地丧失的威胁。白腰勺鹬由于全球估算数量下降，现也为近危（原为低危）。

资料来源：*The IUCN Red List of Threatened Species*, www.iucnredlist.org。读取日期2008年12月

环境保育面临转型

世界自然保护联盟通过发起460人的电子讨论和一系列辩论而最终提出了“未来可持续发展”项目（2006-2008年）。 项目提出的过渡到一个和平、公正和充实的人类未来的目标，对我们来说无疑是一个巨大的挑战。报告归纳的结论是要完成这个过渡需要三个基本步骤：(1)实现“低碳经济”，通过提高技术效率，显著减少碳用量；实现能源发电与碳生产、能源使用和经济增长脱钩；(2)发起达致正义和全球公平的环境运动；(3)保护生物圈。

解决方案包括：(1)改变我们对经济增长和繁荣的看法，以较少资源成就更多；(2)推进全球环境运动，联系社团和组织，制定切实可行的办法来应付可持续发展的挑战，寻求以最少的能源和物资营造幸福生活的方式；(3)建立一个能催生变革的体制架构，将政商两界领袖、各国政府和有效的国际环境制度联合起来，协调行动。

该报告还列出了一些开展保护运动所面临的特殊挑战，如：如何将保护与更广泛的生态系统的健康和人人平等的人类福祉整合起来；如何制定更为人本的保护战略，建立把人的需要和自然相互联系的新型保护区；如何进行规划，整合生物多样性的进化和生态系统的变化。这些产出将对世界自然保护联盟的长期方向有指导作用。

资料来源：Adams WM and Jeanrenaud SJ, 2008. *Transition to Sustainability: Towards a Humane and Diverse World*. IUCN, Gland, Switzerland, 108 pp.

为倦土注入生机

2008年7月召开的国际食品与农业技术研讨会探讨了在粮食和燃料价格不断上涨的国际背景下，对可持续作物集约化种植进行投资的前景。与会者一致认为，以犁耕为基础的传统农业不适合应对在世界粮食体系中新出现的问题，因此呼吁投入大笔资金推动由犁耕广泛转为保护性农业，即对土壤干扰最小、保存有机残渣和轮作等相结合的生产方式。这种转变将减少使用机械、节约能源和减少二氧化碳排放量，增加土壤有机含量和生物活性、减少水土流失、增加作物含水量，从而抵御干旱，改善补给含水层，并降低反复无常的气候变化带来的影响。这样就可降低生产成本、保障收成从而减少农民的风险。

这次研讨会确认了与支持科技发展、扩大保护农业的规模、制定辅助政策和建立激励机制等相关的战略问题、目标和行动。与会者提议建立若干互联的试验社区，早日实现保护性农业目标。截至2007年，中国仅有1,000平方公里土地使用保护农业的生产方式进行耕种，总面积仅占全国可耕地面积的0.1%，但相关行动的推广相当迅速。

资料来源：Food & Agriculture Organization of the United Nations, 2008, www.fao.org/ag/ca/doc/proposed_framework.pdf

发挥人工林的最大效益

国际粮农组织最近出版了一本关于人工造林的新书。作者用三年的时间，从经济、社会和环境的不同角度，回顾人工造林的利弊，旨在尽量增大其裨益及减少负面影响[1]。根据书中数据，全世界现有的人工林140万平方公里，若以每年2%的速率递增，预计到2050年，全世界大部分的木材资源都会来自人工林。现时已有超过二十五万平方公里的人工林为工业生产提供原料，如常用作木材的针叶树、纸浆材的热带

assessment of wild population status. Baer's Pochard *Aythya baeri*, a winter visitor to South China, is also EN (formerly VU) probably due to hunting and wetland destruction.

Sambar *Rusa unicolor* is now considered VU (formerly Lower Risk/Least Concern, LR/lc) due to sustained declines across its range (and despite some local increases). Asian Small-clawed Otter *Aonyx cinerea* is now VU (formerly Near-threatened, NT) due to habitat loss and exploitation. Chinese Water Deer *Hydropotes inermis*, once extending to South China but now confined to the East, is VU (formerly LR/nt) due to poaching and habitat destruction.

Leopard *Panthera pardus* is now NT (formerly Least Concern, LC) as it declines across its extensive range; China's Amur Leopard *P. p. orientalis* remains Critically Endangered (CR). Black Giant Squirrel *Ratufa bicolor* is now NT (formerly LR/lc) due to over-harvesting for food and habitat loss. Eurasian Curlew *Numenius arquata* is also now NT (formerly LC) due to estimated overall global population decline.

Source: *The IUCN Red List of Threatened Species*, www.iucnredlist.org, accessed December 2008.

Conservation in transition

The IUCN *Future of Sustainability* project (2006-2008), which included a 460-person electronic discussion and subsequent debates, sets out the challenge of a transition to a peaceful, equitable, fulfilled human future. It concludes there are three essential steps: (1) decarbonise the world economy, achieving dramatic reductions in carbon use by increased technical efficiency, de-linking energy generation from carbon production, and de-linking energy use from economic growth; (2) commit the environmental movement to a path of justice and global equity; and (3) protect the biosphere.

Solutions include: (1) changing the way we think about growth and prosperity, to achieve more with less; (2) rejuvenating the global environmental movement to link communities and organisations working out practical solutions to sustainability challenges, and ways to live with more happiness and lower energy and material consumption; and (3) building an institutional architecture to bring about change, with collaborative and coherent action by political and business leaders, governments and an effective international environmental regime.

The report lists some particular challenges for the conservation movement: (1) integrating conservation with wider ecosystem health and human wellbeing – for rich and poor alike; (2) crafting conservation strategies that include people, with new kinds of protected area that link nature to human need; and (3) planning to integrate the evolution of biodiversity with changes in ecosystems. The outputs will inform the long-term direction of IUCN.

Source: Adams WM and Jeanrenaud SJ, 2008. *Transition to Sustainability: Towards a Humane and Diverse World*. IUCN, Gland, Switzerland, 108 pp.

Breathing life into tired soils

An international Food & Agriculture technical workshop in July 2008 explored investment in sustainable crop intensification, against a backdrop of rising grain and fuel prices. Workshop participants agreed that plough-based farming is ill-suited to respond to emerging problems in the food system. They called for a major investment to catalyse a widespread shift from tillage-based production systems to those based on minimal soil disturbance, organic residue retention, and crop rotations and combinations – Conservation Agriculture (CA). Such a shift will lead to savings in machinery and energy use and in carbon emissions, a rise in soil organic matter content and biotic activity, reduced erosion, increased crop water availability and thus resilience to drought, improved recharge of aquifers, and reduced impact of weather volatility associated with climate change. It will thus cut production costs, lead to more reliable harvests and reduce farmer risks.

The workshop identified strategic issues, goals and actions to support science and technology development, to underpin the scaling-up of CA, and to create supportive policies and incentives. Participants propose to establish a number of interconnected Communities of Practice that further CA objectives. Up to 2007 China had just 1000 km² of CA land - 0.1% of its arable land – but uptake is now quite rapid.

Source: Food & Agriculture Organization of the United Nations, 2008, www.fao.org/ag/ca/doc/proposed_framework.pdf

Making the best of plantations

A three-year review was intended to help maximise benefits and minimise negative impacts of “intensively managed” planted forests (IMPFs), from economic, social and environmental perspectives.[1] Plantation forests occupy 1.4 million km² worldwide, increasing at 2% per year; by 2050 they will supply most of the world's wood. More than 250,000 km² are IMPFs, for industrial wood production including timber (e.g. conifers), pulpwood (e.g. tropical acacias and eucalypts) and secondary wood production from crops for other uses (e.g. rubber, oil palm). The authors conclude that environmental benefits and costs are influenced by the degree of landscape modification, the pace of landscape changes, and the institutional and governance context. In landscapes subject to a long period of modification, such as parts of Guangxi, the focus of conservation is likely to be at the level of particular forest stands, with management activities focusing on protecting riparian zones, preventing soil erosion, and maintaining site productivity, with a contribution to landscape restoration. They argue that the need for a landscape approach, protecting areas of high conservation value, becomes progressively more important and urgent in landscapes with lower (or more recent) disturbance.

The review makes practical recommendations for governments, funding institutions, businesses and other agencies, urging that IMPF pursues models that share benefits and costs equitably. In one such recommended action, China is working on national adaptation of FAO's *Voluntary Guidelines for Responsible Management of Planted Forests*.[2]

Sources:

1 Kanowski P and Murray H, 2008. *Intensively Managed Planted Forests: Toward Best Practice. Summary and Recommendations from TFD's IMPF Initiative, June 2005 – June 2008*. The Forests Dialogue.

2 www.fao.org/docrep/009/j9256e/j9256E00.htm

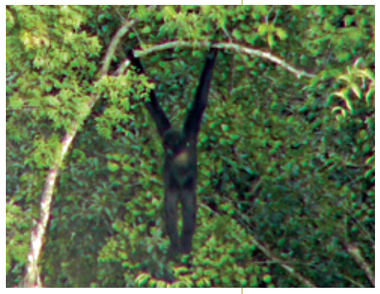
洋槐、刺槐和桉树等，橡胶和棕榈树等次级木材均可用作其它用途。作者在书的结尾部分指出环境的成本效益受景观改造程度、景观变化的快慢，以及体制和管理等诸方面的影响。在景观改造较为缓慢的地区，如广西的部分地区，保护应以林分着眼，辅以如重点保护河岸地区，防止水土流失，维护区域生产力等景观管理活动，以助景观自我恢复。他们认为对保育价值高、景观较少受人为干扰的区域，采用景观保护的方法越来越迫切。

该书对政府、资助机构、企业和其它团体提出了中肯的建议，并以中国正致力于推行联合国粮农组织促进实施的《人工林负责任管理自愿准则》为例，呼吁人工林种植需提供成本效益均衡的样板[2]。

资料来源：

1 Kanowski P and Murray H, 2008. *Intensively Managed Planted Forests: Toward Best Practice. Summary and Recommendations from TFD's IMPF Initiative, June 2005 – June 2008*. The Forests Dialogue.
2 www.fao.org/docrep/009/j9256e/j9256E00.htm

Cao Vit 黑冠长臂猿调查传喜讯



2007年9月一个由多国专家组成的联合调查队在中越边境（越南高平省和广西靖西县邦亮林区）展开对东部黑冠长臂猿（*Nomascus nasutus*）的全面调查，总共发现18个群110只个体，调查所得数据比先前估计的高出很多。此次调查共计18天，11天在越南，7天在中国境内。调查由英国动植物保护国际的科学家带队，在两国两省林业部门共同参与下进行。

资料来源：Insua-Cao P *et al*., 2008. *Oryx* 42: 481-482.

广西发现若干秋海棠新种

中国广西石灰岩地区不断发现秋海棠属侧膜组新种，有在靖西县发现的橙花侧膜秋海棠（*Begonia aurantiflora*），还有仅在广西巴马瑶族自治县发现的彭氏秋海棠（*Begonia pengii*），以及在大新县恩城乡恩城自然保护区内发现的蛛网脉秋海棠（*Begonia aurantiflora*）和该县发现的近革叶秋海棠（*B. subcoriacea*）。专家认为这些物种分布太过集中，会加大灭绝的机率。

资料来源：

1 Peng CI, Liu Y and Ku SM, 2008. *Begonia aurantiflora* (Sect.Coelocentrum, Begoniaceae), a New Species from Limestone Areas in Guangxi, China. *Botanical Studies* 49(1): 83-92.
2 Ku SM, Kono Y and Liu Y, 2008. *Begonia pengii* (Sect. Coelocentrum, Begoniaceae), a New Species from Limestone Areas in Guangxi, China. *Botanical Studies* 49(2): 167-175.
3 Peng CI, Ku SM, Kono Y *et al*., 2008. Two New Species of *Begonia* (Sect. Coelocentrum, Begoniaceae) from Limestone Areas in Guangxi, China: *B. arachnoidea* and *B. subcoriacea*. *Botanical Studies* 49: 405-418.

斑鳖育种尝试

中国最后一只人工饲养的斑鳖（*Rafetus swinhoei*）产下的100个卵中，没有一个孵化成功。其卵不是很薄就是已经破裂，这说明多年来苏州及长沙动物园主要以肉食喂饲，这种次优的人工饮食无法让它们从骨头中择取钙质。目前，饲养员开始给这只八十高龄的母鳖喂食淡水小龙虾、鱼和连骨的鸡肉，同时补充钙质和维生素，希望2009年母鳖能成功怀孕。

资料来源：Turtle Survival Alliance, October 2008, http://www.turtlesurvival.org/news/attempt-to-breed-rafetus-in-captivity-ends-in-disappointment/

中国科学家文章难获国际出版

Biological Conservation杂志的一篇编者按[1]中指出中国和印度发表的科学文章相比一些英语国家如加拿大（47%）、澳大利亚（34%）、英国（31%）和美国（30%）的刊出比例要低很多，分别只占2%和4%。该刊编辑建议上述英语国家的科学家应该协助中印两国的同行，提高他们论文出版的机会。

资料来源：

1 Primack RB and Marrs R, 2008. Bias in the review process. *Biological Conservation* 141: 2919-2920.

环境友好型酒店的经营指南

一本关于如何尽量减少生物多样性负面影响的酒店经营指南近日面世[1]。该指南是由国际自然保护联盟和法国雅高酒店集团联合推出。书中介绍了酒店采取生物多样性保护行动的原则并详解了在酒店餐厅、客房、公共场所、纪念品商店、地面、花园和旅行目的地等各个场所如何实践这些原则的步骤。该书还介绍了国际野生物贸易研究组织制定的关于可持续利用金枪鱼、鲑鱼、贝类、亚洲海产品、其它鱼类、甲壳类动物、鱼子酱、木材、药用植物和芳香植物、活体动物，以野生动物为制作原料的纪念品、园艺植物等资源以及开展各种活动和游览的指南。此外，书中亦提供了寻求区域协助的链接[2,3]，比如：世界自然基金会香港分会推出的华南水产品消费指南，对消费者和零售商很有参考价值。

资料来源：

1 *Biodiversity: My Hotel in Action. A Guide to Sustainable Use of Biological Resources*. IUCN, Gland, Switzerland, 128 pp. http://www.traffic.org/home/2008/10/2/how-to-help-your-hotel-help-nature.html
2 http://wwf.org.hk/eng/conservation/seafood/C1.htm
3 http://www.wwf.org.hk/eng/conservation/wl_trade/reef_fish/online_guide/index.php

新鸟类名录已出版

采用英文名和学名两种命名法的《世界鸟类名录》修订版在国际鸟类大会召开之际正式出版[1]。该名录的专属网站还提供了其它一些权威的命名网站的链接，供读者查阅。

资料来源：

1 http://www.worldbirdnames.org/index.html

Cao Vit Gibbon census reveals good news

A concerted survey in September 2007 of Cao Vit gibbons *Nomascus nasutus* on both sides of the Vietnam-Guangxi border, at Cao Bang and Bangliang (Jingxi County), found some 110 individuals in 18 groups, a much higher population total than previously thought. The survey, lasting 11 days in Vietnam and seven days in China, was led by Fauna and Flora International with the respective provincial Forestry Departments.

Source: Insua-Cao P *et al*., 2008. *Oryx* 42: 481-482.

New Begonias from Guangxi

New species of *Begonia* (Begoniaceae) continue to be described from limestone regions of western Guangxi. *Begonia aurantiflora* is from Xinjing Zhen, Jingxi County.[1] *Begonia pengii* is known only from Xishan, Bama County.[2] *Begonia arachnoidea* is described from Encheng Nature Reserve, Encheng Township, Daxin County, while *B. subcoriacea* is also from Daxin.[3] The narrow distributions of these species place them at high risk.

Sources:

1 Peng CI, Liu Y and Ku SM, 2008. *Begonia aurantiflora* (Sect. Coelocentrum, Begoniaceae), a New Species from Limestone Areas in Guangxi, China. *Botanical Studies* 49(1): 83-92.
2 Ku SM, Kono Y and Liu Y, 2008. *Begonia pengii* (Sect. Coelocentrum, Begoniaceae), a New Species from Limestone Areas in Guangxi, China. *Botanical Studies* 49(2): 167-175.
3 Peng CI, Ku SM, Kono Y *et al*., 2008. Two New Species of *Begonia* (Sect. Coelocentrum, Begoniaceae) from Limestone Areas in Guangxi, China: *B.arachnoidea* and *B. subcoriacea*. *Botanical Studies* 49: 405-418.

Giant Softshell breeding attempt: initial failure

None of the 100 eggs laid by China's last captive Giant Softshell Turtles, *Rafetus swinhoei*, have survived to hatch. A number of the eggs had thin or cracked eggshells, suggesting a suboptimal diet in the animals kept for many years at Suzhou and Changsha Zoos, where their meat diet lacked the calcium they would naturally obtain from bones. The >80 year-old female is now being fed whole freshwater crayfish, whole fish and chicken parts with bones, along with calcium and vitamin supplements, in the hope of better luck in 2009.

Source: Turtle Survival Alliance, October 2008, http://www.turtlesurvival.org/news/attempt-to-breed-rafetus-in-captivity-ends-in-disappointment/

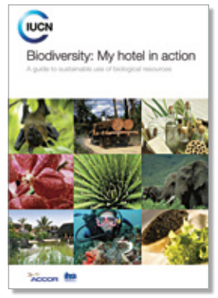
Chinese scientists struggle to publish internationally

According to an editorial in the *Biological Conservation* journal[1], acceptance rates of papers from China and India are dramatically lower (2% and 4% respectively) than those from English-speaking countries such as Canada (47%), Australia (34%), UK (31%) and USA (30%). The editors suggest scientists from the latter countries should help their colleagues from non-English speaking countries prepare their papers for publication.

Source:

1 Primack RB and Marrs R, 2008. Bias in the review process. *Biological Conservation* 141: 2919-2920.

Towards nature-friendly hotels



A guide has been produced for running hotels with minimal negative impacts on biodiversity.[1] The guide, produced by International Union for the Conservation of Nature (IUCN) and Accor Hotels, introduces principles for taking biodiversity action in a hotel, with steps for hotel restaurants, guest rooms, public spaces, souvenir shops, grounds and gardens and destinations. It also includes TRAFFIC guidelines for sustainable use of resources including tuna, salmon, molluscs, Asian seafoods, other fish, crustaceans, caviar, wood, medicinal and aromatic plants, live animals, wildlife-based souvenirs, horticultural plants and activities and excursions. It contains links to resources of regional help, such as WWF Hong Kong's guidance on South China seafoods.[2,3] Much of the information is of use to other consumers and retailers.

Sources:

1 *Biodiversity: My Hotel in Action. A Guide to Sustainable Use of Biological Resources*. IUCN, Gland, Switzerland, 128 pp. http://www.traffic.org/home/2008/10/2/how-to-help-your-hotel-help-nature.html
2 http://wwf.org.hk/eng/conservation/seafood/C1.htm
3 http://www.wwf.org.hk/eng/conservation/wl_trade/reef_fish/online_guide/index.php

New bird checklist released

An updated list of world birds, including English common names and scientific names, has been published for the International Ornithological Congress.[1] The website also contains links to some other authorities on nomenclature.

Source:

1 http://www.worldbirdnames.org/index.html

- Chan BPL, Chen XL, 2008. Species diversity and distribution of freshwater fishes at Mt. Yinggeling, Hainan Island, China. *Biodiversity Science* 16(1): 44–52
  陈霍乐、陈湘粦，2008。海南鹦哥岭地区的鱼类物种多样性与分布特点。*生物多样性* 16(1)：44 - 52

- Chan BPL, Tan XF and Tan WJ, 2008. Rediscovery of the Critically Endangered Eastern Black Crested Gibbon *Nomascus nasutus* (Hylobatidae) in China, with preliminary notes on population size, ecology and conservation status. *Asian Primates Journal* 1(1): 17-25. http://www.primate-sg.org/PDF/APJ1.1.nasutus.pdf

- Ding T, Ning SJ and Tang RQ, 2008. Preliminary study on flora of seed plants of vegetation in Mt. Yuanbaoshan, Guangxi, China. *Guihaia* 28(3): 352-358.
  丁涛、宁世江、唐润琴，2008。广公元宝山植被种子植物区系初步研究。*广西植物* 28(3)：352-358。

- Dudley N, 2008. *Guidelines for Applying Protected Area Management Categories*. IUCN, Gland, Switzerland, 86 pp.
  http://www.iucn.org/about/union/commissions/wcpa/wcpa_puball/wcpa_pubsubject/wcpa_categoriespub/index.cfm?uNewsID=1662

- Fellowes JR, Chan BPL, Zhou J *et al*., 2008. Current status of the Hainan Gibbon (*Nomascus hainanus*): progress of population monitoring and other priority actions. *Asian Primates Journal* 1(1): 2-9. http://www.primate-sg.org/PDF/APJ1.1.hainanus.pdf

- Hanson C, Ranganathan J, Iceland C and Finisdore J, 2008. *The Corporate Ecosystem Services Review: Guidelines for Identifying Business Risks and Opportunities Arising from Ecosystem Change. Version 1.0*. World Resources Institute, Meridian Institute and World Business Council for Sustainable Development. http://www.wbcsd.org/DocRoot/r7ZPRgHXUR39qTZaclQM/Corporate_Ecosystem_Services_Review.pdf

- He S and Zhang L, 2008. *Symphysodontella siamensis* (Pterobryaceae), a moss genus confirmed for China. *The Bryologist* 111(3): 501-504.
  A moss genus new to China (with a previous unconfirmed report from Yunnan) has been found in Hainan's Jianfengling Nature Reserve. *Symphysodontella* is widespread in tropical Asia, but the species *S. siamensis* was previously known only from Thailand.
  在海南尖峰岭自然保护区发现中国一苔藓新属（先前在云南有未证实的报告）。*Symphysodontella*属在热带亚洲有广泛分布，但是*S. siamensis* 这个物种过往只在泰国有记录。

- Hu HB, Liu WJ and Cao M, 2008. Impact of land use and land cover changes on ecosystem services in Menglun, Xishuangbanna, Southwest China. *Environmental Monitoring and Assessment* 146: 147-156.
  From 1988 to 2006 in Menglun Township, the cover of rubber plantation rose from 12% to 46%, forest cover dropped from 49% to 28%, and swidden fields from 13% to 0.5%. The estimated value of ecosystem services (including nutrient cycling, erosion control, climate regulation, water treatment and recreation) dropped by US$11 million (28%). Alternative livelihood opportunities, and appropriate compensation mechanisms, are needed to safeguard ecosystem services.
  1988到2006年间在勐伦县，橡胶林的复盖率由12%上升至46%，森林复盖率由49%降至28%，刀耕火种的土地由13%降到0.5%。生态系统服务的估值（包括营养循环、控制水土流失、气候调节、水源处理及休闲）减少了1100万美金（28%）。需要引入替代生计的机会和适切的补偿机制去保障生态系统服务。

- Iamsiri A, 2008. Variables affecting habitat use of Hume's Pheasant in two disturbed sites in northern Thailand. *Raffles Bulletin of Zoology* 56(2): 453-456.
  A study of Hume's Pheasant *Syrmaticus humiae* in disturbed oak-pine woodland found its distribution related mainly to ground vegetation height (generally below ~37 cm where the species occurred – presumably allowing better predator detection) and leaf-litter cover (below ~73%).
  一项在受干扰的橡树及松树林的黑颈长尾雉研究发现其分布主要与地表植被高度（该鸟出现的地方，植被一般不高于37cm－推测是为了更能发现捕食者）以及凋落层复盖率（低于73%）相关。

- IUCN/SSC, 2008. *Strategic Planning for Species Conservation: A Handbook. Version 1.0*. IUCN Species Survival Commission, Gland, Switzerland, 104 pp. http://intranet.iucn.org/webfiles/doc/SSC/SCSHandbook.pdf

- Jian MF, Liu QJ, Lu SB *et al*., 2008. Species diversity of pteridophytes in evergreen broad-leaved communities in Jiulianshan of subtropical China. *Acta Agriculturae Universitatis Jiangxiensis* 30(2): 246-251.
  Alpha-diversity of pteridophytes at Jiulianshan was highest in *Tsoongiodendron odorum* (=*Michelia odora*) plantation and *Machilus thunbergii* (=*Persea thunbergii*) forest. It was lowest in communities of *Schima superba* and *Castanopsis eyrei*, which were dominated by a small number of pteridophytes.
  九连山蕨类植物的 α 多样性指数最高的群落类型为人工观光木林和红楠林；而多样性指数较低且优势度指数较高的群落类型为木荷林和甜槠林。
  简敏菲、刘琪璟、鲁顺保，2008。九连山常绿阔叶林群落内蕨类物种的多样性分析。*江西农业大学学报* 30(2)：246-251。

- Kang WX, Guo QH, He JN *et al*., 2008. Function and value analysis of water conservation, soil reinforcement and fertility maintenance of urban forest in Guangzhou. *Scientia Silvae Sinicae* 44(1): 19-25.
  康文星、郭清和、何介南等，2008。广州城市森林涵养水源、固土保肥的功能及价值分析。*林业科学* 44(1)：19-25。

- Guangzhou City's urban forests were estimated to store 0.64 cubic kilometres of water, (a function valued at RMB 129 million), and provide 0.26 km^3 more flooding protection than unforested land (valued at RMB 52 million). Along with functions of soil-nutrient maintenance and reinforcement, and soil improvement, the economic value of the city's urban forests is estimated at RMB 832 million.
  对广州城市森林涵养水源、固土、保肥的功能及其价值进行评估，结果表明：广州城市森林生态系统每年贮水量比无林地多6.429亿立方公尺(功能估值约1.29亿)、调节径流防洪能力大2.609亿立方公尺(运算估值约5200万)。随着对土壤的保持与改良，估计广州城市森林的经济价值为8.322亿元。

- Kwok HK, 2007. Changes of a forest bird community in Hong Kong of China in 10 years. *Acta Ecologica Sinica* 27 (10): 3993-4001.
  Bird community structure in Hong Kong's Tai Po Kau Nature Reserve was studied in 1993-1995 and again in 2003-2005. All resident habitat-generalist species declined significantly in density, while two forest specialists showed a significant increase in density: one is native and the other is exotic species. The trend of changes in the forest bird community of Hong Kong is mainly related to the absence of nearby forests that could act as "source" of forest dependent species to colonize the local secondary forests, and the invasion of exotic species.
  郭汉佳，2007。香港大埔滘天然次生林鸟类群落结构变化。*生态学报* 27 (10)：3993-4001。
  分别于1993-1993年和2003-2005年观察了香港大埔滘自然保护区的鸟类群落结构。所有的泛生境留鸟种的密度均呈显着减少，两个树种的密度有显着增加，其中一种是本土种，另一种是外来种。香港树林鸟类群落的变化趋势主要受到两个因素的影响，包括缺少有树林种类鸟居住的树林和外来种的入侵。

- Lee EWS, Hau BCH and Corlett RT, 2008. Seed rain and natural regeneration in *Lophostemon confertus* plantations in Hong Kong, China. *New Forests* 35(2): 119-130.
  In three Brisbane Box plantations, the seed rain of two was comparable to unplanted grassland, and that of the third was dominated by a single shrub species, *Psychotria asiatica*. Understorey woody plants were similarly depauperate. The authors conclude enrichment planting is needed to restore forest diversity in this exotic-tree plantation.
  调查中涉及三个红胶木人工林，发现其中两个林的种子雨无异于荒草地，而后者的优势种为单一的灌木—九节木。林下的木本植物同样亦发育不全。作者总结要恢复这个外来树种的人工林的多样性必须进行抚育。

- Li XC, Wang DY and Wang LZ, 2008. The Tardigrada fauna of Hainan Island (Asia: China) with descriptions of two new species. *Raffles Bulletin of Zoology* 56(2): 293-305.

- Li XD, Qin YH, Shi MC *et al*., 2008. Vegetation characteristics of White-headed Leaf Monkey habitat. *Journal of Guangxi Agricultural and Biological Science* 27(3): 223-229.
  黎向东、覃永华、石孟春、孙晋伟、秦大公、郭亮、陈其海、潘文石，2008。白头叶猴栖息地植被特征。*广西农业生物科学* 27(3)：223-229。

- Liang XF, Chen GZ, Chen XL and Yue PQ, 2008. Threatened fishes of the world: *Tanichthys albonubes* Lin, 1932 (Cyprinidae). *Environmental Biology of Fishes* 82(2): 177-178.

- Meng K, Li SQ and Murphy RW, 2008. Biogeographical patterns of Chinese spiders (Arachnida: Araneae) based on a parsimony analysis of endemicity. *Journal of Biogeography* 35(7): 1241-1249.

- Mootnick A, Wang XM, Moisson, P *et al*.. *25 Most Endangered Primates – Conservation International*. http://www.primate-sg.org/hainanus07.htm

- Nasi R, Brown D, Wilkie D *et al*., 2008. *Conservation and Use of Wildlife-Based Resources: The Bushmeat Crisis*. Secretariat of the Convention on Biological Diversity, Montreal, and Center for International Forestry Research (CIFOR), Bogor. Technical Series no. 33, 50 pp.

- Peng YS, Zhuang XY, He YX *et al*., 2008. Study on spermatophytic flora and feeding plant resources of *Macaca mulatta* on Dan'gan Island Nature Reserve. *Journal of South China Agricultural University* 29(1): 73-78.
  彭逸生、庄雪影、何奕雄、黄久香、盘李军、柯欢，2008。担杆岛自然保护区种子植物区系及猕猴食物资源研究。*华南农业学报* 29(1)：73-78。

- A survey of two islands near Zhuhai, south Guangdong, finds 643 seed plants of which 172 are eaten by Rhesus Monkeys. Vegetation restoration is recommended using native plants.
  调查广东南部近珠海市的两个岛屿，发现643种野生植物，当中猕猴采食的有172种。建议应用乡土植物进行植被恢复。

- Ou ZY and Yang XB, 2008. Comparison on genus of seed plants between Tongguling and Wuzhishan National Nature Reserve, Hainan Island. *Guihaia* 28(3): 344-351.
  Inventories of Tongguling and Wuzhishan NNRs have revealed 984 and 2146 taxa respectively. Of these 35 (3.6%) and 284 (13%) are Hainan-endemics, representing 6.5% and 53%, respectively, of all Hainan-endemic taxa.
  欧芷阳、杨小波，2008。海南铜鼓岭与五指山种子植物属的比较研究。*广西植物* 28(3)：344-351。
  铜鼓岭及五指山国家级自然保护区分别共有984个及2146个种子植物类群。其中铜鼓岭有35个海南特有种(3.6%)，占海南特有种总数的6.53%；五指山则有284个海南特有种(13%)，占海南特有种总数的53%。

- Qin WH, Wang ZX, Wang G and Jiang MK, 2008. Investigation and analysis on alien invasive plants in three national nature reserves in Hainan Province. *Journal of Plant Resources and the Environment* 17(2): 44-49.
  A survey of exotic plant species in Tongguling, Dongzhaigang and Datian NNRs found 55 species. Seven species (*Eupatorium odoratum, E. catarium, Ageratum conyzoides, Alternanthera pungens, Datura stramonium, Passiflora foetida and Opuntia stricta*) are considered a serious biodiversity threat in the reserves, and control measures are suggested.
  秦卫华、王智、徐网谷、蒋明康，2008。海南省3个国家级自然保护区外来入侵植物的调查和分析。*植物资源与环境学报* 17(2)：44-49。
  通过野外实地调查，对海南省的铜鼓岭、东寨港和大田三个国家级自然保护区内的外来入侵植物的种类数量和分布现状进行了调查分析，记录了55个入侵种，其中飞机草、假臭草、胜红蓟、刺花莲子草、曼陀罗、龙珠果及仙人掌等7种外来入侵植物对保护区生态环境及生物多样性的危害最大，并提出了一些有效的管理措施和防治建议。

- Shi RP and Zhu RL, 2008. Notes on the taxonomy and distribution of *Telaranea semperiana* (Steph.) del ros. and *Telaranea octoloba* del. ros. (Lepidoziaceae, Marchantiophyta). *Cryptogamie Bryologie* 29(2): 127-134.

- The liverwort *Kurzia hainanensis*, previously thought endemic to Hainan, is found to be a synonym of *T. semperiana*.
  以往被认为是海南特有的苔藓植物*Kurzia hainanensis*原来只是*T. semperiana*的同物异名。

- Smith AT and Xie Y (eds), 2008. *A Guide to the Mammals of China*. Princeton University Press, 544 pp.
  This long-awaited English publication sprang from the Biodiversity Working Group of the China Council for International Cooperation on Environment and Development, which recognised the need for an illustrated synthesis of the mammalian fauna of China using up-to-date taxonomy. The work itself, building on an unpublished outline by Wang Song, was done by a team of international and Chinese scientists and especially the two editors. It covers 556 species, most of them illustrated in colour by Frederico Gemma, and details the distinctive characteristics, distribution, natural history and conservation status of each. An Introduction section covers geography and mammalian zoogeography, a history of mammalogy in China, and a section on conservation, and in each order, species accounts are preceded by anatomical keys to family, genera and species.
  由中国环境与发展国际合作委员会生物多样性工作组出版的《中国哺乳动物图鉴》英文版是保育界期待以久的一部着作。有见于中国哺乳类动物有需要采用更新的类群分类，于是促成了此图鉴的诞生。图鉴以汪松的大纲为蓝本，由一班来自国际及中国的科学家，特别是两名编辑编写而成。此书共列出中国556种哺乳动物，当中大部分物种不单请来Frederico Gemma绘制彩图，还对每一物种的形态特征、分布、生态习性、保护状况都作出了介绍。而引言部分则包括哺乳动物的地理及动物地理分布、中国哺乳动物学的历史以及保育讯息。此外每个目的物种档案都会先列出其所属的生物属、种及科的索引。

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  谭干开、黎华寿、骆世明等，2008。广东恩平市稻区越冬期不同土地利用方式下主要节肢动物多样性调查分析。*中国生态农业学报* 16(4)：938-943。

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- Thompson I and Christophersen T (eds), 2008. *Cross-Sectoral Toolkit for the Conservation and Sustainable Management of Forest Biodiversity*. Secretariat of the Convention on Biological Diversity, Technical Series no. 39, Montreal, Canada, 53 pp.

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- Wang HL, Huang LS, Miao SY *et al*., 2008. Community characteristics of *Rhododendron simiarum* in Shimentai Nature Reserve, Guangdong. Guihaia 28(1): 73-77.
  王厚麟、黄林生、缪绅裕等，2008。广东石门台保护区猴头杜鹃群落特征。*广西植物* 28(1)：73-77。

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Ecosystem services of restored forest in west-central Guangxi were quantified. The accumulated total value was estimated at over RMB 882 million. Of this direct use of timber, herbs and fruits was only 6%; high indirect-use service values include controlling soil erosion (35%), conserving biodiversity (20%) and supporting research and culture (6%).
吴孔运、蒋忠诚、邓新辉、叶晔，2008。喀斯特石山区次生林恢复后生态服务价值评估－以广西壮族自治区马山县弄拉国家药物自然保护区为例。*中国农业生态学报* 16(4)：1011-1014。
定量评价广西中西部的次生林恢复后的生态服务价值，结果表明：恢复重建后的次生林价值累计超过8.82亿元人民币，其中有关木材、香草及生果的直接利用仅占总价值的6%，间接使用价值高的有防止水土流失(35%)、生物多样性的保护(20%)及推动科研及文化(6%)。

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中国全球及国家受危植物物种的分布格局主要集中在八个地区，华南的包括：云南东南部以南、广西西南部、海南南部、连接贵州、湖南及广西的山脉，以及广东西部的山岭。

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人事变动
Personnel changes

中国项目近数个月来经历了几番人事变动。“老”臣子李国诚已于去年十月离职，他为本部效力已有十年光景，他离职之后，我们都惦记着他那辨认鸟类和其它动物的过人本领，还有那跳脱的摄影风格，他的风趣幽默更是不在话下。此外，与我们共事近两载的朱咏贤亦于十一月辞任教育及公众意识主任一职，现时是我们的短期兼职顾问，合约将于五月届满。她在深化社区参与的方面，不论是对我们或是合作伙伴，都注入了许多创新的思维，我们真渴望能从她身上学到更多呢！而她现正参与一项香港新高中通识教育科推广计划的工作。

有同事离职，即意味着有生力军加入。温柏豪在香港大学完成香港果子狸研究的硕士课程后，于去年九月加入我们的保育小队。前教育主任罗益奎亦转投到陈辈乐的旗下，是新成立的保育小队的要员之一。

教育小队的新貌亦见雏型。司徒颖宜与吴红云分别于一月及二月加入本部，司徒颖宜在香港大学攻读海洋生物硕士后到海洋公园保育基金工作，吴红云曾于世界自然基金会中国分部工作，具丰富的教育工作及传讯经验，她亦先后于香港中文大学及英国的东英吉利大学获得人类学硕士学位及环境及国际发展硕士学位，现主导教育小队的工作。无独有偶，两位都是土生土长的内地同胞，相信我们的普通话水平一定会相应提高呢！

生力军为本部带来了不少动力与新点子（可别忘了刘惠宁、乐小山、留佳宁、林芷薇与费乐思仍然留守在中国项目呢！），他们正期待与新知旧雨同心同力工作。

The China Programme team has had a number of changes in recent months. Lee Kwok Shing, a founder member of the China Programme, left us in October after ten years. The team will miss his outstanding skills in identifying birds and other animals, and his creative photography, not to mention his jokes. After nearly two years Ms Wylie Chu resigned as our Education and Public Awareness Officer in November, though she has agreed to stay on as a part-time consultant until May 2009. She has brought great creativity in in-depth community engagement to the team and our partners, and we hope to have learned something from her experience. She is now involved with a major liberal education programme in Hong Kong schools.

On the plus side, Jay Wan joined the conservation team in September, as he finished up a Masters degree on Hong Kong's civets at the University of Hong Kong. Along with Philip Lo, who has switched from education work, he forms an exciting new conservation team led by Bosco Chan.

The new education team has also taken shape, with the recruitment of Anna Situ and Wu Hongyun in January and February respectively. Anna Situ has worked at Ocean Park Conservation Foundation after completing her M.Phil at the University of Hong Kong, while Hongyun was with WWF China and has rich experience in education and communication. Hongyun also has a Masters in Anthropology in the Chinese University of Hong Kong and obtained her second Masters degree in Environment and International Development in the University of East Anglia in UK and now heads our education team. Both, too, are Mainland-born, so raise our collective Mandarin standards considerably.

The new staff bring much-appreciated passion and fresh ideas to the CP team (and in case you'd lost track, Michael Lau, Hil Padilla, Ruthie Lau, Ela Lam and John Fellowes are still around!). They look forward to working alongside our partners, old and new.

亚洲的蜂猴贸易：利用短期训练班制衡非法贸易的增长

Trade in Asian slow lorises (*Nycticebus*): using education workshops to counter an increase in illegal trade

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五個蜂猴属物种（由左至右）
The five *Nycticebus* species
From left to right:

相片提供：圣地亚哥動物園、UlrikeStreicher, K.A.I.Nekaris, K.A.I.Nekaris, Konstans Wells。
Photos: San Diego Zoo, Ulrike Streicher, K.A.I. Nekaris, K.A.I. Nekaris, Konstans Wells.

蜂猴物种的學習字卡，一套共31張，集齊五個物种的彩照。
Slow loris species flashcard *(Nycticebus pygmaeus)*. One of a set of 31 showing different photos of the five slow loris species.

砍伐与捕猎是蜂猴的致命伤。过去的研究显示虽然蜂猴属动物在亚洲国家受到法律保护，但由于该地区将其用作宠物豢养、食用及药用等方面的需求过盛，蜂猴的生存依然备受威胁。在以往的研究中，蜂猴贸易常常都是被重点报导的主题，然而因贸易记录甚少提到别物种，所以贸易数据还有很多空白。分类学家根据基因与形态学的分析，修订了蜂猴属物种的分类，现时共确认了五个物种，分别是：*Nycticebus coucang, N. menagensis, N. pygmaeus, N. javanicus*和*N. bengalensis*[1]。最近，世界自然保护联盟（又称：IUCN）红色名录已把所有蜂猴属物种的现状评级为濒危或易危，而《濒危野生动植物种国际贸易公约》最近亦把这一物种从附录II转到附录I。此外，*N. javanicus*也于2008年8月被保护国际（CI）列为全球最爲濒临灭绝的25种灵长类动物之一[2]。

很多东南亚国家对蜂猴的需求量都很高，当地人主要是以此作传统药物与宠物[3,4,5]。相传蜂猴的不同部位（包括毛发、脑、尿液以至皮肤），对不同病症均有疗效，例如，毛发能使伤口迅速复原；要是把骨头挂在身上，可以带来好运；眼睛的萃取物更具“催情作用”；要是吃掉它们的肉，据说还能医治麻疯病、哮喘和胃部不适[6,7,8]。蜂猴是野生动物市场、宠物店以至网上商店的销售对象。回顾1990-2006年进行的24项调查，发现在进行调查的13年间（1991、1992、1995及1998的资料缺失），东南亚的野生动物市场共出售了近3,000只蜂猴，每年平均销售额为228只。货源主要来自柬埔寨、印尼、越南及老挝[9]，并以雅加达、棉兰、新加坡及曼谷为中转站，最终运送到中国、台湾、日本、欧洲及沙地阿拉伯作宠物贸易[9,10,11,12,13,8]。

物种鉴别困难

由于资金和人力的不足，执法人员的物种鉴别能力很弱[14,15,13,8,16]，这个问题在非法动物贸易的执法保护中很常见。要解决这方面的问题，建议可举办物种鉴别的实务课程、培训班[13,15,8,16]。东南亚哺乳类动物数据库（SAMD）—专门为东南亚哺乳类动物而设的免费网上搜寻工具—及《濒危野生动植物种国际贸易公约》也呼吁需要为保育蜂猴开展更多教育工作。因分类状况含混造成的鉴别错误[17,13]使得从非法贸易市场中拯救出来的蜂猴大多会被错误放归到不适合的地方。单凭毛色或体型来鉴别蜂猴并不容易，譬如说越南的小蜂猴，其毛发会随季节转变[18]，这个现象多年来已误导了许多专家，因而有了中蜂猴（*N. intermedius*）这个独立种的出现。野生动物市场中非法售卖的蜂猴多数也是营养不良，体重明显过轻[19]，有些更被染成另一种颜色[20]，使鉴别更加困难。

培训班与成效评估

为了推动蜂猴的保育，牛津布鲁克斯大学曾于2008年五至七月间在三个国家举办了四次为期一天的短训班，

Slow lorises (*Nycticebus* spp.) are vulnerable to deforestation and hunting. Although legally protected, past studies have shown this genus to be in high demand for pets, meat and traditional medicine. Previous research has highlighted the trade in slow lorises; however, huge data gaps remain as the trade is rarely documented to species level. The taxonomy is being revised, with five species currently recognised based on genetic and morphological analysis:[1] *Nycticebus coucang, N. menagensis, N. pygmaeus, N. javanicus,* and *N. bengalensis*. Recently, the IUCN Red List has classified all *Nycticebus* species as Endangered or Vulnerable and the Convention on International Trade in Endangered Species (CITES) has transferred slow lorises to Appendix I. In August 2008, *N. javanicus* was placed on Conservation International's biennial list of the 25 Most Endangered Primates.[2]

In most Southeast Asian countries, *Nycticebus* species are in high demand for traditional medicines and as pets.[3,4,5] All parts of the slow loris (including hair, brain, urine and skin) are believed useful for various ailments; applying the hair is believed to accelerate healing of wounds; wearing the bones brings luck; extract from the eyes is turned into 'love potion'; and eating the flesh is thought to cure leprosy, asthma and stomach ailments.[6,7,8] Slow lorises are promoted in markets, pet shops and on the Internet. A review of 24 previous surveys (1990–2006) observing wildlife trade (including *Nycticebus* spp.) within Southeast Asia found nearly 3,000 slow loris individuals reported in 13 survey years (no data are available for 1991, 1992, 1995 or 1998), providing an average of 228 animals per year. Key sources for the trade in slow lorises include Cambodia, Indonesia, Vietnam and Laos.[9] Trade hubs include Jakarta, Medan, Singapore and Bangkok, with animals destined for China, Taiwan, Japan, Europe and Saudi Arabia as pets.[9,10,11,12,13,8]

The identification problem

A common problem in the enforcement of legislation to protect animals from illegal trade is the inability of enforcement officials to identify species due to inadequate funding and staffing levels.[14,15,13,8,16] Recommendations to address these areas include identification-training initiatives[13,15,8,16] and capacity-building work. The Southeast Asian Mammal Databank (SAMD) – a free web-based research tool for Southeast Asian mammals – and CITES call for additional education work to be undertaken on slow lorises. Lorises rescued from the trade are often released into inappropriate areas due to misidentification resulting from the confusion surrounding their taxonomic status.[17,13] It can be difficult to identify slow lorises by coat colour or body size alone. For example *N. pygmaeus* from Vietnam has been found to have a coat that can change seasonally; [18] for many years this led to the mistaken belief of a distinct species (*N. intermedius*). Lorises held illegally in animal markets are often malnourished and can be considerably underweight[19] while some are dyed,[20] adding to identification difficulties.

Training-workshops and their evaluation

To support the protection of slow lorises, four one-day awareness-raising training sessions were conducted by Oxford Brookes University for 110 enforcement officials and rescue-centre personnel in three range countries between May and July 2008. Workshops were held at Singapore Zoo, ACRES Wildlife Rescue Centre (Singapore), the Thai Forestry Department in Bangkok, Thailand, and in Bogor, Indonesia, at a workshop jointly organised with International Animal Rescue and the Wildlife Conservation Society of Indonesia. Attendees included government personnel, CITES officials, academics, zoo and rescue-centre personnel and representatives from TRAFFIC. Funding for the training was provided by Cleveland Metroparks Zoo, the International Primatological Society, Columbus Zoo and the International Primate Protection League. Topics were selected to provide officials with an introductory working knowledge of slow lorises, and to improve their ability to identify and care for slow lorises. The workshop used a range of training materials (presentations, ID leaflet, training DVD, flashcards and calendar) and techniques (lecture, small and large group discussions) to optimise learning. The effectiveness of the workshops was assessed using pre- and post-workshop questionnaires, review sheets, video exercises and behavioural observation.

Pre-workshop questionnaire responses supported previous findings that knowledge levels are low amongst enforcement officials and that training is lacking. Some 87% of respondents had difficulties in identifying species but only 32% had undergone prior species identification training. Quantitative analysis of learning during the workshops showed that significant improvements in knowledge levels were achieved across key areas including *Nycticebus* spp. knowledge, individual slow loris species identification ability and legislative knowledge. This research indicates that the learning deficit can be addressed and that one-day workshops can effect significant knowledge change.

Educational theory suggests giving consideration to specific issues when designing training for adults. These include using a range of training and assessment methods to address different learning preferences[21] as well as rewarding improvement;[22] including a practical component to reinforce learning;[23,24] and allowing participants to discuss previous experiences.[25,23] The project followed these recommendations and did find evidence of different learning preferences among the participants: each training and assessment method was rated as the most-preferred method by some participants but least-preferred

畫面擷取自鑒別蜂猴物种(*Nycticebus javanicus*)的錄象光盤。

Screengrab from training DVD on identification of slow lorises *(Nycticebus javanicus)*.

"蜂猴基本談"一環節的培訓評估表。參加者在每一節培訓課的尾聲要填寫評估表。

Training review sheet for the "introduction to slow lorises" section. Review sheets were completed by participants at the end of each training section.

以提高110位执法人员及拯救中心工作人员对蜂猴的认识。短训班在新加坡动物园、ACRES野生动物拯救中心(新加坡)、泰国曼谷的泰国林业局及印尼的博果尔举办(由国际动物拯救中心及国际野生生物保护协会印尼分会联办)。政府官员、《濒危野生动植物种国际贸易公约》人员、学术界人士、动物园及拯救中心的职工及国际野生生物贸易调查委员会的代表都有参与。这些培训课全由克利夫兰都市公园、国际灵长类动物学会、哥布动物园及国际灵长类动物保护联盟资助。培训内容的选材以向官员传授蜂猴基本知识及提高他们鉴别及护理各种蜂猴的能力为主。培训班利用多种教材(如演示文稿、鉴别手册、光盘、学习字卡、月历)及技巧(讲授课、大、小组讨论)优化学习过程。培训班结束后，组织者用课前/课后的问卷、培训评估表、视频练习和行为观察评估了培训班的成效。

课前问卷的反馈支持了过往观察所得的现象—执法人员的物种鉴别知识不足，而该方面的培训亦不足够。87%的被访者表示对鉴别物种感到困难，当中只有32%曾接受相关培训。培训期间，培训班的组织者对学习进行了量化分析，结果显示参加者/学员对蜂猴的认识、区分个别蜂猴的能力及法律常识方面都得到显着提升。这个调查说明了知识的不足是可以解决的，哪怕一天短训班也是一场重大的知识提升！

教育理论提到当为成年人设计培训班时，一定要顾及他们的具体需要，包括：利用一系列的培训及评估方法应对不同的学习偏好[21]，以及对进步要有奖赏[22]，及加进实用性活动以强化学习[23,24]，和让学员有机会分享过往汲取的经验等[25,23]。这次计划采纳了上述建议，亦因此发现与会者的确存在不同的学习偏好：每种培训及评估方式都会有人喜欢，亦有人抗拒，当中讲授课与演示文稿都被选为最理想的学习方式，反之大组讨论则最不受欢迎。根据评估结果，将来的培训班将继续沿用多种教材及培训形式。

据以往的研究所得，短期培训所学的知识很易随时间被忘掉[26]，因此往后或需要增设复修课。即使详尽知识会消退，学员对蜂猴属动物的意识、其保护现状及掌握的一些鉴别技巧也会增强。学员对培训班的反应热烈，而内容也很切合执法官员与拯救中心职工的需要。在2009年，区内将会规划更多类似的短训班。这些课程虽以传授蜂猴的知识为主，这种教育模式也适用于其它物种。

其它保育需要

物种鉴别、对一般物种的保育意识还有蜂猴的法律地位都是学员要掌握的，但这仅仅是防止野生动物贸易的其中一环而已[27]。不管从贸易调查中取得多少数据，蜂猴的野外种群数字都是一个根本性的缺口[28]，譬如说，过往十年，市场见的矮蜂猴(*N. pygmaeus*)比野外生境[20]的活体还要多。蜂猴一直是东南亚市场调查中最多见的灵长类，却因人类活动而遭到严重破坏。在市场调查发现 *Nycticebus javanicus* 和 *N.pygmaeus* 的数字亦已在锐减，显示蜂猴种群无法承受这样大量的利用。[20]作为东南亚一度被认为常见的哺乳类动物，过度的开发利用与生境消失都使蜂猴种群面临灾难性的急遽下降，若不即时采取行动，它们的前景将更坎坷。

短訓課的講學情況
A training session

by others. Lectures and presentations were chosen by most participants as their most-preferred methods, while a big group discussion was among the least popular methods. Based on this analysis, future workshops will continue to use a range of materials and teaching techniques.

Previous studies have found that the knowledge acquired in short-term training is likely to fade over time[26] so that additional refresher workshops may be needed. Even if the detailed knowledge fades, however, participant awareness of *Nycticebus*, its protected status and some of the identification techniques has been raised. The workshops were met with an enthusiastic response from participants, and indicated a real appetite for identification training among enforcement and rescue centre personnel. Additional workshops are planned elsewhere in the region for 2009. Although this training workshop was designed for slow lorises, the education model is also applicable to other species.

Other conservation needs

Although adequate knowledge on species identification, general species awareness and legislative position of slow lorises is essential, this is just one part of the jigsaw.[27] No matter how much data is collected via trade surveys, there remains a fundamental gap in wild population data for slow loris species;[28] for example, during the past decade *Nycticebus pygmaeus* has been recorded mostly from animals in trade rather than in its habitat.[20] Usually the most abundant primate in market surveys across Southeast Asia, the genus *Nycticebus* has been seriously impacted by human activities. *Nycticebus javanicus* and *N. pygmaeus* are already showing dramatic reduction of numbers in market surveys, indicators that slow loris populations are not withstanding such large-scale off-take.[20] Once considered a common mammal of Southeast Asia, slow lorises are facing a catastrophic population decline caused by over-exploitation and habitat loss. Without immediate action, the future of this genus appears bleak.

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多方利益相关者会议为加强穿山甲贸易管制指明前路

Scaling-up pangolin trade enforcement efforts – multi-stakeholder workshop points the way

James Compton and Chris Shepherd
TRAFFIC East Asia & TRAFFIC Southeast Asia

尽管穿山甲已经受到国家和国际的法律保护，它们在亚洲仍然被大量出售。穿山甲的肉、鳞片和血被广泛应用在滋补食品和中药当中。最近几次大型的抓捕行动已昭显了这个事实。2008年，搜查员两次在越南没收了近24吨来自印尼的穿山甲；在印尼，则搜出近14吨的冷藏穿山甲。

目前对亚洲穿山甲的保护是不复杂的，至少在法例条文上是如此。四个穿山甲亚洲种：菲律宾穿山甲、印度穿山甲和马来穿山甲，从印度以东到中国和东南亚，包括印尼、马来西亚和菲律宾的部分岛屿均有分布。它们在这个分布范围内都受到本身国家的保护。在国际上，四个物种都被列在濒危野生动植物物种国际贸易公约附录II，自2000年起，更设定其贸易配额为零。这意味着穿山甲的国际商业贸易受到绝对禁止。

尽管受到全面保护，穿山甲的走私数量依旧惊人。查获事件频频发生，检出的包括穿山甲的活体、尸体（常常是冷藏的、去鳞的或真空包装的）、鳞片，或者成药。所有售卖的穿山甲都是从野外捕得，由于人工繁殖很困难，商业养殖的做法并不可行。


相片提供 Photo : EW-Traffic

为了解决这个正在蔓延的危机，要制定适切的“应对方案”委实是个挑战，这是很多保育学家的愿望，但直到最近才就归纳当务之急作出正式的讨论。

2008年7月，国际野生物贸易研究委员（TRAFFIC）与新加坡野生动物保护区组织合作，召集多方利益相关者，在新加坡动物园举办了南亚及东南亚穿山甲贸易及保育研讨会。来自15个国家逾75位与会人员，包括政府官员、学者、保育人士及兽医，聚首商讨减少穿山甲非法贸易的方法，交流穿山甲行为及保育需要方面的资讯，以及如何处理充公的活体。

东盟（ASEAN）10国的政府代表以及中国（包括台湾）都各自陈述了区内非法野生动植物贸易的情况，特别是成功的经验和打击贸易时遇到的困难。其它机构对于亚洲穿山甲贸易和保育提供了专业意见，包括食性和行为方面的资讯，种群评估和贸易动态数据。

未来的研究和工作重点分为四个方面：生物学和生态学、贸易与执法、动物护理与康复及教育与宣传。会上还建议需要取得更多关于穿山甲种群状况和复康需求方面的信息，建立一个贸易监测网络和集中统一的报告系统，培训执法的能力，改良针对执法单位、儿童和媒体的教育材料。

这次会议的重要成果是与会者达成协议，成立穿山甲工作小组，负责协调后续工作和寻求更佳的协调研究、筹集资金、信息交流和支持执法工作的途径。为了避免这种已被大量售卖的物种野外种群的进一步下降，国家和国际间能否更好地协调工作至关重要。这对于目前东盟野生动物执法网络在加强打击穿山甲走私方面的工作将是很好的补充。

这次会议的记录即将于网上公布http://www.traffic.org/proceedings/，如需更多资讯，请联系国际野生物贸易研究组织东南亚办公室Chris Shepherd（电邮地址：cstsea@po.jaring.my）。


相片提供 Photo : EW-Traffic

Despite being protected by national and international laws and conventions, pangolins *Manis* spp. are still heavily traded in Asia for their meat, scales and blood, consumed largely as tonic foods and traditional medicines. This fact has been highlighted by several recent and significant seizures, including two in Viet Nam during 2008 in which nearly 24 tonnes of pangolins originating from Indonesia were confiscated, and another in Indonesia that resulted in the discovery of nearly 14 tonnes of frozen pangolin.

The current protected status for Asian pangolins is simple, at least on paper. The four Asian species *M. culionensis, M. crassicaudata, M. javanica,* and *M. pentadactyla* are protected at national level throughout their range, which extends from India eastwards to China and Southeast Asia, including some islands of Indonesia, Malaysia and the Philippines. At international level, all four species are listed in Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and since 2000, a zero quota qualification to the CITES Appendix II listing has been in place. This means that no international commercial trade should be taking place.

Yet still the smuggling continues at alarmingly high volumes. Seizures occur regularly, involving pangolins in various forms – live, dead (often frozen, descaled or vacuum sealed), quantities of scales only, or as packaged medicines. All pangolins in trade are harvested from the wild, with the difficulty of captive breeding making commercial farming operations a non-viable option.

Devising an appropriate ‘menu’ of responses to this ongoing crisis is a challenge which many conservationists have been interested to address, but until recently, there had been no forum to pool ideas on prioritizing what needs to be done.

In July 2008, TRAFFIC, the wildlife trade monitoring network, in collaboration with Wildlife Reserves Singapore, brought together multiple stakeholders for a Workshop on Trade and Conservation of Pangolins native to South and Southeast Asia, which was held at the Singapore Zoo. Over 75 participants from sectors of government, academia, conservation and veterinary science from 15 countries came together to identify ways to reduce the illegal trade of pangolins, share more information about pangolin behaviour and conservation needs, and how to deal with confiscated live animals.

Government representatives from all 10 member countries of the Association of Southeast Asian Nations (ASEAN), plus China (including Taiwan), described illegal wildlife trade in their countries, highlighting the successes and obstacles they face in combating such trade. Other institutions provided technical inputs on specific aspects related to the trade and conservation of Asian pangolins, including information on feeding habits and behaviour, available population assessments, and trade dynamics.

Top priorities for future research and action were grouped into four major sectors: biology and ecology; trade and law enforcement; husbandry and rehabilitation; and education and awareness. Recommendations coming out of the workshop focused on the need to gain further information about pangolin population status and rehabilitation requirements; develop a trade monitoring network and centralized reporting system; build law enforcement capacity; and improve educational materials for law enforcement agencies, children and the media.

A major output of the workshop was the agreement among participants to create a Pangolin Working Group that will be responsible for coordinating follow-up action and finding ways to improve the co-ordination of research, fundraising, exchanging information and supporting enforcement activities. Improving co-ordination of national and international efforts on this heavily traded group of species was determined to be of paramount importance to arrest further declines in wild populations. This directly complements the current focus within the ASEAN Wildlife Enforcement Network to increase law enforcement action against pangolin smuggling.

Proceedings of this workshop will soon be available via http://www.traffic.org/proceedings/, and for more information, please contact Chris Shepherd from TRAFFIC’s Southeast Asia team at cstsea@po.jaring.my.

国际野生生物保护学会遏止中国野生动植物贸易的初步成果

其中一種非法販賣的物種凹甲陸龜

One of the illegally-traded species *(Manouria impressa)*

Preliminary efforts by WCS to respond to the wildlife trade in China

张明霞 Zhang Mingxia
国际野生生物保护学会中国项目 Wildlife Conservation Society (WCS) China Program

中国的野生动物消费已经对全世界的生物多样性构成了严重威胁。随着经济和人口的增长，这种威胁在近年来更有加剧的趋势[1]。为了遏制这种趋势，政府和许多非政府组织(NGO)在市场调查与监测[2,3]、人们的消费理念调查、教育[4]和公众宣传等方面做出了大量的努力。自1895年成立以来，国际野生生物保护学会(WCS)就一直在全世界范围内致力于濒危物种及其栖息地的保护。在野生动物贸易越来越全球化的今天，某个区域的需求很容易影响到一个物种的命运。如果不能降低消费终端的需求，物种栖息地的保护工作需要付出更多代价甚至无法进行。为此，WCS在中国开展了针对野生动物贸易的相关保护工作，其中包括针对中医药使用濒危动植物的情况开展宣传和市场调查、在边境地区帮助政府进行能力建设，促进不同部门之间的交流、在野生动物的主要消费地点建立办公室开展公众宣传工作等方面内容。

此兩本為研討會論文集，旨在呼吁中醫药人士為濒危野生動植物資源作出貢獻。

These two proceedings were published to encourage TCM practitioners to play a role in protecting wildlife resources.

中医药资源保护相关的工作

中国有利用天然动植物进行治疗的传统，到现在为止，有记录的动物药材已超过1500种，其中包括国家一级保护动物50种，二级保护动物110种。有5,000多种植物在中国较正规地用于医疗。在被列入《中国植物红皮书》(1992)的388种濒危植物中，有77种是较为典型的中药材，占总数的约20%。为了提高中医药从业人员和公众的保护意识，使中药的发展不至于威胁到动物的野外生存状况，在美国鱼类和野生动物管理局的支持下，WCS开展了亚洲保护交流项目(ACCP)，该项目从1996年开始关注濒危野生药用动植物资源的保护。这也是国际组织在中国设立的首个减少野生动物制品消费的保护项目。自1997年以来，WCS-ACCP项目在中国十几个城市共举办了近20次“中药与濒危野生动植物保护”研讨会，旨在呼吁中医药人士为濒危野生动植物保护做出贡献。在2000和2004年，WCS将研讨会的论文收编，分别出版了《中国濒危野生药用动植物资源的保护》、《中药资源与濒危野生动植物保护》两书。会议促进了中医药专家与野生动植物保护专家之间的交流，为中药的发展和保护开辟了更有利的环境。WCS还在2003年资助第二军医大学郑汉臣教授出版了《生药资源学》一书，其中有一章节专门讲述了生药资源的保护。这是第一次将野生动植物资源保护穿插到中医药教材中，促使中医药领域的学生们在学习专业知识过程中加强野生动物保护意识。2007-2008年之间，WCS在西南地区支持了六个有关濒危药用动植物保护的小额资助项目，其中包括对成都药用市场中龟类使用情况的调查、赛加羚羊角的临床配方使用现状调查等。

在2006-2008年之间，在关键生态系统合作基金(CEPF基金)的支持下，WCS开始了“西南濒危药用动植物保护项目”。该项目通过加强西南诸省乃至全国中医药从业人员保护濒危野生动植物的保护意识，引导公众树立良好的消费习惯，不盲目使用濒危药用动植物制品。目前在该项目的帮助下，成立了四川省药用动植物保护与利用专业委员会。这个委员会由中医药专业人士组成，主要从事更新濒危药用动植物种名录，编制信息通讯，收集物种濒危信息、中医药替代品研究信息以及其它有关的信息，提供给会员和其它相关人员，促使中医药界的广大医师关注保护，逐渐养成良好的意识习惯，到现在为止，已经出版了两期会刊；对中医药人员开展濒危野生动植物药用现状及替代品研究进行小额资助并组织濒危野生药用动植物资源保护研讨会；在四川和云南的中医药大学生、普通高校和医药市场人员之间开展公众宣传

邊境守衛協力巡護，為打擊邊境地區貿易出一分力。

Border guards on patrol to keep an eye on transboundary illegal trade.

Wildlife consumption in China has been considered a major threat to global biodiversity. In recent years, growth in both the population and the economy have accelerated the depletion of wildlife populations.[1] The government and several NGOs have endeavoured to understand and slow this trend for a long time, through steps such as market surveys,[2,3] wildlife consumption awareness surveys and public awareness-raising.[4] The Wildlife Conservation Society (WCS) has focused on the protection of endangered species and their habitats since it was established in 1895. The wildlife trade in China has increasingly become a concern of WCS because the trade threatens many species in WCS project sites. It is not cost-effective, or even feasible, to protect animals in the wild unless the consumption demand decreases. To respond to the increasing wildlife trade in China, WCS began to conduct many trade-related activities. These included market monitoring and public-awareness raising for Traditional Chinese Medicine (TCM), capacity-building in transboundary areas, and public-awareness raising in the main consumption sites of wildlife.

Protecting TCM resources

China has a long history of including wildlife in medicine. More than 1,500 animal species have been recorded as TCM, among which 50 are Class I state-protected species and 110 Class II. About 5,000 plant species have been involved in TCM. The *China Plant Red Data Book* (1993) contained 388 threatened plant species. Of these 77 species (20%) are commonly used in TCM. To increase conservation awareness among TCM practitioners and the public, and to maintain sustainable development of TCM, WCS conducted the Asia Conservation Communication Program (ACCP) under the support of the United States National Fish and Wildlife Foundation (NFWF). Starting in 1996, it was the first protection programme conducted by an international organization located in China aimed at reducing peoples' consumption of wildlife in TCM. Since 1997, the WCS-ACCP Program has conducted 20 symposia in over ten cities, aimed at appealing to TCM practitioners to play a role in protecting these resources. Based on the papers in these symposia, WCS published *Resources of Chinese Materia Medica and Conservation of Endangered Wild Animals and Plants* in 2000 and 2004 respectively. The meetings have boosted communication between TCM experts and wildlife conservationists, and explored a better environment for TCM development. WCS also supported Professor Zheng Hanchen of the Second Military Medical University to publish a *Study of Natural Medicinal Herb Resources* in 2003. In the book is a chapter describing protection of medicinal resources. This was the first time wildlife protection was included in TCM teaching materials. This can promote conservation awareness among TCM students. During 2007-2008, WCS supported six small-grant projects in southwest China. Most of these focused on wildlife used in TCM, such as a turtle market survey in Chengdu and a survey of Saiga (*Saiga tatarica*) horn clinical prescriptions.

During 2006-2008, WCS implemented the project “Protecting Southwest China's Wildlife Used in TCM” under the support of the Critical Ecosystem Partnership Fund (CEPF). In the project, we promoted conservation awareness among the public in southwest China through conservation actions spread by TCM practitioners. The main achievements of the project include: (1) setting up a Sichuan professional committee for wildlife TCM conservation and usage. All the committee members are experts in TCM, and they take charge of updating the endangered TCM wildlife list. (2) Printing a TCM protection newsletter. The Sichuan committee has published two issues of the newsletter (http://www.baohu.org/read.php?tid=7781) up to now. (3) Compiling information on endangered wildlife. (4) Supporting research on substitutes for TCM. (5) Running public awareness campaigns among TCM college students in Sichuan and Yunnan province, including the distribution of wildlife protection pledges and signs.

Besides conservation awareness campaigns, WCS also conducted a survey about Saiga horn in the TCM markets. This survey was conducted from February 2006 to February 2007. Surveys were conducted in 14 provinces, and covered a total of 262 shops in all 12 of the best known TCM wholesale markets, 195 TCM retail pharmacies in six large cities, and 10 border ports. For each retail and wholesale market investigated,

在市中心舉行大型宣傳活動來引起公眾對保育的關注

Campaigns are held in the city centre to draw public attention

活动；宣传的形式包括发放保护濒危动植物的倡议书、展出展板等。

除了在专业人员与普通消费者之间进行宣传以推进保护意识之外，WCS也在中药市场开展调查。在2006年2月到2007年2月之间，WCS在中国的14个省份开展了赛加羚羊角贸易情况的调查，调查复盖了12个大型批发市场的262间商店、六个大城市的195个零售商店和10个边境口岸。在调查过程中，调查人员向店主咨询以下信息：1)药品形式；2)价格；3)可以确认的产地；4)数量；5)消费者类型和他们的籍贯。在调查过程中共发现3,000多只赛加羚羊角，价格从每公斤500美元到2,500美元不等[5]。WCS的工作人员针对调查结果提出了保护和管理建议，并把调查报告提供给国家林业局的管理部门，以帮助他们制订有效的管理措施。

边境地区野生生物贸易控制相关的工作

中国的国境线超过21,000公里，与15个国家接壤，这使得许多野生动物可能通过东南亚、帕米尔高原等地走私进入国内。同时，许多中国特有的野生动物，例如东北虎(*Panthera tigris altaica*)、远东豹(*Panthera pardus orientalis*)、亚洲象(*Elephas maximus*)、马可波罗羊(*Ovis ammon polii*)等都分布在边境地区。控制这些区域的非法狩猎和贸易是保护的一个重要环节。2005年到2006年间，WCS在内蒙古开展了中蒙边境地区的动物毛皮销售情况调查。同时，为了在中国的边境地区帮助执法人员进行能力建设从而加强执法力度，WCS在美国布莱蒙基金(Blue Moon)的支持下，从2008年开始为在边境地区从事野生生物保护工作的集体和个人设立了“中国边境野生生物卫士”奖。除了用于野外巡护的奖品之外，获奖的个人和集体可以得到全国范围的表彰和为期大概一个星期的执法能力培训。WCS同时为他们提供到周边国家参观交流的机会。通过网络投票、专家评审两个步骤，2009年共评出三个个人、两个集体获得卫士奖，同时有20个个人/集体获得提名奖。获奖的人员中包括吉林、新疆、内蒙、云南等地的保护区、林业局、边防部队和海关的工作人员。“中国边境野生生物卫士”奖会作为WCS的一个固定项目长期开展，以便推进政府在关键的野生动物贸易区域加强执法力度。

贸易状况评估和公众宣传教育活动

为了全面的了解贸易状况以便更加系统的开展工作，在2006-2008年之间，WCS对中国的野生动物贸易做了一个系统的评估。评估的内容包括野生动物保护法和行政单位的构架，野生动物的贸易规模和路线，贸易的消费人群，现今的商业养殖状况及公共健康问题等[1]。通过对以往资料的整理，现今国内的野生动物消费地主要集中在东部经济发达的区域[4]，这些区域内公众意识的转变无疑可以大量降低野生动物的消费规模。在2008年3月，WCS与广东省科学院辖下的华南濒危动物研究所签约，建立办公室。公众意识提升和宣传是广州办公室的一个重要任务。根据以往的调查结果，经常消费野生动物的人群往往认为人类利用野生动物天经地义，而且过多的野生动物会对人类造成威胁[6]。转变他们的观念并非易事，只有他们对野生动物产生发自内心的喜爱或者保护愿望时，消费才会终止。为了扭转人们对野生动物的态度，我们通过举办讲座，进行大型宣传活动等方式来进行保护宣传教育。例如，在最近的两次广场活动中，我们邀请过往的群众加入我们的动物游戏，通过这些游戏来传递保护信息。同时，我们也邀请一些著名的科学家开展关于保护生物学的讲座。我们计划邀请并鼓励来自不同领域的专家和大众参与讨论。在不久的将来，我们也将开始推行一些激发人们关注大自然的活动(例如：观鸟)。

政府相关部门对非法野生动物贸易的打击是控制贸易的最主要手段。然而，许多非法贸易物种的辨认对于非专业的执法人员很困难。另一方面，许多消费者由于不知情而购买一些违法的动物或者动物制品。针对这种情况，WCS设计了一份介绍部分非法贸易物种的折页，并在广东省林业局、自然保护区和公众之间发放。这样可以帮助执法人员快速识别相关物种，同时也可以吸引公众参与市场监督。根据执法人员的反馈信息，我们可能会陆续设计一些其它宣传折页或图鉴并推广。

携手共进

贸易已经使许多动物的野外种群面临灭绝的危机，拯救它们的需求迫在眉睫。只有在对捕猎、运输、贩卖各个环节都进行打击时，贸易才能得到控制。除了政府相关部门对非法贸易的直接打击，我们也期望通过NGO的工作，促进社会各界参与到打击野生动物贸易的行动中来。只有当地政府、社会各界之间紧密合作，才可能拯救那些濒临灭绝的物种。

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whenever Saiga horn was encountered, the following information was collected by interviewing shopkeepers: (1) the form in which it was available; (2) its price; (3) its origin, if this could be ascertained; (4) the quantity for sale; (5) the type of customers and where they came from. Over 3,000 Saiga horns were seen in the survey, the price ranging from US$500 to $2,500/kg[5]. From the findings, WCS put forward suggestions about conservation of Saiga and submitted the report to the Protection Branch in the State Forestry Administration, to help them take effective management.

Anti-transboundary illegal trade

China has a long border of over 21,000 km adjoining 15 counties, leading to much smuggling of wildlife across the border from southeast Asia and the Pamir mountains. The border region of China also encompasses a unique range of ecological zones and ecosystems. These include the habitat of Amur Tiger (*Panthera tigris altaica*), Amur Leopard (*Panthera pardus orientalis*), Asian Elephant (*Elephas maximus*), Marco Polo Sheep (*Ovis ammon polii*) and many more. The control of illegal hunting and trade in these areas is a critical step in wildlife protection. WCS conducted a survey in the major fur markets of Inner Mongolia during 2005-2006. In 2008, WCS launched the China Transboundary Wildlife Conservation Award programme under the Bluemoon Fund of U.S.A. Individuals/groups who assist with wildlife protection are encouraged to apply for this award. The winners will receive their awards in public ceremonies and will then partake in a study tour to relevant wildlife enforcement programmes in other parts of Asia; they will also attend a training course in China. In 2009, three individuals and two groups won this award, and an additional 20 individuals/groups were nominated. The winners and nominees included members of nature reserve staff, forestry staff, the military and customs. The China Transboundary Wildlife Conservation Awards will become a long-lasting programme of WCS to strengthen transboundary conservation.

Trade review and public awareness raising

During 2006-2008, WCS conducted a systematic trade review on the illegal wildlife trade in China. This review included the laws relevant to wildlife; the management system in China; the trade scale, routes, main markets and consumers; wildlife farming and public health issues[1]. According to previous research, the main consumption sites of wildlife are rich cities in eastern China[4], so changing people's perceptions in these places could notably reduce the consumption of wildlife. In March 2008, WCS set up a new branch in Guangzhou. The primary objective of this branch is to raise public awareness and spread conservation knowledge about traded species. According to past research, some consumers regard wildlife consumption as their inherent right. What is more, they think animals are a threat to human beings.[5] Wildlife consumption cannot be stopped until most people are willing to protect wildlife, or really appreciate animals. To raise public awareness, we have held campaigns in the city centre to draw public attention. For example, we set up a game booth in a shopping mall and invited passers-by to join in and have some fun. In addition, we have invited famous biologists to give presentations about wildlife protection. In future, we will develop projects about exploring nature through, for example, bird watching. Furthermore, we expect to involve different experts and the public in a symposium on biodiversity conservation.

The most effective way to control the illegal trade is enforcement by government agencies. But the staff on the ground are often handicapped during enforcement by the difficult diagnostic features of all the illegally-traded species. On the other hand, many people buy illegal animals or their products through lack of conservation knowledge. WCS is designing a user-friendly leaflet about illegal wildlife and their products, and will distribute it to the forestry bureaus, nature reserve staff and the public in Guangdong. This leaflet will help the enforcement agencies' staff in species identification; it will also involve people in market monitoring. We're planning to design more detailed brochures after the response from the forestry bureau staff is collected.

Working together

Many wildlife populations are on the brink of extinction due to the illegal trade. It is an urgent task to save them. But the trade cannot be controlled unless every step (hunting, transportation and marketing) is addressed. Besides enforcement by government agencies, we expect to involve the public in the campaign against the illegal wildlife trade. Populations of endangered wildlife can be saved only if long-term partnership between government, NGOs, scientists and the public is built.

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浅谈香港处理野生生物贸易的经验

Tackling the wild animal trade – the Hong Kong experience

刘惠宁 嘉道理农场暨植物园中国项目
Michael Lau China Programme, Kadoorie Farm and Botanic Garden

七十年代初期，野生动物在香港是公开销售的，市场里尽是一笼笼叠在一起的兽类及猛禽，而宰蛇通常都是在人群围观下当众进行的。这些情景跟九十年代末二十一世纪初在广州及深圳的野生动物市场不无两样。根据一份当时的野生动物贸易详细报告[1]，在香港每年有超过10,000只兽类(大部分是豹猫、果子狸及穿山甲)及10,000只猛禽及猫头鹰出售，但这已成历史，现今已没有专门售卖野味的市场或商店，在市区只有少数蛇店，而在市场亦只看到少量的野生淡水龟及野鸟(如各种鹭鸟)，这个转变是怎样形成的？

七十年代初，香港的一些自然学家及环保人士对庞大的野生动物贸易及它们所受的虐待非常关注，他们不但编写文章、报告，还在英国广播公司的电台节目中谈论这个事情，引起广泛的公众关注。这对香港政府造成一定的压力，使之加强执行控制野生动物贸易及防止虐畜的法例。香港政府亦于1976年根据濒危野生动植物种国际贸易公约(CITES)订立动植物(濒危物种保护)条例，法例的收紧及执法的加强大大改善了野味市场的监管：受保护物种大多不再出现、贸易量明显下降，野生动物售卖的状况也改善不少。根据九十年代初在香港及华南进行的野生动物贸易调查[2]，广州及深圳的野味市场售卖的物种及涉及的数量都远比香港多。

有趣的是，香港人对野生物的态度亦有所转变，1996年的调查(33%)发现，食用野味的人士较1989年(70%)及1993年(48%)时为少[3]。在1996年的同一个调查里，年长的人较年轻人更有可能吃过野味，而年纪轻的及受教育程度较高的亦会更关注濒危生物的保护[3]，这些结果显示香港较年轻的一辈不将野生动物视为可食用的资源，而是值得珍视的瑰宝。

我觉得这转变是基于两大原因，第一为有效执法，除了处罚的直接阻吓作用，通过执法将野生动物排除于食用市场会消灭市民将它们视作食物的观念，亦不会将它们当作一些可任意粗暴对待的次等生物。第二，在八十年代及九十年代大量的课程内外的环境教育和意识推广工作已经将野生动物的正面形象灌输到年轻人心中，而这些年轻人是没有想过或经历过食用野生动物的。但对于老一辈曾食用野味的人，观念是难改变的。如要有效管制野生动物贸易及让物种保护得到支持，破除负面的形象(执法的结果)以及建立一个正面的观念(通过有效的环境教育)两者都缺一不可。

在大陆进行的一些调查却发现受教育程度较高的人吃野味比较多[4,5]，这跟香港的研究结果[3]不同。其中一个原因是受教育程度高的人一般收入更多，能负担较昂贵的野味；亦很可能反映出在中国大陆的环境教育仍有不足，或被负面的媒体报道(如推广野味菜肴)和日常经验(在市场看到野生动物售卖及屠宰)所冲淡。

然而，要解决广义上的野生动植物贸易问题，香港才刚起步。香港的生态足印远远超过全球的平均水平，同时也进口非常大量的林产品和海鱼[6]。这些产品在很多人看来是必需品，不可能全面禁止这些产品的贸易。但是如果我们这一代不采取行动保育这些资源，我们的后代将无法继续享用这些“必需品”。尽管近来人们经常讨论可持续发展议题，如何达到真正的可持续之道仍然是一个最大的挑战。

During the early 1970s, wild animals were openly for sale in Hong Kong. A visit to the market would reveal cages of wild mammals and raptors stacked high, and snakes slaughtered in front of a big crowd. These scenes were not very different from those in wildlife markets in South China in the 1990s and early 2000s. According to a comprehensive report on the wild animal trade in Hong Kong at the time,[1] over 10,000 mammals - mostly Leopard Cats, Masked Palm Civets and Pangolins - and over 10,000 raptors and owls were traded every year. However, this situation now belongs to history. Today there are no markets or shops specializing in wild animals in Hong Kong; one will find only the odd snake shop scattered around the city, and small numbers of turtles and wild birds, such as herons and egrets, for sale in the food markets. How did this reduction happen?

During the early 1970s a number of naturalists and conservationists were very concerned about the scale of the wild animal trade and the cruelty therein. They wrote reports and articles, and even appeared in radio documentaries in UK, raising public awareness on the issue. These created pressure on the Hong Kong Government, which then stepped up enforcement of the legislation that controls the wildlife trade and cruelty prevention. Moreover, the Animals and Plants (Protection of Endangered Species) Ordinance was introduced in 1976 and was based on the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). The tightening of legislation and enforcement resulted in much improvement in the food markets, so that protected species largely disappeared, the volume of trade was reduced and the condition of the animals improved. In a study on the wildlife trade in Hong Kong and neighbouring South China in the early 1990s,[2] a stark contrast was observed: a lot more species, and in much greater abundance, in the wildlife food markets in Guangzhou and Shenzhen than in Hong Kong.

Interestingly, the attitude of the Hong Kong people towards wildlife had also changed. A lower percentage of Hong Kong people had consumed exotic animals in a survey in 1996 (33%) than in 1989 (70%) or in 1993 (48%).[3] In the same survey, older people were found to be more likely than younger people to have eaten wildlife, and the younger generation and people with better education were more concerned about conserving endangered species.[3] These results indicated that younger people in Hong Kong tended not to see wild animals as something to be consumed, but to be treasured.

I think this has been achieved by two main factors. First was effective enforcement. Besides the direct effect of legal penalties, the removal of wild animals from the food market reduced people's perception of them as food, and as lower beings of which mistreatment was acceptable. Second, the growth in both formal and informal environmental education and awareness during the 1980s and 1990s must have instilled a positive image for wildlife among young people, who had no past perception or experience of treating wild animals as food. However, for the older generations who were used to consuming wildlife, attitudes were difficult to change. Both removal of the negative image (a result of enforcement) and projection of the positive image (i.e. through effective environmental education) seem essential if we want to tackle the wildlife trade and garner support for species conservation.

It is interesting to note that some attitude surveys in Mainland China have indicated that more 'educated' people eat more wildlife,[4,5] a result quite different from the Hong Kong study.[3] One reason is that more educated people tend to have higher income and hence can afford the relatively expensive wildlife. It probably also reflects that effective conservation education is inadequate in mainland China, and/or it is compromised by conflicting influences, like media promotion of wildlife cuisine and the experience of seeing wildlife for sale and eaten in daily life.

However, in terms of tackling the broader trade in wild animals and plants, Hong Kong is just a beginner. Hong Kong has a significantly higher than average ecological footprint and imports a disproportionately high amount of timber products and marine fish.[6] These are seen as essential resources by many people and it is not feasible to completely ban the trade in them. Later generations, though, will not have the luxury of these "essentials" unless our generation acts decisively to conserve them. Although many people talk about sustainable development these days, how to reach real sustainability remains the biggest challenge.

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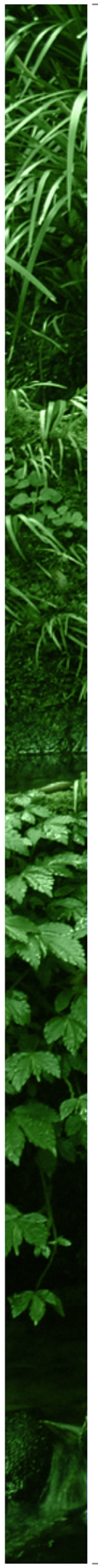

打击东南野生动植物贸易：更多战争如箭在弦

Combating the Southeast Asian wildlife trade: toward winning more battles

整理：费乐思
Summarised by John Fellowes

嘉道理农场暨植物园中国项目
China Programme, Kadoorie Farm and Botanic Garden

相片提供 Photo : John Fellowes @ KFBG

許多來自中南半島的珍稀物种，如圖示的縞灵猫，都是出口到中國消費的。

Many individuals of Indochina's rare species, like this Owston's Palm Civet *Chrotogale owstoni*, are consumed in China.

为了了解柬埔寨、印尼、老挝及越南规模庞大的野生动植物贸易背后的经济和社会成因，从2005年起，野生动植物监测网络—国际野生物贸易研究委员会（TRAFFIC）进行了工作回顾。众所周知，上述提到的国家是东南亚国家中野生动植物贸易的主要源头。回顾报告中用到的数据取自与89位贸易专家进行的访谈调查，以及相关的文献及会议记录。回顾的目的在于为在这些和其它国家致力于减少非法和不可持续动植物贸易的工作者提供有用的资料。这项调查中专家的反馈涵盖了30个动植物类群，并以其中三个类群—老虎、沉香和非海水龟类为重点研究的对象。

老虎的个案研究记录了最近中国及其它国家有兴趣把来自人工饲养老虎之产品的本地贸易合法化。报告对此持相反态度，表明支持号召所有缔约国禁止所有贸易的《濒危野生动植物物种国际贸易公约》的12.5号决议，认为没有证据显示将贸易合法化能缓减对野外种群的压力[2]。报告也质疑公众教育的成效，一方面，中国虽然在提高公众意识的工作及减少老虎制品消费的法规方面取得了一定的成效[3]，但中南半岛和印尼的老虎盗猎活动并没有显着减少。报告的作者呼吁：在中国和其它地区加强执法，控制餐馆出售非法猎取的野生动物，同时加强对于老虎猎物越来越少的关注。

大部分来自中南半岛和印尼的龟鳖类都会被出口到中国。在90年代末，中国本地龟种群大幅的减少，导致中国开始输入亚洲其它国家的龟类[4]。随机采集仍然是野生龟类的主要来源，除此以外，一些中国或越南的贸易团伙还会聘请专业猎手进行捕捉。

中国对野生动物日益增长的需求，加上日渐减少的动植物资源，令许多动植物制品的价格飙升。加强对贸易的监管也可能造成价格上升[5]，但大部分专家认为

From 2005 a review was conducted by TRAFFIC, the wildlife trade monitoring network, to understand the economic and social drivers of the huge wildlife trade in Cambodia, Indonesia, Lao PDR and Vietnam. These are among the Southeast Asian countries that act as major sources of wild animals and plants in trade. Data sources for the review were a questionnaire survey of 89 experts on the trade, as well as relevant literature and meetings. The aim was to generate findings useful to those involved in reducing illegal and unsustainable wildlife trade, in these and other countries. Responses from the survey covered around 30 plant and animal taxa, of which three – Tiger *Panthera tigris,* agarwood *Aquilaria* spp. and *Gyrinops* spp., and non-marine turtles – were highlighted in case studies.

The Tiger case study notes recent interest from China and elsewhere in legalising domestic Tiger trade from farmed specimens. The report, however, supports CITES Resolution Conf. 12.5 calling on Parties to ban all trade, noting there is no evidence that legalising trade would reduce pressure on wild populations.[2] It also raises doubts about the success of public education; while awareness-raising efforts and regulation aimed at reducing consumption of Tiger products in China have had some success in reducing sale of Tiger parts,[3] levels of Tiger poaching in Indochina and Indonesia have not been discernibly reduced. Authors call for enforcing controls of illegally harvested wildlife in restaurants in China and elsewhere, with an added focus on depleted Tiger prey species.

Among turtles, most hard-shelled taxa, and many softshells, from Indochina and Indonesia are exported to China. Severe depletion of China's own turtle populations led to harvesting in other Asian countries by the late 1990s.[4] While opportunistic collection remains a major source of wild turtles, some trade syndicates based in China or Vietnam employ professional hunters to collect them.

Rising demand for wildlife in China, coupled with declining availability of wild resources, has steeply increased the price of many products. Increasing regulation of the trade is also likely to result in a price increase,[5] but most experts felt price rises would not diminish demand. Overall rising affluence in urban China is the driving force for much of the international wildlife trade in the region;[6,7] a recent model found that increases in per capita income in Guangdong explained 80% of the increase in shark fin consumption there.[8]

Attempted interventions in the wildlife trade have been based on assumptions on economic and social drivers. These assumptions were reviewed, with a number of findings:

- Efforts to improve the income or livelihood status of harvester communities, intended to reduce their participation in the wildlife trade, have often failed to do so.
- Conversely, factors associated with economic growth, trade expansion and infrastructure development have increased the wildlife trade. Price- and market-based instruments to control it (e.g. certification, buying agreements, tax incentives and price controls) have shown early promise.
- Laws and regulations have improved control, but their effectiveness has depended on enforcement and broader governance conditions.
- Improved awareness about illegality and negative conservation impacts of wildlife trade do not necessarily lead to a corresponding reduction in the trade.
- Resource management practices (e.g. species management plans and harvest controls) have generally been successful in controlling exploitation, but are hampered by weak information on the sustainability of different harvesting regimes.

相片提供 Photo : John Fellowes @ KFBG

很多龜類如前方的鋸緣攝龜和後方的緬甸陸龜，都是從其他亞洲國家進口的。

Many turtles, like these *Cyclemys dentata* (foreground) and *Indotestudo elongata* (background), are imported from elsewhere in Asia.

价格上涨并不能减少需求。中国城市人口财富总体上升是推动本区大部分国际野生动植物贸易的主因[6,7]；最近通过数学模型发现广东人均收入的增加和当地80%的鱼翅消费增长有关联[8]。

对野生动植物贸易的干预建基于对经济和社会推动力的假设。报告对这些假设进行了评估，发现：

- 为了减少猎捕社区参与野生动植物贸易，而改善他们的收入和生活的工作，通常都收不到想要的效果。
- 反之，经济增长、贸易扩展和基础设施建设等相关因素则导致野生动植物贸易增长。利用价格和市场工具进行管制（例如：认证、销售合同、税收优惠和价格控制）初见成效。
- 法律法规对贸易监管有所改善，但它们的成效取决于执法力度以及总体政府管治条件。
- 对于动植物贸易的不合法性和负面保育影响的意识提高不一定能带来贸易量的减少。
- 资源管理方法（例如：物种管理计划和开采管制）总的来说对于控制采捕是有效的，但是由于对于不同采捕制度的可持续性所知不多，这些管理方法的实施受到阻碍。

这份报告提出了八个结论：

1. **需要加强对野生动植物贸易进行干预的根据基础。**
这项研究发现贸易的推动力有时比我们认识的还要复杂；专家们对于哪种干预方式最有效有不同的想法。需要更多的研究去填补数据的缺失，例如贸易对于野外种群和人们生计的影响、消费者和市场的特点、执法能力和力度，及发展替代产品的潜力。这些研究也必须为决策者和计划者带来实际及与政策相关的信息。
2. **在东南亚，财富，而不是贫穷，反倒是推动非法和不可持续的动植物贸易的主因。**
光靠改善乡村贫民的生计进行干预是不可能解决贸易问题的。报告敦促针对城市的消费者和强大的贸易团伙进行干预。
3. **设计干预活动时，应考虑促成非法和不可持续野生生物贸易更广泛的条件和趋势。**
交通设施的转变、经济增长、科技进步、拥有权和贪污可能严重影响贸易。发展的决策者需要了解贸易问题，区域性的合作也是需要的。
4. **法律法规必须得到有效的实施和执行，及政府管治的问题得到解决，才有可能成功。**
执法不仅需要发现与贸易相关的罪案，还包括起诉和检察，而这需要充足的人力资源和能力；司法机构需要特殊培训。东盟的多元执法工作必须延伸到消费国家如中国、日本、美国和欧盟。
5. **非监管形式的贸易控制手段没有被充分运用，例如：建基市场的干预手段，支援改善资源管理。**
在可持续的资源管理、销售合同和产品证书方面需要加强研究。这些措施应该与提高意识联系在一起。
6. **为减少非法和不可持续贸易进行的宣传工作需要针对特定的观众，以及在过程中评估它们的效用。**
以前的宣传工作很少能在改变行为方面获得成功：只能改变半数消费者和少于三分之一的采捕者或贸易者。我们需要对于利益相关者的态度如何形成有更好的理解和证据。宣传活动也需要一个监测和评估的元素。
7. **需要一系列完备的、相互强化的干预行为来更全面的针对非法和不可持续的野生生物贸易。**
干预行为需要在正面激励及限制性和惩罚性手段两者之间取得平衡，另外东盟与消费国家之间更好的协调、数据分享及合作也很重要。
8. **如果野生动植物贸易要达到可持续性和受国家和国际的监控，更密切的政策关注和行动是必须的。**
需要得到高度的政治支持、把贸易问题纳入发展和扶贫政策的主流议题，才能扭转众多野外动植物数目的持续减少。

Eight general conclusions are made in the report:

1. **The evidence base for wildlife trade interventions needs to be strengthened.**
The review finds the drivers of trade to be more complex than sometimes acknowledged; experts held differing opinions on the most effective form of intervention. Further research needs to address data gaps, such as impacts of trade on wild populations and on human livelihoods, characteristics of consumers and markets, enforcement capacity and efforts, and potential for alternative products. It must also lead to practical and policy-relevant information for decision-makers and planners.
2. **Wealth appears to be a stronger driver of illegal and unsustainable wildlife trade in Southeast Asia than poverty.**
Livelihood-based interventions for the rural poor are not, in isolation, likely to resolve the trade problems. The report urges targeting interventions toward urban consumers and powerful trade groups.
3. **The design of wildlife trade interventions needs to take into account the broader conditions and trends that act to drive illegal and unsustainable wildlife trade.**
Changes in transport infrastructure, economic growth, technological advances, tenure and corruption can strongly influence trade. Development decision-makers need to understand wildlife trade issues, and regional co-operation is needed.
4. **Laws and regulations stand little chance of success unless they are effectively implemented and enforced, and wider issues of governance are also tackled.**
Enforcement requires not only detection of wildlife-trade related crime, but also prosecution, and this requires adequate staff resources and capacity; the judiciary needs special training. ASEAN's multi-lateral enforcement efforts must be expanded to include consumer countries such as China, Japan, USA and the EU.
5. **Non-regulatory approaches to controlling illegal and unsustainable trade, e.g. market-based interventions and support for improvements in resource management, are under-used.**
Research is needed on sustainable harvest management, buying agreements and product certification. These measures should be linked to awareness-raising.
6. **Awareness efforts to reduce illegal and unsustainable trade need to be targeted to specific audiences and their effectiveness evaluated over time.**
Past awareness-raising efforts are believed to have succeeded in changing behaviour quite rarely: of consumers in about half the cases, and of harvesters or traders in less than one-third of cases. Greater understanding and evidence is needed of what shapes stakeholder attitudes. Awareness campaigns also need a monitoring and evaluation component.
7. **Coordinated packages of mutually reinforcing interventions are required to address illegal and unsustainable wildlife trade in a more comprehensive manner.**
Interventions need a balanced mix of enabling and positive incentives with more restrictive and punitive measures. Again better coordination, data-sharing and joint efforts between ASEAN and consumer countries is highlighted.
8. **Increased policy attention and action is required if wildlife trade is to be brought within sustainable levels and conducted according to national and international trade controls.**
High-level political support, and the mainstreaming of trade issues in development and poverty-reduction policies, are needed to address the ongoing decline of many wild species.

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海南熱帶植物園 – 中國的第一個熱帶植物園

Hainan Tropical Botanic Garden–The first tropical botanic garden in China

何华玄教授为父亲延续修复海南土地的未了愿

Like father, like son: He Huaxun's mission to restore Hainan's soils

访问及撰文：朱咏贤
Interview and article by Wylie Chu

何华玄教授，从事热带牧草研究与推广30多年，获省部级科技进步奖23项，选育优良热带牧草新品种18个，参与海南省1980-2000年主要热带人工草地建设项目，发表论文30多篇。他于去年退休，主动以月薪800元向单位申请反聘，他笑言这是最低工资，工人职位反聘亦是这一个薪金。但由于申请额外的经费需时，他宁可立即返回自己的工作岗位，继续他未完的心愿。

何华玄教授的工作单位是在海南的中国热带农业科学院热带作物品种资源研究所“前身是华南热带、亚热带植物研究院/学院”，他的父亲何敬真是该研究所第一任所长，兼任橡胶栽培研究室主任，开展了橡胶北移栽培和热带作物研究工作，同时他亦创办了中国第一个热带植物园。

父亲是中国的保育先驱

作为森林学家，植物学家，何教授的父亲早在上世纪40年代初，就非常重视森林和生态保护的工作，根据何教授的形容，他的父亲对此有近乎于本能的反应。当看到各地森林遭到乱砍乱伐，尤其是对四川、云南、贵州、海南等地的原始森林遭到严重破坏时，他就非常痛心，不停地给有关部门写调查报告，呼吁保护森林资源。可说是森林保护及保育行动的先驱！何教授一面回忆着父亲一面说着：“他对不问青红皂白地大面积毁林植胶行为深恶痛绝，记得我们1958年到海南之际，大炼钢铁之风正在蔓延，加上开荒植胶，大片的原始森林被毁，3、4人才能合抱的大树也被砍倒后烧成木炭，还挂上大红花向党委报喜，每当看到这些情景，父亲总是心痛得摇头叹息。”连年开荒，许多珍贵的热带植物资源永远消失了！何教授估计这也许是他父亲没有继续留在橡胶所的一个主要原因，那时候刚好要建设植物园，父亲很高兴接手负责此项目，不需再做破坏生态的工作。

何教授父亲不单思想上爱恨分明，而且身体力行。“为了减缓森林资源耗费，从1943年父亲就开始研究制作了可节柴的月眉形经济灶[1]，开始在家中和同事邻居家试用，后来陆续扩展到许多大单位。”另外，还有一件事令何教授印象非常深刻，“从前这里有很多很多树，烧柴火非常方便，砍几棵晒干便可以用。一到假日，其他家庭大人和小孩就到山上砍树，一车车拉回家用；但我们的父亲从来就不容许我们去砍树。”为了解决燃柴问题，何教授父亲自制了一个特殊工具，在一截水管上装上一个丁字镐，然后亲自带他们去啃树头。“我们要获取同样的柴火要花上比别人多几倍的时间，所以从小我们就吃了不少苦头！”何教授笑着说。

身教重于言教，虽然父亲长期出差在外，远赴印度、埃及、阿尔及利亚、越南等国考察，早出晚归，忙于建设植物园和引种等等的工作，跟何教授坐下来说教的时间不多，但何教授从小就已经受到薰陶，特别关注及思考有关环境和生态的问题，亦间接引领他走到热带牧草研究与推广的工作。

附注：

1 此项发明曾获四川省人民政府奖，重点是把灶膛缩小，用半个铁圈著近锅底的地方，能使火力集中，让木材得以充分燃烧，不仅缩短了烧菜的时间，还节省了50-60%的柴火；此外，在灶后上方放了个大铁桶，炊烟经过铁桶才排出室外，这样便可净化环境。

何教授於1992-93年進行一個種植牧草與養兔子的推廣計劃，約有200多戶參加。

Prof. He carried out a promotional campaign on fodder crop planting and rabbit raising, which attracted about 200 participants.

相片提供：何華玄教授
Photo: Prof. He Huaxun

Engaged in the research and application of fodder crops for more than 30 years, Professor He Huaxun is the recipient of 23 Provincial Science and Technology Advanced Awards, having selected and cultirated 18 new fodder-crop species. On retiring last year, he volunteered to be re-hired at RMB800 per month, "minimum wages" he jokes, as this is the rate for retired labourers. Applying for extra funding would take time; he preferred carrying straight on in pursuit of his incomplete dream.

Professor He Huaxuan serves in the Institute of Tropical Crop Germplasm Resources in the Chinese Academy of Tropical Agricultural Sciences (formerly the South China Institute of Tropical and Sub-Tropical Botany). His father, He Jingzheng, was the first director of the institute and held a concurrent post with the Rubber Planting Laboratory. He instigated research work on rubber planting to the north as well as other tropical crops; he also founded the first tropical botanic garden in China.

My father was the Conservation Pioneer

A botanist and forest biologist, Prof. He's father (He senior) was highly attentive to forest and ecosystem conservation long ago in the early 1940s; Prof. He (He junior) describes this as his instinct. He senior was deeply distressed whenever he heard a piece of primary forest was seriously damaged, particularly those in Sichuan, Yunnan, Guizhou and Hainan, and kept sending survey reports to relevant departments as a means to urge action on forest conservation.

"My father bitterly hated the ruthless forest clearance for rubber plantations. When we visited Hainan in 1958, steel production in villagers was being widely advocated, along with the extensive logging to clear forest for rubber plantations. Large trees, with trunks so big it took three or four men to get their arms around them, were burnt to make charcoal. The people would happily hang up a big red-ribbon "flower" (signifying happy events in Chinese culture) to report such good news to the Party Committee as soon as possible. Every such scene would make him heave a sigh and shake his head," said Prof. He. Such clearance over many years led to the loss of many rare tropical plants. He guesses that was why his father decided to leave the Rubber Planting Laboratory. When, by chance, He senior was assigned to develop the tropical botanic garden in Hainan, he was delighted he no longer had to do more ecological destruction.

He senior had clear principles and put them into practice. "To lessen the consumption of forest resources, my father started to make a dome-shaped energy-saving stove.[1] He conducted trials at home and even in his colleagues' and neighbours' houses, which he extended to many other large agencies and departments. But he went further than this.

"Trees were everywhere in Hainan at that time – firewood was very handy, and people could simply log a few trees and dry them for use. Parents and kids from other households would go to the hill to log during holidays and bring the wood back in carts. But this was forbidden in our family." To solve the fuel problem, his father made a special tool by fixing a pick to a length of metal pipe to help dig up the tree-stumps. "To obtain a similar quantity of firewood, we had to spend much more time than others. We suffered a lot since we were small!" Prof. He said smilingly.

Teaching is best done by example. He senior often had to pay visits to other countries, such as India, Egypt, Algeria and Vietnam, and returned from work late at night. Developing the botanic garden kept him very busy. Though he could hardly squeeze much time to teach his son, he exerted an uplifting influence on him from childhood. Prof. He was particularly aware of environmental and ecological problems, and this indirectly paved the way to his research and promotion of tropical fodder crops.

Note:

1 This stove won an award from the Sichuan Provincial Government. The design involves a reduced hearth size and a semi-circular iron ring enclosing the base of the stove. This helps centralize the heat, burning the wood more thoroughly. Cooking time is shortened, and firewood requirement is cut by 50-60%. A steel-lined flue improves air quality.

海南熱帶植物園內隨處可見到生長得很高大和漂亮的樹木
Lofty and magnificent trees can be found elsewhere in the garden

保护与发展的微妙螺旋

解放初期，海南岛上仍有不少的原始森林(主要分布在中部山区)，森林复盖面积约为26%。到1977年已降到8.2%，他的父亲当时曾心痛地形容说："海南岛已经到了山穷水尽的地步。"海南岛现存原始森林面积仅余下4%，大部份已被各类经济林所取代。

"我在这里生活了四十多年，肯定看到很多生态的变化，但这不是一般人都能看到的，如果你不注意的话。"何教授指他刚来海南岛的时候，大部分地区的腐植质最少有15到20公分，但现在随处看到白的、黄的石头露出来；过去随便在路边种木瓜，长出来的都是甜甜的，但现在种木瓜长出来很多都是发病的，农作物长得很慢，还要放很多化学肥料。"过去这里的风很凉快，可以看到很多野生动物跑来跑去，现在蛇都很少见。气候变热了，人变得不舒服，这些全都是不好的变化，是人类干扰自然的结果。"

人类和自然怎样才能长久一起生活下去？

"生态保护与经济发展之间的矛盾早在父亲那个年代已经存在，悠来已久。"何教授表示。"生态学家或是森林学家，他们想到的都是怎样去保护生态，保护森林这个观念是非常正确，非常好的，这个愿望是良好的，但怎样去实现这个愿望呢？"

理想的原生态保护，何教授认为很难实现。"吃饭永远是第一需要，什么专家跟他们讲也没用。如果专家住在山里面，没有得吃，我想他也会砍山，也会打猎。"何教授说，"而且他们会生小孩，小孩还会生小孩，以前100人住在山里面，现在有1000人，他们不把整个山吃光才怪，这是很实际的东西。"

所以何教授认为生态工作必须结合他们的经济收益来做，怎样去说服老百姓生态保护是跟他们有关的，让他们体会是对他们以及他们的子孙后代是有好处的。何教授跟他的父亲除了关注生态环境的问题，亦同样关心农民和百姓的生活。

对农民的关怀

"我的爷爷在农村行医，父亲从小负责挑担子在一旁帮忙，对农民的疾苦有着贴切的了解。"数十年后再回到农村，看到原来有山有水的地方，现在山已砍光，水也少了，但生活依然艰苦，农业技术落后。"父亲有着科技救国，农业救国的思想。除了受父亲影响，我自己亦是由最基层出身，对农民的感情也很深，同时亦很清楚知道这一工作的重要性。"

何教授所说的就是从事了30多年的热带牧草研究与推广工作，当中他有很大的感受。"我现在不是停留在光是种草或是做饲料的阶段上，而是涉及到生态的问题，我现在才慢慢悟得到父亲当年所讲的道理，知道当中深刻的含义。父亲讲的时候是四、五十年前，但我现在才领悟得到。"

何教授父亲所讲的主要是有关土壤肥力的恢复，在原生态的情况下，原始的落叶，加上几千年的积累，形成的有机层，提供一个良好的农业生态环境；但现在经过多年的开荒，种植橡胶，下化学肥料，土质变差，靠自然修复几乎是不可能的。

"我的父亲很强调畜牧业以及畜牧业的肥回田的问题"何教授相信发展畜牧业是农业系统中重要的一环，除了为我们提供食物，还可以利用它们的粪便来提高土壤的肥力及保护，增加农业的生产，减轻开垦更多土地的压力，同时亦能养地。

但这不是容易的工作，要说服和教育农民要有养地的观念，以及尝试新的农业技术。何教授认为规模化的庭园经济模式可能会是其中一个办法，主要是小农户走在一起，形成好像是合作社或是小产业的运作模式。"四川攀枝花的芒果合作社是一个很好的例子，他们在村里面办农民学校，专家去讲课和指导，他们慢慢的提高自己的技术水平，慢慢提高产品的质量。产品好就变成一个品牌，企业愿意来收购，价钱就提高，形成一个良性循环。"何教授说更重要的是他们有了

To interweave conservation and development

In the early Liberation period, Hainan still had a lot of primary forest (mainly in the central mountains) with a forest cover of 26%. "It had dropped to 8.2% by 1977. This sad figure triggered my father's lament: 'Hainan is at the end of its tether!'" Prof. He recalled. But the figure further declined to no more than 4%, as most of the forest was replaced by various kinds of economic plantations.

"Having lived here for some 40 years, I've seen a lot of ecological changes, but they may not be apparent to the general public unless you pay particular attention." When Prof. He first arrived in Hainan, the humus layer in most regions was at least 15-20 cm deep. Now, barren rocks are exposed everywhere: some white, some yellow. In the past, even if you planted papayas at the roadside they would soon yield sweet fruit. Today they are intensively cultivated but often get infected with disease. Crops now grow slowly despite great inputs of chemical fertilizers. "The breezes were cooler before. We often saw wild animals. But even snakes are rarely seen now. The weather gets hotter and hotter which makes people feel uncomfortable. These adverse changes are the outcomes of human disturbance to nature."

How can people and nature co-exist?

"The conflict between ecological protection and economic development already existed in my father's time," He expressed. "Ecologists and forest biologists, they all have this same belief to protect the ecology and the forests. This hope is great, but how to make it happen?"

Prof. He finds it hard to be a purist about protecting nature. "Getting sufficient food always remains the first priority – otherwise the efforts of experts will be in vain. If these experts were told to live in the mountains, they would surely go logging and hunting if food were unavailable. What's more, due to population growth, where once there were only 100 people dwelling in the mountain, the population is now 1,000. It's no wonder they use up the forest."

So Prof. He believes that economic gain must be combined with ecological protection. Experts have to convince farmers how ecological protection is relevant to them, and let them feel the benefits to themselves and their future generations.

Devotion to farmers

"My grandfather was a village doctor, and my father helped him out by carrying baskets of medicine and herbs by a shoulder pole when he was young. So he had a well-grounded understanding of farmers' difficult livelihoods and torments." When he returned to the villages after several decades, the landscapes were changed beyond recognition. All hills were cleared, and the streams and rivers had much less water. But life was still hard, and farming techniques were backward. "My father had long suggested using technology and farming to save our country. Even aside from his influence, I am from the rank-and-file. I get emotionally attached to farmers, and know the importance of this mission."

The mission Prof. He mentions is the research and promotion of tropical fodder crops. He has been working on it for more than 30 years, and has profound feelings towards his work. "I don't just deal with planting grass or fodder crops, but get involved in solving ecological problems. I am getting to know how to interpret the underlying principles and the deep implications of my father's words, spoken to me 40–50 years ago."

He senior's belief was in recovering soil fertility. In a primary ecosystem fallen leaves and wood, accumulated after thousands of years, generate an organic layer providing a good ecological environment for farming. But following years of forest clearing, rubber planting and application of chemical fertilizers, the soil quality worsens and it is impossible to revitalize it quickly by natural restoration alone.

"My father put strong emphasis on the problems derived from livestock raising and the return of manure to soils." Prof. He believes livestock have a key role within farming systems, harvesting nutrients not directly available to humans and boosting soil fertility via their manure. Only by this means can we increase farming yields, reducing the pressure of land clearing, and at the same time regain the soil nutrients.

相片拍攝：何貴文教授
Photo: Prof. He Huawen

何教授給村民上課的情況
Prof. He teaching villagers on how to run their own cooperative

一个集体以后，对农民个人来说，这是一种指导的模式，同时亦是一种对胡乱种植行径的约束，他们不会乱来，只会按照科学的方法慢慢一步一步进行。

“农民是为自己干，这是一个很好的学习过程，他们户与户之间影响着彼此，如果你种芒果种得不好，其他农户会给你压力，你不能偷懒。由于他们是自发的，项目的生命力就很强，慢慢发展下去。”何教授说。“原来已出去的都跑回来农村帮忙种芒果，我们的体会很深，很有成就感。”

生态保育是综合性的工程

中国有八亿农民，是以农民为主体的国家，解决他们的就业和出路是一个很大的问题，不然对社会很容易做成不稳定。海南的农业没有什么规模，比较分散。根据何教授形容：“农民们没有技术、没有钱、没有组织、也没有市场；属一穷到底，恶性循环，没有国家或企业的支持，他们要发展起来，几乎是没有可能”。好像橡胶作为战略物资，有国家补贴，农民种橡胶还可以赚到一点钱，但种其他东西的风险就很大。

何教授指出虽然现在国家对农民已经有很大的支持，但针对海南的独特性，他觉得国家还需要加大力度。“海南岛的环境这么好，应该多种一点树，好好保护野生动物。谁不懂这样说？但钱从那里来？”何说。“要保护生态，政府就要给钱，光是说有什么用。但同时我们亦不应养成老百姓伸手要钱，懒惰的思想。”“最重要的是把农民组织起来，提高他们的经济水平的同时，亦要提高他们对生态认识的水平，透过他们的生活实践，慢慢把他们的观念改变。”何说如果他们不去关注自己生态的问题，专家又岂能代替他们去做？“专家们只是去跟他们上课，然后就走了…生命力最强的项目是他们自己组织自己，自己能够认识这个道理，自己能够按照这个道理操作；但同时专家要给他们意见，国家要在这方面作投资。”

何教授多次强调生态保护是一个系统性的东西，不是说那一人或是那一个技术可以解决问题，而是需要一个全面的系统做综合处理，当中包括不同的专家、政府、企业、社会科学家…何教授一身兼数职。“我原来是搞生产的，不是搞生态；原来是罪人和坏蛋，现在来赎罪。”他笑着道。

何教授说话的感染力很强，有一股感动人心的魅力，这不是因为他的词锋厉害，或是他懂得捕捉别人的心理，而是他的每一句说话都是他的心底话，出于他对农民以及周遭环境的关心，对很多问题有一套透彻的看法。何教授跟他的父亲一样，从不计较自己的付出，对世界有一份使命感，不遗余力地推动环境保育工作。

項目推行後，何教授會定期探訪農戶，了解他們種草的情況以及有沒有遇到什麼難題。

Prof. He visits the farmers regularly after the project is launched to get ideas on the growth of fodder crops and the their difficulties faced.

去年五月，我們與海南鸚哥嶺自然保護區合辦一個「社區可持續農業技術培訓班」，何教授帶領農民實地參觀他的牧草研究基地，並介紹不同種類的牧草。

Last May, we ran training with Hainan Yinggeling Nature Reserve for the local community on the techniques of Sustainable Agriculture, Prof. He guided the farmers to visit his research base, and acquainted them with different kinds of fodder crops.

But convincing farmers to conserve soil, and to try new farming techniques, are not always easy. Prof. He believes one way forward is to promote a kitchen-garden economy. This would bring small households together to run a business in the form of a cooperative or a small enterprise. "The mango cooperative in Panzhihua, Sichuan, is a good example. The members run farmers' schools in villages, and invite experts to lecture and guide the farmers. So their skills and, eventually, the product quality are gradually enhanced. High-quality products will soon build a brand; and outside enterprise is more willing to buy them, the price will rise and form a positive cycle." More importantly, when there is a group of practitioners, their practice will serve to guide as well as motivate others; they can advance scientific methods step by step.

"What farmers do is ultimately for their own sake, and this is a very good learning process," he went on. Households influence one another; if your mangos are of low quality, the other households will exert pressure on you, and you have no way to shirk your work. It is a spontaneous project; its vitality is so strong it can expand in stages. Those who have left the villages all come back to help cultivate the mangos. I gained some deep insights, and a real sense of accomplishment, from this project.

Ecological protection is an integrated task

China is a country founded on farming. It is essential to maintain a high rural workforce, as a highly urban population risks unemployment and instability. In Hainan, the farming industry is not on a large scale, and is rather scattered. He depicts the farmers as having "four lacks": lack of technology, money, organization and market. Poverty is a vicious-circle; without the support of the state or enterprises, it is almost impossible to break out of it. Strategic materials, like rubber, attract official subsidy, so that farmers planting this can earn a living. But they bear higher risks if they plant other crops.

Prof. He thinks that although China already provides farmers with support, efforts have to be intensified in the case of Hainan. "Hainan has a good environment. It should be planted with more trees, and it deserves better protection for wildlife. But where can we source the money? To protect the ecology, the government should pay; words are useless without action to back them up. But we also don't want villagers to be too dependent and ask for money without doing anything."

"The key is to organize the farmers; to improve their economic status on one hand, while enhancing their ecological knowledge on the other hand; to change their perceptions step by step through their livelihood." He says if farmers do not care about the ecological issues, how can experts change anything? "Experts just give them lectures, then leave… In a thriving project people would run it on their own. They'd know the ecological principles and how to operate under these principles. But expert advice, and national investment, are also of crucial importance."

Prof. He often stresses that ecological protection is a systematic thing. A person or a single technique can't solve the problems single-handed. What we need is a systematic and integrated approach involving various experts, government, entrepreneurs and social scientists, and so on. Prof. He has played different roles. "I was concerned with production instead of the environment in the past. Now I am trying to repair the damage."

Professor He's words are intense and captivating, not because of his verbal skill or his ability to catch people's imagination, but for his speaking from the heart. His every word unveils his inner feelings; he speaks up because he cares about farmers and the environment, and he has a broad depth of understanding. Like his father, he has a sense of mission towards the world, and spares no effort for environmental conservation.

广西喀斯特森林鸟类调查中一份偶然邂逅的大礼

Unexpected returns from a study of birds in Southwest Guangxi karst forests

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弄岗自然保護區
Nonggang Nature Reserve

丰富的水热条件使广西西南部的喀斯特地貌发育十分典型，山峰丛聚，洼地星罗棋布。在这些形态各异的多边形封闭洼地里，人迹罕至，蕴藏着丰富的生物多样性。这一地区被认为是中国乃至世界的生物多样性关键地区。由于地处中越边境地区，一直未曾进行过系统调查。近年来，加大了对这一地区的调查力度，不断有新东西被科学家发现。

2004年，我获得了香港嘉道理农场暨植物园生物多样性奖学金项目的资助，在我的老师周放教授的指导下，对桂西南喀斯特森林鸟类进行调查和比较研究。我主要采用在固定样线上直接观察和利用雾网捕捉的方法对喀斯特森林鸟类进行调查。样线法主要针对大型鸟类和树冠层活动的鸟类，网捕法则可以获得中下层活动鸟类的资料。在三年里，我深入调查了广西西南部的弄岗、下雷、邦亮、岜盆、板利、大青山和底定等多个自然保护区或保存较好的林区，共计记录了171种森林鸟类。在这些鸟类当中，一些是珍稀的鸟类，如濒危的海南鹎（*Gorsachius magnificus*）、黑冠鹃（*Gorsachius melanolophus*）、蓝背八色鸫（*Pitta soror*）、白翅蓝鹊（*Urocissa whiteheadi*）、黄胸绿鹊（*Cissa hypoleuca*）等。这些鸟类在桂西南喀斯特森林都有一定的种群数量，尤其是白翅蓝鹊，在保存较好的区域数量还比较多。一些广西鸟类新记录也在这次调查中被发现，如斑姬啄木鸟印支亚种（*Picumnus innominatus malayorum*）、鹊鸲（*Copsychus saularis erimelas*）、棕胸雅鹛（*Pellorneum tickelli*）、黄喉穗鹛*Stachyris ambigua*等。一些近年才发现的鸟类新记录在这次调查中也被再次发现，如白腰鹊鸲（*Copsychus malabaricus*）、大仙鹟（*Niltava grandis*）等。然而这次研究中最意想不到的收获莫过于发现鸟类学新种弄岗穗鹛。

弄岗穗鹛的生境
Habitat of *Stachyris nonggangensis*

The warm wet conditions of southwest Guangxi have shaped a karst landscape of many small flat areas interspersed withtowering limestone hills that is difficult to access and cultivate. It has very rich biodiversity and is considered to be of national, and even global, importance. Straddling the China-Vietnam border, these karst landscapes have not been a key target for systematic research in the past. But scientists have made a lot of new discoveries following more in-depth studies in recent years. Upon obtaining a KFBG Studentship grant in 2004 and with the guidance of my supervisor, Professor Zhou Fang, I undertook a comparative study of birds in karst forests.

Data were mainly collected by direct observation along fixed transects and by setting mist nets. The fixed-transect method was effective in recording large-bodied and canopy birds, while mist nets were useful at collecting data on secretive, understorey birds in the forests. In the three-year study I went to Nonggang, Xialei, Bangliang, Bapen, Banli, Daqingshan and Diding; these are either nature reserves or patches of well-preserved forest in southwest Guangxi. A total of 171 forest bird species were recorded. Some are rare, including the Endangered White-eared Night Heron *Gorsachius magnificus*, the Malayan Night Heron *Gorsachius melanolophus*, Blue-rumped Pitta *Pitta soror*, White-winged Magpie *Urocissa whiteheadi* and Indochinese Green Magpie *Cissa hypoleuca*. These birds have significant populations in karst forests in southwest Guangxi, and White-winged Magpie even occurs in good numbers in well-preserved forests. Some new records to Guangxi were made, such as the Indochina subspecies of Speckled Piculet *Picumnus innominatus malayorum* and Oriental Magpie-robin *Copsychus saularis erimelas*, Buff-breasted Babbler *Pellorneum tickelli* and Buff-chested Babbler *Stachyris ambigua*. Some recently recorded species such as White-rumped Shama *Copsychus malabaricus* and Large Niltava *Niltava grandis* were also found in this study. Nonetheless, the most unexpected find must be the discovery of Nonggang Babbler *Stachyris nonggangensis*, a species new to science.

相片提供：杨华
Photo : Yang Hua

Stachyris nonggangensis – a gift from out of the blue

One afternoon in July 2005 at Nonggang Nature Reserve, when I was having a bite of compressed biscuits, two inconspicuous birds hopped slowly down from the rocks to search for food right in front of me. Subsequently, whenever there was a sunny day, these birds would appear. After a couple of encounters, we seemed to be getting more familiar with one another. However, when I read through "*A Field Guide to the Birds of China*", my old friends couldn't be identified. The species was brown in colour with a white, crescent–shaped patch on its face. Its behaviour and distribution were similar to Streaked Wren-babbler *Napothera brevicaudata*, and it would fly only short distances when disturbed; it often foraged in rock crevices, preying on snails and other invertebrates. But its appearance was distinct from *N. brevicaudata*. For a long time I thought it was a wren-babbler species from Southeast Asia that was hitherto not recorded from China.

When I went back to school, I consulted Professor Zhou, who instead thought this might be a new species, and urged me to intensify the study. It was still there on my subsequent visits to Nonggang, but attempts to capture one with mist nets were unsuccessful. Even when it moved around the nets, it did not get trapped. This extraordinary bird occurs mainly in well-preserved forests with a sparse understorey but the ground

弄岗穗鹛 — 偶然邂逅的大礼

2005年7月的一个中午，当我正坐在一个大石头上吃压缩饼干时，两只以前我从没有见过的鸟类从石头上慢慢地跳下来，在离我很近的地方寻找食物。此后，只要天气好时，每天中午我都能在那看见它们活动。多次见面后，彼此变得有些象老朋友一样熟悉。然而我翻遍了中国鸟类野外手册，却似乎没有一种鸟类和它相似。这种鸟全身基本为褐色，但脸部有一明显的月牙形白斑。它的行为与同域分布的短尾鹪鹛相似，但从外型来看就有明显的区别，而且它只有受惊时才进行短距离的飞行。它常在石头之间的缝隙处活动，觅食蜗牛和其它无脊椎动物。因此好长时间我认为这是一种鹪鹛，一种在东南亚分布而中国从未记录的鹪鹛。

回到学校后，我和周放教授谈到了这个鸟的问题，他觉得完全有可能是个新的东西，并要求我加大调查力度。随后我几次深入弄岗自然保护区，虽然还是每次都能见到，但是用雾网总不能捕获到它。有时就见它在雾网附近活动，却又总是与雾网擦肩而过。这种奇特的鸟类主要活动于保存完好的森林，这种森林主要由高大的乔木组成，灌木和草本比较缺乏，而地面却遍布各种岩石，它们就是在这些岩石缝隙之间活动、觅食。2006年1月，我们在它的活动区增加了雾网的密度，终于获得了两个标本，而且很巧的是，刚好是一雄和一雌，正好凑成了一对模式标本。这种鸟类和绝大多数画眉科鸟类一样，雌雄在羽毛颜色上几乎没有差别，雌鸟似乎比雄性稍小，但在野外完全没有办法区分。

反复查证，结果令人喜出望外

采到标本以后，我和周放教授很快就确定这是一种穗鹛属的鸟类，因为它具有穗鹛属的典型特征，如额羽羽干坚硬等。这种地面活动的穗鹛和国内记录的穗鹛不太一样，它体型较大，达17cm左右，在观察中，感觉比斑颈穗鹛(*Stachyris striolata*)还要明显大一些。因此可从体型上与国内的穗鹛属鸟类分开。分布于越南中部的乌穗鹛(*Stachyris herberti*)和这种鸟习性较为接近，但它月牙形白斑以及喉部的斑点又与乌穗鹛显著不同。因此我们认为这是一种在科学史上从未记录过的鸟类，我们将它命名为弄岗穗鹛(*Stachyris nonggangensis*)，并很快撰写出论文投往美国鸟类学会的《*AUK*》杂志。经过漫长的审稿和校对之后，论文终于在今年4月份的刊物上出版。这意味着弄岗穗鹛作为一个鸟类新种已获得科学上权威认可，这也是中国鸟类学家描述并命名的第二个鸟类新种。凑巧的是，第一个新种金额雀鹛也在广西发现，但时间要追溯到1932年。

在最初设计桂西南喀斯特森林鸟类的调查区域时，我并没有把主要时间安排在弄岗自然保护区。当时，刘惠宁博士和陈辈乐博士极力向我推荐弄岗，说那里有桂西南保存最好的喀斯特森林。后来我又把弄岗推荐给他们做红外线动物调查，他们也拍摄到了大量的野生动物。因此我见面都笑称是给对方介绍了一个福地。也许正是这样的偶然，让我有了一次发现鸟类学新种的机会。发现弄岗穗鹛，对我来说，真是一份偶然邂逅的大礼。

周放教授與弄崗保護區護林員合照

Prof. Zhou Fang with the reserve wardens in Nonggang

has many rocks among which they hop around and search for food. In January 2006, we finally captured a pair (the holotype and the paratype) as a result of increased trapping effort. This species, like other babblers in the family Timaliidae, does not vary much in appearance or coloration between sexes. The female is slightly smaller than the male, but cannot be distinguished in the field.

Unexpected rewards

Once the specimens were collected, Professor Zhou and I quickly determined that they represented a new species of *Stachyris*, since they had distinctive characteristics of that genus, such as stiff quills on the forehead feathers. They were larger than other ground-foraging babblers and the species can be distinguished by size from other Chinese species. Its body length is 17cm, obviously larger than Spot-necked Babbler *Stachyris striolata* when observed in the field. While the behaviour was somewhat similar to that of Sooty Babbler *Stachyris herberti,* the white crescent-shaped patch, combined with the dark greyish-brown spots on the white throat and upper breast, distinguished it readily from Sooty Babbler. Thus we were sure the Nonggang specimens represented a new *Stachyris* species. We proposed the name *Stachyris nonggangensis* and swiftly contributed an article on this wonderful discovery to "*Auk*", the journal of the American Ornithologists' Union. After a prolonged period of editing and proofreading, our article was finally accepted and published, thus becoming recognised by the scientific authorities. This is the second bird species described and named by Chinese ornithologists. Coincidentally the first, Gold-fronted Fulvetta *Alcippe variegaticeps*, was also from Guangxi, but this dates back to 1932.

When I first planned these surveys, I didn't intend to spend much time in Nonggang National Nature Reserve. It was Drs Michael Lau and Bosco Chan who strongly recommended that reserve to me, and assured me there was an extensive tract of well-preserved karst forest. Later I recommended they carry out their camera trap survey of mammals in this reserve and they were able to capture many species on film. We joke that we have introduced a blessed land to one another. Such a quirk of fate led to the discovery of a new species. To me, the discovery was a gift utterly out of the blue.

弄崗穗鹛的近拍照

Close-ups of *Stachyris nonggangensis*

* 除另行標明外，所有相片均由作者提供。

All photos are credited to the author, unless otherwise stated.

中国穿山甲

进化地位： 穿山甲隶属于哺乳纲中的鳞甲目，现存仅8种。相信穿山甲早于“泛古陆”—古生代晚期到中生代早期的超级大陆板块—演变出来，并与食肉目[1]有相同祖先。穿山甲与食蚁兽、犰狳和针鼹等食蚁和白蚁动物没有亲缘关系，它们外貌上的类同乃由于趋同适应。

特　　征： 中国尚有分布于云南西部的印度穿山甲，而近年爪哇穿山甲常常被非法进口到中国。与两者所不同的是，中国穿山甲的外耳突出，亦不同于印度穿山甲尾尖底部不披鳞片，身体中部有15-18列鳞片，（印度穿山甲有11-13列，而爪哇穿山甲则有17-19列）[2,3]。

分　　布： 分布于尼泊尔、缅甸至中国东部长江以南等地、包括中南半岛北部、海南及台湾，与其猎物白蚁一样，绝迹于寒冷地区。

生态与行为： 喜于泥土中挖10-17厘米宽、1-2米深（夏季时洞穴较浅）的洞穴作栖所，每隔10-15天转换洞穴一次[4]。洞穴亦可能长达3-5公尺[5]。擅用强而有力的前爪扯破白蚁及蚂蚁的巢，然后用附满黏液的舌头（可伸至25厘米）黏食猎物。此外，它还有上树和游泳的本领。自我防卫招式有二：把身体卷缩成球状或快速挖洞。独居，成年的穿山甲于秋天交配，春天产子[6]，多为每胎一子。

命　　名： 身上复盖鳞甲，由强壮前肢特化而成的五爪挖土利器，犹如身披胄甲、“穿山”快于行，因而命名。英文名字“*Pangolin*”源自马来亚文，意为“可卷成球状的东西”。

现　　状： 中国项目近年于广东、广西及海南的野外考察均未有发现穿山甲新近栖息的洞穴（惟香港及江西仍能找到）。中国穿山甲是全球及国家濒危种，由于中国的需求量大，非法捕猎猖獗，把亚洲的三种推向灭绝的边缘[7,8]。此外，不当地放生没收的非本土穿山甲，会对仅余的野生种群构成潜在的威胁，如情况许可的话，这些动物应该送回它们的原产地。亦被列在濒危野生动植物种国际贸易公约附录二之上。

（费乐思与刘惠宁著）

Chinese Pangolin *Manis pentadactyla* Linnaeus, 1758

Evolutionary position: Belongs to one of the smallest mammal orders, the Pholidota, with just eight living species. Thought to have arisen on the supercontinent Laurasia, and to share ancestry with the Carnivora.[1] Unrelated to other myrmecophagous (ant-and termite-eating) mammals such as anteaters, armadillos, aardvarks and echidnas, which have convergent physical adaptations.

Identification: One other species, the Indian Pangolin *M. crassicaudata*, occurs in China (in west Yunnan) while the Sunda Pangolin *M. javanica* is illegally imported. Distinguished from both by its pronounced ear pinna (5-6 mm), and from *crassicaudata* by a scale-less patch on the ventral side of the tail-tip. Has 15-18 rows of scales round the mid-body (cf. 11-13 in *crassicaudata* and 17-19 in *javanica*).[2,3]

Distribution: From Nepal and Myanmar to east China south of the Yangtze; including northern Indochina, Hainan and Taiwan. Like its termite prey, it is absent from colder regions.

Ecology & behaviour: Lives in burrows 10-17 cm wide and 1-5 m deep (shallower in summer); changes burrows after 10-15 days.[4,5] Tears open termite and ant nests with its powerful fore claws and extracts the insects on its 25 cm, sticky tongue. Can also climb trees and swim. Defends itself by rolling into a ball or by rapid burrowing. Solitary, mating in autumn and giving birth in spring to (usually) a single young.[6]

Names: The Chinese “Chuang Shan Jia (pinyin)” means “penetrate the mountain”; the English “pangolin” is from the Malay *pengguling* meaning “something that rolls up”.

Status: No recent burrows were found during KFBG surveys in Guangdong, Guangxi or Hainan (though it was still in Hong Kong and Jiangxi). Endangered, both globally and nationally, by steep declines across its range due to hunting – principally to meet the demand in China which is pushing all Asian species toward extinction.[7,8] A further potential threat to remaining wild populations is the inappropriate release of non-native pangolin species after confiscation. The confiscated animals should be returned to the range states whenever possible. Also on CITES Appendix II.

(by John Fellowes and Michael Lau)

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抱茎白点兰

*Thrixspermum*白点兰属共有150种兰花，分布在斯里兰卡和喜马拉雅山地区，并广泛分布在东南亚至太平洋西南面的岛屿[1]。苏门答腊分布有38个该属的种[2]，似是该属分布的核心地带。全部种皆为附生兰或者石生兰，主要分布在沿海地区日晒足、受人类活动影响的地方，由海平面到1,500米的山区都有分布。

中国现知的*Thrixspermum*白点兰属有13种[3]。其中的*Thrixspermum amplexicaule* 抱茎白点兰仅在海南岛东部沿海发现，但在东南亚大陆、马来群岛、新几内亚和所罗门群岛都有分布。虽然分布很广，但是对于该种的生态学信息却知之甚少。

在*Thrixspermum amplexicaule* 抱茎白点兰的分布范围采集的标本显示该种喜爱生活在日晒充足、受到一定程度人为侵扰的疏林地区。在海南，目前仅在海口市附近火山岩地区的干旱带刺灌丛中发现。它们附生于灌丛或岩石上，不象一般附生兰把根系“吸附”在别的植物上，而是如同有攀缘茎的植物一样，依靠发达的气根“挂”在灌丛上。茎细长，稍扁，每节长出1条气根。叶先端稍尖而微开裂，基部无柄，呈心形抱茎，排成二列，并因此特征而得名。花序轴较长、直立，花由浅粉红到浅紫色，顺序开花。

虽然抱茎白点兰会整株开花几个星期，每朵花只会开一天或更短。如果栖息地受到成片的木质植被遮盖，该种就会变成不育，甚至消失。为什么每朵花只开那么短的时间仍然是一个谜，目前也不清楚该种的授粉者，但认为应该是中大型的昆虫[4]。

抱茎白点兰似乎是典型的演替早期的植物类型，占据着临时性的生态位置茂盛生长。该种在某些地点密度很高，在海南，1平方米的面积内可有数十个植株。但目前其在海南的分布点地都不在自然保护区里面。随着海口市的发展，抱茎白点兰赖以生存的火山岩地区正面临着旅游开发、大型房地产发展项目和高尔夫球场建设的威胁。该种在中国被列作“易危”级别[5]。

（Stephan Gale 与卢刚著）

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Thrixspermum amplexicaule (Blume) Rchb. f.

Thrixspermum is an orchid genus of about 150 species distributed from Sri Lanka and the Himalayan region, throughout Southeast Asia to the Southwest Pacific islands.[1] Sumatra appears to represent the centre of diversity for the genus, with 38 species recorded.[2] All species are either epiphytes or lithophytes, typically occurring in sunny, disturbed situations close to the coast, from sea level to around 1,500 m.

Thirteen species of *Thrixspermum* are currently known from China.[3] One, *T. amplexicaule*, is known only from the eastern seaboard of Hainan Island, although it also occurs throughout mainland Southeast Asia, the Malay Archipelago, New Guinea and the Solomon Islands. Despite this wide distribution, surprisingly little is known about its ecology.

Herbarium material from across the species' range indicates that *T. amplexicaule* tends to occur in open, sunny sites prone to intermittent disturbance. In Hainan, it is found only in dry thorn-shrub thickets on volcanic rock around Haikou. The plant scrambles over low vegetation, sending out one aerial root at each node along its flat, slender stem. The leaves are narrowly ovate, clasping the stem at their base, and are arranged in two opposite rows. The plant produces long, erect racemes bearing several large pale pink to lilac flowers that flower in succession.

Though a plant may remain in flower for a few weeks, each individual flower only lasts one day or less. When the habitat becomes shaded by more substantial, woody vegetation, *T. amplexicaule* becomes sterile, and may disappear altogether. It is not known why individual flowers last for such a short period, and there are presently no data available on the species' pollinator, though it is presumed to be a medium-large insect.[4]

T. amplexicaule seems to thrive in a temporary niche typical of early-succession vegetation types. The species may become locally abundant, and in Hainan tens of plants have been observed in an area no greater than 1 m^2. However, all of the known localities of *T. amplexicaule* in Hainan are situated outside the island's nature reserves. With the development of Haikou city, the volcanic rock areas upon which this species is dependent are facing increasing development pressure from tourism, urban expansion and golf courses. The species is listed as Vulnerable in China.[5]

(by Stephan Gale and Lu Gang)

现实的世界？

The Real World?

全球化不可避免的带来了各方面的趋同，比如说“文化趋同”以及同这个讨论最相关的“经济趋同”，换另一种说法也就是文化和经济多样性的丧失。就复杂系统的运作而言，这就类似于生态系统中生物多样性，亦即：遗传异质性的丧失。我们的世界正逐渐失去其社会、文化和经济各方面的自我复原能力。现今的地球就像一片巨大的麦田，变得越来越容易受到相同社会或经济疾病的侵扰。如果想要全球社会经济系统这片大麦田不出问题的话，我们就得给它非常全面的管理、照料，因爲它自身对外界威胁的天然免疫力已经不复存在了。又或者可以这样表达，单一栽培与全球化两者是本质一致的方案，都是孤注一掷的做法。

管理一个均一性如此之强的系统需要采取一些如喷洒杀虫剂般的经济手段，因而也就必须面对一些我们预料不到、也不想见到的后果。国际货币基金(IMF)似乎做过不少类似的事。但我想不起来有什麽国家遵照了他们的指示后，国内的生活状况取得了任何改善。而且我们面对的这个系统本身已是极度不一致，一方面不断推动全球一体化，但这如上文所说需要全面管理；另一方面却宣称完全不受约束的自由市场才是最完美的。我认为……这样的一个全球生态体系正面临崩溃，现今的人口已远超它所能承受的极限，全球社会-经济系统也看似面临着崩溃的危险。这样的担忧现在看起来有充分的理由，一些熟悉财经界的人士都持有相似的观点。

…如果让我简单概括的话，我会说：“一旦人类开始从事农业，对物种长期生存最根本的威胁在于人在[理解和处理动态复杂系统]这方面的缺陷。这个盲点所衍生的就是人类普遍缺乏能力去认识这样一个事实：一个在颇长一段时间里都看似能良好运作的制度，往往由于很多原因不能够“永远”持续下去。这种信仰或怀疑（两种形式都可出现）在许多方面体现出来。最明显的反映就是多年来各界对托马斯·马尔萨斯[1]的讥讽，一是否认我们的自然资源是有限而且可以被消耗殆尽的事实；再就是作出假设粮食产量可以无止境增长的推断，四处大力推行“绿色革命”；而且还普遍坚信科技才是我们最终的“救世主”等等。

……继续假装我们的生态状况还是非常的稳定，这无疑是非常愚蠢的。我们制造的问题很大，虽然概念简单，但在实践中极难处理。最根本、最艰巨的挑战其实在于我们自己。也许我们应该从承认我们是很奇怪的动物物种开始，或者更具体的说，承认我们就是一种很奇怪的黑猩猩，对所处的生态环境并没有适应能力。也许我们应该停下来考虑下“智人”（*sapiens*）是否对我们最适当的称呼。聪明，是；机智，也算得上；但称得上睿智吗？有人曾说过这样的话：人类跟智慧的距离比我们想象中还要远。

附注：

1 托马斯·罗伯特·马尔萨斯牧师（Thomas Robert Malthus，1766年2月17日—1834年12月23日），一般被称呼为托马斯·马尔萨斯，虽然他喜欢自称为罗伯特·马尔萨斯。他是英国人口学家和政治经济学家。他的学术思想悲观但影响深远。

2 IMF为世界货币基金组织

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Globalisation in all its senses inevitably leads to uniformity – to cultural uniformity and, of immediate relevance to this part of the discussion, to economic uniformity. Or, to phrase that another way – to the loss of cultural and economic diversity. In terms of the functioning of complex systems, this is analogous to the loss of biodiversity – of genetic heterogeneity – in an ecosystem. The world is losing its social, cultural and economic resilience. Like an enormous field of wheat, the entire planet is becoming increasingly vulnerable to the same social or economic diseases, whatever they might be. And like that field of wheat, the global socioeconomic system will need to be very comprehensively managed if it is not to succumb to the assorted slings and arrows[1] to which it is exposed and against which it has lost its natural immunity. Or, to put this another way, the monoculture and globalisation are each dynamic equivalents of putting all one's eggs in the same basket.

Managing this homogeneous system will include the economic equivalent of applying pesticides – and have its own range of unintended, undesirable consequences. The actions of the IMF[2] would seem to fall within that category. I do not have the impression that living conditions within countries that have obeyed IMF directives have improved because of that response. And again we encounter the stupefying inconsistency of a system which sets out to produce global homogeneity, which therefore must be managed but which asserts that the ultimate god is the free market which must be left entirely to its own devices. I argued… that the global ecosystem is in serious danger of 'collapsing' to the extent of being unable to support more than a small proportion of the present human population – if that. It would seem that there are good reasons for suspecting that a collapse of the global socio-economic system might be more imminent. There are others far more familiar than I with the world of finance and economics who share such an opinion.

…If I were to make one simple generalisation it might be that, once Man adopted agriculture, the most fundamental threat to the long-term survival of our species lay in that deficiency [human difficulty in understanding and dealing with the dynamics of complex systems]… A derivative of that blind spot is an apparently widespread inability to recognise that a dynamic system that apparently works well over a significant period of time might not, for any number of reasons, be able to do so 'for ever'.

This type of faith or scepticism – it can take either form – shows itself in many ways. It is reflected in the ridicule that has been heaped on Thomas Malthus over the years, in refusal to acknowledge that some natural resources are effectively finite and therefore exhaustible, in some of the assumptions underlying the push to continue raising crop yields – for more 'Green Revolutions', in the underlying faith in continuing technological salvation – and so on.

…It would be foolish indeed to pretend that the ecological situation is anything but dangerously unstable. The problems we have generated are vast and, although conceptually simple, they are immensely difficult to deal with in practice. The most fundamental and most daunting challenge probably lies in coming to terms with ourselves. Perhaps we should begin by acknowledging that we are quite a strange species of animal or, more specifically, of chimpanzee that is showing precious little evidence of adapting to its ecological environment. We might also pause to consider whether *sapiens* is the most appropriate specific name for us. Clever, yes; smart, yes; – but wise? And, as someone or other once said – it's later than you think.

Notes:

1 "Slings and arrows of outrageous fortune" in Shakespeare - i.e. things going wrong

2 International Monetary Fund

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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，借以启发读者。《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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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 (1,200 words) and *Short articles* (500 words), with photographs, are invited on topics relevant to the magazine's focus in South China. These include, but are not limited to:

- Considerations and guidelines for effective management of protected areas
- Field research and reviews on the status and distribution of threatened species, taxonomic groups or ecosystem components
- Initiatives and case studies for ecological restoration and biodiversity conservation
- The working of relevant conventions, laws and policies
- Research on the importance and impacts of forest and wildlife utilisation.

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. In the News

Concise reports (<200 words) on news of forest and species conservation interest in South China and surrounding areas, based on published sources including reputable websites.

5. 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 for Manuscripts

Authors are advised to consult a recent issue of *Living Forests* for general style. 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.

Submissions

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.

Others

Contributors will receive two free copies of the issue in which their paper is published. The copyright, upon acceptance of an article, will be transferred to the Kadoorie Farm and Botanic Garden. To contact us, please write to:

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