

Pterocarya macroptera, Large-winged wingnut

Assessment by: Song, Y., Bétrisey, S. & Kozłowski, G.



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Taxonomy

Kingdom	Phylum	Class	Order	Family
Plantae	Tracheophyta	Magnoliopsida	Fagales	Juglandaceae

Taxon Name: *Pterocarya macroptera* Batalin

Common Name(s):

- English: Large-winged wingnut

Taxonomic Notes:

Three varieties have traditionally been recognized: *Pterocarya macroptera* var. *macroptera*, var. *insignis* and var. *delavayi*. Thus, morphological differences between varieties are very thin, so the same subpopulation can be alternately described as a different subspecies according to the collectors. The validity of these subdivisions still need further study.

Assessment Information

Red List Category & Criteria: Vulnerable C2a(i) [ver 3.1](#)

Year Published: 2019

Date Assessed: January 16, 2019

Justification:

Pterocarya macroptera is an endemic tree of China growing in riparian habitats in mountainous regions. The area of occupancy (AOO) is low and estimated to be around 516 km². The total number of subpopulations is estimated to be approximately 120 and the total number of mature individuals is 5,000-8,000. Alteration and destruction of its habitat still represents an important threat to the species and based on the fact that no known subpopulations exceed 1,000 individuals, the species is assessed as Vulnerable under criterion C2a(i).

Geographic Range

Range Description:

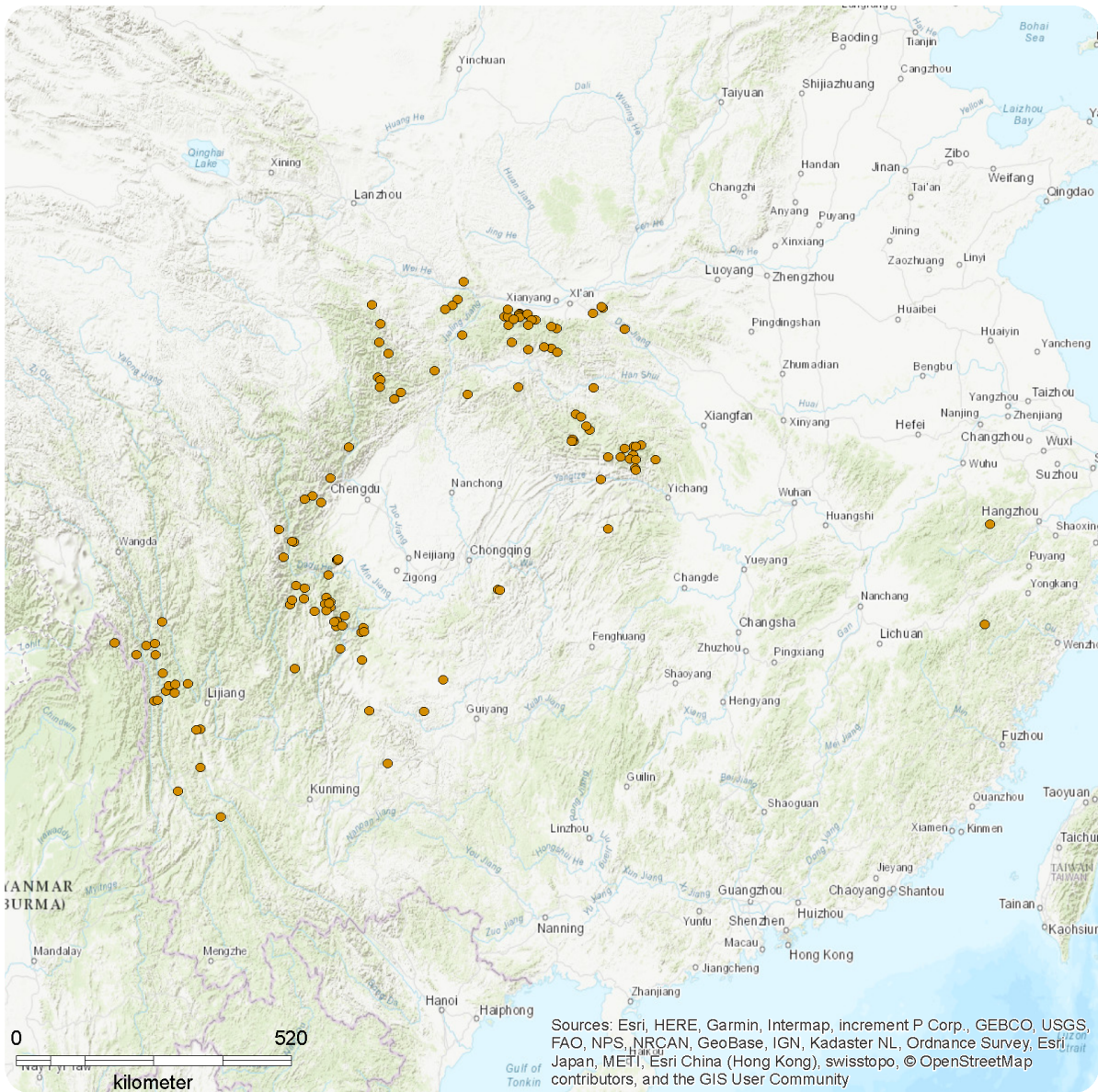
Pterocarya macroptera is an endemic tree of China, present in South Eastern Gansu, West Hubei, South Shaanxi, West and South Western Sichuan, North Western Yunnan and Zhejiang provinces (Zheng and Raven 2003, Fang *et al.* 2003, Chinese Virtual Herbarium (CVH)). The distribution of the different varieties seems to differ slightly with *P. macroptera* var. *macroptera* predominately in the North, *P. macroptera* var. *insignis* growing further South and East, and *P. macroptera* var. *delavayi* situated in Western China (Kozłowski *et al.* 2018). The centre of distribution of the species is located in the mountainous areas surrounding the Sichuan plains. Only a few isolated and restricted subpopulations are present in the east (Zhejiang province) and the west (Yunnan province). It has an estimated extent of occurrence (EOO) of 1,324,349 km². The area of occupancy (AOO) is low and estimated to be around 516 km².

Country Occurrence:

Native: China (Chongqing, Gansu, Guizhou, Hubei, Shaanxi, Sichuan, Yunnan, Zhejiang)

Distribution Map

Pterocarya macroptera

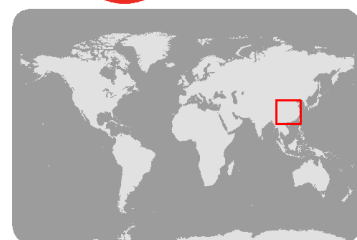


Range

- Extant (resident)

Compiled by:

GTA



The boundaries and names shown and the designations used on this map do not imply any official endorsement, acceptance or opinion by IUCN.



Population

The total population of *Pterocarya macroptera* is estimated to be between 5,000 to 8,000 mature trees in ca. 120 localities. However, the total number of localities could differ from this estimation, because a large part of the distribution range of the species has not been fully explored by botanists and some historical localities could have already disappeared. Recent explorations show that subpopulations comprise of no more than 50 individual trees and that the species seems to reproduce mainly through cloning, with fruits being often sterile (Kozłowski *et al.* 2018). Based on recent field explorations (Kozłowski *et al.* 2018) the population size of the different stands are very small, except for one important subpopulation in Shennongjia, Hubei.

Current Population Trend: Decreasing

Habitat and Ecology (see Appendix for additional information)

Pterocarya macroptera is a large tree which grows in wet environments along mountain streams, river valleys and slopes between 1,100 and 3,500 m asl (Kozłowski *et al.* 2018). The species ranges from sub-tropical to a temperate climate and reaches the highest elevation compared to the other species of the genus (Kozłowski *et al.* 2018).

Systems: Terrestrial

Use and Trade

This species is sometimes logged for its timber by local people.

Threats (see Appendix for additional information)

The main threats to *Pterocarya macroptera* include the destruction or artificialization of riparian habitats (Kozłowski *et al.* 2018). However, compared to the other species of the genus occupying the same type of environment (*P. hupehensis*, *P. stenoptera* and *P. tonkinensis*), *P. macroptera* seems less affected by human activities, as the species grows generally at higher elevations in more remote areas. Generally, forests and riparian habitats located in deep mountain valleys at higher elevations face less damage and are presently still well preserved (Kozłowski *et al.* 2018). This is particularly true in mountainous areas in the centre of China, but it could slightly differ in other regions of the country, such as Yunnan and Guizhou provinces where afforestation and agriculture by local communities are frequent even in higher altitudes. Another threat for the long term conservation of this tree is the low production of seeds combined with the low survival rate of the young seedlings.

Conservation Actions (see Appendix for additional information)

The three infra-specific varieties were all assessed as Least Concern in China (Red List of Chinese Plants 2019). Field explorations are still necessary to confirm ancient indications and to estimate more precisely the total number of individuals. The species is not very common in cultivation and is reported to have at least 19 *ex situ* collections worldwide (BGCI PlantSearch 2019). An *ex situ* conservation program should be initiated to protect the genetic diversity of the species. Afforestation projects in mountainous degraded riparian habitats could play an important role to promote the species.

Credits

Assessor(s): Song, Y., Bétrisey, S. & Kozłowski, G.

Reviewer(s): Harvey-Brown, Y. & Rivers, M.C.

Bibliography

BGCI. 2019. Botanic Gardens Conservation International (BGCI) - Plant Search. Available at: https://tools.bgci.org/plant_search.php.

CVH (Chinese Virtual Herbarium). 2018. Chinese Virtual Herbarium. Available at: <http://www.cvh.org.cn/en>. (Accessed: 2018).

Fang, J., Wang, Z. and Tang, Z. 2011. *Atlas of Woody Plants in China*. Higher Education Press, Beijing.

IUCN. 2019. The IUCN Red List of Threatened Species. Version 2019-3. Available at: www.iucnredlist.org. (Accessed: 10 December 2019).

Kozłowski, G., Bétrisey, S. and Song, Y-G. 2018. *Wingnuts (Pterocarya) and walnut family. Relict trees: linking the past, present and future*. Natural History Museum Fribourg, Switzerland.

Red List of Chinese Plants. 2019. Available at: http://www.chinaplantredlist.org/about_us.php.

Zheng, Y.W. and Raven, P.H. 2003. Zelkova. Flora of China. Vol. 5. Ulmaceae – Basellaceae. Missouri Botanical Garden Press, St. Louis.

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External Resources

For [Images and External Links to Additional Information](#), please see the Red List website.

Appendix

Habitats

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Habitat	Season	Suitability	Major Importance?
1. Forest -> 1.4. Forest - Temperate	-	Suitable	-

Plant Growth Forms

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Plant Growth Forms
Tree - large

Threats

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Threat	Timing	Scope	Severity	Impact Score
1. Residential & commercial development -> 1.3. Tourism & recreation areas	Ongoing	-	Negligible declines	-
2. Agriculture & aquaculture -> 2.1. Annual & perennial non-timber crops -> 2.1.3. Agro-industry farming	Ongoing	-	Negligible declines	-
2. Agriculture & aquaculture -> 2.2. Wood & pulp plantations -> 2.2.2. Agro-industry plantations	Ongoing	-	Negligible declines	-
4. Transportation & service corridors -> 4.1. Roads & railroads	Future	-	Negligible declines	-
7. Natural system modifications -> 7.2. Dams & water management/use -> 7.2.9. Small dams	Future	-	Rapid declines	-

Conservation Actions in Place

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Conservation Actions in Place
In-Place Species Management
Subject to ex-situ conservation: Yes

Conservation Actions Needed

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Conservation Actions Needed
3. Species management -> 3.2. Species recovery
3. Species management -> 3.3. Species re-introduction -> 3.3.1. Reintroduction
3. Species management -> 3.4. Ex-situ conservation -> 3.4.1. Captive breeding/artificial propagation

Research Needed

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Research Needed
1. Research -> 1.2. Population size, distribution & trends

Additional Data Fields

Distribution
Estimated area of occupancy (AOO) (km ²): 516
Estimated extent of occurrence (EOO) (km ²): 1324349
Lower elevation limit (m): 1100
Upper elevation limit (m): 3500
Population
Number of mature individuals: 5000-8000
Continuing decline of mature individuals: Yes
Habitats and Ecology
Generation Length (years): 20-30

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