

Pterocarya hupehensis, Hubei wingnut

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



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Taxonomy

Kingdom	Phylum	Class	Order	Family
Plantae	Tracheophyta	Magnoliopsida	Fagales	Juglandaceae

Taxon Name: *Pterocarya hupehensis* Skan

Common Name(s):

- English: Hubei wingnut

Assessment Information

Red List Category & Criteria: Vulnerable C1+2a(i) [ver 3.1](#)

Year Published: 2019

Date Assessed: February 13, 2019

Justification:

Pterocarya hupehensis is an endemic tree of China growing in the vicinity of streams and rivers in mountainous habitats. The area of occupancy (AOO) is small, calculated to be 312 km². The total number of subpopulations is approximately 80 and consist generally of a few dozen individuals only. Even if the species is frequently situated inside nature reserves, destruction or alteration of its habitat by construction of roads or logging still represent an important risk of destruction, especially because the stands of the species are very often small. The total number of mature individuals is estimated to be less than 2,000–5,000 and it is projected that more than 10% of the actual population will disappear within the next 100 years, which makes the species fall within the threshold for Vulnerable under criterion C1. Moreover, a continuing decline of the species could be expected, based on the frequent damages on its natural habitats, and no known subpopulations exceed 1,000 individuals, which fall also under criterion C2(i).

Geographic Range

Range Description:

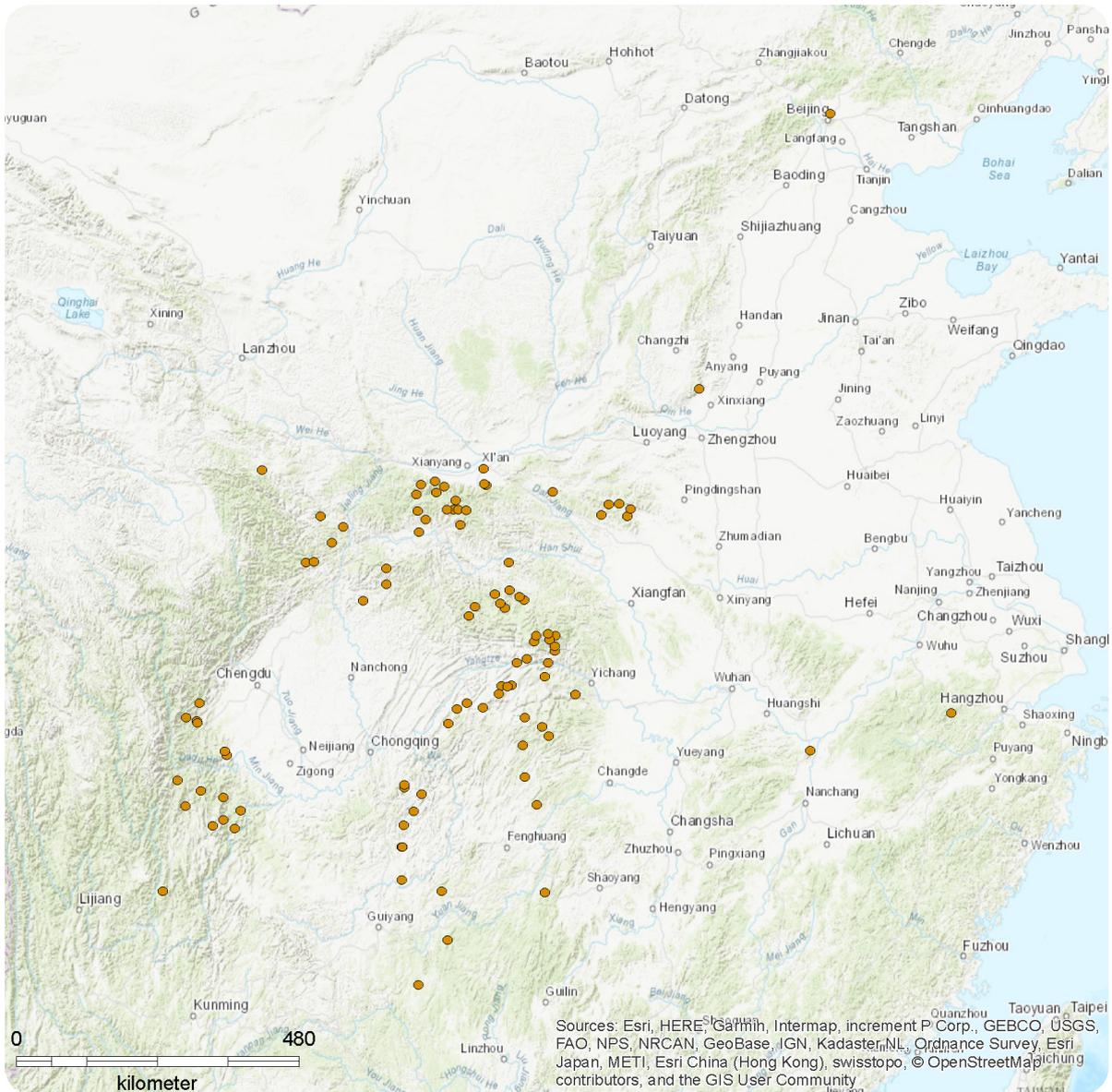
Pterocarya hupehensis is a tree endemic to China with known subpopulations in Guizhou, Sichuan, Hubei, Shaanxi, Gansu and Henan provinces (Zheng and Raven 2003, Fang *et al.* 2003, Chinese Virtual Herbarium (CVH)). There is also evidence of sporadic distribution in the mountainous regions of Eastern China (e.g. Tian-mu Mountain). The species is distributed sporadically in the mountainous areas of those six provinces and is commonly growing together with *Pterocarya macroptera*.

Country Occurrence:

Native: China (Gansu, Guizhou, Henan, Hubei, Shaanxi, Sichuan)

Distribution Map

Pterocarya hupehensis



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 hupehensis* is estimated to be composed of 2,000 to 5,000 mature individuals distributed in 80 localities. No known subpopulations exceed 1,000 individuals. The subpopulations are often composed of a few dozen individuals, with very poor seedling production. Many *P. hupehensis* subpopulations have been severely impacted or even destroyed by the logging of the corridors near small rivers and streams in the mountains. Currently, most of the subpopulations are located in nature reserves. It is projected that more than 10% of the population will be lost within the next 100 years.

Current Population Trend: Decreasing

Habitat and Ecology (see Appendix for additional information)

Pterocarya hupehensis is a tree which can grow up to 20 m and mainly grows in the mid-sections of rivers, in mountainous areas between 700 and 2,000 m asl (Kozłowski *et al.* 2018). The species prefers wet and humid habitat and is very often restricted to the vicinity of streams and rivers in mixed broadleaved deciduous, broadleaved evergreen forests or mixed forests.

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 hupehensis* comprise of the destruction or alteration of its habitat to construct roads and the conversion of riparian habitats to plantations. Corridors along rivers are sometimes logged by the local population for a cheap wood source. Despite a very intense production of seeds, the regeneration of the species seems to be very weak in its natural habitat, with a general absence of seedlings. The destruction of its habitat combined with a very low number of individuals can lead to a quick disappearance of any subpopulations. Even if most of the remaining subpopulations are located in nature reserves, the species is still facing direct damages due to the development of primary and secondary roads and a lack of global management.

Conservation Actions (see Appendix for additional information)

The species is assessed as Least Concern in China (MEP and CAS 2014). It is necessary to reassess this species in light of the recent studies and fieldwork done in its distribution range (Kozłowski *et al.* 2018). Field explorations are still necessary to confirm ancient indications and to estimate more precisely the total number of individuals in the different subpopulations. The species also needs a global conservation plan to protect subpopulations in the different Provinces. It would be important to integrate the protection of the species and its habitat in the management plan of the nature reserves where the species grows. Generally, forested corridors along streams and rivers should be better conserved, especially in nature reserves across China. The species is not very common in botanic gardens and arboreta and is reported to have at least 18 *ex situ* collections worldwide (BGCI PlantSearch 2019). *Ex situ* conservation program should be initiated to protect the genetic diversity of this species in the different botanic gardens of China. Research focused on the natural regeneration of *Pterocarya*

hupehensis stands and seed dormancy and germination are also necessary to fully understand the ecology of the species and its ability to survive in very small and isolated stands.

Credits

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

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

Bibliography

BGCI (Botanic Gardens Conservation International). 2018. PlantSearch online database. Richmond, UK Available at: www.bgci.org/plant_search.php. (Accessed: 2018).

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.

Ministry of Environmental Protection and the Chinese Academy of Sciences. 2014. *Chinese Red List of biodiversity - the volume of higher plants*.

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	Ongoing	-	Slow, significant declines	-
5. Biological resource use -> 5.3. Logging & wood harvesting -> 5.3.1. Intentional use: (subsistence/small scale) [harvest]	Ongoing	-	Negligible declines	-
7. Natural system modifications -> 7.2. Dams & water management/use -> 7.2.9. Small dams	Future	-	Negligible 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 -> 3.4. Ex-situ conservation -> 3.4.1. Captive breeding/artificial propagation
3. Species management -> 3.4. Ex-situ conservation -> 3.4.2. Genome resource bank
5. Law & policy -> 5.1. Legislation -> 5.1.2. National level

Additional Data Fields

Distribution
Estimated area of occupancy (AOO) (km ²): 312
Estimated extent of occurrence (EOO) (km ²): 1096028
Lower elevation limit (m): 700
Upper elevation limit (m): 2000
Population
Number of mature individuals: 2000-5000
Continuing decline of mature individuals: Yes
Habitats and Ecology
Generation Length (years): 20-30

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