

Conservation news

Asian songbird crisis also affects unprotected species

With the demand for live songbirds in South-east Asia so high and negatively affecting so many species, conservationists have dubbed it the Asian songbird crisis. Nowhere is this crisis felt more than on the Indonesian island of Java, where tens of thousands of wild-caught birds are openly offered for sale in bird markets every day. In July 2018 Indonesia published its long-awaited new protected species list. Unfortunately few of the heavily traded songbirds that were not already on the 1979 list were included. One of these omissions is the Asian fairy-bluebird *Irena puella*, a bird as attractive as its name suggests. Males have an iridescent blue and black plumage and a loud liquid two-note call, making them highly desirable in the Indonesian songbird trade. Partially because of its large South-east Asian range, the species is categorized as Least Concern on the IUCN Red List, although it is noted that its populations are declining. Some of the various subspecies, in particular that on Java (*Irena puella turcosa*), are recorded in the wild less and less frequently. We believe that, at least on Java, part of this rarity is due to excessive trapping for the domestic songbird trade.

Between August 2016 and August 2018 we recorded 443 Asian fairy-bluebirds during 109 surveys in 20 bird markets on Java, Bali and Lombok. Although in many bird markets only single individuals were on offer, several bird markets had relatively large numbers for sale per survey: Pramuka (mean of 16.8), Jatinegara (4.4) and Barito (4.3) in Jakarta; Plered (5.2) in Cirebon; Sukahaji (4.1) in Bandung; and Depok (4.0) in Surakarta. In August 2018 we found 71 Asian fairy-bluebirds offered for sale on two online classified ad webpages (OLX.co.id and inkuiri.com) and a specialist Facebook group (komunitas burung cucuk biru), mainly by sellers from western Java (46 advertisements) and central Java (12). We also found the species on offer in two bird markets on Bali and one on Lombok, and online in Bali and Sulawesi—three islands east of their natural range—demonstrating they are traded over long distances. Prices varied from USD 22 for a newly captured bird to USD 220 for an accomplished singer. The mean asking price based on 50 first quotes was USD 63, thus making it affordable for a large proportion of Javanese society (the 2018 government recommended minimum monthly wage for Jakarta is USD 262). We expect that most of the Asian fairy-bluebirds were sourced in Java, augmented with imports from Sumatra and Borneo. There was a strong correlation between the size of the market and the number of Asian fairy-bluebirds on display (< 20 shops, mean of 1.0 birds; 20–49 shops, 3.2 birds; > 50 shops, 5.9 birds), and with at least 54 bird markets on Java, Bali and Lombok we estimate that on

any given day 150 Asian fairy-bluebirds are offered for sale. If we assume that a quarter of the birds are sold within 2 weeks, and half within 4 weeks (anything less makes the trade probably no longer economically viable), then > 2,000 birds may pass through these markets annually. Quantifying the number of birds on offer in the virtual marketplace was not possible, but it probably adds substantially to the estimate for the bird markets.

Despite still not being legally protected in Indonesia, commercial trade in Asian fairy-bluebirds is strictly regulated and only limited numbers are allowed to be captured and sold as pets. The 2018 harvest quota indicates that no more than 100 Asian fairy blue birds can be captured in the province of Jambi (Sumatra) and 100 in Central Kalimantan (Borneo) but none from Java. Perhaps the opportunity to add Asian fairy-bluebirds to Indonesia's protected species list has passed, but we urge the Indonesian authorities, and especially the regional branches of the Natural Resources Conservation Agency, to be more vigilant in checking actual and virtual bird markets, and ensuring that no additional birds are traded outside the approved harvest quotas.

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Finding *Lysimachia robusta*, a long-lost endemic plant species of China

Lysimachia robusta Handel-Mazzetti, a perennial herb species of the family Primulaceae, is endemic to the southern Hengduan Mountains in south-west China. Previously it had only been collected three times, in 1911, 1912 and 1913, by George Forrest and Edward Butts Howell, and was described in 1928 (H. Handel-Mazzetti, 1928, *Notes from the Royal Botanic Garden, Edinburgh*, 16, 116). According to the three type collections (George Forrest 9286, 11997; Edward Butts Howell 49) at the herbaria of the Royal Botanic Garden Edinburgh and the Institute of Botany, Chinese Academy of Sciences, this species is only known from Tengyüeh (now Tengchong) and the Shweli-Salween divide, in the southern Hengduan Mountains, an area of c. 400,000 ha in western Yunnan. Surveys (Qinghai-Tibet Plateau Expedition in 1982 and Gaoligongshan Biodiversity Survey in 1998–2007) close to the type locations and adjacent areas were not able to locate the species.

With the joint support of the National Natural Science Foundation of China (Grant No. 31570212, 31770228), the National Key Program of the Ministry of Science and Technology (Grant No. 2017FY100100) and the Talent Project of Yunnan (Grant No. 2015HB092), the Kunming Institute of Botany surveyed for any remnant *L. robusta* in the southern Hengduan Mountain range during June–August in 2018. Approximately 1,100 individuals in flower were discovered in three separate sites in grassy wetlands at an altitude of 1,730 m. The total area of occupancy of the species is c. 800 m². This suggests that it should be categorized as Critically Endangered on the IUCN Red List on the basis of criterion B2ab (i,ii,iii,v). Also, because of its restricted distribution, small population size, and habitat degradation, it should be included in the list of Plant Species with Extremely Small Populations in China (Ma et al., 2013, *Biodiversity and Conservation*, 22, 803–809). My survey and interviews with local people indicated that the main threats to this species are its small population size, the development of its wetland habitat for tourism in the last 15 years—leading to an increasing number of people picking the flowers for their ornamental value—and habitat loss because of road construction. Urgent and effective measures need to be taken to protect this species.

The Kunming Institute of Botany is now carrying out studies on the population genetics of *L. robusta* and its genetic relationships to other *Lysimachia* species of the southern Hengduan Mountains, to obtain a better understanding of the microevolution of this species. In collaboration with staff of nature reserves, I am planning to collect seeds of *L. robusta* for propagation and for potential restoration of the species in the wild. The southern Hengduan Mountains are currently managed as a nature reserve by the local government. However, more attention should be paid to wetlands in this region, because this is the only known natural habitat for the remnant *L. robusta*.

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Rediscovery and conservation of the Critically Endangered *Rhododendron griersonianum* in Yunnan, China

Rhododendron griersonianum Balf. f. et Forrest, belonging to subsection *Griersoniana* Davidian ex Chamb of the Ericaceae, is a Critically Endangered species on *The Red List of Rhododendrons* (Gibbs et al., 2011, Botanic Gardens Conservation International) and the Threatened

Species List of China's Higher Plants (Qin et al., 2017, *Biodiversity Science*, 25, 696–744). Circa 10% of all registered *Rhododendron* cultivars have been created by hybridization with *R. griersonianum*. Despite its value for horticulture, the conservation of *R. griersonianum* has been afforded little attention. After its description in 1919 (Isaac Bayley & Gorge, 1919, *Notes from the Royal Botanic Garden, Edinburgh*, 11, 69–71), Gorge Forrest collected the species again in 1924, 1925 and 1931. In 1964 Wu Sugong of Kunming Institute of Botany, Chinese Academy of Sciences, collected one specimen, deposited in the Herbarium of Kunming Institute of Botany, Chinese Academy of Sciences. Since then the species had not, until now, been located again.

To secure up-to-date information on *R. griersonianum* we surveyed in its type locality during its flowering time in May 2015, but failed to find the species. In May 2016, however, with the help of local people, we surveyed again and three plants with flowers were found within an area of c. 100 m² on steep rocky terrain near farmland in Jietou, Tengchong County, west Yunnan. Following further searches we found four plants on a riverbed in Houqiao, c. 50 km from the first population. In July 2018 we found eight plants along a road in Guyong, c. 12 km from the first population and c. 42 km from the second population. We did not find seedlings in any of the three populations. Information obtained from interviews with local people and our field investigations indicated that the main threat to this species is the loss of suitable habitat as a result of human activities such as logging, farming, and reservoir and road construction.

Priority conservation action is required to prevent the extinction of this Critically Endangered and horticulturally important species. At Kunming Botanical Garden of Kunming Institute of Botany seedlings are being propagated, from both seeds and cuttings, for ex situ conservation, a local nature reserve has agreed to establish protection plots in the habitat of *R. griersonianum* for in situ conservation, and samples have been taken for phylogenetic research. In addition, further surveys to locate other potential populations are required. An integrated conservation action plan for the species is now being prepared.

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