

TIME RUNNING OUT FOR TAPANULI ORANGUTAN

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THE rainforests of Malaysia and Indonesia have long had enigmatic residents in their canopies of trees. They are the orangutans, who have always fascinated with their shocks of orange fur, remarkable vocal abilities as well as the 97 per cent of the DNA they have in common with humans.

The two distinct species of the primates living on the islands of Borneo and Sumatra are surviving members of the family of six species of great apes, along with Eastern and Western African gorillas as well as chimpanzees and bonobos, which also live in Africa.

But, new research some two decades in the making is now upsetting that conventional scientific wisdom and suggesting that there is a seventh great ape species: the Tapanuli orangutan, from upland forests on Indonesia's island of Sumatra.

An international team of scientists announced their findings in a paper published on Thursday in the journal *Current Biology*.

"I discovered the population south of Lake Toba in 1997, but it has taken us 20 years to get the genetic and morphological data together that shows how distinct the species is," said Erik Meijaard, a conservation scientist affiliated with Australian National University and an author of the paper.

Orangutans are an endangered species, with populations in some areas critically endangered. The new species, *Pongo tapanuliensis*, or the Tapanuli orangutan, was described as living only in an area of forest about 1,100 square kilometres in size.

The team researching the Tapanuli orangutan contends that it's the most endangered of all surviving great apes, with only about 800 left.

In 2013, researchers involved in conservation efforts in an area of North Sumatra province known as the Batang Toru ecosystem recovered parts of a skeleton from



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an adult male orangutan killed by local residents.

They were surprised to find singular characteristics that consistently differed from other Sumatran orangutans, including in the measurements and overall shape of its skull, jaw and teeth, said Matthew G. Nowak, a conservation biologist with the Sumatran Orangutan Conservation Programme, an organisation involved in the research.

"When we realised that Batang Toru orangutans are morphologically different from all other orangutans, the pieces of the puzzle fell into place," said Michael Krützen, a professor at the University of Zurich and a member of the research team.

Researchers then conducted what they called the "largest genomic study of wild orangutans to date", comparing the genes from the recovered orangutan with data collected in the past from other field sites on Sumatra.

They found that the Tapanuli population had become isolated from other Sumatran orangutan

populations sometime in the last 10,000 to 20,000 years.

They also found that the Tapanuli's orangutan's lineage was ancient – between 3 million and 3 ½ million years old – and that they appeared to be direct descendants of the orangutan ancestors that crossed into what is now Malaysia and Indonesia from mainland Asia.

"We have learned how little we actually knew about orangutan evolution, despite many decades of research and how much more there is to learn," Meijaard said. "Orangutans are ancient creatures, as old as the very first members of our own genus *Homo*."

The researchers acknowledged that there are limitations in their study, as they had access to only a single skeleton and two individual genomes.

But, they noted that other species have been defined with a single specimen.

Biruté Mary Galdikas, a Canadian primatologist who has studied orangutans for 46 years and

led conservation efforts on the neighbouring island of Borneo, said she was pleased – but not necessarily surprised – by the announcement.

"It was the talk 50 years ago, that there were two types, including one that had long fingers," she said of descriptions made by residents of that area of Sumatra.

"So, what they have done is solidified the evidence, using anatomical evidence and genetic evidence, and evidence from the population."

Galdikas, president of Orangutan Foundation International, said she hoped media attention over the announcement would further efforts to protect remaining orangutan populations in Borneo and Sumatra.

She also said she hoped it would spark new scientific debate on whether the three subspecies of the Bornean orangutan should themselves be elevated to full species of great ape, in particular the orangutan of eastern Borneo. **NYT**

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