



भारतीय वन्यजीव संस्थान
Wildlife Institute of India



United Nations
Educational, Scientific and
Cultural Organization



UNESCO Category 2 Centre
World Natural Heritage Management and
Training for Asia and the Pacific Region

Training Program on Monitoring of Outstanding Universal Value of Natural World Heritage Sites: Periyar, Parambikulam and Anaimalai Sub-clusters of Western Ghats



19th to 25th January 2018

Executive Summary

UNESCO Category 2 Centre (C2C) for World Natural Heritage Management and Training for Asia and the Pacific Region has organized a series of training entitled “Training Program on Monitoring of Outstanding Universal Value of Natural World Heritage Site“ from 19th to 25th January (19-20 Jan, Periyar; 22-23 Jan, Parambikulam; 24-25 Jan) 2018 .The purpose of this workshop was to build capacity and sensitize World Heritage Site frontline staff and other stakeholders with the best OUV monitoring techniques. In Periyar Tiger Reserve the workshop was inaugurated by Dr. A.K. Bhardwaj, PCCF, HoF of Kerala and provided valuable inputs in setting up the context of the workshop. The workshop provides valuable information on the Outstanding Universal Value for Natural and World Heritage Sites, Monitoring & Reporting, OUVs and SWOT analysis. The workshops held an interactive discussion with forest frontline staff and other stakeholders on the current status of OUVs of the heritage site and explored monitoring, planning and management strategies. This report contains background information that was presented to participants, summarizes workshop discussions of OUV and SWOT analysis and catalogs potential recommendation options. With the consent of the participant’s it was reported that the very limited loss or alteration of the elements necessary to maintain the OUV has occurred, however, the overall condition is not causing persistent or substantial effects on the elements of OUV in all the three clusters evaluated. The Forest Conservation Act (1980) provides the regulatory framework to protect OUV from infrastructure development, however, to maintain the integrity of the heritage site Eco-sensitive zone already been notified. Measures were taken to strengthen the ecological connectivity measures to ensure consistency and greater functional linkages between component sites in Tiger Conservation Plans. In conclusion, the following recommendation is put forwarded to further augmentation in the capacity building and long-term conservation of world heritage sites-

- Awareness generation on the importance of World Heritage among the forest front-line staff and locals
- Further enhancement of capacity-building and capacity-exchange and continuous dialogue between all stakeholders including local communities.
- Emphasis should be given to manage the pilgrimage centers, more specifically waste management practices
- Emphasis should be given to conduct research on rare species like Nilgiri Martin, Brown Palm Civet and Slender Loris
- Conduct surveys outside PAs to discern the current status of the Nilgiri Tahr population
- To put emphasize on the monitoring and restoration of the threatened flora
- Further augmentation or modification on the policies for livelihood support activities around World Heritage Site
- Required enhanced mitigation measures to minimize forest fire
- Enhancement of frontline personnel, better infrastructure at the and health services for field level staff

1: Workshop Overview

1.1 Background and Objectives

The Western Ghats are among the ecologically richest regions of India, next only to the Himalayan in the diversity of biological species. The climate and rainfall pattern here has led to a variety of unique plant and animal species. There are about 4000 species of flowering plants of which 1500 species are endemic, about 28 genera of mammals, 275 genera of birds and 58 species of reptiles are present in the Western Ghats (IUCN Red Data List). The Western Ghats provide habitat for several orchid species and also house a variety of medicinal plants. The region is also rich in iron, manganese and bauxite ores. The biological diversity of the Western Ghats is not only important in itself or as the resource base of the diverse human communities who live in the region, but also for maintaining the life support system of the peninsular region.

UNESCO World Heritage Site The mountain chain of the Western Ghats represents geomorphic features of immense importance with unique biophysical and ecological processes. Globally it has been recognized as one of the world's eight "hottest hotspots" of biological diversity and is also inscribed as a UNESCO World Natural Heritage site. The UNESCO Criteria ix & x for natural sites are suitably linked to the 39 serial landscapes in the site that collectively form the best representatives of non-equatorial tropical evergreen forests anywhere and are home to at least 325 globally threatened flora, fauna, bird, amphibian, reptile and fish species (Serial nomination of dossier of The Western Ghats of India: In Natural heritage for inscription on the World natural heritage list, Submitted by State Party, India, 2009).

UNESCO Category 2 Centre (C2C) for World Natural Heritage Management and Training for Asia and the Pacific Region has been established at the Wildlife Institute of India, Dehradun, India in 2014 (http://www.wii.gov.in/unesco_category2_centre). The Centre's mission is to strengthen implementation of the World Heritage Convention by building the capacity of professionals and institutions involved with world natural heritage site inscription, protection, conservation and management in Asia and the Pacific region, through training, research, dissemination of information and network building.

In this context, UNESCO Category 2 Centre (C2C) has conducted three training programmes titled '*Monitoring of Outstanding Universal Values of Natural World Heritage Sites*' in **Periyar Tiger Reserve, Parambikulam Tiger Reserve and Anaimalai Tiger Reserve** from 16th to 23rd January 2018.

The overall objective of the training programme is **to build capacity and sensitize World Heritage Site frontline staff and other stakeholders with the best OUV monitoring techniques.**

1.2 Workshop Materials

- **Workshop Agenda:** The workshop agenda is included in Appendix A.
- **Participant List:** A list of all workshop participants is included in Appendix B.
- **Workshop Presentation:** The workshop presentation provided basic information on Introduction to Outstanding Universal Values (OUVs) For Natural World Heritage Sites for Natural World Heritage Sites, OUVs of Serial Sites, World Heritage Outlook: Process & Outcome, Interpretation Programmes/Activities for World Heritage Site, Monitoring & Reporting, OUVs Analysis and SWOT analysis.

2. Details on the OUV analysis- Group exercise

OUV (Outstanding Universal Values) is the fundamental central concept to the credibility of the World Heritage system. The permanent protection of the world's heritage that exemplifies OUV is of the highest importance to the international community. Moreover, OUV is the basis for WH reporting. We break the complex Statement of OUV (SoOUV) into smaller more understandable components. Recognize key examples of values/attributes and the factors affecting those values and tried to prioritize the highest priority threats. In all the three sites where workshops have held the participants were grouped and the worksheet (Appendix C) on the OUV statement was provided to discuss and comment on the current status of specific criterion and the effectiveness of the management and protection strategies.

Criteria ix: “... to be outstanding examples representing significant on-going ecological and biological processes in the evolution and development of terrestrial, fresh water, coastal an marine ecosystems and communities of plants and animals”

2.1 Current status:

Very limited loss or alteration of the elements necessary to maintain the OUV has occurred. However, the overall condition is not causing persistent or substantial effects on the elements of OUV in all the three clusters evaluated. Species new to science have been described from the property in recent years. There is no major geographical, geomorphological or climatic changes occur since the inscription of the property. Moreover, the property is being successfully monitored and managed by the forest department. Recent management strategies such as habitat as well as watershed management practices along with upliftment law & enforcement activities maintain the OUV of these sites.

Criteria x:“... contain the most important and significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science or conservation”

At present the threatened species such as Asian Elephant, Tiger, Gaur, Lion-Tailed Macaque, Nilgiri Langur, Malabar Giant Squirrel, Grizzled Giant Squirrel population within the distribution limit of these three sub-clusters evaluated. With the high degree of consensus, it was found that the OUVs (in terms of population, habitat and protection) are essentially intact, and their overall condition is stable or improving. Available evidence indicates only minor conflicts with elephant in the fringe areas of Periyar. However, Nilgiri Tahr population outside protected

area ranges and associated threats need to be evaluated. On the other hand, species like Nilgiri Martin, Brown Palm Civet, Slender loris, Salim Ali's fruit bat, Cane Turtle and Travancore Tortoise require species specific survey to evaluate the current status.

The threatened habitats such as unique seasonally mass-flowering wildflower meadows, Shola forests and Myristica swamps are well protected and specifically mentioned management strategies has already been adopted in the Tiger Conservation Plan (TCP) of the sites. However, there is hardly any information available on the status of the most of the threatened species of trees found in the heritage site. Additionally, *Coscinium fenestratum* was reported to be under unsustainable collection.

2.2 Integrity

The integrity of the sites well maintained. However, minor loss or alteration of few elements necessary to maintain OUV has occurred due to developmental projects mostly due to the construction of roads. A Tiger Conservation Plan for the adjoining Landscape has been proposed by the Periyar Foundation and prescribes mitigations and management measures.

2.3 Management and Protection

The Forest Conservation Act (1980) provides the regulatory framework to protect OUV from infrastructure development, however, to maintain the integrity of the heritage site Eco-sensitive zone notified. Measures have taken to strengthen the ecological connectivity measures to ensure consistency and greater functional linkages between component sites in TCPs. Invasive species and other habitat management activity are ongoing under different schemes of the forest department. The livelihood concerns of the local communities are regulated by the Forest Rights Acts, 2006 and their participation in governance is ensured as well as functional through Village Eco-development Committees (VECs). Forest department facilitated increased engagement with all stakeholders to build awareness and support, foster participatory governance approaches, and ensure equitable sharing of benefits in association with the foundations (e.g., Periyar Foundation) formed in each of the World Heritage Clusters. Eco-tourism is restricted and regulated in buffer zone; assessing carefully and capacity. However, issues and concerns rose for the pilgrimage tourism on waste management.

3. Details on the SWOT analysis- Group exercise

A Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis is a strategic planning tool to evaluate internal and external influences upon a common vision or specific goal. Therefore, to analyse and understand the Strengths, Weaknesses, Opportunities, and Threats, A survey was carried out during workshops organised in Periyar Tiger Reserve, Paramabikulam Tiger Reserve and Anaimalai Tiger Reserve, Topslip, to identify the strengths, weaknesses, opportunities and threats of the Western Ghats Natural World Heritage Sites.

In each site, all the participants were divided into groups and provided predesigned SWOT analysis worksheet (Appendix D). Participants were asked to fill the information as per their previous experience. All the participants completed a SWOT analysis and identified several key strategic issues regarding world heritage management strategy. All the worksheets were analysed for common response and prepare actions to be prioritised in the strategy for natural world heritage management.

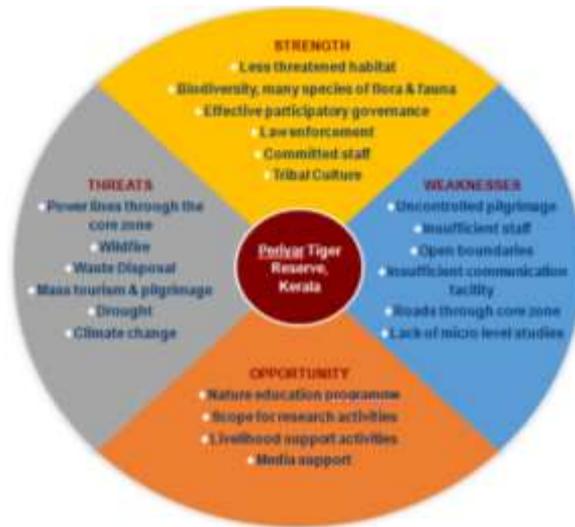


Figure 1. Periyar Tiger Reserve 27 participants were involved in the process representing from Western Ghats Sub clusters: Periyar and Agasthyamalai (19-20 January, 2018)

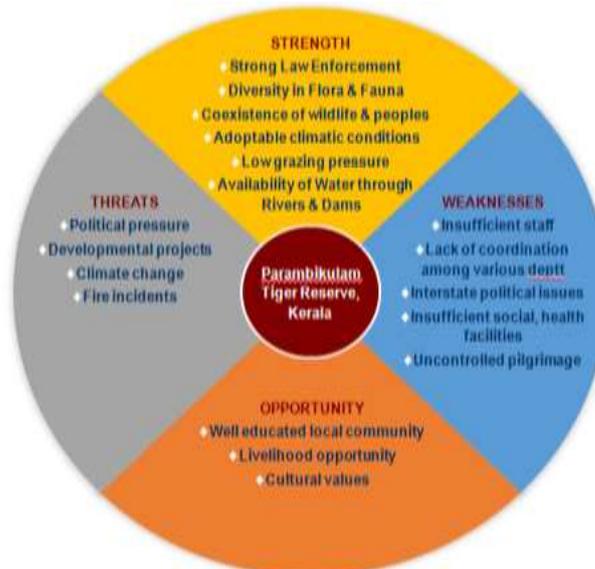


Figure 2. Parambikulam Wildlife Sanctuary 18 participants were involved in the process representing from Western Ghats Sub clusters: Anaimalai and Nilgiri Sub-Cluster. (22-23 January, 2018)



Figure 3. Anaimalai Tiger Reserve, Topslip, 23 participants were involved in the process representing from Western Ghats Sub clusters namely: Anaimalai and Nilgiri Sub-Cluster (24-25 January, 2018).

Recommendations

- Awareness generation on the importance of World Heritage among the forest front-line staff and locals is much needed.
- OUV analysis revealed the gap in information and required research for filling up the same.
- Further enhancement of capacity-building and capacity-exchange and continuous dialogue between all stakeholders including local communities.
- Emphasis should be given to manage the pilgrimage centers, more specifically waste management practices wherever applicable.
- Emphasis should be given to conduct research on rare species like Nilgiri Martin, Brown Palm Civet, Slender Loris etc., as local status is unknown.
- Conduct surveys outside PAs to discern the current status of the Nilgiri Tahr population for each site elements.
- Put emphasize on the monitoring and restoration of the threatened flora which has to be reflected in management plans of PAs and working plans within territorial divisions.
- Further augmentation or modification on the policies for livelihood support activities around World Heritage Sites with convergence of rural development schemes.
- Effective signages depicting the site as part of WHS need to be installed for awareness.
- Scope of inclusion cultural angle to the WHS can be explored with respect to Chinnar area
- Separate legislation/ inclusion of provisions in existing legislations for protection of WHS needs to be made
- Special need based enhancements for tourism management have to be formulated for each site elements.
- More programmes of similar nature is intended for further improvement of knowledge of frontline staffs.

Training Program on Monitoring of Outstanding Universal Value of Natural World Heritage Sites

PROGRAMME

Day 1	
0930 – 1000h	Inaugural & Welcome Address (Guests – TBC)
1000 – 1130h	(I) Introduction to Outstanding Universal Values (OUVs) For Natural World Heritage Sites; (Sh. Vinod Kumar D.K.) : (II) OUVs of Serial Sites
1130-1145 h	Tea Break
1145– 1300 h	World Heritage Outlook: Process & Outcome (Dr. Bhumesh Singh)
1300-1400h	Lunch
1400-1500h	Interpretation Programmes/Activities for World Heritage Site – (Sh. Vinod D.K.)
1530–1730h	Monitoring & Reporting – OUVs Analysis - Group Exercise (Dr. Anukul Nath & C2C Team)
Day 2	
0930 – 1100 h	Presentations of Group Work (By Participants)
1100-1130 h	Tea Break
1130-1230 h	Strengths, Weakness, Opportunity Threats (SWOT) Analysis (Sh. Vinod D.K . & C2C Team)
1230 – 1330h	Action Plan for Monitoring of OUVs (Sh. Vinod Kumar & C2C Team)
1300-1430h	Lunch
1500-1530	Concluding Session

Appendix B
Participant list



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TRAINING PROGRAM ON MONITORING OF OUTSTANDING UNIVERSAL
VALUE OF NATURAL WORLD HERITAGE SITES
PERIYAR NATURAL WORLD HERITAGE SITE, KERALA
19-20 JANUARY, 2018

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TRAINING PROGRAM ON MONITORING OF OUTSTANDING UNIVERSAL
VALUE OF NATURAL WORLD HERITAGE SITES
PARAMBIKULAM WILDLIFE SANCTUARY, KERALA
22-23 JANUARY, 2018

PARTICIPANT LIST

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TRAINING PROGRAM ON MONITORING OF OUTSTANDING UNIVERSAL
VALUE OF NATURAL WORLD HERITAGE SITES
TOPSLIP, TAMILNADU
24-25 JANUARY, 2018

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Appendix C

Western Ghats

Older than the Himalaya mountains, the mountain chain of the Western Ghats represents geomorphic features of immense importance with unique biophysical and ecological processes. The site's high montane forest ecosystems influence the Indian monsoon weather pattern. Moderating the tropical climate of the region, the site presents one of the best examples of the monsoon system on the planet. It also has an exceptionally high level of biological diversity and endemism and is recognized as one of the world's eight 'hottest hotspots' of biological diversity. The forests of the site include some of the best representatives of non-equatorial tropical evergreen forests anywhere and are home to at least 325 globally threatened flora, fauna, bird, amphibian, reptile and fish species.

Outstanding Universal Value

Brief synthesis

The Western Ghats are internationally recognized as a region of immense global importance for the conservation of biological diversity, besides containing areas of high geological, cultural and aesthetic values. A chain of mountains running parallel to India's western coast, approximately 30-50 km inland, the Ghats traverse the States of Kerala, Tamil Nadu, Karnataka, Goa, Maharashtra and Gujarat. These mountains cover an area of around 140,000 km² in a 1,600 km long stretch that is interrupted only by the 30 km Palghat Gap at around 11°N.

Older than the great Himalayan mountain chain, the Western Ghats of India are a geomorphic feature of immense global importance. The Outstanding Universal Value of the Western Ghats is manifested in the region's unique and fascinating influence on large-scale biophysical and ecological processes over the entire Indian peninsula. The mountains of the Western Ghats and their characteristic montane forest ecosystems influence the Indian monsoon weather patterns that mediate the warm tropical climate of the region, presenting one of the best examples of the tropical monsoon system on the planet. The Ghats act as a key barrier, intercepting the rain-laden monsoon winds that sweep in from the south-west during late summer.

A significant characteristic of the Western Ghats is the exceptionally high level of biological diversity and endemism. This mountain chain is recognized as one of the world's eight 'hottest hotspots' of biological diversity, along with Sri Lanka. The forests of the Western Ghats include some of the best representatives of non-equatorial tropical evergreen forests in the world. At least 325 globally threatened (IUCN Red Data List) species occur in the Western Ghats. The globally threatened flora and fauna in the Western Ghats are represented by 229 plant species, 31 mammal species, 15 bird species, 43 amphibian species, 5 reptile species and 1 fish species. Of the total 325 globally threatened species in the Western Ghats, 129 are classified as Vulnerable, 145 as Endangered and 51 as Critically Endangered.

Criterion (ix): The Western Ghats region demonstrates speciation related to the breakup of the ancient landmass of Gondwanaland in the early Jurassic period; secondly to the formation of India into an isolated landmass and the thirdly to the Indian landmass being pushed together with Eurasia. Together with favourable weather patterns and a high gradient being present in the Ghats, high speciation has resulted.

Integrating the management of 39 components across 4 States is a challenge, for which a 3-tier governance mechanism is required that will operate at the Central, State and Site levels to provide effective coordination and oversight to the 39 components. A Western Ghats Natural Heritage Management Committee (WGNHMC) under the auspices of the Ministry of Environment of Forests (MoEF), Government of India to deal with coordination and integration issues is already functional. All 39 components in the 7 sub-clusters are managed under specific management / working plans duly approved by the State/Central governments. The livelihood concerns of the local communities are regulated by the Forest Rights Acts, 2006 and their participation in governance is ensured through Village Ecodevelopment Committees (VECs).

The Western Ghats is an "Evolutionary Ecotone" illustrating "Out of Africa" and "Out of Asia" hypotheses on species dispersal and vicariance.

Criterion (x): The Western Ghats contain exceptional levels of plant and animal diversity and endemism for a continental area. In particular, the level of endemism for some of the 4-5,000 plant species recorded in the Ghats is very high: of the nearly 650 tree species found in the Western Ghats, 352 (54%) are endemic.

Animal diversity is also exceptional, with amphibians (up to 179 species, 65% endemic), reptiles (157 species, 62% endemic), and fishes (219 species, 53% endemic). Invertebrate biodiversity, once better known, is likely also to be very high (with some 80% of tiger beetles endemic).

A number of flagship mammals occur in the property, including parts of the single largest population of globally threatened 'landscape' species such as the Asian Elephant, Gaur and Tiger. Endangered species such as the lion-tailed Macaque, Nilgiri Tahr and Nilgiri Langur are unique to the area.

The property is also key to the conservation of a number of threatened habitats, such as unique seasonally mass-flowering wildflower meadows, Shola forests and Myristica swamps.

Integrity

The property is made up of 39 component parts grouped into 7 sub-clusters. The serial approach is justified in principle from a biodiversity perspective because all 39 components belong to the same biogeographic province, and remain as isolated remnants of previous contiguous forest.

The justification for developing a serial approach rather than just identifying one large protected area to represent the biodiversity of the Western Ghats is due to the high degree of endemism, meaning that species composition from the very north of the mountains to 1,600km south varies greatly, and no one site could tell the story of the richness of these mountains. The formulation of this complex serial nomination has evolved through a consultative process drawing on scientific analysis from various sources. The 39 component parts grouped into 7 sub-clusters together reflect the Outstanding Universal Value of the property and capture the range of biological diversity and species endemism in this vast landscape.

Protection and management requirements

The 39 component parts of this serial property fall under a number of protection regimes, ranging from Tiger Reserves, National Parks, Wildlife Sanctuaries, and Reserved Forests.

All components are owned by the State and are subject to stringent protection under laws including the Wildlife (Protection) Act of 1972, the Indian Forest Act of 1927, and the Forest Conservation Act (1980). Through these laws the components are under the control of the Forestry Department and the Chief Wildlife Warden, providing legal protection. 40% of the property lies outside of the formal protected area system, mostly in Reserved Forests, which are legally protected and effectively managed. The Forest Conservation Act (1980) provides the regulatory framework to protect them from infrastructure development.

Assessment grade				Area		
Very good condition	Good condition	Poor condition	Very poor condition	Tubbutaha Reefs Natural Park		
						
All elements necessary to maintain the OUV are essentially intact, and their overall condition is stable or improving. Available evidence indicates only minor, if any, disturbance to this element of OUV	Some loss or alteration of the elements necessary to maintain the OUV has occurred, but their overall condition is not causing persistent or substantial effects on this element of OUV	Loss or alteration of many elements necessary to maintain OUV has occurred, which is leading to a significant reduction in this element of the OUV	Loss or alteration most elements necessary to maintain the OUV has occurred and has caused a major loss of the OUV	Trend since 1993	Confidence	
				↑ Improving	Grad	Trend
				↓ Deteriorating	1	1
				↔ Stable	½	½
				↕ No clear trend	0	0
					Adequate high-quality evidence and high level of consensus	
					Limited evidence or limited consensus	
					Very limited evidence, assessment based on anecdotal information	

In applying this subjective assessment approach, the following principles should be considered:

- The wording of the grading statements is based on a grading system used by IUCN to assess natural WH sites.
- OUV should be considered as being distributed throughout the whole of the WH property, rather than being found at discrete locations unevenly distributed throughout the property.
- To provide the most effective assessment of the elements of the SoOUV, the grade reflects a grade for the entire element (this is easier to assess for some elements than others). Each assessment is therefore a 'grade of best fit' for that element across the whole property and all matters relating to the element.
- To be deemed to be of OUV, *"a property must also meet the conditions of integrity ... and must have an adequate protection and management system ..."* (s. 78 of the Guidelines). Consequently this assessment considers the four criteria and integrity.

What is now required for the worksheets on the following five pages?

1. Firstly, noting the excerpt from the Statement of OUV, write a 1-2 sentences in the second column about the current condition of that SoOUV excerpt.
2. Assess the grade against the four colour-coded grading statements and chose the grade of best-fit today based on the best available evidence (*not just what you think or want*) ie. Is the current grade Good, or Poor... or what? If helpful, copy and paste the relevant column colour into the relevant 'cell' to indicate the grade.
3. Insert a trend arrow into the same 'cell' as the coloured grading statement; the trend arrow should indicate the trend today compared to the benchmark of the date of inscription (ie 1993). If helpful, copy and paste the arrows from the example below.
4. (*Not essential but useful*) Indicate your confidence in both the grade and trend arrow by inserting either 0, ½ or 1

Worksheet for Western Ghats

Synthesis:(as this wording is not covered elsewhere by wording in any of the criteria below)

Excerpt from Statement of OUV	Comments on <u>current</u> condition c.f. SoOUV excerpt	Very good	Good	Poor	Very poor	Confidence	
						Condition	Trend
<i>The Western Ghats are internationally recognized as a region of immense global importance for the conservation of biological diversity, besides containing areas of high geological, cultural and aesthetic values.</i>							
<i>The Outstanding Universal Value of the Western Ghats is manifested in the region's unique and fascinating influence on large-scale biophysical and ecological processes over the entire Indian peninsula.</i>							
<i>A significant characteristic of the Western Ghats is the exceptionally high level of biological diversity and endemism. This mountain chain is recognized as one of the world's eight 'hottest hotspots' of biological diversity.</i>							

Criteria IX: "to be outstanding examples representing significant on-going ecological and biological processes in the evolution and development of terrestrial, fresh water, coastal and marine ecosystems and communities of plants and animals"

Excerpt from Statement of OUV	Comments on <u>current</u> condition c.f. SoOUV excerpt	Very good	Good	Poor	Very poor	Confidence	
						Condition	Trend
<i>Together with favourable weather patterns and a high gradient being present in the Ghats, high speciation has resulted</i>							
<i>home to 805 vascular plant species, 192 species of lichen, 12 species of liverworts and 25 species of mosses</i>							

Criterion x:"... contain the most important and significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science or conservation"

Excerpt from Statement of OUV	Comments on <u>current</u> condition c.f. SoOUV excerpt	Very good	Good	Poor	Very poor	Confidence	
						Condition	Trend
<i>Animal diversity is also exceptional, with amphibians (up to 179 species, 65% endemic), reptiles (157 species, 62% endemic), and fishes (219 species, 53% endemic).</i>							
<i>A number of flagship mammals occur in the property, including parts of the single largest population of globally threatened 'landscape' species such as the ---</i>							
<i>Asian Elephant</i>							
<i>Gaur</i>							
<i>Tiger</i>							
<i>Lion-tailed Macaque</i>							
<i>Nilgiri Langur</i>							
<i>Nilgiri Tahr</i>							
<i>Grizzled giant squirrel</i>							
<i>Malabar Giant squirrel</i>							
<i>Nilgiri Martin</i>							
<i>Brown Palm Civet</i>							
<i>Slender Loris</i>							
<i>Salim Ali's Fruit Bat</i>							

Excerpt from Statement of OUV	Comments on <u>current</u>	Very	Good	Poo	Very	Confidence
<i>Malbar Pied Hornbill</i>						
<i>Black and Orange Flycatcher</i>						
<i>King Cobra</i>						
Cane turtle <i>Vijayachelys silvatica</i>						
Travancore tortoise (<i>Indotestudo travancorica</i>)						
The property is also key to the conservation of a number of threatened habitats, such as unique seasonally mass-flowering wildflower meadows, Shola forests and Myristica swamps.						
seasonally mass-flowering wildflower mea						
Shola forests						
Myristica swamps						
650 tree species found in the Western Ghats, 352 (54%) are endemic.						
<i>Actinodaphne lanata</i> (Shola forest between 1,500 and 1,800 m; Endemic to the Nilgiri Hills, where there is only one recorded population)						
<i>Buchanania barberi</i> (Known only from the type locality at Nadari, Travancore District)						
<i>Melicope indica</i> (Restricted to a single locality in the Nilgiris)						
<i>Eugenia discifera</i> (Known from two locations, Chimunji and the Sethur Hills. Asian <i>Eugenia</i> are now contained within <i>Syzygium</i> ; Native to Kerala & Tamil Nadu; The species occurs very sparsely in evergreen forest between 1,300 and 1,400 m.)						
<i>Euonymus serratifolius</i> (A small understory tree, recorded only three times: once from an imprecisely recorded site in the Agastyamalai Hills and elsewhere from isolated localities in the Wyanad area.)						
<i>Humboldtia unijuga</i> (Travancore range. Since the type specimen was collected in the last century, a second record of the species has been made in an area close by; native to Kerala & Tamil Nadu)						
<i>Humboldtia bourdillonii</i> (Collections of the species were made from Peermade and Courtallum at the southern end of the Western Ghats)						
<i>Cosciniium fenestratum</i> Mara Manjal						
<i>Diospyros sulcata</i>						
<i>Tripogon ananthaswamianus</i>						

INTEGRITY - as 'a measure of the wholeness and intactness of the natural and/or cultural heritage and its attributes'.

Examining the conditions of integrity requires assessing the extent to which the property:

- a) includes all elements necessary to express its OUV;
- b) is of adequate size to ensure the complete representation of the features and processes which convey the property's significance;
- c) suffers from adverse effects of development such as hydroelectric project, Road and railway construction etc.

Excerpt from Statement of OUV	Comments on <u>current</u> condition c.f. SoOUV excerpt	Very good	Good	Poor	Very poor	Confidence	
						Condition	Trend
<i>The property is made up of 39 component parts grouped into 7 sub-clusters. The serial approach is justified in principle from a biodiversity perspective because all 39 components belong to the same biogeographic province, and remain as isolated remnants of previous contiguous forest.</i>							
<i>7 sub-clusters together reflect the Outstanding Universal Value of the property and capture the range of biological diversity and species endemism in this vast landscape.</i>							

Management and protection requirements

Excerpt from Statement of OUV	Comments on <u>current</u> condition c.f. SoOUV excerpt	Very good	Good	Poor	Very poor	Confidence	
						Condition	Trend
<i>Components are under the control of the Forestry Department and the Chief Wildlife Warden, providing legal protection</i>							
<i>40% of the property lies outside of the formal protected area system, mostly in Reserved Forests, which are legally protected and effectively managed.</i>							
<i>The Forest Conservation Act (1980) provides the regulatory framework to protect them from infrastructure development.</i>							
<i>The livelihood concerns of the local communities are regulated by the Forest Rights Acts, 2006 and their participation in governance is ensured through Village Ecodevelopment Committees (VECs).</i>							

Other management requests following recent WHC Decisions	Comments on <u>current</u> condition against WHC request	Very good	Good	Poor	Very poor	Confidence	
						Condition	Trend
<i>Take measures to reduce the impact of existing and planned infrastructure as well as disturbed areas on the values of the property</i>							
<i>Review and strengthen buffer zones or other measures to provide increased protection or buffering for the values within the nominated property</i>							
<i>Strengthen the ecological connectivity measures to ensure consistency and greater functional linkages between component sites</i>							
<i>Facilitate increased engagement with all stakeholders to build awareness and support, foster participatory governance approaches, and ensure equitable sharing of benefits</i>							

Other significant values of national, regional or local significance??

Significant values of national, regional or local significance	Comments on <u>current</u> condition c.f. value at time of park declaration	Very good	Good	Poor	Very poor	Confidence	
						Condition	Trend
<i>Indigenous/Traditional values?</i>							
<i>Local community values?</i>							
<i>Sites of local significance?</i>							

Appendix D

SWOT Analysis Worksheet

Strengths	Weaknesses
Opportunities	Threats



Workshop activities on Training on Monitoring Outstanding Universal Value of Natural World Heritage Sites on 19th -25th January, 2018.