Book of Abstract

I. SESSION DESCRIPTION

ID: S8a

Title of session:

Natural Heritage and Protected Area Conservation: Ecosystem Services in Planning and Management

Hosts:

	Title	Name	Organisation	E-mail
Host:	Ms.	Malvika Onial	UNESCO Category 2 Centre for World Natural Heritage Management and Training for Asia and the Pacific Region, Wildlife Institute of India, Dehradun	malvika@wii.gov.in
Co-host:	Mr.	Niraj Kakati	UNESCO Category 2 Centre for World Natural Heritage Management and Training for Asia and the Pacific Region, Wildlife Institute of India, Dehradun	nirajkakati@wii.gov.in

Abstract:

The UNESCO World Heritage Convention emphasises that the cultural and natural heritage of the world is among the priceless and irreplaceable assets, not only of each nation, but of humanity as a whole. Parts of that heritage, because of their exceptional qualities, can be considered to be of 'Outstanding Universal Value' (OUV). OUV means cultural and/or natural significance which is so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity. As such, the permanent protection of this heritage is of the highest importance to the international community as a whole. At present, 1073 properties are inscribed on the World Heritage List,

comprising of 832 cultural, 206 natural and 35 mixed World Heritage Sites.

Natural and Mixed World Heritage Sites are primarily protected areas which have high ecological, geological and aesthetic values. These sites contain a range of ecosystem services which provide diverse benefits at different scales – local, regional, national and global. The variety of benefits purported to be provided by such World Heritage Sites include regulatory services such as climate regulation, water flow, flood prevention, soil retention, nutrient regulation, pollination and biological control; provisioning services in the form of natural resources such as food, water, raw materials, genetic resources and medicinal resources; cultural services such as aesthetic values, spiritual values, science and education, recreation and tourism. However, the ecosystem functions and services of these sites have not been fully appreciated. Moreover, multiple challenges to the integrity of the ecosystems have likely impacted the delivery of the services and benefits.

The proposed session aims to comprehend the diversity of ecosystem services and the benefits that World Heritage sites can deliver to the larger community. It seeks to increase awareness and recognise the drivers of change of the multiple services and benefits that ecosystems provide. It also intends to deliberate on the prospects of effective management systems in the sites for sustainable functioning of their ecosystem services. The session plans to target a wide range of audience and practitioners, including World Heritage Site managers, academic community, civil society and decision makers. The session outcomes are expected to inform management planning and decisions which result in strategies to conserve healthy, functioning ecosystems within World Heritage Sites that support the delivery of multiple benefits to the society at large.

Goals and objectives of the session:

- To learn more about the range of ecosystem services and benefits provided by natural World Heritage Sites and protected areas particularly in Asia.
- To identify the threats and opportunities of ecosystem services in the World heritage Sites.
- To examine the role of different governance models that can help strengthen management of the sites to enhance ecosystem services delivery and benefits.

Planned output / Deliverables:

- Enhanced awareness about ecosystem services and their benefits provided by natural World Heritage Sites.
- Recommended mechanisms for integrating ecosystem services in sustainable management of World Heritage Sites.
- Technical report and journal article on the session theme.

Related to ESP Working Group/Natioanl Network:

SWG 8 – ES in Conservation

II. SESSION PROGRAM

Date of session: Wednesday, 10 October 2018

Time of session: 14:00 – 16:00

Time	First name	Surname	Organization	Title of presentation
14:00-14:15	Malvika	Onial	UNESCO C2C at WILDLIFE INSTITUTE OF INDIA	Introduction
14:15-14:30	Sonali	Ghosh	UNESCO C2C at WILDLIFE INSTITUTE OF INDIA	Integrating Cultural Ecosystem Services into Natural Heritage Site Management- Opportunities and Challenges
14:30-14:45	Kamal	Thapa	Ministry of Forest and Environment, Adaptation for Smallholders in Hilly Areas (ASHA) Project	Management Effectiveness Assessment of Jagadishpur Reservoir Ramsar Site, Nepal
14:45-15:00	Elham	Sumarga	School of Life Sciences and Technology, Institut Teknologi Bandung, Indonesia	Spatial modelling of anthropogenic disturbances inside protected area: an approach for buffer zone design
15:00-15:15	Preeti	Sharma	UNESCO C2C at WILDLIFE INSTITUTE OF INDIA	Can Non-charismatic species be used for monitoring Ecosystem Services? A case study from Sahyadri sub-cluster, Western Ghats World Heritage Site
15:15-15:30	Malvika	Onial	UNESCO C2C at WILDLIFE INSTITUTE OF INDIA	World Natural Heritage: Sustaining ecosystem goods and services

Time	First name	Surname	Organization	Title of presentation
15:30-15:45	Dhruv	Verma	UNESCO C2C at WILDLIFE INSTITUTE OF INDIA	Landscape Governance Approach and UNESCO World Heritage to address multi-functionality and diversity of Kailash Sacred Landscape
15:45-16:00			Discussion & Conclusion	

III. ABSTRACTS

Abstracts are clustered based on the last name of the authors. First authors are presenting authors unless indicated otherwise.

1. Type of submission: Abstract

S. Sectoral Working Group sessions: S8a - Natural Heritage and Protected Area Conservation: Ecosystem Services in Planning and Management

Integrating Cultural Ecosystem Services into Natural Heritage Site Management- Opportunities and Challenges

First authors(s): Ben Clement, Sonali Ghosh

Other author(s): Surabhi Walavalkar, Vinod B.Mathur

Affiliation: UNESCO C2C at WILDLIFE INSTITUTE OF INDIA Forest Department, Govt of Mahrashtra, UNESCO Category 2 Centre on World Natural heritage Site Management and Training in the Asia Pacific Region, Wildlife Institute of India, India

Contact: ghoshsonaliwii@gmail.com

The World Heritage Convention is a unique environmental instrument that encapsulates ten cultural and natural criteria for inscribing the Outstanding Universal Value (OUV) of a physical monument or site for the present and future generations. Such is the relevance of this unique convention that it encourages and blends the use of cultural aspects (including intangible benefits such as spiritual beliefs and aesthetic beauty) into the management of Natural heritage sites (largely managed as Protected Areas for preservation of wild species of flora and fauna). In this case study, we present the acknowledgement of cultural services in Sahyadri Sub-Cluster (Western Ghats) that has helped in gaining larger public support and therefore better management of such a site. We argue that the 'sense of pride' as a recognised cultural ecosystem service can be measurable and hence effectively be monitored for achieving long term goals of Protected Area management.

Keywords: Cultural Ecosystem Services, Sense of Pride, UNESCO Natural World Heritage, Operational Guidelines, Protected Areas

2. Type of submission: Abstract

S. Sectoral Working Group sessions: S8a - Natural Heritage and Protected Area Conservation: Ecosystem Services in Planning and Management

Spatial modelling of anthropogenic disturbances inside protected area: an approach for buffer zone design

First authors(s): Elham Sumarga,

Other author(s): Ichsan Suwandhi, Adenna Nurrachman, Dwi Susilowardani, Hairatunnisa, Ashma Sadida

Affiliation: School of Life Sciences and Technology, Institut Teknologi Bandung, Indonesia School of Life Sciences and Technology, Institut Teknologi Bandung, Indonesia, , Indonesia

Contact: elham@sith.itb.ac.id

The harmony between ecosystems and people, particularly those who live around and inside protected area, is a key factor for the success of ecosystem protection, which subsequently ensures the maintainance of ecosystem capacity in providing different types of services. Unfortunately, human activities are still commonly linked to different types of disturbance inside protected areas. This study aims to model spatial distribution of some anthropogenic disturbances inside a protected area as the basis for designing buffer zone, with a case study in Mount Masigit Kareumbi, Indonesia. Three kind of disturbances, which can be directly and indirectly related to human intervention, are modeled, i.e. fires, encroachment for agricultural purposes, and potential conflict between human and wild animal. This study uses different methods for spatial modelling, including Maximum Entrophy (MaxEnt), logistic regression and multi-criteria analysis. MaxEnt is applied for fire modelling, while logistic regression is applied for encroachment modelling. The potential conflict between human and wild animals is approached by a combined method: multi-criteria analysis for modelling human activities inside protected area and MaxEnt for modelling habitat suitability of wild animals. Four wild animals are selected: Sus scrofa, Macaca fascicularis, Trachypithecus auratus, and Nisaetus bartelsi. This study presents how some hotspots of anthropogenic disturbances can be identified, and further uses the information for determining the priority for selecting areas for buffer zone development. This study also demonstrates how ecosystem services optimization inside buffer zone can be formulated based on the combined information on the spatial distribution of anthropogenic disturbances.

Keywords: conservation area, ecosystem protection; forest fires, forest encroachment, human-wildlife conflict

3. Type of submission: Abstract

S. Sectoral Working Group sessions: S8a - Natural Heritage and Protected Area Conservation: Ecosystem Services in Planning and Management

Management Effectiveness Assessment of Jagadishpur Reservoir Ramsar Site, Nepal

First authors(s): Kamal Thapa,
Affiliation: Ministry of Forest and Environment, Adaptation for Smallholders in Hilly Areas (ASHA) Project Adaptation for Smallholders in Hilly Areas (ASHA) Project, , Nepal
Contact: thekamal@gmail.com

Nepal's protected area network of national parks, wildlife reserve, hunting reserve, conservation area and buffer zone covers 23.39% of country's total area. However, Ramsar Site is not legally considered as protected area (unless it is situated within the legally established protected area) thus threatening its existence. 4 Ramsar sites lies out of the protected area systems among ten in total. Jagadishpur reservoir Ramsar site, designated in 2003, is only the Ramsar site in Nepal which is human made reservoir and purposely built for irrigation purpose.

Management effectiveness assessment was carried out in Jagadishpur Reservoir Ramsar Site using Ramsar Site Management Effectiveness Tracking Tool (R-METT) methodology. Assessment was carried out in the workshop setting and facilitated by the author in 2015. Participants belonged to the key stakeholders group of the Ramsar site.

High threats to the site were identified as spread of invasive species, isolation from natural habitats and siltation/sedimentation. Livestock grazing, illegal hunting and poaching of aquatic life and birds, vandalism, water management issue (use for irrigation), loss of species, drought conditions are observed to be of medium threats. Although the district forest office sometimes makes random visit/patrol to the site, there is no dedicated team/department to look after. Irrigation office's priority comes only to enhance the irrigation system of the reservoir. Management effectiveness score of 32.43 percent (36

score out of 111 possible score) was achieved for the site. Eight indicators scored 0, fifteen indicator scored 1 and six indicator scored 2 for the assessment questions. The highest score was in Process element (15 score) and the lowest was that of Context (legal background of the site) which resembles score of (0) zero.

It is recommended that the site has to be legally recognized and adequate financial resources have to be allocated for the sustainable management.

Keywords: CEPA, Jagadishpur Ramsar Site, Management Effectiveness, Nepal, Threat

4. Type of submission: Abstract

S. Sectoral Working Group sessions: S8a - Natural Heritage and Protected Area Conservation: Ecosystem Services in Planning and Management

Can Non-charismatic species be used for monitoring Ecosystem Services? A case study from Sahyadri sub-cluster, Western Ghats World Heritage Site

First authors(s): Preeti Sharma
Other author(s): Abhijit Das, Sonali Ghosh, V. Clement Ben, Vinod B.Mathur
Affiliation: Wildlife Institute of India, Chandrabani, Dehradun
Contact: preeti19292@gmail.com

Nepal's protected area network of national parks, wildlife reserve, hunting reserve, conservation area and buffer zone covers 23.39% of country's total area. However, Ramsar Site is not legally considered as protected area (unless it is situated within the legally established protected area) thus threatening its existence. 4 Ramsar sites lies out of the protected area systems among ten in total. Jagadishpur reservoir Ramsar site, designated in 2003, is only the Ramsar site in Nepal which is human made reservoir and purposely built for irrigation purpose.

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High threats to the site were identified as spread of invasive species, isolation from natural habitats and siltation/sedimentation. Livestock grazing, illegal hunting and poaching of aquatic life and birds, vandalism, water management issue (use for irrigation), loss of species, drought conditions are observed to be of medium threats. Although the district forest office sometimes makes random visit/patrol to the site, there is no dedicated team/department to look after. Irrigation office's priority comes only to enhance the irrigation system of the reservoir. Management effectiveness score of 32.43 percent (36 score out of 111 possible score) was achieved for the site. Eight indicators scored 0, fifteen indicator scored 1 and six indicator scored 2 for the assessment questions. The highest score was in Process element (15 score) and the lowest was that of Context (legal background of the site) which resembles score of (0) zero.

It is recommended that the site has to be legally recognized and adequate financial resources have to be allocated for the sustainable management. The World Heritage Convention is a unique environmental instrument that encapsulates ten cultural and natural criteria for inscribing the Outstanding Universal Value (OUV) of a physical monument or site for the present and future generations. The Operational guidelines prescribe the regular monitoring of the OUV under the management protocol of the site. We cite the case of Western Ghats (Sahyadri sub-cluster) where the OUV relates to the presence of non-charismatic endemic species. We have assessed the distribution of these species for further integration in to the ecosystem services assessment framework for Protected Areas including Natural World Heritage Sites. The study demonstrates that monitoring certain taxa such as endemic species is very useful for linking ES to conservation.

Keywords: CEPA, Jagadishpur Ramsar Site, Management Effectiveness, Nepal, Threat Provisioning Ecosystem Services, UNESCO Natural World Heritage, Operational Guidelines, Protected Areas