

cuttings, only five of 28 made produced roots and shoots. While working to improve these propagation methods, we will also trial tissue culture propagation methods. We hope these methods will produce viable seedlings that can be used to support additional ex situ conservation and future reintroduction programmes for the species.

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### Threats to an undescribed songbird species in Indonesia

New vertebrate species are still being discovered in the Indonesian Archipelago (Rheindt et al., 2020, *Science*, 367, 167–170), many of which may already be threatened with extinction. One such species is the Wangi-Wangi white-eye, an undescribed micro-endemic species of *Zosterops* inhabiting just one small island: the 155 km<sup>2</sup> Wangi-Wangi in the Wakatobi archipelago, South-east Sulawesi (O'Connell et al., 2020, *Raffles Bulletin of Zoology*, 68, 574–587). The Wangi-Wangi white-eye is a novel taxon, unlike many recently described bird species that have resulted from so-called taxonomic splits. Genetic and morphological analyses (O'Connell et al., 2019, *Zoological Journal of the Linnean Society*, 186, 701–724) have shown the Wangi-Wangi white-eye to be distinct, but it is not formally recognized as a species as no type specimen (a preserved adult) exists in a museum.

Wangi-Wangi Island has been heavily deforested and therefore the Wangi-Wangi white-eye is likely to have already suffered from habitat loss. The Indonesian NGO Prigen Conservation Breeding Ark has found this species is being increasingly traded in bird markets (Menner, 2020, *Prigen Conservation Breeding Ark Spring News*, [silentforest.eu/spring-news-from-the-prigen-conservation-breeding-ark-pcba-march-2020](https://silentforest.eu/spring-news-from-the-prigen-conservation-breeding-ark-pcba-march-2020)). White-eye species are commonly traded for their pleasant song, and trade in bird species that have suffered from habitat loss is threatening songbird species in Indonesia (Marshall et al., 2020, *Biological Conservation*, 241, 108237). Trade of this undescribed species is therefore of concern. Although Menner (op. cit.) notes the Wangi-Wangi white-eye is being bred in captivity, it is difficult to ascertain how many of the traded birds have been captive bred and how many have been recently trapped in the wild.

Unregulated trapping for the cage bird trade may pose a serious threat, particularly as the Wangi-Wangi white-eye's status has yet to be formalized. Until a species is formally described, it receives no conservation protection (O'Connell et al., 2020, *Science*, 369, 1172). The process of obtaining permits for the collection of a type specimen is underway, to facilitate formal recognition of the species and an assessment of its conservation status. Only then can it be protected by law. However, this can be a lengthy process.

As its range is < 500 km<sup>2</sup>, the Wangi-Wangi white-eye is likely to be categorized as Endangered on the IUCN Red List. The example of the Wangi-Wangi white-eye highlights the problems faced by rare new species. Modern trappers are quick to exploit profitable populations (Yang & Chan, 2015, *Zootaxa*, 3980, 67–80; Neslen, 2016, *The Guardian*, [theguardian.com/environment/2016/jan/01/poachers-using-science-papers-to-target-newly-discovered-species](https://theguardian.com/environment/2016/jan/01/poachers-using-science-papers-to-target-newly-discovered-species)). Conservationists need to be alert to this issue and consider how to make protection more effective for threatened populations.

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### Saving the Tapanuli orangutan requires zero losses

The discovery of a new great ape species is a rare event. Prior to the discovery of the Tapanuli orangutan *Pongo tapanuliensis* in Sumatra in 2017, the last great ape described was the bonobo *Pan paniscus*, in 1929. Ironically, immediately after its description the Tapanuli orangutan was categorized as Critically Endangered on the IUCN Red List. A recent study suggested that the range of the Tapanuli orangutan has declined by more than 95% in the past 130 years (Meijaard et al., 2020, *bioRxiv*, 2020.08.11.246058). Saving the rarest great ape in the world requires avoiding all further losses.

Approximately 800 Tapanuli orangutans remain, in three forest blocks. These blocks remain ecologically connected but the development of a hydroelectric project threatens to separate the populations. A goldmine and small-scale farming

have previously resulted in loss of forest, and orangutans are being injured or killed by local people. Despite this, the Indonesian Minister of Environment and Forestry has recently declared there is no possibility that the species will go extinct (Anon., 2020, [foresthints.news/minister-evidence-shows-no-possibility-of-orangutan-extinction](https://foresthints.news/minister-evidence-shows-no-possibility-of-orangutan-extinction)). The Ministry's optimism is not supported by our analysis of historical records of this orangutan, which indicates that the current remaining range of the Tapanuli orangutan is c. 2.5% of the range the species occupied in the 1890s (Meijaard et al., 2020, *bioRxiv*, 2020.08.11.246058).

Much of this decline appears to have happened before industrial-scale deforestation for plantation development. We believe this orangutan species disappeared from much of its former range as a result of unsustainable hunting in forest that had been fragmented by land clearing for traditional agriculture.

IUCN population viability assessments indicate that an annual offtake of more than 1% of the adult population in suboptimal habitats would drive any population of this slowly reproducing great ape to extinction. Current losses are probably higher. Contrary to statements by the Minister of Environment and Forestry, we believe there is a high possibility that the species will soon go extinct unless we prevent further habitat loss and fragmentation, and ensure zero offtake.

Preventing the first potential extinction of a great ape species in recent history requires development and effective implementation of a detailed conservation action plan that applies the best science available. Such a plan will need to be endorsed by the various national and international parties involved in the area, including the Indonesian government, IUCN, funding bodies and industry.

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## Tourism development projects and nature loss on Xuedou Mountain, China

Xuedou Mountain, in Ningbo in Zhejiang province, recognized as a national park since the 1980s and one of the five renowned mountains of Buddhism in China, has been receiving more than one million visitors annually since 1991. Covering an area of 85 km<sup>2</sup> in the unique Danxia landform, the mountain has rich natural resources. It is a habitat for 1,600 animal species, 20 of which are threatened, as well

as for plants facing a high risk of extinction, such as *Eucommia ulmoides* and *Pteroceltis tatarinowii*.

Nevertheless, 52 construction projects began in 2014, including the Buddhist Academy of Zhejiang together with temples and other places of worship. In 2018 a construction scheme comprising 12 additional projects began. The governors of Fenghua district, with representatives of other governmental institutions, announced a plan to build a village of cultural and historical significance on the mountain, aiming to boost local cultural and ecological tourism. Investments of CNY 16 billion (c. GBP 1.83 billion) were secured from companies, including China's leading real estate developer, the Evergrande Group.

This construction programme entails extensive logging, paving and construction of infrastructure, and has fragmented and damaged areas of natural habitat. The programme has also expropriated the farmland and houses of local peasants, and affected the well-being of those whose social and economic lives depend on the diminishing natural resources.

As in other scenic places, tourism to Xuedou Mountain has been affected by the COVID-19 pandemic, with all construction projects halted. But with the situation gradually brought under control, the provincial government is now taking measures to reinvigorate tourism. In April 2020 a joint meeting of the Provincial Park Association of Zhejiang and the China Association of National Parks and Scenic Sites announced a plan to revitalize the development of local tourism, with all interrupted construction projects to resume.

To reverse the adverse impacts of these projects on the local environment and communities, the Ningbo government plans to introduce a compensation policy to tackle the losses of biodiversity and attendant effects on human well-being. The policy includes ecological restoration following construction and financial compensation for affected local residents. However, without effective biodiversity offsetting, this policy is insufficient to redress the losses fully. How to offset the residual losses in one area of the mountain with commensurate gains in another area remains a challenge for the Ningbo government.

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