Ecology of the National Key Protected Wild Plants in the Xinjiang Region, China

In April 2024, a survey of the national key protected wild plants in Xinjiang, China, was successfully completed. The project was initiated by the Xinjiang Uyghur Autonomous Region Forestry and Grassland Bureau to document the distribution and habitat of key national protected wild plants in Xinjiang for conservation management.

Researchers from the Xinjiang Institute of Ecology and Geography of the Chinese Academy of Sciences led this survey, with participation from other universities, research institutions and wildlife protection organizations in the Xinjiang region. The survey was conducted in 2022 and 2023, covering the entire territory of Xinjiang, with 52 project personnel. More than 300 specimens were collected and 2,000 photographs taken. The survey documented the ecology, distribution and conservation status of 82 species of plants, including 50 key national protected species and 32 species with narrow distributions. Of these, 73 species were previously included in the 2020 edition of the China Biodiversity Red List, with one species categorized as Critically Endangered, eight as Endangered, 20 as Vulnerable, 17 as Near Threatened and 27 as Least Concern.

Example findings of the project are as follows: Populations of *Saussurea involucrata*, endemic to the high-altitude areas of the Tian Shan Mountains, have high genetic diversity, and the Bayinbuluk area is a centre of differentiation for the species. There is only one known population of *Atraphaxis irtyschensis*, endemic to Xinjiang, of c. 4,000 mature plants, but it is not currently included in the national or Xinjiang regional lists of protected plants.

The project also established an evaluation system to assess reserves and the utilization value of wild plant resources, and proposed protection measures, including habitat protection, species restoration and control of illegal collection and trade. We expect that similar projects will be supported in the future, to document the distribution and quantity of wild plant resources and promote the planning of conservation measures.

Wang Jiancheng, Zhang Daoyuan and Shi Wei (shiwei@ms.xjb.ac.cn)
Xinjiang Key Lab of Conservation and Utilization of Plant Gene Resources, Xinjiang Institute of Ecology and Geography, Chinese Academy of Sciences, Urumqi, China.
Turpan Eremophytes Botanical Garden, Chinese Academy of Sciences, Turpan, China

Finding *Staphylea shweliensis*, a long-lost Critically Endangered plant species of China

Staphylea shweliensis W.W. Smith, a tree species of the family Staphyleaceae, is endemic to the southern Hengduan Mountains in south-west China. It was categorized as Critically Endangered on the Red List of China's Higher Plants in 2020. This species had only been collected once, in 1917, by George Forrest and was described by William Wright Smith in 1921. According to the single type collection (George Forrest 15800) stored at the herbaria of the Royal Botanic Garden Edinburgh (E, holotype, barcode 00120662; E, isotype, barcode 00120663), this species is only known from the Shweli–Salween divide, an area of c. 400,000 ha in western Yunnan. Surveys close to the type locations and adjacent areas (the Qinghai–Tibet Plateau Expedition in 1982, Gaoligongshan Biodiversity Survey in 1998–2007, and Biluoxueshan Biodiversity Survey in 2010–2019) were not able to relocate the species.

With joint support from the Key Programme for Basic Research Project of Yunnan Province (Grant no. 202201AS070045), the National Key Research and Development Programme of China (Grant no. 2022YFF1302401), the Platform Programme for Basic Research Project of Yunnan Province (Grant no. 202205AM070008) and the Strategic Priority Research Programme of the Chinese Academy of Sciences (Grant no. XDA26020203), the Kunming Institute of Botany surveyed for *S. shweliensis* in the southern Hengduan Mountain range during March–May in 2024. Sixty-nine individuals in fruit were discovered in two sites in evergreen broad-leaved forests at 2,380 m altitude. The total area of occupancy of the species is c. 3 km², indicating it should be categorized as Critically Endangered on the IUCN Red List on the basis of criterion B2ab(i,ii,iii,v). Because of its restricted distribution, small population size and degradation of its habitat, the species should be included in the list of Plant Species with Extremely Small Populations in China. Our survey and information obtained from interviews with people local to the area indicated that the main threats to this species are its small population size, destruction by people and road construction (and hence habitat loss). Urgent measures need to be taken to protect this species.

The Kunming Institute of Botany is now carrying out studies on the population genetics of *S. shweliensis* and its genetic relationships with other Chinese *Staphylea* species. In collaboration with staff of nature reserves, we are also planning to collect seeds of *S. shweliensis* for propagation and future restoration. Using species distribution models, we plan to identify and explore other sites where the species could potentially grow.

Rong Li (lirong@mail.kib.ac.cn), Lihuan Tang and Zhiyou Wang