IUCN Conservation Outlook Assessment 2014 **(archived)**
Finalised on 12 November 2014

Please note: this is an archived Conservation Outlook Assessment for Nahanni National Park. To access the most up-to-date Conservation Outlook Assessment for this site, please visit https://www.worldheritageoutlook.iucn.org.

Nahanni National Park

SITE INFORMATION

Country:
Canada
Inscribed in: 1978
Criteria:
(vii) (viii)

Site description:
Located along the South Nahanni River, one of the most spectacular wild rivers in North America, this park contains deep canyons and huge waterfalls, as well as a unique limestone cave system. The park is also home to animals of the boreal forest, such as wolves, grizzly bears and caribou. Dall's sheep and mountain goats are found in the park's alpine environment. © UNESCO

SUMMARY

2014 Conservation Outlook

Good with some concerns

The geological features of the site and its outstanding scenic beauty have been well preserved and remain in a good condition. There are natural threats from increased permafrost thaw/ landsliding and possible increase in storm event flooding. Hazards from the established mining activities are minor. However, the potential hazards from full-scale mining at the Prairie Creek site are substantial but, at time of this assessment, it does not appear likely that that will occur in the near future. From an ecological integrity point of view the massive expansion of the national park and the creation of a new Naats'ihch'oh National Park Reserve adjacent to it have improved the long term outlook of the original World Heritage site which remains within its 1978 boundaries. However, areas excluded from Nahanni National Park (i.e., Prairie Creek mine) and from the new Naats'ihch'oh National Park Reserve represent weak links in the protection of Nahanni as a whole. If those areas are developed in the future, there is significant concern that the World Heritage values of the site could be threatened.

Current state and trend of VALUES

Good
Trend: Stable

Nahanni National Park is a very large wilderness with very few permanent human inhabitants or dwellings. The superlative landscapes are generally very robust. There are only a few hundred visitors each year, arriving by floatplane and canoeing out of the Park. From a physical geographic perspective, the concerns are limited to natural impacts of thawing permafrost, and the (chiefly potential) hazards posed by future development of mines at Tungsten and Prairie Creek.

Overall THREATS

Low Threat

There are natural threats from increased permafrost thaw/ landsliding and possible increase in storm event flooding. Hazards from the established mining activities are minor. The potential hazards from full scale mining at the Prairie Creek site are substantial but, at time of this assessment, it does not appear likely that that will occur in the near future. It is important to note that the entire Nahanni River watershed is not currently protected by the new and adjacent Naats'ihch'oh National Park Reserve. If industrial mining occurs at full scale in such areas in the future, the impact may have severe consequences for the ecological integrity and values of Nahanni.

Overall PROTECTION and MANAGEMENT

Mostly Effective

Overall protection and management of the site is effective. However, areas excluded from Nahanni National Park (i.e., Prairie Creek mine) and from the new adjacent Naats'ihch'oh National Park Reserve represent weak links in the protection of the ecological integrity of Nahanni as a whole. If those areas are developed in the future, there is significant concern that the values of the World Heritage site could be threatened.

FULL ASSESSMENT

Description of values

Values

World Heritage values

► Exceptional natural beauty
Criterion:(vii)

The Nahanni River is one of the most spectacular wild rivers in North America, with deep canyons, huge waterfalls, and spectacular karst terrain, cave systems and hot springs. Exposure of geologic and geomorphologic features includes the meanders of ancient rivers, now raised high above present river levels (Statement of Significance, 2006).

► Exceptional representation of on-going geological processes
Criterion:(viii)

In Nahanni National Park, there is exceptional representation of on-going geological processes, notably fluvial erosion, tectonic uplift, folding and canyon development, wind erosion, karst and pseudo-karst landforms, and a variety of hot springs. The major geologic and geomorphologic features provide a combination of geological processes that are globally unique (Statement of Significance, 2006). Nahanni offers the greatest diversity of geomorphic erosional landforms seen in any Canadian park, due to a nearly unique mixture of (i) alpine glacial sculpture on granitic rock and softer sedimentary rocks; (ii) a central zone of never-glaciated terrain (very rare in Canada) that displays three magnificent examples of antecedent meandering river canyons with paleocutoff meanders along the South Nahanni River plus many lesser canyons on tributaries; remnants of multiple glacial lakes caused by downstream blockages in the eastern zone are seen as deep and

colourful cliffs and hoodoos of unconsolidated sediments in this zone; (iii) an eastern zone that was repeatedly overrun by ice of the continental Laurentide Ice Sheet; glacial scour was weaker than in the alpine zone but erratic rocks from the Shield 400 km to the east are abundant. Along and around the juncture of the central and eastern zones are the most accentuated limestone karstlands known anywhere in the arctic and sub-arctic regions of Earth, including giant sinkholes, poljes, karst corridors, the finest arctic relict caves that also contain long records of paleoclimate and ecology, plus dramatically rapid modern drainage through underlying cave systems that are inaccessible.

Other important biodiversity values

► Threatened wildlife species

Nahanni National Park Reserve (expanded in 2009) and contiguous Naat'inch'oh National Park Reserve provide extensive and crucial habitat for three wide-ranging wildlife species: woodland caribou (Rangifer tarandus caribou), grizzly bear (Ursus arctos horribilis), and Dall’s sheep (Ovis dalli dalli) (Weaver 2006, Weaver 2008).
The Upper Nahanni caribou herd numbered 1635 (± 259) animals in 2009 (Hegel et al. 2010) and occupies a home range of 17,500 km2 (Weaver 2006). Importantly, these caribou have traditional winter ranges around iconic Virginia Falls and migrate in spring >150 km to traditional calving and breeding sites at higher elevations in the headwaters area of the South Nahanni River watershed. The lower Nahanni caribou herd (comprised of the Coal River and LaBiche groups) numbered approximately 731-878 animals in 1990s (Weaver 2006) and occupies a home range of 32,000 km2 (Weaver 2008). These caribou spend the winter on traditional ranges near the confluence of Flat River and the South Nahanni River in Nahanni National Park. Importantly, they migrate 200-240 km in spring to traditional calving and breeding sites on alpine plateaus outside of Nahanni National Park in southeast Yukon Territory (headwater areas of Coal River and LaBiche drainages) (Weaver 2008). These treks represent the longest migrations yet reported for woodland caribou (Weaver 2008). Members of the Redstone caribou herd (5000-10,000 animals: Alasdair Veitch, personal communication) have traditional calving and calf-rearing sites in the very

headwater region of the South Nahanni River, whereas some have traditional winter sites north of Virginia Falls in Nahanni National Park (Clearwater, Cathedral Creeks) (Weaver 2006).
The South Nahanni River watershed provides habitat and security (from human-caused mortality and disturbance) for >500 grizzly bears (Weaver 2006). Importantly, the Nahanni grizzly bears exhibit the highest genetic diversity recorded thus far for grizzly bears in North America (Weaver 2006).
A trail near Rabbitkettle Lake in Nahanni National Park provides a unique opportunity to interpret tree-rubbing behavior by grizzly bears (Weaver 2006).
Dall’s sheep number 800-1200 Dall’s and occupy some 27 sheep ranges throughout the South Nahanni River watershed, which represents the southeast terminus of Dall’s sheep range in North America (Weaver 2006). These sheep exhibit a distinct genetic structure, likely due to the Mackenzie Mountains being an ice-free refugium during the latter period of the Wisconsinan glaciations (Worley et al. 2004). Importantly, the highest concentration of karst caves used by wild sheep in North America was discovered on the Ram Plateau in Nahanni National Park (Weaver 2006).

► **An outstanding landscape of high ecological integrity**

Nahanni National Park (and the larger South Nahanni River watershed) exhibits a globally outstanding landscape of high ecological integrity. Due to its remoteness and its current industrial footprint limited to the Cantung site along the western edge, the ecosystem appears to function naturally with intact assemblage of native species, natural movements of wide-ranging wildlife, natural river dynamics, etc. It also provides extraordinary wilderness experiences. The Nahanni River is considered perhaps the world’s most iconic canoe trip and the Cirque of the Unclimbables (where the Lotus Flower Tower is located) is one of the world’s most iconic rock climbing areas.

Assessment information

Threats

Current Threats

Low Threat

There are natural threats from increased permafrost thaw/ landsliding and possible increase in storm event flooding. Hazards from the established mining activities are minor.

► Water Pollution

Low Threat
Outside site

There has been water pollution from the zinc mine at Prairie Creek, however activity is very low at present due to economic constrains. (Parks Canada Ecological Statement 2001; Mining Watch Canada annual reports; Personal observations in 2006, 2007, 2010). The risk of pollution, however, remains and is exacerbated by the fact the area is seismically active and earthquake prone.

► Avalanches/ Landslides

Low Threat
Inside site

There are occasional natural landslides in bedrocks and unconsolidated glacial, etc. deposits occasionally throughout the area.

► Mining/ Quarrying

High Threat
Outside site

Mining at Tungsten on the Flat River (principal south bank tributary of the S Nahanni). Hazards from the established mining activities are minor. The main concern is the water quality in the park because of the close upstream location of both mines on direct tributaries to the South Nahanni River (SOC Report, 2006).
The exploration and potential mine development at Prairie Creek, a major north bank tributary, is of high concern. Serious chemical pollution of air, surface and ground waters can be anticipated if the Prairie Creek Mine goes

into production. (Ford Report to Parks Canada, 2006 and 2007).

▶ Roads/ Railroads

Low Threat
Inside site

Access to the Prairie Creek site (Canadian Zinc) is by a winter road from the settlement of Nahanni Butte that crosses the main karst belt upstream of the principal northern springs that drain it, and then follows a varied route through the Ram headwaters across a divide into the Prairie Creek watershed; much of it follows stream beds. Large volumes of supplies from a failed mining effort in the early 1980s are abandoned along the route. Upgrading this road would provide year-round access for hunters/poachers to sites used by grizzly bears and Dall's sheep, and additional risk of human-caused mortality to grizzly bears.

Potential Threats

High Threat

The potential hazards from full scale mining at the Prairie Creek site are substantial but, at time of this assessment, it does not appear likely that that will occur in the near future. It is important to note that the Nahanni River watershed is not currently protected by the new and adjacent Naats'ihch'oh National Park Reserve. If industrial mining occurs at full scale in such areas in the future, the impact may have severe consequences for the ecological integrity and world-class values of Nahanni.

▶ Mining/ Quarrying

Very High Threat
Outside site

If industrial mining and year-round access is permitted in areas excluded from Naats'ihch'oh National Park Reserve adjacent to Nahanni and located in the headwaters of Nahanni (30% of area is excluded), this is likely to threaten wildlife, fish, and water quality and comports a high risk of human-caused disturbance and mortality of woodland caribou, grizzly bears, and Dall's sheep. This is particularly the case for the Upper Nahanni caribou herd

whose calving grounds are in one of the areas left out of the park.

► Temperature changes

Low Threat
Inside site
Outside site

Regional warming is thawing many areas of permafrost in the frost-susceptible glacial lake silts exposed widely in the central and eastern zones of the park, resulting in landslides. Ford (2010) counted 40 new ones between 1976 and 2010 in main karst areas, most small (<200 m in length) but one was very large (~800 m). Habitats and species may shift distribution in response to changing climate.

Protection and management

Assessing Protection and Management

► Relationships with local people

Highly Effective

Dehcho First Nations are involved in the ongoing cooperative management of the site since 2000 when the Naha Dehé Consesus Team was created by Parks Canada and the Dehcho First Nations. Community and stakeholder involvement played an important role in the development of the 2010 Management Plan (www.pc.gc.ca, accessed 2014; Management Plan, 2010).

► Legal framework and enforcement

Highly Effective

The site is managed by Parks Canada under the Canada National Parks Act of 2000 and the Parks Canada Agency Act of 1998 through the Agency’s Guiding Principles and Operational Policies (WCMC, 2011).

► Integration into regional and national planning systems

Data Deficient

Data deficient

► Management system

Highly Effective

The site is managed by Parks Canada. The most recent Management Plan was developed in 2010 by the Naha Dehé Consensus Team. The Naha Dehé Consensus Team is involved in the ongoing cooperative management of the park according to the Interim Park Management Arrangement. The ultimate goal is to establish a permanent management regime between Parks Canada and Dehcho First Nations through completion of the Parks Chapter of the Dehcho Final Agreement (Management Plan, 2010).

► Management effectiveness

Mostly Effective

The 2009 State of the Park Report concluded that most of the management objectives were met (State of the Park Report, 2009).

► Implementation of Committee decisions and recommendations

Mostly Effective

In its most recent Decision (30COM 7B.22) the World Heritage Committee encouraged the State Party of Canada “to proceed with the expansion of Nahanni National Park to protect the entire South Nahanni watershed and the kartslands of the Ram Plateau”. The area of the national park was expanded in 2009; however, no boundary modifications were applied to the World Heritage site.

► Boundaries

Mostly Effective

When the site was inscribed on the World Heritage List in 1978 it was considered of sufficient site to protect its values. However, it was noted that it would be desirable to incorporate the entire upstream watershed in the World Heritage site (IUCN, 1978). The area of Nahanni National Park was expanded in 2009 (Management Plan, 2010). Ecological criteria were used in the expansion including the range of 500 grizzly bears which is thought to be

a viable population as part of a larger meta-population. The national park now also includes the spectacular karst areas of the Ram Plateau (the largest Arctic and SubArctic karst area in the world), the Ram River watershed and the Cirque of the Unclimbables, The new park protects roughly 75% of the entire 38,000 sq km watershed. Additonal protection for the South Nahani watershed came in 2012 with the creation of the 4895 sq km Naats'ihch'oh National Park Reserve immediately adjacent and upstream of the the expanded Nahanni National Park Reserve. Thus the two parks protect 93% of the watershed. However, the park expansion left a notable hole in the arae of Prairie Creek where there is a partially developed mine site upstream of the South Nahanni River. The World Heritage Site has not yet been enlarged.

► Sustainable finance

Data Deficient

The annual operating budget for 2003 was C$1,200,000 (Periodic Report, 2004). No recent figures available.

► Staff training and development

Data Deficient

7 fulltime plus 1 part-time, 6 seasonal and 7 others: administrative 3, resource management 4, general work 2, volunteers 5 reported in 2004 (Periodic Report, 2004). No recent information available.

► Sustainable use

Highly Effective

According to the Nahanni National Park Reserve Management Plan (2010) "subsistence harvest occurs in a respectful and sustainable manner, in accordance with Dene laws, values and principles".

► Education and interpretation programs

Data Deficient

Data deficient

► Tourism and interpretation

Mostly Effective

Interpretation is provided through various media which include website, print materials and displays, as well as through staff. Visitor surveys have shown high levels of satisfaction with interpretation (Management Plan, 2010).

► Monitoring

Highly Effective

There is a comprehensive monitoring programme in place. The ecological integrity of the national park is monitored according to a set of five indicators which correspond to the main ecosystems of the park: forest, alpine tundra, freshwater, wetlands and glaciers. Monitoring of cultural resources and visitor experience is also being carried out (Management Plan, 2010).

► Research

Data Deficient

Data deficient

Overall assessment of protection and management

Mostly Effective

Overall protection and management of the site is effective. However, areas excluded from Nahanni National Park (i.e., Prairie Creek mine) and from the new adjacent Naats’ihch’oh National Park Reserve represent weak links in the protection of the ecological integrity of Nahanni as a whole. If those areas are developed in the future, there is significant concern that the values of the World Heritage site could be threatened.

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

Some Concern

The most serious threat originating from outside the site originates from potential full-scale mining operations within the areas not included in the national park.

State and trend of values

Assessing the current state and trend of values

World Heritage values

▶ **Exceptional natural beauty**

Good
Trend:Stable

Nahanni National Park is a very large wilderness with very few permanent human inhabitants or dwellings. The superlative landscapes are generally very robust. There are only a few hundred visitors each year, arriving by floatplane and canoeing out of the Park.

▶ **Exceptional representation of on-going geological processes**

Low Concern
Trend:Stable

From a physical geographic perspective, the concerns are limited to natural impacts of thawing permafrost, and the (chiefly potential) hazards posed by future development of mines at Tungsten and Prairie Creek. The 2009 State of the Park Report noted that the glacier extent had decreased by 30% in the last 26 years (State of the Park Report, 2009).

Other important biodiversity values

▶ **Threatened wildlife species**

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iconic Virginia Falls and migrate in spring >150 km to traditional calving and breeding sites at higher elevations in the headwaters area of the South Nahanni River watershed. The lower Nahanni caribou herd (comprised of the Coal River and LaBiche groups) numbered approximately 731-878 animals in 1990s (Weaver 2006) and occupies a home range of 32,000 km2 (Weaver 2008). These caribou spend the winter on traditional ranges near the confluence of Flat River and the South Nahanni River in Nahanni National Park. Importantly, they migrate 200-240 km in spring to traditional calving and breeding sites on alpine plateaus outside of Nahanni National Park in southeast Yukon Territory (headwater areas of Coal River and LaBiche drainages) (Weaver 2008). These treks represent the longest migrations yet reported for woodland caribou (Weaver 2008). Members of the Redstone caribou herd (5000-10,000 animals: Alasdair Veitch, personal communication) have traditional calving and calf-rearing sites in the very headwater region of the South Nahanni River, whereas some have traditional winter sites north of Virginia Falls in Nahanni National Park (Clearwater, Cathedral Creeks) (Weaver 2006).
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► An outstanding landscape of high ecological integrity

Nahanni National Park (and the larger South Nahanni River watershed) exhibits a globally outstanding landscape of high ecological integrity. Due to its remoteness and its current industrial footprint limited to the Cantung site

along the western edge, the ecosystem appears to function naturally with intact assemblage of native species, natural movements of wide-ranging wildlife, natural river dynamics, etc. It also provides extraordinary wilderness experiences. The Nahanni River is considered perhaps the world's most iconic canoe trip and the Cirque of the Unclimbables (where the Lotus Flower Tower is located) is one of the world's most iconic rock climbing areas.

Summary of the Values

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

Good

Trend: Stable

Nahanni National Park is a very large wilderness with very few permanent human inhabitants or dwellings. The superlative landscapes are generally very robust. There are only a few hundred visitors each year, arriving by floatplane and canoeing out of the Park. From a physical geographic perspective, the concerns are limited to natural impacts of thawing permafrost, and the (chiefly potential) hazards posed by future development of mines at Tungsten and Prairie Creek.

Additional information

Key conservation issues

▶ **Surface and ground water contamination cause by mining activities**

Local

The exploration and potential mine development at Prairie Creek, a major north bank tributary, is of high concern. Serious chemical pollution of air, surface and ground waters can be anticipated if the Prairie Creek Mine goes into production.

▶ **Visual pollution**

Local

The exploration activities at the Prairie Creek site also degrade the natural

beauty of the area.

Benefits

Understanding Benefits

▶ **Sacred natural sites or landscapes**

Aesthetic appeal. Spiritual revitalization.

▶ **Outdoor recreation and tourism**

Rock climbing, mountaineering, canoeing, hill walking, caving, camping. Scientific studies of many kinds.

▶ **Wilderness and iconic features**

Several sites as well as the overall area have spiritual vale for Dehcho

▶ **Carbon sequestration**

Due to its large size and diverse ecological gradients, Nahanni offers significant ecological resilience in the face of climate change.

Projects

Compilation of active conservation projects

№	Organization/ individuals	Project duration	Brief description of Active Projects
1	Data deficient		Data deficient

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