Chitwan National Park

2020 Conservation Outlook Assessment

SITE INFORMATION

Country: Nepal
Inscribed in: 1984
Criteria: (vii) (ix) (x)

At the foot of the Himalayas, Chitwan is one of the few remaining undisturbed vestiges of the 'Terai' region, which formerly extended over the foothills of India and Nepal. It has a particularly rich flora and fauna. One of the last populations of single-horned Asiatic rhinoceros lives in the park, which is also one of the last refuges of the Bengal tiger. © UNESCO

SUMMARY

2020 Conservation Outlook

Finalised on 16 Jan 2022

SIGNIFICANT CONCERN

The management at Chitwan National Park has been successful in ensuring effective conservation over the last few years, such that the World Heritage values of the site of of low concern overall. Nevertheless, the site remains vulnerable to current threats such as invasive species, increasing human-wildlife conflicts, negative impacts of mass tourism, pollution, the impacts of climate change, earthquakes or sudden and unexpected increases in poaching or the resurgence of political instability. Despite the low concern surrounding the values, due to focussed management efforts in conserving them, certain elements surrounding the protection and management of the site are of some concern also. The proposed road developments (including the Tarai Hulaki Highway) requires addressing at a regional level to ensure that linear infrastructure does not pass through the site and risk fragmenting the ecosystems contained in the park. Road and railway projects which are diverted outside the site's boundaries, which may still have an impact on the values, should ensure due process is followed in carrying out impact assessments which fully consider potential impacts on the OUV of the site. Relationships with local people and law enforcement have been focal areas for the management of the site through buffer zone community forestry alongside anti-poaching efforts. The management of the site must ensure that practices surrounding these issues result in tangible and equitable benefits for local communities. As such Chitwan should remain on the radar of conservationists worldwide as an area of significant concern, as well as being recognised for its successes.

FULL ASSESSMENT

Assessment information

Threats

Current Threats

High Threat

Chitwan National Park is subject to high current threats. Flooding, such as the event in 2017, still represents a high level threat to the values of the site, particularly to large megafauna and grassland systems, which contribute significantly to the site's OUV. The rapidly increasing spread of invasive species is also proving to be challenging to manage. Despite the manual removal of multiple species such as Mikania micrantha in wetland habitats and increasing scientific research on these species, the IUCN reactive monitoring mission that visited the property in 2016 confirmed that there appears to be little effective management of invasive species. Increasing human-wildlife conflict is another current issue, which threatens the values of the site should levels of conflict become heightened to a level whereby grasslands are degraded or wildlife is persecuted as a result. Buffer zone management is key in addressing this threat, however whilst currently attitudes towards wildlife conservation were positive overall, many are not satisfied with current practices and policies in buffer zone community use areas.

▶ **Hunting and trapping**

Low Threat

(Wild plant collection)

Inside site, localised(<5%)

Subsistence wild plant collection within the park is a threat, however it is restricted to a few locations, is not increasing, is managed and has low impacts on the site’s values (State Party of Nepal, 2011).

▶ **Housing/ Urban Areas, Tourism/ Recreation Areas**

Low Threat

(Housing development in the buffer zone)

Outside site

Extensive housing development in the buffer zone of the park was causing significant negative impact on the site’s values (State Party of Nepal, 2011), including illegal settlements encroaching on and causing severe damage to valuable wildlife habitat in the buffer zone (for example at Ichhanagar, Sikaribas, and Bandarjhula), with no apparent coordination between Chitwan National Park Office and organisations providing development aid (IUCN, 2016). However, the development has since been controlled compared to the previous assessment period. Development regulations have been improved upon also with madatory EIA and IEE in the buffer and core areas as well as increased local participation in planning (IUCN Consultation, 2020; WWF, 2014).

▶ **Commercial/ Industrial Areas**

Low Threat

(Commercial Areas)

Outside site

Some localised commercial development – although not increasing – has been reported to impact the values of the site in the past (State Party of Nepal, 2011) and may still be having an impact.

▶ **Dams/ Water Management or Use**

Data Deficient

(Damming of the Narayani river)

Outside site

The Gandak barrage in Narayani at Bhainsalotan has disrupted the migration and movements of aquatic animals such as dolphin, crocodile and fishes. The dam seriously threatens the survival of the endangered South Asian River Dolphin in CNP. Water management is also a potential threat outside the park (State Party of Nepal, 2011). Dialogue between Nepal and Indian authorities is required to resolve this threat and further studies are needed to assess the impact and its extent.

▶ **Erosion and Siltation/ Deposition**

Very Low Threat

(Landslides)

Inside site, localised(<5%)

Frequent landslides are a current threat to the values of the site, although most are very localised and there is some management capacity to deal with their impacts (State Party of Nepal, 2011).

▶ **Erosion and Siltation/ Deposition** — **Low Threat**
(Erosion and Siltation) — Inside site, scattered(5-15%)

Ongoing erosion and siltation impacts are extensive and have a significant impact on the site's values. Previously low management capacity to deal with such impacts impacts have been identified (State Party of Nepal, 2011) but are now being addressed. Siltation occurs in the Rapti and Narayani rivers flowing in the western and northern border of the Park. However, some positive effects have been noted, particularly in favour of rhino, as they provide high areas to take refuge in times of flash floods (IUCN Consultation, 2020).

▶ **Identity/social cohesion/ changes in local population and community that result in negative impact** — **Low Threat**
(Social change) — Outside site

Social change amongst local communities has had significant impact in the past (the desire of buffer zone communities to be on the national electricity grid outlined below is an example of changing desires and attitudes) (State Party of Nepal, 2011). The traditions, cultures and production systems of some indigenous and ethnic groups are rapidly changing due to the influx of foreign tourists and resettlement of some villages from their original place to elsewhere. A study to investigate the influence of changing social contexts on families in the whole Chitwan Valley (the Chitwan Valley Family Study) notes that: In the late 1970s, the valley was linked to two major highways of national importance which facilitated a rapid proliferation of government services, businesses, markets, and diversified employment opportunities. For most of the older individuals, the rapid and vast social and economic changes have occurred within their own lifetime (Pradhan, 2011).

The situation above was during the times of political instability in Nepal and now with the new legislation and constitution in place in Nepal - considers the Park as the sole authority of the Federal Government and this insulates the area from being affected by local and provincial governments decisions and impacts. Over the last 10 years there are about 22 Buffer zone management committees that collectively work towards the safeguard of both Park and people living around it, including women and marginalized stakeholders - in and around the Park. National Park and Wildlife Conservation Act of Nepal allocates 30%-50% of Park annual income for social and community development activities.

▶ **Solid Waste** — **Low Threat**
(Solid Waste) — Outside site

Solid waste is a localised but increasing threat in the buffer zone of the park. It is having some impact on the values but there is little management capacity to deal with the issue (State Party of Nepal, 2011).

▶ **Livestock Farming / Grazing** — **Low Threat**
(Grazing of domesticated animals) — Inside site, localised(<5%)

There is some localised grazing inside the park, but the impact on values is minor, activities are managed and the threat is not increasing (State Party of Nepal, 2011).

▶ **Tourism/ Recreation Areas** — **Low Threat**
(Major visitor accommodation and associated infrastructure) — Outside site

Localised and increasing development in some areas of the buffer zone of the park, could have some impact on Outstanding Universal Value (State Party of Nepal, 2011). All concessionaires that previously operated inside the park have been moved out following the expiry of their contract in July 2012 (IUCN Consultation, 2017). The tourist accommodation in the Tiger Tops area, a critical habitat for many endangered species, has been decommissioned and is no longer operational (IUCN Consultation, 2017).

▶ **Mining/ Quarrying** — **Very Low Threat**
(Quarrying) — Outside site

Quarrying is localised in some areas of the buffer zone, and was previously noted to be increasing, with major impacts on nature conservation values despite management action (State Party of Nepal, 2011). Annual allowable quota for harvesting sand and gravel are stipulated in the current management plan and currently limited to some low impact areas outside the Park. All quarrying activities are subject to strict monitoring and any such activity inside the site is strictly prohibited (IUCN Consultation, 2020).

► **Roads/ Railroads** — **Low Threat**

(Roads)

Inside site, scattered(5-15%)

Impacts from existing roads are localised and not increasing in threat, but do have a significant impact on the site's values despite management actions (State Party of Nepal, 2011). The UNDP Tiger-Rhino Conservation Project, for example, noted the lack of enforcement of the 40 mph speed limit along the Highway through the National Forest near the Park (Tiwari et al, 2007). The proposed Hulaki highway and other roads (and until recently a proposed railway) through CNP pose a very high threat which can affect the ecological integrity of the park (UNESCO, 2014). This issue is discussed further below under "potential threats".

► **Storms/Flooding** — **High Threat**

(Flooding)

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

The Chitwan area is one of the most flood prone districts in Nepal. In 1993, for example, devastating floods affected many thousands of people in the Terai landscape, damaged the tourism infrastructure of Sauraha, a gateway into the park, and killed some endangered species of animals and destroyed their habitats (Nyaupane and Chhetr, 2009 and Government of Nepal, 2011). In 2010 floods inundated hundreds of houses of Madi area in western Chitwan district. Although flooding impacts are localised they are increasing. Floods have a significant impact on the attributes of the property and there is low management capacity to deal with impacts (State Party of Nepal, 2011). The long embankments of the Rapti and Narayani Rivers have adverse impact on natural functioning of the ecosystem (IUCN Consultation, 2014). A community based early warning system for floods and other natural disasters has however been implemented by Practical Action (Government of Nepal, 2011). There was high flood in Rapti River (northern boundary of CNP) in 2017. Two rhinoceros were found dead and eight were rescued from India to the park. At present, mitigation measures against the disturbances from flooding are in place. Climate change mitigation measures are underway. The biogas initiative has reduced substantial fuel wood consumption among the buffer zone communities and improved health-education. The Population-Health-Education program and restoration the flash floods of the dry river beds and starting agriculture in the base has shown the preliminary success in Madi valley. Mainstreaming Climate Change Risk Management in Development report – which outlines a project to refine a Nepal specific climate change vulnerability assessment methodology through an initial application of the method in Chitwan district.

► **Fishing / Harvesting Aquatic Resources** — **High Threat**

(Fishing)

Inside site, localised(<5%)

Localised and increasing fishing activity inside and outside the park has been reported to have a significant impact (State Party of Nepal, 2011). The Chitwan National Park provides fishing licenses to the traditional fishermen to support their livelihood. Besides these wetland dependent communities, others are also intensively fishing in the river on both banks resulting to scarcity of fish prey base, disturbances to the gharials and dolphins and their habitat loss. The fishermen were known to use illegal large fishing net (gill net) which largely threatens the gharial population due to risk of being entrapped, although this is reported to now be largely under control (IUCN Consultation, 2017). In addition, small sized mesh nets are often used which removes both adult breeding stock and fingerlings from the populations reducing the possibilities of future breeding and recruitment from the areas (IUCN Consultation, 2014).

► Invasive Non-Native/ Alien Species

High Threat
Inside site, widespread(15-50%)

(Invasive species)

Other invasive species names
Mikania micrantha, Parthenium hysterophorus, Lantana camara, Chromolaena odorata and Eupatorium adenophorum.

Invasive species (including freshwater species) are an increasing problem in the whole area (i.e. inside and outside of the park). They have a significant impact on attributes and management capacity to deal with this threat is low (State Party of Nepal, 2011). The main problem is an invasive creeper, Mikania micrantha, which thrives in moist areas and riversides and can smother and kill native flora such as grasses and sapling trees, several of which are important fodder plants. To date eradication measures have proved unsuccessful and the plant is spreading stimulated by the movement of people and animals within the park. Impacts on wetlands include some reduction in bird species and the plant is impacting mammals in terms of reducing food and cover for hunting (BBC, 2010 and Pokharel, 2012). Other species invasive species include Lantana camara, Chromolaena odorata and Eupatorium adenophorum and Parthenium hysterophorus.
A recent survey found Mikania across 44% of habitats sampled and almost 15% of these have a high infestation (> 50% coverage). Highest densities were recorded from riverine forest, tall grass and wetland habitats. Local community dependence on natural resources in the core area of the Park is high. The range and volume of resources (e.g. fodder) collected and the distances travelled all pose a high risk of the spread of Mikania (Murphy et al, 2013).
Over the years threats from invasive species are assessed and incorporated into management planning and annual planning. Land cover change analysis has been done by the researchers and by DNPWC. Habitats are mapped for invasive species, grassland and wetland management are being done to improve habitats. Invasive species such as Mikania are mapped, piloting on control is being done and research study to identify its impact on rhino is available. Natural succession as a threat to habitat has been identified. Thus, there is room to improve control of Invasive species , improve habitat, develop/maintain water holes.

► Water Pollution

High Threat
Inside site, scattered(5-15%)

(Water Pollution)

Extensive (and increasing) ground water pollution outside the park, is having a significant impact; surface water pollution is a more localised problem but is also increasing and management capacity to deal with this threats is very limited (State Party of Nepal, 2011). Pollution from adjacent settlements of different sizes in Rapti River watershed has greater impact to CNP as this watershed and river covers greater length of the park, compared to Narayani (IUCN Consultation, 2020).
Increasing industrialization is leading to increase in pollution loads from factories. Discharges from various industries including paper and pulp mills, pharmaceuticals and breweries are the major sources of pollution in Narayani River (State Party of Nepal, 2003; Rajbhandari and Acharya, 2013). Water pollution has also been cited as a cause of Gharial population decline (see discussion below).

► Other Biological Resource Use

Low Threat
Inside site, localised(<5%)
Outside site

(Poaching)

Poaching of large megafauna remains a constant threat for the conservation of Chitwan National Park, which protects species with a high market value (IUCN/UNESCO, 2007). In 2020, four rhino were reported to have been poached, ending four years free of rhino poaching in the site (Rimal, 2020; DNPWC Annual Reports). Nonetheless, in light of overall successes achieved in preventing poaching of rhino and tiger, poaching is currently considered to be a low threat, but the recent incidences serve to highlight the potential to become a high or even a very high threat if current management action to control it is not maintained (IUCN, 2016).

► Tourism/ visitors/ recreation

Low Threat
Inside site, scattered(5-15%)
Outside site

(Impact of tourism)

Impacts of tourism/ visitors in some areas of the buffer zone, although localised and managed, is increasing and has had an impact on the values of the site (State Party of Nepal, 2011). A maximum number of tourists recorded was 178,257 in Fiscal Year 2014/2015 (DNPWC Annual Report 2016), although more recent data is not available. Tourism is highly concentrated in the Sauraha and Kasra areas, and carrying capacity of tourism on seasonal basis should be assessed in order to plan accordingly for regulating tourism in the Park. Pilgrimage is a specific type of tourism that is leading to certain developments, which are noted to be of concern in terms of their (potential) impacts on the site. These have included, but are not limited to, the construction and expansion of a temple complex at Gajendra Dam, mostly within the buffer zone of the property but partly located within the sites's boundaries, and the proposed development of a suspension bridge at Trivenidham-Bhalmikiashram (IUCN, 2016).

▶ **Other** — **High Threat**

(Human wildlife conflict)

Inside site, localised(<5%)
Outside site

Conflict between humans and wildlife in Chitwan National Park is a current threat which manifests in multiple ways amongst local communities, which should be addressed as a matter of priority (IUCN, 2016). Examples of human wildlife conflict include direct conflict with wildlife attacks recorded by rhino, sloth bear, tiger, elephant, wild boar and leopard (Lamichhane et al., 2018) in the past, which can lead to persecution and resentment of conservation initiatives amongst local communities. More indirect conflict such as competition for grazing between livestock and wildlife can also damages habitats and increases the risk of disease transmission to wild animals (ZSL, 2018).

Potential Threats

Very High Threat

Climate change (in particular in relation to flood risk) and earthquakes are a constant threat to Chitwan. Although hard to assess it should also be noted that political instability in the past has had severe impacts on conservation efforts throughout Nepal (between 2000/01 to 2006/07 113 greater one-horned rhinoceros were killed by poachers in Chitwan when military protection for the park was diverted (IUCN/UNESCO, 2007)). The proposed construction of the Tarai Hulaki Highway, as well as up to 6 other proposed roads that would cross the property, would fragment important wildlife habitat, including for rhino, tiger, elephant and gaur. All of these roads are therefore considered to be very high threats, with the Tarai Hulaki road being the proposal in the most advanced stage of project design at the time of the 2016 IUCN reactive monitoring mission.

▶ **Temperature extremes** — **Data Deficient**

(Climate Change & Severe weather events)

Inside site, scattered(5-15%)

Observed changes in climate / climate-related impacts include: increasing number of flood days in some rivers as well as trends towards a reduction in dependable flows in the dry season. Projections also suggest an increase in the intensities of monsoons (Nyaupane and Chhetr, 2009). However, the precise effects of climate change on the values of the site is currently unclear and there are no accurate projections of likely future changes, and therefore is assessed as data deficient.

▶ **Roads/ Railroads** — **Very High Threat**

(Road / Railroad)

Inside site, localised(<5%)
Outside site

The 2016 IUCN reactive monitoring mission to the property found that there are a total of 7 proposed road developments crossing the property that would likely have significant negative impacts on its Outstanding Universal Value. There are plans for the construction of the East-West Electric Railway and the Tarai Hulaki Highway, the latter of which would cross the property. Initially the railway was proposed to cross through the property as well, but alternative alignments that avoid the property have been considered and are now being pursued (State Party of Nepal, 2017), and the State Party of Nepal has committed to undertake an Environmental Impact Assessment (EIA) for this alternative route (State Party of Nepal, 2018; UNESCO, 2019) having acknowledged that the proposed road and railroad would fragment important wildlife habitat, including for rhino, tiger, elephant and gaur (State Party Report, 2014). In addition, the proposed road from Thori to Birgunj, although fully located outside the property, could have negative impacts on its OUV if it leads to an increased demand for the transportation of

commercial goods through the Madi Valley, and through the property (IUCN, 2016). The road will only concern the section passing through the buffer zone of the property and not the property itself, however it is stil uncertain whether the specific recommendations regarding the use of the road following its upgrading outside the property, including ensuring that the road will not be used for transportation of commercial goods to destinations beyond Thori, have been implemented (UNESCO, 2019). At the time of this assessment the State Party has yet to clarify the status of these projects. However, as stated in the most recent decision from the Committee in 'if any of the aforementioned road and railway developments were to proceed through the property, they would represent a potential danger to the OUV of the property... and thus form a clear basis for inscription of the property on the List of World Heritage in Danger' (World Heritage Committee, 2019).

▶ **Crops** — **Low Threat**
(Agricultural production) — Outside site

Agricultural production outside of the park has been reported as a potential threat which may impact a number of values of the site (State Party of Nepal, 2011), in particular the biological processes of sal forest and associated communities and remains a potential low level threat.

▶ **Fire/ Fire Suppression** — **High Threat**
(Fire) — Outside site

Fire was considered a potential threat inside the park (State Party of Nepal, 2011). However the role of fire was noted by Murphy et al. (2013) as a contributory factor in the spread of the invasive species Mikania with the authors suggesting actions to control burning, reduce spread and raise awareness about best practice for local resource management by local communities.

▶ **Utility / Service Lines** — **Low Threat**
(Expansion of electricity infrastructure) — Inside site, localised(<5%)

There has previously been considerable concern over long term plans to connect the village of Madi (which is in the buffer zone of the park between the park boundaries and the Indian border) to the electricity grid through the laying of cables through the park. The project has now been completed through the laying of an underground fibre optic cable following the alignment of the existing Bharatpur-Madi road (IUCN Consultation, 2017). More information is needed to assess any impacts that may have arisen from this project.

▶ **Earthquakes/ Tsunamis** — **Data Deficient**
(Earthquakes) — Inside site, extent of threat not known
Outside site

The entire Himalayan belt is seismically active and earthquakes are a common threat in Nepal, therefore this is a potential threat to the values of the site (State Party of Nepal, 2011), albeit one which is not easily addressed or mitigated, and could even be considered as part of natural processes.

Protection and management

Assessing Protection and Management

▶ **Management system** — **Mostly Effective**

The primary management document is the Management Plan for Chitwan National Park and its Bufferzone (2011-2016), which is under revision for 2018-2022.
The management plan is adequate to maintain the site’s Outstanding Universal Value. An annual work/action plan exists and many activities are being implemented (State Party of Nepal, 2011).

▶ **Effectiveness of management system** — **Mostly Effective**

Several management effectiveness assessments have been made, albeit some years ago now: EoH (2003 and 2007), PR report (2007 and 2011) and CNP was the first Protected Area in the tiger range

countries to be approved under the WWF – Conservation Assured | Tiger Standards in 2014. Management is considered to be mostly effective, however, protection and management efforts appears to be focussed on mega fauna such as tiger and rhino, with less attention being paid to small mammals such as the otter, the fishing cat and others which are considered to be an indicator of the health of aquatic habitats (IUCN Consultation, 2014).

► Boundaries — Some Concern

The boundaries of the World Heritage site are considered adequate to maintain its Outstanding Universal Value (State Party of Nepal, 2011). Boundary protection is maintained with the aid of the government's deployment of two protection units a Battalion and a Company having more than 1000 army personnel in Chitwan (State Party of Nepal, 2011).
Nevertheless, there is some confusion about the exact location of the site's boundaries, in particular on the West bank of the Narayani River. This has lead to a situation of conflict with the construction and expansion of a temple complex at Gajendra Dham. The lack of distinction being made between the buffer zone and the core zone of Chitwan National Park (only the latter is inscribed on the World Heritage List) adds to the confusion, as the core and buffer zones are collectively being referred to as "Chitwan National Park" (IUCN, 2016). Information provided to the World Heritage Committee by the State Party in 2018 stated that Gajendra Dham is reportedly no longer located within the boundaries of Chitwan National Park, following a revision of boundaries in 2016 and its demarcation on the ground. However, this requires further investigation to determine whether such a boundary modification warrants a boundary modification, in line with Paragraph 164 of the Operational Guidelines (World Heritage Committee, 2019).

► Integration into regional and national planning systems — Some Concern

There is coordination between the range of administrative bodies / levels involved in the management of the site is sufficient but it could be improved (State Party of Nepal, 2011). The 2016 IUCN reactive monitoring mission to the site noted a lack of coordination between different government institutions and ministries and an ensuing lack of awareness of the implications of World Heritage status and the legal requirements that need to be adhered to in case of development proposals that may impact on Outstanding Universal Value (IUCN, 2016).

► Relationships with local people — Some Concern

Human density in the buffer zone and the surrounding area of the site is relatively high (261.5 persons per km2 in 2011), including Tharu, Bote, and Darai communities. Whilst buffer zone community use models have been developed and in place for the past few decades, the issue of equitable benefits sharing still tends to elicit varying opinions (State Party of Nepal, 2011; Lamichhane et al., 2019). For example one research survey notes: "Questionnaire interview data indicate the livelihoods of buffer zone residents remain strained by conservation activities. While benefits under incentive-based programmes are recognized by the residents, villages distant from the main tourist entry points to the park, where costs associated with conservation are highest, recognize few benefits. More recent studies suggest that funds should be concentrated into direct interventions (prevention and mitigation) to reduce wildlife conflicts (Lamicchhane et al., 2019).
Several projects in and around the park have worked on developing the links between communities, development and conservation. For example, the UNDP Tiger-Rhino Conservation Project, was deemed successful in terms of conservation (regeneration of the Barandabhar Forest ecological corridor, based on survey results, and resulting increases of species diversity/ breeding populations of endangered species) and livelihoods (improved livelihoods among at least 51% of the 3,500 households targeted for the introduction of a wide range of income-generating activities). Although the project evaluation notes that improvements in livelihoods have not been quantified and compared with the available baseline socio-economic data (Tiwari et al., 2007); which highlights the need for better monitoring and research on socio-economic data to help accurately assess the links between the Park and local communities. Other projects such as Terai Arc Landscape Program and Hariyo Ban Program of WWF and Conservation projects of National Trust for Nature Conservation (NTNC) also aimed at improving relationships with local people. The ZSL greater one-horned rhinos conservation efforts in the area have increased healthy

grassland in the site through decreasing grazing competition between livestock and wildlife by providing access to veterinary services, and encouraging better grazing practices (ZSL, 2018).

► Legal framework — Highly Effective

The legal framework for the maintenance of the Outstanding Universal Value provides an adequate or better basis for effective management and protection. The impacts of World Heritage status of the site in relation to the legal/policy framework by which the site is managed is very positive (State Party of Nepal, 2011). Under the new Constitution of Nepal of 2015, Rural Municipalities were given more power in managing their resources, which was identified as having the potential for increased challenges in the management of Chitwan National Park, which overlaps with four provinces. However, the impacts to the management of the site of this devolution is unclear.

► Law enforcement — Serious Concern

Law enforcement efforts on behalf of the site management are largely focussed around anti-poaching measures. More than 1000 army personnel are deployed for the park protection and are backed by significant investment in new technologies, including the use of Real Time SMART (Spatial Monitoring and Reporting Tool), surveillance camera and sniffer dogs in CNP and its Buffer Zone. These measures have been successful in reducing poaching, and indeed Nepal was able to claim several poaching-free years (The Himalayan Times, 2018), until four rhinos were found to have been poached in 2020 (Rimal, 2020). However, recent allegation of serious human rights abuses by government eco-guards supported by WWF, including in the site (Warren & Baker, 2019; Ganguly, 2020), have called into the question the methods by which this was achieved. In response, WWF commissioned a high-level independent review to investigate the allegations made in the article published by Buzzfeed in 2019 (WWF, 2019).
Outside of anti-poaching measures, the National Tiger Conservation Committee is a political priority within the country and chaired by Prime Minister. Other examples include the Wildlife Crime Control Coordination Committee, chaired by the Minister of Forests and Soil Conservation at the policy level and the Wildlife Crime Control Bureau at central and district levels, which have also been important tools for effective law enforcement in a coordinated and collective manner.

► Implementation of Committee decisions and recommendations — Mostly Effective

Past Committee decisions have been mostly resolved and well reported on in response to decisions made by the World Heritage Committee, including the ongoing collaborative efforts of Chitwan National Park, the Nepali Army, local communities and other partners to combat rhinoceros poaching (World Heritage Committee, 2019). Some requests within recent decisions made in 2017 and 2019 still require implementation, but progress is being made in some areas, as demonstrated by the State Party's recent decision to divert the East-West Electric Railway away from the property (State Party of Nepal, 2017), and the subsequent implementation of relevant EIAs (state Party of Nepal, 2018). Despite such commendable progress, a number of other linear infrastructure projects remain sources of concern (UNESCO, 2019), and therefore although the State Party is mostly effective in implementing Committee decisions and recommendations, there are still outstanding issues to be resolved.

► Sustainable use — Mostly Effective

Harvesting of timber both inside the park and its buffer zone is assessed as being sustainable (PR section 2, 2011). Other resource use such as fodder and medicinal plant use are all managed effectively by the Chitwan National Park Office. Buffer Zone Community Forestry is an approach adopted in close vicinity of the site which relies on sustainable use and has yielded significant improvements to biodiversity conservation and local livelihoods and in that sesne can be considered mostly effective. However, challenges to this model persist, such that sustainable use in this manner could stil be improvied (Thing and Poudel, 2017). Conflict for grazing pastures between livestock and wildlife in the buffer zone of the site has been an issue in the past, however is reportedly improving (ZSL, 2018).

► Sustainable finance — Some Concern

The park is reliant on government funds (90% - average per cent of conservation budget) with the remaining small amount coming from NGOs (State Party of Nepal, 2011). Whilst recent data on sustainable financing is limited, the lack of funds to complete the most recent rhino census (Raj Joshi, 2019) is indicative of an overall lack of funding for the management requirements of the site, especially given that this is one of the site's core monitoring programmes. Overall, the available budget has been assessed in the past as acceptable but could be further improved to fully meet the management needs.

► Staff capacity, training, and development — Some Concern

The ranking of training opportunities for a range of disciplines in the latest periodic report shows that whilst training opportunities exist in the more 'traditional' protected area management activities (e.g. research and monitoring, education, conservation, administration, legal and enforcement), less training is available for promotion, community outreach, visitor management and tourism and no opportunities exist for training in interpretation and risk preparedness (the latter being a particularly important point given the results of the threat assessment above) (State Party of Nepal, 2011). There is no more recent information available relating to staff capacity building and training, and therefore this remains as some concern.

► Education and interpretation programs — Some Concern

CNP received funding and developed an interpretation programme in the early 1990s. The 2011 Periodic Report notes that while there is fair availability of professionals for education, interpretation availability is poor. There is limited current information relating to this issue, and therefore previous findings that education and awareness programmes in place within the site only partly meet requirements and could be improved remain of some concern.

► Tourism and visitation management — Mostly Effective

A visitor centre, site museum, information booths, and information materials provide opportunities for interpretation; guided tours are considered to be adequate whilst trails/routes and transportation facilities could be improved (State Party of Nepal, 2011). Progress is reported to be made in that regard, with designated routes and timings for jungle drives, upgrading of vehicles, and better maintenance of roads (IUCN consultation, 2017).

► Monitoring — Some Concern

There is considerable monitoring but it is not directed towards management needs and/or improving understanding of Outstanding Universal Value. Key indicators have been defined but are centred largely around a small number of keystone species (Bengal tiger and greater one-horned rhino) and the monitoring the status of indicators could be improved (State Party of Nepal, 2011). The lack of funds for the most recent rhino survey, as reported by Raj Joshi, 2019, is of some concern for the status of ongoing monitoring of key indicators of the sites values and should be addressed as a matter of priority.

► Research — Mostly Effective

Scientific studies related to species such as Rhino, Tiger and Mikania micrantha have been on-going. Research projects relating to B.Sc, M.Sc and PhD studies from national and international level have been permitted yearly. Although there is considerable research it is not directed towards management needs and/or improving understanding of Outstanding Universal Value (State Party of Nepal, 2011).

Overall assessment of protection and management

► Assessment of the effectiveness of protection and management in addressing threats outside the site — Some Concern

There are some illegal settlements in the buffer zone, including in areas of critical wildlife habitat. The Chitwan National Park Office does not appear to have the management capacity to address this issue, and there is an apparent lack of coordination with other government institutions and national

and international organisations providing development aid to these communities. This has lead to some critical wildlife habitat in the buffer zone being severely damaged (eg. at Bandarjhula), and is reported to increase human-wildlife conflict.

▶ **Best practice examples**

CNP has institutionalized mechanisms in the buffer zone to minimize biotic pressures on the park and motivate communities in the participatory management of forest resources to fulfill their needs of forest products. The long-term objective is to motivate local people and to win their support to involve them in nature and wildlife conservation. The local community receives up to 50% of the park's income generated from tourism and other incomes of the park, alternative forest resources from Buffer Zone forest and employment opportunity from the site management and the site benefits from the community for resource management in the buffer zone (IUCN/UNESCO, 2007). However, as noted above, there remain some challenges in buffer zone management, in particular where it concerns encroachment of critical wildlife habitats, and the management of human-wildlife conflict.

State and trend of values

Summary of the Values

▶ **Assessment of the current state and trend of World Heritage values** **Trend: Stable**

Additional information

Benefits

Understanding Benefits

▶ **History and tradition, Cultural identity and sense of belonging**

The sites with cultural, religious and archaeological importance include: Triveni Ghat, Valmiki Ashram, Gajra Gajaha, Brahma Chauri and Laxmi Narayan Temple in Triveni; Panch Pandav, Shivalinga, Parsuram Kunda and Godak Nath Temple in Bankatta, Madi;, Bikram Baba in Kasara, and Someshvar Kalika monument in Madi (IUCN/UNESCO, 2007). The religious sites in the property and its buffer zone, particularly at Gajendra Dham in Triveni, attract pilgrims from around Nepal and India.

▶ **Fishing areas and conservation of fish stocks**

Traditional fishing to maintain the livelihood of the indigenous Bote people is permitted inside CNP (IUCN/UNESCO, 2007)

▶ **Sustainable extraction of materials (e.g. coral, shells, resin, rubber, grass, rattan, etc)**

Collection of thatch grass in the park by villagers is permitted and well controlled within CNP (IUCN/UNESCO, 2007)

▶ **Outdoor recreation and tourism**

CNP contributes nearly 60% of the tourism revenue of the protected areas in Nepal (IUCN/UNESCO, 2007).

► **Importance for research**

Ease of accessibility means CNP is one of the most important places to study various natural phenomena, ecology and behaviour of wildlife and socio-economy of the people in Nepal. The scientific information generated from the park research has high value (IUCN/UNESCO, 2007)

Summary of benefits

The fact that the Government of Nepal recognizes the role of people in biodiversity conservation including PA management, means that community engagement and agreements on legal resource use within CNP are well established and the range of benefits from the park are extensive.

Projects

Compilation of active conservation projects

№	Organization	Brief description of Active Projects	Website
1	NTNC	The NTNC Biodiversity Conservation Centre in Chitwan has run many conservation projects in the park, one of the most recent reported above was a partner in the tiger census (NTNC, 2013)	http://www.ntnc.org.np/national-trust-nature-conservation

№	Organization	Brief descriptionof Active Projects	Website
2	WWF	WWF (international and primarily WWF Nepal) has been working with Chitwan for 22 years, main project focus areas including: Community development and conservation projects in the Chitwan buffer zone. Rhino monitoring Terai Arc Landscape (TAL) program is being jointly implemented by DNPWC, the Department of Forests and WWF	http://wwfnepal.org/?208669/WWF-Nepal-celebrates-20-years-of-conservation-partnerships http://www.wwfnepal.org/?207351/Communities-come-together-to-protect-wetland http://www.wwfnepal.org/hariyobanprogram/latest_updates_and_stories/?208401/Safeguarding-r monitoring http://wwf.panda.org/what_we_do/how_we_work/conservation/species_programme/species_peop
3	USAID	“Nepal Tiger Genome Project” is using innovative genetic technology to build a comprehensive national DNA database of the endangered Bengal tigers living in Nepal’s Terai Arc Landscape	http://blog.usaid.gov/2013/04/tracking-tigers-for-conservation/
4	The Rufford Foundation	Several projects – which are reported in this assessment (see reference list)	http://www.rufford.org/projects/bycountry/np?page=2

№	Organization	Brief descriptionof Active Projects	Website
5	Global Tiger Initiative (GTI) partners	Training courses for wildlife conservation professionals to introduce SMART patrolling practices and technology (completed)	Training courses for wildlife conservation professionals to introduce SMART patrolling practices a
6	Outreach International	Training elephants to work in the park	http://www.outreachinternational.co.uk/nepal/projects/elephant_conservation_centre.html
7	Cleveland Metroparks Zoo/Cleveland Zoological Society Asia Seed Grants Program	Community-based gharial conservation initiative in the Narayani River of Chitwan National Park	http://www.clemetzoo.com/conservation/grants/asia/2012/Dol-Raj-Thanet.asp
8	Zoological Society of London	Conservation and development projects	https://www.zsl.org/blogs/asia-conservation-program/an-update-from-nepal
9	Green Governance Nepal	Living with tigers: By changing natural resource use behaviors, building capacity, improving livelihoods, the Living with Tigers Project aims to secure the safety of people, livestock and tigers in the buffer zones of Chitwan National Park and Bardia National Park.	http://ggnepal.org.np/blogs/living-tigers/

№	Organization	Brief descriptionof Active Projects	Website
10	Disaster Risk Reduction (DRR) Strengthening Project in Chitwan District.	Under the agreement, the Government of Japan is extending the financial assistance of US dollars 378,309 equivalent to approximately 43.9 million Nepali rupees, to SHAPLA NEER - Citizens' Committee in Japan for Overseas Support under the Grant Assistance for Japanese NGO Projects Scheme. Shapla Neer, an international NGO based in Japan, will work with a Nepali partner NGO, Rural Reconstruction Nepal (RRN), to implement the Disaster Risk Reduction (DRR) Strengthening Project in Chitwan District. This grant assistance will be used to implement a project in both Madi Municipality, a flood prone area; and previously named Lothar VDC in Rapti Municipality, a landslide prone area. Both areas are within Chitwan District. This project aims to strengthen	https://www.spotlightnepal.com/2018/11/16/japan-provides-assistance-launch-drr-project-chitwa japan.go.jp/files/000564839.pdf

№	Organization	Brief descriptionof Active Projects	Website
11	Drinking water for the wildlife	SunFarmer, in partnership with ICIMOD, implemented a 2.4 kWp project to provide drinking water for the wildlife. Three easily accessible ponds are being made to store water for the wildlife.	http://www.sunfarmer.org/chitwan-projects
12	Projects and Programmes under Government Of Nepal Ministry of Forests and Environment Department of Forests and Soil Conservation	Rastrapati Chure Conversation Program Wildlife Conservation Program Leasehost Forestry and Livestock Development Program	http://dof.gov.np/about_us/projects

REFERENCES

№	References
1	Acharya P.M., Lamsal P., Rajbhandari S.L., Shrestha P., Neupane D., Pathak M., Niraula M., Lama H.M., and Lama B.2010. Status and distribution of otters in Narayani River, Chitwan National park. A fist phase research report submitted to Rufford Foundation, U.K. 52 pp.
2	Allen, D.J., Molur, S., Daniel, B.A. (Compilers). (2010). The Status and Distribution of Freshwater Biodiversity in the Eastern Himalaya. Cambridge, UK and Gland, Switzerland: IUCN, and Coimbatore, India: Zoo Outreach Organisation.
3	Anon (2013); Nepal: Tiger population up but threats persist, FirstPost July 30th 2013, http://www.firstpost.com/fwire/nepal-tiger-population-up-bu…
4	BBC. (2010). The invader that is strangling an ecosystem. [online] London, UK: BBC. Available at: http://news.bbc.co.uk/go/pr/fr/-/2/hi/science/nature/857664… (Accessed 25 November 2020).
5	Ballouard, J M; Priol, P; Oison, J; Ciliberti, A and Cadi, A (2010); Does reintroduction stabilize the population of the critically endangered gharial (Gavialis gangeticus, Gavialidae) in Chitwan National Park, Nepal? Aquatic Conservation-Marine and Freshwater Ecosystems, 20:7, 756-761 DOI: 10.1002/aqc.1151
6	Baral, H. S. and C. Inskipp. (2005). Important Bird Areas in Nepal: Key Sites for Conservation. Bird Conservation Nepal and Birdlife International, Kathmandu and Cambridge.
7	Baral, H. S. and G. P. Upadhyaya. (2006). Birds of Chitwan. Fourth edition. Department of National Parks and Wildlife Conservation, Participatory Conservation Programme II and Bird Conservation Nepal, Kathmandu, Nepal.
8	Bhattarai, B P and Kindlmann, P (2012); Habitat heterogeneity as the key determinant of the abundance and habitat preference of prey species of tiger in the Chitwan National Park, Nepal, Acta Theriologica, 57: 1, 89-97 DOI: 10.1007/s13364-011-0047-8
9	Chitwan National Park and its Buffer Zone Management Plan 2013-2017.
10	DNPWC. (2016). Annual Report FY 2015/2016, Department of National Parks and Wildlife Conservation, Babarmahal, Kathmandu, Nepal
11	Dhakal, M.; Karki (Thapa), M.; Jnawali, S.R.; Subedi, N.; Pradhan, N.M.B.; Malla. S.; Lamichhane, B.R.; Pokheral, C.P.; Thapa. G.J.; Oglethorpe, J.; Subba, S.A.; Bajracharya, P.R.; and Yadhav, H. 2014. Status of Tigers and Prey in Nepal. Department of National Parks and Wildlife Conservation, Kathmandu, Nepal
12	Edds, D. (1989). Multivariate analysis of fish assemblage composition and environmental correlates in a Himalayan river – Nepal’s Kali Gandaki/Narayani. Ph.D. diss., Oklahoma State University, Stillwater, USA.
13	Ellis, S. & Talukdar, B. (2019). Rhinoceros unicornis. The IUCN Red List of Threatened Species 2019: e.T19496A18494149. https://dx.doi.org/10.2305/IUCN.UK.2019-3.RLTS.T19496A18494… on 25 November 2020.
14	Ganguly, M. (2020). Nepal Park Guards Accused of Persecuting Indigenous People. [online] 28 July, Human Rights Watch. Available at: https://www.hrw.org/news/2020/07/28/nepal-park-guards-accus… (Accessed 25 November 2020).
15	Government of Nepal (2011); Disasters Report 2012: Policies, Practices and Lessons, Ministry of Home Affairs, Government of Nepal, http://www.nset.org.np/nset/php/publication_books.php
16	Government of Nepal, Ministry of Forest and Soil Conservation, Department of National Parks and Wildlife Conservation, 2014. State of Conservation of Chitwan National Park, Nepal (N 284).

№	References
17	Government of Nepal. (2015). Status of Wetlands and Mugger Crocodile In and Around Chitwan National Park. [online] Kasara, Chitwan: Ministry of Forests and Soil Conservation, Ministry of Forests and Soil Conservation, Department of National Parks and Wildlife Conservation, Department of National Parks and Wildlife Conservation Chitwan National Park. Available at: https://rsis.ramsar.org/RISapp/files/1309/documents/NP1313_... (Accessed 30 July 2020).
18	Government of Nepal. (2016). Grassland Habitat Mapping in Chitwan National Park. [online] Kasara, Chitwan: Ministry of Forests and Soil Conservation, Department of National Parks and Wildlife Conservation. Available at: http://dnpwc.gov.np/media/publication/GRASSLAND_HABITAT_MAP... [Accessed 30 July 2020].
19	Government of Nepal. (2018). Status of Tigers and Prey in Nepal. [online] Kathmandu, Nepal: Ministry of Forests and Environment Department of National Parks and Wildlife Conservation and Department of Forests and Soil Conservation Kathmandu, Nepal. Available at: https://ntnc.org.np/sites/default/files/doc_publication/201... (Accessed 17 July, 2020).
20	Government of Nepal/Ministry of Law, Justice and Parliament Affairs, 2017 International Trade in Endangered Wildlife and Plant Control Act, 2017*. Act and Regulation related to Forest, National Park, Soil Conservation, and Endangered Wildlife and Plant related Act and Regulations Compile. Government of Nepal/Ministry of Law, Justice anad Parliament Affairs/ Law Book Management Committee, Babarmahal, Kathmandu
21	Gurung, B; Nelson, K C and Smith, J L D (2009); Impact of grazing restrictions on livestock composition and husbandry practices in Madi Valley, Chitwan National Park, Nepal, Environmental Conservation, 36:4 , 338-347, DOI: 10.1017/S0376892910000160
22	IUCN Consultation. (2014). IUCN Confidential Consultation- Chitwan National Park, Nepal.
23	IUCN Consultation. (2017). IUCN Confidential Stakeholder Consultation- Chitwan National Park, Nepal
24	IUCN. (2016). Report on the mission to Chitwan National Park, Nepal, from 14 to 21 March 2016. [online] Gland, Switzerland: IUCN. Available at: https://whc.unesco.org/en/list/284/documents/ (Accessed 25 November 2020).
25	IUCN/UNESCO. (2007). Enhancing Our Heritage Final Evaluation, Gland, Switzerland: IUCN.
26	Inskipp, C. 1989. Nepal’s Forest Birds: Their Status and Conservation. ICBP Monograph No. 4. International Council for Bird Preservation, Cambridge, UK.
27	Jnwali, S.R., Baral, H.S., Lee, S., Acharya, K.P., Upadhyay, G.P., Pandey, M., Shrestha, R., Joshi, D., Lamichhane, B.R., Griffiths, J., Khatiwada, A.P., Subedi, N. And Amin, R. (Compilers) (2011). The Status of Nepal Mammals: The National Red List Series, Department of National Parks and Wildlife Conservation, Kathmandu, Nepal
28	Kafle. G. and I. T. Savillo (2009). Present status of Ramsar sites in Nepal, International Journal of Biodiversity and Conservation Vol. 1(5) pp. 146-150 September, 2009
29	Khadka, B. B., & Bashyal, A. (2019). Growth rate of captive Gharials Gavialis gangeticus (Gmelin, 1789)(Reptilia: Crocodylia: Gavialidae) in Chitwan National Park, Nepal. Journal of Threatened Taxa, 11(15), 14998-15003.
30	Khadka, B. B., Acharya, P. M., & Rajbhandari, S. L. (2017). Population status and species diversity of wetland birds in the Rapti and Narayani rivers and associated wetlands of Chitwan National Park, Nepal. Journal of Threatened Taxa, 9(6), 10297-10306.
31	Lamichhane, B. R., Persoon, G. A., Leirs, H., Poudel, S., Subedi, N., Pokheral, C. P., ... & de Iongh, H. H. (2018). Spatio-temporal patterns of attacks on human and economic losses from wildlife in Chitwan National Park, Nepal. PloS one, 13(4), e0195373.

№	References
32	Lamichhane, B. R., Persoon, G. A., Leirs, H., Poudel, S., Subedi, N., Pokheral, C. P., ... & de Iongh, H. H. (2019). Contribution of buffer zone programs to reduce human-wildlife impacts: the case of the Chitwan National Park, Nepal. Human Ecology, 47(1), 95-110.
33	Murphy, S.T., Subedi, N., Raj Jnawali, S., Lamichhane, B.R., Upadhyay, G.P., Kock, R. and Amin, R. (2013). Invasive mikania in Chitwan National Park, Nepal: the threat to the greater one-horned rhinoceros Rhinoceros unicornis and factors driving the invasion. Oryx, 47, pp 361-368. Doi:10.1017/S003060531200124X.
34	NTNC. (2013). NTNC Chairman Released the Recent Tiger Number in Nepal. [online] National Trust for Nature Conservation (NTNC). Available at: http://www.ntnc.org.np/news/ntnc-chairman-released-recent-t...
35	Nyaupane, G P and Chhetr, N I (2009); Vulnerability to Climate Change of Nature-Based Tourism in the Nepalese Himalayas, Tourism Geographies, 11: 1, 95–119
36	Pokharel (2012); The Four-Horned Antelope: The Distribution Patterns, Resource Selection and Immediate Threats in Chitwan National Park, Final report for The Rufford Foundation, http://www.rufford.org/files/9748-1%20Detailed%20Final%20Re...
37	Pradhan, M S (2011); Social exclusion and social change: Access to, and influence of, community-based collective action programs in Nepal (dissertation), The University of Michigan, http://deepblue.lib.umich.edu/bitstream/handle/2027.42/8635...
38	Raj Joshi, A. (2019b). Nepal reckons with the dark side of its rhino conservation success. [online] 25 March, Mongabay. Available at: https://news.mongabay.com/2019/03/nepal-reckons-with-the-da... (Accessed 29 July 2020).
39	Raj Joshi, Abhaya. (2019). No rhino census this year as Nepal runs short of funds for survey. 11 April, Mongabay. [online] Available at: https://news.mongabay.com/2019/04/no-rhino-census-this-year... (Accessed 17 July, 2020).
40	Rajbhandari, S L and P M Acharya (2013); Study of Habitat and Population of Endangered Gavialis gangeticus in Narayani River of Chitwan National Park, Nepal, Final report for The Rufford Foundation, http://www.rufford.org/rsg/projects/sunil_lal_rajbhandari
41	Rimal, T. (2020). Four rhinos killed in Chitwan National Park, ending four years of zero poaching. [online] 8 November, The Himalayan Times. Available at: https://thehimalayantimes.com/nepal/four-rhinos-killed-in-c... (Accessed 25 November 2020).
42	Shrestha (2013); Gharial: Living Dinosaurs and Plastic Bottles in Chitwan National Park, Sustainable Nepal, http://sustainablenepal.org/gharial-living-dinosaurs-and-pl...
43	Spiteri, A and Nepal, SK (2008); Distributing conservation incentives in the buffer zone of Chitwan National Park, Nepal, Environmental Conservation , 35: 1, 76-86 DOI: 10.1017/S0376892908004451
44	State Party of Nepal (PR Summary). (2003). Periodic Report First Cycle, Section II Summary: Chitwan National Park. [online] Paris, France: UNESCO World Heritage Centre, pp.1-11. Available at: https://whc.unesco.org/en/list/284/documents/ (Accessed 25 November 2020).
45	State Party of Nepal (Periodic Report). (2011). Periodic Report Second Cycle, Section II: Chitwan National Park. Paris, France: UNESCO World Heritage Centre.
46	State Party of Nepal. (2019). Report of the State Party to the World Heritage Committee on the state of conservation of the Chitwan National Park (Nepal). [online] Kathmandu, Nepal: Ministry of Forests and Environment Department of National Parks and Wildlife Conservation. Available at: https://whc.unesco.org/en/list/284/documents/ (Accessed 22 October 2019).

№	References
47	Stevenson, C. and Whitaker, R. (2010). Indian Gharial Gavialis gangeticus. Pp. 139-143 in Crocodiles. Status Survey and Conservation Action Plan. Third Edition, ed. By S.C. Manolis and C. Stevenson. Crocodile Specialist Group: Darwin.
48	The Himalayan. (2013). Connecting Madi. [online] Available at: http://www.thehimalayantimes.com/fullNews.php?headline=Conn... [Accessed 25 Novermber 2020].
49	Tiwari, S; Regmi, R and M J B Green (2007); Report of the Final Evaluation Mission: Landscape-Scale Conservation of the Endangered Tiger And Rhino Populations in and around Chitwan National Park (Tiger-Rhino Conservation Project), UNDP
50	UNESCO. (2014). Report on the State of Conservation of Chitwan National Park, Nepal. State of Conservation Information System of the World Heritage Centre. [online] Paris, France: UNESCO World Heritage Centre. Available at: https://whc.unesco.org/en/list/284/documents/ (Accessed 25 November 2020).
51	UNESCO. (2019). Report on the State of Conservation of Chitwan National Park, Nepal. State of Conservation Information System of the World Heritage Centre. [online] Paris, France: UNESCO World Heritage Centre. Available at: https://whc.unesco.org/en/soc/3900 (Accessed 22 October 2019).
52	WWF (2011); Nepal rhino census shows increase, http://wwf.panda.org/?200112/Collective-conservation-effort...
53	WWF. (2013). Hariyo Ban Program Chitwan- Annapurna Landscape Biodiverstiy Important Areas and Linkages. [online] Kathmandu, Nepal: WWF Nepal. Available at: https://wwfasia.awsassets.panda.org/downloads/annex_12_6_re... (Accessed 30 July 2020).
54	WWF. (2019). Statement on safeguarding human rights in conservation, and addressing allegations of human rights abuse. [online] 10 July. Available at: https://wwf.panda.org/wwf_news/wwf_independent_review_/?349... (Accessed 19 September 2019).
55	Warren, T. & Baker, K.J.M. (2019). WWF funds guards who have tortured and killed people. [online] 4 March, Buzzfeed. Available at: https://www.buzzfeednews.com/article/tomwarren/wwf-world-wi... (Accessed 28 July 2020).
56	World Heritage Committee (2012). Decision : 36 COM 8E Chitwan National Park- Adoption of retrospective Statements of Outstanding Universal Value (Nepal). In: Decisions Adopted by the World Heritage Committee at its 36th Session. [online] Paris, France: UNESCO World Heritage Centre. Available at: https://whc.unesco.org/en/decisions/4841 (Accessed 25 November 2020).
57	ZSL. (2018). Nepal's greater one-horned rhinos. [online] Available at: https://www.zsl.org/conservation/regions/asia/nepals-greate... (Accessed 29 July 2020).