



Parks Canada Preliminary Screening under the *Mackenzie Valley Resource Management Act*

TYPE OF DEVELOPMENT:

- New
- Amended
- Requires permits, licences or authorizations under the *Preliminary Screening Requirement Regulations* (issuance of a Business Permit pursuant to the *National Parks of Canada Business Regulations* s 4.1 and issuance of a Restricted Activity permit pursuant to the *National Parks of Canada General Regulations* s 11(1)).
- Does not require permit, licence or authorization and is proposed by PCA

1. DEVELOPMENT TITLE & LOCATION

Engineering and environmental studies associated with proposed all season road to Prairie Creek Mine

2. PROPONENT INFORMATION

Company Name: Canadian Zinc Corporation

Company Contact: David Harpley

Company Address: Suite 1710-650 West Georgia Street, Vancouver, BC V6B 4N9

Tel: (604) 688-2001 *Fax:* (604) 688-2043

E-mail: david@canadianzinc.com

Contractors:

<p><i>Company Name:</i> Tetra Tech Canada Inc. <i>Company Contact:</i> Karla Langlois <i>Company Address:</i> PO Box 2244 / 201 4916-49 St. / Yellowknife, NT / X1A 2P7 <i>Ph:</i> 867.920.2287, x 223 <i>Fax:</i> 867.783.3324 <i>E-mail:</i> Karla.Langlois@tetrattech.com</p>	<p><i>Company Name:</i> Allnorth Consultants Limited <i>Company Contact:</i> Alana Hall <i>Company Address:</i> 2011 PG Pulpmill Road / PO Box 968 / Prince George, BC / V2L 4V1 <i>Ph:</i> 250.614.7291 <i>Fax:</i> 888.839.3114 <i>E-mail:</i> ahall@allnorth.com</p>
<p><i>Company Name:</i> LifeWays of Canada Ltd. <i>Company Contact:</i> Claire Bourges <i>Company Address:</i> #105, 809 Manning Road NE / Calgary, AB / T2E 7M9 <i>Ph:</i> 403-730-9461 <i>Fax:</i> 403-730-5192 <i>E-mail:</i> Claire@lifewaysofcanada.com</p>	<p><i>Company Name:</i> Water Survey of Canada <i>Company Contact:</i> Roger Pilling <i>Company Address:</i> Box 377, Fort Simpson, NT X0E 0N0 <i>Ph:</i> 867 695-2259 <i>E-mail:</i> roger.pilling@canada.ca</p>



3. PROPOSED DEVELOPMENT DATES

Planned commencement: 2018-08-10
Planned completion: 2018-12-31

4. INTERNAL FILE

NAH2018-008

5. DEVELOPMENT DESCRIPTION

In support of EA1415-01 (construction of an all-season road to the Prairie Creek Mine), currently in the Ministerial decision-making phase, Canadian Zinc Corporation (CZN) is proposing to conduct studies primarily within the boundaries of Nahanni National Park Reserve (NNPR) (Figure 1) to document baseline environmental conditions and to acquire necessary data for further road design and construction planning. This work serves to build on various engineering and environmental studies conducted by CZN along the proposed all-season road (ASR) alignment during the EA process. Should EA1415-01 proceed to the permitting phase, more extensive and detailed studies will be required for completion of road design and construction planning to meet requirements from the Mackenzie Valley Land and Water Board (MVLWB) and Parks Canada.

Proposed Activities

Note: access to the proposed locations for the activities described below will be either by quad or helicopter. Quad access is available for the portion of the proposed ASR that aligns with the existing winter road alignment for approximately 24 km east of the mine site. Helicopters will land in naturally open areas with hardened surfaces or on previously established landing pads. Helicopter fuel may be slung to cache locations established by CZN in 2017 (Attachment 1).

Invasive species baseline survey (conducted by Tetra Tech)

- The invasive species survey will consist of up to 4 people traversing the proposed ASR alignment and inspecting vegetation to determine the presence/absence of invasive species. The survey is expected to start at the eastern NNPR boundary (Km 102, Wolverine Pass) and end at the Nahanni Butte access road. However, the survey may include some components of the road inside the NNPR. The survey will be led by a professional biologist from Tetra Tech, who will be accompanied by representatives from local indigenous groups, likely including the Nahʔą Dehé Dene Band (NDDB) and Łíídlıı Kúę First Nation (LKFN). Work will comprise ground based surveys with helicopter access; no clearing of helicopter landing pads is required other than maintenance on existing pads.



Installation of surface water flow monitoring stations (conducted by Water Survey of Canada)

- Additional surface water flow data is required to support the design of a proposed diversion of Sundog Creek, and for a number of clear span and large culvert road crossings of streams. CZN proposes to contract Water Survey of Canada (WSC) to install two flow stations inside the NNPR, one on Sundog Creek just upstream of the proposed diversion (~Km 35) and one near the proposed bridge crossing of Tetcela River main stem (Km 90). To record stream water levels WSC will install a transducer (a small pressure sensing device) in the stream with a cable linked to a metal box on the stream bank housing a recorder and battery. This box is approximately 2'x2' and sits on the ground surface. The transducer does not have any effect on the aquatic environment. At periodic intervals, WSC will visit the locations via helicopter and measure stream flow volumes and correlate them to water levels.

Definition of locations for future test pits and geotechnical drill holes (conducted by Allnorth with archaeological support from LifeWays)

- Test pits are required to determine soil and ground conditions along the proposed ASR. These will be dug using a back hoe, and geotechnical boreholes drilled using a drill rig. Both pieces of heavy machinery will require access provided by a winter road (these activities are not within the scope of this preliminary screening). In the meantime (during summer 2018), CZN proposes to flag the proposed locations of pits and boreholes with ribbon so they can be easily found in winter conditions. At the same time, CZN will inspect the proposed locations for heritage/cultural resources to ensure no impacts occur. This inspection will be led by a professional archaeologist from Lifeways of Canada Ltd., assisted by designated representatives from local Indigenous groups. Should EA1415-01 proceed to permitting, broader, more detailed archaeological investigation of the road corridor will be undertaken. The proposed archaeological inspections during summer 2018 are intended to ensure no impacts at the investigation locations only.

Soil investigation drill (conducted by Tetra Tech)

- To minimize the future number of test pits and geotechnical drill holes required, and to collect preliminary soils data with which to optimize the locations of those pits and holes, CZN proposes to engage Tetra Tech during summer 2018 to conduct a soils investigation using a portable hand-held drill which drives a split-spoon sampler. The sampler is approximately 1.5 inches in diameter. The drill is powered by gas, and has a small crank-case containing oil. Gas and oil are added within a lined containment. The gas and oil containers are small (e.g.: <25 L) jerry cans. The crew carries absorbents to mop-up in the containment in the event of any spillage.
- The proposed soils investigation would occur in tandem with the definition of future test pits and geotechnical drill holes described above. The focus of the investigation would be the borrow pits defined for construction of the ASR, although some soils investigation may also occur along the proposed road alignment. Maps of sections of



the road showing the proposed road alignment and borrow pits can be found in the October 21, 2016 Allnorth report posted to the Mackenzie Valley Review Board public registry (pages 20-42 covering the NNPR portion).

Mountain caribou baseline

- CZN proposes to initiate further mountain caribou baseline work in 2018. Initial suggestions are a fall rut aerial survey; plans for this or other applicable surveys/studies, will be developed in collaboration with Parks Canada and will be conducted in accordance with Parks Canada standards for caribou surveys and in compliance with applicable legislated and mandated requirements and guidelines.

6. VALUED COMPONENTS

See information on included on the *Mackenzie Valley Environmental Assessment Review Board's Public Registry* for the Prairie Creek All Season Road - EA1415-01 (<http://reviewboard.ca/registry/ea1415-01>). Information specific to valued components along the proposed alignment is included in the Developer's Assessment Report (DAR) and the DAR Addendum.

7. EFFECTS ANALYSIS

Wildlife/Vegetation and Water Bodies

- Terrestrial and avian wildlife could be disturbed by noise and human presence during surveys and during helicopter and ATV/truck activity;
- Invasive species can be spread from site to site by transport on equipment or personal;
- Flagging can create litter and visual disturbance on the landscape;
- Minor destruction of vegetation during brushing/clearing required to maintain existing helicopter landing pads;
- Work is taking place at the tail end of the nesting period for migratory birds; May 1 to August 25 in this area (http://www.ec.gc.ca/paom-itmb/default.asp?lang=En&n=4f39a78f-1#_fig03_1), therefore the potential for impacts to breeding birds exists, though is minimal;
- Storage of transducer batteries, storage of fuel and refuelling of machinery (hand-held portable drill; brushing equipment) could result in leakage/spills and contamination of surface soils or nearby water bodies.

Heritage Resources

- Drilling could disturb buried artifacts;



- Survey activity (walking) could result in disturbance to previously undocumented heritage resources.

Traditional Use

- Aircraft activity could disturb traditional users of the park.

8. MITIGATION MEASURES

(Note that these mitigations do not preclude or otherwise limit any requirements of the regulatory phase of EA1415-01, should the EA proceed to that stage). Additionally, they do not apply to future proposed activities of testpitting using a back hoe, and drilling of geotechnical boreholes using a drill rig; these activities are not within the scope of this preliminary screening

Wildlife/Vegetation and Water Bodies

1. Use biodegradable flagging tape or other biodegradable means of flagging; remove when the development is completed.
2. Transducer batteries must be checked during the regular site visits to ensure no corrosion or other damage has occurred.
3. Invasive species must be reported to Parks Canada. Precautions, such as washing/cleaning of equipment and clothing, must be taken to prevent their spread.
4. If migratory bird nests (list available at: <https://www.canada.ca/en/environment-climate-change/services/migratory-birds-legal-protection.html>), or species at risk (SAR) and/or their nests/dens are encountered during the course of operations, CZN and authorized contractors shall not clear flora or cause a disturbance within 100 meters of the species, nest, or den without the approval of the Superintendent (see Attachment 2 for list of SAR that may be encountered along the proposed ASR alignment within the park reserve boundaries). If active nests/dens are encountered during the course of work, contact Parks Canada for further direction.
5. If wildlife is observed at or near the work site(s), allow the animal(s) the opportunity to leave the work area.
6. Display appropriate behaviour if wildlife are encountered. Do not feed, disturb, walk towards, or otherwise harass wildlife.
7. Parks Canada staff must be alerted immediately to any potential wildlife conflict (e.g., aggressive behaviour, persistent intrusion), distress or mortality. In the case of aggressive behaviour or persistent intrusion, stop work and evacuate the area.
8. Use appropriate handling and disposal procedures for all wildlife attractants (e.g., immediate disposal of waste into bear-resistant containers/bins that do not attract



wildlife or permit wildlife access). All waste shall be disposed of at licensed waste disposal facilities.

9. Portable spill kit(s) must be located at the work site(s) and must be accessible when the hand-held drill and/or brushing equipment are being refueled.
10. The hand-held drill and/or brushing equipment, and jerry cans, must be placed on an impermeable berm when being refueled and/or stored at the work site(s). This berm must not be located within thirty (30) meters of the ordinary high water mark of any water body.
11. Only aircraft operators in possession of a valid Parks Canada business licence for Nahanni National Park Reserve shall be used. These operators must adhere to the *Parks Canada Best Management Practice (BMP) for Aircraft Operations and Landings in Nahanni and Nááts'jéhch'oh National Park Reserves of Canada, Southwest Northwest Territories Field Unit*.
12. ATV's cannot travel beyond km 24 of the permitted winter road alignment or leave the established alignment of the winter road.

Fuel Caching (drums of helicopter fuel)

13. The establishment of fuel caches beyond those used for 2017 baseline work (Attachment 1) are to be logged and approved with Parks Canada prior to cache establishment.
14. All drums must be removed from the park before December 31, 2018.
15. A fuel caching report must be submitted to Parks Canada by December 31, 2018, including details on cache locations, fuel amounts, and confirmation of drum removal.
16. Avoid rough handling of drums.
17. Drums must be inspected for signs of leakage before placement at caches. Drums that appear to be damaged, rusted, or leaking must not be stored in the park.
18. Full/partial drums must be stored in approved secondary containment units such as impermeable berms. Drums stored in berms must be lain on their side with bungs parallel to and away from the ground. Empty drums may be stored outside the secondary containment unit.
19. Spill kits, supplied by the proponent, are required at each cache location.
20. All drums must be clearly marked with:
 - (i) Workplace Hazardous Materials Information System (WHMIS) label which must clearly identify the product contained
 - (ii) Year and date placed at the cache site, and
 - (iii) Responsible company.



Heritage Resources

21. A Parks Canada Research and Collection Permit will be issued to Lifeways of Canada Ltd. and will prescribe mitigations applicable to heritage resources.

9. OTHER CONSIDERATIONS

- ❑ Surveillance
- ❑ Follow-up monitoring, general:
 - Reports will be required for all field work and, specific to the archaeological work, all artifacts, notes, and photographs must be submitted to Parks Canada's archaeology department.
- ❑ Follow-up monitoring, required by legislation or policy (indicate basis of requirement e.g. required by the *Species at Risk Act*)
- ❑ SARA Notification

INDIGENOUS ENGAGEMENT TO DATE:

CZN discussed the proposed activities described in this development description with the Nahᓂᓂ Dehᓂ Dene Band (NDDDB), the Łı́ı́ııı Kúé First Nation (LKFN) on July 4, 2018 at a joint meeting in Fort Simpson. The NDDDB indicated it has no concerns at this time and the LKFN indicated that it agrees with CZN conducting the proposed summer field work activities.

10. SIGNIFICANCE OF RESIDUAL ADVERSE EFFECTS

Given the limited and short-term magnitude of effects and the application of mitigation measures the development is not expected to cause residual adverse effects to natural/cultural resources or traditional use of the park reserve.

11. EXPERTS CONSULTED

- The development proposal for this screening was discussed and approved by the Nahᓂᓂ Dehᓂ Consensus Team on July 30, 2018.
- The development description for this screening was publically circulated for a 21 day review period (July 10-31, 2018). No comments were received.



Department: Parks Canada / Government of Canada	Date of Request: July 13, 2018
Expert's Name & Contact Information: Donnalee Deck 145 McDermot Ave., Winnipeg, MB, R3B 0R9 donalee.deck@pc.gc.ca / Tel: 204-984-5823 / Cel: 204-599-7467	Title: Archaeologist, Archaeology and History Branch, Parks Canada
Expertise Requested: Mitigations for proposed drilling work and archaeological surveys	
Response: Detailed mitigations will be incorporated into Parks Canada Parks Canada Research and Collection Permit issued to Lifeways of Canada Ltd.	

12. DECISION

Taking into account the analysis and implementation of mitigation measures outlined in the analysis, the development:

- Might have a significant adverse impact on the environment, and the proposal should be referred to the *Mackenzie Valley Environmental Impact Review Board* for environmental assessment.
- ✓ Does not have a likelihood of causing significant adverse impact on the environment.
- Might be a cause for public concern, and the proposal should be referred to the *Mackenzie Valley Environmental Impact Review Board* for environmental assessment.
- ✓ Does not have a likelihood of causing public concern.

13. APPROVAL

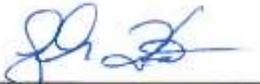
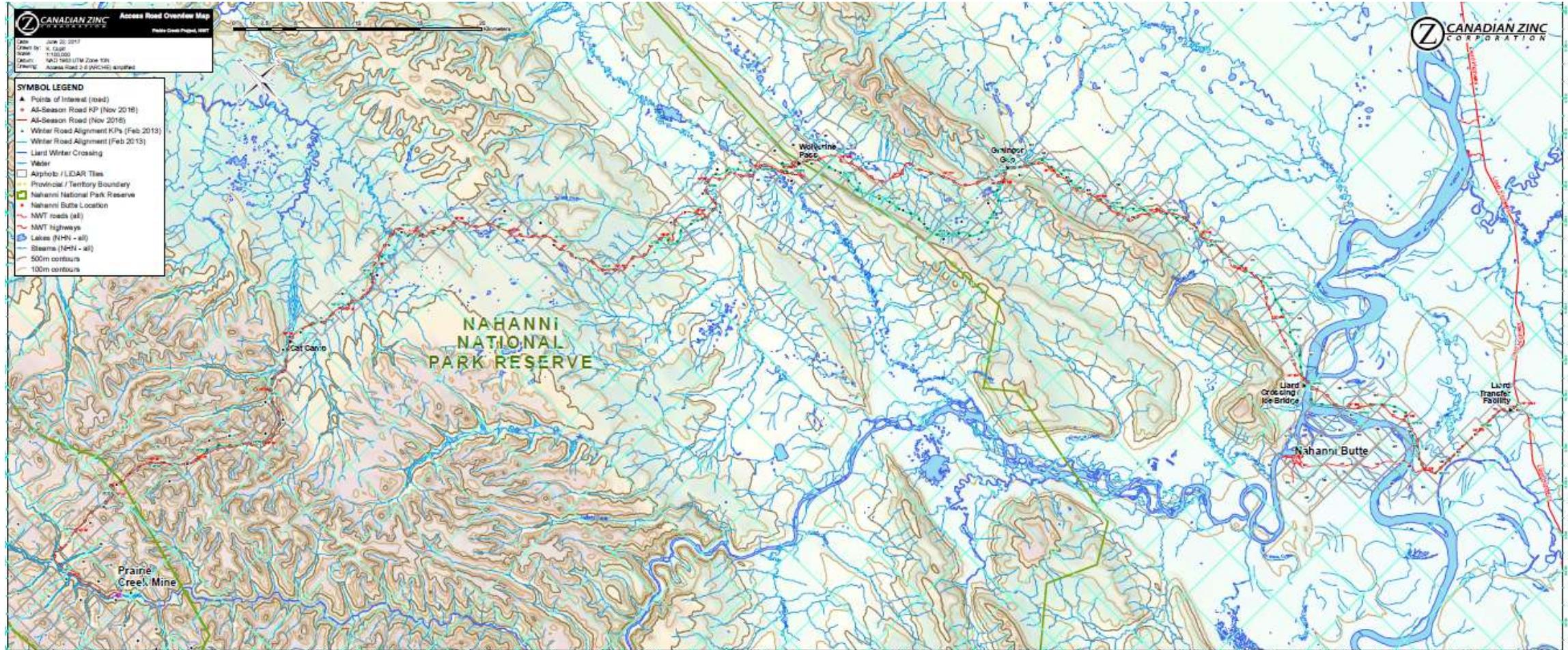
Prepared by: <i>Jacquie Bastick</i> A/Resource Conservation Manager, Nahanni National Park Reserve	Date: July 31, 2018
Approved by:  <i>Jonathan Tsetso</i> Superintendent, Nahanni National Park Reserve	Date: July 31, 2018



Figure 1: Overview map of proposed Prairie Creek all-season road alignment





ATTACHMENT 1: Helipads established during CZN baseline work_2017

Label	UTM_Zone	Easting	Northing	Latitude	Longitude
Helipad	10	467157.7145	6811860.141	61.43916498	-123.6157509
HP 86	10	459052.5353	6814082.852	61.45834561	-123.7681889
Helipad	10	468229.7382	6811689.848	61.43772565	-123.595624
HP 81	10	455185.0483	6815576.09	61.47132117	-123.8410967
Heli spot	10	434949.1993	6828671.682	61.58598451	-124.2254215
HP 94	10	464689.2925	6813716.856	61.45561515	-123.6623806
HP 104	10	470703.2013	6810024.255	61.4229686	-123.5489917
HP 105	10	470908.0301	6809474.693	61.41805063	-123.5450676
Helipad	10	466508.2189	6812007.577	61.4404329	-123.6279538
HP 127	10	482035.7668	6794641.942	61.28556777	-123.3351571
HP 127.5	10	482071.6312	6795406.229	61.29243071	-123.334561
HP 116	10	475724.1369	6801161.733	61.34375552	-123.4537539
HP 128	10	482428.668	6794042.135	61.28020097	-123.3277708
HP	10	486799.8195	6782254.094	61.17454599	-123.245408
HP 127	10	482103.0328	6795521.904	61.29347061	-123.3339861
HP 91	10	462417.4776	6815856.006	61.47460368	-123.7054271
HP 88	10	460906.697	6814404.357	61.46142323	-123.7334754
HP 81	10	454227.6218	6815327.814	61.46898054	-123.8590022
HP 93	10	463718.6505	6814443.042	61.46204417	-123.6807292
	10	450555.5749	6816908.964	61.48272149	-123.9283269
HP 72	10	450286.5726	6818271.317	61.49491559	-123.933743
HP 77	10	452513.2787	6815814.849	61.47314576	-123.8912953
HP 95	10	465360.7353	6813724.096	61.45574078	-123.6497876
HP 53	10	440713.922	6830795.213	61.60597437	-124.1175379
HP 68	10	448942.8205	6822170.952	61.52974349	-123.9600565
HP 48	10	436420.7517	6829041.786	61.58955193	-124.1978359
HP 50	10	437054.5086	6829708.436	61.59563932	-124.1861276
HP 99	10	467327.139	6811180.991	61.4330827	-123.6124551
HP 109	10	472204.216	6805671.768	61.38400681	-123.5202155
HP 53B	10	440670.1845	6830788.271	61.60590532	-124.11836



ATTACHMENT 2:

Species at Risk that may be encountered along the proposed Prairie Creek all-season road alignment (ASR) in Nahanni National Park Reserve

Updated April 2018

Mammals

SARA Status

^a Little Brown Myotis (<i>Myotis lucifugus</i>)	Schedule 1 - Endangered
^a Northern Myotis (<i>Myotis septentrionalis</i>)	Schedule 1 - Endangered
Grizzly Bear, Northwest population (<i>Ursus arctos</i>)	<i>Proposed</i> - Special Concern
Wolverine, Western population (<i>Gulo gulo</i>)	<i>Proposed</i> - Special Concern
^b Woodland Caribou, Northern Mountain population (<i>Rangifer tarandus caribou</i>)	Schedule 1 - Special Concern

Birds

^c Bank Swallow (<i>Riparia riparia</i>)	Schedule 1 - Threatened
^d Barn Swallow (<i>Hirundo rustica</i>)	Schedule 1 - Threatened
^e Common Nighthawk (<i>Chordeiles minor</i>)	Schedule 1 - Threatened
Olive-sided Flycatcher (<i>Contopus cooperi</i>)	Schedule 1 - Threatened
Peregrine Falcon (<i>Falco peregrinus anatum-tundrius</i> complex)	Schedule 1 - Special Concern

^a*Myotis* spp. often roost in the bark and cavities of dead-but-standing deciduous trees

^bWoodland caribou inhabit the park, including the area around the proposed ASR. They are particularly sensitive to human disturbances during two distinct time periods:

1. Calving/post calving: May 15 to June 15
2. Rut/post rut: September 15 to October 31st

^cBank swallows often build nests on human-made structures, including machinery

^dBarn swallows are known to nest along road right-of-ways

^eCommon nighthawk nest in open areas with sand or gravel substrate (e.g., unpaved roads)