

ASIA / PACIFIC

KHANGCHENDZONGA NATIONAL PARK

INDIA



Sacred site in the Khangchendzonga National Park - © IUCN Tilman Jaeger

WORLD HERITAGE NOMINATION – IUCN TECHNICAL EVALUATION

KHANGCHENDZONGA NATIONAL PARK (INDIA) – ID 1513

IUCN RECOMMENDATION TO WORLD HERITAGE COMMITTEE: To inscribe the property under natural criteria.

Key paragraphs of Operational Guidelines:

Paragraph 77: Nominated property meets World Heritage criteria.

Paragraph 78: Nominated property meets integrity and protection and management requirements.

1. DOCUMENTATION

a) Date nomination received by IUCN: 16 March 2015

b) Additional information officially requested from and provided by the State Party: Khangchendzonga National Park is nominated as a mixed site. ICOMOS wrote to the State Party in September, 2015 requesting supplementary information on a range of issues related to the evaluation of cultural values. A joint IUCN / ICOMOS progress report was then sent on 17 December 2015 following the respective ICOMOS and IUCN Panel meetings. Requests were made of the State Party to update the biodiversity inventory for species within the property; consider changes to the configuration of the buffer zone; advise on strategies to engage local communities; clarify how the management of cultural and natural values will be better integrated; elaborate on how traditional management systems will be incorporated; and finally advise on the objectives and protective measures proposed to safeguard the property's spiritual values. The information in response was received from the State Party on 30 January 2016.

c) Additional literature consulted: Various sources including: Arrawaita, M.L. and Tambe, S. 2011. *Biodiversity of Sikkim Exploring and Conserving a Global Hotspot*. Department of Information and Public Relations Government of Sikkim, Gangtok. Chettri, N., Shakya, B. and Sharma, E. 2008. *Biodiversity Conservation in the Kangchenjunga Landscape*. Bernbaum E (1998) *Sacred Mountains of the World*. The Mountain Institute. Introduction from the Mountain Forum Online Library. Bhardway AK, Srivastav A, Sathyakumar S, Ansari NA, Mathur VN (2015) *Management Effectiveness Evaluation (MEE) of Khangchendzonga National Park, Sikkim*. Process and Outcomes. Department of Forests, Environment and Wildlife Management, Government of Sikkim and Wildlife Institute of India, Dehradun, Uttarakhand. Chhettri SK, Singh KK, Krishna AP (2013) *Resource Use Impacts within the Forest Land Cover of Khangchendzonga Biosphere Reserve, Sikkim Himalaya along Different Disturbance Levels and Altitudinal Zones*. Applied Ecology And Environmental Research 11(2): 273-291. Chettri N, Shakya B, Sharma E (2008) *Biodiversity Conservation in the Kangchenjunga Landscape*. International Centre for Integrated Mountain Development ICIMOD. Kathmandu, Nepal. Kandel P, Chettri N (n.d.)

Kangchenjunga Transboundary Conservation and Development Initiative in the Hindu Kush Himalayas. Prepared for TBPA. Krishna AP, Chhetri S, Singh KK (2002) *Human Dimensions of Conservation in the Khangchendzonga Biosphere Reserve: The Need for Conflict Prevention*. Mountain Research and Development 22(4):328-331. Lachungpa U (2009) *Indigenous Lifestyles and Biodiversity Conservation Issues in North Sikkim*. Indian Journal of Traditional Knowledge 8(1): 51-55. Oli KP, Chaudhary S, Sharma UR (2013) *Are Governance and Management Effective within Protected Areas of the Kangchenjunga Landscape (Bhutan, India And Nepal)?* PARKS 19(1): 25-36. Sathyakumar S, Bashir T, Bhattacharya T, Poudyal K (2011b) *Mammals of the Khangchendzonga Biosphere Reserve, Sikkim, India*. Wildlife Institute of India. Sathyakumar S, Bashir T, Bhattacharya T, Poudyal K (2011) *Mammals of the Khangchendzonga Biosphere Reserve, Sikkim, India*. 327-350 In: Arrawaita ML, Tambe S (eds) (2011) *Biodiversity of Sikkim – Exploring and Conserving a Global Hotspot*. Information and Public Relations Department. (<http://sikkimforest.gov.in/Biodiversity-of-Sikkim.htm>). Tambe S, Rawat GS (2010) *The Alpine Vegetation of the Khangchendzonga Landscape, Sikkim Himalaya*. Mountain Research and Development, 30(3): 266-274. WWF (2015) *Hidden Himalayas: Asia's Wonderland New Species discoveries in the Eastern Himalayas, Volume II, 2009-2014*. www.worldwildlife.org/publications/hidden-himalayas-asia-s-wonderland Chettri, S. K. Singh, K. K. and Krishna, A. P. 2006. *Anthropogenic pressures on the natural resources in fringe areas of the Khangchendzonga Biosphere Reserve*. International Journal of Ecology and Environmental Sciences. 32 (3): 229-240. Rai, S.C. and Sundriyal, R. C. 1997. *Tourism and biodiversity conservation: The Sikkim Himalaya*. Ambio Vol.26(4): 235-242.

d) Consultations: 10 desk reviews received. The mission also met with a wide range of representatives from national, state, district and village level government, site management staff, NGOs and communities including representatives of the indigenous Dokpa people. The mission consulted with the national level Ministry of Culture, Ministry of Human Resource Development (Education) and the Ministry of Environment, Forests and Climate Change. In addition meetings were held with officials from the Indian Forest Service; Khangchendzonga National Park management staff; Director and staff of the Wildlife Institute of India; Sikkim Department of

Ecclesiastical Affairs; Namgyal Institute of Tibetology; local representatives of Eco-Development Committees, a Women's Association and volunteer rangers. In addition, regional WCPA members, the TILCEPA Specialist Group on Sacred Sites, International Centre for Integrated Mountain Development (ICIMOD) and its supporting GIZ programme were consulted prior to and after the mission.

e) Field Visit: Tilman Jaeger (IUCN) and Kai Weise (ICOMOS), 28 September - 09 October, 2015

f) Date of IUCN approval of this report: April 2016

2. SUMMARY OF NATURAL VALUES

Khangchendzonga National Park (KNP) has been nominated as a mixed site under cultural criterion (iii) and natural criteria (vii) and (x). The focus of IUCN's evaluation is on KNP's natural values whilst ICOMOS will evaluate the cultural aspects of the nominated property.

KNP is situated in the Himalayan range in northern India and includes the world's third highest peak, Mt. Khangchendzonga. KNP has an extremely impressive altitudinal range: a vertical sweep of 7,366 meters (m) across an elevational range of 1,220m to 8,586m above sea level (asl) within a relatively small area. The Himalayas are narrowest here resulting in extremely steep terrain which magnifies the distinction between the various eco-zones which characterise the nominated area. As a consequence, KNP contains a remarkable range of eastern Himalaya landscapes and wildlife from sub-tropical to alpine to Trans-Himalayan (Cold Desert) within a small geographical area.

The area nominated for inscription coincides with the boundaries of KNP and totals 178,400 hectare (ha). Established in 2000, the nationally designated Khangchendzonga Biosphere Reserve (KBR) includes the KNP as its core zone with buffer and transition zones following the usual configuration for biosphere reserves. The nominated area is also part of the much larger transnational Kangchenjunga Landscape defined by ICIMOD and spanning areas within Nepal, India and Bhutan. The State Party in supplementary information has confirmed a change in the composition of the World Heritage buffer zone primarily to include a part of the KBR transition zone that contains a cluster of 10 important cultural attributes in the south of the property. The World Heritage buffer zone is made up of parts of the KBR buffer and transition zones and covers a total area of 114,712 ha.

KNP is located within three of the four administrative districts of Sikkim and covers approximately 25% of the entire State. The former kingdom of Sikkim formally became an Indian state only in 1975 and is today the second smallest of all Indian states. KNP was declared in 1977 and its area more than doubled in 1997 to protect an area of spectacular peaks, glaciers and rugged alpine terrain in the Indian part of the Eastern Himalayas. The 1997 extension

broadened the range of ecosystems covered and increased the impressive altitudinal gradient.

KNP shares approximately 45 kms of international border with Nepal to the west where it is contiguous with the Kanchenjunga Conservation Area (KCA). KCA comprises some 200,000 ha of comparable ecosystems along the same vertical gradient, including the shared peak of the Khangchendzonga / Kanchenjunga Massif itself (Kanchenjunga being the Nepali spelling). KNP shares a shorter border with China's Autonomous Region of Tibet.

India's highest peak, Khangchendzonga, at 8,586m asl, literally stands out even within a mountain protected area boasting 20 peaks above 6,000m. The visually prominent Khangchendzonga Massif is actually comprised of five major peaks, which culturally stand for the five treasures salt, gold, turquoise, arms and (combined) medicine and seeds. The massif, literally named the "Abode of the Gods", has exceptional symbolical, cultural, religious and spiritual significance for many ethnic peoples and religious beliefs across and beyond the Himalayas.

Numerous lakes and glaciers, including the 26 km long Zemu Glacier, dot the barren high altitudes. The glaciers feed important rivers, creeks and wetlands within the seven major watersheds of KNP. While most of KNP is located within the Greater Himalayas, the nominated area transitions into the distinct cold deserts of the Trans-Himalaya towards the north. Towards the east and south, the mountain landscape abruptly descends in the form of large and exceptionally steep valleys. Along the altitudinal gradient, a pronounced zonation is visible within the vegetation. Peri-glacial and sub-nival vegetation can reach up to 5,500m, replaced by various types of alpine meadows below. The treeline can climb well above 4,000m in the extensive Rhododendron scrubs (krummholz). Depending on slope and the exposure levels, closed conifer forests extend up to around 4,000m. Further down, the forests transition into mixed temperate and eventually deciduous temperate forest. In the lowest elevations of KNP, there are small pockets of lush sub-tropical broadleaf forest, representative of Sikkim's much larger sub-tropical forests, some of which are located in the proposed buffer zone.

The nomination dossier incorrectly notes that KNP is located within Indo-Burma biodiversity hotspot when it is actually coincident with the Himalaya biodiversity hotspot to the northwest of the former. The park boasts an unusually diverse flora and fauna with many rare and endangered species, some of them endemic. The different altitudinal zones provide habitat for markedly distinct faunal and floral assemblages. Supplementary information has confirmed that overall, some 1,580 species of vascular plants have been confirmed in the larger KBR including 106 pteridophytes, 11 gymnosperms and 1,463 species of angiosperms. KNP also exhibits unusually high lichen diversity with some 114 species confirmed. Eleven broad vegetation types have been identified, each confined to specific elevational ranges and topographic niches and each

with corresponding faunal assemblages. 22 plant species are IUCN Red Listed, 19 of which are threatened (CR, EN or VU). 28 plants are reported as endemic although the nomination does not make clear if all are found within KNP.

The nomination originally reported some 447 vertebrate animal species within the nominated area including 124 species of mammals, 300 bird, 10 reptile, 5 amphibian and 8 fish species. IUCN sought verification on these numbers which appeared to be inaccurate and supplementary information has revised the numbers for some taxa. Revised species lists were provided for birds and mammals. The numbers of bird species for example have been revised from 300 to 213 species of birds and from 124 to 45 for mammal species. Based on this a revised total of 281 vertebrates can be concluded as occurring within the nominated area. However, it is clear that data is patchy and more inventory work is required to confirm the species numbers within the nominated area as opposed to the larger KBR. However, recent camera-trapping confirms that the mammal species encompass numerous rare and endangered species and probably the full array of naturally occurring predators. Asiatic Black Bear (VU) and at least four canids, including the elusive Asiatic Wild Dog (EN) and the Tibetan Wolf (CR) have recently been confirmed. The Snow Leopard (EN) is the flagship species of KNP, one of three leopard species and six confirmed (possibly eight) cat species found within KNP. The charismatic Red Panda (EN) is the State Animal of Sikkim and is likewise found in the lower altitude forests of KNP, its buffer zone and nearby protected areas. Among the insects, butterflies are extremely abundant in Sikkim State which is home to an estimated 46% of India's butterfly species. Sikkim boasts up to 650 species, and supplementary information confirms 189 of which are recorded within KNP (revised down from an originally claimed 400 species).

KNP coincides with an Important Bird Area (IBA) and is part of an Endemic Bird Area (EBA). Among the most conspicuous bird species are the many large birds of prey, several species of Old World Vultures and numerous pheasant species, including the spectacular Blood Pheasant (LC), the State Bird of Sikkim. The Lhonak Valley is a Trans-Himalayan grassland, which is partially included in KNP and the only known breeding site of the Black-necked or Tibetan Crane (VU) in the Eastern Himalayas as well as an important stopover for migratory waterbirds.

3. COMPARISONS WITH OTHER AREAS

The nomination dossier contains an analysis that, for natural values, compares KNP to other sites with comparable ecosystems characteristic of a wide altitudinal range and which are recognised as global conservation priorities. For criterion (vii) comparisons are made with sites displaying similar natural beauty and aesthetic importance, in this case mountain sites with sweeping altitudinal ranges. IUCN notes that consideration of the nominated area's aesthetics under

criterion (vii) as worded in the Operational Guidelines should focus upon the natural phenomenon, beauty and aesthetics of the nominated area. However, it should of course be acknowledged that as a mixed nomination the human appreciation of the site's value is intrinsically entwined with its cultural values and spiritual importance.

The analysis within the nomination compares the nominated property to a reasonably wide range of existing World Heritage and Tentative Listed properties on the basis of comparable contexts. Nevertheless there are some comparisons which do not appear immediately obvious such as Manas Wildlife Sanctuary which is a lowland system. Whilst altitudinal range is a principal determinant for comparison, contrasted sites are from a diversity of biogeographic settings. There are some areas which in IUCN's view should have been analysed in greater depth. For example the KCA in Nepal is not considered despite the fact that it adjoins KNP and shares many species with the nominated area including the home ranges of some key species such as Snow Leopards and several ungulates. IUCN notes the potential for future transnational cooperation with Nepal as Mt Khangchendzonga effectively straddles the border between the two countries. Another example concerns the only superficial comparison made with Central Karakorum National Park in Pakistan. This site contains the world's second highest mountain K2, more than 60 peaks over 7,000m and the largest glacial field outside of the poles with several impressively long glaciers such as Siachen (75 km), Baltoro (57 km), and Hispur-Biafo (122 km) Glaciers.

Despite some shortcomings in the nomination's comparative analysis, it provides some compelling arguments supporting KNP's global biodiversity significance (extreme vertical gradient; exceptional diversity of forest types and species; and the richness of mammals). To supplement the analysis IUCN has undertaken further assessment with the support of UNEP-WCMC.

The scientific literature confirms KNP's considerable biodiversity values and the case for global importance is supported by a number of priority-setting schemes and other documents. A common, very broad classification distinguishes the Western Himalayas from the Eastern Himalayas. KNP falls into the latter which is ecologically quite distinct from the Western Himalayas and Central Asian mountain ranges adjacent to the west and north. It can be argued that KNP is therefore not directly comparable to existing properties like Nanda Devi and Valley of Flowers National Parks, Great Himalayan National Park Conservation Area, Sagarmatha National Park, Tajik National Park (Mountains of the Pamirs) and other protected areas in that region despite many similarities.

KNP's extraordinary vertical gradient exceeding 7 kms is stunning. Strictly speaking, the gradient is not unique as claimed by the State Party. The contiguous KCA in Nepal boasts an identical altitudinal difference and the nearby Makalu Barun National Park also in

Nepal is documented as having a wider altitudinal range of 8,119 m within a smaller area of 150,000 ha. Nevertheless, there are not many places in the world where such a gradient is possible at all and KNP is without doubt a great and rare example.

KNP contains a diverse range of eastern Himalaya landscapes: it covers three terrestrial biomes, of which the Indo-Malay Temperate Broadleaf and Mixed Forests biome is not yet represented on the World Heritage List. In addition, two of the four ecoregions present within KNP are also not currently represented on the List. KNP also belongs to the Himalaya terrestrial biodiversity hotspot, and two terrestrial priority ecoregions, of which the Eastern Himalayan Alpine Meadows is not currently represented on the List by a biodiversity site.

KNP, along with the adjacent reserve forests, is home to some 22 endemic, rare and threatened plant species. The property provides habitat for Snow Leopard, the largest Himalayan carnivore and a globally endangered species, other threatened species such as the Alpine Musk Deer (EN), Clouded Leopard (VU), Red Panda, Wild Dog and Asiatic Black Bear. KNP is part of the Eastern Himalaya EBA which hosts at least 127 bird species of conservation concern, including seven globally threatened and restricted range species. The property also covers most of an IBA which is one of the highest in the world. Birds from at least four biomes are found in this IBA due to its size and high elevations.

UNEP-WCMC note that KNP ranks in the top 0.7-1.2% of all protected areas assessed worldwide for their irreplaceability for species conservation (1246th most irreplaceable protected area in the world, and 2135th regarding threatened species).

Of particular note is IUCN's 2002 global overview of mountain protected areas which refers to the trinational Khangchendzonga area (Nepal, India and China) as one of 28 mountain areas worldwide with "strong potential" for World Heritage. This study alludes to the fact that this area includes the "World's third highest peak", a "variety of life zones from subtropics to alpine", as well as "sacred values and cultural features". Among the 28 sites with "strong potential", only two others are located within the Himalayas (Mustang region and Bhutan's Jigme Dorji National Park).

In conclusion with respect to criterion (vii) KNP's grandeur is undeniable and the Khangchendzonga Massif and other peaks and landscape features are revered across several cultures and religions. While not the highest mountain in the world, a case can be made that Khangchendzonga is nevertheless a superlative peak within one of the most spectacular mountain ranges globally. The combination of extremely high and rugged mountains covered by intact old-growth forests up to the unusually high timberline further adds to the exceptional landscape beauty.

In regard to criterion (x) KNP is located within a mountain range of global biodiversity conservation significance and is the core zone of the KBR. The nominated property covers 25% of the State of Sikkim, acknowledged as one of the most significant biodiversity hotspots of India. KNP houses nearly half of the nation's bird diversity, wild trees, orchids and rhododendrons and one third of the country's flowering plants. It also contains the most extensive zone of krummholz (stunted forest) in the Himalayan region. KNP along with the adjacent reserve forests is home to a significant number of endemic, rare and threatened plant and animal species. The nominated property has the highest number of plant and mammal species recorded in the Central/High Asian Mountains, except compared to the Three Parallel Rivers of Yunnan Protected Areas, in China; and also has a high number of bird species.

4. INTEGRITY, PROTECTION AND MANAGEMENT

4.1. Protection

KNP was legally declared in 1977 and extended in 1997. The park is the equivalent of an IUCN Category II protected area and is strongly protected under India's national Wildlife (Protection) Act of 1972. The Act includes elements of both area-based and species-based conservation and both are applicable to KNP. The Forest Conservation Act of 1980 adds another layer of legal protection to the legally declared forests within KNP and its buffer zone. The legal protection is adequate and whilst there are no signs of past or current attempts to call the strong protection status into question, the development of hydropower, and the extraction of timber and minerals are not categorically excluded. Such change would, however, require complex and demanding procedures, which would have to fully consider conservation aspects. Noteworthy further legislation includes India's Places of Worship Act which regulates access rights for religious and spiritual purposes. A notification identifies the key sites of religious and spiritual importance in Sikkim, including KNP. Another state level notification prohibits the scaling of sacred peaks, including in particular Khangchendzonga.

The entire nominated area is state-owned and so is most of the biosphere reserve buffer zone. There is some private land in the biosphere reserve buffer zone, where families have small agricultural plots excised from reserved forest status. The property's buffer zone corresponds with two zonings within the national level biosphere reserve: the biosphere reserve buffer zone is protected as Reserve Forest, however the KBR transition zone is aimed at supporting livelihoods and is subject to less stringent protection.

The legal regime, steep terrain and difficult access of the nominated property combine to ensure a very good level of protection.

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

4.2 Boundaries

The nominated property boundaries are considered adequate and include the necessary range of attributes in support of the proposed Outstanding Universal Value. Most of the altitudinal vegetation and habitat zones are well-represented, however some of the lower altitudes forest types are less well represented. The evaluation mission noted that many of these lower altitude forests are in good condition and would be suitable as progressive additions to the nominated area.

The configuration of the buffer zone is, for the most part, rational and the status of much of the area as reserved forest legally underpins its buffering function; however, it is noted that the World Heritage buffer zone comprises two different zones of the KBR each with different management objectives. There is no buffer zone to the east as KNP's boundary coincides with the international border with Nepal and along a few kilometres with China. The rationale for the lack of a buffer zone adjacent to the northern edge of KNP relates to the remoteness and inaccessibility of this area. The lack of a buffer zone in parts of Rangyong Chu watershed is less plausible, as the intensively used "transition zone" in those areas is directly adjacent to the nominated area. It was explained that this was a function of the legal status of the land in that area which is not "reserved forest" and thus cannot formally be declared a buffer zone. The lack of a buffer zone in parts of this watershed implies that KNP might be more vulnerable to human impacts here and this will need to be monitored. The State Party's decision to extend the buffer zone in the Rathang Chu area is primarily concerned with cultural values, however it also adds additional protection to this area which was previously without a buffer zone.

India has a system of eco-sensitive zones which surround protected areas. These are designed to protect environmentally sensitive areas from development and resource exploitation. In KNP an eco-sensitive zone of between 25-200m has been recently notified. This has been a controversial issue as the zones have been reduced from a recommended 10 kms. These zones exist outside of the nominated property however it remains somewhat unclear as to how they will be implemented within the much larger proposed World Heritage buffer zone of KNP.

IUCN considers that the boundaries of the nominated property meet the requirements of the Operational Guidelines.

4.3 Management

The Forest, Environment and Wildlife Management Department, Government of Sikkim (FEWMD) and its KNP administration unit is the primary management authority. The KNP Management Plan (2008-2018) provides overarching guidance and zonation is a key management instrument. In addition to the three zones of the biosphere reserve, there is an internal zonation of the nominated area into "wilderness", "habitat improvement" and "ecotourism" zones.

The formal arrangement is top-down with decision-making in the hands of FEWMD. There is direct exchange and coordination with other governmental branches at the state level and with the central government (Indian Forest Service, which is represented in Sikkim). There is limited evidence of systematic inputs of local stakeholders in decision-making. In 1990, India initiated the concept of Joint Forest Management Committees (JFMC) / Eco-development Committees (EDC) as a mechanism to engage local communities. Starting in 2002 a number of EDCs have been created in the buffer zone around KNP. In essence, the scheme promotes on-farm and off-farm income generation near reserved forests and protected areas as a means to reduce pressure. The scheme has drawn major attention as a policy shift but does not amount to granting rights in decision-making and it does not primarily refer to KNP but rather its buffer zone. The State Party in its supplementary information has restated the importance of the 21 EDCs which operate across the property. The State Party has indicated that local EDCs will play an active role in the day to day maintenance, monitoring, management and protection of the cultural attributes inside the KNP and the buffer areas and be given increased responsibility for managing nature-culture linkages.

KNP's management authorities have conducted a management effectiveness evaluation (MEE) in 2015 with the support of the Wildlife Institute of India. This is a commendable systematic assessment of the management of the park using the internationally accepted IUCN MEE Framework. A scorecard system has been used to pinpoint management strengths and weaknesses and gain some relative indicator of the effectiveness of KNP's management against other sites in India. The property ranked in the 'good' category. Whilst the evaluation uses a simplified set of indicators it highlights a number of actionable points to address weaknesses.

The administrative arrangements for the KNP are quite hierarchical, of positive note is the fact that the KNP Director also has responsibility for the KBR which is empowering in terms of the larger system. The nomination conceded that staffing numbers and expertise should be increased in line with increasing management responsibility particularly related to buffer zone issues. The recent MEE evaluation also noted weaknesses in staff expertise and numbers. However given the low levels of threat to the core areas of the property the evaluation mission did not perceive any evidence of a dramatic capacity gap. Volunteer rangers from fringe villages contribute to wildlife monitoring and patrolling, in cooperation with KNP and WWF.

Funding relies mostly on the government. The Government of Sikkim provides a basic budget, which has been slightly increasing over the last years but is in essence restricted to covering the salaries of the limited number of staff. KNP has also benefited from donor funding for example via a Japanese supported project which strongly supported the nomination effort.

Funding is “inadequate” according to the recent MEE, which suggests a need to increase and diversify funding.

A final important point relates to the fact that KNP has been nominated as a mixed site in deference to its entwined natural and cultural values. However, the nomination has been conceptualised from a nature perspective with cultural aspects considered later and the history of site management, the legal and governance arrangements reflect this bias to nature. Whilst this is understandable it is important to redress the management emphasis to ensure an appropriate balance between the natural, cultural and spiritual aspects of the property.

Whilst noting the need to improve the integration of natural and cultural heritage management and a number of weaknesses highlighted by the recent management effectiveness evaluation, IUCN considers the management of the nominated property nevertheless meets the requirements of the Operational Guidelines.

4.4 Community

What is today KNP has traditionally and into the recent past been inhabited and used by Dokpa, Bhutia, Lepcha and Nepali people and temporarily by Tibetan refugees in the 1960s. Today, national legislation categorically excludes permanent human presence and consumptive resource use in KNP, including livestock grazing, inevitably creating a source of contention. There are no resident populations within the nominated area and some communities have been re-settled and/or lost access to traditionally used livestock grazing and forest areas. While not per se related to the World Heritage nomination, this is one important legacy of the national park.

A complex issue concerning the governance and management of KNP is the relationship with indigenous peoples (“scheduled tribes”) and local communities (“fringe villages”). On the one hand, the cultural and spiritual meaning of KNP is fully acknowledged and there appear to be no conflicts in terms of access to cultural sites and resources. On the other hand, the recognition of the cultural meaning of KNP does not encompass resource use practices, traditional livelihood systems, local knowledge etc., which could reasonably be interpreted as elements of local and indigenous cultures. There is a contradiction between the legal ban on any resource use, including livestock grazing, and a vision of “ensuring sustainable flow of resources for traditional livelihood” and an objective “to allow controlled use of the Park and its resources by local people” both of which are stated in the management plan. On a positive note the State Party has advised that the traditional system of rotational alpine grazing by the Dokpa people will be integrated in the management plan and as a first step the Dokpa’s traditional right of livelihood through herding of yaks has been recognized by formalizing their community into an EDC. Nonetheless sustained effort will be needed to empower more participatory approaches to the management of the property, and

more importantly to implement genuine reforms that facilitate local community access to the resources of KNP in such a way that is sustainable and does not damage core values.

As in most of the other India protected areas, management is typically top-down. On the ground management has direct communication with local villagers but there are no formal mechanisms enabling local stakeholders to take part in decision-making. The authorities acknowledge this and are actively working to address more inclusive approaches to conservation in the face of human and development pressure.

4.5 Threats

KNP enjoys a very high degree of natural protection, in particular in the large areas of extremely high and rugged terrain. There is no indication in the nomination file, field evaluation mission nor desk reviews of any serious current threats (for example from climate change, increasing tourism, local resources use, invasive species and/or natural disasters) to the property, its integrity and its outstanding values. However there are potential threats related to these issues.

As with most other mountain systems, changes to temperature and precipitation could impact on the ecology of KNP in many ways, including the dynamics of the altitudinal zonation. Management should make every effort to monitor and understand change as a basis of informed decision-making in terms of preparedness and adaptation.

The State of Sikkim encourages tourism development and KNP is among the most obvious and marketable resources. KNP is a renowned mountaineering destination with a history going back at least to the early 20th Century. More recently, a trekking industry has locally developed in selected areas. Visitors to KNP have steadily increased since the early 2000s but remain low at less than 3,500 per annum. Mountaineering is modest in scale and strictly regulated. Disturbance and inadequate waste management are problems well-known from other parts of the Himalayas and require attention; however, large scale, commercial mountaineering has not arrived in Sikkim but may develop in the future. In KNP the peaks themselves must not be accessed for cultural and religious reasons, however, it is unknown whether all expeditions have respected this rule. In theory, Khangchendzonga is the only peak in the world above 8,000 m which has never been scaled. Trekking tourism is still in its infancy but expected to grow bringing with it potential benefits to local people but also impacts. At today’s visitor numbers and management, there are no signs that the evolving trekking tourism has yet resulted in major impacts but a likely further increase will require more careful planning and management. Pilgrimages are an important and particular form of visitation of KNP. Access to culturally and religiously important resources should be maintained while making every effort to fully respect sensitivities related to sacred sites and to prevent environmental damage.

Sikkim has signalled a decision to massively develop the state's high hydro-power potential. This has been generating conflicts both on environmental and religious / spiritual grounds, illustrated by the controversial dams on the nearby Teesta, Sikkim's major river. Forestry has a strong say in decision-making and it is noteworthy that several planned dam projects in the buffer zone have reportedly been rejected in the past on conservation grounds.

Mobile pastoralism has been a central element of the traditional local livelihood systems in Sikkim, including what is today KNP, both in the form of transhumance and nomadism. Sikkim's FEWMD banned open grazing in 1998 in both protected areas and reserved forests, plantations and near water sources and embarked on stricter enforcement. Cattle sheds have since been removed from KNP, whereas some grazing by yaks and sheep appears to be de facto accepted. Despite some evidence of low level grazing there is a policy to control high elevation grazing. Trekking use is supported by pack animals resulting in some localised grazing impacts but generally the nominated property is free from any major signs of overgrazing. Local subsistence use of non-timber forest products and medicinal plants continues at modest levels without appreciable impacts. A ban on the commercial exploitation of medicinal plants and aromatic plants used for incense was imposed in 2001 and continues. Hunting and trapping of birds and mammals has long been a part of traditional livelihood systems, both for food and medicinal purposes. It is today categorically banned, i.e. considered as poaching. Park management, WWF and volunteer rangers report occasional poaching and trapping but overall the threat is considered minimal. Some human-wildlife conflict occurs in the fringe villages with some predation on livestock reported. IUCN recognises the challenges in heavily populated areas, however supports policies and management which permits some level of sustainable local use compatible with World Heritage status.

The exceptionally steep slopes coupled with heavy rainfall result in seasonally extreme surface runoffs and frequent and often large landslides, visible in all parts of the nominated area. Within KNP, the risks are not associated with human disturbance or land degradation and thus considered an entirely natural disturbance factor.

In conclusion IUCN considers that the integrity, protection and management of the extended property meet the requirements of the Operational Guidelines.

5. ADDITIONAL COMMENTS

KNP is an integral part of a much larger mountain landscape crossing several international borders. For example the ICIMOD supported Kangchenjunga Landscape recognises this wider conservation system and there are clear opportunities to enhance transnational collaboration, particularly with Nepal which shares a common border across the Khangchendzonga / Kanchenjunga Massif.

Nevertheless, KNP is relatively large and consistently features as a particularly valuable protected area in the literature. The nomination is thus considered coherent and strong on its own merits.

6. APPLICATION OF CRITERIA

Khangchendzonga National Park has been nominated under natural criteria (vii) and (x), as well as under cultural criterion (iii) which will be evaluated by ICOMOS.

Criterion (vii): Superlative natural phenomena or natural beauty or aesthetic importance

The scale and grandeur of the Khangchendzonga Massif and the numerous other peaks within Khangchendzonga National Park are extraordinary and contribute to a landscape that is revered across several cultures and religions. The third highest peak on the planet, Mt. Khangchendzonga (8,586m asl) straddles the western boundary of Khangchendzonga National Park and is one of 20 picturesque peaks measuring over 6,000m located within the park. The combination of extremely high and rugged mountains covered by intact old-growth forests up to the unusually high timberline and the pronounced altitudinal vegetation zones further adds to the exceptional landscape beauty. These peaks have attracted people from all over the world, mountaineers, photographers and those seeking spiritual fulfilment. The park boasts eighteen glaciers including Zemu Glacier, one of the largest in Asia, occupying an area of around 10,700 ha. Similarly, there are 73 glacial lakes in the property including over eighteen crystal clear and placid high altitude lakes.

IUCN considers that the nominated property meets this criterion.

Criterion (x): Biodiversity and threatened species

Khangchendzonga National Park is located within a mountain range of global biodiversity conservation significance and covers 25% of the State of Sikkim, acknowledged as one of the most significant biodiversity concentrations in India. The property has one of the highest levels of plant and mammal diversity recorded within the Central/High Asian Mountains. Khangchendzonga National Park is home to nearly half of India's bird diversity, wild trees, orchids and rhododendrons and one third of the country's flowering plants. It contains the widest and most extensive zone of krummholz (stunted forest) in the Himalayan region. It also provides a critical refuge for a range of endemic, rare and threatened species of plants and animals. The national park exhibits an extraordinary altitudinal range of more than 7 kilometres in a relatively small area giving rise to an exceptional range of eastern Himalaya landscapes and associated wildlife habitat. This ecosystem mosaic provides a critical refuge for an impressive range of large mammals, including several apex predators. A remarkable six cat species have been confirmed (Leopard, Clouded Leopard, Snow Leopard, Jungle Cat (LC), Golden Cat (NT), Leopard Cat (LC)) within the park. Flagship species include Snow Leopard as the largest Himalayan predator,

Jackal, Tibetan Wolf, large Indian Civet (NT), Red Panda, Goral, Blue Sheep (LC), Himalayan Tahr (NT), Mainland Serow, two species of Musk Deer, two primates, four species of pika and several rodent species, including the parti-colored Flying Squirrel (LC).

IUCN considers that the nominated property meets this criterion.

7. RECOMMENDATIONS

IUCN recommends that the World Heritage Committee adopts the following draft decision, noting that this will be harmonised as appropriate with the recommendations of ICOMOS regarding their evaluation of this mixed site nomination under the cultural criterion and included in the working document WHC-16/40.COM/8B:

The World Heritage Committee,

1. Having examined Documents WHC/16/40.COM/8B and WHC/16/40.COM/INF.8B2;
2. Inscribes the **Khangchendzonga National Park (India)** on the World Heritage List under natural criteria (vii) and (x);
3. Adopts the following Statement of Outstanding Universal Value:

Brief synthesis

Situated in the northern Indian State of Sikkim, Khangchendzonga National Park (KNP) exhibits one of the widest altitudinal ranges of any protected area worldwide. The Park has an extraordinary vertical sweep of over 7 kilometres (1,220m to 8,586m) within an area of only 178,400 ha and comprises a unique diversity of lowlands, steep-sided valleys and spectacular snow-clad mountains including the world's third highest peak, Mt. Khangchendzonga. Numerous lakes and glaciers, including the 26 km long Zemu Glacier, dot the barren high altitudes. The property falls within the Himalaya global biodiversity hotspot and displays an unsurpassed range of sub-tropical to alpine ecosystems. The Himalayas are narrowest here resulting in extremely steep terrain which magnifies the distinction between the various eco-zones which characterise the property. The Park is located within a mountain range of global biodiversity conservation significance and covers 25% of the State of Sikkim, acknowledged as one of India's most significant biodiversity concentrations. The property is home to a significant number of endemic, rare and threatened plant and animal species. The nominated property has the highest number of plant and mammal species recorded in the Central/High Asian Mountains, except compared to the Three Parallel Rivers of Yunnan Protected Areas, in China; and also has a high number of bird species.

Khangchendzonga National Park's grandeur is undeniable and the Khangchendzonga Massif, other peaks and landscape features are revered across

several cultures and religions. The combination of extremely high and rugged mountains covered by intact old-growth forests up to the unusually high timberline further adds to the exceptional landscape beauty.

The fringe area of KNP also harbours an assemblage of cultural elements of the local peoples who have maintained their traditional identities, cultures and religious practices. The protected area status of KNP preserves its cultural uniqueness, and conserves its exceptional aesthetic value and biodiversity. For local communities in Sikkim, KNP and the buffer and transition zones of the Khangchendzonga Biosphere Reserve that act as buffer to KNP, have significant cultural and religious values, which complement the value of its natural beauty and biodiversity.

Criteria

Criterion (vii)

The scale and grandeur of the Khangchendzonga Massif and the numerous other peaks within Khangchendzonga National Park are extraordinary and contribute to a landscape that is revered across several cultures and religions. The third highest peak on the planet, Mt. Khangchendzonga (8,586m asl) straddles the western boundary of Khangchendzonga National Park and is one of 20 picturesque peaks measuring over 6,000m located within the park. The combination of extremely high and rugged mountains covered by intact old-growth forests up to the unusually high timberline and the pronounced altitudinal vegetation zones further adds to the exceptional landscape beauty. These peaks have attracted people from all over the world, mountaineers, photographers and those seeking spiritual fulfilment. The park boasts eighteen glaciers including Zemu Glacier, one of the largest in Asia, occupying an area of around 10,700 ha. Similarly, there are 73 glacial lakes in the property including over eighteen crystal clear and placid high altitude lakes.

Criterion (x)

Khangchendzonga National Park is located within a mountain range of global biodiversity conservation significance and covers 25% of the State of Sikkim, acknowledged as one of the most significant biodiversity concentrations in India. The property has one of the highest levels of plant and mammal diversity recorded within the Central/High Asian Mountains. Khangchendzonga National Park is home to nearly half of India's bird diversity, wild trees, orchids and rhododendrons and one third of the country's flowering plants. It contains the widest and most extensive zone of krummholz (stunted forest) in the Himalayan region. It also provides a critical refuge for a range of endemic, rare and threatened species of plants and animals. The national park exhibits an extraordinary altitudinal range of more than 7 kilometres in a relatively small area giving rise to an exceptional range of eastern Himalaya landscapes and associated wildlife habitat. This ecosystem mosaic provides a critical refuge for an impressive range of large mammals, including several apex predators. A remarkable six cat species have been confirmed (Leopard, Clouded Leopard, Snow Leopard, Jungle Cat, Golden Cat, Leopard Cat) within

the park. Flagship species include Snow Leopard as the largest Himalayan predator, Jackal, Tibetan Wolf, large Indian Civet, Red Panda, Goral, Blue Sheep, Himalayan Tahr, Mainland Serow, two species of Musk Deer, two primates, four species of pika and several rodent species, including the parti-colored Flying Squirrel.

Integrity

Khangchendzonga National Park has an adequate size to sustain the complete representation of its Outstanding Universal Value. The Park was established in 1977 and later expanded in 1997 to include the major mountains and the glaciers and additional lowland forests. The more than doubling in size also accommodated the larger ranges of seasonally migrating animals. The property comprises some 178,400 ha with a buffer zone of some 114,712 ha included within the larger Khangchendzonga Biosphere Reserve which overlays the property. The property encompasses a unique mountain system comprising of peaks, glaciers, lakes, rivers and an entire range of ecologically-linked biological elements, which ensures the sustainability of unique mountain ecosystem functions.

The representativeness of lower altitude ecosystems within the property could be improved by considering progressive additions of what are well protected and valuable forests in the current buffer zone. The functional integrity of this system would also profit from opportunities to engage with neighbouring countries such as Nepal, China and Bhutan which share the wider ecosystem: the most obvious collaboration being with the Kanchenjunga Conservation Area in Nepal as this protected area is contiguous with Khangchendzonga National Park and Mt Khangchendzonga effectively straddles the border between the two countries.

There are no significant current threats for the property however, vigilance will be required to monitor and respond to the potential for impact from increasing tourism as a result of publicity and promotion. Similar attention must be paid to the potential impact of climate change on the altitudinal gradients within the property and the sensitive ecological niches which provide critical habitat. Active management of the buffer zone will be essential to prevent unsympathetic developments and inappropriate landuses from surrounding local communities whilst at the same time supporting traditional livelihoods and the equitable sharing of benefits from the park and its buffer zone.

Protection and Management requirements

The protected area status of KNP under the Wildlife (Protection) Act, 1972 of India ensures strong legal protection of all fauna and flora as well as mountains, glaciers, water bodies and landscapes which contribute to the habitat of wildlife. This also assures the protection and conservation of the exceptional natural beauty and aesthetic value of the natural elements within the Park.

The property is managed by the Sikkim Forest, Environment and Wildlife Management Department under the guidance of a management plan with a vision to conserve key ecosystem and landscape attributes whilst promoting recreational opportunities, cultural and educational values as well as the advancement of scientific knowledge and strategies which advance the well-being of local communities. Opportunities should be taken to better empower local people and other stakeholders into decision making related to the property's management.

Efforts should continue to expand knowledge of the property's biological and ecological values as data is still inadequate. Inventory, research and monitoring should focus on clarifying the species composition within the property and informing policy and management.

Periodic evaluation of the effectiveness of management should continue and be used to direct investment into priority areas so that financial and staff resources are matched to the challenges of future management.

Khangchendzonga National Park displays a rich intertwined range of natural and cultural values which warrant a more integrated approach to the management of natural and cultural heritage. Legal protection, policy and management should be progressively reformed and improved to ensure an appropriate balance between the natural, cultural and spiritual aspects of the property.

4. Commends the State Party for undertaking a comprehensive evaluation of management effectiveness and encourages it to address the 12 recommended actionable points in an integrated and adaptive manner in keeping with the cultural values of the property;

5. Encourages the State Party to consider the progressive addition of suitable lower altitude areas to the inscribed property in order to improve the balance of ecosystems and habitats across the property's more than 7 kilometre vertical gradient;

6. Further encourages the State Parties of India and Nepal to foster greater collaboration between Khangchendzonga National Park (India) and Kanchenjunga Conservation Area (Nepal) noting that Mt Khangchendzonga effectively straddles the border between the two countries, and the similarities between the ecosystems of the two protected areas and thus the potential for a future transboundary World Heritage extension of Khangchendzonga National Park.

Map 1: Location of the nominated property in Sikkim State, India



Map 2: Nominated property and buffer zone

