

Report at a Glance

Source: A Rapid Biological Assessment of three sites in the Mountains of Southwest China Hotspot, Ganzi Prefecture, Sichuan Province, China: 62

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Expedition Dates

22 August – 9 September 2005

Area Description

Based on the area's high vascular plant diversity, impressive mammalian diversity and high levels of endemism among avian species, the Mountains of Southwest China are recognized as one of 34 global Hotspots of Biodiversity (Mittermeier et al. 2004). This Biodiversity Hotspot, comprising nearly one-tenth of China's land area (about 800,000 km²), contains the eastern Tibet Autonomous Region, northwestern Yunnan, western Sichuan, the southeastern tip of Qinghai and the southern tip of Gansu, and harbors the richest biodiversity of any temperate forest region in the world (Boufford et al. 2004).

The region is also culturally rich. Nearly 80 percent of the hotspot is inhabited by Tibetans, who are strong believers in Tibetan Buddhism, which teaches unique cultural values and perceptions toward life and the natural world. In Ganzi Prefecture of Sichuan and eastern Tibet, those places where wildlife still can be found are most often the protected sacred sites of local villages and monasteries. The practice of protecting sacred sites has resulted in an accumulated wealth of indigenous knowledge on land-use and resource management and is still functional in many places despite the influences from outside the region. This non-material value system presents a unique opportunity for biodiversity conservation in the Hotspot and is especially important in promoting sustainable development and livelihoods, not only for Tibetan communities but also for the rest of Chinese society.

Expedition Objectives

The goal of Conservation International's (CI) Sacred Lands Project is to conserve the unique biodiversity of the Mountains of Southwest China Hotspot by promoting traditional Tibetan sacred lands and resource management systems in the region, and promoting the associated sustainable lifestyle values to the broader Chinese society.

A Rapid Assessment Program (RAP) team of Chinese and international biodiversity experts surveyed three remote valleys in the Mountains of Southwest China Hotspot, Sichuan Province, China. The RAP survey data will inform CI and local Tibetan communities of the rich biodiversity on their lands and help them promote protection of their lands beyond their communities. Data will also be used to justify and determine boundaries for the expansion of nature reserves and parks in the region.

Results

All three RAP survey sites contain a rich and interesting biodiversity (see Executive Summary). In particular, at Site 1, Danba County, the RAP team documented many globally threatened species, including Critically Endangered (CR) and Endangered (EN) small mammal species. Site 2, Kangding, contained the highest diversity since it was at the lowest elevation, with several species possibly new to science, including two amphibian species. The third site, Yajiang, was at the highest elevation and in best condition, with a high diversity of mammals and birds, and high habitat heterogeneity.

Number of Species Recorded

| | |
|---------------|-------------|
| Plants | 1477 |
| Ants | 45 |
| Beetles | 43 |
| Orthoptera | 14 |
| Other Insects | 170 |
| Amphibians | 10 |
| Reptiles | 6 |
| Birds | 164 |
| Small mammals | 33 |
| Large mammals | 17 |
| Total | 1979 |

Species Possibly New to Science

| | |
|---------------|---|
| Ants | 4 species |
| Katydid | <i>Kingdonella</i> sp. nov. |
| Beetles | 10-11 species |
| Other Insects | 10 species |
| Amphibians | 2 species (<i>Amolops</i> sp. nov. and <i>Megophrys</i> sp. nov.) |
| Small mammal | <i>Microtus fuscus</i> ssp. nov. (new subspecies) |

New Records for Sichuan Province

| | |
|-------------|---|
| Beetles (2) | <i>Enoplotrupes yunnanus</i> <i>Odontotrupes meiomintang</i> |
|-------------|---|

Species of Conservation Concern

China Plant Red Data Book (Fu and Chin 1992), V=Vulnerable, R=Rare, E=Endangered)

Plants (13)
Abies georgei Orr (V)
Cupressus chengiana S. Y. Hu (V)
Tetracentron sinense Oliv. (R)
Cercidiphyllum japonicum Sieb. et Zucc. (R)
Circaea agrestis Maxim. (R)
Juglans regia L. (V)
Salix magnifica Hemsl. (V)
Syringa pinnatifolia Hemsl. (E)
Sinopodophyllum emodi Wall. ex Royle Ying. (R)
Euptelea pleiospermum Hook. f. et Thoms. (R)
Eucommia ulmoides Oliv. (R)
Rhododendron alutaceum Balf. f. W. W. Smith (V)
Gastrodia elata Bl. (V)

IUCN Red List of Threatened Species (IUCN 2007)

| | |
|----------------|---|
| Plants (3) | <i>Gastrodia elata</i> Bl. (VU) <i>Cupressus chengiana</i> (VU) <i>Salix magnifica</i> (VU) |
| Amphibians (2) | <i>Batrachuperus tibetanus</i> (VU) <i>Nanorana pleskei</i> (NT) |
| Birds (4) | <i>Lophophorus lhuysii</i> (VU) <i>Perisoreus internigrans</i> (VU) <i>Bonasa sewerzowi</i> (NT) <i>Crossoptilon crossoptilon</i> (NT) |

| | |
|-------------------|---|
| Small mammals (4) | <i>Soriculus salenskii</i> (CR) <i>Sorex cylindricauda</i> (EN) <i>Eospalax fontanierii</i> (VU) <i>Eozapus setchuanus</i> (VU) |
| Large mammals (6) | <i>Ailurus fulgens</i> (EN) <i>Capricornis milneedwardsii</i> (NT) <i>Cervus albirostris</i> (VU) <i>Catopuma temminckii</i> (VU) <i>Ursus thibetanus</i> (VU) <i>Elaphodus cephalophus</i> (DD) |

The IUCN Red List (IUCN 2007) categorizes species based on the degree to which they are threatened. Categories, from higher to lower threat status, include: Critically Endangered (CR), Endangered (EN), Vulnerable (VU), Near Threatened (NT) and Data Deficient (DD, not enough is known to make an assessment).

Conservation Recommendations

All three RAP survey sites contain a wealth of biodiversity and each presents unique opportunities for biodiversity conservation. Present grazing practices are likely having a long-term, negative impact on many species of wildlife and are not sustainable for domestic livestock production. Review and revision of domestic livestock management practices is vital not only to support sustainable livestock production but also to preserve the biodiversity of western Sichuan. Human population density of some areas in and around the RAP survey sites is relatively high and is likely to increase. More abundant human populations put pressure on local natural resources as people look to the forests as sources of timber, firewood, grazing land, medicinal plants, and agricultural expansion. For these reasons it is recommended to:

- Reduce grazing to more sustainable levels and implement measures to decrease the influence to wildlife that results from the grazing of domestic livestock.
- Promote and recognize the positive effects of the local Buddhist religion on wildlife protection. Integrate Tibetan cultural values into local land planning and management by expanding the scale of the traditional protection system.
- Establish a nature reserve based on the Sacred Dingguoshan Mountain in Danba county. The forests on Dingguoshan Mountain are in good condition, the population density of local people is quite low and the vegetation is recovering well from past logging, therefore this site has high protection value.
- Design all protected areas in Kangding County to specifically include preservation of Panda habitat, as Pandas were recorded in this area during the third Giant Panda survey.
- Establish a nature reserve to protect the alpine and sub-alpine ecosystems in Yajiang. The strong consciousness of the local Tibetan people toward protecting their environment has kept this area in good condition and should make protection of this site possible.

References

- Boufford, D.E., P.P.van Dijk and L. Zhi. 2004. Mountains of Southwest China. In: Mittermeier, R.A., P. Robles Gil, M. Hoffmann, J. Pilgrim, T. Brooks, C.G. Mittermeier, J. Lamoreux and G.A.B. da Fonseca (eds.). Hotspots Revisited. Cemex. Pages 159 – 164.
- IUCN. 2007. 2007 IUCN Red List of Threatened Species. Web site: www.iucnredlist.org. Accessed on 28 July 2008.
- Mittermeier, R.A., P. Robles Gil, M. Hoffmann, J. Pilgrim, T. Brooks, C.G. Mittermeier, J. Lamoreux and G.A.B. da Fonseca (eds.). 2004. Hotspots Revisited. Earth's Biologically Richest and Most Endangered Terrestrial Ecoregions. CEMEX/Agrupación Sierra Madre, Mexico City.