

Saving threatened orangutans with climate change-resilient trees

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Credit: Alan Lee

A study of the International Union for Conservation of Nature has identified tree species native to Indonesia's Kutai National Park that are resilient to climate change. The species support threatened East Bornean orangutan populations; therefore, the study recommends their use in reforestation efforts. Hortus botanicus Leiden prefect Paul Kessler and former Leiden Ph.D. candidate Arbainsyah contributed to the publication.

Recognising that saplings planted today face [dramatic climate changes](#) over their 100+ year life-spans, the study analysed the traits of around 250 species of [trees](#) and other plants native to the rainforest of Kutai National Park. The researchers identified species resilient to the fires and [drought conditions](#), which are expected to increase as the [climate](#) warms. The authors also identified [tree species](#) that provide food and habitat for threatened East Bornean orangutans, for which the [park](#) provides a key habitat.

Restoring rainforests

"Increasing drought and fires caused by a warming climate are important emerging threats to species-rich areas such as Kutai National Park," said Alan Lee, lead author of the study and member of the IUCN SSC Climate Change Specialist Group (see box). "Selecting climate-resilient tree species can

help protect the park and the orangutan populations it shelters from the impacts of [climate change](#). We hope that the information in this study is taken up by all those working to restore this unique area of rainforest."

Climate change-resilient species included those with low sensitivity to changes, high capacity to adapt to them, or both. Two tree species that were singled out for their resilience to fire should be planted in buffer zones around fire-prone areas, the authors recommended. One of them is a native palm, *Borassodendron borneense*, and the second one is the hardwood tree *Eusideroxylon zwageri*, known locally as Bendang and Ulin.

"This study provides valuable practical guidance as to how we can make a unique Bornean rainforest more climate-resilient," says Sandeep Sengupta, IUCN's Climate Change Coordinator. "Of course, to halt the catastrophic impacts of climate change on nature we urgently need ambitious emissions cuts. But with climate change already impacting many species in alarming ways, nature needs all the help it can get in adapting to these rapid changes."

Seven plants that are likely to be climate resilient emerged as key food sources for East Bornean orangutans. These should be planted alongside vines that the apes use for moving through the forest and trees which they prefer for nesting, such as the Ulin tree, according to the study. To minimise conflict with humans – a key threat to orangutans – the authors recommended planting these species in areas that humans are unlikely to access.

"Kutai National Park was once one of the most important lowland rainforest sites in Borneo, and its degradation is a major loss not only for Indonesia but for the world," says co-author Douglas Sheil. "But there is a glimmer of hope in that populations of threatened East Bornean orangutans persist there and work continues to restore forest cover in

the park. Selecting which [species](#) to plant is a significant contribution to restoring the health of this ecosystem. Of course, the reasons why [forest cover](#) was lost in the first place must also be addressed for reforestation efforts to succeed," he concludes.

Provided by Leiden University

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