

Key to Mammal Track Patterns in Snow

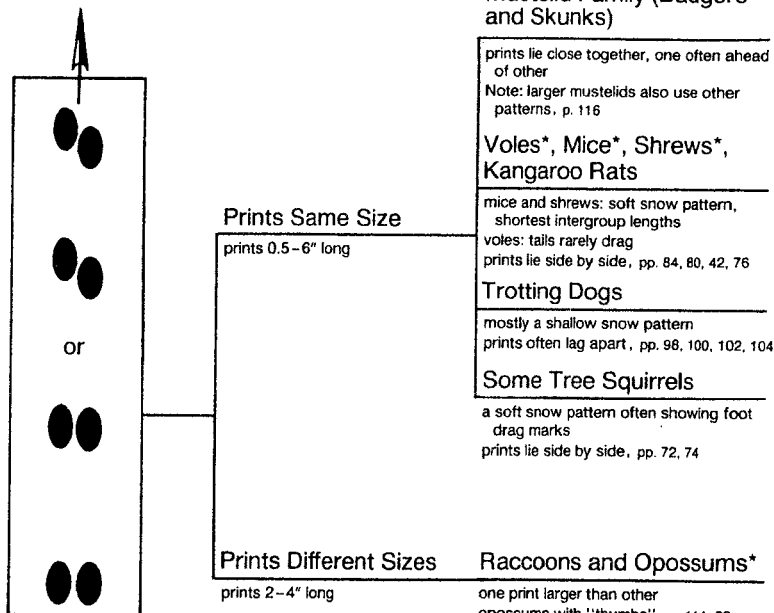
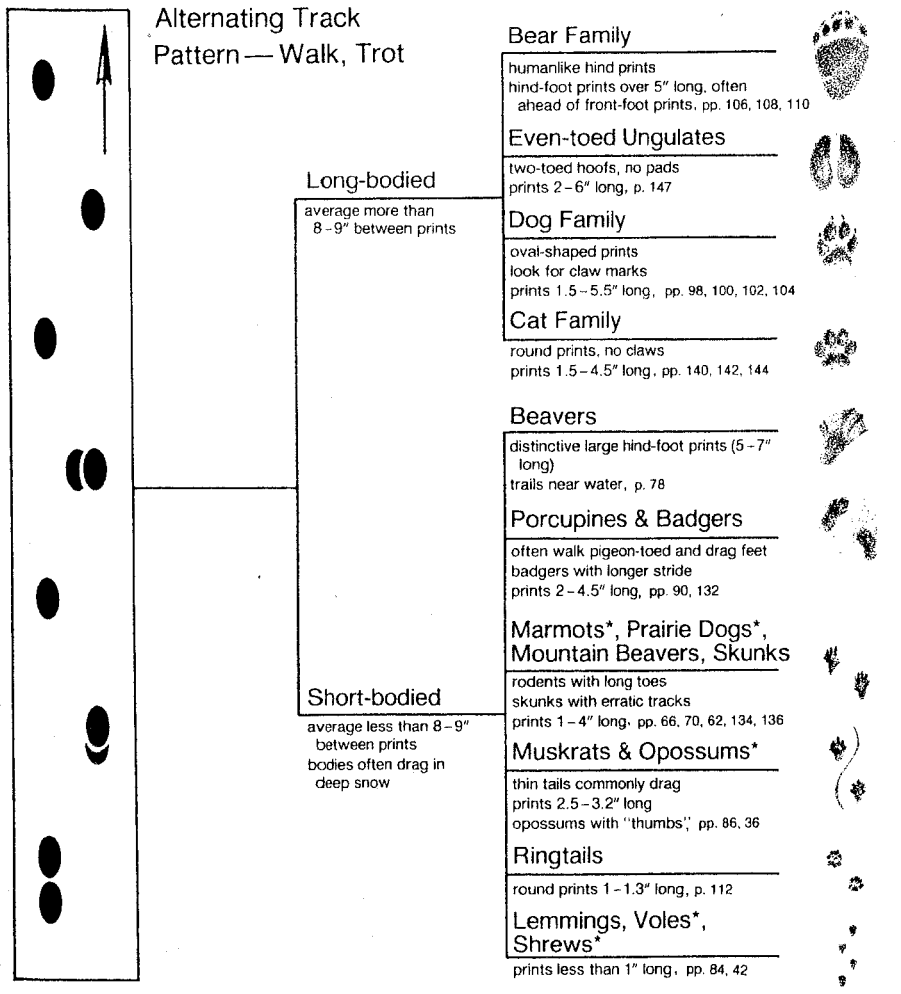
(See introduction for detailed explanation of track patterns and gaits.)

Field Guide to Tracking Animals in the Snow.

When in doubt, follow the trail.

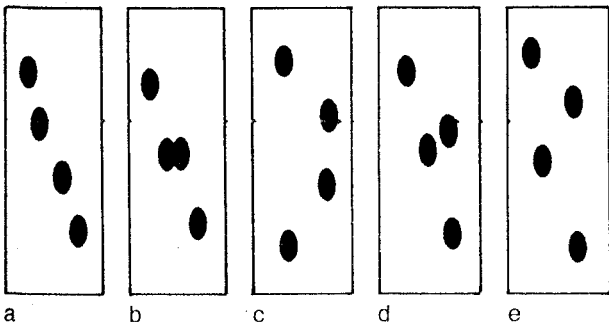
Two-print Track Pattern—Walk, Trot, Bound

Louise Forrest. 1988



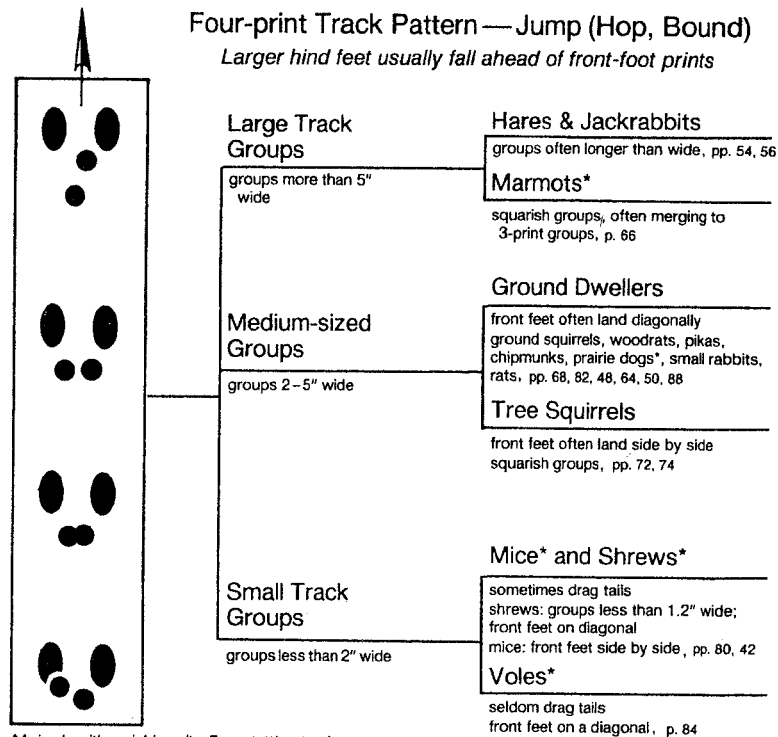
Less Common Four-print Lope or Gallop Patterns

Prints are generally found in shallow snow



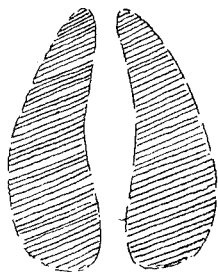
a and b are lopes; c through e are faster gallops
a is common for dogs; b for mustelids; c for dogs, deer, and antelope
e is most common, made by all mammals

Follow trail for other patterns and clues.



*Animals with variable gaits. Expect other track patterns.

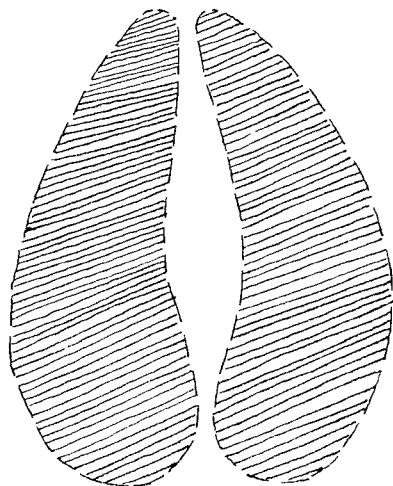
TWO-TOED ANIMALS



Deer
L. 3½ inches, W. 2½ inches

Odocoileus hemionus

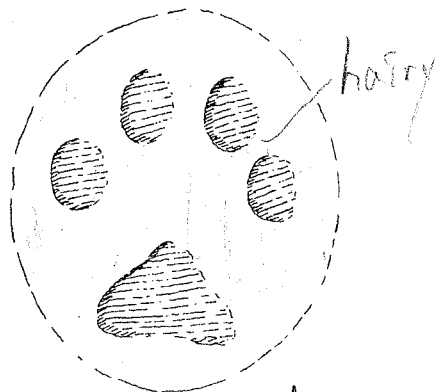
Often the front part of the toes is spread apart when the animal is supporting itself on soft surfaces. Also two small toes, called "dewclaws," may show in deep snow as two circular marks behind each foot.



Moose
L. 7 inches, W. 5 inches

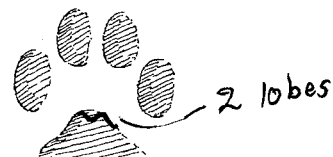
Alces alces

All canines have four toes in an oval print with claws showing. All three are difficult to distinguish and one must rely most on other signs and the character of the trail. Read the natural history descriptions of Fox and Coyote, and see Key to Patterns.



Lynx canadensis or
L. 3½ inches, W. 3½ inches

Felis lynx



Bobcat Lynx rufus
L. 2 inches, W. 2 inches (Felis rufus)



Cat
L. 1 inch, W. 1 inch

All felines have four toes in a circular print with no claws showing. Their prints are easy to distinguish by size alone. The Lynx has stiff hairs over its feet, which obscure its toe pads. Sometimes house cats are born with extra toes on one or more feet.

Sylvilagus nuttallii



Mtn Cottontail/Rabbit
Hind: L. 3 inches, W. 1 inch
Fore: L. 1 inch, W. ¾ inch

Snowshoe Hare Lepus americanus
Hind: L. 5 inches, W. 3½ inches
Fore: L. 1¾ inches, W. 1½ inches

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FOUR-TOED ANIMALS

Canis familiaris



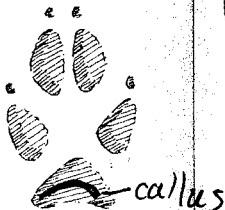
Dog
variable

Canis latrans



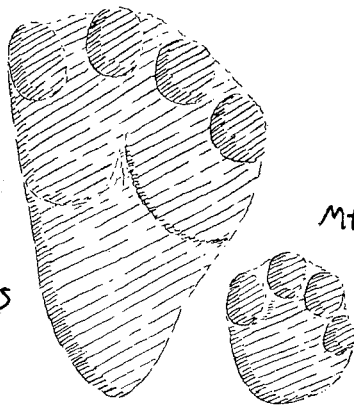
Coyote
L. 2¾ inches,
W. 2¼ inches

Vulpes vulpes



Red Fox
L. 2½ inches,
W. 1¾ inches

Grey Fox - no callus
no claws showing



The front feet of Rabbits or Hares could be confused with other prints, but their long hind feet and common galloping pattern distinguish them. The Hare print is particularly large and obvious. See Key to Patterns.

FIVE-TOED ANIMALS



Weasel
L. $\frac{3}{4}$ inch
W. $\frac{3}{4}$ inch



Skunk
L. $1\frac{1}{4}$ inches
W. 1 inch



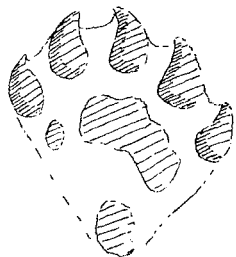
Mink
L. $1\frac{1}{4}$ inches
W. $1\frac{1}{4}$ inches



Marten
L. $1\frac{1}{4}$ inches
W. $1\frac{1}{4}$ inches



Fisher
L. $2\frac{1}{2}$ inches
W. $2\frac{1}{2}$ inches



Otter
Hind: W. $3\frac{1}{2}$ inches
L. 4 inches

All of the Weasel family above have five toes, but the small fifth toe may not show in the print, in which case the pointed shape of the toe pad and claw together helps distinguish them from four-toed animals.



Raccoon
Fore: L. $2\frac{1}{2}$ inches
W. $2\frac{1}{2}$ inches
Hind: L. 4 inches
W. $2\frac{1}{4}$ inches



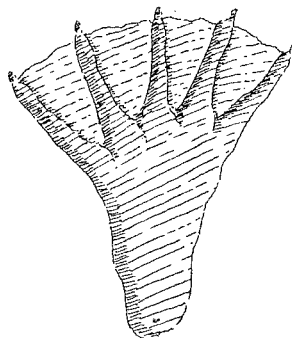
Opossum
Fore: L. 2 inches
W. 2 inches
Hind: L. 3 inches
W. $1\frac{1}{2}$ inches



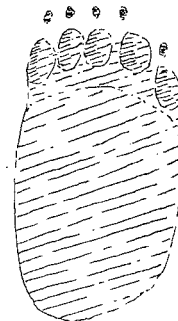
Muskrat
Fore: L. $1\frac{1}{2}$ inches
W. $1\frac{1}{2}$ inches
Hind: L. 3 inches
W. 2 inches



Raccoon prints have five clear toes on both hind and forefeet, while Opossum prints show four toes and a thumb on hind foot, and those of a Muskrat show primarily four toes on a small front foot.



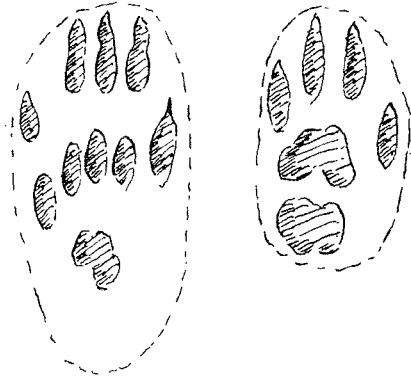
Beaver
Hind: L. 5 inches
W. $4\frac{1}{2}$ inches



Porcupine
Hind: L. 5 inches
W. $2\frac{1}{2}$ inches

The large-fingered and webbed hind foot of Beaver is distinctive. Toe pads of Porcupine rarely show up in prints, but the large oval print and the pattern of the trail are distinctive (see Key to Patterns).

ANIMALS WITH FOUR TOES ON FRONT FEET
AND FIVE TOES ON HIND FEET



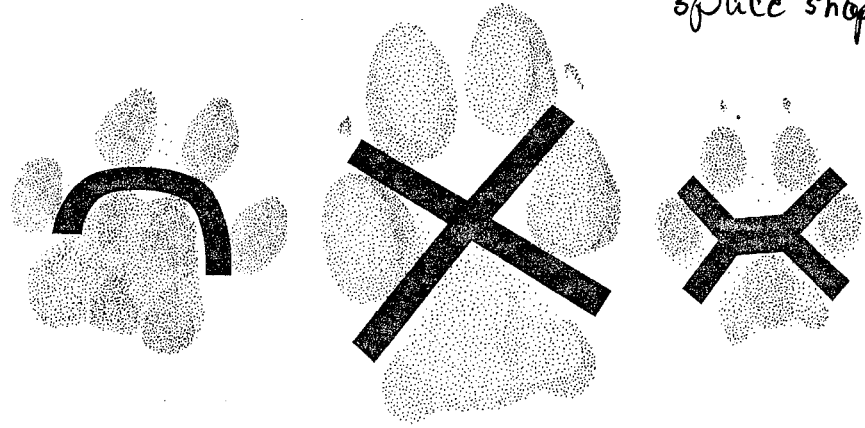
Squirrel
Fore: L. 1 1/2 inches, W. 1 inch
Hind: L. 2 inches, W. 1 inch

See also five-toed animals: Muskrat and Opossum.

Key to Track Patterns

All animals can move in a variety of ways, but each also has a characteristic normal gait it uses most often. We can walk,

Interdigital
space shapes



Front bobcat: "C"

Front eastern coyote: "X"

Front gray fox: "H"

pads in front tracks, just as all weasels, ringtails, and bears register at least one pad in complete front tracks. Mammalogists and zoologists are still in the process of studying the function of many of these pads.

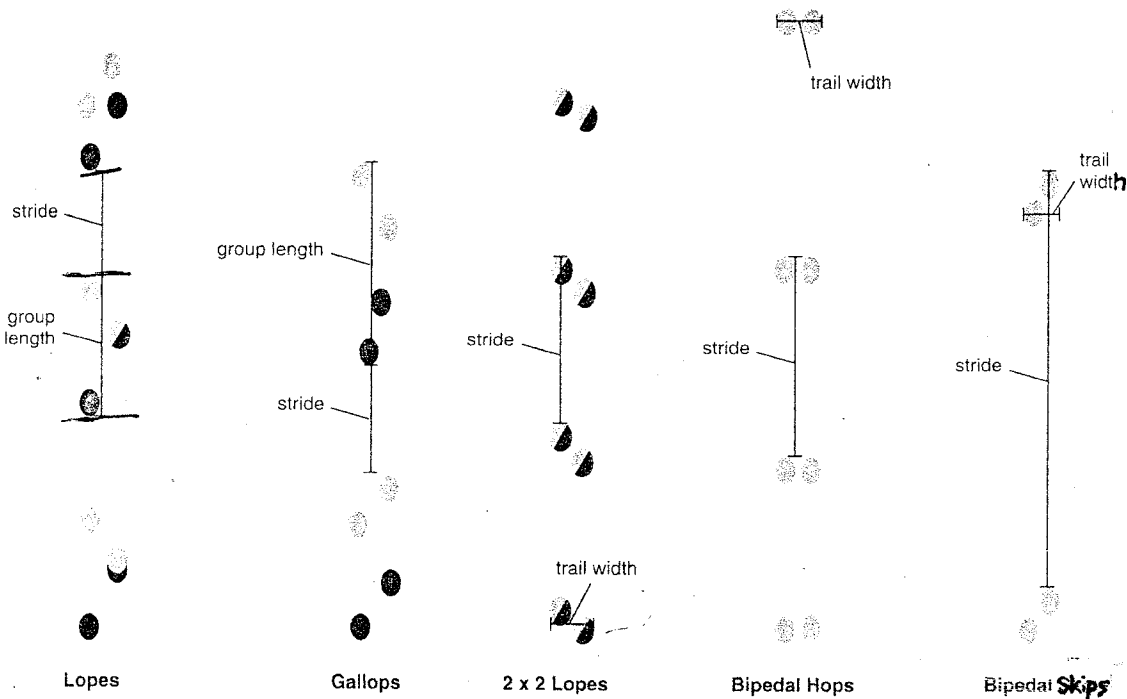
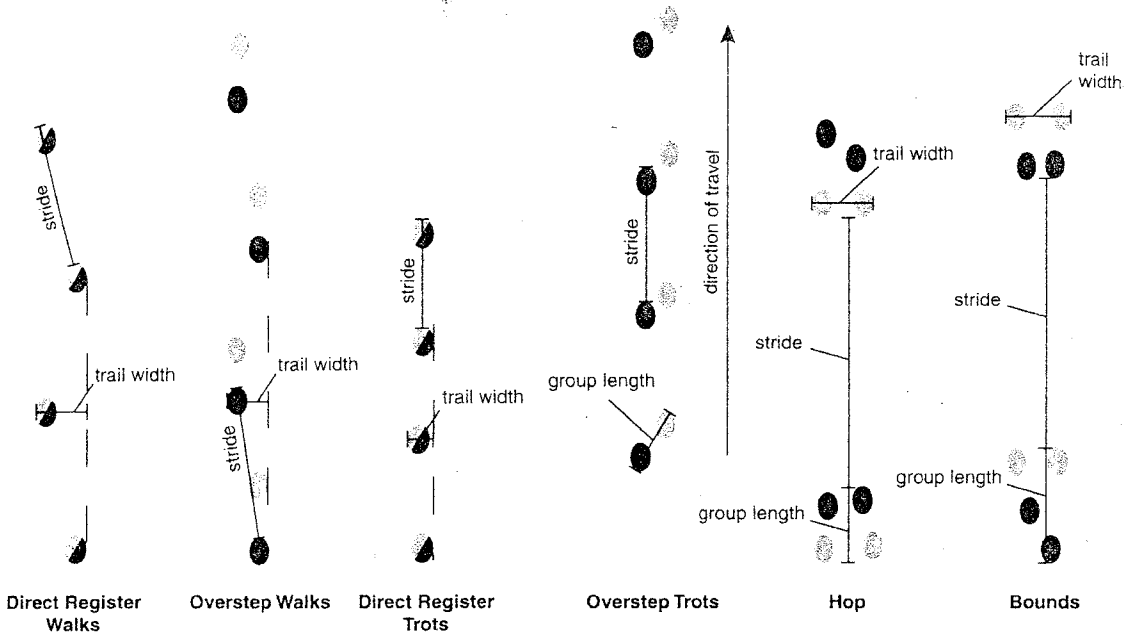
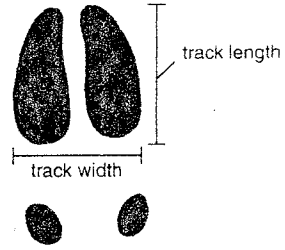
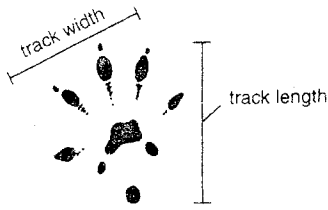
Negative space. The spaces between the toes, between the palm pads, and between the individual interdigital pads form shapes that are incredibly useful to track detectives. I often look for an X, H, or C shape to help distinguish feline and canine tracks. The front tracks of gray foxes and domestic dogs tend to show an H, while those of red foxes and coyotes show an X. Look for a C in the front tracks of cats.

Substrate

Substrate is a catchall word for what an animal has stepped in, whether it be sand, mud, snow, or grass. The depth of substrate, which is reflected in the depth of the print, has an enormous influence on the appearance, size, and shape of the track, as well as on how the animal moves. In shallow substrates, such as moist, hard sand, animals move easily and therefore tend to use their natural gaits, but in deep or slippery substrates, animals tend to move in ways that best suit the circumstances, sometimes crawling or floundering. Always note the substrate characteristics as you look at tracks and trails so that you'll be able to predict the substrate's influence on track patterns and gaits.

The conditions of the substrates in which animals step are infinite, creating great challenges for trackers. So if a track is in a deep, soft

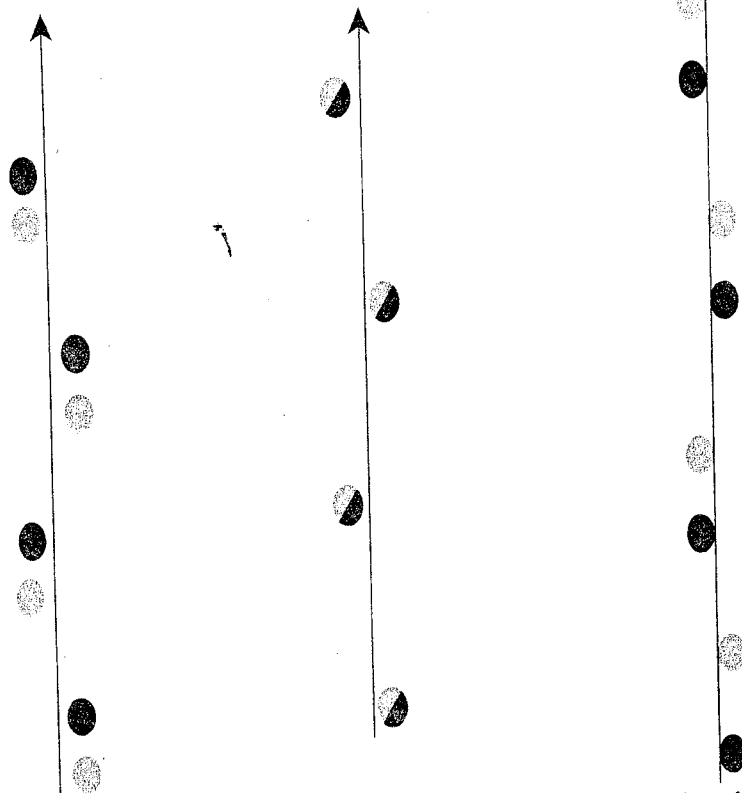
How to Measure Quick Reference



key:
 ● - Front
 ● - Hind
 ● - Both registers perfectly

Mark Elbroch, 20

E Broch 2003



voles, shrews, weasels, rats, woodrats, stalking carnivores, opossums, polar bears

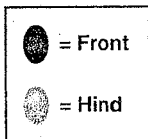
beavers, marmots, canines, felines, ringtails, bears, skunks, opossums, porcupines, muskrats

bears, canines, felines, muskrats, coatis, skunks, porcupines

Understep Walk

Direct Register Walk

Overstep Walk

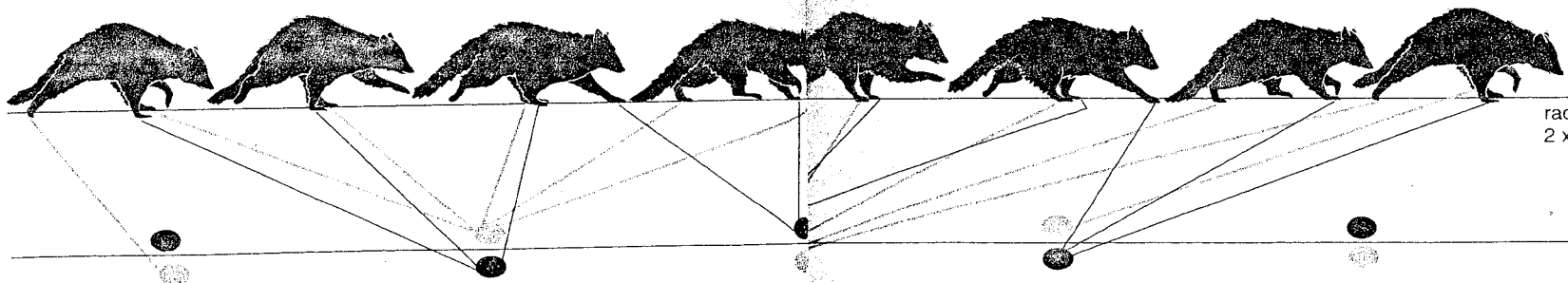


holds true for all walking gaits: As an animal walks faster, its rear track moves over and beyond the front track in each pair. Therefore, an understep walk (rear track behind the front track) is probably a slower gait than a direct registering walk (rear track on top of the front track), and both are likely slower than an overstep walk (rear track beyond the front track). A fast walk is also called an *amble*. Remember, there are other variables to consider as well, such as depth of substrate and physiology of the specific animal. But as a general rule, speed can be inferred by considering the placement of the rear foot in relation to the front.

There are several variations of the walk that add some confusion. For example, raccoons prefer to walk in such a way that the front and hind legs on one side of the body move nearly simultaneously. The resulting track pattern is one in which the tracks are paired—a front and the opposite side's rear—and they flip-flop from one pair to the next. That is the front sits on the left side in the first set, and on the right side in the second (see the illustrations). However, moving the legs nearly simultaneously is not enough to create such a radically different track pattern. Walker Korby and I have discussed this at length, and he believes that the animals also shift their weight to the hind legs. When I walk this way, it shortens my stride and seems to create similar track patterns, especially when I stretch my arms to their fullest potential.



Typical overstep walk of a bobcat. (MA)



raccoon
2 x 2 walk