

of the local ecosystem. Following these sessions, some of the peri-forest community members offered to record the dark sitana whenever they observe it, to improve knowledge of the speices' distribution. We have since received invitations from several other schools for similar education sessions, and requests for the poster. We look forward to conducting further education sessions during World Lizard Day on 14 August and to collaborating with other organizations to improve the conservation of the dark sitana in Nepal.

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## Dipterocarpaceae, the vanishing giants of the tropics

The Dipterocarpaceae—a family of tree giants that provide valuable timber for regional and international markets—are dominant members of the tropical forests of Southeast Asia. For the first time, through the Global Tree Assessment, more than 50 researchers across 15 organizations have collaborated to prepare IUCN Red List assessments for the 535 dipterocarp species. The findings were published on 3 March 2023 in *The Red List of Dipterocarpaceae*, which builds on national and regional assessments.

Occurring in 46 countries across four continents, 67% (357 species) of dipterocarps have been categorized as threatened, with 70 species categorized as Critically Endangered. One species, *Hopea shingkeng*, has been categorized as Extinct, and 22 species as Data Deficient because of their rarity or lack of recent records.

Southeast Asia is the centre of dipterocarp diversity, with Indonesia (278 species) and Malaysia (340 species) having the greatest number of species and also the highest number of threatened species, with 168 and 211 species at risk, respectively. Sri Lanka and India have far fewer species but > 90% of their native dipterocarp species are threatened. In total, 84% of the 201 dipterocarps endemic to a single country are at risk of extinction.

The primary reported threat is land conversion, affecting > 400 species, with the major conversion being for agroindustry. The second most significant threat is timber harvesting. These findings follow the global threats identified in the 2021 *State of the World's Trees* by Botanic Gardens Conservation International. In addition, threats posed by fire and climate change continue to increase. Threats are often synergistic, with instances of infrastructure development promoting logging and land-use change.

Conserving dipterocarp species is a global effort, with research and conservation actions being undertaken in

various countries by research institutes, universities, government agencies, NGOs, botanic gardens and other organizations. Each country has its own story to tell and actions taken include sustainable forest management, site protection, species rescue and recovery planning, changes in law and policies, ex situ collections and many more.

*The Red List of Dipterocarpaceae* is a call for greater support of conservation activities from the wider plant and conservation community. There is a need for the mobilization of sustainable funding and collaborations to bring these forest giants and their habitats back from the brink.

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## Supporting the recovery of the pampas deer in Uruguay

The pampas deer *Ozotoceros bezoarticus* is categorized as Near Threatened on the IUCN Red List. However, it now occurs in < 2% of the original extent of its southern range, in Argentina and Uruguay. Populations are small and isolated as a result of habitat loss to agriculture, and poaching. In 2020, we obtained support from the Uruguayan Ministry of Environment (National Board of Biodiversity and Ecosystem Services) to census the population and to improve the genetic variability of pampas deer in the captive breeding centre Estación de cria de Fauna Autóctona de Piriápolis. This centre was founded in 1980 with 10 pampas deer from the Arerunguá population in Salto and currently numbers 156. Population fluctuations and genetic data suggest this captive population is suffering inbreeding depression, and therefore in March 2022 we captured five wild males to collect semen, to introduce genetic variability into the captive population.

We captured five males on two livestock ranches in Arerunguá. Each male was weighed, faeces, blood, ectoparasites and semen were collected, and we tagged them with an ear tag and GPS radio collar. Simultaneously, in the captive breeding centre, nine females were submitted to an oestrous cycle synchronization protocol. In the second week, we carried out transcervical artificial insemination, and the females were in good condition.

Seven months later we found the inseminations had been unsuccessful, with none of the females pregnant. However,

we successfully recorded the daily movements and home ranges of the five males. The collars dropped off by the end of March 2023, and were successfully recovered.

Although the inseminations were unsuccessful, we have demonstrated that male and female pampas deer can be handled without any resulting health issues or injuries. We are now revising the protocols for optimizing the oestrous cycle synchronization so that we can reattempt insemination in the next reproductive season.

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### Conservation of *Diospyros crumenata* (Ebenaceae), an Endangered tree endemic to the Western Ghats, India

The Western Ghats of India are recognized as a biodiversity hotspot and are remarkable for their floristic diversity and endemism. *Diospyros crumenata* Thwaites of the family Ebenaceae is an Endangered, dioecious tree endemic to this region. It grows up to 25 m tall in evergreen forests. There is only limited data available for this rare species, so the research team of Kerala Forest Research Institute conducted population surveys from August 2021 to March 2023, locating populations in Poringalkuthu, Vellanipacha and Mannamangalam in the Kerala part of the Western Ghats. We recorded the number of mature individuals, area of occupancy, extent of occurrence, and any natural regeneration or threats.



Characteristics and conservation of *Diospyros crumenata*: (a) habit, (b) & (c) fruit, (d) predated fruits, (e) processed seeds, (f) seed damage by unidentified insects, and (g) planting stock.

We observed that the tree flowers and fruits irregularly. The fruits, locally known as *karimbudan*, are edible. There are eight seeds per fruit, and the seeds are recalcitrant and lose viability within 2 weeks of collection. The fruits are typically consumed before they reach maturity, and fallen fruits are affected by fungal infections. The fruits are consumed in particular by the Endangered lion-tailed macaque *Macaca silenus*, which is endemic to the Western Ghats. The conservation of this tree is therefore important for the conservation of this primate.

We determined that the main threats to *D. crumenata* are (1) the low number of reproductively active trees, (2) poor recruitment of seedlings, (3) irregular flowering and fruiting, (4) low seed viability, and (5) consumption of the fruits by tribal people and by wild animals. As there appear to be constraints to the reproduction of this species in the wild, ex situ conservation may be required. We have grown 2,000 seedlings of *D. crumenata* in the Kerala Forest Research Institute nursery and are planning to plant them in the species' natural habitat.

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