

# Sumatran orangutan: threats and rehabilitation strategies



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The Sumatran orangutan is widely considered as the most threatened species of great ape Durrell Wildlife Conservation Trust 2006. It is estimated that there are approximately 6,500 individuals remaining in Sumatra (Wich et al, 2008), and the species is listed as Critically Endangered under the International Union for Conservation of Nature (IUCN) Red List (Singleton et al, 2008). This is due not only to the small remaining population, but to the fact that the population has declined by over 80% in the last 75 years (3 generations) (Wich et al, 2008). The Sumatran orangutan is endemic to Sumatra (considered a separate species from the Bornean orangutan (Mittermeier et al, 2009)), with its range restricted to a small area of fragmented habitat in the North of the island. Historically, the species had a much larger range across Sumatra, but the majority of the population is now constrained to the province of Aceh (Singleton et al, 2008). This condensed population means that we can expect the population to show more intense competition within the species for food and resources, causing an increase in mortality over time (Marshall et al, 2009). The orangutan is an arboreal species, it is highly adapted to spend all of its time above the ground, and primarily inhabits lowland tropical forest and peat-swamp forest ecosystems (DWCT, 2006). These traits have left them extremely vulnerable to habitat destruction, the major threat to orangutans in Sumatra. Heavy logging of the orangutans natural habitat means that only less suitable habitat remains for them (Wich et al 2008). In addition, the majority of the orangutan population in Sumatra were found outside of protected areas, and many within potential logging areas (Singleton et al, 2008). It is clear that the Sumatran orangutan is under severe pressure, and many threats need to be addressed in order to attempt to restore the population.

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## Threats

### Deforestation and fragmentation

Both legal and illegal logging are a major threat to the Sumatran orangutan. The species' main habitat, primary lowland forest, has been devastated in the last 30 years due to large scale forest conversion to agricultural land and oil palm plantations (Singleton et al, 2008). One study between 1990 and 2000 recorded a 13% loss of orangutan habitat forest (Gaveau et al, 2007). Another study by van Schaik et al (2001) found that during the late 1990's habitat supporting 100 orangutans was lost each year in the Leuser Ecosystem in Sumatra. This habitat loss was largely due to legal logging concessions from the Indonesian government for oil palm conversion (van Schaik et al, 2001). The orangutans habitat of lowland forest has been targeted due to the fact that it is easily and cheaply accessible for logging (Campbell-Smith et al, 2011). The forest is being destroyed in order to provide hardwood to developed nations, providing income to boost Indonesia's economy, as well as to clear land for agricultural conversion and expanding human populations (DWCT, 2006). Within the last decade the scale of logging in Sumatra has continued to expand. This was partly due to the surge in demand for timber since the 2004 tsunami (Singleton et al, 2008), as well as a peace agreement in the Aceh province. A moratorium on logging during the conflict meant a lower rate of forest loss, however a peace accord in 2005 led to a lift of the moratorium and re-issuing of logging permits in Aceh (Singleton et al, 2008). In addition, the history of political unrest in the province has greatly impacted past conservation efforts (Marshall et al, 2009). This recorded habitat loss is the main contributor to the species' declining population.

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orangutans are particularly vulnerable due to the fact that they are an arboreal species. They spend the majority of their lives in the canopy to avoid the threat of tigers, meaning the species is restricted to areas untouched by deforestation. However, the spread of human settlements and development of new road systems has caused severe fragmentation of their remaining habitat. In addition, a proposal for the Ladia Galaska road network in Aceh has been put forward, and if allowed will quickly fragment the last remnants of habitat (Singleton et al, 2008). The remaining forest within the orangutans range cannot support its prior ecosystems, and further deforestation and fragmentation could lead to multiple extinctions. Indonesia has converted over 3 million hectares of land to oil palm plantations, with plans to convert a further 4 million (Brown and Jacobson, 2005). However areas of oil palm monoculture only supports 20% of its previous diversity (Marchal and Hill, 2009). Even small scale selective logging can reduce local orangutan densities by as much as 60% (Rao and van Schaik, 1997), which shows how sensitive the species are to the destruction of habitat. The threats to orangutans from deforestation are made greater by the fact that the Indonesian government supports development (orangutan National Action Plan, 2007), and are therefore willing to issue large numbers of logging permits. Furthermore, the decentralisation of forest management in 2001 has aided the rise in forest destruction, as it means that regional land use plans are made without any thought for conservation (The Ministry of Forestry, 2009). The increase in human population also increases pressure, as greater resource degradation occurs to meet an ever increasing demand for timber and agricultural land. A paper by Robertson and van Schaik (2001) suggests that ultimate causal factor of deforestation is corruption, as well as <https://assignbuster.com/sumatran-orangutan-threats-and-rehabilitation-strategies/>

feeble compliance with legislation and poor law enforcement. Corruption is the most difficult threat to overcome, but law enforcement and compliance need to be improved in order to have a chance of protecting the remaining orangutan population.

### **Other threats**

As well as being severely threatened by habitat destruction, orangutans are also in high demand for the pet trade across Indonesia. The central demand is for infant orangutans, considered as good pets as they do not reach full size until the age of 7, and are known for their trait of human imitation.

Currently around 200-500 infants are taken from the wild for the pet trade each year in Kalimantan (Nijman, 2005). No data is available for the Sumatran orangutan, but demand for pets is high in both Borneo and Sumatra, and the number of infants being removed from the wild is unsustainable. Wild orangutans are also threatened by their conflict with humans, and they are at times killed as pests. They are forced to encroach upon agricultural land as a result of habitat destruction, but are considered pests by farmers and often killed when found raiding crops at forest edges. In a study interviewing farmers in northern Sumatra, 28% of those interviewed feared orangutans. They also on average believed orangutans to be the third most frequent, and the fourth most destructive pest (Campbell-Smith et al, 2010). This shows that a high proportion of orangutans are being forced to raid crops due to destruction of habitat and food sources, but also that the human-orangutan conflict may not easily be reconciled as it is largely driven by fear. Finally, the current small nature of the remaining orangutan population means it is highly vulnerable to stochastic events such

as natural disasters, random genetic fluctuations and disease outbreak (Caughley, 1994). The species' relatively slow reproductive rate (25 years per generation) and the ongoing vulnerability to habitat reduction means it is at constant risk of extinction.

## **Past and current recovery strategies**

### **Rehabilitation centres**

During the 1970s the Indonesian government began to establish reserves for orangutans, which are now seen across Sumatra. The reserves act as rehabilitation centres where orphans are taught how to live in the wild and then returned, but also as sanctuaries for individuals unable to be reintroduced. Individuals found in logging areas, as well as orphans and orangutans confiscated by the forestry department, are moved to these sanctuaries (DWCT, 2006). It is estimated that around 63-97% of intakes by orangutan centres are under 7 years old (Russon, 2009). The orangutans are treated medically until their health is regained, as they are often in bad condition. For example many have gunshot and machete wounds, scars from tight chains, and internal damage, as well as behavioural and psychological damage as a result of prolonged isolation, abuse, and abnormal associations with humans (Russon, 2009). In addition many orangutans arrive carrying human diseases such as Tuberculosis, as well as significantly high parasite loads (Russon, 2009) after living in close proximity with humans. Once treated, the orangutans are taught ecological and social skills, and gradually weaned from human contact in order for them to be able to live independently in the wild once released (Beck et al, 2007). When the rehabilitation centres were initially established, uncertainty over orangutan

numbers meant that rehabilitation programmes concentrated on releasing individuals into areas with existing wild populations to supplement those that were too small (Russon, 2009). Between 1973 and 2000, 218 orangutans were released at Bohorok in Gunung Leuser National Park, Sumatra, to supplement the rapidly declining population. The Sumatran orangutan Conservation Programme (SOCP) is one of the orangutan rehabilitation centres in Sumatra, but it also concentrates on other aspects of orangutan conservation. The SOCP rehabilitation centre and quarantine site is in the Medan region, and individuals are released in Bukit Tigapuluh National Park. Over ten years, 190 orangutans have been through quarantine, with 125 individuals released into Bukit Tigapuluh, and 3 wild births by reintroduced females (DWCT, 2006). In addition the programme is helping to improve law enforcement through providing facilities for confiscated or unwanted orangutans. The availability of sanctuaries means that illegally kept individuals are more readily reported (DWCT, 2006). A mobile education unit from SOCP is used as an educational tool to teach conservation and the importance of orangutan tolerance, particularly in human-orangutan conflict areas. This provides a vital part of the orangutan conservation effort, as building understanding within local communities will help to reduce threats. Additionally, the programmes links with the Durrell Wildlife Conservation Trust means they also have access to the latest research in orangutan medicine, husbandry and captive care (DWCT, 2006).

### **Protected Area's**

There are many protected areas across Sumatra, however illegal logging still occurs within the majority of them. The Leuser Ecosystem Conservation

area, established in 1998, is considered a conservation 'stronghold' for orangutan populations (Singleton et al, 2008). It is a 2.6 million hectare area consisting of two National parks and containing around 5,800 (over 85%) of the remaining Sumatran orangutan population (Mittermeier et al 2009). It is the only conservation area within Sumatra with viable populations of the Sumatran orangutan, Sumatran tiger, Sumatran Rhinoceros and the Sumatran elephant. This shows that the Leuser Ecosystem Conservation area is highly important in the conservation and protection of the Sumatran orangutan. However, the national park is predominantly a mountainous region, which is highly unsuitable for the lowland orangutan species. This means that most of the orangutan population is found outside of park boundaries, leaving them even more vulnerable to habitat destruction. It is estimated that only around 30% of the orangutan population in Sumatra are found within park boundaries (Mittermeier et al, 2009), causing more problems and difficulties for their conservation.

### **Legislation**

The Sumatran orangutan was listed on Appendix I of the Convention on International Trade in Endangered Species of wild fauna and flora (CITES) in 1975 (DWCT, 2006). This means that no trade is allowed in live orangutans or orangutan products. The ban was put in place due to the expanding pet trade in Indonesia, and by 1980 over 30,000 orangutans had been killed as result of this trade across Sumatra and Borneo (DWCT, 2006). In addition the species has been protected under Indonesian domestic law (Singleton et al, 2008). Act no. 5, which was made law in 1990, legally protects the orangutan from hunting throughout its range. The Act also aims to protect “



environmental support structures” and preserve biodiversity in Indonesia. However, a ban on hunting is extremely difficult to enforce, and current law enforcement of legislation appears to be very weak.

### **Foreign support**

Many foreign non-governmental organisations (NGO's) have invested an interest in the future survival of the Sumatran orangutan. For example, the Durrell Wildlife Conservation Trust based in Jersey joined the effort to conserve Sumatran orangutans in 1968. Durrell has contributed greatly to the survival of the species, breeding 7 babies in Jersey for the international Sumatran orangutan breeding programme (DWCT, 2006). The trust also helps by sharing information with orangutan rehabilitation centres, as well as sending experts to the field in Sumatra to help in the rehabilitation process. Some governmental support for the protection of the Sumatran orangutan has also been shown. Through the United Nations Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (REDD), the Norwegian government pledged US\$1 billion to Indonesia to reduce deforestation rates (Butler et al, 2009).

### **Success of species recovery to date**

The Sumatran orangutan has been listed as Critically Endangered by the IUCN since 2000 when it was first categorised (Singleton et al, 2008). The species data was re-examined in both 2007 and 2008, and in both cases it was found to still be Critically Endangered (Singleton et al, 2008). The population in Sumatra has been decreasing since the 1900s, with the most recent decline from 7, 300 individuals in 2004 (Singleton et al, 2004), to around 6, 500 in 2008 (Wich et al, 2008). It appears that, despite efforts to

restore orangutan populations over the last 40 years, the species recovery has been unsuccessful to date. The predominant reason behind the continued decline of orangutan populations is the sustained level of deforestation, allowed by legal logging permits, illegal logging, poor law enforcement and ultimately corruption. Legislation is ineffective and reserves are not sufficiently policed, allowing commercial forestry to continue to occur even within protected areas. The rate of illegal logging to legal logging is 4: 1 (DWCT, 2006), meaning that without drastic improvements in law enforcement orangutans will remain at constant threat of extinction. Furthermore, despite the illegalisation of trade in orangutans, the pet trade for the species is still booming throughout Indonesia. Although the forestry department are responsible for confiscating many illegally owned orangutans for reintroduction, a huge proportion of individuals remain in human possession. The current level of protection for orangutans is not enough to combat the threats to the species.

The most successful recovery attempt has been through the rehabilitation centres, but even they have a limited capacity. The rehabilitation process is only able to reintroduce a relatively small number of individuals, with one centre returning 125 orangutans to the wild over a ten years period. Over the same 10 year period only 3 wild births from ex-captive mothers occurred, and a high infant mortality was found at many release sites (Russon, 2009). Several observations of released orangutans at Bohorok release site showed individuals returning ill, underweight or wounded by wild counterparts (Dellatore, 2009). It is clear that there are still some problems with the rehabilitation and reintroduction process, and room to expand

projects to a larger scale. However, it is also evident that these projects are the most successful aspect of the species recovery to date. The centres carry out highly important medical and genetic screening of individuals.

orangutans are susceptible to human diseases, and the risk of spreading disease is great, so medical screenings help prevent disease from entering wild populations. Genetic screening is also highly valuable, as it helps monitor genetic diversity and maintain a healthy population. Rehabilitation centres also play an important role in orangutan welfare, allowing the confiscation of poorly kept individuals and providing safe places to go (Russon, 2009). In this aspect, they are an important part of the limited law enforcement available. Finally, the centres provide vital infrastructure and logistical support in the translocation of wild orangutans away from deforested areas (Beck et al, 2007).

### **Recommendations for future management practices**

It is estimated that if the current rate of orangutan decline is sustained, we could see a further 50% loss of the population within ten years (Mittermeier et al, 2009). In order to ensure the Sumatran orangutans future, drastic action needs to be taken. Conservation of the species relies on immediate improvement of forest and wildlife laws, an increase in consideration for biodiversity in land use planning, and greater law enforcement effectiveness.

The implementation of patrols to prevent illegal activity is vital as the first step to stopping illegal logging (Mittermeier et al 2009). In order to do this regular funding is required to put operations in place, and a forum for monitoring the enforcement of current legislation needs to be established. It

is also important to implement anti-hunting patrols, as even very low hunting  
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levels have strong deleterious effects (1% annual hunting rate sustainable) (Marshall et al, 2009). Patrols will also stem some of the supply to the pet trade, and attempt to reduce levels of illegal logging. In addition it is advised to temporarily halt legal logging and forest conversion, as well as road development plans (Mittermeier et al, 2009) in order to establish a more viable orangutan population. However, it is unlikely that the Indonesian government would halt development plans as it is essential for the country's economic growth. A final step in the improvement of law enforcement would be the establishment of more patrols to confiscate illegally owned and poorly kept individuals to be taken to rehabilitation centres. This means that it is also vital to ensure the future expansion of rehabilitation centres across Sumatra. It is important to build capacity within current centres, as well as establishing new release sites across the island to restore populations in areas outside the Aceh province. Funding and volunteers would be required to expand the reintroduction projects across Sumatra.

The future of orangutans also relies on the provision of protected areas and reserves with strict controls to prevent illegal activity from still occurring. Again, this would involve the supply of regular reserve patrols and stringent regulation. National park perimeters should also be increased to enhance the conservation areas. It is important to include large areas of forest below 1000 metres above sea level within the protected areas (Singleton et al, 2008), as this is the orangutans primary habitat. Habitat restoration is also needed within the protected areas in order to make it suitable for orangutan reintroduction. In addition, the re-establishment of habitat corridors is greatly needed (Robertson and van Schaik, 2001) to improve genetic flow

between fragmented populations. Improving habitat connectivity will increase genetic diversity and therefore make the species more adaptable to its constantly changing environment. The conversion of any remaining orangutan habitat to other uses should be strictly prohibited immediately, as only a very small fraction remains. In order to do this, alternative livelihoods will need to be provided to many local communities which may have relied on the land. This should be done by employing locals in orangutan conservation projects, helping with rehabilitation, habitat restoration and law enforcement. Not only will this provide an income for communities, it will provide an economic incentive to protect orangutans, and may potentially start to change local opinion of the species. Building tolerance of the species and changing attitudes towards them is an important part of their conservation. It is important to address the human-orangutan conflict, especially as in the future more orangutans are likely to be living in close proximity to humans. In Batang Serangan in Northern Sumatra, a small group of orangutans were found to live in peaceful co-existence with farmers. The landscape is made up of degraded natural forest, smallholder farms and oil palm monoculture plantations (Campbell-Smith et al, 2011). Although not an ideal habitat for orangutans, the mixed landscape was still suitable for the small group to live. Once tolerance of the species has grown, it would be possible to begin establishing small populations in these mixed agro-forest systems which occur across Sumatra. The ultimate aim is to create a landscape of primary lowland forest within protected areas, joined by corridors through major agricultural land. With the addition of further release sites, a connected habitat and better law enforcement, it is possible to establish viable populations across the island of Sumatra.

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## **Conclusion**

In order to reduce the current threats to the Sumatran orangutan immediate action needs to be taken. The species' critically endangered status and its vulnerability to habitat destruction mean it is at great risk of extinction if further protection measures are not put in place. By following some of the recommendations laid out above, and increasing the level of support for orangutan projects, the species may yet have a future.