2020 Conservation Outlook Assessment

SITE INFORMATION

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

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

2020 Conservation Outlook

CRITICAL

Finalised on 02 Dec 2020

Serious concern about the threats and damage to the Tropical Rainforest Heritage of Sumatra (TRHS) have been raised by UNESCO and IUCN since the inscription of this site on the World Heritage List in 2004. In 2011, the TRHS was inscribed on the List of World Heritage in Danger. Recent reports indicate that environmental crimes within the World Heritage site, such as poaching, illegal logging and encroachment, continue at very high levels and may even be increasing. The damage occurring to lowland tropical rainforests and the habitat of species such as orangutans, rhinos, tigers and elephants is therefore continuing at a high level. Data on the key species are incomplete to determine their statuses. Law enforcement is totally inadequate; the numbers of documented arrests comprise a tiny fraction of the numbers of illegal incidents reported. Management of the TRHS is also inadequate due to the absence of a World Heritage site-wide management plan and structure. The legal framework is complex. Serious concern remains about the impact of the Aceh Spatial Plan, whose objectives include increased resource extraction from the Gunung Leuser National Park (GLNP) component and its surroundings. Requests from the World Heritage Committee for a rationalisation of the boundaries to exclude areas whose contribution to the Outstanding Universal Value (OUV) has been destroyed, and to include additional habitat of key species, have not been met. Proposed developments on the periphery of the site, including hydro dams, geothermal development and new roads, pose additional threats to the site’s integrity. No new roads have so far been permitted inside the site, however, there is a proposal for a Trans-Sumatran Highway that will run adjacent to the site, bringing substantial threats to its OUV.

On the positive side is the Government’s undertaking not to allow geothermal development within the World
Heritage site (hopefully this will be both legislated and communicated strongly to would-be developers and to provincial authorities); commitment from some of the provincial government to tackle encroachment and forest loss; and the recent significant improvement in the numbers of patrols and their equipment.

Hopefully, this will lead to the needed improvement in law enforcement. The TRHS, thanks to its size and diversity, retains its OUV despite the above threats, but a concerted effort on the part of the State Party and the international community is necessary to reverse the deterioration in the site’s condition. Patrolling, monitoring and forest restoration activities must be prioritized in ecologically sensitive areas, wildlife corridors and road sides that are particularly vulnerable.
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, montane peat swamps, and numerous waterfalls and cave systems in lush rainforest settings, emphasise the outstanding beauty of the TRHS (adapted from IUCN, 2004 & World Heritage Committee, 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, 2004 & World Heritage Committee, 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 Southeast Asia. Similarly, the montane forests, although less threatened, are very important for conservation of the distinctive montane vegetation of the TRHS (adapted from IUCN, 2004 & World Heritage Committee, 2013).
A critical habitat refuge for several globally significant and endangered species

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, 2004 & World Heritage Committee, 2013).

Other important biodiversity values

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, 2012), has been declared a Watershed Protection Forest (IUCN Consultation, 2014).

Assessment information

Threats

Current Threats

SMART patrols in the property have increased to tackle poaching and illegal logging. In recent times important political support has been demonstrated through commitments at the provincial and national levels. However, these are counteracted by contrasting actions by different parts of the government. Encroachment continues to be the most significant threat to the OUV which is still widespread and outpaces the restoration efforts. Anti-poaching efforts appear to be leading to a positive outcome regarding Sumatran tiger populations which are now seeing a very slight recovery, but comprehensive data for the other key mammal species continue to be lacking. The approval of two road upgrades through KSNP and BBSNP will further fragment the already vulnerable ecosystem, and much effort is needed to prioritise monitoring and forest restoration in ecologically sensitive areas, wildlife corridors and road sides.

Invasive Non-Native/ Alien Species

Merremia peltata (locally known as mantangan) is estimated to cover 22,000 ha (22%) of Bukit Barisan Selatan National Park component of the WH property (State Party of Indonesia, 2020), literally suffocating the forests. A 2018-2022 Ecosystem Restoration Plan is being implemented by the Park Authorities in collaboration with local communities to control the spread of this invasive plant, but its effectiveness to date is unclear. The species has also been reported to be present in areas adjoining Kerinci Seblat National Park, which raises concern for potential spread into the property but no control programmes appear to be in place (IUCN Consultation, 2017).

Roads/ Railroads

The impact of existing and proposed roads was already identified as a threat at the time of inscription (IUCN, 2004) and has been examined by the Committee annually ever since. Roads through the property and adjacent to it provide access for poaching, illegal logging and encroachment, so constitute a major threat. In 2017 the State Party completed an SEA for road network in the Bukit Barisan Mountain Range, which concluded that road development within the property would likely have a direct negative impact on the OUV, causing "unacceptable habitat loss and biodiversity conflict“ (UNESCO,
2017). The Committee requested the State Party to continue its commitment not to construct any new roads within the property (a commitment that has been upheld so far), and to ensure any road upgrades are only permitted if these would demonstrably not cause any negative impact on the property's OUV (WH Committee, 2017). However, in 2018 the IUCN mission learnt of two road upgrades inside the property that were recently approved without EIAs; one to expand the Sungai Penuh to Tapan road that traverses KSNP, and the other to upgrade the Karo-Langkat road through GLNP. Although the Committee urged the State Party not to proceed with these upgrades until EIAs had been undertaken, the 2020 State Party report indicates that the latter road upgrade had now been completed. Sumatran organutan, which are critically endangered are known to inhabit the area of the road and therefore the road will likely fragment its habitat. Furthermore, the proposed Trans-Sumatran Highway would create new roads that run along the boundaries of KSNP and GLNP, fragmenting the Parks from the adjacent ecosystem, and encouraging encroachment due to facilitated access to the forest (Sloan et al., 2019). On the plus, a national regulation on Strategic Roads in Forest Area was adopted in 2019, which states that the concept of strategic road alignment within natural WH sites must consult with the relevant institutions, which would include the WH Centre and IUCN (State Party of Indonesia, 2020).

**Hunting and trapping, Logging/ Wood Harvesting**

*Very High Threat*

*Inside site, widespread (15-50%)*

*Outside site*

There are conflicting information on the extent of poaching but overall, it appears that poaching is more prevalent around the boundaries of the property in more accessible areas (State Party of Indonesia, 2020). The State Party has made significant efforts to implement SMART patrols across the property in recent years, increasing 20-fold between 2013 and 2017 in GLNP and BBSNP (IUCN, 2018). The number of poachers successfully apprehended also increased during this period, although the numbers still remained substantially lower than the number of poaching incidents detected. Poaching of Sumatran tiger in KSNP rose dramatically between 2012 and 2015 following a 400% rise in blackmarket prices for tiger body parts in that same period. Prices went down again since 2015, and the poaching threat to tigers has been falling since 2016. Low encounter rates, limited spatial coverage of surveys and therefore the resultant large margins of error for the Sumatran tiger mean that no trend can be obtained but it appears their population is stable (State Party of Indonesia, 2020). Much effort is still needed to ensure patrol coverage across the whole property. The Sumatran elephant population is possibly decreasing based on dead elephant findings. The elephant faecal DNA analyses will provide much needed information on their status once the results are published. As for the other two key mammal species (Sumatran orangutan and Sumatran rhino), there are currently insufficient data. Anecdotal information however points to a possible viable population of Sumatran rhino in GLNP (IUCN Consultation, 2020).

**Crops**

*(Encroachment)*

*Very High Threat*

*Inside site, scattered (5-15%)*

Encroachment continues to be the most significant threat to the OUV of the property. Relict lowland rainforests in the property are crucial for the conservation of the plant and animal biodiversity of the rapidly disappearing lowland forests of Southeast Asia. The montane forests, though less threatened, are vital for conservation of the distinctive montane vegetation of the property (World Heritage Committee, 2004), and are increasingly under threat from Arabica coffee and oil palm plantations. Since the time of inscription of the site on the WH List, encroachment and its related impacts had been identified as an important threat. Forms of encroachment identified at the time included small-holder agriculture and industrial plantations with associated illegal logging and poaching (IUCN, 2004). The most complete forest loss estimates for all three components was conducted by an NGO consortium using satellite imagery. Its analyses showed that between 2011 and 2017, 6,799ha of forest was lost from GLNP, 21,570ha lost from KSNP, and 2,448ha from BBSNP (IUCN, 2018). The 2018 IUCN mission noted with particular concern that encroachment occurs at the margins of the property affecting the lowland rainforests. These lowland forests are particularly valuable and increasingly rare across Southeast Asia, being especially diverse and productive, and contributing far more to the property's OUV than would be implied by simple surface area considerations. Encroachment along key ecological corridors is also fragmenting habitats for key faunal species. The factors preventing a timely resolution to the problem include lack of clear boundary demarcation, insufficient political support, and insufficient
funds and personnel. Positive progress has been made in recent times including the signing of an MoU with the regional government to stop further enroachment in KSNP and multiple forest restoration programmes (State Party of Indonesia, 2020).

**Logging/ Wood Harvesting**

*(Logging and land conversion)*

In 2018 the State Party reported that the Provincial Government of Aceh announced its commitment to prioritize the prevention of further deforestation in the entire Leuser Ecosystem (State Party of Indonesia, 2018). In 2019, the Governor of Bengkulu reported plans to convert 1306 ha of forest inside KSNP, and 49,000 ha of forests just outside of KSNP and BBSNP, into land for plantations and mining. Such plans would have a significant impact on the OUV of the property and the ecological integrity of the ecosystem, as well as being contrary to the DSOCR indicator. It also goes against an MoU that was signed between the Governor of West Sumatra and the Directorate General of Natural Resources Conservation and Ecosystem on 21 August 2019, committing not to expand encroachment within KSNP and to undertake ecosystem restoration (State Party of Indonesia, 2020). Therefore on the one hand there is positive progress but on other hand, there are provincial differences that undermine efforts to protect the property.

**Potential Threats**

The landscape context of TRHS is critical to its survival, yet it is 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 decision not to approve geothermal development at Kappi Plateau is extremely positive but it appears that a geothermal development is proceeding adjacent to the property without the World Heritage Committee having been informed. Of three hydroelectric projects proposed in the Leuser Ecosystem outside of the property, one has been cancelled, but no recent information is available on the remaining two. Further information is required to ascertain the full extent of threats to the property’s OUV and integrity from such developments.

**Mining/ Quarrying**

*(Mining/ Quarrying)*

Although mining is illegal inside national parks, one small-scale artisanal gold mining operation exists in KSNP. In 2017, concerns were raised regarding the potential for the new Aceh Spatial Plan to permit mining within the Leuser Ecosystem, around the GLNP component of the property. The State Party continues to report that there are no mining concessions or exploration permits within the property. At present, threat from mining remains small.

**Renewable Energy**

*(Proposed geothermal development)*

Indonesia has ambitious plans for energy development and aims to increase the proportion of new and renewable energy sources from its present 7.7% of total output to 31% by 2050. It considers geothermal energy to be an environmental service (according to a 2016 Ministerial Decree). There had been a proposal to develop a controversial geothermal project at Kappi Plateau inside GLNP but a firm commitment has now been made a the national and provincial governmental levels to not develop this site.

Another geothermal development proposed adjacent to BBSNP has been discussed, and the Committee has called for an EIA that addresses potential impacts on the OUV of the property to be submitted for review (World Heritage Committee, 2015, 2016). In response, the State Party has asserted that “the preliminary study to explore the possibility of Geothermal Energy will not be conducted within the property” (State Party of Indonesia, 2017). This assertion sidesteps the Committee’s request, which pertained to a development adjacent to the property. An online report appears to indicate that the proposal adjacent to BBSNP is proceeding, with major work being done on a biodiversity action plan,
with maps showing the project’s proximity to tiger habitat and the TRHS (PTT Greencap, 2017). Given the apparent absence of the EIA sought by the Committee as well as the proximity of this project to the property, there appears to be a potential threat to the property’s integrity from this project. Furthermore, planning is reported to be well advanced for geothermal development immediately adjoining KSNP in Solok Selatan, West Sumatra Province. Exploration for geothermal is also reported to have been conducted in the Merangin and Kerinci areas of KSNP, and a geothermal contractor is said to have requested permission to conduct test drilling in a site bordering KSNP.

**Renewable Energy**

*Data Deficient*

*Inside site, localised(<5%)*

*Outside site*

In 2017, conservation NGOs raised alarm for three major hydroelectric dams that were being proposed in and/or around the GLNP component of the property and that these would have a significant impact on the integrity of the Leuser Ecosystem (HAkA et al., 2017a; b). In particular, one of the proposed dams, the Kluet Dam, appeared to be in an area identified as an important orangutan habitat (Wich et al., 2011) with media outlets reporting the ‘mega project’ to start in 2019. Whilst there are many reports from 2017, there have been no reports in recent years and the status of the project unclear. There is also no data available on the OUV of the property. Another of the proposed project, the Tampur Dam, had been approved but in 2019 a court in the Aceh Province ruled against the project and ordered it to be cancelled (Mongabey, 2019). No recent data is available on the third dam in Jambo Aye, also within the Leuser Ecosystem but the most furthest away from the property boundaries.

### Overall assessment of threats

**Very High Threat**

Since the time of inscription in 2004, the WH Committee has continued to express great concerns about the impacts of encroachment, roads, wildlife poaching and illegal logging. Encroachment is widespread across all components of the property, particularly concentrated around the borders. Multiple efforts are underway to increase patrols, obtain provincial government commitments, and implement forest restoration projects, however, much still remains to be done. Priority should be given to monitoring and forest restoration in ecologically sensitive areas, wildlife corridors and roadsides, and also scale up efforts to halt encroachment and prevent the further spread of the invasive Merremia peltata. More comprehensive mammal species data are required to ascertain their status and trends but there are early signs that Sumatran tiger population may be recovering. A landscape level approach is required to protecting the property, which include the wider Leuser Ecosystem with respect to road development, hydro dams, geothermal development and any other activities that has the potential to impact the OUV.

### Protection and management

**Assessing Protection and Management**

**Management system**

*Some Concern*

The property consists of three national parks, which are all public lands. The only exception is the Tambling Wildlife Nature Conservation (TWNC), a 45,000 ha conservation forest in the southern tip of BBSNP and privately owned by Artha Graha Peduli (AGP Foundation). Since 2015 all three national parks have been managed by the Directorate General of Conservation of Natural Resources and Ecosystems. Law enforcement responsibility has been transferred to the Directorate General of Law Enforcement, which has its Sumatra office in Medan and has no representative staff in management offices of the property (IUCN Consultation, 2017). Collaboration between managers and NGOs on patrols and community liaison are frequent but there appear to be no structured, transparent means for stakeholders to have input into the broader management of the property. There does not appear to be an accepted, transparent and accountable framework of governance for the TRHS as a whole. At the
time of nomination, the State Party noted the need for an overall Management Plan to cover all three National Parks that make up the WH site in order to have a coherent approach to management. In 2007, the Committee followed up and urged the State Party to “establish an effective coordination mechanism between the three management units of the property so that it functions as one integrated World Heritage property, and for effective cooperation amongst different organisations and agencies involved in the property” (World Heritage Committee, 2007). There is no evidence that this has occurred.

**Effectiveness of management system**

Whatever the professionalism, hard work and good intentions of the managers, the state of conservation of TRHS is undermined by the lack of enforcement and the proliferation of environmental crimes. Poor maintenance of boundaries and provincial differences mean that encroachment is continuing. The constantly looming threat of intrusive and destructive infrastructure within and around the property, in the form of proposals for roads, dams and geothermal development, is a symptom of poor governance and assessment structures. Management effectiveness is seriously undermined by all of the above, as well as by the apparent absence of an overarching management structure or plan for the property as a whole. It should be acknowledged that improvements have been made in recent times, and the METT scores for the three national parks are increasing. However overall, the management system continues to be inadequate to maintain the property’s OUV and integrity.

**Boundaries**

Confused boundaries occur throughout the site, both on paper and on the ground. Furthermore, some official boundary changes have occurred since the inscription of the property on the WH List in 2004. The 2018 mission observed that these new boundaries imply a 4% reduction in the area of GLNP and a 12% reduction at BBSNP compared with the areas inscribed on the WH List. Additional confusion arises from the 2004 nomination dossier itself which includes different version of boundary maps. Following the WH Committee’s requests, the State Party has reported that progress towards developing a Significant Boundary Modification to reflect the new boundaries are being prepared (State Party of Indonesia, 2020). The Committee had long requested the State Party to incorporate key habitats of important species (World Heritage Committee, 2009), and had also requested the State Party to consider expanding GLNP to include the Leuser Ecosystem (World Heritage Committee, 2018), but the State Party announced that a decision had been taken not to expand the boundaries into the Leuser Ecosystem (State Party of Indonesia, 2019).

**Integration into regional and national planning systems**

Provincial and local government authorities surrounding the property tend to view protected areas as barriers to development and are largely unaware of its World Heritage status (IUCN, 2013). Such a case includes the 2019 proposal by the Governor of Bengkulu to convert forests inside KSNP and the areas surrounding KSNP and BBSNP into land for plantations and mining. This is clearly contrary to the State Party commitments towards the DSOCR indicator of no further loss of primary forest, and no net loss of secondary forest. The serious concern amongst environmental NGOs and the Committee regarding the Aceh Land Use Spatial Plan, the apparent ambiguity about which legal regime prevails, and the resultant litigation (HAkA et al., 2017a; World Heritage Committee, 2015; 2017) indicate that a regime protecting the property has not been effectively integrated into regional and local planning systems. The establishment of National Strategic Areas (NSA) for all three components of the property is considered to be a positive step towards establishing effective buffer zones to regulate development and ensure that it is sustainable (IUCN, 2013), especially the designation of the wider Leuser Ecosystem as a NSA (IUCN, 2018). However, the effectiveness of this approach has yet to be demonstrated as the Leuser Ecosystem continues to be under significant threat despite its NSA status (IUCN, 2018). The proposed Trans-Sumatran Highway in this context is concerning.

**Relationships with local people**

The State Party collaborates with various environmental NGOs and local communities on ecosystem restoration, patrols, community liaison, outreach and wildlife management (State Party of Indonesia, 2020). In 2017 several environmental NGOs described some conservation challenges including issues
with palm-oil companies and the provincial government in the courts (HAKA et al., 2017a). It appears therefore that communication between the government and civil society can be improved on matters pertaining to the protection of the property. The 2014 Outlook Assessment reported that confusion regarding boundaries had created conflict with local people and district governments over rights to land and resources. Since 2017 the State Party has reported efforts to maintain and restore national park boundary markers and undertaking an information dissemination programme (State Party of Indonesia, 2017-2020). However, no figures are given regarding lengths of the boundary clarified in this fashion. The information dissemination was described in very general and brief terms. The large-scale encroachment, illegal logging and poaching reported indicate that much work remains to be done. The exact boundaries of the property is one point of confusion and requires clarification (WH Committee, 2019).

Legal framework

Positive steps have been taken to strengthen the protection of the property such as the adoption of a national regulation on Strategic Roads in Forest Area in 2019, which states that the concept of strategic road alignment within natural WH properties must consult with the relevant institutions, which would include the World Heritage Centre and IUCN (State Party of Indonesia, 2020). The Spatial Land Use Plan developed by the Aceh provincial government initially indicated that mining, palm-oil development and major infrastructure would be permitted within the Leuser Ecosystem but the Provincial Government announced its commitment to prioritize the prevention of further deforestation in the Aceh part of the Leuser Ecosystem (State Party of Indonesia, 2019). The State Party also committed not to grant any permits for geothermal energy exploration inside the property but this needs to be strengthened through the introduction of a legislation against possible future geothermal development proposals inside World Heritage properties. Formal and enforceable legislative protection of the World Heritage property, based on the State Party’s obligations under the World Heritage Convention, would be a desirable step to help overcome current problems and ambiguities within the legal framework.

Law enforcement

Patrol efforts have been significantly increased in recent times, but these are continuing to result in only a few arrests and prosecutions. In KSNP in 2019 for example, 1260 illegal activities were detected but only 4 individuals were sentenced (4 ongoing) for illegal logging and poaching/trade. The 2017 State Party report says “prosecution to encroachers have not been done properly, the data from 2013 to 2016 showed that only 17 people were brought to legal process”. The report documents only 24 arrests from 2,377 illegal incidents (Annex 3), an alarming failure to enforce critical protective laws. The responsibility for law enforcement lies with the Directorate General of Law Enforcement, which has its Sumatra office in Medan, and which has no representative staff within the management offices of the property (IUCN Consultation, 2017). The State Party’s central government should be driving a concerted effort to overcome this critical inadequacy in the management of the TRHS.

Implementation of Committee decisions and recommendations

The 2014 and 2017 Outlook assessments concluded the State Party’s responses to Committee decisions had 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 in 2011 had mobilised greater attention, there remained significant shortcomings in protection and management. This largely remains true. The State Party has made efforts and progress to implement protection measures and the collaborations with NGOs, local communities and provincial governments to address encroachment and illegal land use is encouraging. However such efforts need to be significantly enhanced to truly bring the threats under control. The approval of two road upgrades through the property at GLNP and KSNP are of considerable concern and is against the Committee’s previously expressed position on this matter.

Sustainable use

Uses of the property such as poaching, illegal logging and encroachment are prevalent and widespread.
These constitute unsustainable use of the property.

**Sustainable finance**

The inscription of the TRHS on the List of World Heritage in Danger has mobilised 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 capacity, training, and development**

Park-management staff capacity was previously noted as a serious problem. The significant increase in recent patrols and the resultant training described by the State Party is a large positive step. The engagement of local communities in patrolling should complement management and law enforcement activities.

**Education and interpretation programs**

The State Party has reported progress to increase public awareness through education and information dissemination including exposure to NTFP management through print and electronic media and school visits (State Party of Indonesia, 2020). The effectiveness of such activities are unknown however. The continued cases of illegal activities in and around the property however, indicates further strengthening of the education and outreach programmes are required.

**Tourism and visitation management**

The 2014 Outlook reported that an in-depth assessment of the current tourism market was to be carried out by UNESCO and State Party with a view to developing an ecotourism strategy for TRHS. No further information on this has been found. The 2020 State Party reports that an ecotourism masterplan is being drafted for KSNP, however no information is available on the other parks. The 2018 IUCN mission reported that waste management around the route around Lake Tujuh needed significant efforts.

**Monitoring**

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. The subsequent recent massive increase in patrols, the acquisition of improved equipment, and the use of methods such as camera trapping as described by the State Party have greatly enhanced monitoring of the property. Monitoring of forest loss using remote sensing has been presented by the State Party with accompanying tables is positive. The 2018 forest cover data has now been submitted, which will form the baseline for this DSOCR indicator.

**Research**

Multiple research projects are being undertaken in collaboration with conservation partners, including for the Sumatran Tiger, Sumatran Rhino and Sumatran Orangutan. The State Party also reports of various research activities in the different component parts of the World Heritage site, including for endemic flora, mantangan control and local communities (State Party of Indonesia, 2018; 2019; 2020). However, there are questions as to how and to what extent these research findings inform and influence an adaptive management response.

**Overall assessment of protection and management**

This serial property (consisting of three separate national parks) faces enormous challenges. There appears to be no overarching management structure or plan for the TRHS. Management appears to be undertaken on a park-by-park basis. Boundaries of the property have yet to be clarified, a situation that renders on-the-ground demarcation an exercise of questionable merit in certain areas. There remain areas outside the property which would contribute significantly to OUV with respect to key species, and there remain areas inside the property that have been damaged so badly that they
retain no contribution towards the property’s OUV. Recent legislative changes have made geothermal development a permitted activity within protected areas, creating a new area of uncertainty for managers (notwithstanding the State Party’s undertaking that it will not be permitted within the property). A recent welcome investment in patrols has improved monitoring but this has not been accompanied by a commensurate improvement in law enforcement, which remains disturbingly inadequate. Contributing to this deficiency is the separation of responsibilities between two Directorate Generals, where the DG of Conservation of Natural Resources and Ecosystems has overall management authority over the property, whereas law enforcement is entirely under the responsibility of the DG of Law Enforcement. It is crucial that representative staff of the DG of Law Enforcement are stationed within each of the management offices of the three component national parks of the property. The conservation of the Leuser Ecosystem has been jeopardised by the advent of the Aceh Spatial Land Use Plan, which critics say opens the way for a spate of roads and resource exploitation around – and potentially within – the GLNP component of the property. There appears to be no formal evaluation of the impacts of infrastructure developments (such as proposed hydro dams and geothermal developments) in close proximity to the property. It is therefore not clear how land managers can mitigate impacts of such developments on the property. In some cases, the World Heritage Centre and IUCN have yet to be formally notified of the existence or progress of such proposals. Relationships with stakeholders both inside and outside the property remain challenging. Environmental NGOs are having to tackle some of the issues affecting the property (the Aceh Spatial Plan, palm-oil development) in the courts, an uncertain and expensive process. Positive progress has been made such as the considerable increase in SMART patrols to target poaching and illegal logging, the commitment of the Provincial Government of Aceh to prioritize the prevention of further deforestation in the Aceh part of the Leuser Ecosystem, and the MoU signed by the Governor of West Sumatra to tackle encroachment. Much work is still needed however towards meeting the DSOCR for the property, and protecting its OUV including its integrity.

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

The connectivity of the property with the wider landscape is critical for the protection of the OUV. The Leuser Ecosystem outside of GLNP for instance has been known since the time of inscription, to contain populations of important species. Therefore the increasing pressure for road development, poaching and hydropower development in these surrounding areas are of great concern. Commitments from some of the provincial governments are positive, but support from all the necessary provincial governments and other stakeholders are required. At present, there are conflicting activities proposed and therefore as requested by the Committee, a creation of a clear buffer zone for the WH property restricting development projects would go a long way to restrict external pressure. At present poaching, illegal logging, encroachment and new roads outside the property continue to present a major threat to the integrity of the property. Relationships with members of communities in close proximity to the property who wish to exploit natural resources remain a challenge.

State and trend of values

Assessing the current state and trend of values

World Heritage values

Exceptional scenic landscapes at all scales

Large-scale and widespread encroachment coupled with an opening up of forest areas through illegal logging threaten the integrity of the aesthetic beauty of this property which acts as a backdrop to the lowlands of Sumatra. Geothermal energy development adjacent to the property, and hydro dams in the
vicinity, would exacerbate these impacts if they proceed. (EIAs may show otherwise but these have not been provided.) The undertaking of the State Party not to approve new roads within the property is positive but should be enshrined in a legal instrument. The approval of two road upgrades inside the property without appropriate EIAs is of great concern. Invasive species, especially Merremia peltata is continuing to impact BBSNP, now covering 22% of the park. Forest restoration is being undertaken but is not keeping pace with forest loss.

**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

Most of the threats identified above affect lowland forest. This includes threats from illegal logging, encroachment, proposed geothermal developments and proposed dams. Mountain ecosystems are less affected as it is more difficult to access, and the land is naturally less suited for agricultural purposes, although a growing national and international demand for Arabica coffee appears to have potential to impact on upper hill and montane forests. Poor management capacity coupled with ineffective integration with local development planning is limiting the capacity of park authorities to manage these threats. The situation is therefore serious.

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

High Concern

Trend: Deteriorating

Forest loss remains a key concern (World Heritage Committee, 2019), with conservation NGOs calculating that over 14,000 ha have been permanently lost since 2004 (Orangutan Centre, 2017). The impacts on integrity and crucial wildlife species of various projects adjacent to the property (geothermal next to BBSNP, Kluet hydro dam adjacent to GLNP, other hydro projects) cannot be assessed because EIAs have not been provided. The State Party’s undertaking not to issue a permit (State Party of Indonesia, 2017) for geothermal development within an area of critical habitat of the GLNP component of the property is positive, and should be communicated strongly to the relevant provincial authorities and the developer. New development proposals such as the Trans-Sumatran Highway that would run immediately adjacent to the property as well as the approval of two road upgrades through the property without adequate EIAs exacerbate the fragmentation of the forest and the habitat of critically endangered species. As a result of the above continuing threats, impacts on natural vegetation, including rainforest, have continued and in some cases escalated, meaning that critical habitats are being degraded and, in many cases, lost. Poor management capacity coupled with ineffective integration with local development planning is limiting the capacity of park authorities to manage these threats. This situation could be exacerbated if proposed developments around the fringes of the property (dams, geothermal, roads) proceed. The 2018 World Heritage Committee request to review and revise the buffer zone around each park has not yet been implemented.

**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 but there is currently insufficient data. Whilst preliminary results indicate a possible increase in Sumatran tiger populations in all three components of the property, the margins of error are too large to already draw this conclusion. Updated data on Sumatran rhino and orangutan to generate a trend are not available (State Party of Indonesia, 2020). The number of arrests and sentencing remains low, raising concern about whether law enforcement is able to keep pace with environmental crime, whilst also noting that in the cases of organised crimes comprising only a small number of individuals but responsible for large number of activities such data may be misleading. Poaching is facilitated by access, so the advent of new proposals for infrastructure (dams, roads, geothermal power plants) around the property could exacerbate this situation. No proposal for an extension to the property to include adjacent critical habitat for key species as requested by the Committee since 2009 has yet been realized. A welcome increase in patrols; the plan for an Intensive Protection Zone and Rhino Sanctuary Centre at BBSNP (State Party of Indonesia, 2017), and initiatives on human–wildlife conflict should
enable an improvement of the situation. A concerted effort on law enforcement remains essential, including by posting officers of the Directorate General of Law Enforcement at the national park management offices, and by providing the national parks with a budget for law enforcement.

### Summary of the Values

- **Assessment of the current state and trend of World Heritage values**
  
  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 present. 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. IUCN, conservation NGOs, missions to the site and the World Heritage Committee have repeatedly expressed serious concern about the impacts on the TRHS of encroachment, roads, wildlife poaching and illegal logging, as well as the potential impacts of geothermal energy development. A relatively new threat has emerged in the form of proposed hydro dams around the periphery of the GLNP component of the property. The inscription of the TRHS on the List of World Heritage in Danger seems to have created a momentum to address the range of issues in a longer-term and more comprehensive manner, such as a massive increase in patrols. Unfortunately, such measures have not been accompanied by an improvement in law enforcement; a concerted effort is required on this front to prevent permanent loss of OUV and integrity. Similarly, the continued loss of forest must be halted and reversed in order to meet the requirements of the DSOCR. The broader landscape of the property continues to suffer from environmental degradation. The property attracts considerable international profile due to its formal status as a sanctuary for charismatic species such as the Sumatran rhino, tiger, elephant and orangutan. It is difficult to assess the overall status of these key species as the data provided by the State Party are not accompanied by an authoritative analysis pertaining to the benchmark levels of 2004, when the property was inscribed on the World Heritage List; what is known is that incidents of poaching remain high with a worryingly low level of arrests and prosecution. The State Party’s commitment to monitor the four flagship species should improve the understanding of the health of these populations, and the 2018 baseline forest cover data will provide the necessary information for ongoing monitoring. Ultimately though, it is solid law enforcement that is necessary to deter poachers and other illegal exploiters. The outstanding qualities of the TRHS, though damaged, nevertheless remain. It is still an exceptionally beautiful landscape of mountains, rainforest and rivers, with extraordinary wild animals. Nevertheless, a concerted effort from the State Party and the international community remains essential to protect the property’s OUV from the alarming level of impacts being suffered.

- **Assessment of the current state and trend of other important biodiversity values**
  
  There is insufficient data on the status and trend of the other species.

### Additional information

#### Benefits

**Understanding Benefits**

- **Water provision (importance for water quantity and quality)**
  
  The Leuser Ecosystem 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. An assessment of ecosystem services (water) from KSNP forests to the municipality of
Sungai Penuh, Kerinci in 2011 valued water services for domestic consumption and rice field irrigation at 1.049 million Euros per year (IUCN Consultation, 2014).

Factors negatively affecting provision of this benefit:
- Habitat change: Impact level - Moderate, Trend - Increasing

The main threat to the provision of water stems from the illegal conversion of rainforests to industrial plantations, mostly for palm oil, but also for rubber.

► Soil stabilisation

The steep slopes in the property experience heavy rainfall throughout the year, and are prone to landslides. Healthy forest cover is critical to stabilising these slopes.

Factors negatively affecting provision of this benefit:
- Habitat change: Impact level - High

As forests are illegally cut, there is a significant risk for landslides in the exposed areas.

► Outdoor recreation and tourism, Natural beauty and scenery

The property’s exceptional scenery, including the highest lake in Southeast Asia (Lake Gunung Tujuh), as well as its magnificent biodiversity, are of great interest to domestic and international tourists alike.

► Wilderness and iconic features

The wilderness and natural beauty of the property are attributes that are rare and diminishing in Southeast Asia and the world generally.

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 and flood through retention of forest cover.

Projects

Compilation of active conservation projects

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<tr>
<th>№</th>
<th>Organization</th>
<th>Brief description of Active Projects</th>
<th>Website</th>
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<tbody>
<tr>
<td>2</td>
<td>WCS</td>
<td>WCS has continued to work across the different landscapes of Sumatra, including Gunung Leuser National Park and Bukit Barisan Selatan National Park.</td>
<td><a href="https://indonesia.wcs.org/">https://indonesia.wcs.org/</a></td>
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<td>3</td>
<td>Sumatran Orangutan Conservation Programme</td>
<td>Rescue, confiscation, quarantine and re-release of orangutans; habitat conservation; research and monitoring.</td>
<td><a href="http://sumatran-orangutan.org/">http://sumatran-orangutan.org/</a></td>
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<td>4</td>
<td>Jambi Community Forest Management Project (FFI and Lembaga Tiga Beradik)</td>
<td>Establishing community managed forest in KSNP buffer zones in 2 park edge districts in Jambi.</td>
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IUCN World Heritage Outlook: https://worldheritageoutlook.iucn.org/ 
Tropical Rainforest Heritage of Sumatra - 2020 Conservation Outlook Assessment
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<td>5</td>
<td>PanEco Foundation</td>
<td>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 (Sumatran Orangutan Conservation Programme, 2017).</td>
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<td>7</td>
<td>Yayasan Leuser International (YLI)</td>
<td>Monitoring of the population of Sumatran rhino and their habitat in GLNP, ecosystem restoration, awareness raising, Rhino Protection Units (RPUs).</td>
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<td>8</td>
<td>Yayasan Ekosistem Lestari</td>
<td>Environmental outreach and education and community development.</td>
<td><a href="https://www.yel.or.id/de/">https://www.yel.or.id/de/</a></td>
</tr>
<tr>
<td>9</td>
<td>YABI (Yayasan Badak Indonesia)</td>
<td>Rhino conservation in BBSNP, Rhino Protection Units (RPUs).</td>
<td>badak.or.id.</td>
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