

Gianluca Cerullo, University of Sheffield

### The recovery of invertebrate diversity in logged tropical forest, Borneo, 1 June – 1 September

Borneo's rainforests are fortresses of biodiversity, home to orang-utans, clouded leopards and sun bears. Many of these rainforests have been selectively logged, a process which involves chain-sawing down only large valuable timber and leaving the remaining forest standing. Although logging is damaging, conservationists are increasingly recognising that logged forests are biodiversity strongholds, hosting many of the species found in pristine unlogged forests. In large part, therefore, the fight to protect Borneo's staggering biodiversity into the future will hinge on our ability to protect these logged forests from being swallowed up by agricultural land.

One potential way to do this is restoration. Activities like seedling planting or machete cutting of vines strangling understorey trees can speed up the recovery of valuable timber trees within logged forests. In turn, this could provide an economic reason for land owners to keep logged forests standing, instead of chopping them down to make way for croplands, such as oil palm plantations. The problem is that very little is known about how such restoration will impact biodiversity. For instance, we know that restoration is damaging to fruit-eating birds because they lose an important fruit source when understorey vines are removed. But what about other important wildlife?



*Proagoderus watanabie* and *Catharsius dayacus* – two common dung beetles in Bornean rainforest

In terms of importance, dung beetles are emperors of the forest. They may not be as cute looking as clouded leopards (though I think otherwise), or as acrobatic as gibbons, but they do a pretty exceptional role in making sure that the jungle isn't overrun by leopard and gibbon poo! That's why last summer, with the generous help of the Royal Society of Biology Travel Grant, I spent three months in Malaysian Borneo sampling dung beetles in forests that had been logged and in forests that had been logged and then restored.

This involved macheting 500 m transects through the jungle and burying plastic cups in the ground, with the all-important bait (provided courtesy of a high fibre diet) dangling particularly enticingly from a stick. Over the coming months as part of my Master's project, I will be investigating whether dung beetle communities differed between logged and restored forests (so stay tuned!). This will provide new insights into what we can expect for wildlife when we restore logged forests, which is timely, given that Indonesia recently passed a new law that opens up an area the size of France to restoration activities.

My time in Borneo was fantastic. I developed key skills in dung beetle identification, project organisation and GPS navigation—which comes very much in handy if you take a wrong turning in the forest! The experiences I gained would not have been possible without the Travel Grant, and it is thanks to these that I have been invited to return to Borneo next summer to help set up a long-term research plot which explores the best ways to manage logged forest restoration for biodiversity.



Fieldwork in the jungle is awesome.