Conservation news

Urgent protection is required for *Michelia lacei* (Magnoliaceae) in Yunnan, China

The evergreen tree *Michelia lacei* W.W. Smith (with the synonyms *M. uniflora, M. tignifera, M. magnifica* and *M. pachycarpa*), of the family Magnoliaceae, occurs in Myanmar, Vietnam and China. In 2004 it was evaluated as occurring in fewer than five localities in China, with an estimated 50–60 mature individuals. This evaluation was based on the field knowledge of experts rather than on verification of occurrence in particular localities. The species was subsequently categorized as Critically Endangered on the China Species Red List in 2004 and on the Red List of Magnoliaceae published by Fauna & Flora International in 2007, and as Endangered on The Red List of Magnoliaceae revised and extended by Botanic Gardens Conservation International in 2016, and the IUCN Red List of Threatened Species in 2016. In March 2010 the species was identified as one of 62 plant species with extremely small populations in China.

To secure more reliable data on *M. lacei* in China a total of eight field surveys were carried out in south-east Yunnan during 2014–2016 with the joint support of the second survey of key protected wild plants in Wenshan and Honghe Prefectures (grant 39Y33G831261) and Yunnan Provincial Wildlife Conservation Projects (grant 201606). Field surveys in Wenshan Prefecture were conducted in May, July and December 2014 and November 2015 by Dao Zhiling, and in Honghe Prefecture in October 2014, August 2015, and June and September 2016 by Cai Lei. In total only three localities and 10 mature individuals have so far been recorded, in Maguan County (six individuals), Malipo County (three individuals) and Jinping County (one individual). There have been no known in situ conservation actions for this species until now, although the species is cultivated in five ex situ collections in botanical gardens in China. Our survey and information obtained in interviews with local people indicate that the main threats to this species are habitat degradation, forest loss and low production of fruits. At Kunming Botanical Garden, Yunnan, we planted several individuals of *M. lacei*, germinated from seed collected in Jinping County in 1987 but, with the exception of one individual that flowered in 2009, they have not flowered or fruited.

Urgent measures need to be taken to protect this rare species of Magnoliaceae, and therefore Kunming Botanical Garden is now going to establish in situ conservation for *M. lacei* and study its reproductive biology. To elucidate the species' conservation status fully, further surveys are required in south-western China, Myanmar and northern Vietnam, and also in other areas of its potential range, such as Laos.

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Impending recovery of a tiger population in Telangana following increased protection

Increasing the global number of tigers *Panthera tigris* is a key conservation target. Recovery of tiger populations in contiguous, well-protected habitat is a critical step in achieving this goal. Across their range, tigers respond negatively to human presence, largely as a result of depletion of prey numbers, conflict with people and poaching for illegal trade. The demarcation of protected areas with strict protection measures is therefore the cornerstone of tiger conservation.

The forested landscape of south-east India, the southern Central Indian tiger landscape, has large tracts of habitat and the potential to hold viable tiger populations. Currently, however, because of persistent anthropogenic threats and weak protection, these forests are largely depauperate of large mammals. The Wildlife Conservation Society India Program (WCS India) has been working with local conservation partner Hyderabad Tiger Conservation Society to further the recovery of tigers in this landscape. The two NGOs have been involved in enhancing awareness of and interest in tiger conservation; training forest department personnel in monitoring of tigers, their prey and threats; mitigating direct anthropogenic threats to tiger survival by assisting the forest department in protection; supporting families that wish to voluntarily resettle from forest interiors; and mitigating human–tiger conflict.

In 2012 the Kawal Wildlife Sanctuary and adjoining Reserved Forests in this region were declared a Tiger Reserve following a survey that highlighted the potential of the area for the species. At the time tigers had been functionally extinct in the area for at least a decade. Nonetheless there was evidence of the area's conservation potential, with the occasional signs of tiger presence, extant prey populations, and nearly 1,500 km² of good quality habitat. With enhanced protection as a Tiger Reserve, conservationists expected anthropogenic stressors in Kawal to reduce, allowing tigers to gradually recolonize the area. To facilitate immigration into the area, the state additionally enforced protection measures in the 1,000 km² forested corridor linking Kawal to the neighbouring Tadoba-Andhari Tiger Reserve, with stepping-stones of tiger breeding territory along the way.

WCS India and Hyderabad Tiger Conservation Society have been working in close coordination with a team appointed by the Forest Department to monitor tigers in Kawal and its corridors. Following a recorded tiger dispersal into the Kawal corridor area in 2013, these organizations initiated a citizen-science programme in which c. 200 local community volunteers residing in and around the corridor were integrated into tiger monitoring and conservation.

In September 2015 a female tiger was detected by a camera trap in the core area of Kawal Tiger Reserve, and in December 2015 a male tiger was similarly photographed in the same area. In March 2016 the tigress was seen with four cubs in nearby forests. WCS India and partners have been closely monitoring these new recruits into the population, particularly as mortality rates of tiger cubs are high. As of December 2016 two of the cubs have survived and remain in the tigress's territory, and one has dispersed to a new territory and is still being monitored by WCS India and the Forest Department. The remaining cub and the mother have not been seen in this territory since November 2016.

For more than a decade reproducing tigers have not been recorded in this area, but strict protection, combined with stakeholder involvement, has resulted in immigration and reproduction within the Reserve. Close monitoring of the immigrant tigers will continue. With 900 km² of core habitat, and a 1,100 km² buffer zone, Kawal Tiger Reserve has potential to be an important tiger population in this landscape. With continued protection, this protected area can serve as an example of how effective threat mitigation can assist in species population recovery and, ultimately, in increasing global tiger numbers.

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Reintroduced northern bald ibises from Spain reach Morocco

The northern bald ibis *Geronticus eremita* is one of the few Critically Endangered bird species whose breeding range is confined to the Western Palearctic. At present two disjunct natural populations are known: in Morocco, and in Turkey and Syria. In Morocco the population consisted of c. 116 breeding pairs in 2015. In the Middle East the population has suffered a long-term decline; in Turkey there is a semi-captive colony, and in Syria a small colony was discovered in 2002 (Serra et al., 2004, *Oryx*, 38, 106–108), with birds migrating to Ethiopia (Lindsell et al., 2009, *Oryx*, 43, 329–335). In Europe the species became extinct c. 400 years ago, although it was previously widely distributed. European birds were known to leave their breeding areas in autumn and to return in spring, although the location of their historical wintering areas is unknown. Could the species' movements be similar to those today of the glossy ibis *Plegadis falcinellus* and the spoonbill *Platalea leucorodia*, involving the crossing of the Strait of Gibraltar?

Reintroducing threatened species is an eye-catching approach to saving species maintained in captivity. This has recently been the case for the northern bald ibis in southern Spain, where 257 birds were released during 2004–2011 in the context of a project evaluating the efficacy of different controlled release methods (López et al., 2015, *Quercus*, 349, 15–23). In 2008 reproduction in the reintroduced population was confirmed for the first time, and since then the ibises have bred every spring, with a slow increase in numbers.

Plate 1 A northern bald ibis *Geronticus eremita*, ringed and reintroduced in southern Spain, observed in northern Morocco on 24 May 2007 after crossing the Strait of Gibraltar (© Teo Todorov).

Here we report the first confirmed sighting of northern bald ibises successfully reaching Morocco after crossing the Strait of Gibraltar, a matter that could have important implications for conservation of this species in an intercontinental area. On 2 November 2016, whilst monitoring migration of the griffon vulture *Gyps fulvus*, we observed a group of six northern bald ibises reaching the Moroccan coast from Europe. They were first detected at a great distance while flying southwards over the sea, and reached the Moroccan coast at the same point where the arrival of soaring birds was taking place.

Since January 2008 we have regularly visited the wetlands of northern Morocco to survey birds and we have never seen the northern bald ibis there, nor have we received reports of the species. The Moroccan breeding colonies of the northern bald ibis are c. 700 km south of our observation point.

To our knowledge this is the first observation of a group of northern bald ibises successfully reaching Morocco after crossing from Spain. The only other observation was of a single Spanish-ringed northern bald ibis on 24 May 2007 (Plate 1), in Merja Bargha (116 km south-west of our observation location, in a coastal wetland; Teo Todorov, pers. comm.). These observations suggest that the reintroduced ibises are expanding their home range southwards, which could indicate a progressive adaption of the population.

With the Spanish population increasing, the crossing of the Strait of Gibraltar, in both directions, will probably become more regular, and could have far-reaching consequences for both the Moroccan wild population and for the reintroduction programme in Spain. Many questions require investigation: Will these ibises return to Spain?