

Program Schedule for Field Sites

(Pu'er City and Xishuangbanna Prefecture, 11-15 September, 2013)

Sep. 11, 2013

- 06:50 Drive from the hotel to Kunming Changshui Airport*
- 08:50 Flight from Kunming to Pu'er City*
- 10:30 Check in at hotel (Golden Phoenix Hotel)*
- 11:00 Visit Pu'er Fine Variety Ecological Tea Garden*
- 12:00 Lunch*
- 13:30 Visit Natural Forest Resources Protection and Reforestation sites*
- 18:00 Dinner (hosted by Local Government and Forestry Bureau)*

Sep. 12, 2013

- 08:00 Breakfast*
- 08:30 Introduction to forestry in Pu'er City*
- 09:30 Visit Wanzhangshan Forest Farm*
- 12:00 Lunch*
- 13:00 Visit Coffee and Tea Agroforestry and Cultivation Base for Rare and High Value Medicinal Herbs under Natural Forests*
- 18:00 Dinner*

Sep. 13, 2013

- 08:00 Breakfast*
- 09:00 Visit Xishangbanna Dadu Conservation Station*
- 11:00 Visit Xishangbanna National Nature Reserve- Wild Elephant Gully*
- 12:00 Lunch*
- 16:30 Drive from Xishangbanna National Nature Reserve to Jinghong City*
- 17:30 Check in at hotel (Daiyuan Hotel)*
- 18:00 Dinner*

Sep. 14, 2013

- 08:00 Breakfast*
- 08:30 Introduction to forestry in Xishuangbanna*
- 09:30 Introduction to collaborative management of Lao-China Tran- boundary Nature Reserve*
- 10:00 Drive to Menghai County*
- 12:00 Lunch*
- 13:00 Visit Manbeng-Manmian Dai Village Protected Forest for Community Benefit*
- 18:00 Dinner*

Sep. 15, 2013

- 08:30 Breakfast*
- 09:00 Visit Jinghong Urban Forest Management*
- 11:30 Leave hotel and have lunch*
- 14:00 Flight from Jinghong to Kunming*
- 16:00 Check in at hotel (Kunming Hotel)*
- 18:30 Dinner (Kunming Hotel)*

Brief Introduction to the Field Sites

Pu'er City

Pu'er City is situated in the Southwest region of Yunnan Province and administers one district and nine counties over a jurisdiction area of 45,385 km². It is the largest prefecture in Yunnan in terms of area. Pu'er City is 470 km south of Kunming. Pu'er Prefecture borders the Laos and Vietnam



in the Southeast and adjoins Myanmar in the Southwest, sharing an international border of 625 km with these countries. The Lancang (Mekong) River, Red River and Nankang River flow to the neighboring countries. A significant segment of the famous Southern Silk Road traverses Pu'er City. The total population of Pu'er Municipality is 2.37 million, of which 1.44 million are ethnic minorities, accounting for 61% of the total. There are 36 ethnic minorities in the prefecture and 14 of whom are indigenous inhabitants, which mainly include the Hani, Yi, Dai, Lahu, Wa, Bulang and Yao peoples. It is an important production area of the renowned Pu'er Tea and one of the largest tea production areas in China.

Distributed within the territory of Pu'er Municipality are vast undulating mountains that occupy 98.3% of its landscape. Due to its proximity to the Tropics of Cancer and an integrative impact of the physiognomy and varying elevation gradient from 376 to 3,306 meters, distinctive vertical climate zones are widespread in the region. Being located at the same latitude with that of Cuba in Central America and Taiwan Province of China and as a result of its location on the transient area between the northern and southern bio-geographic regions, its landscape has long been reputed as "a magic natural museum" that composed of rich species diversity, lush primary forest vegetation, rare animals and plants, and a diverse and uplifted landscape.

Xishuangbanna Prefecture

Xishuangbanna is an autonomous prefecture at the south end of Yunnan Province, sharing a boundary of 966 km with Burma and Laos in the east, south and west, being a vital pass from China to Indo-China Peninsular by land. It governs one county-level city (Jinghong, prefectural seat) and two counties (Menghai and Mengla). It has a population of about 870,000 in a total area of about 19,700 km². Xishuangbanna is home to the Dai people, Dai and Han each make up of approximately one third of the population. The region is rich in natural and cultural resources, noted for its folklore, rain forests, rare plants and wildlife. Its major tourist attractions include Menglun Tropical Botanical Garden, Manfeilong Pagodas, Jingzhen Pavilion, Wild Elephant Gully, and Dai people's village at Ganlanba.



Located in the south extension of the Hengduan Mountains, over 95% of the area's territory is occupied by mountains and hills. Most of the prefecture is below the altitude of 1500 m, and Jinghong city is at 550 m

above sea level. The Lancang River runs through the prefecture, reaching Laos, Thailand, Cambodia and Vietnam as the Mekong River. The prefecture harbors much of the biodiversity of Yunnan province because of its tropical climate and remoteness. It is home to the few remaining Asian Elephants in China, now protected in a reserve. There are six famous tea mountains located in the prefecture, producing some of the most highly regarded Pu'er tea in the country. The weather in this region is a combination of continental and oceanic climates with an annual average temperature of 18-22° C.

Field Sites or Activities

1. Introduction to Forestry and Ecological Construction in Pu'er City

Natural Forest Resources Protection Programme

To protect natural forest resources in the region, the Natural Forest Resources Protection Programme is implemented in year 2000 to conserve and manage a total forest area of 8500 km², including 288 km² of reforestation. The project has successfully increased forest volume by 26 million cubic meters in a period of 10 years.

Reforestation Programme

Since year 2002, Pu'er City has reforested a total area of 1155 km², including the conversion of 279 km² of agricultural land and afforestation of 720 km² of bare land. More than 78,000 households have participated in the programme. As a result of this programme, the region has increased forest cover by 2%, and has reduced soil erosion and improved ecological conditions significantly.

2. Fine Variety Ecological Tea Garden



The Fine Variety Ecological Tea Garden is run by Yunnan Pu'er Tea Research Institute, the only tea research institute established within the academic system of Yunnan. The institute has implemented more than 20 research projects funded by the provincial

government, the provincial departments of sciences and technology, agriculture and education. Some outstanding achievements have been made in the

germplasm of tea trees in Yunnan, the intrinsic relationship between Pu'er tea processing techniques and its quality, the functional elements in Pu'er Tea, and processing of large-leaf high quality tea varieties in Yunnan as well as the integrative utilization of tea products. The areas of research include the genetic diversity of Pu'er tea germplasm; the key techniques for managing ecological Pu'er tea plantations, key techniques for post fermentation of Pu'er tea, fine processing and integrative use of Pu'er tea, improving the quality of Pu'er tea by using beneficial microorganisms; appreciation of Pu'er tea quality; safety assessment and evaluation of the quality of Pu'er tea; and the sustainable development of the Pu'er tea culture. All these efforts have contributed enormously to the development of tea industry in Yunnan Province.

3. Caiyanghe Provincial Nature Reserve

Caiyanghe Provincial Nature Reserve is located in the southeastern part of Simao District in Pu'er Municipality. The nature reserve is located in the low latitude zone in Southern Yunnan and is covered by typical subtropical forest ecosystems of Southern



China. The nature reserve was established in 1981, it has a total area of 149 km², with the core zone of 45.3% and an experimental zone of 54.7%. In 2009, the nature reserve became a part of Pu're National Park (216.23 km²) to strengthen forest management and the development of eco-tourism.

Wild animals: There are 415 wild animal species listed for national and provincial protection in the nature reserve, including 71 species of national protection and 344 species of provincial-level protection. These include 102 mammal, 222 bird and 91 reptile species. The species listed for key monitoring include: Indian buffalo (*Bubalus bubalis*), sambar deer (*Hydropotes inermis*), Indian muntjac (*Muntiacus muntjak*), red jungle fowl (*Gallus gallus*), silver

pheasant (*Lophura nycthemera*), great white egret (*Oriolus traillii Vigors*), giant water monitor (*Varanus salvator*), python (*Python molurus bivittatus*) and latera-stripe salient tree frog (*Chirixalus vittatus*).

Vegetation and plants: 2,104 higher plant species have been recorded in the nature reserve belonging to 883 genera in 209 families. There are 892 species of medicinal plants in the reserve belonging to 530 genera in 163 families. In total, 36 species are listed for protection, including one species for National Class I Protection, 15 species for National Class II Protection, and 20 species for provincial protection in Yunnan. Fifty species are endemic to Yunnan.

4. Upland Agroforestry Models (Coffee and Tea Agroforestry Demonstration Site)



The mixed planting of coffee under the economic forest was a dominated upland agroforestry model in Dakaihe Village, which was invented from traditional shifting cultivation, such as slash and burn or swidden. The total area is around 3.1 km², producing

a net income of 3,580 yuan per person annually for the village.

5. Propagation and Cultivation Base for Rare and High Value Medicinal Herbs under Natural Forests

Jinling Plant Pharmaceuticals Company is the largest of its kind in using the medicinal herbs *Dendrobium* species in China. Currently, the company has three subsidiary companies, two of which are in China and one in Oudomxai Province of the Laos PDR. All of these subsidiary companies are specialized in growing rare and high value medicinal herbs, such as *Dendrobium* species, and they are the leading enterprises in Pu'er City. For a decade since the founding of the company, it has become the earliest *Dendrobium* growing enterprise, and the

largest of its kind in the region. The company has adopted the management model of "Company + Plantation Bases + Farmer Households". It has promoted the development of more than 30 plantation bases and 3,000 farmer households specialized in growing Dendrobium medicinal herbs



which have contributed substantially to poverty alleviation amongst the rural farmers in the mountainous areas. These efforts further contributed significantly to the sustainable extraction and the use of Dendrobium resources, and to promote the modernization, internationalization and industrialization of traditional Chinese herbal medicines.

6. Wanzhangshan Forest Farm

Wanzhangshan Forest Farm is a new type of state-owned forest farm that was created through reforming a previous forest logging enterprise. The forest farm covers 88 km², of which 42.7 km² is commercial forest and 45.3 km² is amenity/ecological forests that are distributed in the first level tributary of the Lancang (Mekong) River. Currently, the forest farm has 60 permanent staffs. In the past decade, the forest farm has implemented the Low-yield Forest Improvement Programme and afforestation on barren land. In total, about 40 km² of plantation forest has been established and eight million trees have been planted. The indigenous species, *Pinus kesiya* (Simao pine), is the main tree



species used in the afforestation project.

The survival rate has maintained at above 96% in the planting year and above 86% in following years.

Through years of efforts, the forest stands in Wanzhangshan Forest Farm has been greatly improved.

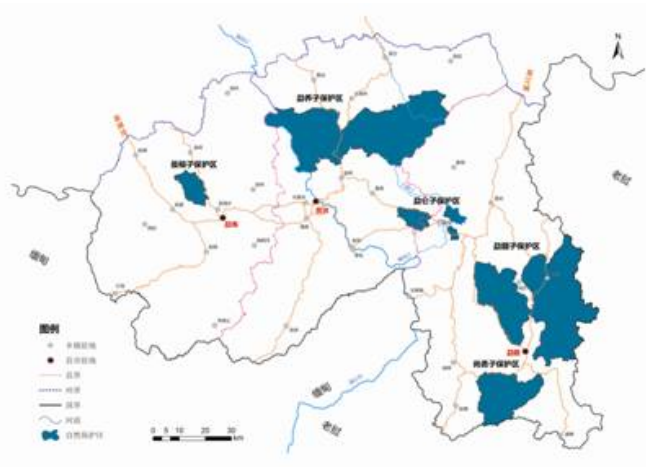
Sustained forest resources were enhanced significantly and net

growth of forest resources is also increasing steadily. The establishment of effective management models for state-owned forest farms has contributed substantially to the management goals of "seeing green mountains and steady stock growth", and to the erosion control and ecological protection in the watersheds of the Mekong River.



7. Xishuangbanna National Nature Reserve

Xishuangbanna National Nature Reserve (XNNR) is located in Xishuangbanna Dai Autonomous Prefecture, South Yunnan, China. It consists of five isolated sub-reserves of Mengyang, Menglun, Mengla, Shangyong and Mangao, with a total area of 2425 km², making up 12.68% of



the prefecture. It is a large and forest-and-wildlife oriented nature reserve targeting at the protection of the tropical forest ecosystems, and rare and precious wild species. It is the largest tropical forest nature reserve in China with the richest bio- diversity and the most intact tropical forest ecosystems. It is well-known for its richness of rare, precious and/or endangered wild plant and

animal species. The reserve is also the major habitat of the wild Asian Elephant population in China.

Mengyangzi Nature Reserve

Mengyangzi Nature Reserve is located at the northern part of Jinghong City at



the east side of Lancang River. It is the largest sub-reserve of the XNNR, with an area of 1000 km². It is home to the largest population (100 - 120 individuals) of Asian Elephant in China, therefore it is a key region for species conservation. In addition, the reserve is also inhabited by other

typical tropical animals such as gaurs, cloud leopards, white-cheeked gibbons, grey leaf monkeys, sloths, red deer and red muntjac etc. Key protected bird species include hornbills, green peacocks, jungle fowl and grey peacocks. The major vegetation types in the reserve are tropical mountain rainforests, monsoonal rainforests, subtropical evergreen broadleaf forests and tropical bamboo forests.

Wild Elephant Gully

Wild Elephant Gully is an area where the most frequent visits of the Asian Elephants are found. Thus, it is the best location to observe and study the species in the wild, and is also one of the best locations to observe wild tropical birds such as hornbills, jungle fowls, silver pheasants, Hume's pheasants, bee-eaters, bulbuls, fairy bluebirds, sunbirds etc.



8. Introduction to Forestry and Ecological Construction in Xishuangbanna Autonomous Prefecture

The prefecture has 9,113 km² of protected forests for community benefit and



6,787 km² of timber plantations. The protected forests for community benefit are mostly state- owned, and a small proportion is community and privately owned, and are mostly managed by the Natural Forest Resources Protection Programme.

9 Manbeng-Manmian Dai Village Protected Forest for Community Benefit

Manbeng-Manmian Dai Village is located at Menghun Town in Menghai County. The village has a population of 747 of 152 households. It has community forest of 0.73 km², and agricultural land of 1.32 km². Economic income of the village mainly came from rice, tea and seasonal crops. Annual average income is 6,593 yuan per person. With the support and compensation from the government, 0.08 km² of agricultural land has been converted to tea forest. The village also takes part in the Protected Forest for Community Benefit Programme with a total area of 0.41 km² of community forest. The compensation has been used for community construction, fire prevention and pest control.



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