

Wildlife Tracking on the Bruce Trail



With David Beamer
February 9, 2023



Bruce Trail
CONSERVANCY

Introduction to David Beamer

- ▶ Managed 30,000 acre Trapline for ~10 years
- ▶ Taught Mammal Identification and Tracking at Niagara College
- ▶ Managed Conservation Areas, Parks, and a Provincial Wildlife Area
- ▶ Coordinated a provincial habitat restoration program



Mammals Found on the Bruce Trail

▶ Canines

- Domestic dogs, Red Fox, Coyote, and Wolves

▶ Felines

- Bobcat and domestic cats

▶ Ungulates

- White tailed-deer

▶ Weasel Family

▶ Lagomorphs

▶ Rodents

▶ Raccoons

▶ Opossum

▶ Black Bears



About Tracking

- ▶ Tracking is more than just following the animal
- ▶ Every mark is a track
- ▶ It is important to learn the mammal's habits
- ▶ Other means to identify mammals
 - Scat, Lodging, Feeding Activity, Artifacts, Territory Markings
- ▶ Memorizing each track would be a huge task!
- ▶ Tracks can be placed into groups based on the number of toes
- ▶ Species can be determined by further analyzing shape, size, and gait

Scat

- ▶ Size and shape (what species)
- ▶ Contents (what they have eaten)
- ▶ Colour and consistency (how old it is)
- ▶ Where it is (territory i.e. otter)



Lodging

- ▶ Beaver house
- ▶ Muskrat Pushups
- ▶ Tree cavities
- ▶ Nests
- ▶ Hollow stumps
- ▶ Under uprooted trees
- ▶ Holes dug in sand



Artifacts

- ▶ Parts of the animal left behind
- ▶ Feathers, hair, fur, bones that tell you the animal has been in the area



Territorial Markings

- ▶ Ungulate rubs
- ▶ Bear scrapes
- ▶ Urine (Felines, Canines, etc.)
- ▶ Scent (i.e. beaver)

- ▶ Indicates to other animals that this is his space



Feeding Activity



Trails



- ▶ Many mammals use the same trails
- ▶ Many predators know this
- ▶ Sometimes multiple species use the same trail



What you can tell from a track

- ▶ Species Identification
- ▶ When was it there
- ▶ Was it running or walking
- ▶ How long it stood there
- ▶ Direction it's facing (what is it looking at)
- ▶ Is it injured/healthy
- ▶ Direction it's going (what's its intention)
- ▶ Hunting (looking for food) or being hunted
- ▶ Marking territory
- ▶ Is it dominant in the group
- ▶ Is it hungry-How many animals (or is it the same animal)
- ▶ Is it having fun/is it frightened
- ▶ Family group (mating pair and/or with young)
- ▶ Is it investigating you

Where to look for tracks

- ▶ Forest Edge
- ▶ Beside streams
- ▶ Where habitats meet
- ▶ Around potential dens & nest cavities
- ▶ Old beaver houses
- ▶ Sand
- ▶ But...



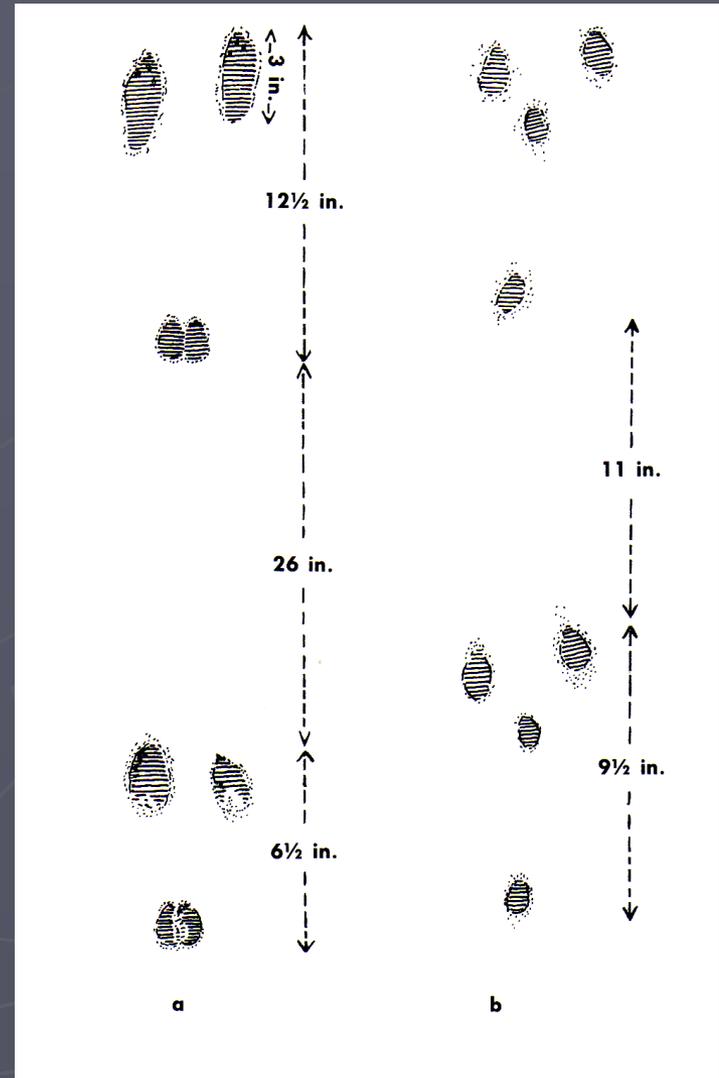
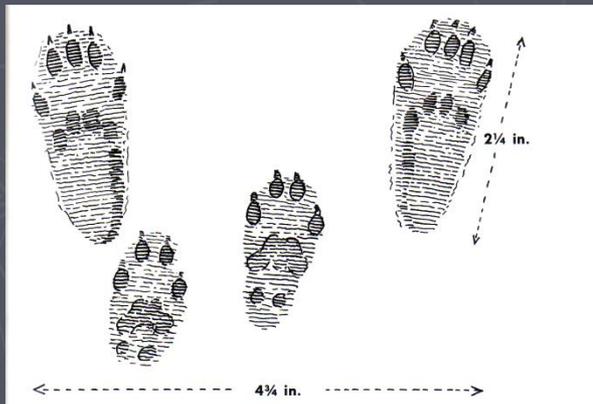
How to identify the track maker

- ▶ Toes, claws, shapes, and sizes
- ▶ Direct or indirect registry
- ▶ Gaits and patterns
- ▶ Habitat
- ▶ Context



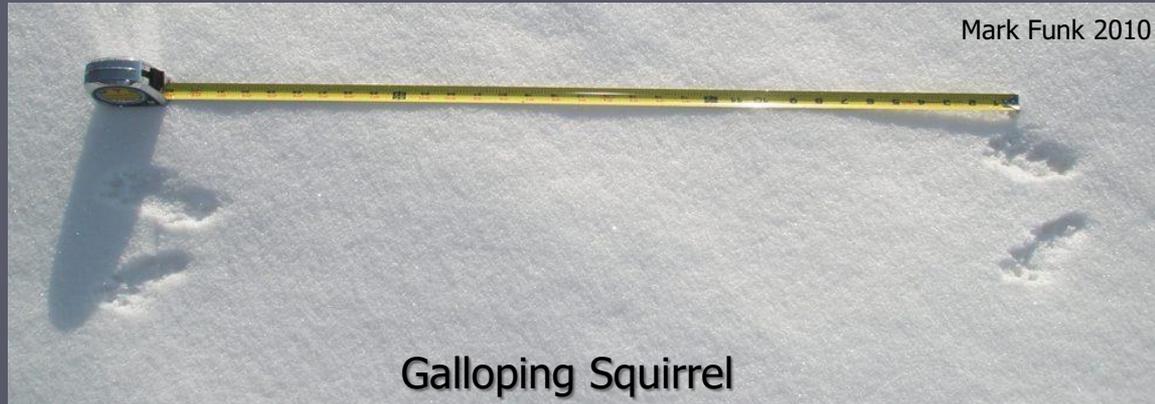
Measurements

- ▶ Don't include claws in the measurement!
- ▶ Measure:
 - The width of the trail (straddle)
 - Distance between print (speed, length of legs)



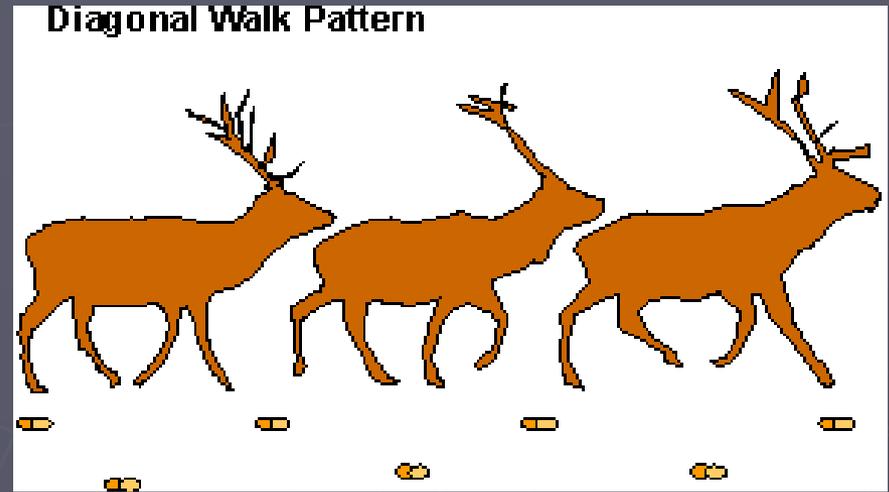
Gaits, Straddle, and Patterns

- ▶ Diagonal Walkers
- ▶ Pacers
- ▶ Bounders
- ▶ Gallopers
- ▶ One species may use one method for walking and another method for running
- ▶ Not family specific



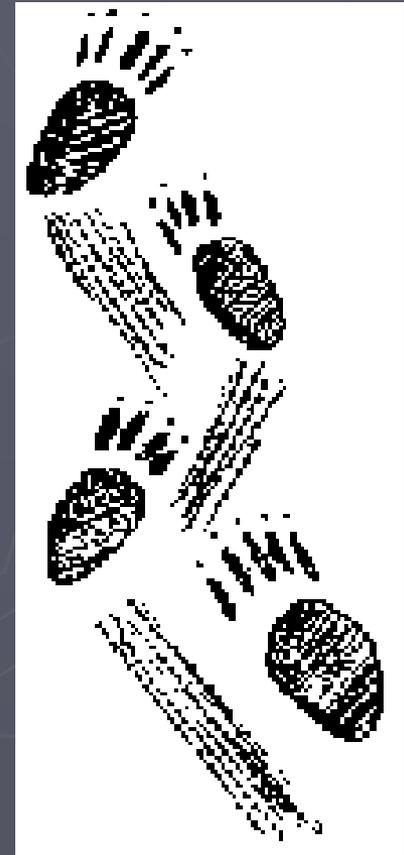
Diagonal Walkers

- ▶ Cats, Dogs, Ungulates
- ▶ Opposite limbs move at the same time
- ▶ Front right and back left
- ▶ Front left and back right
- ▶ May have direct or indirect registry



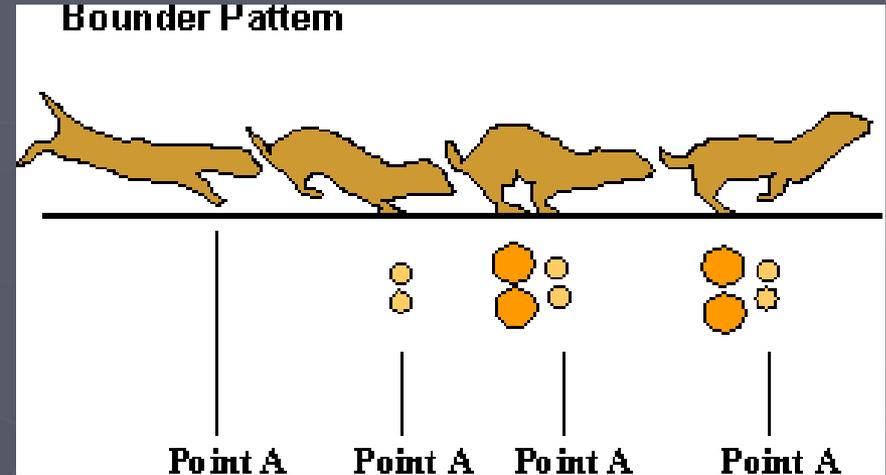
Pacers

- ▶ Wide bodied animals
- ▶ Bear, raccoon, opossum, beaver, muskrat, wolverine, skunk, badger
- ▶ Both limbs on one side move together
- ▶ Front right and rear right
- ▶ Front left and rear left



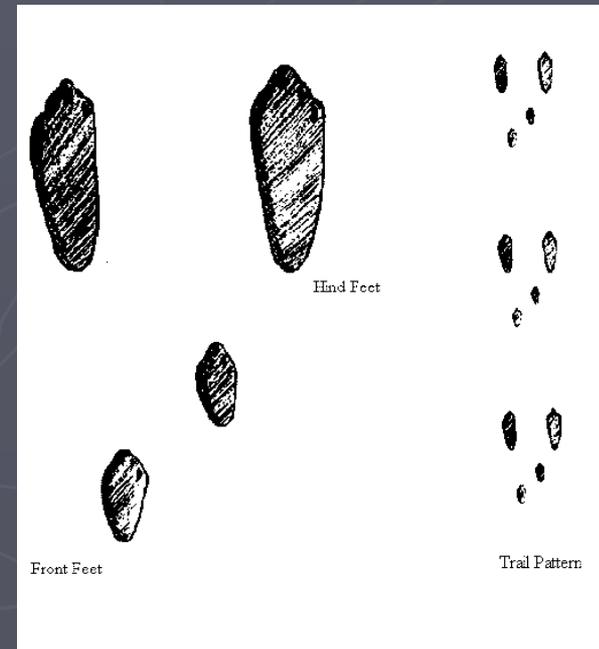
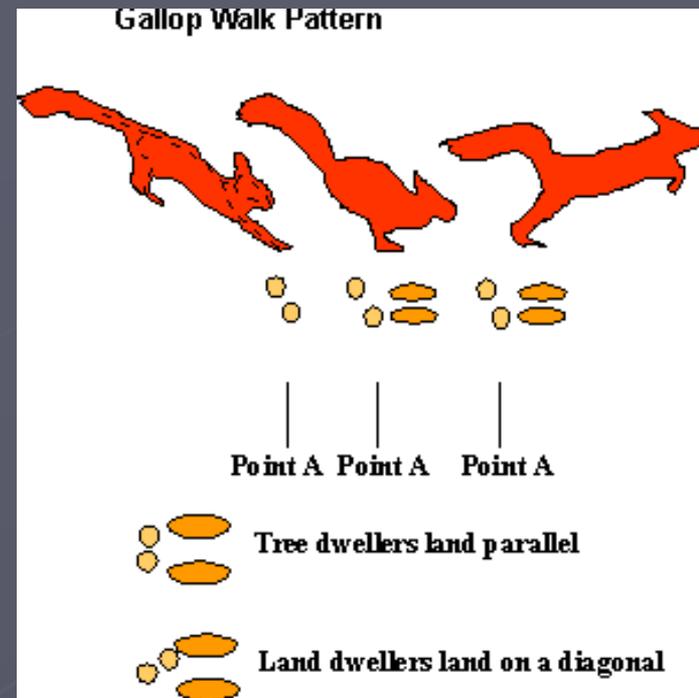
Bounders

- ▶ Long bodied, short legged animals
- ▶ Weasel, mink, marten, fisher, otter, etc.
- ▶ Front feet together followed by rear feet together
- ▶ Rear feet land *even* and *behind* the front



Gallopers

- ▶ Jumping/hopping mammals
- ▶ Rabbits, hares, squirrels, mice
- ▶ Lift off with their rear feet
- ▶ Land with their front feet
- ▶ Front feet land *uneven*
- ▶ Rear feet land *even* and *ahead of* the front



What happens when they pick up speed?

Diagonal walkers

- ▶ Become trotters, bounders, gallopers

Pacers

- ▶ Become diagonal walkers, bounders, gallopers

Bounders and gallopers

- ▶ Rarely change their gait (distance between prints determines speed)

Toes, claws, shapes, and sizes

- ▶ Look for nails/claws
- ▶ Often shows hair
- ▶ Count the toes
- ▶ Measure the tracks



Canines

- ▶ Gray/Timber Wolf (*Canis lupus*)
- ▶ Coyote (*Canis latrans*)
- ▶ Red Fox (*Vulpes fulva*)
- ▶ Gray Fox (*Urocyon cinereoargenteus*)
- ▶ Domestic Dogs



Differentiating Wild Canines

- ▶ All Canines:
 - ▶ Show four toes
 - ▶ Diagonal walkers
 - ▶ Always shows their nails



Differentiating Wild Canines

- ▶ Differing between species:
 - ▶ Size difference
 - ▶ Straddle/Width (shoulders)
 - ▶ Gait
 - ▶ Habitat
 - ▶ Behaviour



Differentiating Canines

- ▶ Wild canines walk straighter lines and with more purpose than domestic dogs



Felines

- ▶ House cat (*Found everywhere!*)
- ▶ Bobcat (*Likely found on Bruce Trail*)
- ▶ Canada Lynx (*Likely not ☹️*)
- ▶ Eastern Cougar (*Data Deficient?*)



House Cat



Bobcat



Canada Lynx
(probably not on
the Bruce but too
cool not to include
in presentation)

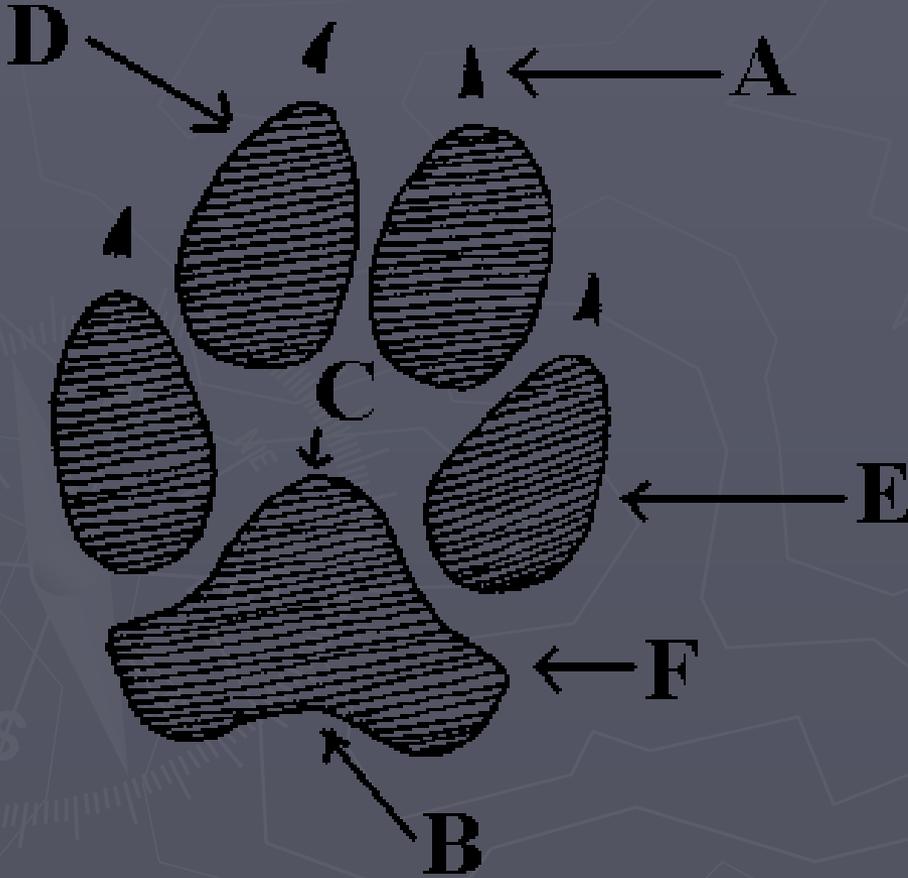
Felines (cats)

- ▶ Rarely show their retractable nails
- ▶ Very inquisitive
- ▶ Lynx print always fuzzy (due to hairy pad)
- ▶ Cougar print paired with tail (in snow)

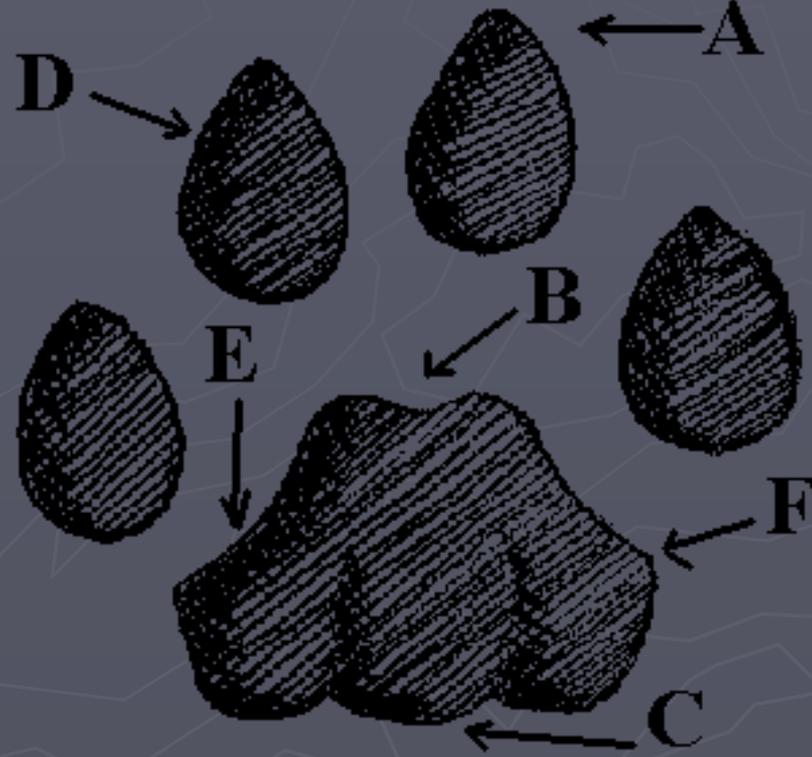


Comparing Canine to Feline Tracks

Canine

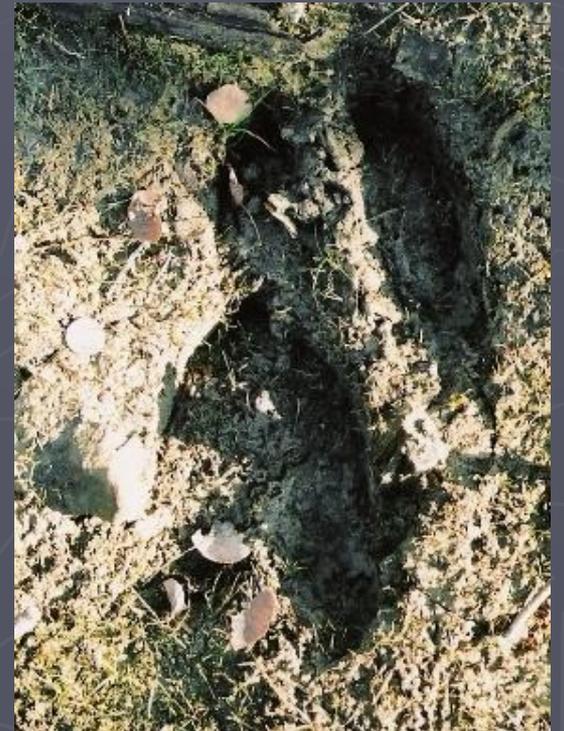
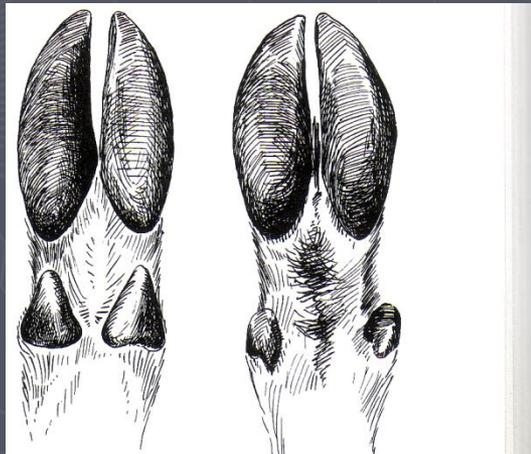


Feline



White Tailed Deer

- ▶ May or may not see dew claws
- ▶ Significant difference between species is size
- ▶ Dominant males can be up to four times of a calf



Weasel Family (Mustelidae)

- ▶ Weasels (shorttail, longtail, and least)
- ▶ American Mink (*Mustela vison*)
- ▶ Marten (*Martes americana*)
- ▶ Fisher (*Martes pennanti*)
- ▶ River Otter (*Lutra canadensis*)
- ▶ Striped Skunk (*Mephitis mephitis*)

Mink, Marten, Fisher and Wolverine



Jess Fang 2010

Ermine (short tailed weasel)



Mink

(typically not found in trees)



Marten



Fisher



Skunk



River Otter

Mustilidae

(weasel, mink,
marten, fisher)

- ▶ Looks a lot like squirrel
- ▶ Usually bounders (especially in snow)
- ▶ Species dictated by size



River Otter

- ▶ Considered the 'Wolf of the Water'
- ▶ Commonly lives in beaver lodges
- ▶ Leaves 'toilets' to mark territory
- ▶ More active at night
- ▶ Pacers and bounders
- ▶ Webbed feet
- ▶ Watch for tail mark



Lagomorphs

European Hare, Snowshoe Hare, Eastern Cottontail Rabbit

- ▶ Can heavily browse vegetation
- ▶ Snowshoe turns white in winter and has largest ears

Jackrabbit/European hare
(*Lepus europaeus*)



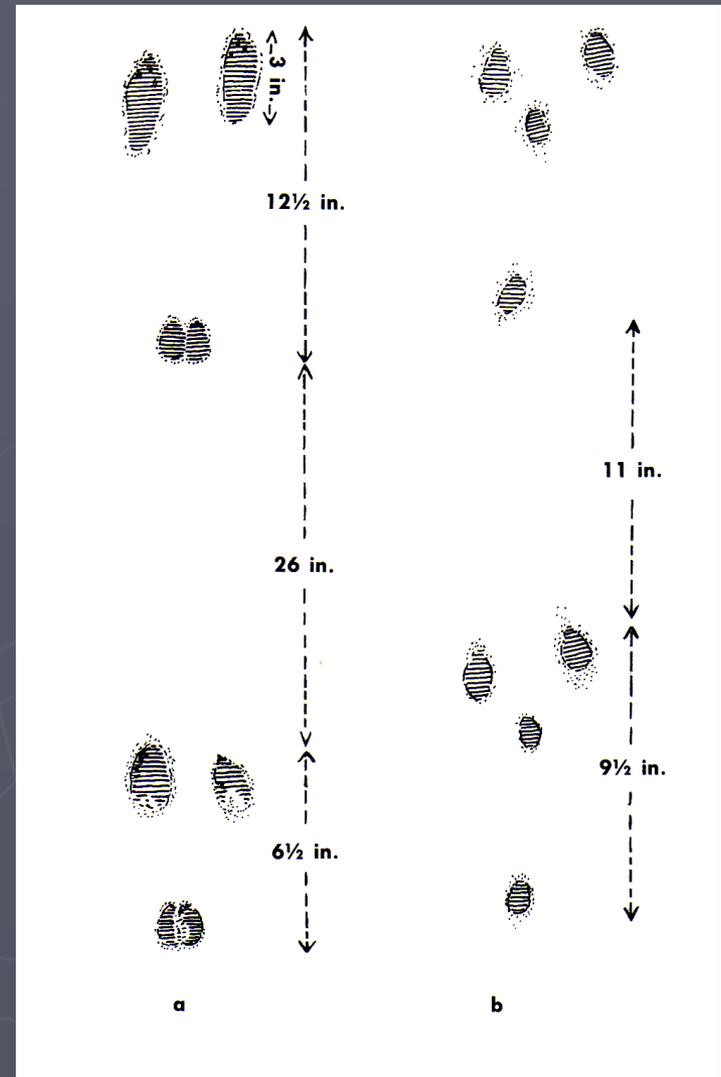
Snowshoe hare
(*Lepus americanus*)



Eastern Cottontail
(*Sylvilagus spp.*)

Lagomorphs (Hares and Rabbits)

- ▶ Galloper
- ▶ Four toes/foot
- ▶ Clawmarks, toemarks are indistinct
- ▶ Much larger than a rodent



Rodents (Rodentia)

- ▶ Most numerous order of mammals
- ▶ Beaver (*Castor canadensis*)
- ▶ Muskrat (*Ondatra zibethica*)
- ▶ Squirrels (red, grey and flying)
- ▶ Porcupine (*Erethizon dorsatum*)
- ▶ Groundhog/Gopher
- ▶ Mice, Rats, Voles, and Shrews
- ▶ Bats

Small Mammals

(mice, shrews, voles)

- ▶ Subnivean (Lives underneath the snow)
- ▶ Easily identified by size
- ▶ Usually movement is associated with feeding activity



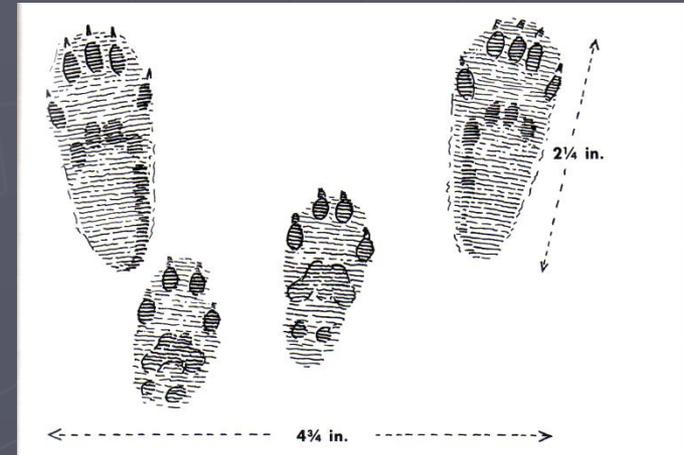


Squirrels



► Size

- Four toes on front
- Five toes on hind
- Heel of hind foot does not necessarily leave a track
- Leaps can be as much as 3 ft.
- Flying squirrels most difficult to track



Beaver

- ▶ Aquatic mammal
- ▶ Typically up to 60 lbs
- ▶ Lives in beaver 'lodges'
- ▶ Webbed feet
- ▶ Scent mounds



Muskrats

- ▶ Four toes
- ▶ Pacer
- ▶ Builds 'push ups' for the winter
- ▶ Rarely found far from water
- ▶ Spends much of it's life around cattails
- ▶ Not found in winter



Raccoon (Trash Pandas)

- ▶ 5 toes on both feet
- ▶ Flat-footed tracks (like bears, but smaller)
- ▶ Left hind foot usually paired with right forefoot
- ▶ Found everywhere on Bruce Trail

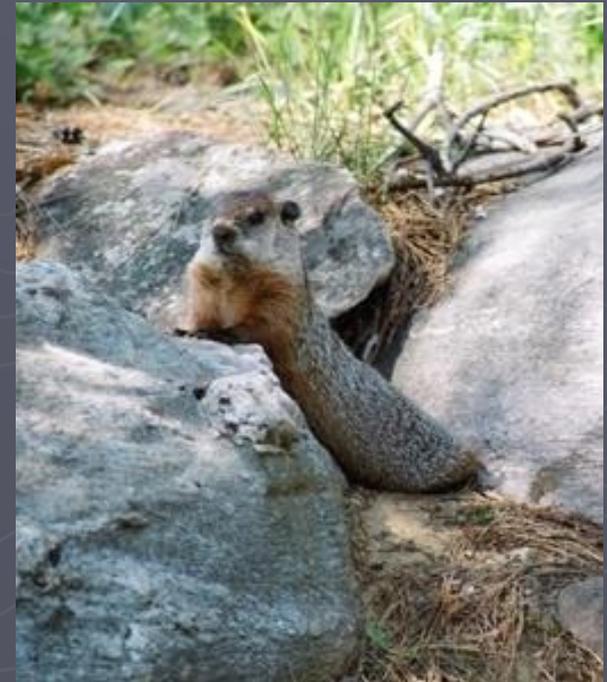


Groundhogs/Gophers

- ▶ Pacers
- ▶ Burrows/Lives in a den
- ▶ Requires easy to dig soil (sandy and well drained)
- ▶ Rarely found in clay
- ▶ True hibernation



Have also been known to predict the weather





Opossum

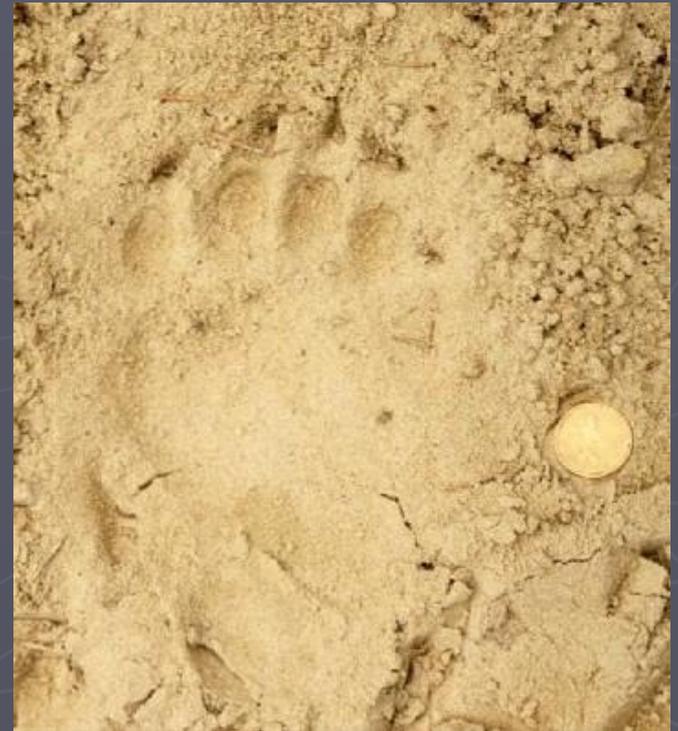


- ▶ Only North American marsupial
- ▶ Prehensile tail (may show in track)
- ▶ Voted '*least likely to survive a predator attack*'
- ▶ Similar behaviours and habitats with Raccoon
- ▶ Representative of Carolinian Habitat



Black Bear

- ▶ Often found around Blueberries in Summer
- ▶ Not usually seen during winter
- ▶ Range from 100 up to over 600 lbs
- ▶ Most likely around Bruce Peninsula



Black Bear

(Ursus americanus)

- ▶ Only Black Bear in Ontario (except near Hudson's Bay)



Grizzly Bear

Black Bear

The diagram compares the physical characteristics of a Grizzly Bear and a Black Bear. On the left, the Grizzly Bear is shown with a brown coat. It has a long front claw (5-10 cm), a dish-shaped face profile, short rounded ears, a prominent shoulder hump, and long claws. On the right, the Black Bear is shown with a black coat. It has a shorter front claw (4 cm), a straight face profile, tall pointed ears, no shoulder hump, and short claws. Both bears have front tracks shown above them, with the Grizzly track having a distinct claw mark and the Black Bear track having a more rounded shape. A copyright notice for 1997 CWI is visible at the bottom right of the diagram.

Colour and Size can be misleading.
Look for a combination of characteristics.

- ▶ Best defense is to scare the bear by making lots of noise, acting aggressively, and slowly backing away

Useful Websites

Tracking

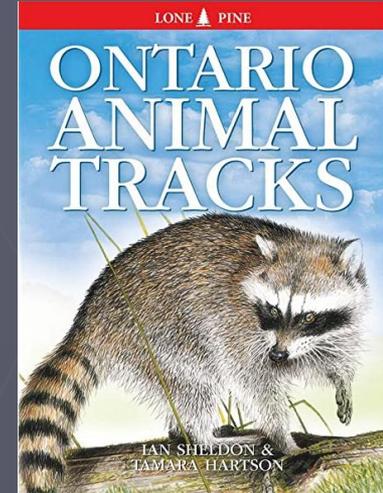
- www.princeton.edu/~oa/nature/tracking.shtml
- www.bear-tracker.com
- www.wildernessrhythms.com/skull.html
- www.aquatic.uoguelph.ca/mammals/mammframes.htm

Species at Risk

- www.ontarioparks.com/english/sar.html
- www.cosewic.gc.ca
- www.rom.on.ca/ontario/risk.php

Mammal Biology

- www.natureportfolio.com/mammals/mammals.php
- www.wildernessrhythms.com/skull.html
 - Encyclopedia of Life
 - www.eol.org/
 - Hinterland Who's Who Mammal Index
 - www.hww.ca



Thank YOU!



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