Male orangutans need quality forests

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A male orangutan in the forest of the Lower Kinabatangan Wildlife Sanctuary (Copyright: Rudi Delvaux).

(Phys.org) -- Cardiff University researchers have discovered further proof that orangutans need large swaths of forests to survive.

The study, recently published in the scientific journal Molecular Ecology, showed that the male orangutan would navigate much longer distances than the females and suggests changes are needed to ensure that males are able to move between suitable habitat patches.

The findings, from a Cardiff scientist based at the Danau Girang Field Centre (DGFC) and colleagues from the Institute of Anthropology in Zürich, Switzerland, were based on faecal samples collected from male orangutans at seven sites in Borneo, including Kinabatangan South and North and Danum Valley in Sabah, and two in Sumatra.

Sabah Wildlife Department Director Dr Laurentius Ambu said the findings were further proof that the orangutan needs high-quality natural

forests. "If orangutans are to be efficiently protected, a sufficient network of high-quality natural forest and dispersal corridors must be restored across Borneo and Sumatra to allow the orangutan to disperse naturally," he explained.

The findings follow previous studies from the field centre into the orangutan population. "During a previous study published in 2006, a drastic decline in the orangutan population size was discovered, mostly due to habitat loss. In addition, a loss of male dispersal due to habitat fragmentation will significantly increase the effects of genetic drift (loss of genetic variation) due to small local population sizes and extreme female philopatry, as female orangutans tend to stay in the area where they were born throughout their lives, while males tend to disperse," explained Dr Benoit Goossens, of the University's School of Biosciences and Director of the Danau Girang Field Centre (DGFC).

The research shows it is highly desirable that all orangutan populations are connected through gene flow. "In order to conserve the natural genetic structure and the genetic health of orangutan populations, it is therefore crucial to ensure that males are able to move between suitable habitat patches, even if they are far apart. An effective immigration rate of one to two animals per generation (every 15-20 years) is considered to be the minimum to reduce the negative fitness effects of inbreeding depression (reduced fitness in a given population as a result of breeding of related individuals)," stressed Dr Goossens.

When addressing the need for restored forests across Borneo and Sumatra, Dr Ambu concluded. "It is a big challenge in front of us, where governments, industries and NGOs should work hand-in-hand in order to achieve it".

Provided by Cardiff University