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## Human-wildlife interactions

and (5) scientific outreach to specialists and the general public highlighting the importance of fungal conservation. If these initial goals are met, we expect that Brazil will be recognized as a country that values and conserves its fungi and contributes to the Reverse the Red Initiative.

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### Updating the action plan of the national strategy for the conservation of fungi in Cuba

The Strategy for the Conservation of Fungal Diversity in Cuba ([cybertruffle.org.uk/cubacons/index.html](https://cybertruffle.org.uk/cubacons/index.html)) was concluded during the implementation of the Fungi of the Caribbean project (1997–2000), which was funded by the UK Darwin Initiative. The strategy was a key reference for national and international projects but given the time since its preparation, an update of the Strategy's Action Plan was required. The Action Plan was updated through workshop discussions in which members of the project Implementation of the Strategy for the Conservation of Fungal Diversity in Cuba (2019–2021) and relevant invited specialists participated. In these discussions, the Action Plan was analysed to ensure it corresponds to the goals and actions of the National Programme on Biological Diversity. The update of the Action Plan was published in November 2022 (Mena-Portales et al., 2022, *Acta Botánica Cubana*, 221, 438).

Of the 65 actions in the updated Action Plan, 22 are currently being carried out related to: (1) the awareness of Cuban society in general, and some target groups in particular, of the importance of fungal conservation, (2) scientific research and technological innovation, monitoring and evaluation of fungal diversity and institutional strengthening, (3) assessment of the conservation status of Cuban mycobiota using the IUCN Red List criteria, (4) integrated

agroecological pest management, including the use of fungi as biofertilizers and for biological control, (5) the inclusion of information about fungi in the approval and management of protected areas of national and local significance, (6) in situ and ex situ conservation of the genetic diversity of fungal species, with emphasis on species useful for food and agriculture, and (7) the incorporation of fungal species into methodologies for the restoration and/or rehabilitation of priority ecosystems and landscapes.

This update of the Action Plan is essential for advancing efforts to conserve not only the mycobiota, but also the habitats, ecosystems and landscapes where these organisms play a leading role.

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### Conservation of the Critically Endangered dark sitana in Nepal through education campaigns

The 42 lizard species known from Nepal have received little conservation attention. In many Nepalese communities, lizards are portrayed as relatives of snakes and considered to be venomous, and in folklore they are treated as lazy and dishonest animals. There are three species of sitana lizards in Nepal: the Siwalik sitana *Sitana sivalensis*, Shuklaphanta sitana *Sitana schleichi* and dark sitana *Sitana fusca*. The dark sitana is an agamid lizard endemic to Nepal and known only from its type locality in Madhesh province. It is categorized as Critically Endangered as a result of habitat loss, forest fragmentation and urbanization.

With support from The Rufford Foundation, UK, Auckland Zoo, New Zealand, and Katie Adamson Conservation Fund, USA, a conservation and research project for the dark sitana has been jointly initiated by the Nepal Conservation and Research Center and the Mithila Wildlife Trust. Outreach education sessions were jointly conducted by these two institutions in March and April 2023. We worked with students in 15 schools and five peri-forest communities (i.e. living immediately adjacent to the forest and dependent on it). A total 1,055 students (492 boys and 563 girls) and 123 community members attended these sessions. We also distributed a conservation poster about the dark sitana to each student and community member.

In these education sessions, the communities and students, who previously perceived the dark sitana to be venomous, were able to learn that this lizard occurs only in their province, is non-venomous and is an important component

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,