IUCN Conservation Outlook Assessment 2014 **(archived)**
Finalised on 27 May 2014

Please note: this is an archived Conservation Outlook Assessment for Tropical Rainforest Heritage of Sumatra. To access the most up-to-date Conservation Outlook Assessment for this site, please visit https://www.worldheritageoutlook.iucn.org.

Tropical Rainforest Heritage of Sumatra

SITE INFORMATION

Country:
Indonesia
Inscribed in: 2004
Criteria:
(vii) (ix) (x)

Site description:
The 2.5 million hectare Tropical Rainforest Heritage of Sumatra site comprises three national parks: Gunung Leuser National Park, Kerinci Seblat National Park and Bukit Barisan Selatan National Park. The site holds the greatest potential for long-term conservation of the distinctive and diverse biota of Sumatra, including many endangered species. The protected area is home to an estimated 10,000 plant species, including 17 endemic genera; more than 200 mammal species; and some 580 bird species of which 465 are resident and 21 are endemic. Of the mammal species, 22 are Asian, not found elsewhere in the archipelago and 15 are confined to the Indonesian region, including the endemic Sumatran orang-utan. The site also provides biogeographic evidence of the evolution of the island. © UNESCO

SUMMARY

2014 Conservation Outlook

Critical

The TRHS has been subject to threatening processes since its inscription in 2004. IUCN, the World Heritage Centre and the World Heritage Committee have repeatedly drawn attention to the current and potential threats of widespread and large scale encroachment, fragmentation due to road construction and upgrading and associated illegal logging and wildlife poaching. In addition the landscape setting of the property continues to suffer from environmental degradation. Compounding this are a number of management deficiencies which, despite the efforts of the park authorities and supporting international organizations, persist at the site. The site has significant value as a sanctuary for globally significant flagship species such as the Sumatran Rhino, Tiger, Elephant and Orangutan. It is difficult to assess the overall status of these key species and reports on the conservation status of elephant populations as stable but tiger numbers decreasing due to poaching (IUCN Consultation, 2013) need to be verified against credible property wide monitoring data that is currently inadequate. The State Party commitment to comprehensive baseline monitoring of the four flagship species should improve the understanding of the health of these populations. The addition of the site onto the List of World Heritage In Danger in 2011 has had a tangible effect in raising its profile within Indonesia and the international community. Additional resources are being mobilized to implement the necessary measures needed to address threats and management needs. Nevertheless many serious problems continue to threaten the OUV of the property.

Current state and trend of VALUES

High Concern
Trend: Deteriorating

It is important to highlight that although the threats are substantial and protection and management to date largely ineffective, the values of the site are

still intact. That said many of the flagship species are at a crossroads in terms of their long term viability and external development pressures are adversely impacting their prospects. The inscription of the TRHS on the List of World Heritage In Danger seems to be creating momentum to address the range of issues in a longer-term and more comprehensive manner, for example the SEA which will assess cumulative impacts of road developments and the DSOCR indicators which will drive conservation action on a number of fronts. Nevertheless continued efforts are central to securing the values of the site long term.

Overall THREATS

Very High Threat

The World Heritage Committee has expressed increasing alarm regarding threats to the TRHS since its inscription in 2004. A total of five missions to the site have taken place between 2006 and 2013, all of which have expressed grave concerns about the impacts of encroachment, roads, wildlife poaching and illegal logging. Encroachment has been widespread, large scale and often linked to commercial plantation interests. The inscription of the site on the List of World Heritage In Danger listing (WHC 35COM Decision, 2011) is raising wider awareness of the alarming threats to the site and leading to positive measures to mobilize the necessary financial and technical expertise to address current and potential threats to the site. Nevertheless many complex and entrenched threats persist which will require vigilance and long term commitment from the State Party and international partners. Reports continue to emerge of large scale conversion of forest in Aceh Province which would have a detrimental effect on the site’s integrity.

Overall PROTECTION and MANAGEMENT

Serious Concern

Despite willingness on the part of the MOF, inadequacies in protection and management have plagued this site since its inscription. IUCN at the time recommended the property be simultaneously added to the World Heritage List in Danger (IUCN Evaluation 2004). Following inscription improvements to management have been noted, however, park management has been unable to keep pace with threats. Management limitations have been characterized by funding constraints, poor law enforcement and poor cooperation and support

from local authorities (IUCN/UNESCO Missions 2006, 2007, 2009, 2011). The addition of the property onto the List of World Heritage in Danger has signaled a call to arms and the international community is responding with improved financial and technical support to the site. That said, many protection and management issues remain to be addressed and the MOF continues to struggle with outside threats.

FULL ASSESSMENT

Description of values

Values

World Heritage values

- **Exceptional scenic landscapes at all scales**
  Criterion:(vii)

  The three national parks that comprise the Tropical Rainforest Heritage of Sumatra (TRHS): Gunung Leuser (GLNP), Kerinci Seblat (KSNP) and Bukit Barisan Selatan (BBSNP), are all located on the prominent main spine of the Bukit Barisan Mountains, known as the 'Andes of Sumatra'. The mountains of the site, many of which descend into the sea, present prominent backdrops to the mostly settled and developed lowlands of Sumatra. The combination of the spectacularly beautiful Lake Gunung Tujuh (the highest lake in southeast Asia), the magnificence of the giant Mount Kerinci volcano, numerous small volcanic, coastal and glacial lakes in natural forested settings, fumaroles belching smoke from forested mountains and numerous waterfalls and cave systems in lush rainforest settings, emphasise the outstanding beauty of the TRHS. (adapted from IUCN Evaluation, 2004 & SoUV, 2013)

- **Outstanding examples of forest on the island of Sumatra for the conservation of the biodiversity of both lowland and mountain forest ecological processes.**
  Criterion:(ix)

  Indonesia's extraordinary biological richness is the reason why it is one of only seven megabiodiverse countries in the world. As one of Indonesia's largest islands, Sumatra possesses globally exceptional forest biodiversity yet its tropical rainforests have been reduced to isolated remnants over the

past 50 years. It is in this context that the site, which protects some of the most important remnant forest on Sumatra, is of outstanding universal value. Both GLNP and BBSNP extend from the highest mountains on Sumatra to sea level. All three components of TRHS exhibit wide altitudinal zonation of vegetation, from lowland rainforest to montane forest, extending to sub-alpine low forest, scrub and shrub thickets and covering an astounding diversity of ecosystems. The Leuser Ecosystem, including the GLNP, is by far the largest and most significant forest remnant remaining in Sumatra. All three components of the TRHS would have been important climatic refugia for species over evolutionary time and have now become critically important refugia for future evolutionary processes. (adapted from IUCN Evaluation, 2004 & SoUV, 2013)

- **Important and significant natural habitats for in-situ conservation of biological diversity of plant and animal species**
  Criterion:(x)

  All three components of the site are areas of very diverse habitat and exceptional biodiversity. Collectively, the three parks include more than 50% of the total plant diversity of Sumatra. There are an estimated 10,000 species of plants, including 17 endemic genera. Animal diversity in TRHS is also impressive, with 201 mammal species and some 580 species of birds, of which 465 are resident and 21 are endemics. At least 92 locally endemic species have been identified in GLNP. The site contains relict lowland forests which are very important for conservation of the plant and animal biodiversity of the rapidly disappearing lowland forests of South East Asia. Similarly, the montane forests, although less threatened, are very important for conservation of the distinctive montane vegetation of the TRHS. (adapted from IUCN Evaluation, 2004 & SoUV, 2013)

- **A critical habitat refuge for several globally significant and endangered species**
  Criterion:(x)

  The site holds the greatest potential for long-term conservation of the distinctive and diverse biota of Sumatra, including many endangered species. Of the mammal species, 22 are Asian, not found elsewhere in the archipelago and 15 are confined to the Indonesian region, including the

endemic Sumatran orangutan. Key mammal species also include the Sumatran tiger, rhino, elephant and Malayan sun-bear. The site also contains populations of both the world's largest flower (Rafflesia arnoldii) and the world's tallest flower (Amorphophallus titanum). (adapted from IUCN Evaluation, 2004 & SoUV, 2013)

Other important biodiversity values

► **Biological integrity values**

Gunung Leuser was designated a UNESCO Biosphere Reserve in 1981. (UNESCO MAB, 2013)

► **Significant biological values**

GLNP and KSNP were designated as ASEAN Heritage Parks in 2005 (UNEP-WCMC, 2013 and ASEAN, 2013)

► **Watershed values**

The Rimba Karya Indah 'finger', which is surrounded on three sides by the property and has been repeatedly recommended for urgent inclusion in KSNP, for the first time by the World Bank in 2002, due to biodiversity and watershed protection values (IUCN SOC, 2012), has been declared a Watershed Protection Forest (IUCN consultation, 2014)

Assessment information

Threats

Current Threats

Very High Threat

Encroachment and the associated threats of illegal logging, agricultural

development and poaching continue to pose a serious threat to the site. Confused and unmarked boundaries contribute to problems of unclear land tenure and encroachment. Existing roads and plans for upgrading these equally remain a threat with many local politicians continuing to advocate for greater access (IUCN consultation, 2014). Whilst programmes are in place to address some invasive species, these appear small scale and are not based on thorough monitoring programmes and data.

► Crops

Very High Threat
Inside site

Encroachment is one of the main threats to the property, affecting attributes of its Outstanding Universal Value (OUV) under all three criteria for which it was inscribed (vii, ix, x). Relict lowland rainforests in the property are crucial for the conservation of the plant and animal biodiversity of the rapidly disappearing lowland forests of South East Asia. The montane forests, though less threatened, are vital for conservation of the distinctive montane vegetation of the property (Statement of OUV). The issue of encroachment and related impacts was identified from the date of inscription with IUCN highlighting encroachment for subsistence agriculture and industrial plantations with associated illegal logging and poaching (IUCN Evaluation, 2004). All five IUCN/UNESCO monitoring missions between 2006 and 2013 have highlighted ongoing and serious encroachment inside the site. Large scale encroachments of the parks within the site have been noted, for example of up to 22.5% of BBSNP often due to large scale coffee and/or palm oil land conversions (IUCN/UNESCO Mission 2006). Though outside the site, the large-scale conversion of forest to oil palm plantation within the critically important Leuser Ecosystem is likely to have a significant effect on the integrity of the site, particularly through loss of habitat for key species (IUCN Confidential Consultation, 2013).

► Roads/ Railroads

Very High Threat
Inside site
Outside site

The issue of the impact of existing and proposed roads was identified from the date of inscription (IUCN Evaluation, 2004) and has been noted in all

subsequent State of Conservation reports, five IUCN/UNESCO Missions and many Committee Decisions (WHC 30COM, 31COM, 32COM, 33COM, 34COM, 35COM, 36COM, 37COM). With respect to road impact the 2011 mission to the site noted that “compared to the visit by the 2009 mission no further improvement in halting human presence in the region has been observed and the situation appears to have become worse” (IUCN/UNESCO Mission 2011). In 2013 the State Party reports that of three roads proposed in KSNP one had been rejected whilst two others were pending assessment. The latter two have been subsequently rejected by the Ministry of Forestry (MOF) (IUCN consultation, 2014). Furthermore the roads within GLNP have been upgraded by local authorities. The Committee at its 35th session requested the State Party to conduct a Strategic Environmental Assessment (SEA) of the cumulative impacts of all road developments in the Bukit Barisan Range (WHC 35COM Decision, 2011). The State Party note that funding for a SEA on the cumulative impact of roads in the Bukit Barisan Mountain Range has been secured and that this assessment will commence in 2013, however, there remains no commitment to a moratorium on road construction pending completion of the SEA (SP Report, 2013).

► Invasive Non-Native/ Alien Species

Low Threat
Inside site

Programmes are in place to attempt to eliminate the invasive plant species, Mantangan, in BBSNP (SP Report, 2013)

► Logging/ Wood Harvesting, Commercial hunting

Very High Threat
Inside site
Outside site

The threat of illegal logging and poaching is linked to access and so road construction/upgrading, and increasingly to organized trader-led syndicates (IUCN consultation, 2014). Poaching and illegal logging were identified as issues from the date of inscription (IUCN Evaluation, 2004) and have been noted in all subsequent missions and State of Conservation reports. State Party Reports acknowledge this threat and report on efforts to contain it, however, law enforcement efforts have to date been ineffective.

Potential Threats

High Threat

The landscape context of TRHS is critical to its survival yet appears to be suffering environmental degradation from uncoordinated development. The Leuser Ecosystem, of which GLNP is a part, has been repeatedly noted as providing critical habitat for globally significant species, however, it continues to suffer from various impacts. The addition of TRHS onto the World Heritage List in Danger is beginning to raise the profile of the site within both Indonesia and the international community. Additional financial resources have been mobilized and the SEA will review in a holistic way the threats to the site from surrounding road development. It will be important to understand the extent of threats and the cumulative impacts on the site's OUV. The State Party's proposals to consider the development of geothermal energy within the site is of considerable concern. Equally concerning are reported plans by the Government of Aceh to convert 1.2 million ha of forests located near the property to mining, plantations, logging concessions and roads.

► Mining/ Quarrying

High Threat
Inside site
Outside site

This issue has been identified since the date of inscription (IUCN Evaluation, 2004). For example, the State Party reports that boundary confusion resulted in an existing mining concession overlapping GLNP (SP report, 2013), as different governmental agencies use different maps to determine where the boundaries of GLNP are (IUCN consultation, 2014). As of 2013 the State Party reports there are no mining concessions within the site (SP Report, 2013 & Draft RSoOUV 2012), however, the 2013 IUCN mission confirmed small scale gold mining within KSNP (IUCN mission report, 2013). There is a potential threat of geothermal energy development evidenced by State Party reports that it "may develop geothermal energy located within the property which may lead to forest opening – as minimum as possible" (SP Report, 2013). While the exploitation of geothermal energy is currently classified as a mining activity, and therefore not permitted in national parks, a proposed new law would classify geothermal energy as an environmental service,

making its exploitation legal in national parks (IUCN mission report, 2013). Furthermore national media reports a new spatial plan by the Government of Aceh to convert 1.2 million ha of forests located near the property to mining, plantations, logging concessions and roads (Jakarta Globe, Feb - May 2013). Conversion of this scale would reduce forest cover in Aceh from 68% to 45% and have a significant effect on the site's integrity (IUCN SOC, 2013)

► Roads/ Railroads

High Threat
Inside site
Outside site

See above. Existing roads are a current threat, so too is proposed road development a potential threat. The State Party has noted that MOF will not approve any new roads (SP Report, 2013). However, the MOF may not have the influence to prevent road construction by the relevant authorities. The 2011 Mission noted that despite MOF regulations on use, construction and upgrading of roads within protected areas, the road issue continues to be a major threat to the property (IUCN/UNESCO Mission 2011). Whilst new roads may not be approved, existing roads may continue to be upgraded thereby opening access and associated impacts such as encroachment, poaching, and illegal logging. As noted above there are reported plans by the Government of Aceh for large scale forest conversion to mining, plantations, logging and roads (IUCN SOC, 2013).

Protection and management

Assessing Protection and Management

► Relationships with local people

Serious Concern

Confusion regarding boundaries is creating conflict with local people and district governments over rights to land and resources. In addition complex social changes are exacerbating issues of encroachment due to the mix of original peoples and displaced immigrants from Java who have nowhere else to go. Local politicians believe enhanced road access is necessary to support

evacuation in the event of volcanic eruptions. Such road construction is at the expense of the natural values of the site. Local politicians in KSNP & GLNP in particular are still reluctant to see restrictions imposed on roads (SP Report, 2013). The site's addition to the List of World Heritage In Danger is raising awareness (SP Report, 2013 & DSOCR Workshop Report of Nov 2012). Significant investment has been made by the State Party on addressing the Committee's concerns however more time and work is needed (IUCN SOC, 2013).

► Legal framework and enforcement

Serious Concern

The Indonesian laws protecting the site are technically sound however, law enforcement is ineffective. Despite some successful cases reported by the State Party (SP Report, 2013) law enforcement is patchy and staff capacity variable, with no effective monitoring mechanism, and no consistent patrolling mechanism to curb forest crimes (IUCN consultation, 2014). There is also a significant shortage of forest rangers (IUCN consultation, 2014). Effective law enforcement is a fundamental response to address serious threats such as encroachment, wildlife poaching and illegal logging. The forest systems of the Leuser Ecosystem are highly significant yet since the cessation of the Leuser Ecosystem Management Board (BPKEL) (IUCN Confidential Consultation, 2013), there is no longer a single coordinating body for the wider Leuser Ecosystem (IUCN mission report, 2013)

► Integration into regional and national planning systems

Serious Concern

Provincial and local government authorities surrounding the site tend to view protected areas as barriers to development and are largely unaware of the property's World Heritage status (IUCN mission report, 2013). For example road construction was proposed by local authorities in all three components of the site, and particularly in KSNP. State Party reports that funding for a SEA has been secured and will support the completion of a more strategic review and assessment of regional road developments to minimize impacts on the OUV of the site. (SP Report, 2013). The State Party has given a commitment that no new roads will be approved by the MOF (SP Report, 2013). A further significant example of the disconnect between the needs of

the site against provincial and local needs concerns plans for large scale conversion of forest in Aceh Province which would have a detrimental effect on the site's integrity.
The ongoing establishment of National Strategic Areas (NSA) for all three components of the site is considered to be a positive step towards establishing effective buffer zones to regulate development and ensure that it is sustainable (IUCN mission report, 2013)

► Management system

Some Concern

The three parks which make up TRHS are widely spread, creating challenges for coordination of their management. The recent re-activation of the World Heritage Working Group under the Coordinating Ministry of People Welfare is expected to take an active role in promoting strong coordination in the protection and management of the site (IUCN mission report, 2013).

► Management effectiveness

Serious Concern

The recent re-activation of the World Heritage Working Group under the Coordinating Ministry of People Welfare is expected to take an active role in promoting strong coordination in the protection and management of the site (IUCN mission report, 2013). The lack of a single coordinating management body for the Leuser Ecosystem since the cessation of the Leuser Ecosystem Management Board (BPKEL) (IUCN mission report, 2013) is of significant concern.

► Implementation of Committee decisions and recommendations

Serious Concern

The response to Committee decisions has been slow and inadequate, hampered by intractable problems such as ineffective law enforcement, poor boundary definition and lack of capacity. Whilst the addition of the property onto the List of World Heritage In Danger has mobilized greater attention there remain significant shortcomings in protection and management.

► Boundaries

Serious Concern

Confused boundaries occur throughout the site, both on paper and on the ground. This is especially so in GLNP where a confused chronology of land tenure and boundary changes has occurred since the park's declaration in 1980 (IUCN Consultation, 2013). The confused boundary issue creates conflict over land tenure and so exacerbates encroachment impacts. It has also resulted in misperceptions between the park authorities and the Aceh Provincial Government (SP Report, 2013), as well as at the district level (IUCN consultation, 2014). Approximately one third of the property was demarcated over the past decade. In some areas the boundary demarcation has been removed by local communities (IUCN mission report, 2013). Work is continuing to rationalize and mark boundaries (SP Report, 2013).

► Sustainable finance

Some Concern

The inscription of the TRHS on the List of World Heritage In Danger has mobilized some additional resources to more strategically address threats and management needs; however, long term sustainable financing remains to be secured, and should be adequately allocated to address the threats to the site.

► Staff training and development

Some Concern

Staff capacity of park management authorities is still a weakness in the management of the property (IUCN mission report, 2013; IUCN consultation, 2014). According to the Statement of OUV, the State Party is investing in building park management staff capacity to combat illegal wildlife trade and encroachment (SOUV, accessed 2014). The engagement of local communities in patrolling and forest fire prevention should complement management and law enforcement activities (IUCN mission report, 2013).

► Sustainable use

Data Deficient

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► Education and interpretation programs

Data Deficient

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► Tourism and interpretation

Mostly Effective

UNESCO Jakarta with support from the Spanish Government proposes to undertake an ecotourism study focused on an in-depth assessment of the current tourism market in the property with a view to developing an ecotourism strategy for TRHS (MOF, 2011).

► Research

Data Deficient

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► Monitoring

Some Concern

The State Party has committed to a regular programme of monitoring for four flagship species (Sumatran Elephant, Rhino, Tiger and Orangutan) to assess their conservation status (SP Report, 2013). As the actual monitoring is conducted by NGOs, it is essential that the State Party collaborate with these NGOs, and allocate funding for regular population surveys (IUCN consultation, 2014). The Draft Desired state of conservation for the removal (DSOCR) of the TRHS from the List of World Heritage in Danger is proposed for adoption by the World Heritage Committee at its 38th session (Doha, 2014) and will specify indicators for viable populations of key species in the site. The State Party has reported on monitoring of key species including Sumatran Elephant, Rhino, Tiger and Orangutan. Notably recent camera trapping in GLNP has confirmed 5 individual rhinos in the park, the first direct evidence of the presence of rhino in GLNP in 32 years (SP Report, 2013). Camera trapping in KSNP has led to an estimate of 166 tigers in KSNP, and monitoring of elephants in KSNP has led to an estimate of 90 elephants in three groups (IUCN consultation, 2014).

Overall assessment of protection and management

Serious Concern

Despite willingness on the part of the MOF, inadequacies in protection and management have plagued this site since its inscription. IUCN at the time recommended the property be simultaneously added to the World Heritage List in Danger (IUCN Evaluation 2004). Following inscription improvements to management have been noted, however, park management has been unable to keep pace with threats. Management limitations have been characterized by funding constraints, poor law enforcement and poor cooperation and support from local authorities (IUCN/UNESCO Missions 2006, 2007, 2009, 2011). The addition of the property onto the List of World Heritage in Danger has signaled a call to arms and the international community is responding with improved financial and technical support to the site. That said, many protection and management issues remain to be addressed and the MOF continues to struggle with outside threats.

► Assessment of the effectiveness of protection and management in addressing threats outside the site

Serious Concern

Improvements have been made but many issues remain unresolved and threats continue. The site sits within a highly developed landscape. Poor boundary definition, a lack of coordination between the MOF and other provincial and local authorities together with weak law enforcement and the lack of a single coordinating management body for the Leuser Ecosystem conspire to undermine the effectiveness of managing the many external threats to this property. It is hoped that the completion of an SEA for road development across the Bukit Barisan Range will greatly assist in developing a long term and comprehensive strategy to manage this impact (SP Report, 2013). The inclusion of the site onto the List of World Heritage in Danger in 2011 (WHC 35COM Decision, 2011) has improved the focus of attention although many issues remain to be addressed.

► Best practice examples

Development of the Corrective Measures and the Desired State of

Conservation for Removal from the World Heritage List in Danger. Following the inscription of the site onto the World Heritage List in Danger funding from the World Heritage Fund and the State Party supported a series of regional workshops and a joint workshop in November 2012 to develop a draft DSOCR and an Emergency Action Plan as the basis for a long term joint strategy to address threats (MOF, 2012). The DSOCR, Corrective Measures, and Emergency Action Plan were finalized during the IUCN reactive monitoring mission to Jakarta in November 2013, and have been adopted by the World Heritage Committee at its 38th session in 2014 (Doha, Qatar).

State and trend of values

Assessing the current state and trend of values

World Heritage values

▶ **Exceptional scenic landscapes at all scales**

High Concern
Trend:Stable

A number of parts of the site descend from the mountains into the sea. Large scale and widespread encroachment coupled with an opening up of forest areas through road construction threaten integrity of intact forest and so the scenic and aesthetic beauty of this site which acts as a backdrop to the lowlands of Sumatra. Mining activity within and near to the site and the threat of geothermal energy development and forest clearing within the site may exacerbate these impacts (SP Report, 2013). Invasive species in BBSNP and heavy encroachment at all three components of the site are also impacting on the exceptional scenic landscapes (IUCN consultation, 2014).

▶ **Outstanding examples of forest on the island of Sumatra for the conservation of the biodiversity of both lowland and mountain forest ecological processes.**

High Concern
Trend:Deteriorating

The site has a history of significant encroachment at a scale that seriously threatens the ecological function of the lowland and montane forest systems.

Road construction risks further fragmenting forest blocks and opens up access for illegal logging, subsistence agriculture, commercial plantations and poaching. Relic lowland rainforests are at greatest threat although montane forests are also threatened. The Leuser Ecosystem provides critical habitat for key species (particularly tiger, rhino, elephant and orangutan) and areas of contiguous forest cover that act to connect these areas with each other and the property (IUCN mission report, 2013). Poor management capacity coupled with ineffective integration with local development planning is limiting the capacity of park authorities to manage these threats. The recent addition of the site onto the List of World Heritage In Danger is beginning to mobilize greater attention and action however continued efforts are crucial to avoid serious threats to the integrity of TRHS's values (WHC 37COM Decision, 2013).

► Important and significant natural habitats for in-situ conservation of biological diversity of plant and animal species

High Concern
Trend:Deteriorating

Similar issues of encroachment, excessive road construction, illegal logging and poaching as noted above also impact on the sites value as critical habitat for lowland and montane forest species. Key species, such as the Sumatran Elephant, have already disappeared from the southern part of BBSNP (IUCN consultation, 2014), and Sumatran Rhino are restricted to the central part of BBSNP due to the impacts of the Sanggi – Bengkunat road (IUCN mission report, 2014).

► A critical habitat refuge for several globally significant and endangered species

High Concern
Trend:Deteriorating

It is feared that the Sumatran Elephant population has shown a marked decline in BBSNP since 2002. In GLNP, the populations of Sumatran Orangutan, Sumatran Tiger, Sumatran Elephant and Sumatran Rhino are all decreasing (IUCN SOC, 2012), although Tiger populations are stable in areas that are subject to focused patrol and protection regimes (IUCN consultation, 2014). Recent camera trapping evidence on rhino in GLNP is encouraging (IUCN SOC, 2013). There is evidence of active tiger and elephant poaching in

KSNP (IUCN SOC, 2012), and many smaller species in the property, including song birds, are under intensive pressure and in decline. Between July 2013 and January 2014 ten tiger poachers and traders around KSNP were arrested and prosecuted (IUCN consultation, 2014). Achieving an overall picture of the status of flagship species is difficult. For example despite general reports that the Sumatran rhino continues to build its numbers thanks to protection of core habitat over the last thirty years, it is likely this is specific to areas in and around GLNP and not a property wide trend. Monitoring programmes to date have been patchy and inconclusive, however, the State Party note that a new format has been established to carry out baseline monitoring of four flagship species in the property (SP Report, 2013). In addition, the State Party, in consultation with IUCN and UNESCO, has developed wildlife population indicators for key species, which identify target population growths in order to enable the removal of the TRHS from the List of World Heritage in Danger (IUCN mission report, 2013).

Other important biodiversity values

► Biological integrity values

Gunung Leuser was designated a UNESCO Biosphere Reserve in 1981. (UNESCO MAB, 2013)

► Significant biological values

GLNP and KSNP were designated as ASEAN Heritage Parks in 2005 (UNEP-WCMC, 2013 and ASEAN, 2013)

► Watershed values

The Rimba Karya Indah ‘finger’, which is surrounded on three sides by the property and has been repeatedly recommended for urgent inclusion in KSNP, for the first time by the World Bank in 2002, due to biodiversity and watershed protection values (IUCN SOC, 2012), has been declared a Watershed Protection Forest (IUCN consultation, 2014)

Summary of the Values

▶ Assessment of the current state and trend of World Heritage values

High Concern

Trend: Deteriorating

It is important to highlight that although the threats are substantial and protection and management to date largely ineffective, the values of the site are still intact. That said many of the flagship species are at a crossroads in terms of their long term viability and external development pressures are adversely impacting their prospects. The inscription of the TRHS on the List of World Heritage In Danger seems to be creating momentum to address the range of issues in a longer-term and more comprehensive manner, for example the SEA which will assess cumulative impacts of road developments and the DSOCR indicators which will drive conservation action on a number of fronts. Nevertheless continued efforts are central to securing the values of the site long term.

▶ Assessment of the current state and trend of other important biodiversity values

Data Deficient

Trend: Data Deficient

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Additional information

Key conservation issues

▶ Encroachment for subsistence agriculture and commercial plantations

Local

Widespread and large scale encroachment is fragmenting the site’s lowland and montane forests impacting scenic values, ecological function and habitat viability. The processes triggered by the inscription of the TRHS on the List of World Heritage In Danger will hopefully arrive at a comprehensive strategy to address the need for strengthened law enforcement and better coordination

with local development.

► Road construction and upgrading

Local

Local pressure to open up new roads and upgrade existing ones continue at the site. The called for Strategic Environmental Assessment will assist in understanding the cumulative impacts of current and proposed roads leading to a more comprehensive strategy to address this impact. Its findings should be incorporated in the Mid Term Development Plans and Spatial Plans of each of the districts which overlap with the site (IUCN consultation, 2014)

► Poaching & illegal logging

National

Poaching of wildlife and the illegal extraction of timber is linked to increased access brought about by roads and encroachment, and increasingly by organized trader-led syndicates (IUCN consultation, 2014). These threats are exacerbated by ineffective monitoring and law enforcement (IUCN consultation, 2014). The processes triggered by the inscription of the TRHS on the List of World Heritage In Danger will hopefully arrive at a comprehensive strategy to address these threats through greatly improved law enforcement, monitoring and surveillance.

► Unclear boundaries

Local

Boundaries are confused and not demarcated leading to misconceptions and/or exploitation of natural resources within the site. Programmes need to be accelerated to confirm the boundaries, accurately mark them on the ground and communicate this to local communities and local and provincial politicians. The resolution of this issue is particularly urgent in GLNP (IUCN consultation, 2014).

► Decreasing populations of key globally significant species

Global

Key populations of flagship species are under threat. Ad hoc monitoring programmes make it difficult to assess the conservation status of several key species within the property and in high conservation value areas outside of the

World Heritage site.

▶ **Ineffective law enforcement**

National

Law enforcement efforts to date have been ineffective in combating encroachment, illegal construction and upgrading of roads, poaching and illegal logging.

▶ **Mining**

Local

Gold, coal and iron ore reserves are driving the pressure for mining within or adjacent to the site. Small scale illegal gold mining occurs in part of KSNP (IUCN mission report, 2014). The State Party has also signaled the potential for geothermal energy development within the property.

▶ **Poor coordination with regional and local development planning and implementation**

Local

Park authorities are challenged to work with local authorities to ensure that development respects the values of the TRHS. This is also compounded by confusion over the boundaries of the site which creates conflict over land tenure rights.

Benefits

Understanding Benefits

▶ **Water provision (importance for water quantity and quality)**

The Leuser Ecosytem provides many environmental services to the surrounding region – valued at 400 million dollars per year. For instance the water from the Leuser Ecosystem supports some 4 million people. The biodiversity of the Leuser Ecosystem is probably the richest in SE Asia and is the only place left where rhinos, orangutans, elephants and tigers still coexist and do so in sufficient numbers to support viable populations (IUCN Consultation, 2013); An assessment of ecosystem services (water) from KSNP

forests to the municipality of Sungaipenuh , Kerinci in 2011 valued water services for domestic consumption and ricefield irrigation at 1.049 million Euros per year (IUCN consultation, 2014).

▶ **Outdoor recreation and tourism**

UNESCO Jakarta with the support of the Spanish Government will develop a plan that harnesses the potential of tourism. The plan will assess the current tourism market in the property and its potential for development in a way that actively engages the community in decision-making and optimises the benefits to create livelihood opportunities for local people (MOF, 2011).

▶ **Soil stabilisation**

UNESCO Jakarta with the support of the Spanish Government will develop a plan that harnesses the potential of tourism. The plan will assess the current tourism market in the property and its potential for development in a way that actively engages the community in decision-making and optimises the benefits to create livelihood opportunities for local people (MOF, 2011).

Summary of benefits

The values of TRHS for Sumatra’s scenic amenity, rich assemblages of wildlife and cultural assets should be translated wherever possible into tangible benefits for all stakeholders, particularly local communities. The site’s significant ecotourism potential should be harnessed through the proposed ecotourism plan. The site also provides significant ecosystem services, most notably the provision of valuable water supplies to the surrounding region and the prevention of landslides through retention of forest cover.

Projects

Compilation of active conservation projects

№	Organization/ individuals	Project duration	Brief description of Active Projects

1	Ministry of Forests/Local communities/Army	Forest rehabilitation project to recover encroached areas. Project covers areas of the three parks that comprise TRHS, with on-going support for three years until 2014. (IUCN/UNESCO Mission Report, 2011)
2	Flora & Fauna International (SE Asia)	FFI have had a constant presence in KSNP with 18 years of camera trapping monitoring and analysis and since 2000 conducting routine species (tiger) protection and conservation and monitoring and human wild life conflict mitigation, primarily in the central area of KSNP and buffer zones in six districts of two provinces (IUCN consultation, 2014)
3	IUCN SSC	SSC specialists on Asian Rhino, Asian Elephant.
4	WCS	Worked on TRHS issues for many years and continue to do so.
5	Levang, P. Sitorus, S., Gaveau, D. and Sunderland, T. (2012)	“Landless Farmers, Sly Opportunists, and Manipulated Voters: The Squatters of the Bukit Barisan National Park (Indonesia)”. Case study on BBSNP encroachment and squatters.
6	Friends of the Earth / Greenpeace / Sumatran Orangutan Conservation Programme	Support and campaigns to save Sumatran Orangutan
7	Deddy Ratih, Walhi – FOE Indonesia Yuyun Indradi – Greenpeace Ian Singleton – Sumatran Orangutan Conservation Programme	Monitoring tiger and biodiversity in and adjoining KSNP
8	Jambi Community Forest Management Project (FFI and Lembaga Tiga Beradik)	Establishing community managed forest in KSNP buffer zones in 2 park edge districts in Jambi
9	PanEco Foundation	PanEco leads the multi-stakeholder Initiative: Sumatran Orangutan Conservation Programme (SOCP) and about 35% of the world’s remaining Sumatran orangutans are within this site.
10	Hutan, Alam dan Lingkungan Aceh (HAkA)	Rapid Response Facility funded project on “Monitoring and law enforcement program for Sumatran Rhino Population World Heritage Area and fringe: Tropical Rainforest Heritage of Sumatra” Running March- Aug 2013.

11	Lembaga Tumbuh Alami / AKAR Network	A network of NGOs working around on community empowerment around KSNP. LTA and the KSNP park management authority have a program of collaboration during 2012-2015
12	Yayasan Orangutan Sumatera Lestari - Orangutan Information Centre (YOSL-OIC)	Ecosystem Restoration, patroling, awareness raising, campaign for saving orangutans
13	Yayasan Leuser International (YLI)	Monitoring of the population of Sumatran Rhino and their habitat in GLNP, ecosystem restoration, awareness raising, Rhino Protection Units (RPUs)

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