

ASIA / PACIFIC

THE CENTRAL HIGHLANDS OF SRI LANKA: ITS CULTURAL AND NATURAL HERITAGE

SRI LANKA



WORLD HERITAGE NOMINATION - IUCN TECHNICAL EVALUATION

THE CENTRAL HIGHLANDS OF SRI LANKA: ITS CULTURAL AND NATURAL HERITAGE (SRI LANKA) ID N° 1203

1. DOCUMENTATION

- i) **Date nomination received by IUCN:** 16th March 2009
- ii) **Additional information officially requested from and provided by the State Party:** Additional information was requested from the State Party following the IUCN World Heritage Panel, and was provided to the World Heritage Centre and IUCN in February 2010, including a hard copy of the "Operational Plan for the Laggala Section of the Knuckles Conservation Forest".
- iii) **UNEP-WCMC Data Sheet:** Relevant datasheets on comparable properties were consulted; a datasheet will be elaborated in relation to the Committee's consideration of the nomination.
- iv) **Additional Literature Consulted:** Meegaskumbura, N. Beenaerts et al. (2004). **Local endemism within the Western Ghats – Sri Lanka biodiversity hotspot.** *Science* 306: 479-481.; Brooks, T.M., R.A. Mittermeier, C.G. Mittermeier et al. (2002). **Habitat loss and extinction in the hotspots of biodiversity.** *Conservation Biology* 16: 909-923. Collins, N.M., J.A. Sayer and T.C. Whitmore (eds.) (1991). **The Conservation Atlas of Tropical Forests: Asia and the Pacific.** Macmillan Press, London, UK.; Davis, S.D., V.H. Heywood and A.C. Hamilton (eds.) (1995). **Centres of Plant Diversity: A Guide and Strategy for their Conservation. Volume 2: Asia, Australasia and the Pacific.** WWF, Gland, Switzerland and IUCN, Cambridge, UK.; Gunawardene, N.R., A.E. Dulip Daniels, I.A.U.N. Gunatilleke et al. (2007). **A brief overview of the Western Ghats – Sri Lanka biodiversity hotspot.** *Current Science* 93: 1567-1572. Helgen, K.M. and C.P. Groves (2005). **Biodiversity in Sri Lanka and the Western Ghats.** *Science* 308: 199.; IUCN (2004). **The World Heritage List: Future priorities for a credible and complete list of natural and mixed sites.** IUCN, Gland, Switzerland; Magin, C. and S. Chape (2004). **Review of the World Heritage Network: Biogeography, Habitats and Biodiversity.** IUCN, Gland, Switzerland and UNEP-WCMC, Cambridge, UK; Meegaskumbura, M., F. Bossuyt, R. Pethiyagoda et al. (2002). **Sri Lanka: An amphibian hot spot.** *Science* 298: 379.; Mittermeier, R.A., P. Robles Gil, M. Hoffmann et al. (2004). **Hotspots Revisited.** CEMEX, Mexico City, Mexico.; Mittermeier, R.A., J. Ratsimbazafy, A.B. Rylands et al. (2007). **Primates in peril: the World's 25 most endangered primates, 2006-2008.** *Primate Conservation* 22: 1-40.; Myers, N., Olson, D.M., E. Dinerstein, E.D. Wikramanayake, et al. (2001). **Terrestrial ecoregions of the world: a new map of life on Earth.** *BioScience* 51 (11): 933-938.; Olson, D.M. and E. Dinerstein (2002). Thorsell, J. and T. Sigaty (1997). **A Global Overview of Forest Protected Areas on the World Heritage List.** IUCN, Gland, Switzerland.
- v) **Consultations:** Ten external reviewers consulted. The mission met with senior representatives of the State Party including the Minister for Environment & Natural Resources, representatives from relevant ministries, departments, universities, UNESCO National Committee, as well as community groups and stakeholder representatives.
- vi) **Field Visit:** Vinod Mathur, with Jane Lennon, ICOMOS, September/October 2009.
- vii) **Date of IUCN approval of this report:** 15th April 2010.

2. SUMMARY OF NATURAL VALUES

The nominated property Central Highlands of Sri Lanka (CHSL) is a serial proposal comprising three component parts, details of which are shown in Table 1. The nomination is for inscription as a mixed property, and has been made under all four natural criteria, as well as three cultural criteria. This nomination addresses the natural values of the

property; the cultural values have been evaluated by ICOMOS.

Sri Lanka's highlands, where the land rises to an elevation of over 2,500 m.a.s.l, are situated in the south-central part of the island. The three component parts of the nominated property share common features of their mountainous terrain, but also have prominent physiographic differences.

Table 1: Component parts of the nominated property

Name	Area (ha)	Buffer zone
1. Peak Wilderness Protected Area (PWPA)	20,596	An area (37,571) ha has been identified conceptually as a buffer zone but has not been legally defined.
2. Horton Plains National Park (HPNP)	3,109	No buffer zone has been identified/delineated.
3. Knuckles Conservation Forest (KCF)	31,305	An area (35,074 ha) has been identified conceptually as a buffer zone but has not been legally defined.

The PWPA has a cone-shaped mountain top that reaches a sharp peak (Adam's Peak) at an elevation of 2,243 m. The terrain in PWPA is very rugged with steep escarpments, covering about 50 percent of the area. In HPNP, the terrain, for the most part, in contrast to the Adam's Peak Range, consists of gently undulating land forming a highland plateau situated at the southern edge of the arc of the anchor-shaped Central Massif. KCF is located in the heart of the extremely rugged Knuckles Massif and consists of peaks, a complex of interconnected steep escarpments with near vertical rock faces, plateaus and river valleys. Within the Knuckles Massif, there are 35 peaks, of which 14 are over 1500 m in altitude. The most distinctive among these are a set of five peaks which when viewed from afar resemble the knuckles of a clenched fist.

Geologically, nine-tenths of Sri Lanka is made up of extremely ancient, highly crystalline and metamorphic rocks of Precambrian age. The entire Central Highlands, including all three components of the nominated property, are composed of two main types of rocks: metamorphosed sediments and charnockite gneisses. Four major episodes of deformation have been recognized in the Central Highlands. Evidence of these episodes can be seen in the Knuckles region, where the main structure is a recumbent fold upon which, in a subsequent episode, upright folds have been superimposed.

Sri Lanka's evolutionary history is as a component of the Deccan Plate which has drifted north since the beginning of the Tertiary period and right up to the Miocene, and with land connections also occurring since then up to the Holocene. The island shares many biotic taxa with peninsular India. For example of the 173 families of angiosperms, 167 are peninsular. The total number of indigenous plants species in Sri Lanka is around 7000. This includes over 3000 angiosperm species of which 845 are endemic to the island. Among the pteridophytes, 57 of 314 species are endemic. It is this extraordinary endemism that occurs mainly at specific and intra-specific rank that makes the Sri Lankan flora of outstanding interest. The indigenous faunal species include 678 species of vertebrates and 262 species of migrant birds. Endemism is high in fauna too ranging from 50 percent in reptiles, 54 percent in freshwater fishes and 85 percent in amphibians.

The Sri Lankan montane rain forests represented by CHSL can in fact be considered a super-hotspot within the Western Ghats and Sri Lanka biodiversity hotspot. More than half of Sri Lanka's endemic vertebrates, half of the country's endemic flowering plants and more than 34% of its endemic trees, shrubs, and herbs are restricted to these diverse montane rain forests. The altitudinal range and location of the Knuckles at the ecotonal boundary between Sri Lanka's wet and dry climate zones has given rise to a diverse range of vegetation, which includes most of Sri Lanka's major associations. The flora of the Knuckles is so distinct that it is recognized as a separate floristic region within Sri Lanka. It contains part of a relict flora of Deccan-Gondwanic origin with a high level of species endemism and many montane and submontane taxa at the northern limits of their ranges in Sri Lanka. At least 10 of the 23 endemic bird species that make Sri Lanka an Endemic Bird Area also occur in the Knuckles range. The Peak Wilderness and Horton Plains, together with surrounding forest areas, comprise Sri Lanka's most important water catchments from which almost all the country's major perennial rivers originate. The Peak Wilderness is one of the few sites remaining in Sri Lanka with continuous tracts of forest altitudinally graded from lowland to submontane and montane rain / cloud forest. The flora of the Peak Wilderness and Horton Plains, which is a relic of Gondwanic flora, is characterised by high species endemism and much localized species distributions. Up to 13 of the 23 endemic bird species that make Sri Lanka an Endemic Bird Area occur in the Peak Wilderness and Horton Plains.

In the montane forests represented by the three serial properties, the faunal elements provide strong evidence of geological and biological processes in the evolution and development of taxa. The endemic purple-faced langur of Sri Lanka (*Semnopithecus vetulus*) has evolved into several morphologically different forms which occur within the three serial properties and exhibit allopatry, which could be considered as an ongoing process. Molecular genetic analysis shows that the Sri Lankan leopard, the only representative in the island of the genus *Panthera*, which diverged from other felids about 1.8 million years ago, is a unique sub-species (*Panthera pardus kotiya*) and distinct among the 10 sub-species of leopard found the

world over. All three nominated properties provide habitat to this subspecies of leopard, endemic to Sri Lanka.

The nominated property provides critical habitat to a number of other endemic vertebrate species including amphibians, reptiles, birds and mammals. These include two of the world's 25 most endangered primates: the Critically Endangered western purple-faced langur (*Trachypithecus vetulus nestor*) and the Endangered Horton Plains slender loris (*Loris tardigradus nycticeboides*). Although property-wide species figures were not provided in the nomination, the nominated property may contain more than a third of the Sri Lankan amphibian species, including two dozen or more Sri Lankan endemics (the nomination (pages 69-70) notes that CHSL provides habitat for 23 endemic frog species of the *Philautus* genus alone, of which at least 7 species are completely confined to the nominated property). The nominated property also provides critical habitat to a number of globally threatened plant and animal species (see Table 2).

3. COMPARISON WITH OTHER AREAS

The property has been nominated in relation to all four natural criteria. IUCN requested supplementary information on the comparative analysis from the State Party, in addition to its own consideration of global comparisons.

The case for inscription of the property in relation to criterion (vii) is based on the scenery and topography of the three components. The most dramatic feature within the property is 'World's End' in HPNP, where there is a near vertical drop of almost a kilometer which provides a spectacular view of the dry zone lowland plains, but this is not unique or outstanding at the global level. Similarly, the 35 peaks rising over 915 m in the KCF provide a view of rugged mountains, found nowhere else in Sri Lanka, but this view cannot be considered as unique or outstanding at the global level. There are many mountain protected areas of much greater size, and scale than the nominated serial property,

whose individual components are relatively small.

The basis for inscription under criterion viii is also not compelling. The landforms found within the property are of national and sub-regional importance, but are not particularly unusual or distinctive at the global scale. The geomorphological and geological values of the property do not approach those of major mountain properties already inscribed on the World Heritage List under this criterion in terms of scale (for instance in comparison to the Canadian Rocky Mountain Parks, Canada), nor are well known exemplars at the international level, such as the Dolomites, Italy or the Swiss Tectonic Arena Sardona, Switzerland. Whilst changes over geological time have had a profound impact on the composition of the biota in Sri Lanka, where biodiversity values and species endemism have become exceptionally high, this is not a basis for inscription of the property under criterion viii.

IUCN considered comparisons regarding the biodiversity values in conjunction with UNEP-WCMC. There are ten existing natural World Heritage properties inscribed under biodiversity criteria in the Indo-Malayan realm. Keoladeo National Park in India is however very small (2,873 ha), inscribed primarily for its wetland values, and does not include notable forest values. In addition to nine comparable inscribed properties, three Tentative List sites in the Indo-Malayan realm were also selected for this analysis due to their notable forest values: Western Ghats, (India); Transborder Rainforest Heritage of Borneo, (Indonesia/Malaysia); and Cat Tien National Park, (Viet Nam).

CHSL includes the largest and least disturbed remaining areas of the submontane and montane rain forests in Sri Lanka's south-western wet zone. These forests are globally important as they provide habitat for an exceptional number of endemic species of flora and fauna. IUCN's theme study on World Heritage forests in 1997 listed two component parts of the nomination in their list of forest protected areas which may merit consideration for WH nomination: Peak Wilderness and Horton Plains. (At that time, Knuckles had not

Table 2: Number of globally threatened species found within the components parts of CHSL (from Nomination Document)

Taxonomic group	Peak Wilderness	Horton Plains	Knuckles
Woody plants	147	14	71
Freshwater fish	-	-	2
Amphibians	17	10	10
Reptiles	1	-	2
Birds	9	3	5
Mammals	7	10	9
TOTAL	181	37	99

been designated as a conservation forest). The moist forests of the Western Ghats and south-western Sri Lanka are globally distinct due to their long history and isolation. The forests and rivers of the Western Ghats, India, have been identified by IUCN as being of potential Outstanding Universal Value in previous gap analyses. However, especially in terms of endemism, the comparably smaller Sri Lankan montane rain forests are of equal importance.

The component parts of CHSL stretch across two Udvady biomes and provinces: Peak Wilderness and Horton Plains belong to the Ceylonese rainforest province in the tropical humid forests biome, while Knuckles belongs at least in part to the Ceylonese monsoon forest province in the biome of tropical dry or deciduous forests (incl. monsoon forests) or woodlands. The only other natural World Heritage property in these provinces is Sinharaja Forest Reserve (SFR) (inscribed in 1988 under both biodiversity criteria), which is also in Sri Lanka, and also belongs to the Ceylonese rainforest province. Biogeographically, SFR is strongly related to the nominated property. The nominated property and SFR share values as the most important remnants of once extensive and contiguous natural forests. The contrast is that Sinharaja represents more lowland rain forests, whereas CHSL represents the Sri Lankan montane rain forests.

As the nomination notes, by world standards, the property and its three component parts are relatively small. The smallest component part, Horton Plains, is contiguous with the 20,596 ha Peak Wilderness and thus forms a contiguous component part of 23,705 ha. The nominated property as a whole exceeds the size of Kaziranga and Manas in India, and Gunung Mulu in Malaysia, but is far smaller than Sumatra and Ujung Kulon in Indonesia, Dong Phrayayen – Khao Yai and Thungyai – Huai Kha Khaeng in Thailand and the tentative list sites of the Western Ghats in India or Borneo in Indonesia and Malaysia. The component parts of the nominated property are all smaller than all forest properties or tentative list sites in the Indo-Malayan Realm except for Sinharaja in Sri Lanka. The property therefore makes a good case for recognition under criterion (ix), however there is no doubt that this would be strengthened by consideration of its linkage to the existing inscribed property of Sinharaja Forest Reserve.

The nomination also makes a strong case for inscription of CHSL under criterion (x). The nominated property is of global importance for the conservation of a range of species, including a large number of endemic and threatened species, in various taxonomic groups. The CHSL nomination includes two of the four Alliance for Zero Extinction sites in Sri Lanka, (i.e. sites that hold the last remaining populations of Critically Endangered or

Endangered species, in this case all amphibians). The nomination also includes three of the Important Bird Areas in Sri Lanka. Almost twenty years ago, the three component parts of the nominated property were also identified as three of the six Sri Lankan areas of particular significance for their rain forests. SFR was among the other three areas identified. Based on available information, the nominated property is overall comparable in species richness and endemism to a number of Indo-Malayan World Heritage properties inscribed under criterion (x).

In terms of species richness, CHSL surpasses smaller properties but is surpassed by some larger properties and properties that include “less isolated” rain forests. In terms of endemism, CHSL has more mammal species than Kaziranga, Sinharaja and possibly Manas and more endemic mammal species than Sinharaja and Borneo. It has more bird species than Sinharaja, and a number of endemic bird species similar to Sumatra, Gunung Mulu, Sinharaja, Western Ghats and Borneo. It also has more reptile species than any other property of its size and more species and endemic species of amphibians and freshwater fish than Sinharaja. Furthermore it has more plant species than Manas, Ujung Kulon and Sinharaja, and more endemic plant species than Sinharaja, Dong Phrayayen – Khao Yai and Cat Tien. Conversely it certainly has fewer mammal species than Sumatra, Gunung Mulu, Kinabalu, Dong Phrayayen – Khao Yai, Thungyai – Huai Kha Khaeng, Borneo and Cat Tien, fewer bird species than all properties except for Sinharaja and does not have the highest levels of species in relation to reptiles, amphibians, freshwater fish and plants.

IUCN considers that, despite being exceeded in values by some inscribed properties, the nominated property clearly has comparable biodiversity values to many existing World Heritage properties. However the values of the property for biodiversity would be further strengthened by more direct association with the closely related property of Sinharaja.

4. INTEGRITY, PROTECTION AND MANAGEMENT

4.1 Protection and management requirements

The whole of the PWPA is state-owned; the Conservation Forests within the PWPA are under the charge of the Forest Department whilst the newly declared Peak Wilderness Nature Reserve, and the pilgrim trails and peak are under the administrative control of the Department of Wildlife Conservation (DWLC). The PWPA comprises several parts falling under three categories of areas under protective legislation: (a) The Peak

Wilderness Nature Reserve (in nine blocks) which is a highly protected area under the provisions of the Fauna and Flora Protection Ordinance (FFPO), (b) the pilgrim trails and peak, which have the status of sanctuary under the provisions of FFPO, and (c) the three conservation forests have been designated under the provisions of Forest Ordinance.

The whole of HPNP is state-owned and under the administrative control of DWLC. HPNP has been designated under the provisions of FFPO. The FFPO also provides for prohibition of damaging activities within one mile of the boundary of both HPNP and PWPA. The KCF has also been declared as Conservation Forest in 2000 under the provisions of the Forest Ordinance. The Government of Sri Lanka has additionally notified 'Knuckles Environmental Protection Area' under the National Environment Act, 1980 under which ensures special protection in relation to planning schemes and projects to an area including KCF.

IUCN considers that the protection status of the nominated property meets the requirements set out in the Operational Guidelines.

4.2 Boundaries

The small size of the components of the nominated property is a result of the limited extent of the most significant rain forest areas remaining on the island. However, if effectively protected and managed, the size and shape of CHSL and its component parts can be considered to be sufficient to maintain its values, especially since many of the plant and animal species have highly localized distributions. The boundary of PWPA includes a range of protected areas and this component has a common boundary with HPNP. Through a variety of procedures the boundaries appear to be securely gazetted within national laws. When the Knuckles Forest was earmarked for conservation it was decided to take the 3500 ft (1067 m) contour as the boundary. Subsequently, this decision was changed and it was decided to extend the limit to cover all contiguous forests even at lower elevations. The boundary now extends down the mountain slope, particularly in a north-east trending arm, to an elevation of ca 200 m. The new boundary needs to be reflected in updated national maps. There is a need to better delineate the entire boundary of the three components in the field.

The concept of 'buffer zone' and its boundary demarcation has been differently applied in each of the three component parts. IUCN sought supplementary information on buffer zones from the State Party. The nomination considers that there is no need for a buffer zone in case of HPNP as there are no human habitations in its periphery. The HPNP for its most part is surrounded by natural forests, protected and administered by the Forest Department

Proposed buffer zones surround three quarters of the PWPA and almost completely surrounds the KCF, and should provide an added layer of protection, and also include habitat for plant and animal species, including endemics, not represented in the property itself. The area surrounding KCF is stated to have been conceptually identified as the buffer zone by the Forest Department. Through the management plans of KCF, the Forest Department undertakes a wide range of activities through the community based organizations (CBOs) to strengthen conservation by public participation. However, the area has not been legally defined nor land marked as a buffer zone. A buffer zone for PWPA is also "conceptually" identified as a buffer zone but not legally defined nor land marked. The DWLC undertakes several community-based programmes within it to strengthen conservation and reduce dependence of the local communities on forest resources to a sustainable level. The mission heard appreciation from community members and CBO representatives, during different meetings, regarding the initiatives undertaken by the Forest Department and by the DWLC in their villages. IUCN does not consider that these areas represent fully functional buffer zones for the property, being instead area based community programmes, which appear to be positively received.

IUCN sought clarification of whether the State Party had considered the possibility of nominating the proposed property as a serial extension of Sinharaja Forest Reserve, rather than a separated property. The State Party noted that the nominated components are located in distinct geographical areas and cite several publications supporting considerable differences between montane and sub-montane forests and biota. Sinharaja is suggested as a different forest type and floristic region with strongly differing endemism and species richness. It is also referred to a number of studies on different taxonomic groups of the fauna, which suggest distinctiveness. The State Party also noted that the parallel consideration of cultural criteria meant there would have been no possibility of linking with the Sinharaja Forest. From a natural perspective, IUCN does not find the reasoning particularly convincing, as the relationships as remnants of the previously contiguous forests are very clear. IUCN recommends that the possibility of a linked serial extension of SFR should be considered by both the State Party and the World Heritage Committee, in view of both the potential to strengthen integrity, and also gain the maximum benefits to conservation from the serial property concept, by promoting interaction and joint consideration of management issues.

IUCN considers that the boundaries of the property meet the requirements set out in the Operational Guidelines, but could be strengthened by association of the property as a serial extension of

the Sinharaja Forest Reserve. The areas stated to be buffer zones for KCF and PWPA are in need of formalization and clarification to ensure their long term functioning.

4.3 Management

The management of the three components of the nominated property is covered by the management plans for the Peak Wilderness Sanctuary, 1999-2003, Samanala Adaviya Protected Area Complex Management Plan, 2005, Management Plan of HPNP, 1999-2003 and 2005 and the Management Plan of KCF, 1994. IUCN requested clarification from the State Party about the current status and plans to update and renew the management plans. The response states that the Peak Wilderness Protected Area and Horton Plains have current management plans. For KCF the State Party notes that there are two operational plans, and that “a consolidated plan for KCF as a whole (in English) would be prepared based on the two operational plans”. IUCN notes that the status of management planning for all of the components of the property needs to be made consistent, with each covered by an effective and current management plan.

The conservation and management of the three nominated properties is financed through the annual budgets of the Forest and Wildlife Departments. The approximate allocations for the different components of the property amount to c.18 million Sri Lanka Rupees annually (in excess of USD150,000). In addition to the above, funds are also provided through donor funded projects. The Provincial Administration also provides additional funding support for some activities.

As noted in the Operational Guidelines, in the case of serial properties, a management system or mechanism for ensuring the co-ordinated management of the separate components is essential and should be documented in the nomination. This is presently not the case. The three nominated properties are administered by separate Management Plans prepared and implemented by two separate agencies. In addition the Ministry of Cultural Affairs and the Department of Archaeology would be implicated in the management system should the property be inscribed for its cultural values. The nomination contains an explanatory note on revising the system of management for PWPA, HPNP and KCF following acceptance for inscription on the World Heritage List⁷ has been provided. This states that a revised system of management would be developed and implemented within two years of the inscription of these properties on the World Heritage List. IUCN considers that more reflection and clearer plans are required to develop the necessary joint management, and is not convinced that the current plans are likely to be delivered effectively in the short timescale anticipated, given

the complexity of establishing an overall functional management regime.

IUCN further considers that more efforts are needed to engage the local communities and CBOs in providing protection to the nominated property. Coordination could be made more broad-based by including other relevant stakeholders such as civil society representatives and economic interests in site protection and the implementation of environmental regulations.

IUCN considers that the management of the property does not meet the requirements set out in the Operational Guidelines, considering in particular the lack of an overall management system for the nominated serial property.

4.4 Threats

The nature and magnitude of existing and potential threats to the three nominated properties varies between the components. In case of PWPA, the major human use is from 2 million pilgrims who visit the Adam's Peak annually and contribute to both forest and environmental degradation along the pilgrim trails leading up to the peak. Illicit gem mining with no ecological restoration also takes place in some sections in the periphery of PWPA. The Forest and Wildlife Departments have recently taken steps to address the above issues. A wide ranging protective legislation has been enacted rationalizing the legal status of the various constituents of PWPA, which give adequate mandate and powers to both DWLC and the Forestry Department to regulate the forest and environmental degradation. More efforts are needed to address the issue of environmental legislation, in which the Department of Culture and other relevant stakeholders can play a major role.

In HPNP the major threat is from the spread of invasive species European Gorse (*Ulex europaeus*), forest die-back, occasional fires and vandalism on the nature trail by the visitors. The DWLC efforts in the abatement of above threats needs to be further strengthened.

In KCF, the major threat is from cultivation of cardamom inside the forest. This spice crop was under-planted in some sections of the natural forests under a lease agreement scheme initiated by the FD many decades ago. What started on a small scale eventually extended beyond the leased areas. Maintenance work to sustain the cardamom crop resulted in a degradation of the natural forests. The Forest Department then took a series of measures to address this threat: the lease agreements were terminated and all resident cultivators were relocated elsewhere. The areas that were under-planted by the cardamom cultivators are now reverting to their natural forest state. Eleven of the former non-resident and

influential lessees continue to harvest cardamom from the land using hired labour, in spite of the expiry of their leases. The Forest Department has initiated legal action and court orders have been received against this illegal activity, which are now being implemented.

IUCN sought additional clarification in terms of addressing the corresponding threats to the values and integrity of the site. The State Party considers that adequate organization is in place and that inscription of the property could provide an “added incentive” for strengthening control and management of tourism. As regard the pilgrimage route, the State Party states that traditionally there is a closed season of six months during which there are hardly any visitors, allowing the ecosystem to recover, as well as a range of protective measures. IUCN considers that the monitoring of tourism should be strengthened to ensure that impacts are understood and fully addressed, both within the overall management of the property, and that of its individual component parts.

In summary, IUCN considers that the nominated property meets the requirements for integrity as set out in the Operational Guidelines, but the associations with Sinharaja Forest Reserve should be considered. The property does not fully meet the requirements for protection and management, which need to be strengthened, in relation to the overall management system for the property, establishment of consistent updated management plans for all of its components parts, strengthened tourism monitoring and clarified and effective buffer zones.

5. ADDITIONAL COMMENTS

5.1 Justification for Serial Approach

(a) What is the Justification for serial approach?

The serial approach is justified from a biodiversity perspective because the three component parts belong to the same biogeographic province or the same ecosystem type (as required by paragraph 137 of the Operational Guidelines). The nature of the component parts as isolated remnants of previous continuous forests also corresponds well to a serial approach. The justification is less compelling from a landscape or geological perspective, considering that the landforms and geology continue over a much greater area of the property.

(b) Are the separate components of the property functionally linked?

The three components of the nominated property are functionally linked to a large extent in relation to

conservation of biodiversity. They all contribute to the representation and conservation of the montane and sub-montane forest elements of the ‘Ceylonese Rainforests’. The three serial properties along with contiguous forests form a functionally linked series. The functional links with the Sinharaja Forest Reserve are equally strong, on the same basis.

(c) Is there an overall management framework for all the components?

As noted above, there is not currently an overall management framework for all of the components.

6. APPLICATION OF CRITERIA

The Central Highlands of Sri Lanka: Its Cultural and Natural Heritage has been nominated as a mixed property under all four natural criteria. The nominated property has been evaluated in relation to cultural criteria by ICOMOS:

Criteria (vii): Superlative natural phenomena or natural beauty and aesthetic importance.

The property contains nationally important phenomena, including attractive natural landscapes which are found nowhere else in Sri Lanka. However these values are not unique or outstanding at the global level. There are many mountain protected areas of much greater size, and scale than the nominated serial property, whose individual components are also relatively small in relation to the conservation of natural landscapes.

IUCN considers that the nominated property does not meet this criterion.

Criteria (viii): Earth’s history and geological features.

The landforms found within the property are of national and sub-regional importance, but are not particularly unusual or distinctive at the global scale. The geomorphological and geological values of the property do not approach those of the major mountain properties already inscribed on the World Heritage List, nor are well known exemplars at the international level. Whilst changes over geological time have had a profound impact on the composition of the biota in Sri Lanka where biodiversity values and species endemism have become exceptionally high, this is not a basis for inscription of the property under criterion viii.

IUCN considers that the nominated property does not meet this criterion.

Criteria (ix): Ecological processes

The nominated includes the largest and least disturbed remaining areas of the submontane and montane rain forests of Sri Lanka, which are a global conservation priority on many accounts. The component parts of stretch across two Udivady biomes and provinces: the Ceylonese rainforest and the Ceylonese monsoon forest in the biome of tropical dry or deciduous forests (incl. monsoon forests) or woodlands. In the montane forests represented by the three serial properties, the faunal elements provide strong evidence of geological and biological processes in the evolution and development of taxa. The endemic purple-faced langur of Sri Lanka (*Semnopithecus vetulus*) has evolved into several morphologically different forms recognizable today. The Sri Lankan leopard, the only representative in the island of the genus *Panthera*, which diverged from other felids about 1.8 million years ago, is a unique sub-species (*Panthera pardus kotiya*) and distinct among the 10 sub-species of leopard found the world over. All three nominated properties provide habitat to this subspecies of leopard, endemic to Sri Lanka. Long isolation and the concomitant evolutionary processes have also resulted in a Sri Lankan molluscan fauna that is the most distinct in the South Asian region. The only other natural World Heritage property in these provinces is Sinharaja Forest Reserve, also in Sri Lanka, which belongs to the Ceylonese rainforest province. Biogeographically, Sinharaja is strongly related to the nominated property and they share values as the most important remnants of once extensive and contiguous natural forests.

IUCN considers that the nominated property meets this criterion, however it would be strongly preferable to associate it by inscription with the closely linked area of Sinharaja Forest Reserve, which is already inscribed on the World Heritage List.

Criteria (x): Biodiversity and threatened species

Considering its size, the nominated property features exceptional numbers of threatened species, exceptional levels of endemism, including higher-level endemism, and high levels of richness in a number of taxonomic groups. Of the 408 species of vertebrates recorded in the three properties, 141 are endemic and many of these are strictly montane species. Eight three percent of indigenous fresh water fishes and 81% of the amphibians in PWWA are endemic, 91% of the amphibians and 89% of the reptiles in HPNP are endemic, 64% of the amphibians and 51% of the reptiles in KCF are endemic. The montane forests in the three serial properties contain the only habitats of many threatened plant and animal species and are therefore of prime importance for their in-situ

conservation. The biodiversity conservation values of the property complement those of the Sinharaja Forest Reserve.

IUCN considers that the nominated property meets this criterion, however it would be strongly preferable to associate it by inscription with the closely linked area of Sinharaja Forest Reserve, which is already inscribed on the World Heritage List.

7. RECOMMENDATIONS

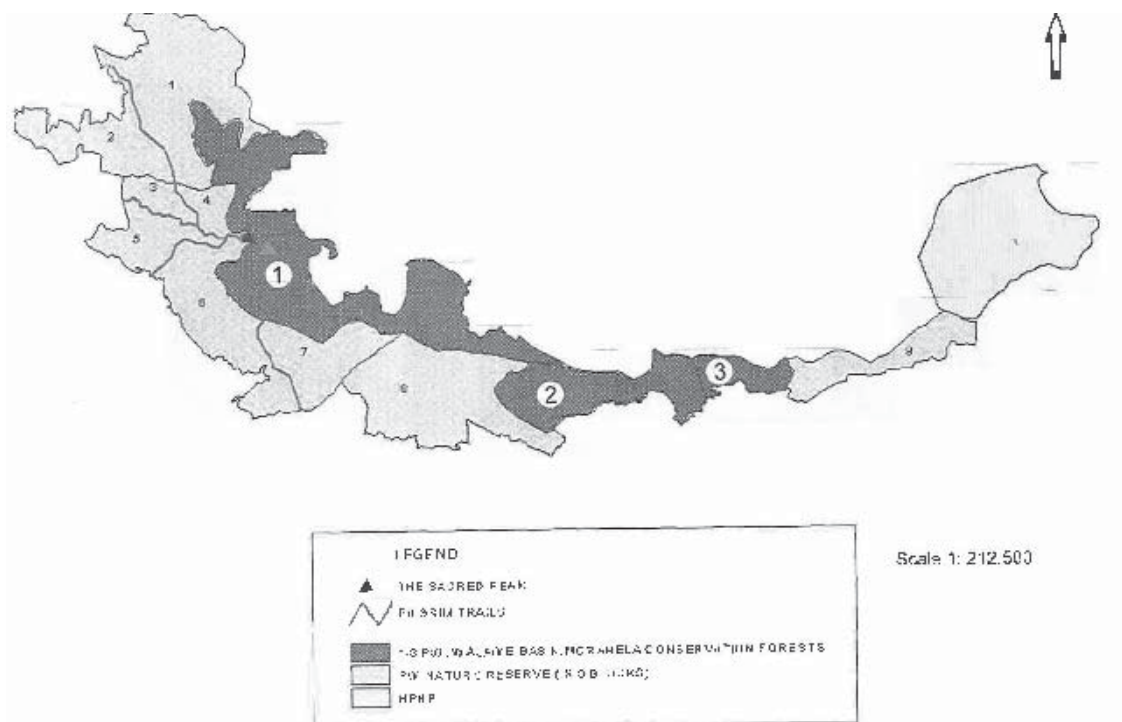
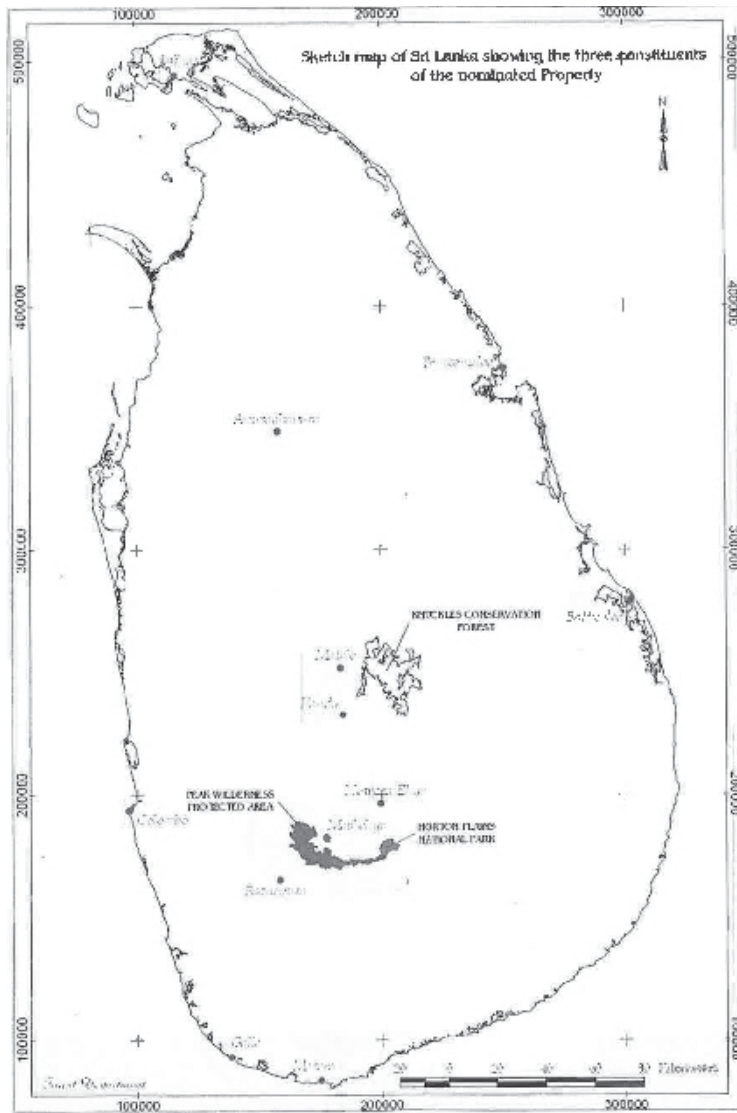
IUCN recommends that the World Heritage Committee adopt the following decision, noting that as the nomination is for a mixed property, the IUCN recommendations will be harmonized with those of ICOMOS in preparing the draft decision for the Committee.

The World Heritage Committee,

1. Having examined Documents **WHC-10/34.COM/8B** and **WHC-10/34.COM/INF.8B2**,
2. Decides not to inscribe the Central Highlands of Sri Lanka: its Cultural and Natural Heritage, Sri Lanka on the World Heritage List under natural criteria (vii) and (viii);
3. Refers the examination of the nomination of the **Central Highlands of Sri Lanka: its Cultural and Natural Heritage, Sri Lanka**, to the World Heritage List on the basis of natural criteria (ix) and (x) to allow the State Party to address a number of significant issues related to the integrity and management of the nominated property;
4. Recommends the State Party to:
 - a) Establish an overall management framework for the serial property, as required in the Operational Guidelines, and to also establish completed and effective management plans for each of the component parts of the property;
 - b) Establish effectively functioning buffer zones for the property, which will ensure its protection from threats arising from outside its boundaries in consultation with local stakeholders;
 - c) Establish a fully effective management and monitoring framework for tourism.

5. Recommends the State Party, in reconsidering the nomination, to evaluate the possibility to represent the nomination as a serial extension of the existing Sinharaja World Heritage Site, considering that the nominated property has complementary values to the existing property and meets the requirements to be one overall serial World Heritage property, as specified in the Operational Guidelines. The Committee considers that a single serial property would provide a more appropriate means of recognizing the Outstanding Universal Value of the remaining high conservation value forests on Sri Lanka than two separate inscriptions of the nominated property and of Sinharaja;
6. Strongly commends the State Party for the significant management and protection efforts in Peak Wilderness Protected Area, Horton Plains National Park and Knuckles Conservation Forest.

Map 1 and 2: Location of nominated component parts



Map 3: Sketch Map of the Knuckles Conservation Forest and buffer zone

