ISLAND NATURE TRUST

CONSERVATION GUARDIAN

FIELDGUIDE

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Thank you for choosing to be a Conservation Guardian and being a part of Island Nature Trust's Land Stewardship Program!

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SAFETY CHECKLIST

It is always more important that you come back un-injured than take a risk to complete a monitoring survey. The following Safety Checklist will help ensure your safety while conducting monitoring. If for any reason you feel uncomfortable or unsure, trust your instincts and leave.

Check the weather report before you leave and reschedule your trip if bad weather is expected.

For INTs coastal natural areas, check the tide times and aim to monitor during a falling tide as to not get stuck as the tide rises. Tide charts can be found online specific to the shoreline you are nearest.

Dress for the weather and comfort. Wearing the right apparel in hot, wet, or cold conditions can help you stay productive and safe.

Before embarking, leave detailed instructions with someone letting them know when to expect your return. Make sure to return before nightfall. Arrange for a hiking companion to go with you if feel unsafe monitoring alone.

Bring a First Aid Kit with you and make sure that it is replenished as needed. It can be good to have Benadryl in the kit, in case of an allergic reaction. INT can provide tick removal tools.

MONITORING CHECKLIST

Regular monitoring of INT Natural Areas is important to assess the changes, conditions, and threats to the area. The following checklists are provided as a guide to help Conservation Guardians while out in the Natural Area.

Essential Documents: Monitoring form template, previous monitoring reports (if applicable), briefing document prepared by INT staff with information on the Natural Area, maps of Natural Areas including trails and landmarks.

Monitoring: Walk the property's boundaries to check for encroachments (e.g. tree harvesting, dumping, construction, digging, or planting) where practical. Then check the interior of the property (especially areas with enhanced public access such as trails) for threats and rare features.

SUGGESTED MATERIALS:

- Notepad and pencil
- Camera (if available)
- GPS unit (if available)
- First aid kit, water and food
- Map and compass
- Cell phone
- Binoculars

Collect Information on:

- Plant and wildlife species observed (especially rare finds)
- Human use of the Natural Area
- Potential threats
- Condition of trails (where applicable)
- Condition of signage (where applicable)

Compare the property's current condition with the previous property report and note any changes resulting from natural (e.g. insect infestations, storms, floods, etc.) or other (e.g. construction, tree cutting, digging, etc.) causes. These changes should be documented either with photographs or a detailed written description, and the location noted. GPS coordinates are most useful, however, using Avenza or even your phone Maps application
can work.

Things to look for that might suggest change:

- New roads or worn tire paths
- Piles of sawed logs, slash, or stumps
- New culverts or piping
- Piles of fresh dirt or fresh ditches
- New flagging for boundaries
- New structures
- Evidence of ATVs, horses, bikes, or camping
- Dumping
- Diseased or dying wildlife (both plants and animals)
- Vandalism
- Litter
- Newly flooded areas

HARMFUL PLANTS

There are several plants and insects that could be present in INTs Natural Areas that Conservation Guardians should be aware of for their personal safety. Please take extra precaution to avoid the following plants:

POISON IVY

Toxicodendron radicans

Identification: Shiny, alternate leaves, made up of three leaflets. Stalk of central leaflet is much longer than the stalks of the two side leaflets. Leaf margins may be smooth or toothed with very prominent veins. Leaves are reddish when they emerge in spring and change to dark green in summer. In fall, they turn yellow, red or orange. Plants can vary greatly in size.

Habitat: Grows in many habitats, including: cliff bases, coastal areas, along rivers and lakes, borders of woods, in fallow fields, and along roadsides. In PEI, this is most often seen along coastal forest edges.

Treatment: Wash all exposed regions as soon as possible with cold water. Wash all contaminated clothing and objects several times in hot, soapy water.

STINGING NETTLE

Urtica dioica

Identification: Leaves are opposite, elliptic- to lance-shaped, 3-6 inches long and 1/2 –11/2 inches wide, with a long taper to slightly pointed tip, the base tapering to rounded. The leaf stalk is sparsely covered with bristly, stinging hairs with a pair of small, lance-like leafy appendages (stipules) attached at the leaf node, sometimes with smaller leaves in the axils. Flowers are tiny and indistinct, creamy green to pinkish, clustered in the leaf axils typically along the entire stem.

Habitat: Typically grows in the understory of wet areas, but also can grow in meadows.

Spotted Jewelweed
Impatiens capensis

Treatment: Anti-itch creams can provide some relief. The plant tissues of spotted jewelweed (Impatiens capensis) when crushed and applied to the affected area can also provide relief in the field. These two plants are often growing side by side.

HARMFUL INSECTS

There are not many harmful insects on Prince Edward Island. However, the following two species are present.

BLACKLEGGED TICKS

Ixodes scapularis

PEI is considered a low risk area for Lyme disease, however ticks might be present in INT Natural Areas. Blacklegged ticks (a.k.a deer ticks) take 2 years to complete their life cycle and are found predominately in deciduous forest. Adult males and females are active October-May, as long as the daytime temperature remains above freezing. Preferring larger hosts, such as deer, adult blacklegged ticks can be found questing about knee-high on the tips of branches of low growing shrubs. Adult females readily attack humans and pets.

If you do find a tick attached to you, carefully remove the tick (following the instruction below, or have a doctor remove it), keep it in a plastic bag, wash the affected area, and see your doctor. Bring the tick with you so it can be tested for Lyme disease.

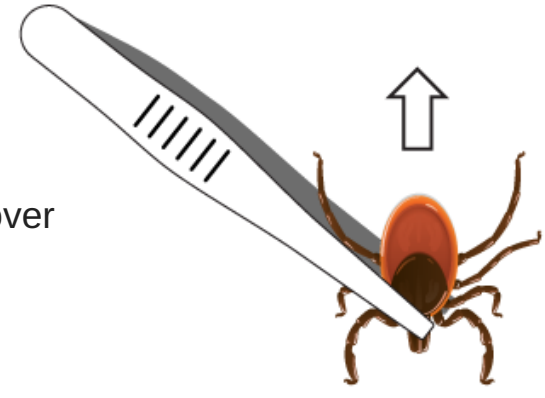
Areas closer to New Brunswick and Nova Scotia (such as Egmont Bay and Wood Islands) are considered to be higher tick density areas.

3 TIPS TO PREVENT TICK BITES:

1. Wear light-colored clothes so ticks are easily spotted
2. Wear long-sleeve shirts and long pants tucked into socks or with gaiters
3. Use bug spray with tick repellent

3 STEPS TO REMOVE A TICK:

1. Use a pair of fine-point tweezers or tick remover
2. Grip the tick as close to the skin as possible
3. Pull straight out with steady pressure



YELLOW JACKETS

Vespula sp.

Identification: Yellowjackets are bright yellow and black. Their bodies are not fuzzy. Yellowjacket queens are around .75 inches long, while workers are around .5 inches long.

Habitat: The eastern yellowjacket builds its nests underground, with the peak worker population between 1,000 and 3,000 individuals, similar to the German yellowjacket. Nests are built entirely of wood fiber and are completely enclosed except for a small entrance at the bottom. In PEI, they are often encountered in dry whit spruce-dominated forests.

Treatment: Some, but not all, stings can be prevented. It is especially important that people known to be allergic to certain insects make an effort to avoid those insects. Wear long pants and long-sleeved shirts as they may provide some protection against stings. If you have a single sting with no allergic symptoms, clean it with antibiotic ointment and make sure to remove any retained stingers. Itching may be treated with antihistamines (will work on most mild allergic reactions). If you have moderate to severe allergic reactions, please seek emergency treatment.

Honeybee

Note: Yellowjackets and honeybees are frequently mistaken for each other. Aside from their yellow and black coloration, the differences between yellowjackets and honeybees are many. The 'yellow' on a honeybee's body is more of a golden brown or amber color. Their bodies are fuzzy, which allows them to capture pollen. They are slightly more than 0.5 inches long.

SPECIES AT RISK

Species at risk include plants, animals, or other organisms that may disappear or become extinct in the near future if the threats facing them are not addressed.

Their disappearance can be due to natural events, human activities, or a combination of both. In a small, heavily settled place such as PEI, many plant and animal species suffer from habitat loss, competition, invasive species, and various other factors.

INT's Species at Risk staff work with a number of these species to better understand the threats to their populations, and potential ways to mitigate their decline. Species that INT works with in PEI will be marked with a "*". If you are interested in learning more about INT's work with these species, please do not hesitate to contact us.

PIPING PLOVER* ENDANGERED

Charadrius melodus melodus

Identification: Small shorebird with a pale, sand-coloured back, short stout bill and orange legs. During the breeding season, the piping plover has a single black band across the breast, another black band across the forehead between the eyes, and a distinctive black tip on the orange bill.

Adult breeding plumage

Adult non-breeding plumage
Juvenile plumage

Habitat: Nests on wide, sandy beaches with little vegetation and a mix of substrates, such as pebbles, gravel, shells, and sticks. Present in PEI between April and September.

Cause of Decline: Human disturbance, predator pressures, weather events, and habitat loss.

BARN SWALLOW* THREATENED

Hirundo rustica

Identification: Medium-sized songbird that is easily recognized by its steely-blue upperparts, cinnamon underparts, chestnut throat and forehead, and its deeply forked tail. Sexes have similar plumage, but males have longer outer tail streamers than females and tend to be darker chestnut on their underparts.

Habitat: Nests in and on artificial structures such as barns and other outbuildings, garages, houses, bridges, and road culverts. Barn Swallows prefer various types of open habitats for foraging, including grassy fields, pastures, and various kinds of agricultural crops. Present in PEI between May and August.

Cause of Decline: Loss of breeding and foraging habitat is apparent, especially nesting and foraging habitats due to conversion from conventional to modern farming techniques, large scale declines in insect populations, direct and indirect mortality due to an increase in climate changes on the breeding grounds (cold snaps), competition with invasive species, and exposure to pesticides.

BANK SWALLOW* THREATENED

Riparia riparia

Identification: Male and female appear similar, with a brown back, white belly, dark band across chest extending down chest, forked tail, small bill and long wings.

Habitat: Breeds in a wide variety of natural and artificial sites with vertical banks, including riverbanks, lake and ocean bluffs, aggregate pits, road cuts, and stock piles of soil. Breeding sites tend to be somewhat temporary due to the dynamic nature of bank erosion. Large wetlands are used as communal nocturnal roost sites during post-breeding, migration, and wintering periods. Present in PEI between May and August.

Cause of Decline: Loss of breeding and foraging habitat is apparent, especially through erosion control projects, flood control (dams), aggregate management activities, conversion of pastureland to cropland, and afforestation. The destruction of nests during aggregate excavation may also pose a significant threat in some areas. Climatic changes may reduce overwinter survival or reproductive potential, while widespread pesticide use may cause decreases in the abundance or diversity of flying insects.

BOBOLINK*

THREATENED

Dolichonyx oryzivorus

Identification: Sparrow-like bird related to blackbirds. Has a large flat head, short neck, and short tail. Breeding males are black below, black and white above, with a yellow patch on the back of the head. Females are warm brown below with streaking on the flanks. Pinkish bill, un-streaked nape and dark eyeline

Adult male breeding plumage

Habitat: Nests in forage crops (e.g. hayfields and pastures). The Bobolink also occurs in various grassland habitats including wet prairie, graminoid peatlands and abandoned fields dominated by tall grasses, remnants of uncultivated tall-grass prairie, etc. Present in PEI between May and July.

Adult female and non-breeding male plumage

Cause of Decline: Incidental mortality from agricultural operations such as haying that destroys nests and kills adults, habitat loss caused by conversion of forage crops to intensive grain crops/row crops, habitat fragmentation (promoting higher rates of predation), and pesticide use on breeding and wintering grounds

CANADA WARBLER

THREATENED

Cardellina canadensis

Identification: Medium sized warbler. Male has a grey back, long tail, bold eye-ring, and a black necklace on a yellow breast. Female dons a faint necklace and smaller amounts of black on the face.

Adult female and non-breeding male plumage

Habitat: Most abundant in wet, mixed deciduous-coniferous forest with a well-developed shrub layer. Present in PEI between May and August.

Cause of Decline: Habitat loss and degradation in wintering range. Conversion of swamp forests to agricultural activities.

Adult male breeding plumage

LITTLE BROWN BAT

ENDANGERED

Myotis lucifugus

Identification: Weighs between 7-9g, and has a wingspan of 25-27cm, Females tend to be slightly larger than males but are otherwise identical. Pale tan to reddish or dark brown with a slightly paler belly. Ears and wings are dark brown to black.

Habitat: Females establish summer maternity colonies, often in buildings or large diameter trees. Foraging occurs over water. Overwinter in cold and humid hibernacula (such as caves or mines)

Cause of Decline: White-nose-syndrome (Geomyces destructans), a fungus-caused disease emerged as a serious threat to bats in North America, hitting Little Brown Bats especially hard with winter hibernacula populations declining up to 99%. Other causes of decline are colony eradication, wind turbines, and chemical contamination (pesticides) to food sources (insects).

GULF OF ST. LAWRENCE ASTER

Symphyotrichum laurentianum

ENDANGERED

Identification: Fleshy annual plant with clusters of small, white/pinkish flowers. Its stem ranges in length from 1-40cm and may be branched or un-branched depending on the growing conditions. Its leaves are lance-shaped and range from 1.1-6.5cm in length and from 2-9.8mm in width. The tip of its leaves is slightly rounded. Gulf of St. Lawrence aster produces dry fruits called achenes, with silky tufts, which help the seeds to be dispersed by wind. This plant is also self-fertile and can reproduce on its own without other plants.

Habitat: There are only 29 known populations of this species, whose range is limited to Quebec's Magdalen Islands, New Brunswick, and Prince Edward Island. This species grows on moist sandy soils.. It can be found on coastal habitats: beaches, dunes, lagoons, and dry areas in salt marshes.

Cause of Decline: Disturbances from high tides and floods that can bury the plant in sand. Sea-level rise and an increase in extreme storm events as a result of climate change also threaten many populations. Coastal development can also destroy their habitats.

BEACH PINWEED

Lechea maritima

SPECIAL CONCERN

Identification: Dense cluster of hairy leaves that remains close to the ground. By mid-summer, 20-35 cm stalks covered with small, reddish-brown flowers shoot up. Most plants that flower appear to be at least eight years old.

Habitat: Canadian populations of Beach Pinweed are of a variety endemic to the southern Gulf of St. Lawrence and have a very limited geographic range. Only 15 populations in five regions of occurrence are known to exist on New Brunswick's eastern coast and PEI' north shore. It is a highly specialized beach dune species. It does not grow in the active foredunes that often have dense stands of American beachgrass, Instead it grows in the sheltered parts of the dune that are stable and often where beach heather and bearberry grow. This plant can tolerate some shade, but becomes sparse in the back areas of dunes that support jack and red pine.

Cause of Decline: An increase in the sea level and in the frequency and intensity of storms caused by climate change could be a long-term threat to the species and its habitat. High levels of recreational activity during the summer months pose a problem for some populations. Minor loss due to all-terrain vehicle traffic in dunes and trampling has been noted at a few sites

INVASIVE SPECIES

Invasive plants are any alien plant species that have the potential to pose undesirable or detrimental impacts on humans, animals or ecosystems. They are able to establish quickly and easily on both disturbed and undisturbed sites and can cause widespread negative economic, social and environmental impacts. Some invasive species can be mistaken for native species.

GLOSSY BUCKTHORN

Frangula alnus

Identification: Flower: Whitish/green in colour that hang in small clusters. Flowering occurs from May to September. Produces berries, are red at first and then turn purple or black when ripe.
Leaf: Alternate formation, shiny, oval shaped, smooth (no teeth). Are green into the fall.
Stalk: Stems are green, older stems are thicker and gray/brown in colour with tiny white spots.

Habitat: Tolerates a lot of different habitat types: can be found in wetlands, woodland edges, old fields, ditches and grassy areas.

WOODLAND ANGELICA

Angelica sylvestris

CAUTION: Woodland Angelica sap can cause skin rashes when the sap comes in contact with skin and is exposed to sunlight.

Identification: Flower: Umbrella shaped head that contains multiple small round clusters of flowers. The flowers are white to off-white in color. Flowers from July to September.

Leaf: Compound arrangement. Large in size, but divided into many leaflets. Leaflets have toothed edges, are oval shaped and sometimes lobed.

Stalk: Thick, smooth, not many branches. Bamboo-like in appearance and has purple joints

Habitat: Can usually be found in forest edges, open moist areas, ditches and roadside habitats that have been disturbed.

Woodland Angelica
Angelica sylvestis
INVASIVE

Cow Parsnip
Heraculeum macimum
NATIVE, HARMFUL PLANT

Queen Anne's Lace
Daucus carota
NON-NATIVE, BUT NOT INVASIVE

PURPLE LOOSESTRIFE

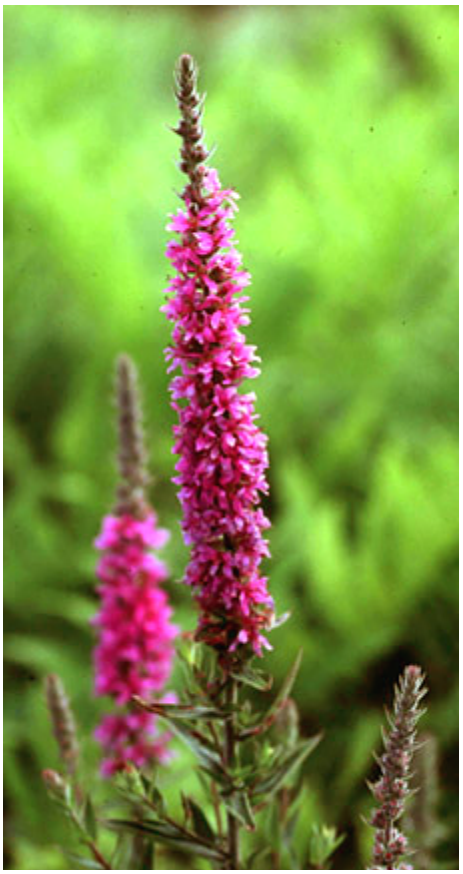
Lythrum salicaria

Identification: Flower: Very showy, deep pink to purple in colour. Flowers are arranged in a dense spike shape. Flowers in July-September

Leaf: Simple, narrow, triangular with smooth edges and fine hairs. Leaves are stalkless. They have a broad base, but their shape tapers towards the tip. The leaves and leaflets are arranged in an alternate pattern.

Stalk: Woody, stiff, square shaped, with 4-6 sides. New actively growing stems are green while older stems are a reddish brown to purplish colour.

Habitat: Thrives in moist habitats like marshes, wet meadows, wetlands, shorelines, roadside ditches and river floodplains. Prefers to grow in recently disturbed areas.



Purple Loosestrife
Lythrum salicaria
INVASIVE

Fireweed
Chamaenerion angustifolium
NATIVE

ORIENTAL BITTERSWEET

Celastrus orbiculatus

Identification: Flower: greenish/yellow in colour, 5 petals, grows in clusters along the stem where the leaf meets the stem. Flowering occurs in May and June. Female plants bear bright red fruit with orange outer leaves. Immature fruit is yellow.

Leaf: alternative arrangement, small, toothed edges, roundish in shape with tapered tip. Glossy.

Stalk: bark is a light brown to gray in colour and at times is covered with small light spots.

Habitat: Can be found in woodlands, forest edges, grasslands, roadsides, old fields, hedgerows, coastal beaches, etc. They do not grow in wet areas. Plants prefer full sun but are shade tolerant as well.

JAPANESE BEETLE

Popillia japonica

Identification: Adult: Beetles oval shaped, up to 13mm long, green with metallic bronze wing covers with 5 white patches of short hairs on each side of the abdomen. Feed on up to 300 different types of shrubs and herbaceous plants.

Larvae: White, "C" shaped grubs, covered with scattered long brown hairs and short, blunt spines. Yellowish brown head. Larvae feed (mostly on roots and turf) until cold temperatures force hibernation, then begin to feed again in spring and pupate in May.

Eggs: Hatch towards end of July.

Habitat: Adults found in wide range of habitats. They emerge in late June, early July, and feed into October.

WINTER TRACKS

ZIG-ZAGGERS (PERFECT WALKERS)

Perfect walkers walk very carefully to conserve energy. Their rear paw/hoof will land in the spot where their front paw previously fell. This gait leaves a zig-zag pattern that is easy to spot. Fox and coyote are perfect walkers.

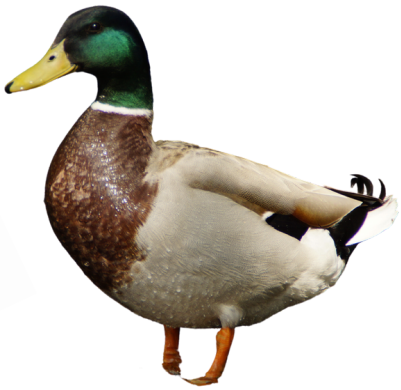
A **domestic dog** can have a similar sized print to **coyote** making it difficult to tell them apart. Wild animals like wolves and coyotes tend to walk in a straight line to conserve energy, while dogs zig-zag and circle around quite a bit when they are walking. Domestic dogs also tend to splay their toes, producing a track with toes and nails pointing outward. Another difference is the nails—dog nails are thick and blunt while wild canines leave thin and sharp nail prints.

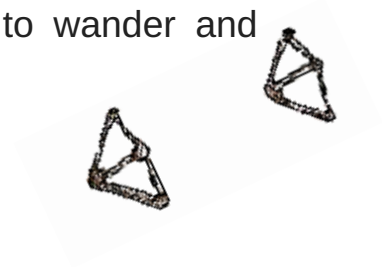
The **fox** is the smallest canine in the group and have the smallest print (2-3”), almost dainty when compared to their bigger cousins. Fox tend to drag their feet and also have more hair in their paws producing a print that is fuzzy around the edges and has a small pad imprint.

The prints of a **house cat** are small (1-1.5”). Similar to the domestic dog, the house cat tends to meander when walking and does not try to conserve energy.

Grouse are small ground birds that have a game bird track with only three forward facing toes. They measure about 2” long.

The **duck** has the same toe arrangement as game birds, but the webbing gives its print a distinctly different shape. Ducks also tend to wander and leave a maze of tracks.

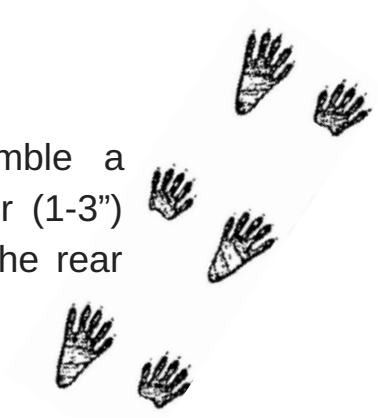




WADDLERS

Waddlers appear to move one side of their body and then the other side when they walk. Their rear foot does not land in the print of the front foot. Their track is made of four prints. Skunk, woodchuck, raccoon, muskrat, and beaver are waddlers.

Raccoon have five toes that resemble a human hand. The front print is smaller (1-3”) and has a C-shaped heel pad, while the rear print has a longer (1.5-4”) heel pad.

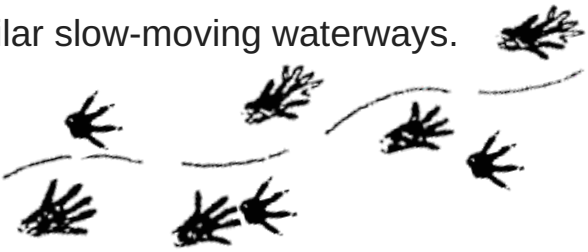


Skunk have five toes on their hind and front feet. The front and hind feet of the skunk are approximately the same size. They also have claws that show up in many of their prints.

You can tell a **beaver** is near by the dams they build and the gnawed trees they leave behind. They have webbed hind feet with 5 toes (4.5-7”), but their tracks are often are often hard to find. You rarely see the four-toe front prints (2.5-3.5”) because the hind prints wipe them out when they waddle as they walk.

Muskrat tracks are hand-like, much like the racoon, but smaller measuring approximately 2-3”. Their prints have five long finger-like toes on their hind foot and four long fingers on their front foot.

Muskrat tracks are found near marshes, beaver ponds, and similar slow-moving waterways.



BOUNDERS

Bounders place their front feet down, and in one motion they leap forward by lifting up their front feet and putting their rear feet in the exact spot where the front feet previously landed. Their tracks appear as two paws that fall side-by-side. Otters, weasels and other mustelids are bounders.

There are recent reports of **otters** on PEI. Look for signs of otter on muddy or snowy river banks where you can find prints and trough from belly-sliding into the water. They have five toes on their feet and short claws that give their prints a pointed look. Their toes are partially webbed which sometimes show up in the mud.

Weasels have five clawed toes on each foot, with a V-shaped footpad that will show in their tracks.

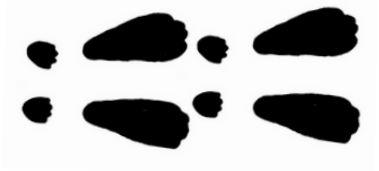
HOPPERS

Hoppers move by placing their rear feet slightly ahead of their front feet and pushing off so their front feet land first and their back feet land in front. This pattern of leapfrogging is found in rabbits and rodents like mice, red squirrels, and chipmunks.

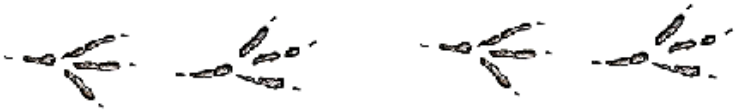
Squirrel tracks often meander instead of following a straight path.

Mice and rats have small feet; the front foot is less than 1/2" long and it has four toes. The back feet are less than 1" and have five toes.

Snowshoe hare tracks show four toes on the fore and hind feet when they register in the snow. You won't always see the toes in each track when the snow is loose and powdery. Usually the hind feet register ahead of the fore feet.



Crows have a standard bird track with three thin forward-facing toes and one rear-facing toe.



RESOURCES

HELPFUL APPS

iNaturalist

TheCornellLab Merlin®

PEINatureTracker

HELPFUL WEBSITES

https://www.peinaturetracker.ca

https://peiinvasives.com

http://www.peiwcf.ca/

https://www.natureconservancy.ca/en/what-we-do/resource-centre/invasive-species/

https://www.greenbelly.co/pages/animal-tracks-identification-guide

https://www.wildliferemoval.com/animal-track-identification-guide/