

# Spruce Haven Zoo Opinion & Commentary

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Spruce Haven Zoo

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**Contents**

<b>1. Introduction</b>	<b>2</b>
<b>2. Methodology</b>	<b>2</b>
<b>3. Results</b>	<b>3</b>
<b>4. Presentation and discussion of the results</b>	<b>5</b>
<b>4.1 African Lion</b>	<b>5</b>
<b>4.2 American Black Bear</b>	<b>9</b>
<b>4.3 Wolves</b>	<b>12</b>
<b>4.4 Coyote</b>	<b>15</b>
<b>4.5 Cougar</b>	<b>19</b>
<b>4.6 Ungulates</b>	<b>22</b>
<b>4.7 Domesticated and other animals</b>	<b>25</b>
<b>5. Conclusion and recommendations</b>	<b>28</b>
<b>References</b>	<b>29</b>
<b>Appendix – Live Collection 2013 vs. 2016</b>	<b>31</b>

## **1. Introduction**

Spruce Haven Nature Park (formerly known as Spruce Haven Zoo) in Sault Saint Marie has been the subject of several animal welfare investigations (1999, 2010, 2013). The report in 2013 informed an investigation by the Ontario Society for the Protection of Animal (OSPCA).

In August 2013 the OSPCA visited the zoo with an appointed veterinarian to inspect animal housing and care conditions at the facility. On November 5, 2013 the owners of Spruce Haven Zoo appeared in front of the Animal Care Review Board (ACRB) regarding various compliance deadlines on 20 different orders the OSPCA had issued. The compliance deadlines varied from October 2013 to 2015.

Since that time, public information about the status of the OSPCA investigation of Spruce Haven and the orders that resulted from it is not available, so the status of OSPCA's orders and Spruce Haven's level of compliance is not known.

This report compares the current conditions of Spruce Haven Nature Park with conditions observed in 2013 (see <http://www.zoocheck.com/SpruceHaven2013.pdf>)

This report is divided in four sections. This brief introduction is section 1. Since an abbreviated overview of wildlife husbandry and housing information was provided in the 2013 report, it is not being provided in this follow up report. Section two describes the methodology used for this latest review of Spruce Haven Nature Park. Section three outlines the results of the review. Section four details changes have occurred at Spruce Haven since 2013. The final section includes conclusions and recommendations.

While the name of the facility has been changed to Spruce Haven Nature Park, in this report it will be referred to simply as Spruce Haven.

## **2. Methodology**

To ensure that it was possible to make an accurate comparison between the living conditions of the animals in 2013 and currently, the research methods are kept as similar as possible.

The 2016 data was gathered during a visit to Spruce Haven in the summer of 2016. The zoo, located on 2016 Third Line West in Sault Saint Marie was visited on Saturday September 3, 2016 from 10.00am to 1.00pm. The weather was sunny, approximately 22° C, skies were clear and there was no discernable wind. Four other adult visitors were present and the two owners of Spruce Haven were also on the premises. During the visit the feeding of the lions, cougar and coyote was observed.

The following items were examined:

- Species and number of animals.
- Complexity of the enclosures (presence of furnishings, vegetation, other enrichment).
- Presence of shelter.
- Availability of food and water.
- Animal safety.
- Public safety.
- Animal behaviour scan.

Photographs and video recordings of the enclosures and observed behaviours were obtained. All findings were recorded in writing and on cell-phone.

The observations of the zoo animals were compared to the following sources:

- 2013 Zoocheck investigation report.
- Video and photographic material re 2013 visit.
- Scientific data from peer-reviewed research papers.

### 3. Results

The animals that were present during the 2016 visit were compared to the list of animals recorded in 2013. Where possible the name of the species has been listed. If it was not possible to determine the species, the common name of the animal is listed. The results are shown in table 1.

*Table 1. Comparison between live collection in 2013 and 2016*

<b>Animal Species Observed</b>	<b>Number of Animals 2013</b>	<b>Number of Animals 2016</b>
African Lion	2	2
Western Cougar	2	1
Arctic Wolf*	1	0
Timber Wolf*	2	2
American Black Bear	1	1
Coyote	0	1
Ibex/West Caucasian Tur	1	1
Deer***	2	2
Yak***	5	5
Rabbit***	1	2
Shetland Pony***	4	4
Donkey***	2	2

Llama***	5	2
Turkey***	5	3
Chinchilla***	2	4
Pot-bellied pig	0	1
African Goose	0	1
Canada Goose	4	1
Sheep***	0	2
Goat***	0	2
Chicken***	0	10
Parrot (species not determined)	0	1
Raccoon	1	0
Canada Lynx	1	0
Gull (species not determined)	1	0
Snakes** (species not determined)	0	0
Japanese Sika Deer	2	0

\*The owner claimed to be in possession of four wolves. Only two were observed during the visit.

\*\*In 2013 the owner claimed to be in possession of eight snakes. The snakes were not on display at the time. The status of those snakes was not determined.

\*\*\*The numbers stated in this report reflect the number of animals observed at the time of the visit. There is a possibility of a slight deviation in the actual number of animals present for those listed with \*\*\*, since some animals may have been able to remove themselves from public view or, if moving, may have been counted twice.

The live collection numbers declined slightly. In 2013, 55 individual animals were observed, while in 2016 the total was 50. The diversity of the live collection also declined slightly (by one species) since 2013.

*Table 2 . Animals per Category*

<b>Animal Category</b>	<b>Numbers in 2013</b>	<b>Numbers in 2016</b>
Exotic Wildlife	4	4
Native Wildlife	10	7
Domesticated Animal Species	7	9
<b>Total</b>	<b>21</b>	<b>20</b>

Similar to 2013, the animals were prioritized based on housing conditions and observed behaviours. The conditions experienced by the following animals (in alphabetical order) were deemed most problematic:

- African Lion
- American black bear
- Coyote
- Cougar
- Timber wolf

The conditions experienced by the following animals (in alphabetical order) was deemed as needing improvement:

- |                          |                   |
|--------------------------|-------------------|
| •African Goose           | • Llama           |
| •Canada Goose            | • Parrot          |
| •Chicken                 | • Pot-bellied pig |
| •Chinchilla              | • Rabbit          |
| •Deer                    | • Sheep           |
| •Donkey                  | • Shetland Pony   |
| •Goat                    | • Turkey          |
| •Ibex/West Caucasian Tur | • Yak             |

To ensure consistency between the 2013 report and the current report, the findings of the visit are again collated with scientific literature and Ontario SPCA Act Regulation 60/09.

#### **4. Presentation and discussion of the results**

In 2013, the living conditions of the animals at Spruce Haven Nature Park were compared to the provisions contained in OSPCA Act Regulation 60/09. To achieve consistency, the same items were reviewed for this report. Only the differences between the 2013 and 2016 observations will be mentioned. The 2013 observations are used as baseline. Please consult the 2013 report whenever the phrase *"No substantive change observed"* appears.

Similar to the 2013 report, the enclosures of the African lions, American black bear, cougar and wolves will be discussed individually. Added to this list is the coyote, which was either not present or not observable during the 2013 visit. Paragraph 4.7 will outline the housing situation of the ungulates as a group as the enclosures and husbandry routines appear to be similar. The domesticated animals/other animals are discussed as one group for similar reasons.

##### **4.1 African lion**

###### **2. (1) Every animal must be provided with adequate and appropriate food and water.**

No substantive changes were observed regarding accessibility and quality of the water in the enclosure.

The visit in October 2016 took place during feeding time. According to the owners of

Spruce Haven, the lions were fed chicken. All that was observed was that frozen food was given. It did not resemble chicken, it seemed more like a mix of pieces of meat that were compressed and frozen. It was not possible to verify what the lions were fed or the amount. It is recommended to feed large felids whole carcasses as that allows the animals to spend more time on feeding and feeding associated behaviours (McPhee, 2002). It will also reduce dental issues (Kapoor *et al.*, 2006).

Both lions appeared to receive an equivalent amount of meat (16 pieces each). It was not possible to establish how many kilograms of meat each animal received. The owner of Spruce Haven said the lions received food once every couple of days. This regime corresponds with the feeding regime of free-ranging lions who do not feed on a daily basis (Altman *et al.*, 2005) with a potential benefit of larger, infrequent feedings improving the digestive health of captive lions. In the study however, the wild lions consumed up to 16 kilograms per meal. Since the Spruce Haven lions do not appear to have a heated, indoor shelter area for the winter, feeding appropriate amounts of meat is especially important as the lions will expend far more energy to keep themselves warm during cold weather. This could have been a factor in the lions appearing somewhat underweight during the spring 2013 visit.

**2. (2) Every animal must be provided with adequate and appropriate medical attention.**

It was not possible to determine if adequate and appropriate medical attention has been provided to the lions. According to the *AZA Lion Care Manual*, the observed body condition of the lions in the latest visit was between 4 and 5, which means moderate/low to moderate condition (AZA Lion Species Survival Plan, 2012). The fur of both animals was in good condition.

**2. (3) Every animal must be provided with the care necessary for its general welfare.**

No substantive change observed.

**2. (4) Every animal must be transported in a manner that ensures its physical safety and general welfare.**

Not applicable..

**2. (5) + 5. (2e) + 5. (2b) Every animal must be provided with an adequate and appropriate resting, sleeping and shelter area, with one or more areas that is accessible and can accommodate all animals.**

No substantive change observed.

**2. (6a) + 5. (1a) + 5. (2a) + 5. (2c) Every animal must be provided with adequate and appropriate space, features and furnishing to enable the animal to move naturally and to exercise/show natural behaviour.**

No substantive change observed.

**2. (6b) Every animal must be provided with adequate and appropriate sanitary conditions.**

No substantive change observed.

**2. (6c) Every animal must be provided with adequate and appropriate ventilation.**

Similar to 2013, no issue for the outside enclosure. Not able to determine for the interior shelter box.

**2. (6d) Every animal must be provided with adequate and appropriate light, and.**

Similar to 2013, no issue for the outside enclosure. Not able to determine for the interior shelter box.

**2. (6e) Every animal must be provided with adequate and appropriate protection from the elements, including harmful temperatures.**

Similar to 2013, no issue for the outside enclosure. Not able to determine for interior shelter box.

**2. (7a) If an animal is confined to a pen or other enclosed structure or area the pen or other enclosed structure or area, and any structures or material in it, must be in a state of good repair.**

No substantive change observed.

**2. (7b) + 5. (3a+b) If an animal is confined to a pen or other enclosed structure or area the pen or other enclosed structure or area, and any surfaces, structures and materials in it, must be made of and contain only materials that are (i) safe and non-toxic for the animal, and (ii) of a texture and design that will not bruise, cut or otherwise injure the animal.**

No substantive change observed.

**2. (7c) If an animal is confined to a pen or other enclosed structure or area the pen or other enclosed structure or area must not contain one or more other animals that may pose a danger to the animal.**

Similar to 2013/ not applicable/ no issue.

**2. (8) Every animal that is to be killed must be killed by a method that is humane and minimizes the pain and distress to the animal; an animal's pain and distress are deemed to be minimized if it is killed by a method that produces rapid, irreversible unconsciousness and prompt subsequent death.**

Similar to 2013/ not able to determine.

**4. (2) Wildlife kept in captivity must be provided with a daily routine that facilitates and stimulates natural movement and behaviour.**

No substantive change observed regarding the provision of enrichment or a daily routine that stimulates natural movement and behaviour.



Similar to 2013, both African lions were observed pacing at arrival of the enclosure. While in 2013 the lions acknowledged the arrival of the visitors, this time both animals kept pacing vigorously, possibly a burst stereotypy in anticipation of being fed. Both animals paced a figure eight pattern that didn't change until feeding time arrived. The pacing behaviour was more vigorous and consistent than that observed in 2013.

**4. (3) Wildlife kept in captivity must be kept in compatible social groups to ensure the general welfare of the individual animals and of the group and to ensure that each animal in the group is not at risk of injury or undue stress from dominant animals of the same or a different species.**

No substantive change observed.

**5. (1b) + 5(2d) A pen or other enclosed structure or area for wildlife kept in captivity must be of an adequate and appropriate size, to enable each animal in the pen or other enclosed structure or area to keep an adequate and appropriate distance from the other animals and people so that it is not psychologically stressed and one or more areas that are out of view of spectators.**

No substantive change observed.

**5. (1c) A pen or other enclosed structure or area for wildlife kept in captivity must be of an adequate and appropriate size, to ensure that the natural growth of each animal in the pen or other enclosed structure or area is not restricted.**

Similar to 2013/ not applicable.

**5. (4a) A pen or other enclosed structure or area for wildlife kept in captivity and any gates or other barriers to it, including moats, must be designed, constructed and locked or otherwise secured to prevent, interaction with people that may be unsafe or inappropriate for the wildlife.**

The public stand-off barrier has been repaired and plants have been placed between the barrier and the enclosure fence. The owner of the zoo said the stand-off barrier was constructed because visitors were teasing the lions by throwing things at them.

No substantive change observed as Nature Park visitors can still access the primary enclosure barrier.

**5. (4b) A pen or other enclosed structure or area for wildlife kept in captivity and any gates or other barriers to it, including moats, must be designed, constructed and locked or otherwise secured to prevent, animals escaping from the pen or other enclosed structure or area by climbing, jumping, digging, burrowing or any other means.**

No substantive change observed.

**5. (4c) A pen or other enclosed structure or area for wildlife kept in captivity and any gates or other barriers to it, including moats, must be designed, constructed and**

***locked or otherwise secured to prevent, animals or people (other than people who are required to enter the enclosure as part of their duties) from entering the pen or other enclosed structure or area by climbing, jumping, digging, burrowing or any other means.***

No substantive change observed.

***5. (5) A pen or other enclosed structure or area for wildlife kept in captivity and any gates or other barriers to it, including moats, must be designed, constructed and maintained in a manner that presents no harm to the wildlife.***

No substantive change observed.

#### **4.2 American Black Bear**

***2. (1) Every animal must be provided with adequate and appropriate food and water.***

During the 2016 visit a second water source, a plastic trough placed at the entrance to the shelter box, was observed. This allowed the bear to drink from a clean water source, instead of the potentially contaminated water contained in the bathtub embedded in the floor. Ideally the water source should have been secured to prevent the possibility of tipping, leaving the bear without fresh drinking water.

No food was observed during the 2016 visit.

***2. (2) Every animal must be provided with adequate and appropriate medical attention.***

Similar to 2013/ not able to determine.

Though it is not possible to determine if the bear is provided with adequate medical attention, the bear's fur appeared patchy and dull. A dull coat can be an indication of dehydration, malnutrition or internal problems (e.g., worms) (Bourne *et al.*, 2010; Cheeran, 2008). Upon arrival at the enclosure, the bear was in a lying position. He lifted his head up to look at the visitors, then placed his head on the rubber tire. He then remained motionless for quite some time, before eventually rolling on his side, still with his head in the same position. The bear remained in this position for three minutes after which the bear proceeded get on all fours and started vigorously pacing. It was consistent and the bear seemed somewhat oblivious to his surroundings. The pacing speed increased when the kennel dogs nearby started to bark. Except for the pacing, the bear appeared lethargic. The bear was 29 years old

***2. (3) Every animal must be provided with the care necessary for its general welfare.***

No substantive change observed.

***2. (4) Every animal must be transported in a manner that ensures its physical safety and general welfare.***

Similar to 2013/ not able to determine.

**2. (5) + 5. (2e) + 5. (2b) Every animal must be provided with an adequate and appropriate resting, sleeping and shelter area, with one or more areas that is accessible and can accommodate all animals.**

No substantive change observed.

**2. (6a) + 5. (1a) + 5. (2a) + 5. (2c) Every animal must be provided with adequate and appropriate space, features and furnishing to enable the animal to move naturally and to exercise/show natural behaviour.**

No substantive change observed.

**2. (6b) Every animal must be provided with adequate and appropriate sanitary conditions.**

No substantive change observed, except for the additional water station.

**2. (6c) Every animal must be provided with adequate and appropriate ventilation.**

Similar to 2013/ no issue for the outside enclosure. Not able to determine for interior shelter box.

**2. (6d) Every animal must be provided with adequate and appropriate light, and.**

Similar to 2013/ no issue for the outside enclosure. Not able to determine for interior shelter box.

**2. (6e) Every animal must be provided with adequate and appropriate protection from the elements, including harmful temperatures.**

No substantive change observed.

**2. (7a) If an animal is confined to a pen or other enclosed structure or area the pen or other enclosed structure or area, and any structures or material in it, must be in a state of good repair.**

No substantive change observed.

**2. (7b) + 5. (3a+b) If an animal is confined to a pen or other enclosed structure or area the pen or other enclosed structure or area, and any surfaces, structures and materials in it, must be made of and contain only materials that are (i) safe and non-toxic for the animal, and (ii) of a texture and design that will not bruise, cut or otherwise injure the animal.**

No substantive change observed.

**2. (7c) If an animal is confined to a pen or other enclosed structure or area the pen or other enclosed structure or area must not contain one or more other animals that may pose a danger to the animal.**

Similar to 2013/ not applicable/ no issue.

**2. (8) Every animal that is to be killed must be killed by a method that is humane and**

***minimizes the pain and distress to the animal; an animal's pain and distress are deemed to be minimized if it is killed by a method that produces rapid, irreversible unconsciousness and prompt subsequent death.***

Similar to 2013/ not able to determine.

***4. (2) Wildlife kept in captivity must be provided with a daily routine that facilitates and stimulates natural movement and behaviour.***

No substantive change observed. Abnormal behaviours appear more pronounced compared to 2013.

***4. (3) Wildlife kept in captivity must be kept in compatible social groups to ensure the general welfare of the individual animals and of the group and to ensure that each animal in the group is not at risk of injury or undue stress from dominant animals of the same or a different species.***

No substantive change observed.

***5. (1b) + 5(2d) A pen or other enclosed structure or area for wildlife kept in captivity must be of an adequate and appropriate size, to enable each animal in the pen or other enclosed structure or area to keep an adequate and appropriate distance from the other animals and people so that it is not psychologically stressed and one or more areas that are out of view of spectators.***

No substantive change observed.

***5. (1c) A pen or other enclosed structure or area for wildlife kept in captivity must be of an adequate and appropriate size, to ensure that the natural growth of each animal in the pen or other enclosed structure or area is not restricted.***

Similar to 2013/ not applicable.

***5. (4a) A pen or other enclosed structure or area for wildlife kept in captivity and any gates or other barriers to it, including moats, must be designed, constructed and locked or otherwise secured to prevent, interaction with people that may be unsafe or inappropriate for the wildlife.***

Though it was mentioned in 2013 that this was not an issue it has to be made clear that the current housing circumstances are not appropriate for housing an American black bear. There is limited distance between the bear and the visitor pathway.

***5. (4b) A pen or other enclosed structure or area for wildlife kept in captivity and any gates or other barriers to it, including moats, must be designed, constructed and locked or otherwise secured to prevent, animals escaping from the pen or other enclosed structure or area by climbing, jumping, digging, burrowing or any other means.***

No substantive change observed.

***5. (4c) A pen or other enclosed structure or area for wildlife kept in captivity and any***

***gates or other barriers to it, including moats, must be designed, constructed and locked or otherwise secured to prevent, animals or people (other than people who are required to enter the enclosure as part of their duties) from entering the pen or other enclosed structure or area by climbing, jumping, digging, burrowing or any other means.***

Similar to 2013/ not able to determine.

***5. (5) A pen or other enclosed structure or area for wildlife kept in captivity and any gates or other barriers to it, including moats, must be designed, constructed and maintained in a manner that presents no harm to the wildlife.***

No substantive change observed.

#### **4.3 Wolves**

According to the owners of Spruce Haven there are four wolves in the Nature Park. All four wolves apparently live in the one exhibit, but only two wolves were observed during the three hour visit. In 2013, one wolf was housed alone.

***2. (1) Every animal must be provided with adequate and appropriate food and water.***

Similar to 2013/ food and water stations were not observed.

***2. (2) Every animal must be provided with adequate and appropriate medical attention.***

Not able to determine.

***2. (3) Every animal must be provided with the care necessary for its general welfare.***

No substantive change observed.

***2. (4) Every animal must be transported in a manner that ensures its physical safety and general welfare.***

Similar to 2013/ not able to determine.

***2. (5) + 5. (2e) + 5. (2b) Every animal must be provided with an adequate and appropriate resting, sleeping and shelter area, with one or more areas that is accessible and can accommodate all animals.***

No substantive change observed.

***2. (6a) + 5. (1a) + 5. (2a) + 5. (2c) Every animal must be provided with adequate and appropriate space, features and furnishing to enable the animal to move naturally and to exercise/show natural behaviour.***

All wolves are currently housed in the enclosure, estimated at 85 m<sup>2</sup> in size. This enclosure is relatively close to the dog kennel area, and enclosures housing waterfowl.

No substantive changes observed.

***2. (6b) Every animal must be provided with adequate and appropriate sanitary***

**conditions.**

No substantive change observed.

**2. (6c) Every animal must be provided with adequate and appropriate ventilation.**

Similar to 2013/ no issue for the outside enclosure. Not determined for the interior shelter.

**2. (6d) Every animal must be provided with adequate and appropriate light, and.**

Similar to 2013/ no issue for the outside enclosure. Not determined for the interior shelter.

**2. (6e) Every animal must be provided with adequate and appropriate protection from the elements, including harmful temperatures.**

Similar to 2013/ not able to determine.

**2. (7a) If an animal is confined to a pen or other enclosed structure or area the pen or other enclosed structure or area, and any structures or material in it, must be in a state of good repair.**

No material or structures were observed in the enclosure that could cause harm to the animals.

**2. (7b) + 5. (3a+b) If an animal is confined to a pen or other enclosed structure or area the pen or other enclosed structure or area, and any surfaces, structures and materials in it, must be made of and contain only materials that are (i) safe and non-toxic for the animal, and (ii) of a texture and design that will not bruise, cut or otherwise injure the animal.**

No substantive change observed.

**2. (7c) If an animal is confined to a pen or other enclosed structure or area the pen or other enclosed structure or area must not contain one or more other animals that may pose a danger to the animal.**

Similar to 2013/ not applicable/ no issue.

**2. (8) Every animal that is to be killed must be killed by a method that is humane and minimizes the pain and distress to the animal; an animal's pain and distress are deemed to be minimized if it is killed by a method that produces rapid, irreversible unconsciousness and prompt subsequent death.**

Similar to 2013/ not able to determine.

**4. (2) Wildlife kept in captivity must be provided with a daily routine that facilitates and stimulates natural movement and behaviour.**

No substantive change observed.

**4. (3) Wildlife kept in captivity must be kept in compatible social groups to ensure the**

***general welfare of the individual animals and of the group and to ensure that each animal in the group is not at risk of injury or undue stress from dominant animals of the same or a different species.***

No substantive change observed.

***5. (1b) + 5(2d) A pen or other enclosed structure or area for wildlife kept in captivity must be of an adequate and appropriate size, to enable each animal in the pen or other enclosed structure or area to keep an adequate and appropriate distance from the other animals and people so that it is not psychologically stressed and one or more areas that are out of view of spectators.***

No substantive change observed.

***5. (1c) A pen or other enclosed structure or area for wildlife kept in captivity must be of an adequate and appropriate size, to ensure that the natural growth of each animal in the pen or other enclosed structure or area is not restricted.***

Similar to 2013/ not applicable.

***5. (4a) A pen or other enclosed structure or area for wildlife kept in captivity and any gates or other barriers to it, including moats, must be designed, constructed and locked or otherwise secured to prevent, interaction with people that may be unsafe or inappropriate for the wildlife.***

No substantive change observed.

***5. (4b) A pen or other enclosed structure or area for wildlife kept in captivity and any gates or other barriers to it, including moats, must be designed, constructed and locked or otherwise secured to prevent, animals escaping from the pen or other enclosed structure or area by climbing, jumping, digging, burrowing or any other means.***

No substantive change observed.

***5. (4c) A pen or other enclosed structure or area for wildlife kept in captivity and any gates or other barriers to it, including moats, must be designed, constructed and locked or otherwise secured to prevent, animals or people (other than people who are required to enter the enclosure as part of their duties) from entering the pen or other enclosed structure or area by climbing, jumping, digging, burrowing or any other means.***

Similar to 2013/ not able to determine.

***5. (5) A pen or other enclosed structure or area for wildlife kept in captivity and any gates or other barriers to it, including moats, must be designed, constructed and maintained in a manner that presents no harm to the wildlife.***

No substantive change observed.

#### 4.4 Coyote

No coyote was observed at Spruce Haven in 2013. The coyote inhabits an enclosure that was formerly two enclosures used to house one of the wolves and the Canada Lynx.

**2. (1) Every animal must be provided with adequate and appropriate food and water.**

Two plastic troughs were observed, but their contents could not be observed, so it was not possible to determine if they contained potable water.

The coyote was fed at approximately the same time as the cougar and the lions. In total three pieces of meat were fed to the coyote. There is little literature available that describes what quantity of food a coyote should be fed daily. In a study of Gilbert-Norton *et al.* (2009), coyotes receive a daily amount of 300 grams of dry pellets. Coyotes are opportunistic hunters, which means that the diet and the amount of food per feeding will differ greatly (Cepek, 2004). It was not determined if the coyote received an adequate and appropriate diet.

**2. (2) Every animal must be provided with adequate and appropriate medical attention.**

Not able to determine.

**2. (3) Every animal must be provided with the care necessary for its general welfare.**

The care provided for the coyote appeared minimal and there was no evidence of staggered feeding or other kinds of enrichment being employed. The substrate was sandy, but clean; no droppings were observed.

**2. (4) Every animal must be transported in a manner that ensures its physical safety and general welfare.**

Not able to determine.

**2. (5) + 5. (2e) + 5. (2b) Every animal must be provided with an adequate and appropriate resting, sleeping and shelter area, with one or more areas that is accessible and can accommodate all animals.**

No adequate or appropriate resting, sleeping and/or shelter area was observed. In 2013 the two enclosures, which the coyote is now housed in, were inhabited by the Canada Lynx and a wolf. No upgrade to the enclosures and no discernable improvements to the animal living conditions appear to have been made

**2. (6a) + 5. (1a) + 5. (2a) + 5. (2c) Every animal must be provided with adequate and appropriate space, features and furnishing to enable the animal to move naturally and to exercise/show natural behaviour.**

No adequate or appropriate space, features and furnishings were observed. No improvements discernable from 2013 inspection.

**2. (6b) Every animal must be provided with adequate and appropriate sanitary**



**conditions.**

At Spruce Haven zoo, there are few dedicated animal feeding stations in the enclosures. Food was observed on the earth substrate, where it may be subject to contamination from waste, mould and/or bacteria. Food should be provided in clean containers or on washable surfaces, protected from the weather and contamination.

**2. (6c) Every animal must be provided with adequate and appropriate ventilation.**

No issue for the outside enclosure. Not determined for interior shelter box.

**2. (6d) Every animal must be provided with adequate and appropriate light, and.**

No issue for the outside enclosure. Not determined for the interior shelter box.

**2. (6e) Every animal must be provided with adequate and appropriate protection from the elements, including harmful temperatures.**

While coyotes are native to the region and acclimated to winter weather, in the wild, animals will still seek protection from severe weather and temperatures (Mowat and Slough, 2003). A door flap and dry bedding material should be provided to make the interior shelter area more comfortable for the coyote in severe weather conditions.

**2. (7a) If an animal is confined to a pen or other enclosed structure or area the pen or other enclosed structure or area, and any structures or material in it, must be in a state of good repair.**

In the enclosure, there are some seemingly random wooden objects and a wooden pallet. Wooden pallets are typically held together by nails. Destruction or deterioration of the pallets could lead to exposed metal nails creating a potential hazard to the coyote.

**2. (7b) + 5. (3a+b) If an animal is confined to a pen or other enclosed structure or area the pen or other enclosed structure or area, and any surfaces, structures and materials in it, must be made of and contain only materials that are (i) safe and non-toxic for the animal, and (ii) of a texture and design that will not bruise, cut or otherwise injure the animal.**

The coyote lives on a substrate of sand and stones, with access to some elevated wooden beams.

**2. (7c) If an animal is confined to a pen or other enclosed structure or area the pen or other enclosed structure or area must not contain one or more other animals that may pose a danger to the animal.**

Not applicable/ no issue.

**2. (8) Every animal that is to be killed must be killed by a method that is humane and minimizes the pain and distress to the animal; an animal's pain and distress are deemed to be minimized if it is killed by a method that produces rapid, irreversible unconsciousness and prompt subsequent death.**

Not able to determine.

**4. (2) *Wildlife kept in captivity must be provided with a daily routine that facilitates and stimulates natural movement and behaviour.***

There was no evidence of any kind of daily routine, other than regular feeding and cleaning, that would facilitate and stimulates natural movement and behaviour. There were no natural features and no enrichment observed.

The feeding session observed is a possible indicator of how little the daily routine facilitates natural movement and behaviour. The coyote was timed during the feeding. To retrieve and consume the food required a total of 32 seconds. Even if the coyote was fed multiple times per day, the actual amount of time spent in food-related behaviour would be just a couple of minutes. Wild coyotes have to track, hunt, kill and eat to survive. Obtaining food is a substantial part of their daily activity budget. In the winter, coyotes may travel up to 3.0 kilometers in search of food, while in the summer this declines a little bit because there is more prey available (Lingle, 2000). There is not a great deal of current literature regarding the daily activities of coyotes. However, Gese *et al.*, (1996) discovered that coyotes spend most of their days traveling (up to 60%), hunting (up to 13%), scavenging (up to 2%) and resting (up to 66%). The actual time spent engaged in each activity varied according to the time of year. In the winter, coyotes spent more time on scavenging and resting, while in the summer more time was spend on hunting and traveling.

In the wild, coyotes spend up to 13% of the time on feeding behaviour, which is approximately 3.12 hours per day. At Spruce Haven, the coyote spends only 0.033 hour on feeding (0.14% of daily time budget). Since traveling, scavenging, social and other behaviours are not possible, the coyote has little or nothing to do for 99% of its daily time budget. The lack of activity can lead to boredom, frustration and other negative states, resulting in the presence of abnormal behaviours. The coyote was observed engaged in a rapid, figure eight, pacing pattern on one side of the enclosure. The pacing behaviour was only interrupted during feeding time. Once the meat was consumed, the rapid pacing resumed. For 2.5 of the three hours spent at the Nature Park, the coyote was observed pacing, without interruption.

**4. (3) *Wildlife kept in captivity must be kept in compatible social groups to ensure the general welfare of the individual animals and of the group and to ensure that each animal in the group is not at risk of injury or undue stress from dominant animals of the same or a different species.***

Coyotes are social animals (Pitt *et al.*, 2003). Housing a social animal in solitary is not recommended. A lack of social species interaction can result in abnormal behaviours such as pacing, self mutilation or unnatural inactivity (Mason, 2006). The coyote at Spruce Haven is kept in social isolation.

**5. (1b) + 5(2d) *A pen or other enclosed structure or area for wildlife kept in captivity***

***must be of an adequate and appropriate size, to enable each animal in the pen or other enclosed structure or area to keep an adequate and appropriate distance from the other animals and people so that it is not psychologically stressed and one or more areas that are out of view of spectators.***

The coyote enclosure is adjacent to the African lion enclosure and within sight of the cougar cage and American black bear pen. There were no visual baffles, so the animals were in view of each other. Not being able to remove themselves from the view of other animals could result in unnecessarily stressful situations (e.g. during feeding time, seasonal stress), when animals try to cope by redirecting their behaviour, resulting in abnormal or overly aggressive behaviour (Clubb and Vickery, 2006; Manteca, 2006). To reduce stress and facilitate individual animals feeling safe and secure, they should be able to remove themselves from the view of the public and/or other animals.

***5. (1c) A pen or other enclosed structure or area for wildlife kept in captivity must be of an adequate and appropriate size, to ensure that the natural growth of each animal in the pen or other enclosed structure or area is not restricted.***

Not applicable.

***5. (4a) A pen or other enclosed structure or area for wildlife kept in captivity and any gates or other barriers to it, including moats, must be designed, constructed and locked or otherwise secured to prevent, interaction with people that may be unsafe or inappropriate for the wildlife.***

There is a stand-off barrier between the enclosure and the visitor pathway. However, there is no other secondary barrier that would prevent the animal from contacting visitors in case of an escape.

The feeding protocol for the coyote was unusual and potentially unsafe. The caretaker threw a piece of food into the enclosure to distract the coyote. Once the coyote was focused on that item, the enclosure door was opened just enough to throw the remaining pieces of meat inside.. A separate feeding area that can be entered by the caretaker, while the coyote is kept in the main enclosure, is preferable and eliminates any opportunity for negative interactions and/or animal escape.

***5. (4b) A pen or other enclosed structure or area for wildlife kept in captivity and any gates or other barriers to it, including moats, must be designed, constructed and locked or otherwise secured to prevent, animals escaping from the pen or other enclosed structure or area by climbing, jumping, digging, burrowing or any other means.***

Not able to determine.

***5. (4c) A pen or other enclosed structure or area for wildlife kept in captivity and any gates or other barriers to it, including moats, must be designed, constructed and locked or otherwise secured to prevent, animals or people (other than people who are required to enter the enclosure as part of their duties) from entering the pen or other***

**enclosed structure or area by climbing, jumping, digging, burrowing or any other means.**

Not able to determine.

**5. (5) A pen or other enclosed structure or area for wildlife kept in captivity and any gates or other barriers to it, including moats, must be designed, constructed and maintained in a manner that presents no harm to the wildlife.**

Doors should ideally move horizontally, instead of vertically, to prevent doors accidentally falling onto animals.

#### **4.5 Cougar**

In 2013 two cougars inhabited the enclosure, but only one cougar was observed in 2016.

**2. (1) Every animal must be provided with adequate and appropriate food and water.**

No substantive change observed.

The cougar feeding session was observed in which 10 pieces of meat, that the caretaker said was frozen chicken, was provided to the animal. Cougars are excellent hunters and their diet in the wild can vary from deer to rabbits and rodents (Thompson, 2009). It was not determined if the cougar diet at Spruce Haven was adequate and appropriate but, based on the feeding session observed, it did appear bland

**2. (2) Every animal must be provided with adequate and appropriate medical attention.**

Similar to 2013/ not able to determine.

**2. (3) Every animal must be provided with the care necessary for its general welfare.**

No substantive change observed.

**2. (4) Every animal must be transported in a manner that ensures its physical safety and general welfare.**

Similar to 2013/ not able to determine.

**2. (5) + 5. (2e) + 5. (2b) Every animal must be provided with an adequate and appropriate resting, sleeping and shelter area, with one or more areas that is accessible and can accommodate all animals.**

No substantive change observed.

**2. (6a) + 5. (1a) + 5. (2a) + 5. (2c) Every animal must be provided with adequate and appropriate space, features and furnishing to enable the animal to move naturally and to exercise/show natural behaviour.**

No substantive change observed.

**2. (6b) Every animal must be provided with adequate and appropriate sanitary**

**conditions.**

No substantive change observed.

**2. (6c) Every animal must be provided with adequate and appropriate ventilation.**

Similar to 2013/ no issue for the outside enclosure. Not determined for interior of shelter area.

**2. (6d) Every animal must be provided with adequate and appropriate light, and.**

Similar to 2013/ no issue for the outside enclosure. Not determined for interior of shelter.

**2. (6e) Every animal must be provided with adequate and appropriate protection from the elements, including harmful temperatures.**

No substantive change observed.

**2. (7a) If an animal is confined to a pen or other enclosed structure or area the pen or other enclosed structure or area, and any structures or material in it, must be in a state of good repair.**

No substantive change observed.

**2. (7b) + 5. (3a+b) If an animal is confined to a pen or other enclosed structure or area the pen or other enclosed structure or area, and any surfaces, structures and materials in it, must be made of and contain only materials that are (i) safe and non-toxic for the animal, and (ii) of a texture and design that will not bruise, cut or otherwise injure the animal.**

Similar to 2013/ not applicable/ no issue.

**2. (7c) If an animal is confined to a pen or other enclosed structure or area the pen or other enclosed structure or area must not contain one or more other animals that may pose a danger to the animal.**

Similar to 2013/ not applicable/ no issue.

**2. (8) Every animal that is to be killed must be killed by a method that is humane and minimizes the pain and distress to the animal; an animal's pain and distress are deemed to be minimized if it is killed by a method that produces rapid, irreversible unconsciousness and prompt subsequent death.**

Similar to 2013/ not determined.

**4. (2) Wildlife kept in captivity must be provided with a daily routine that facilitates and stimulates natural movement and behaviour.**

No substantive change observed.

The cougar was hissing, growling and even attacked the fence, while being observed. The observation period was shortened since it was clearly having a negative effect on

the animal. In addition, it did not seem safe to stay in that location. The owner of the zoo indicated that the cougar always displays that kind of aggressive behaviour and that it had become worse with the animal being alone. The owner also said the age of the animal was responsible for the behaviour, "The animal is very, very old, getting old like me, and as my wife says to me, you are getting grumpy".

This animal appeared stressed by the presence of visitors and therefore should be relocated to an environment that does not result in these kind of aggressive displays. The cougar's behaviour seemed more intense, and frightening to this investigator, than in 2013.

***4. (3) Wildlife kept in captivity must be kept in compatible social groups to ensure the general welfare of the individual animals and of the group and to ensure that each animal in the group is not at risk of injury or undue stress from dominant animals of the same or a different species.***

Cougars tend to be solitary animals in the wild. However, a social companion in captivity can be a great asset (Montaudouin and Le Pape, 2005). As mentioned the cougar used to have a companion, but the situation changed and the animal is now living alone. Directly across from the cougar enclosure is the coyote and one side is relatively close to the petting zoo. The Shetland pony shares an enclosure next to the cougar. Housing predators and potential prey in such close proximity to each other is not usually a good practice.

***5. (1b) + 5(2d) A pen or other enclosed structure or area for wildlife kept in captivity must be of an adequate and appropriate size, to enable each animal in the pen or other enclosed structure or area to keep an adequate and appropriate distance from the other animals and people so that it is not psychologically stressed and one or more areas that are out of view of spectators.***

The summer growth in vegetation resulted in the rear portion being less visible, but the cougar was still not able to remove itself completely from public view. However, there was more privacy than observed during the 2013 visit.

***5. (1c) A pen or other enclosed structure or area for wildlife kept in captivity must be of an adequate and appropriate size, to ensure that the natural growth of each animal in the pen or other enclosed structure or area is not restricted.***

Similar to 2013/ not applicable.

***5. (4a) A pen or other enclosed structure or area for wildlife kept in captivity and any gates or other barriers to it, including moats, must be designed, constructed and locked or otherwise secured to prevent, interaction with people that may be unsafe or inappropriate for the wildlife.***

No substantive change observed.

***5. (4b) A pen or other enclosed structure or area for wildlife kept in captivity and any***

***gates or other barriers to it, including moats, must be designed, constructed and locked or otherwise secured to prevent, animals escaping from the pen or other enclosed structure or area by climbing, jumping, digging, burrowing or any other means.***

No substantive change observed.

***5. (4c) A pen or other enclosed structure or area for wildlife kept in captivity and any gates or other barriers to it, including moats, must be designed, constructed and locked or otherwise secured to prevent, animals or people (other than people who are required to enter the enclosure as part of their duties) from entering the pen or other enclosed structure or area by climbing, jumping, digging, burrowing or any other means.***

No substantive change observed.

***5. (5) A pen or other enclosed structure or area for wildlife kept in captivity and any gates or other barriers to it, including moats, must be designed, constructed and maintained in a manner that presents no harm to the wildlife.***

Similar to 2013/ not able to determine.

#### **4.6 Ungulates**

The collection of ungulates consisted of Shetland ponies, pot-bellied pig, donkeys, a West Caucasian tur, White-tailed deer, llamas and yaks. The enclosures are similar and therefore are discussed collectively as a unit in this section.

***2. (1) Every animal must be provided with adequate and appropriate food and water.***

No substantive change observed. The water containers appeared clean, but additional water troughs should be added to the enclosure housing the largest number of animals to ensure easy accessibility to them for all animals.

***2. (2) Every animal must be provided with adequate and appropriate medical attention.***

Similar to 2013/ not able to determine.

The animals appeared healthier than during the 2013 visit, possibly due to the time of year (i.e., this observation not being shortly after winter).

***2. (3) Every animal must be provided with the care necessary for its general welfare.***

No substantive change observed.

There was a solitary deer in a large grassy enclosure came to the fence and repeatedly chewed on the metal wire. This behaviour warrants further investigation.

***2. (4) Every animal must be transported in a manner that ensures its physical safety and general welfare.***

Similar to 2013, not able to determine.

**2. (5) + 5. (2e) + 5. (2b) Every animal must be provided with an adequate and appropriate resting, sleeping and shelter area, with one or more areas that is accessible and can accommodate all animals.**

No substantive change observed.

**2. (6a) + 5. (1a) + 5. (2a) + 5. (2c) Every animal must be provided with adequate and appropriate space, features and furnishing to enable the animal to move naturally and to exercise/show natural behaviour.**

Similar to 2013/ not an issue.. However, additional climbing structures and enrichment would increase the complexity of the environment and give the animals more choice and control over their surroundings.

**2. (6b) Every animal must be provided with adequate and appropriate sanitary conditions.**

No substantive change observed.

**2. (6c) Every animal must be provided with adequate and appropriate ventilation.**

Similar to 2013/ no issue for outside enclosure. Not able to determine for interior shelter.

**2. (6d) Every animal must be provided with adequate and appropriate light, and.**

Similar to 2013/ no issue for outside enclosure. Not able to determine for interior enclosure.

**2. (6e) Every animal must be provided with adequate and appropriate protection from the elements, including harmful temperatures.**

No substantive change observed.

**2. (7a) If an animal is confined to a pen or other enclosed structure or area the pen or other enclosed structure or area, and any structures or material in it, must be in a state of good repair.**

No substantive change observed.

**2. (7b) + 5. (3a+b) If an animal is confined to a pen or other enclosed structure or area the pen or other enclosed structure or area, and any surfaces, structures and materials in it, must be made of and contain only materials that are (i) safe and non-toxic for the animal, and (ii) of a texture and design that will not bruise, cut or otherwise injure the animal.**

Similar to 2013/ not able to determine.

**2. (7c) If an animal is confined to a pen or other enclosed structure or area the pen or**



***other enclosed structure or area must not contain one or more other animals that may pose a danger to the animal.***

No substantive change observed.

***2. (8) Every animal that is to be killed must be killed by a method that is humane and minimizes the pain and distress to the animal; an animal's pain and distress are deemed to be minimized if it is killed by a method that produces rapid, irreversible unconsciousness and prompt subsequent death.***

Similar to 2013/ not able to determine.

***4. (2) Wildlife kept in captivity must be provided with a daily routine that facilitates and stimulates natural movement and behaviour.***

No substantive change observed.

***4. (3) Wildlife kept in captivity must be kept in compatible social groups to ensure the general welfare of the individual animals and of the group and to ensure that each animal in the group is not at risk of injury or undue stress from dominant animals of the same or a different species.***

No substantive change observed. The Tur, deer and male Yak were all kept singly.

***5. (1b) + 5(2d) A pen or other enclosed structure or area for wildlife kept in captivity must be of an adequate and appropriate size, to enable each animal in the pen or other enclosed structure or area to keep an adequate and appropriate distance from the other animals and people so that it is not psychologically stressed and one or more areas that are out of view of spectators.***

No substantive change observed.

***5. (1c) A pen or other enclosed structure or area for wildlife kept in captivity must be of an adequate and appropriate size, to ensure that the natural growth of each animal in the pen or other enclosed structure or area is not restricted.***

Similar to 2013/ not applicable.

***5. (4a) A pen or other enclosed structure or area for wildlife kept in captivity and any gates or other barriers to it, including moats, must be designed, constructed and locked or otherwise secured to prevent, interaction with people that may be unsafe or inappropriate for the wildlife.***

This part of the zoo allows interaction between humans and animals.

***5. (4b) A pen or other enclosed structure or area for wildlife kept in captivity and any gates or other barriers to it, including moats, must be designed, constructed and locked or otherwise secured to prevent, animals escaping from the pen or other enclosed structure or area by climbing, jumping, digging, burrowing or any other means.***

Similar to 2013/ no issue.

**5. (4c) A pen or other enclosed structure or area for wildlife kept in captivity and any gates or other barriers to it, including moats, must be designed, constructed and locked or otherwise secured to prevent, animals or people (other than people who are required to enter the enclosure as part of their duties) from entering the pen or other enclosed structure or area by climbing, jumping, digging, burrowing or any other means.**

Similar to 2013/ no issue.

**5. (5) A pen or other enclosed structure or area for wildlife kept in captivity and any gates or other barriers to it, including moats, must be designed, constructed and maintained in a manner that presents no harm to the wildlife.**

Similar to 2013/ no issue.

#### **4.7 Domesticated/other animals**

The collection of domestic/other animals exists of: geese, chinchillas, turkeys, chicken and rabbits.

**2. (1) Every animal must be provided with adequate and appropriate food and water.**

No substantive change observed.

**2. (2) Every animal must be provided with adequate and appropriate medical attention.**

The Canada goose appeared to have a damaged wing.

**2. (3) Every animal must be provided with the care necessary for its general welfare.**

No substantive change observed.

**2. (4) Every animal must be transported in a manner that ensures its physical safety and general welfare.**

Similar to 2013/ not able to determine.

**2. (5) + 5. (2e) + 5. (2b) Every animal must be provided with an adequate and appropriate resting, sleeping and shelter area, with one or more areas that is accessible and can accommodate all animals.**

No substantive change observed.

**2. (6a) + 5. (1a) + 5. (2a) + 5. (2c) Every animal must be provided with adequate and appropriate space, features and furnishing to enable the animal to move naturally and to exercise/show natural behaviour.**

No substantive change observed.

**2. (6b) Every animal must be provided with adequate and appropriate sanitary conditions.**

Similar to 2013/ no issue for outside enclosure. Unable to determine for interior

enclosure.

**2. (6c) Every animal must be provided with adequate and appropriate ventilation.**

Similar to 2013/ no issue for outside enclosure. Unable to determine for interior enclosure.

**2. (6d) Every animal must be provided with adequate and appropriate light, and.**

Similar to 2013/ no issue for outside enclosure. Unable to determine for interior enclosure.

**2. (6e) Every animal must be provided with adequate and appropriate protection from the elements, including harmful temperatures.**

No substantive change observed.

**2. (7a) If an animal is confined to a pen or other enclosed structure or area the pen or other enclosed structure or area, and any structures or material in it, must be in a state of good repair.**

Similar to 2013/ no issue.

**2. (7b) + 5. (3a+b) If an animal is confined to a pen or other enclosed structure or area the pen or other enclosed structure or area, and any surfaces, structures and materials in it, must be made of and contain only materials that are (i) safe and non-toxic for the animal, and (ii) of a texture and design that will not bruise, cut or otherwise injure the animal.**

The rabbits and chinchilla were housed in raised wire cages. The cages were presumably used for ease of maintenance, since excrement can fall through the wire to the ground beneath. However, the wire floor could potentially cause discomfort and/or stress to the animals and should be replaced with soft and/or natural substrates.

**2. (7c) If an animal is confined to a pen or other enclosed structure or area the pen or other enclosed structure or area must not contain one or more other animals that may pose a danger to the animal.**

No substantive change observed.

**2. (8) Every animal that is to be killed must be killed by a method that is humane and minimizes the pain and distress to the animal; an animal's pain and distress are deemed to be minimized if it is killed by a method that produces rapid, irreversible unconsciousness and prompt subsequent death.**

Similar to 2013/ not able to determine.

**4. (2) Wildlife kept in captivity must be provided with a daily routine that facilitates and stimulates natural movement and behaviour.**

No substantive change observed.

**4. (3) Wildlife kept in captivity must be kept in compatible social groups to ensure the general welfare of the individual animals and of the group and to ensure that each animal in the group is not at risk of injury or undue stress from dominant animals of the same or a different species.**

No substantive change observed.

**5. (1b) + 5(2d) A pen or other enclosed structure or area for wildlife kept in captivity must be of an adequate and appropriate size, to enable each animal in the pen or other enclosed structure or area to keep an adequate and appropriate distance from the other animals and people so that it is not psychologically stressed and one or more areas that are out of view of spectators.**

No substantive change observed.

**5. (1c) A pen or other enclosed structure or area for wildlife kept in captivity must be of an adequate and appropriate size, to ensure that the natural growth of each animal in the pen or other enclosed structure or area is not restricted.**

Similar to 2013/ not applicable.

**5. (4a) A pen or other enclosed structure or area for wildlife kept in captivity and any gates or other barriers to it, including moats, must be designed, constructed and locked or otherwise secured to prevent, interaction with people that may be unsafe or inappropriate for the wildlife.**

Similar to 2013/ no issue.

**5. (4b) A pen or other enclosed structure or area for wildlife kept in captivity and any gates or other barriers to it, including moats, must be designed, constructed and locked or otherwise secured to prevent, animals escaping from the pen or other enclosed structure or area by climbing, jumping, digging, burrowing or any other means.**

Similar to 2013/ no issue.

**5. (4c) A pen or other enclosed structure or area for wildlife kept in captivity and any gates or other barriers to it, including moats, must be designed, constructed and locked or otherwise secured to prevent, animals or people (other than people who are required to enter the enclosure as part of their duties) from entering the pen or other enclosed structure or area by climbing, jumping, digging, burrowing or any other means.**

Similar to 2013/ no issue.

**5. (5) A pen or other enclosed structure or area for wildlife kept in captivity and any gates or other barriers to it, including moats, must be designed, constructed and maintained in a manner that presents no harm to the wildlife.**

Similar to 2013/ no issue.

## **6. Conclusions and recommendations**

Many of the animals at Spruce Haven remain in the same kinds of conditions observed in 2013. Few, if any, changes aimed at substantially improving the quality of the living conditions experienced by the animals were observed. In some cases, abnormal behaviours appeared more pronounced than during the 2013 visit.

While Spruce Haven's owners presumably have the best of intentions, they have not kept up with evolving animal keeping standards. They are not providing modern, professional standards of housing and care for many of their animals.

Given that few substantive improvements have been made since the 2013 visit to Spruce Haven, it is recommended that the facility downsize by dispersing its carnivores elsewhere and focusing instead on providing optimal conditions for the ungulates and small animals that remain. The petting zoo component of Spruce Haven could be retained and enhanced.

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**Appendix: Live Collection 2013 vs. 2016**

<b>Animal Species</b>	<b>Category</b>	<b>Number of Animals 2013</b>	<b>Number of Animals 2016</b>
African Goose	Exotic / Africa	0	1
African Lions	Exotic / Africa	2	2
Ibex/West Caucasian Tur	Exotic / Europe-Asia	1	1
Japanese Sika Deer	Exotic / East Asia	2	0
Parrot	Exotic	0	1
Snake	Exotic	8 (not on display)	0
Arctic Wolf	Native	1	0
Black Bear	Native	1	1
Canada Goose	Native	4	1
Canada Lynx	Native	1	0
Coyote	Native	0	1
Deer	Native	2	2
Cougar	Native	2	1
Raccoon	Native	1	0
Gull	Native	1	0
Timber Wolf	Native	2	2
Turkey	Native	5	3
Boar	Domesticated	3	0
Chicken	Domesticated	0	10
Chinchilla	Domesticated / South America	2	4
Donkey	Domesticated	2	2
Goat	Domesticated	0	2
Llama	Domesticated / South America	5	2
Potbelly pig	Domesticated	0	1
Rabbit	Domesticated	1	2
Sheep	Domesticated	0	2
Shetland Pony	Domesticated	4	4
Yaks	Domesticated / Himalayan region	5	5
<b>Total</b>		<b>55</b>	<b>50</b>