

Conservation news

Measuring progress towards the 2010 target and beyond: an international expert workshop on biodiversity indicators

In 2002 the Convention on Biological Diversity (CBD) adopted a Strategic Plan that includes the target 'to achieve, by 2010, a significant reduction of the current rate of biodiversity loss at the global, regional and national level, as a contribution to poverty alleviation and to the benefit of all life on earth'. To assess progress towards the 2010 target the CBD subsequently developed a framework of goals, sub-targets and indicators, assembled in seven focal areas. In response, the 2010 Biodiversity Indicators Partnership (<http://www.twentyten.net>) was formed, with major support from the Global Environment Facility. This Partnership, coordinated by the UNEP World Conservation Monitoring Centre (UNEP-WCMC), brings together a host of international organizations working on indicator development to provide the best available information on biodiversity trends to the global community.

With 2010 approaching it is becoming clear that the target is unlikely to be met, and new international commitments to biodiversity will be required. Whilst intense international discussions are underway with regard to post-2010 targets, such targets will not be achievable if they are not measurable. To tackle this issue, on 6–8 July 2009, UNEP-WCMC, in collaboration with the secretariat of the CBD, convened a workshop of over 70 international experts in Reading, UK, to 'review the use and effectiveness of the 2010 biodiversity indicators with a view to providing guidance for the development of a robust post-2010 indicators framework'. The workshop was hosted by the UK Department for Environment, Food and Rural Affairs, with financial support from the European Commission, the UK Joint Nature Conservation Committee and UNEP.

This workshop was the first attempt to consider how the 2010 biodiversity indicators and the processes for their development, use and communication could be improved in a post-2010 world. The workshop, which was a lively event attended by representatives from a range of developed and developing countries, UN agencies, convention secretariats, regional biodiversity institutions and processes, as well as NGOs and research bodies, identified gaps in the current CBD indicator framework and challenges to the development and use of indicators at global, regional and national scales.

The meeting considered that only a handful of indicators in the CBD framework were well developed and able to provide robust temporal data on biodiversity trends, and all of these suggest that biodiversity continues to decline. Whilst participants noted the need to keep a revised frame-

work simple and the indicator suite small, it is going to be important to improve indicators of threat, ecosystem status and condition, and ecosystem services, amongst others, besides maintaining continuity through continued investment in the existing well-developed indicators. It is also important that new indicators are as scientifically rigorous and defensible as possible, with a need for improved peer review and quality control processes and a closer look at how the indicators combine to tell a coherent story.

The workshop drafted a suite of recommendations that will be submitted to the CBD Subsidiary Body on Scientific, Technical and Technological Advice and associated international meetings, with a view to informing the formulation of the post-2010 biodiversity targets and gaining the commitment of CBD Parties to ensure that post-2010 indicators are as scientifically robust and relevant to policy as possible. There was consensus that the new indicator framework should be used to strengthen national capacity for biodiversity monitoring and development of national indicators, with stronger linkages to regional and global indicator processes. The development of indicators would not only need to build on so-called northern science but should learn from and involve traditional knowledge.

There was also agreement that priority must be given to improving the communication of indicator messages and their implications for policy makers and the general public. Importantly, the post-2010 framework of indicators must be appealing to, and inform decision-making in, other sectors affecting biodiversity such as agriculture, forestry, trade and tourism. Success will only be achieved by strengthening and extending the kind of partnerships and processes that have begun to develop in the approach to 2010. For more information, see <http://www.cbd.int/doc/?meeting=EMIND-02>

MATT WALPOLE and PETER HERKENRATH UNEP-World Conservation Monitoring Centre, Cambridge, UK. E-mail matt.walpole@unep-wcmc.org

Conservation of the Yangbi maple *Acer yangbiense* in China

Yangbi maple *Acer yangbiense*, a new tree species described in 2003 (Y. Chen et al., *Novon*, 13, 296), is known from only four individuals scattered in the secondary woods on the western slopes of the Cangshan mountain range in Dali, in the west of Yunnan province, China. Recently one of the four trees was chopped down but has fortunately resprouted. As all four individuals are outside the Dali

Cangshan National Nature Reserve and, as the species is undoubtedly facing an extremely high risk of extinction, conservation action is urgently required. Supported by Botanic Gardens Conservation International (see <http://www.globaltrees.org/acer.htm>), the Institute of Botany of the Chinese Academy of Sciences, Beijing, began in situ and ex situ conservation programmes for *A. yangbiense* and the Critically Endangered *Acer leipoense* (endemic to Sichuan Province and known only from four herbarium specimens and a single population) in 2007.

Hand pollination experiments were carried out with the four extant Yangbi maple in Spring 2008 and, by September, the trees were fruiting. In October c. 3,000 seeds were collected from the hand-pollinated trees. At Kunming Botanic Garden, Yunnan, following 4 months of experimentation with various treatments, seeds successfully germinated and were sown. By February 2009 c. 1,600 seedlings had successfully germinated. They were potted in March, and by April mean seedling height was c. 10 cm.

These seedlings provide hope that the Yangbi maple may be saved from extinction. Kunming Botanic Garden is now carrying out comprehensive studies on the cytogenetics, physiological ecology and genetics of the seedlings. The aim is to use the information from these studies to restore the species in the wild.

WEIBANG SUN and QING YIN Kunming Botanic Garden, Kunming Institute of Botany, Chinese Academy of Sciences, Kunming 650204, Yunnan, China. E-mail wbsun@mail.kib.ac.cn

The value of long-term projects: helping to conserve large felids in the southern Brazilian Amazon

Re-evaluation of large felid (jaguar *Panthera onca* and puma *Puma concolor*) depredation levels has revealed positive changes in attitudes towards non-lethal control methods in the southern Brazilian Amazon. Most large carnivore species are experiencing global declines driven almost entirely by human activities and/or conflict with humans (see *Oryx*, 43, 18–34). Human-carnivore conflicts are especially frequent at deforestation frontiers where the requirements of carnivore populations are often at odds with human activities. Faced with these issues, the development of effective conservation strategies for large carnivores depends on resolving conflicts with people.

Data from the Alta Floresta region, northern Mato Grosso, Brazil, were obtained during research that aimed to understand landscape-scale influences on terrestrial mammals in an Amazonian deforestation frontier. Investigations into human-carnivore conflicts were initiated in 2002 in response to complaints from local landowners

about attacks of large felids on livestock. The aims of the project were to help conserve felids and reduce human-carnivore conflicts across the region, which has experienced one of the highest deforestation rates in the Brazilian Amazon and currently supports nearly 2 million cattle. These aims required a long-term vision but long-term projects are rarely implemented in South America because of limited financial resources. To overcome such limitations a range of financial sources and complementary project activities were used. The project attracted support from academic, tropical forest conservation, and research funding bodies, enabling 5 years of research and outreach activities.

In 2003–2004 we carried out a series of one-to-one interviews with landowners and managers at 62 properties over an area of 21,600 km². In each interview levels of depredation and different management options to mitigate such problems were discussed and educational booklets were distributed. These activities were followed up in June 2009 when 55 of the original 62 properties were revisited. Five years on, the reception by the interviewees was more welcoming, with many remembering the first encounter.

Re-evaluation of depredation levels on livestock showed that there was a significant reduction in the number of properties where predation problems were reported, from 78.2 to 61.8%. We also found an increase in positive attitudes towards the implementation of methods of non-lethal control to reduce depredation, and that there was an increase in awareness of the mitigation options presented 5 years earlier. Asked in 2009 which methods were good to mitigate depredation problems, 80.0% of respondents were keeping cattle further from the forest (58.2% in 2003–2004), 52.7% were keeping aggressive bulls in the herd (23.6% in 2003–2004), and 5.5% were using fireworks and banning hunting on the property (0% in 2003–2004).

These results suggest that the approach used in this long-term project is effective in facilitating awareness of non-lethal control methods for reduction of large felid depredation of cattle, and can thus directly reduce human-carnivore conflict. For example, following the recommendations proposed in 2004, one farm has now entirely eliminated depredation problems. This feedback suggests that the integration of research and outreach programmes can make an effective combination for the conservation of large felids in an agricultural deforestation frontier in the Amazon. This approach could be of value in other areas where human-carnivore conflicts exist.

RICARDO L. P. BOULHOSA Instituto Pró-Carnívoros, Sao Paulo, Brazil

FERNANDA MICHALSKI University of São Paulo, Brazil and Instituto Pró-Carnívoros, Sao Paulo, Brazil. E-mail fmichalski@procarnivoros.org.br

Trading across scales: advancing wildlife trade policy with case study research

On 15 June 2009 a joint workshop Trading Across Scales—Current Perspectives on Managing Wildlife Use was held by two bodies in Cambridge, UK: the Department of Geography, University of Cambridge, and the UNEP–World Conservation Monitoring Centre. The workshop aimed to elucidate new findings and directions regarding the trade of wild living resources through a series of case studies and thematic discussions involving academics and practitioners. One of the issues tackled was the scale of approach. Macro level research that aims to inform large-scale policies often lacks the depth required for the development and implementation of effective policies in individual countries and specific circumstances. Small-scale case study research can provide this depth through a contextualized understanding of particular governance structures and the behaviour of individual markets. Without such detail trade policies are likely to be ineffective or, worse, lead to adverse outcomes.

These potential shortfalls were illustrated through case study research presented at the meeting. The international trade in butterflies from Papua New Guinea (see *Oryx*, 41, 386–389) has been subject to formal regulation by CITES, based on the existence of a market rather than an indication of unsustainable trade. This precautionary approach, which is widely adopted by trade regulation policies has, in this case, not led to effective management. The adoption of such policies by disconnected government departments has, through increased transaction costs, penalized traders that use legal and legitimate routes. This has incentivized illegal trade and negatively affected local producers.

Market-based approaches, which offer an alternative to top-down regulation, are gaining support. Rather than being prohibitive these approaches work to create incentives for, and to support, markets that do not endanger species (e.g. through farming or ranching wildlife). The success of such measures does, however, strongly depend on the nature of demand. Research in Papua New Guinea has shown that ranched butterflies satisfy the demands of collectors and are preferred, because of their good condition, to wild-caught specimens. The opposite was revealed from research on demand for wild meat in Vietnam where, because of preferences for wild-caught animals, farmed wild animals do not satisfy demand. Of even greater concern is the effect of the farming of bear bile in Vietnam,

which appears to be contributing to increased demand for wild bear bile.

Understanding consumer demand can also highlight the need for intervention, whether through market or regulatory approaches. The domestic trade in snakes in Cambodia is fuelled by the high demand for snakes as food for crocodiles. Despite its magnitude, this market is considered to be of low priority for intervention. The responsiveness of demand to the availability of snakes, and other substitute resources, offers a relatively sustainable form of consumerism whereby incentives to hunt at low population levels are avoided. This contrasts with the international market for Cambodian snakes in which value is likely to increase with rarity as a result of their high-end value in fashion markets. Rarity value is also important in markets for wild animals in Vietnam and, in such cases, regulation may be the most effective control measure.

These examples highlight the necessity of a contextualized understanding of how individual markets operate for trade policy development. To incorporate the nuances specific to each market and market place, case study research needs to be better linked with the processes that lead to policy change and better embedded within macro-level studies.

While conservation science and practice have started to embrace the wider perspective of the ecosystem approach and incorporate goals of human well-being, policies concerned with the trade of wild living resources remain species focused. Institutions such as CITES have been criticized for their lack of flexibility to incorporate the socio-economic context in which trade is occurring (see *Oryx*, 42, 548–553). As raised during the discussion at this workshop, the conceptual underpinning of trade policies requires development. Seventeen years after the signing of the Convention on Biological Diversity and 34 years after CITES was established, effective trade policy directions compatible with a livelihood and ecosystem approach have not advanced significantly. New directions may lie in rethinking our scale of approach and incorporating the narratives of individual case studies.

SHARON E. BROOKS and ROB D.S. SMALL *Department of Geography, University of Cambridge, Cambridge, UK. E-mail sharonelizabethbrooks@googlemail.com*

REBECCA DRURY *Department of Anthropology, University College London, London, UK*