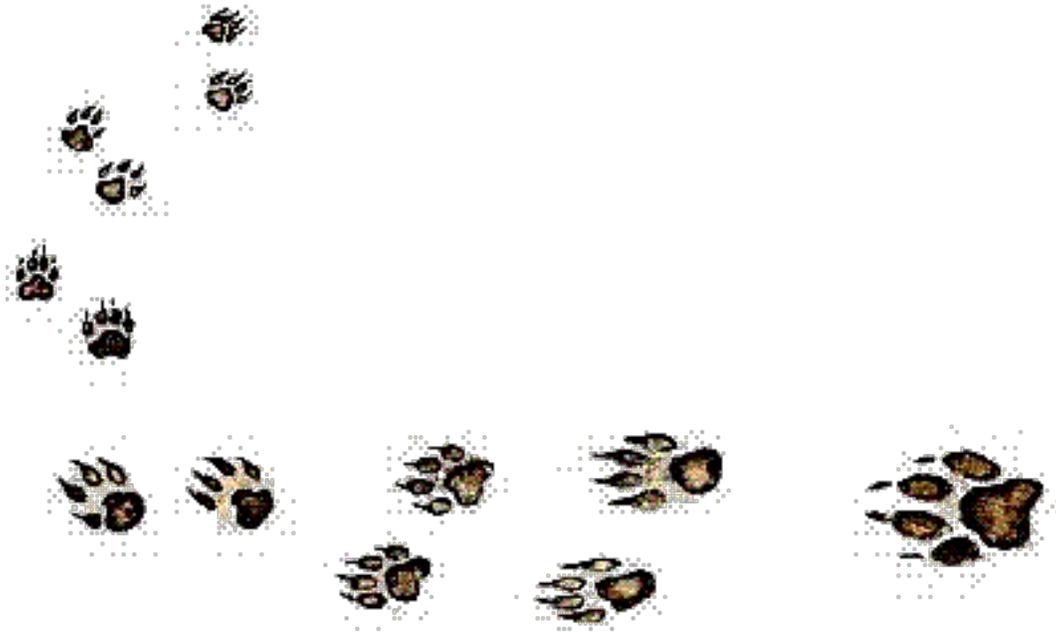


# Haliburton Highlands Land Trust & Abbey Gardens

Event Package: Tracks and Signs  
Season: Winter



Haliburton  
Highlands  
Land Trust

Recognizing Wildlife Tracks and Signs as a Monitoring tool

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## Introduction

Wildlife research often relies on the skills of knowledgeable observers to collect field data about the distribution of species across habitats (Evans *et al.* 2009; Wilson and Delahay 2001). By looking for tracks and signs left by animals, humans can gain knowledge about how to hunt or avoid animals in the wild (Chame, 2003). Tracks and signs of wildlife can be used to monitor the presence, distribution, population size, and habitat of numerous species (Crowley *et al.* 2012; Patterson *et al.* 2004). Several variations in environmental, demographic, and behavioural patterns may influence the accuracy of the identification of tracks and signs (Crowley *et al.* 2012). Therefore the reliability of the observer is quite important to consider whilst collecting accurate wildlife information (Evans *et al.* 2009). Available data about terrestrial animals are often lacking, and many other survey methods are demanding, expensive, and labour-intensive (Roberts, 2011; Gusset and Burgener 2005). In this way, using tracks and signs as a method to monitor animal population sizes is an important method used frequently for wildlife conservation (Roberts, 2011).

## Tracking

Tracking is considered to be one of the oldest sciences (Chame, 2003). Survey methods involving the identification of animal tracks are often subjected to observer errors (Evans *et al.* 2009). A particularly common method of tracking is to perform snow-track surveys (Crowley *et al.* 2012). This type of surveying is quite common due to their low cost, efficiency, and lack of needed equipment (Crowley *et al.* 2012; Gompper *et al.* 2006). In example, snow-track surveys are particularly useful when monitoring river otters *Lontra canadensis* since they are often found near frozen lakes and rivers (Crowley *et al.* 2012; Reid *et al.* 1987). Several factors may affect the accuracy and ease of tracking including: the number of days since the last snow fall, temperature, and differences in animal movement patterns between individuals of different ages and genders (Crowley *et al.* 2012; Linnell *et al.* 2007). Yet for the skilled observer, tracking acts as a non-invasive method to provide information about threatened or rare species (Chame, 2003).

## Scat

Fecal matter is the most common method to record information about rare and secretive species (Reed *et al.* 2004; Putman, 1984). By performing scat surveys, useful information can be obtained about species with elusive behaviour, or inaccessible habitats (Gallant, 2007). Scat surveys can be used to study preferred habitats by certain species, as well as to evaluate the size of populations (Gallant, 2007). By analyzing scat, researchers are able to determine the diets of free-ranging species (Reed *et al.* 2004). Fecal components may contain undigested material including: feathers, bones, teeth, claws, scales, arthropod chitin, seed and plant tissues, pollen grains, and bacteria (Chame, 2003). Mammal feces also provide a social communication role by demonstrating their home range

and establishing territory (Chame, 2003). Scat surveys are quite a popular tool for studying animal activity due to their affordability and non-invasiveness (Gallant, 2007).

## **Browse**

Another method to determine the size and health of wildlife populations is to evaluate the extent of browse by certain species. Although conducting a browse survey can be time consuming, this technique is able to provide statistically sound data (Aldous, 1944). By assessing browse on twigs and leaves by terrestrial mammals, the carrying capacity of certain wildlife populations is able to be determined (Shafer, 1963). Indications about which species browsed a certain area include the plant type, height of browse, and structural nature of browse (Smith, 1982). Therefore by analyzing the preferred diet of animals in a given area, and the quantity of food they are consuming, information can be gleaned about the health of animal populations (Smith, 1982).

## **Conclusion**

Although there are several methods to determine information about wildlife, searching for tracks and signs is particularly useful (Chame, 2003). By performing tracking, scat, and browse surveys, a researcher can obtain information about ecosystem health and diversity without ever having to visually observe elusive animals themselves (Chame, 2003). Monitoring tracks and signs serves as a non-invasive means to record data about the population size, distribution, and habitat selection of many organisms (Evans *et al.* 2009; Wilson and Delahay 2001). Therefore this method to analyze wildlife is highly beneficial to understand how to properly conserve wildlife in sensitive environments (Roberts, 2011).

## Acknowledgements

We would like to acknowledge the generous funding from CFICE: Community First that supported the creation of this event package by Jenna Snelgrove. Thanks to Heather Reid of Abbey Gardens, Sheila Ziman of Haliburton Highlands Land Trust, and Marie Gage of U-Links for their guidance in this project, and also Trent University faculty Tom Whillans and Nadine Changfoot.



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## Talking Points

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- Searching for tracks and signs is an important method to obtain information about rare, nocturnal, and elusive species
- Monitoring tracks, scat, and browse allows one to evaluate the population size, diet, habitat/ territory, and behaviour of certain species
- This information is necessary to know for conservation purposes
- When looking at tracks, it is important to note the size, shape, depth of indentation, and pattern of the track
- Tracks are the easiest to distinguish on a flat, lightly snow-covered surface
- Animal identification based on scat can be unreliable if solely based on the size of scat since this fluctuates based on how much an animal eats.
- Animals can be identified by their browse based on the height of browse, plant species, and the roughness of the browse
- Although tracks and signs provide a non-invasive means to monitor wildlife, the accuracy of the recordings often depend on the skill of the observer

- Sometimes feeling a track with one's hands allows one to notice more detail about the track rather than simply looking

## Proposed Event Logistics

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### Duration of Event

Time	Activity	
	Abbey Gardens	HHLT
10:00 am	-Meet Group at Abbey Gardens Food Hub (or tent if used for a large group) -Register and sign in (on registration/sign in) sheet and receive name tag	-Meet Group at Dahl Forest Trail Head -Register on sign in sheet and receive name tag
10:15 am	-Learn safety protocols and best practices for monitoring tracks and signs -Demonstrate walking in snow and how tracks change with different walking patterns*	-Learn safety protocols and best practices for monitoring tracks and signs -Demonstrate walking in snow and how tracks change with different walking patterns*
10:30 am	-Begin hike through Abbey Gardens, whilst following the map highlighting the proper route -Gather at stops 1-5 to discuss talking points at designated areas	-Begin hike through Dahl, whilst following the map highlighting the proper route -Gather at stops 1-5 to discuss talking points at designated areas
11:30 pm	-Continue loop and begin hiking back towards the Abbey Gardens main office	-Continue loop and begin hiking back towards the Dahl Forest trail head
12:00 pm	-Compare field notes, photos, and sightings for the day -Fill out a feedback card about today's event**	-Compare field notes, photos, and sightings for the day -Fill out a feedback card about today's event**

\*Optional: See Additional Component #3 for further details

\*\*Feedback cards should be printed in advance and are found on the last page

### Date Range

Conducting this event during the winter season is ideal so that tracks can be easily identifiable in the snow. Often tracks are difficult to distinguish in soft, deep snow, so it would likely be best to hold this event after a light snowfall.

Therefore the proposed date range for this event is throughout the month of January to guarantee the presence of snow.

### **Length of Walk**

The hike is suggested to take approximately two hours cumulatively. At Abbey Gardens, the walk will follow the extended loop trail, which is approximately 3.6 kilometers. At Dahl Forest, the walk will follow several trails, totaling approximately 5 kilometers. It is recommended that event leaders hike the designated trails prior to the event to mark the stopping points and any tracks observed along the way to show visitors.

### **What to Bring**

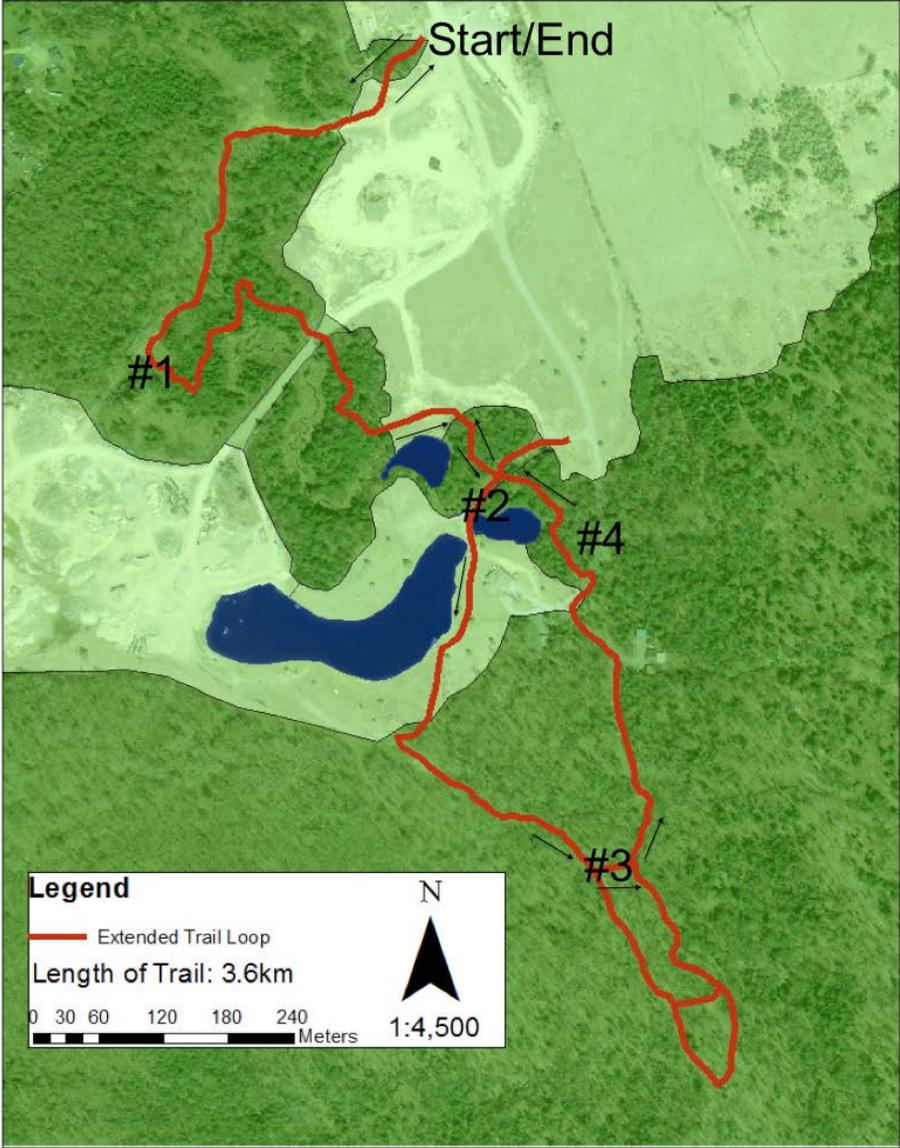
- Field notebook and pencil
- A means to tell the time
- Proper footwear (i.e. hiking boots, snow shoes)
- Appropriate clothing for the weather (i.e. rain gear, hats, sunscreen, bug spray)
- Water/drink
- Lunch
- Calipers/ ruler
- Camera (optional)
- GPS or compass (optional)
- Binoculars (optional)

### **Suggested Walking Loops**

#### Abbey Gardens

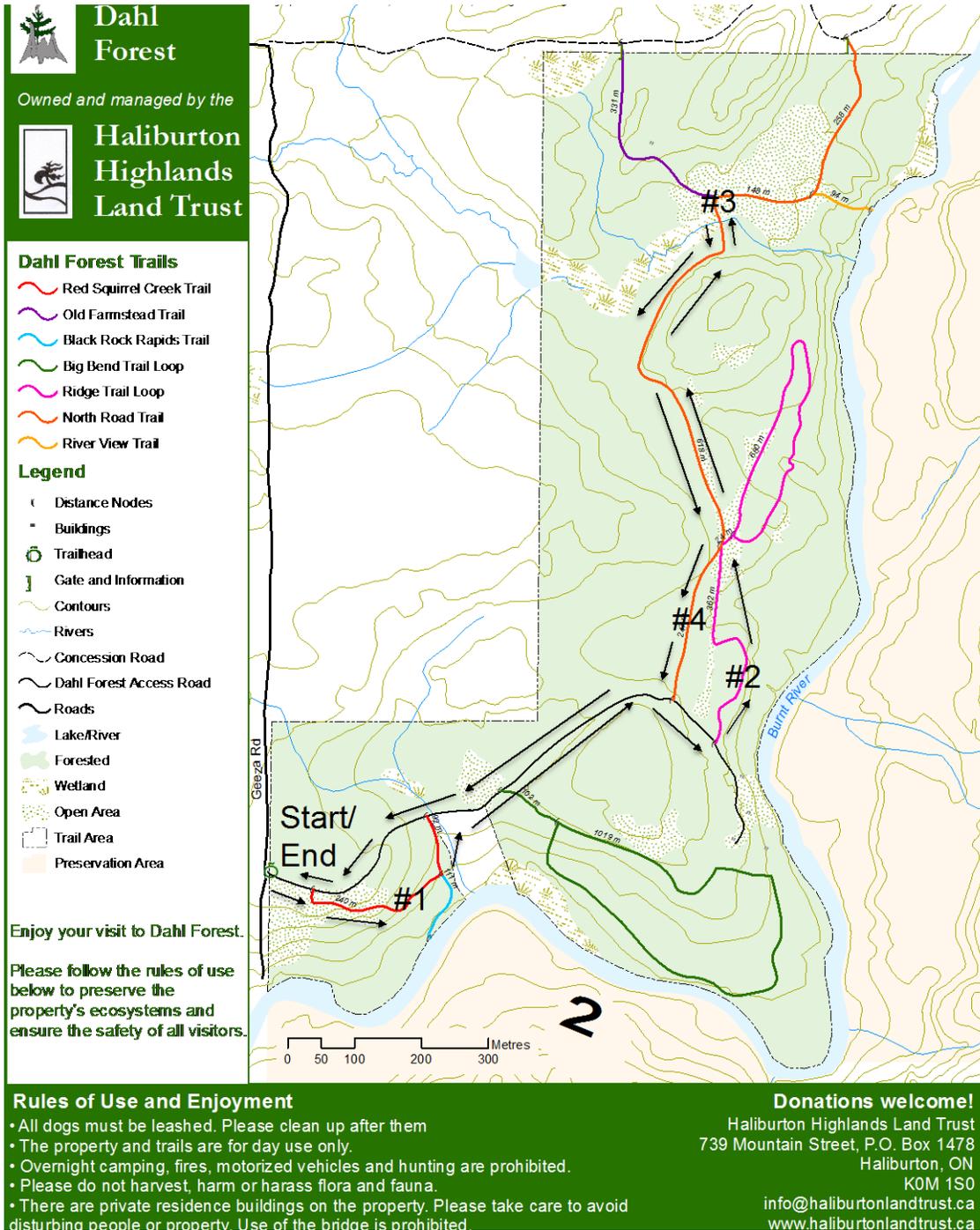
See Map on next page.

# Extended Trail Loop



\*Note: map numbers correspond to the stops listed below. Event leaders should bring corresponding photos, props, and talking points to each stop.

# Dahl Forest



\*Note: map numbers correspond to the stops listed below. Event leaders should bring corresponding photos, props, and talking points to each stop.

## Props

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### Stop #1: Big Game Mammals

#### Moose Talking Points

- Adult moose are one of the largest mammals in North America and may be as tall as 2.3 meters high
- A male's antlers can be as large as 2 meters from tip to tip
- Moose live in forests, often near streams
- Moose are herbivores and are the most active at dusk and dawn
- Although moose are solitary, the mother and calf form a strong social bond



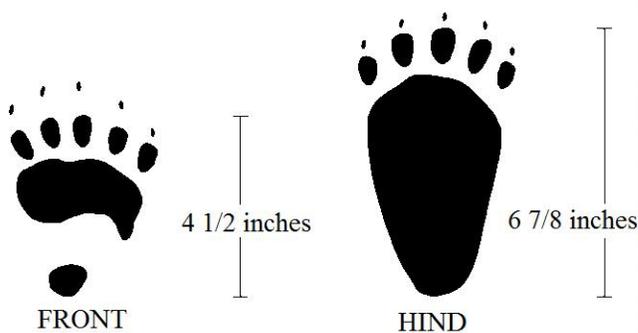
## White-Tailed Deer Talking Points

- Most deer are born with white spots and lose them after a year
- Young deer stay with their mother for a year
- Deer have long legs and therefore can jump as high as 6 meters in the air
- During the mating season, male deer will fight with their antlers to attract a female
- Male deer grow new antlers every year



## Black Bear Talking Points

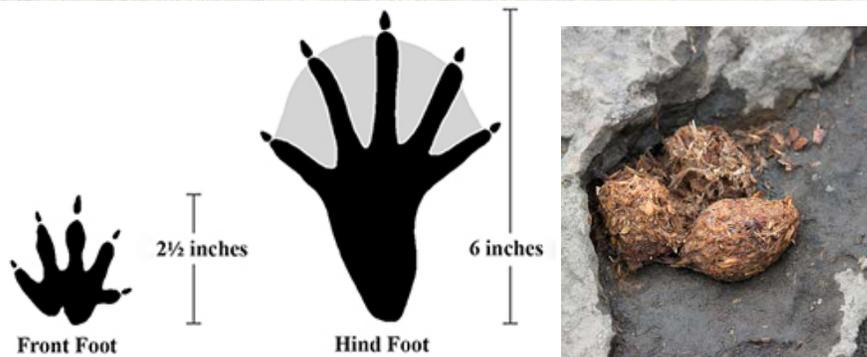
- The black bear is the smallest bear in Canada
- Black bears are excellent at climbing trees to allow cubs safety from predators
- Black bears can run as fast as 40 to 50 kilometers per hour
- Black bears often must leave the forest and travel long distances to find food
- If you encounter a black bear in the wild, you should retreat slowly whilst facing the bear



## Stop #2: Water Lovers

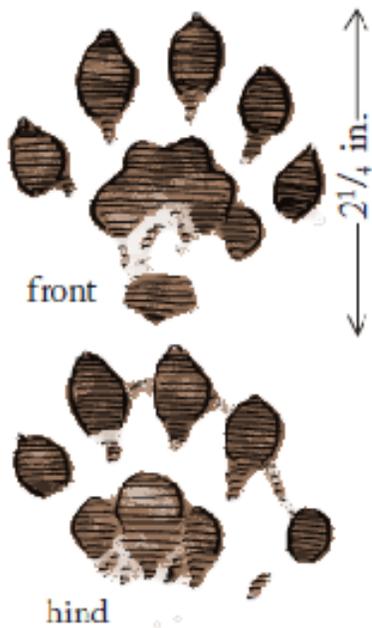
### Beaver Talking Points

- Beavers are semi-aquatic mammals
- They have long, orange teeth and flattened tails
- They use their long teeth to obtain wood and bark as food and fell trees for the construction of dams and lodges
- By making dams, beavers raise the water level to protect them from predators
- If beavers detect danger they slap their tails on the water as a warning



## River Otter Talking Points

- A river otter's stream-lined body and webbed feet make them great swimmers
- River otters have dense fur and nostrils that can close underwater
- River otters spend two thirds of their time on land but live near rivers and streams
- River otters are carnivorous and wash themselves after every meal
- River otters can hold their breath for up to 8 minutes



## Muskrat Talking Points

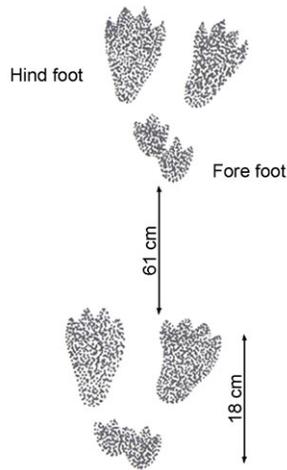
- Muskrats are named for their musky smell and rat-like appearance
- Valued for their fur, muskrats are one of the most trapped animals in history
- Muskrats are great swimmers and can swim backwards and forwards
- The denning habitats of muskrats provides nesting areas for birds
- Muskrats can hold their breath for 15 to 20 minutes



### Stop #3: Fur in the Forest

#### Snowshoe Hare Talking Points

- Snowshoe hares can move as fast as 43 kilometers per hour
- They can leap 3 meters in one jump
- The colour of their fur changes with the season for camouflage
- Snowshoe hares are larger than most rabbits
- They communicate by thumping the ground with their hind legs



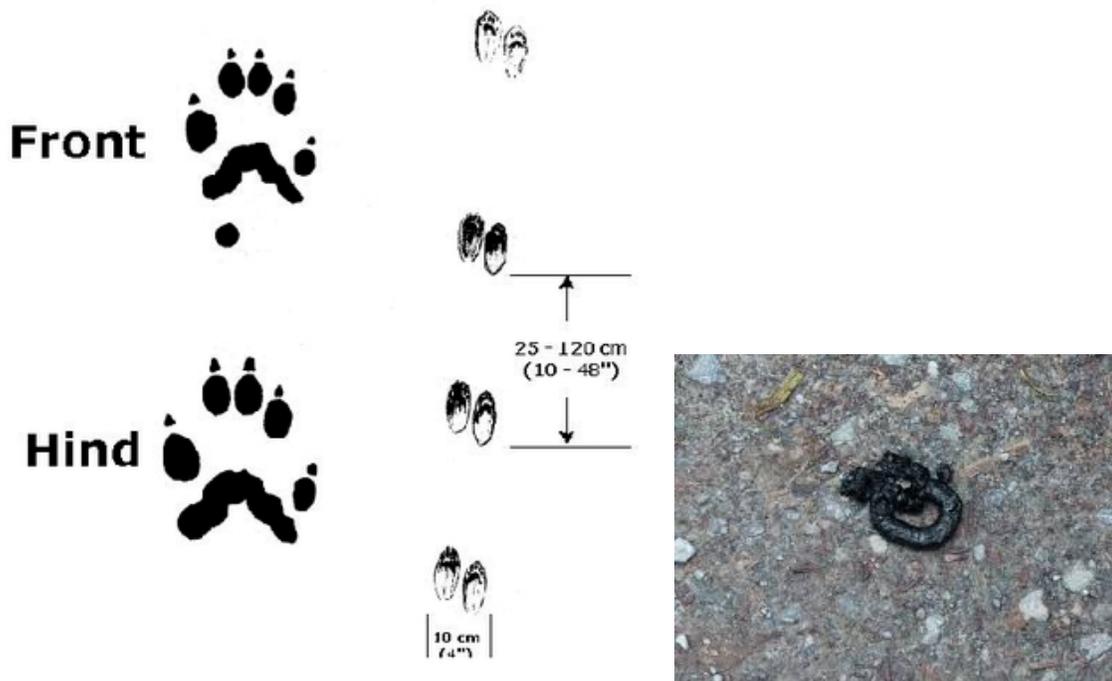
## Fisher Talking Points

- Despite its name, a fisher rarely eats fish
- Fishers produce a hissing and growling sound when threatened
- Fishers sleep in the crevices of rocks and abandoned squirrel nests during the day
- Females are able to delay pregnancy... fertilized eggs can develop up to 10 months after copulation
- Fishers can survive up to 10 years in the wild



## Marten Talking Points

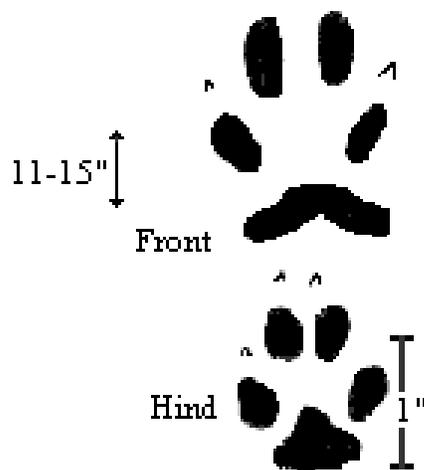
- Martens dig tunnels and move through the snow during the winter
- They are agile climbers and swimmers
- The colour of their fur depends on their geographic location
- Martens reach sexual maturity after one year
- They communicate with huffs, chuckles, screams, and visual cues



## Stop #4: Who Let the Dogs Out

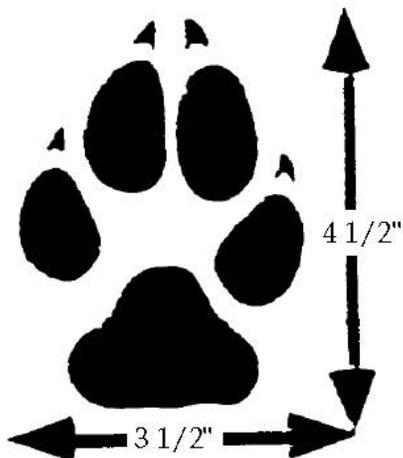
### Red Fox Talking Points

- A group of foxes is called a skulk or a leash
- Foxes have whiskers on their legs and face that help them to navigate
- Foxes are solitary and hunt alone rather in packs
- Their pupils are vertical like a cat so that they can see well at night
- Foxes can reportedly hear a watch ticking 40 yards away



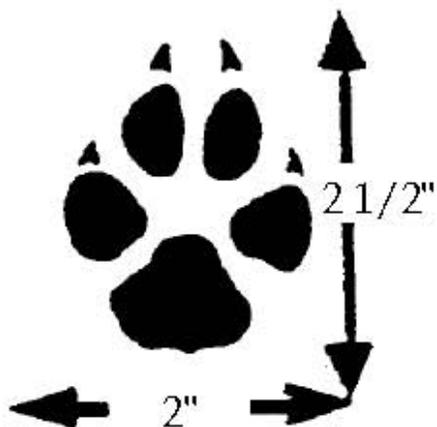
## Eastern Gray Wolf Talking Points

- Wolves are the largest members of the dog family
- Wolves have an organized social structure to cooperate as a family
- Once a wolf has found a mate, they usually stay together for life
- Wolves feed their young by regurgitating chewed up food into their mouths
- Wolves may often howl simply because a nearby wolf has begun howling



## Eastern Coyote Talking Points

- Both male and female coyotes contribute to caring for their pups
- Coyotes are omnivores and they can eat both large and small game
- Coyotes are typically solitary however they become more social in the winter
- Their fur colour depends on where they live
- Coyotes can also mate with dogs and their offspring are called “coydogs”



## Added Components

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1. Participants in the tracks and signs event could be encouraged to carry a field notebook where they can record the species of each observed track. For mystery track sightings, participants could draw the track in their field notebook and use a ruler or calipers to measure the length and width of the track to refer to it with an in-depth guide later on.
2. Another added component for this event could be to use plaster to preserve any observed tracks throughout the day. After selecting an appropriate track to preserve, plaster of paris can be mixed with water to form a thick consistency. After pouring the mixture into the track, allow it to dry. Next it can be gently pried from the base using a stick or spoon. By performing this activity participants will be able to take a memento of the day home.
3. Another added component for this event could be to start the day by encouraging participants to make their own tracks in a designated area in the snow. Participants could be told to alter the pace, speed, and direction of their own walks across the snow. Later they could analyze how slight changes in their method of walking changes the look and feel of their prints.
4. The last added component for this event could be to bring scat replicas so that participants can compare scat observed in the field to accurate three-dimensional comparisons. This would allow participants to become educated about the shape and size of scat from various mammals in the same region. An example of where products like this are available is included in the following link:  
<http://www.canadabeautysupply.ca/sb49923-life-form-replica-bucket-of-scat/>

## Useful Tracking Guides

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1. <http://www.forestsontario.ca/wp-content/uploads/2016/04/Mammal-Identification-and-Tracking-Guide.pdf>
2. [http://www.oyccweb.com/uploads/2/6/4/4/26442920/animal\\_track\\_id\\_guide.pdf](http://www.oyccweb.com/uploads/2/6/4/4/26442920/animal_track_id_guide.pdf)
3. <http://www.naturetracking.com>

# Feedback from Today's Event

What did you enjoy?

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What would you change in the future?

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