Nahanni National Park

2017 Conservation Outlook Assessment

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

2017 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 increasing. 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**

*High Threat*

There are natural threats from increased permafrost thaw/ landsliding and possible increase in storm event flooding. Hazards from the established mining activities are increasing. The potential hazards from full scale mining at the Prairie Creek site are evident and are poised to increase in the near future. The Cantung Mine currently in a care and maintenance mode requires careful monitoring. 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. Cooperative management with the adjacent first nations communities needs to be restored and economic benefits to adjacent communities improved.
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.

Roads/ Railroads

High Threat

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

Access to the Prairie Creek site (Canadian Zinc) was permitted 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 followed 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. An almost fully constructed mine was abandoned and then placed in Care and Maintenance Since 1982. Canadian Zine Corporation acquired the Mine in 1995 and has since received licences and permits for full mine operation with a winter road. In 2014 CZN applied for permits to construct and operate an all season road, rather than the permitted winter road. This application is currently the subject of an environmental assessment (EA) process administered by the Mackenzie Valley Environmental Impact Review Board (MVEIRB). At present the EA is in its final stages. Final public hearings occurred in early 2017, the results of the Environmental Assessment should be known in the early fall of 2017.

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. Given that it is an all season road, there are also potential effects on the superficial geological features of the Nahanni Karst.

Avalanches/ Landslides

Low Threat
Inside site, localised(<5%)

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

Water Pollution
High 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). A number of technical reports were submitted to inform the environmental assessment of the Prairie Creek mine application for mine operation and winter road development (MVEIRB Public registry Prairie Creek Mine - EA0809-002 [2008]). One example is a report by Parks Canada 2011 which notes: average levels of mercury downstream of the mine were between 2.4 and 2.8 times higher than that above the mine, and does not preclude the possibility that these elevated levels are biologically significant, and are of potential concern as the mine transitions to full operation.

Parks Canada also noted that the number of parameters that do not meet Site-specific Water Quality Objectives based on the reference condition approach at low and average flows of Prairie Creek and the lack of analysis of the impacts of those exceedances indicates that there is a potential for significant impacts to the ecological integrity of Nahanni.

The risk of pollution has the potential to be exacerbated by the fact the area is seismically active and earthquake prone.

Mining/ Quarrying
High Threat
Outside site

Mining at Tungsten on the Flat River (principal south bank tributary of the S Nahanni). This mine is currently in a state of Care and Maintenance having ceased operations in 2015. There are 5 tailings ponds. Hazards from this established mining activity may be of concern because tailings ponds have been raised to heights beyond their original design. Information on the status
of this mine is reported on the Mackenzie Valley Land and Water Board Public Registry.

Selwyn Chihong Mining Limited’s Howard’s Pass mine does not fall within the boundaries of the World Heritage site, however, the Environmental Assessments both planned and currently underway will consider the potential downstream implications of development and associated activities on the Nahanni National Park World Heritage site.

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). The main concern is the water quality in the park because of the close upstream location of mines on direct tributaries to the South Nahanni River (SOC Report, 2006).

**Potential Threats**

**High Threat**

The potential hazards from full scale mining at the Prairie Creek site are substantial but, at time of this assessment, this will likely be 3 to five years in the future. Some existing pollution from this mine has been identified as a concern. The Cantung Mine being closed and in a care and maintenance mode with tailings ponds having been raised presents a concern that needs to be carefully monitored. 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, throughout (>50%)
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.

Protection and management

Assessing Protection and Management

▶ Relationships with local people

Some Concern

Dehcho First Nations have been involved in the ongoing cooperative management of the site since 2000 when the Naha Dehé Consensus 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). In June 2009 Nahanni National Park was expanded to over 30,000 km², six times its original size. At that time Negotiations began with Dehcho First Nations for the purpose of establishing an Impacts and Benefits agreement. This agreement has not yet been reached, and serious concerns have been raised by the Naha Deh Dene band with respect to the efficacy of the current cooperative management agreement.

▶ Legal framework and enforcement

Highly Effective

The site is managed by Parks Canada under the Canada National Parks Act of

**Enforcement**

*Some Concern*

Nahanni National Park only has one "Park Warden". In order for this staff member to travel in the Park they are required to be accompanied by another "Park Warden". This additional Park Warden must be obtained from another Park, which is usually Wood Buffalo National Park (another World Heritage property). Wood Buffalo National Park is one day away.

**Integration into regional and national planning systems**

*Serious Concern*

The interim Dehcho Land Use Plan was drafted with the intent of regional integration including landscape connectivity. Work on this plan was commenced in 2001. The Final Draft Dehcho Land Use Plan was submitted to the Dehcho First Nations (DFN) on May 9, 2006 for their approval. DFN requested further changes to the land use zoning around Wrigley as a condition of that approval and ratified the amended Final Draft Plan by unanimous approval at their Annual Assembly in Kakisa on June 28, 2006.

The amended Final Draft Plan was submitted to the Minister of Environment and Natural Resources (ENR) for the GNWT, and the Minister of Indian and Northern Affairs Canada (INAC) for their approval and favourable consideration on June 13, 2006. The Committee received letters from the approving ministers for the GNWT and Canada in August and September, respectively, indicating they were reviewing the Plan and would consider meeting the Committee once complete to discuss any outstanding issues.

Over the course of Winter 2006 and Spring 2007 the Land Use Plan was discussed at main table negotiations on the Dehcho Process. On April 27, 2007 the Dehcho First Nations, the GNWT and the Government of Canada signed a "Terms of Reference and Workplan" for the Committee that is to guide the Dehcho Land Use Plan revisions. The Terms of Reference also set a target date of April 2008 for the approval of an Interim Land Use Plan. At the time of this assessment the plan has not been approved.
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

Some Concern

The 2009 State of the Park Report concluded that most of the management objectives were met (State of the Park Report, 2009). The 2016 State of the Parks Report concluded the ecological integrity indicators were good to fair and that the condition was stable.

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 Sub-Arctic 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. Additional protection for the South Nahanni 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 area 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 $1,200,000 CND (Periodic Report, 2004). The current budget for 2017 is Salary $ 1,245,570 CND, Goods and Services $1,311,352 CND and Capitol $120,000 CND. (Periodic Report 2017)

► **Staff training and development**

*Some Concern*

Administrative 3, Resource Conservation 7.5, Asset management 3.5 , Project Management 1, Visitor Experience 5.25. The current staffing levels reflect an increase resulting from a Treasury Board allocation following Park expansion, positions that were not staffed followed by cuts in the 2014 budget, and then most recently an increase. Dehcho First Nations is also seeking for increased staffing in the current Impact and Benefits Agreement with Parks Canada.

► **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**

*Highly Effective*
Interpretation and education programs are provided to Park visitors on site at Rabbittkettle Lake, Virginia Falls and Nahanni Butte during the summer. The world Heritage Site Plaque is located at Virginia falls and it is interpreted to visitors on site.

▸ **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**  
   **Some Concern**

   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. Only 3 of these indicators were presented in the 2016 State of Parks Reporting. Monitoring of cultural resources and visitor experience is also being carried out (Management Plan, 2010).

▸ **Research**  
   **Data Deficient**

   Nahanni National Park Management Plan has as an objective to become a centre for northern mountain research. Progress on this is not available. A listing of research conducted specifically in Nahanni National Park which is relevant to the World Heritage site is also not available. It was noted that much new research was conducted prior to Park Expansion and that in the International Polar Year, research in Northern Parks was highlighted. On Parks Canada's website only a general description of research is noted as follows. Parks Canada is responsible for monitoring these large, remote places, in some cases for many decades. While the defining principles of this responsibility have not changed over the years, Parks Canada has been applying new tools to a challenging goal.

   Using their traditional skills and knowledge, the indigenous peoples of these
regions now play a major role in cooperatively managing these activities.

Innovative survey methods on the ground, combined with the latest imaging technology in space, are providing long-term insights into the diverse array of ecological systems within the parks system.

In this way, Canada is committed to caring for these special places today while preserving them for future generations.

**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. Cooperative management with the adjacent first nations communities needs to be restored and economic benefits to adjacent communities improved.

► **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).

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

Benefits

Understanding Benefits

► Cultural identity and sense of belonging, Wilderness and iconic features

Aesthetic appeal. Spiritual revitalisation. The 2010 Park management Plan states "A UNESCO World heritage Site, Naha Dehe touches and inspires people who may never dip paddles into the river.... resonates in the hearts and minds of all Canadians and people of the world.

► Outdoor recreation and tourism

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

While scientific studies are listed and no doubt important a data base of these studies is not available. Parks Canada has a product development officer and is attempting to create many new tourism experience products.

► Wilderness and iconic features

Several sites as well as the overall area have spiritual value for Dehcho. The 2010 Management plan states Dene Culture so intimately linked to the ecology of Naha Dehe, is respected in this place of mystery, spirituality and healing.

A cooperative and comprehensive study of these values with Dehcho First Nations using Traditional Knowledge would be important to properly assess this.

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

While this can be assumed to be true no quantitative information is available.

Projects

Compilation of active conservation projects

<table>
<thead>
<tr>
<th>№</th>
<th>Organization/ individuals</th>
<th>Project duration</th>
<th>Brief description of Active Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Data deficient</td>
<td></td>
<td>Data deficient</td>
</tr>
</tbody>
</table>

Compilation of potential site needs

<table>
<thead>
<tr>
<th>№</th>
<th>Site need title</th>
<th>Brief description of potential site needs</th>
<th>Support needed for following years</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Integrity of geological features and processes.</td>
<td>The major geologic and morphological features of Nahanni provide a combination of geological processes that are globally unique (Statement of Significance, 2006). Its designation was based on the area of the original park. The new park protects roughly 75% of the entire 38,000 sq km watershed. 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. What is required is a project to determine the integrity &quot;wholeness&quot; of the geological features of the sites designation.</td>
<td>From: 2017 To: 2020</td>
</tr>
<tr>
<td>2</td>
<td>A study to consider the integrity of the site in relation to mining and mineral property development.</td>
<td>The original designation of this world Heritage Site was based upon its exceptional representation of on-going geological processes and exceptional natural beauty. Threatened wildlife species and an outstanding landscape of high ecological integrity are also included in the statement of values of this site assessment. A study on the effects of current and potential mining on these values needs to be undertaken. In addition a rapid response plan in the event that a catastrophic failure of a tailing pond or major pollution event related to something such as earthquakes at a mine site were to occur.</td>
<td>From: 2018 To: 2023</td>
</tr>
<tr>
<td>№</td>
<td>Site need title</td>
<td>Brief description of potential site needs</td>
<td>Support needed for following years</td>
</tr>
<tr>
<td>----</td>
<td>--------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-------------------------------------</td>
</tr>
<tr>
<td>3</td>
<td>Traditional Indigenous Knowledge of the features and relation to the statement of Significance.</td>
<td>Traditional Indigenous Knowledge of the features and this knowledge as it relates to the statement of Significance, is severely lacking. Many legends and stories passed down through the generations and a comprehensive documentation of peoples traditional use of the World heritage site would be important to its value and continued protection. This study should be conducted by the first nations of the local adjacent communities.</td>
<td>From: 2017</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>To: 2023</td>
</tr>
</tbody>
</table>
# REFERENCES

<table>
<thead>
<tr>
<th>№</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Ford, D.C. 1984. Section 3; Geology (24 p., 7 figs. 4 maps): Section 4; Geomorphology (118 p., 7 tables, 31 figs., 6 maps) and Section 5; Hydrology (58 p., 14 tables, 14 figs., 2 maps) in Nahanni National Park Reserve: Resource Description and Analysis. Natural Resource Conservation Section, Parks Canada, Prairie Region, Winnipeg, Manitoba.</td>
</tr>
</tbody>
</table>
**References**

<table>
<thead>
<tr>
<th>№</th>
<th>Author(s)</th>
<th>Publication</th>
</tr>
</thead>
</table>