

# ZAA Journal

Summer 2019 Volume 13 Issue 2  
Zoological Association of America





# Restoring Ecosystems in Sumatra

by Lucy Radford, Sumatran Orangutan Society (SOS)

## Restoring ecosystems in Sumatra

Sumatran Orangutan Society (SOS) and our frontline partners, Yayasan Orangutan Sumatera Lestari (YOSL), have been managing successful community-led reforestation projects in Sumatra since 2004 and have planted over 1.6 million trees to date, restoring over 2,000 hectares of degraded land. With the permission of the Indonesian government, 13 illegal oil palm plantations have been removed from inside the Leuser Ecosystem, and indigenous rainforest trees are planted in their place. Tree seedlings are grown in organic nurseries managed by the local communities living next to the protected forest and are nurtured for a period of 3-4 years once they have been planted out in restoration sites.

SOS and YOSL's model of establishing local community groups to manage tree nurseries and restore degraded forest areas encourages the community to become guardians of the protected area, whilst gaining significantly themselves from a return of vital ecosystem services and an increase in

income. Around four million people living in the provinces of Aceh and North Sumatra depend on the Leuser Ecosystem for ecological services such as the provision of water for consumption and irrigation, soil fertility, flood control, and climate regulation. Local communities are vital stakeholders in the protection and restoration of critical orangutan habitat, and this holistic approach is crucial if conservation efforts are to be successful in the long term.

## Political Context

The field programmes supported by SOS and managed by YOSL are conducted through strong working partnerships and official agreements with various stakeholders including the Gunung Leuser National Park (GLNP) authority, and the Indonesian government's Nature Resource Conservation Agency (BKSDA). A National Park ranger is stationed at each of the forest restoration sites, so there is mutual capacity building actively in place. Due to this strong collaboration, the government has



*Sumatran orangutan, Pongo abelii.*  
Andrew Walmsley



*Sumatran orangutan, Pongo abelii.* Andrew Walmsley



become far more active in their law enforcement efforts, seeking to prosecute companies and individuals involved in illegal deforestation, poaching and the trade of protected species.

### **Programme Impact and Longevity**

While planting trees to restore rainforest undoubtedly makes an important contribution to conservation efforts, we must also look beyond the trees and consider what lies behind the success of our approach. It's important that we can be confident that we are making a long-term difference to the protection of forests.

When an area of rainforest is destroyed by people or companies who want to use the land to grow crops, it's not enough to simply plant trees and put up a signboard claiming the land back as a reforestation site. We must ensure that those trees, and the untouched primary forest beyond, remain standing as an intact and functioning ecosystem. No matter how many trees we plant, the most essential element of our rainforest restoration programme is the true, deep engagement of the communities who live next to the Leuser Ecosystem in becoming protectors of the forest and defending its borders from future threats.

There are many laws and regulations which exist to protect Sumatra's unique forests, but these are often not effectively enforced, leading to ongoing environmental degradation. The strategic interventions and relationships that we develop increase the capacity of forest-adjacent communities to protect and sustainably manage their precious natural resources.

Our CARE: Community Agroforestry, Restoration and Edu-



*Tree nursery. Andrew Walmsley*

cation model is a 'greenprint' for successful grassroots conservation. Our field partners develop bespoke conservation action plans with communities living next to key orangutan habitat, then provide training and tools to equip them with the skills and knowledge to benefit from, rather than exploit, the rainforest ecosystem. Through training in agroforestry, permaculture and organic farming techniques, farmers have increased crop yields and improved their profit, reducing their need to expand farmlands into the forest. This results in decreased pressure on the ecosystem, providing greater security for orangutans and the many other species that share their habitat.

This holistic approach, with community livelihoods and engagement at its heart, is crucial for successful conservation efforts in the long term. So, just as we plant and nurture trees, the team in Sumatra are also putting down deep roots in these communities, transforming them into conservation ambassadors, and guardians of the ecosystem.

### **Crowdfunding for rainforest restoration**

In the summer of 2018, we learned that a highly strategic plot of land on the edge of Sumatra's Leuser Ecosystem was available for purchase. The 390-hectare plot was being used as an oil palm plantation and was a hotspot for conflict between people and wildlife. A herd of elephants regularly passed through the plantation, damaging the oil palms and people's property, and YOSL reported to us that an elephant calf had been killed in retaliation. Addi-



*Sumatran orangutan, Pongo abelii. Andrew Walmsley*



tionally, an orangutan had become stranded in the plantation shortly before we heard it was up for sale; she was evacuated and returned to the wild in a safe patch of forest, but we know from experience that for each orangutan rescued, there are likely to be many others who are less fortunate. Perhaps most shockingly, one of the plantation's security guards had been arrested and jailed after killing two Sumatran tigers.

Though the price of the land (£870,000) was much higher than anything we had previously fundraised for, with such obvious danger to people and wildlife, it was impossible to turn our backs on this opportunity. The plot's location meant that in addition to restoring and protecting the 890-acre plot itself, purchasing this land with its extensive border along the intact forests of the Leuser Ecosystem would enable YOSL to create a buffer zone that protects that border - and the forest beyond it - from illegal activities such as poaching and logging.

The appeal reached its target in mid-March 2019, just before the deadline. In addition to the two and a half thousand individuals who donated, we had fantastic support from organisations and businesses. Lush Ltd ran their SOS Sumatra campaign again, selling orangutan-shaped soaps and SOS shampoo bars in the UK, Europe, Asia-Pacific and North America. Local artists created a rainforest mural in our Oxfordshire office and sold prints to raise funds, and we also had donations from some wonderful trusts and foundations, including the Zoological Association of America (ZAA).

#### **What happens next?**

Before replanting can begin, the land will need to be

cleared of oil palms – a time-consuming task on such a large site. The YOSL restoration team will also need to carry out a survey of the forest adjacent to the site to establish what indigenous tree species (often including hardwoods such as *Peronema canescens* and *Alstonia scholaris*) are growing there – this will be reflected in the species eventually planted as part of the restoration process. The species chosen will be grown and maintained in a tree nursery and will only be planted in the main restoration area once they have reached a height of 30-40cm, with dense, healthy roots. Despite this precaution, we know that not all seedlings will survive, so the restoration team includes 'blanking' as part of their maintenance work – removing dead seedlings within one month of each planting session and replacing them with new individuals. The team prepares reserve seedlings to replace up to 10% of the total seedlings planted (the total is normally 1,100 per hectare – that equals over 400,000 in the new 390-hectare plot!). Weeding is also important to increase the seedlings' survival rate – this is carried out every four months to ensure that the planted trees get most nutrients possible from the soil. Within the first year, we expect to see a greater diversity of birds returning to the site, while mammals (including orangutans) start to return from around Year 3 or 4 of the restoration process.

Now that the funds have been raised and the paperwork for the land purchase has been signed, we are looking forward to seeing the plot begin its transformation. We are extremely grateful to the Gulf Breeze Zoo and all our other supporters for helping us to reclaim this vital piece of the Leuser landscape. 🐼



*Sumatran orangutan, Pongo abelii. Andrew Walmsley*