IUCN Conservation Outlook Assessment 2014 **(archived)**
Finalised on 19 September 2014

Please note: this is an archived Conservation Outlook Assessment for Sichuan Giant Panda Sanctuaries – Wolong, Mount Siguniang & Jiajin Mountains. To access the most up-to-date Conservation Outlook Assessment for this site, please visit https://www.worldheritageoutlook.iucn.org.

Sichuan Giant Panda Sanctuaries – Wolong, Mount Siguniang & Jiajin Mountains

SITE INFORMATION

Country:
China
Inscribed in: 2006
Criteria:
(x)

Site description:
Sichuan Giant Panda Sanctuaries, home to more than 30% of the world's pandas which are classed as highly endangered, covers 924,500 ha with seven nature reserves and nine scenic parks in the Qionglai and Jiajin Mountains. The sanctuaries constitute the largest remaining contiguous habitat of the giant panda, a relict from the paleo-tropic forests of the Tertiary Era. It is also the species' most important site for captive breeding. The sanctuaries are home to other globally endangered animals such as the red panda, the snow leopard and clouded leopard. They are among the botanically richest sites of any region in the world outside the tropical rainforests, with between 5,000 and 6,000 species of flora in over 1,000 genera. © UNESCO

SUMMARY

2014 Conservation Outlook

Good with some concerns

A number of concerns remain regarding road and dam developments inside the site, as well as mining, translocation of local residents, an emphasis on tourism development rather than conservation, a preoccupation with new developments following earthquake events and a temptation to accelerate ecological restoration through reforestation with arguably inappropriate tree species. There is too much emphasis on captive breeding and less emphasis on in-situ conservation and habitat restoration. Reintroduction research and practice has been undertaken in the area for over a decade, with some progress, but reintroduction will not significantly contribute to wild panda population increase in the near future. The latest IUCN reactive monitoring mission recommended extending site to include Rongjin NR to link with Liangshan giant panda population. In fact additional sites in Minshan and even Baishuijiang (in Gansu Province) could be added as parts of a serial site even though not physically connected. Coordination of management between sub-sites via WH office remains weak, better reporting from field and greater authority to WH office is also needed.

Current state and trend of VALUES

Low Concern
Trend: Data Deficient

Despite some damage from earthquakes and human developments (roads, mining, Qiaoqi dam etc.) the site retains its essential WH values and remains in a very natural state over the great majority of its area. It continues to serve as the heart of China’s wild giant panda population and the hub of giant panda conservation.

Overall THREATS

High Threat

Although several high threats exist these are limited to rivers and less remote sectors of the property. Only few threats impact on Giant pandas and consequently the OUV of the property. Areas adjacent to human developments are somewhat compromised but are small in total area and peripheral to core values of the site. The earthquakes that are of great concern to human residents are considered a natural part of the site's geography and ecology. Landslides caused by earthquakes are generally healing through natural recolonisation, with exception of certain areas, including eastern part of Wolong Nature Reserve. Due to steep profile, large size, humid climate and wide altitudinal range, the property contains some large undisturbed areas with high natural resilience. The changing climate is causing forest zones to climb further up the mountains reducing the habitat area for important alpine communities. Intensity and frequency of extreme rainfall events may also increase in the future.

Overall PROTECTION and MANAGEMENT

Some Concern

Wolong as the central protected area of the site has always enjoyed first place in concern, financial and manpower investment of all China's protected areas. Some of the other county sites are still poorly supported and require improvements in staffing, operational budgets, basic ecological training and management capacity. Better integration of local communities into the site management is recommended. The government is spending large sums of money in encouraging some villages to translocate out of the core area. The general trend in this part of China is for continued movement of population from countryside to towns. A disproportionate effort is placed on management of a captive giant panda population. Coordination of management between sub-sites via WH office remains weak, better reporting from field and greater authority to WH office is needed. There is also a major gap in integrating conservation and development policies with effective disaster risk management planning and implementation.

FULL ASSESSMENT

Description of values

Values

World Heritage values

- **High proportion of global population of iconic giant panda**
  Criterion:(x)

  The Sichuan Giant Panda Sanctuary includes more than 30% of the world's population of giant Panda and constitutes the largest and most significant remaining contiguous area of panda habitat in the world. It is the most important source of giant panda for establishing the captive breeding population of the species. (SoOUV, 2012).

- **Rich montane flora, with many endemic species**
  Criterion:(x)

  The property is also one of the botanically richest sites of any temperate region in the world or indeed anywhere outside of the tropical rain forests (SoOUV, 2012). The property contains more than 10,000 plant species making it possibly the richest temperate flora in the world with high levels of endemism; e.g. more than 200 species of Rhododendron are located here, almost all endemic to China and many confined to this property. Other significant floral elements include magnolias, orchids, lilies, primulas, alpine flora, relict trees and endangered medicinal plants (Nomination Dossier 2006, WCMC Factsheet).

- **Rare and endemic birds**
  Criterion:(x)

  The property constitutes best protected examples of two EBAs – Central

Sichuan Mountains and West Sichuan Mountains (ICBP 1992) and contains 5 recognised IBAs – Wolong, Anzihe, Heishuihe, Fengtongzhai and Labahe (BirdLife International 2009). The site lists more than 300 resident breeding bird species including many local endemics. This is a radiation centre for pheasants – 11 species (Nomination Dossier 2006).

► Rare and threatened mammals

Criterion:(x)

The property lists some rare species – snow leopard, clouded leopard, blue sheep and wolf - probably in non-viable numbers (a recent study suggests that there might be a viable, even though still small and probably declining, population of snow leopard within the property (Liu, 2010); but contains viable and significant population of many other rare, endemic and protected mammals including – takin, red panda and golden monkey (Nomination Dossier 2006, WCMC Factsheet, Smith & Xie 2008).

► Diversity of habitats

Criterion:(x)

The property’s biological richness, ecological resilience and scenic values are due to its large size, wide altitudinal range, steep profiles and great diversity of habitats. There is a continuum from permanent glaciers of Siguniang eastwards through coniferous and temperate broadleaf forests to evergreen subtropical forests and westwards through alpine grasslands to less humid scrub oak, larch and birch woodlands. Mountain streams form breeding catchments of several different rivers (Nomination Dossier 2006).

► Diverse endemic richness of other groups

Criterion:(x)

Overall richness and/or high levels of endemism is repeated in many other taxa including fungi, insects (Bhutanitis, Apollo etc.), amphibians (salamanders) and fish (rare Yangtze catmint endemics) (Nomination Dossier 2006).

Assessment information

Threats

Current Threats

High Threat

Several high threats identified with serious impacts on aquatic habitat and forests, including roads, dams, earthquakes and landslides.

▶ Tourism/ Recreation Areas

Low Threat
Inside site
Outside site

Major investments in Wolong, Dujiangyan, Yaan and Qiaoqi other towns increase impacts of tourism (R4)

▶ Roads/ Railroads

High Threat
Inside site
Outside site

A few roads cross the property, especially sensitive is the road across Balangshan from Wenchuan to Aba prefecture (R7, R4)

▶ Agricultural/ Forestry Effluents

Low Threat
Inside site
Outside site

Fertilizer and insecticide run-off from agricultural lands (R7)

▶ Solid Waste

Very Low Threat
Inside site

Outside site

Fly tipping of waste into the rivers is quite common in most towns and villages (R7, R4)

► Mining/ Quarrying

Very Low Threat
Inside site

Old mine shafts remain in Pitiao and other valleys. May cause toxic run off and explain low fish density (R2)

► Housing/ Urban Areas

High Threat
Inside site
Outside site

Many small villages and some towns within property or buffer enclaves create disturbance (R2, R7).

► Commercial/ Industrial Areas

Low Threat
Outside site

Major Qiaoqi dam and many smaller dams on some on Donghe, Baoxing, Pitiao and other rivers of property. High impact on river fauna but low impact on the OUV of site (R2, R10).

► Crops

Low Threat
Inside site
Outside site

Agriculture only in small patches of inhabited valleys cause some encroachment and disturbance (R2, R3, R7, R5, R4)

► Livestock Farming / Grazing

Low Threat
Inside site
Outside site

Yaks graze on most high pastures competing with local ungulates and lead to

illegal human persecution of any carnivores (R4)

► Livestock Farming / Grazing

Low Threat
Inside site
Outside site

Cattle and horse grazing in forests, leading to altered understory vegetation structure and species composition (with long-term implications for forest regeneration) and declined bamboo biomass for pandas (R16, R17) Generally, in Wolong forests, cattle and goats are much more common than horses, and they generally cause less damage than horses.

► Mining/ Quarrying

Low Threat
Outside site

Marble mines cause disturbance, noise, dust and rubble. Now being contained and controlled (R2, R7)

► Logging/ Wood Harvesting

Low Threat
Inside site
Outside site

Former commercial logging farms closed since 1980s. Villagers cut trees for fuel, house construction and for growing mushrooms (R2)

► Tourism/ visitors/ recreation

Low Threat
Inside site
Outside site

Tourism currently declined post 2008 earthquake but set to be reopened and greatly increased (R4). New investments have been made into large-scale tourism development in Tianquan and Lushan after the 2013 earthquake.

► Dams/ Water Management or Use

High Threat

Inside site
Outside site

Dams create new still water habitat but greatly change annual water flow critical to fish and rare salamanders (R10, R4)

► Invasive Non-Native/ Alien Species

Low Threat
Inside site

Planting of non-native species – Metasequoia, Cryptomeria, gingko, non-local bamboos plus reforestation on landslide areas are inappropriate.

► Other

Low Threat
Inside site
Outside site

Major giant panda compounds in Chengdu, Dujianyan, Yaan and Wolong plus breeding centres for golden monkeys, rare pheasants etc. all have overall negative impact on wild populations until such time as reintroduction programmes become effective (R4).

► Subsistence hunting

High Threat
Inside site
Outside site

Snare lines set in remote areas and near cropland by local villagers and hunting using guns and dogs by local villagers and outsiders, snares and poison around pasture land by local herders (R2, R3, R7)

► Air Pollution

Low Threat
Inside site
Outside site

Leaves of trees in eastern parts of property coated with layer of black soot from smog due to heavy industry in Chengdu basin and some valleys in the WH site (e.g., in Wenchuan county).

► Earthquakes/ Tsunamis

Very High Threat
Inside site
Outside site

Richter 8 Wenchuan earthquake in 2008 and Lushan, Yaan earthquake at Richter 6.6 in 2013 both caused landslides and much destruction to forest and infrastructure (R11).

► Other Biological Resource Use

High Threat
Inside site
Outside site

Several medicinal plants harvested to critical levels – Gastroidea, gentians, caterpillar fungus etc. (R3, R5, R7, R4)

► Avalanches/ Landslides

High Threat
Inside site
Outside site

Forest is mosaic of former landslides and earthquakes. Damage to giant pandas not so serious and dynamic geology may be biologically enriching (R11).

Potential Threats

High Threat

Few new threats might appear on horizon, including potential discovery of valuable minerals. Climate change and growing pressure from tourism, roads and increasing population will get much greater.

► Temperature changes

Low Threat
Inside site
Outside site

Extreme snow and cold weather in 2007/8. Extreme high rainfall in 2012 and

2013. Events predicted to become more frequent with climate change (R15)

► Mining/ Quarrying

High Threat
Inside site
Outside site

Potential discovery of valuable mineral deposits could lead to heavy disturbance and pollution but there are no plans for such developments.

Protection and management

Assessing Protection and Management

► Relationships with local people

Some Concern

Locals, especially the poorer ones, do not benefit much from the site, lose access and sometimes get moved (R7, R4)

► Legal framework and enforcement

Mostly Effective

“The property is covered by a range of laws and regulations at national and provincial levels. These include the “Regulations of the People’s Republic of China on Nature Reserves” and “Regulations on the Management of Nature Reserves of Sichuan Province”. A specific regulation relating to protection of World Heritage in Sichuan Province has been developed, to apply to the nominated property, and this represents the first of its kind in China. These regulations provide an adequate legal framework for protection of the nominated property. The challenge is to ensure their effective implementation and to ensure that there is effective coordination between all relevant agencies and stakeholders.” (R4)

► Integration into regional and national planning systems

Some Concern

Integration into regional and national planning system is rather weak. Needs

more mainstreaming (R7, R4)

► Management system

Mostly Effective

The site is managed under the auspices of the Sichuan World Heritage Management Committee (SWHMC) and has a cascading structure of governance that includes representatives from the relevant government ministries and agencies involved in the site (State Forest Administration (SFA), Ministry of Construction (MOC) and Ministry of Environment (MEP, formerly State Environmental Protection Agency (SEPA)). The 34COM SOC report mentions that “the management authority should establish regular reporting on the property’s state of conservation to the SWHMC, including information on habitat, wildlife populations and the conditions of local people, in order to allow the Committee to proactively manage the property and identify issues of concern early on” (R6, R2, R3, R7, R4).

► Management effectiveness

Some Concern

Some concerns were expressed at the time of inscription of the property with regards to the management effectiveness. The World Heritage Committee requested the State Party to “Ensure the "Sichuan World Heritage Management Committee" has sufficient powers, resources and authority to ensure it can effectively carry out its role in relation to management of the property, including in relation to the review and approval of any major development proposals which may impact on the natural values of the nominated property” (Decision 30COM 8B.22).

► Implementation of Committee decisions and recommendations

Some Concern

At the time of inscription the World Heritage Committee requested the State Party to implement certain measures regarding management effectiveness, existing infrastructure within the property, existing and proposed dams and tourism development (Decision 30COM 8B.22). Certain progress has been achieved in addressing some of the issues as evidenced by the 2010 Mission report – “Efforts are being made on the part of the State Party to enhance management so as to improve the integrity of the property. While action has

been taken on all issues identified at the time of inscription, a number of issues remain in addition to some issues arising subsequent to inscription" (R4)

▶ Boundaries

Mostly Effective

Adequate (R2, R7) but could be extended (R4)

▶ Sustainable finance

Mostly Effective

The property enjoys overall relatively high levels of finance, with high level of variation between national and regional level protected areas. Provincial and county level PAs and buffer areas do not receive enough finance for monitoring and management activities. (R4)

▶ Staff training and development

Some Concern

Some weaknesses noted and capacity building in disaster risk management is especially needed (R4)

▶ Sustainable use

Some Concern

Always a concern (R2, R3, R4, R7)

▶ Education and interpretation programs

Some Concern

Weak or absent (R7)

▶ Tourism and interpretation

Some Concern

"While the investments in tourism infrastructure and in public awareness of the beauty of nature have been strong, less attention has been paid to increasing tourism staff capacity or tourist visitor awareness of conservation issues. In addition, monitoring for impacts of tourism has not yet started yet

this is crucial to begin prior to any major increase in visitor numbers in order to have a baseline from which to assess change” (R4).

► Monitoring

Serious Concern

Weak with almost no reporting (R7, R4)

► Research

Mostly Effective

Much research has been done in the site, but this is still not enough to meet the existing challenges, Especially needed is research that would integrate biodiversity conservation, rural development and disaster risk reduction for overall sustainability and resilience of the WH site.

Overall assessment of protection and management

Some Concern

Wolong as the central protected area of the site has always enjoyed first place in concern, financial and manpower investment of all China’s protected areas. Some of the other county sites are still poorly supported and require improvements in staffing, operational budgets, basic ecological training and management capacity. Better integration of local communities into the site management is recommended. The government is spending large sums of money in encouraging some villages to translocate out of the core area. The general trend in this part of China is for continued movement of population from countryside to towns. A disproportionate effort is placed on management of a captive giant panda population. Coordination of management between sub-sites via WH office remains weak, better reporting from field and greater authority to WH office is needed. There is also a major gap in integrating conservation and development policies with effective disaster risk management planning and implementation.

► Assessment of the effectiveness of protection and management in

addressing threats outside the site
Data Deficient

Data Deficient

State and trend of values

Assessing the current state and trend of values

World Heritage values

▶ **High proportion of global population of iconic giant panda**
Low Concern
Trend:Improving

Continued improvement of bamboo habitat post flowing in 1980s plus good protection and connectivity and low mortality in earthquakes supported by periodic new surveys indicate a healthy and increasing population.

▶ **Rich montane flora, with many endemic species**
Good
Trend:Stable

Satellite imagery indicates forests and vegetation remain in good condition so apart from over-collected rare medicinal plants richness of flora should be retained and resilient against climate change.

▶ **Rare and endemic birds**
Good
Trend:Stable

Apart from some peripheral hunting of song birds (Hwamei) and pheasants the bird fauna remains undisturbed and no indications of declines.

▶ **Rare and threatened mammals**
High Concern
Trend:Deteriorating

Some mammal species are now rare or absent as a result of hunting or

disturbance – primates, deer, carnivores, argali etc.

▶ **Diversity of habitats**
Good
Trend:Stable

Full range of habitats maintained

▶ **Diverse endemic richness of other groups**
Data Deficient
Trend:Data Deficient

Little data on some taxa but aquatic organisms certainly declining

Summary of the Values

▶ **Assessment of the current state and trend of World Heritage values**
Low Concern
Trend: Data Deficient

Despite some damage from earthquakes and human developments (roads, mining, Qiaoqi dam etc.) the site retains its essential WH values and remains in a very natural state over the great majority of its area. It continues to serve as the heart of China's wild giant panda population and the hub of giant panda conservation.

Additional information

Key conservation issues

▶ **Potential for tourism developments to threaten core values**
Local

Each scenic area and nature reserve wants to earn greater tourism revenue

▶ **Yak grazing levels increased adding to pressure on alpine sectors**
Local

Alpine zone also facing shrinking due to climate change

▶ **Weak ecological understanding and low management capacity at smaller scenic areas**
Local

Leads to inappropriate development of facilities and activities within site

▶ **Over-emphasis on keeping and breeding captive pandas**
Local

Release trials into areas where new populations could be established have started. But effective restoration is still to be achieved, especially what concerns turning monoculture of exotic coniferous plantations into more bio-diverse forest habit suitable for pandas and other wildlife.

▶ **Poaching and collection of medicinal plants deplete some species**
Local

Growing purchasing power of urban population led to increasing demand for wildlife and medicinal plant products. Limited livelihood strategies in some areas, especially those highly impacted by natural disasters, is also a main reason for poaching and illegal harvest. Guards usually are stationed in towns rather than in the field and make few field checks and patrols. Guards also lack power of arrest unless they are Forestry Police.

Benefits

Understanding Benefits

▶ **Outdoor recreation and tourism**

Tourism is becoming the major commercial industry for many villages and towns around the property. Recent earthquakes have demonstrated that this is a vulnerable reliance. Benefits from tourism could be better distributed among local communities to encourage greater participation.

► Water provision (importance for water quantity and quality)

The property forms part of the critical water catchment of the Yangtze river on which hundreds of millions of people depend and vast hydro-investments (Three Gorges Dam, Zhouba etc.) are also dependent. Water supply and flood prevention are crucial services.

► Soil stabilisation

Healthy forests in the property provide protective measures for human settlements from small-to-medium scale landslides and debris flows, and may contribute to reduced economic loss and mortality in major disaster events (e.g., the earthquakes).

► Carbon sequestration

The area is a large healthy forest contributing to carbon sequestration and local climate amelioration, serving as a wonderful green lung on the edge of the densely populated Sichuan basin.

► Collection of genetic material

Although not very developed, the property constitutes a vast gene bank of rare trees, valuable horticultural plants (rhododendrons, magnolias etc.), wild fruit relatives (plums, cherries, apples, pears) and valuable medicinal plants.

Summary of benefits

The property is recognized as a valuable generator of tourism industry (both direct and indirect) and provider of vital ecosystem services. It is zones as an ecological priority area in both the National Biodiversity Strategy and Action Plan and also the National Hydrological map of key areas for conservation.

Projects

Compilation of active conservation projects

№	Organization/ individuals	Project duration	Brief description of Active Projects
1	Shan Shui (domestic NGO)		Long-term interest in panda monitoring and some community projects
2	WWF		Original foreign partner in developing Wolong research and breeding centres. Continued support for monitoring and some community projects
3	SFA (State Forestry Administration)		SFA manages several major national projects within the property including Natural Forest Protection Program, Sloping Land Conversion Program, Post-earthquake Ecological Restoration Program, panda breeding centre and release trials.
4	European Investment Bank		Sichuan Forestry Department received large-scale loan for investment in reforestation – post 2008 earthquake. Activities mostly outside but close to property.
5	FFI-China (Fauna and Flora International)		.
6	HELP (Human and Environment Linkage Programme)		Long-term interests and efforts in integrated and adaptive management at community, reserve and WH scales. Partners with Wolong Nature Reserve and Sichuan World Heritage Management Office on various projects since 2006. NGO partner with UNESCO in post-Lushan-earthquake sustainable community reconstruction project since 2013.

Compilation of potential site needs

№	Site need title	Brief description of potential site needs	Support needed for following years
1	.	Staff training (including basic ecology)	
2	.	Coordinated monitoring (for Sichuan WH office and site staff)	
3	.	Community co-management	

№	Site need title	Brief description of potential site needs	Support needed for following years
4	.	Disaster risk management and planning to enhance resilience	

REFERENCES

№	References
1	Baker (TNC) 2006. Climate change impacts on Hengduan Mountains (various papers)
2	BirdLife International 2009 Directory of Important Bird Areas in China (Mainland) – key Sites for Conservation
3	Evaluation report on the Wenchuan earthquake damages to World Natural Heritage – Sichuan Giant Panda Sanctuary – October 2008 (English version)
4	He, G., X. Chen, W. Liu, S. Bearer, S. Zhou, L. Y. Cheng, H. Zhang, Z. Ouyang, J. Liu 2008. Distribution of Economic Benefits from Ecotourism: A Case Study of Wolong Nature Reserve for Giant Pandas in China Environmental Management. 42 (6): 1017-1025
5	Hull, V.; J. Zhang; S. Zhou; J. Huang; A. Vina; W. Liu; M. Tuanmu; R. Li; D. Liu; W. Xu; Y. Huang; Z. Ouyang; H. Zhang; J. Liu, 2014, Journal for Nature Conservation, Impact of Livestock on Giant Pandas and their Habitat
6	ICBP 1992 Putting Biodiversity on the Map: priority Areas for Global Conservation
7	IUCN Monitoring Mission report (Mainka and Xie) 2010
8	IUCN site evaluation report – ID 1213 2006 (Sheppard and Blythe)
9	Liu, W. 2010, A Preliminary Investigation of Alpine Conservation Status and Its Implication on Snow Leopard Conservation in Wolong Nature Reserve, Sichuan, China. Snow Leopard Network, http://www.snowleopardnetwork.org/GrantFinalReports/LiuFina…
10	Liu, W. 2012. Patterns and impacts of tourism development in a coupled human and natural system. Dissertation, Michigan State University
11	Liu, W., C. Vogt, J. Luo, K. Frank, G. He, and J. Liu. 2012. Drivers and Socioeconomic Impacts of Tourism Participation in Protected Areas. PLoS One 7(4): 35420.
12	Management Plan 2005
13	Nomination Dossier 2006
14	Report of fulfilling the Decision 30 COM 8b.22 to World Natural Heritage – Sichuan Giant Panda Sanctuaries – March 2010 (English version)

№	References
15	SOC Report 2010
16	Smith & Xie 2008 A Guide to the Mammals of China, Princeton University Press
17	SoOUV 2012
18	The Remote Sensing analysis about the Impact of 5.12 Earthquake on the Core Value of World Nature Heritage Sichuan Giant Panda Sanctuary Wolong Region
19	The environmental impacts of the Qiaoqi power station – April 2010 (Chinese and English version)
20	WCMC Factsheet