**Consideration of Proposals for Amendment**
**Of Appendices II**

## A. Proposal

Inclusion of happytree (*Camptopheca acuminata Decaisne*) in CITES appendix II of convention in accordance with the provisions of Article II, paragraph 2(a).

## B. State of proposal

The People's Republic of China

## C. Supporting Statement

### 1. Taxonomy

| | | |
|---|---|---|
| 1.1 | Class | *Dicotyledonae* |
| 1.2 | Order | *Cornales* |
| 1.3 | Family | *Nyssaceae* |
| 1.4 | Genus and species | *Camptopheca acuminata Decaisne* |
| 1.5 | Synonyms | |
| 1.6. | Common name | Happytree |

### 2. Biological parameters

2.1 Distrubition.

The happytree is only distributed in the south of the Yangtse river of China. The scope of happytree's distribution is very wide including mountains, valleys and plains, its history of floras development is very long. Because these areas (especially refers to the terrain which ranges from the southwest to the middle of China to the Nanling areas ) received small influence from the fourth epoch of continental glacier since the third epoch of geographical ages, so they remain not only the plant types of the ancient flora of third epoch but also are main distribution center and cradle of East Asian plants in East Asian "temperate-subtropical zone floras", probably are one of the cradle of angiosperm. Simultaneously, these place is also the refuge of some famous ancient genus and species.

Although the historical range of happytree's distribution is wide, according to the results of investigation, wild happytree populations are rarely be seen only dotted in Xishauangbanna, Ailao Mountain, Baoquan village of Eshan County of Yunnan province; Experimental field of Sichuan Forestry School of Dujiangyan city in Sichuan province; Dakeng Mountain Forestry Farm and Qiashui Forestry Farm of Huaiji county in Guangdong province; Forestry farm of Yueyang county in Hunan province.

2.2. Habitat availability

Happytree mostly grows in low dam plain, sides of rivers, stream edge, forest fringe, slope of hill and crops sides. Because happytree's distribution range is often within human activity scope, so it can't avoid being cut for the purpose of planting trees and crops , besides happytree's fast growth and bad timber quality, which result in cracking and are weak fastness in resisting corrode, and is not regard as favourite. Therefore, the dotted-distributed happytrees is saved as the shelter of sunshine when peasants are plowing or as destiny forest.

2.3 Population Status

2.3.1 Artificial Propagation Happytree:

The artificial propagated happytrees are distributed widely. Most of them were planted for the purpose of virescence. In 1970s, Chinese government popularized it in Yangtze's River south reaches, but these happytrees were still damaged seriously because of increasing population, cutting forest to grow crops and cutting for burning. Furthermore, happytree resources were unprecedently damaged since people realized camptothecin's pharmatic values.

2.3.2 Wild Happytree:

According to investigation, the number of wild happytree populations all over China has declined less than 4,000. Most of the original ranges have no wild happytree found. So, wild happytree resources needs to be protection urgently.

2.4 Population trends

There was no record for number of happytree population before, for nobody did the investigation about it . However, it is positive that the number of wild happytree population takes on declined trend quickly in these years. Nowdays, China owns wild happytrees less than 4000. We can't find the traces of wild happytrees in the regions where many wild happytrees once distributed. The number of this kind of populations will minish constantly if we don't take necessary protective measures.

2.5 Geographical trends

According to the record in literatures, from the end of the 20$^{th}$ to early of this century, happytree naturally distributed in Yangtse River's valley and the provinces in its southern part (excpet Hainan province). It is indicated in the results of many investigations that the scope of happytree's distribution is very wide, the southmost tip is Mengyang of Xishuanbannan in Yunnan province, the northmost tip is the south slope of Qin mountain, the eastmost tip is Taiwan province of China and the westmost tip is the foot of Qinghai-Tibet altiplano, spanning almost thirteen provinces or regions including Shanxi, Henan, Anhui, Hubei, Hunan, Jiangsu, Jiangxi, Sichuan, Guizhou, Yunnan, Fujian, Guangdong, Guangxi province, etc.

But now, dotted-distribution of wild happytree is only found in Xishuangbanna, Ailao Mountain, Baoquan village of Eshan county in Yunnan province; Experimental Farm of Sichuan Forestry School of Dujiangyan city in Sichuan province, Dakengshan Farm and Qiashui Forestry Farm of Huaiji county in Guangdong province and Yueyang county's forest farm in Hunan province. Anyhow, happytree's geographical distribution which takes on fragmentized shape is shrinking rapidly and the information communications between populations halts.

2.6 Role of the species in the ecosystem

Happytree commonly grows in humid zone such as riversides or the bottom of valleys, which constitutes the dominate layer of forest, is dominate species of forest ecosystem. Besides riversides and the bottoms of valleys, happytree can also be seen on slopes in terms of humid climate, which also constitutes the ecological system whose dominate species is happytree.

2.7 Threats:

Before 1990s, the threats to the existence of hapytree population mostly come from damaging forest and opening up wasteland to develop agriculture and opening up forestation fields to plant good timber quality forest and cutting firewood. In 1990s, people began to increasingly destroy happytrees in China along with the discovery of camptothecin's pharmatic value and the need of camptothecin's productive materials (mostly are seeds ) in international markets. The population number of wild happytree is

cut down sharply with the consume of artificial propagated happytree.

## 3. Trade and Utilization:

### 3.1. Internal Utilization:

Happytree is a sub-tropic species that growths better in the warm and humid climate and is unbearable in low temperature and aridity. It is good to be a virescence tree species for its fast growth, even to 1.5 meter per year in the height-growth, if conditions are suitable.

The leaf and the branch of happytree contain abundance of nutrition ingredients. According to the analysis, 2.62% nitrogen, 0.51% phosphorus and 2.56% kalium is contained in its dry leaf. The fertility of 500Kgs dry leaves is equal to 65.5 kg ammonium phosphate, 12.75 kg calcium superphosphate or 25.5 kg Kalium sulphate. Comparing to other tree species, its leaves are also better as green manure. On the other side, happytree has more fastness to the poisonous gas, such as sulfur dioxide, hydrogen fluoride and hydroxid, etc.

The happytree's timber is light, soft and tough. It is easy and quickly to be dry and be cut, and not easy to tilt and dehisce, but it can't bear of cautery. It could be used as decorate bar for its beautiful texture after oil painting. Additionally, it is also the industrial material of dead stock, packing, paper making, matchstick and veneer.

The most important value of happytree is that a kind of alkaloid—Camptothecin(CPT, a kind of white power) is contained in its seeds, leaves, flowers, branches, trucks, skins, roots and skins of roots. This alkaloid can cure AIDS and cancer in stomach, recta, bladder, and some kinds of leucocythemia, etc. But because camptothecin is too expensive to use for Chinese, almost all of camptothecin was exported to abroad.

. According to the international research, Camptothecin is also a kind of yeld medicament to prevent domestic flys.

### 3.2 Legal International Trade

Since Jan. 1, 1998, CITES Management Authority of China begin the administration of the import and export of its seeds and live specimen. During this period from Jan 1,1998 to Dec. 31,1998, the number of legal export of the happytree seeds is 50kg, and 0.5kg comes from wild happytree which is mainly to be exported as experimental materials of planting and comparison of effective ingredient.

### 3.3 Illegal trade

We only supervised the seeds and the live of the specimen from Jan. 1 1998, to March 1,1999 and there is no illegal record found during this period.

### 3.4 Actual and potential trade impacts

On the basis of the comprehensive statistics of the seed company and medicinal company and research institutes, we conjecture that there are 500 kg natural dry seeds and 1000 kg pure Camptothecin is traded per year.

According to calculations, the 1000 kg Camptothecin comes from:

1) Approximately 3,000,000 kg seeds of 750,000 happytrees (fifteen years old ) ; or
2) 9,000,000 kg branches or timber ( come from 500,000 happytrees which are fifteen years old).

Presently, it was only in China that 1,600,000 cancer patients were diagnosed every year and 1,300,000 of them died of various cancers, furthermore, more and more cancer

patients are found all over the world. But, annual yield of Camptothecin is only 1000 kg or so , far away from the stupendous market needs in the world. Because we still not find the chemical synthetic method for Camptothecin, so happytree resources is sole source of Camptothecin. Besides, happytree cultivating can't reach the big scale in other countries, it is speculated that happytree came from China is the sole source for Camptothecin in international market. Most of these Camptothecin is exported out of China as rough camptothecin and is derived to pure camptothecin continually abroad.

3.5. Commercial Propagation

Today, Korea, Japan and Britain also propagated happytree in their parks or experiment forest farm, beside China The United States introduced the species from China many times until succeeded in 1934. The newest data indicates that there are dozens of mature happytrees and more than 20,000 young ones in USA. 1970's, the provinces in the south of Yangtse River planted a lot of happytree forest for the purpose of virescence. But happytree population is fragmentated and indicate the reducing trend, because of the reasons mentioned above.

## 4. Conservation and Management

4.1 Legal Status

In 1997, the Resolution of Conservation of Wild Plant, P. R. China came into force. For conservation of the rare species, State Forestry Administrative has added the species to National Protected Wild Plants List (1st set) submit to the regulation as the national second-grade protection plant.

4.2 Species Management

State Forestry Administration (SFA) has organized specialists to research how to get the souce of camptothecin through low-style planting and tissue culture, to reduce the consume of happytree. SFA has set up a laboratory at the Northeast Forestry University of China to be responsible for the identifying and analysis of Camptothecin. The CITES Management Authority of China is cooperating with the Custom to add Camptothecin into the National Commercial Checklist of International Trade, in which the Custom demand the importer or exporter to show the certificate issued by the CITES Management Authority of China when Camptothecin pass the national border of China. At the same time, the SFA urges the local government to strengthen the propaganda and establish concrete conservation measures to protect local wild happytrees.

4.3. Control Measures

According to the Regulation of Conservation of Wild Plants of P. R. China, it must be prior approved by the national administration of wild plants to acquire, trade, machining and utilize happytree. And the certificate issued by CITES Management Authority for Import and export is also needed when international trading.

## 5. Information on Similar Species

Happytree *(Camptotheca acuminata)* has two varieties: Tenuous leaf happytree *(Camptotheca acuminata var. tenuifolia)* and Round leaf happytree (Camptotheca acuminata var. rotundifolia ). In 1997, Shiyou Li published two new species: *Camptotheca lnveyana S. Y. Li, and Camptotheca yunnanensis*.S.Y. Li.All the species or varieties above are very similar to C. acuminata in morphology,and had not yet recognized by most of taxonomists.

## 6. Other Comments:

Happytree is only naturally distributed in China, and propagation in other country is only limited in small scale; So far, artificial synthesizing of camptothecin is still not succeed all over the world. Undoubtedly, all of camptothecin in international market via potential international

trade is come from happytree growing in China.

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