

# COMMON TRACKS OF SOUTHEAST ALASKA

*A naturalist's guide to  
our most "trackable"  
mammals and birds:  
where to find them  
and how to read  
their sign.*

*Richard Carstensen  
2013*



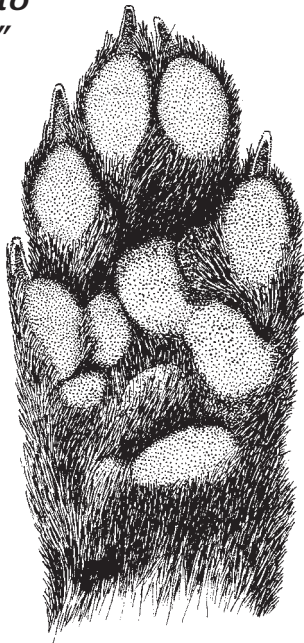
*for  
Discovery  
Southeast*



*Alaska  
Dept of  
Fish and  
Game*

*&*

*Juneau  
Audubon  
Society*



## TRACKING HABITATS

	<i>muddy trails</i>	<i>beaches mudflat</i>	<i>stream banks</i>	<i>yards &amp; buildings</i>
keen's mouse*	✓	✓	✓	✓
red-backed vole*	✓		✓	
long-tailed vole*		✓	✓	
red squirrel	✓			✓
beaver			✓	
porcupine	✓	✓	✓	
shrews*	✓	✓	✓	✓
snowshoe hare*	✓		✓	
black-tailed deer	✓	✓	✓	
domestic dog	✓	✓	✓	✓
house cat	✓		✓	✓
black bear	✓	✓	✓	✓
short-t. weasel*	✓	✓	✓	✓
mink	✓	✓	✓	
marten*	✓	✓	✓	
river otter	✓	✓	✓	

\* *Light-footed. Tracks usually found only on snow.*

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2013

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## COMMON TRACKS OF SOUTHEAST ALASKA

*Text, art and photos by Richard Carstensen unless otherwise credited.*

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*Discovery Southeast, the Alaska Department of Fish & Game and Juneau Audubon Society are partnering along with several other federal, state, local and private stakeholders in Alaska to find ways to encourage and support people to get outdoors more often. We hope you'll enjoy using this booklet to learn more about wildlife while exploring the diversity of habitats across Southeast Alaska.*

## DISCOVERY SOUTHEAST

Discovery Southeast (DSE) was founded in 1989 to promote place-based education for youth, adults, and teachers. Discovery Southeast's mission is to connect people and nature. Discovery naturalists offer programs such as Nature Studies, Outdoor Explorers, Discovery Days and Teacher Expeditions.

For more information about Discovery Southeast programs and resources, visit our website at [www.discoverysoutheast.org](http://www.discoverysoutheast.org), follow us on FaceBook, contact our office at 907-463-1500 or send an email to [info@discoverysoutheast.org](mailto:info@discoverysoutheast.org).



## JUNEAU AUDUBON SOCIETY

The mission of Juneau Audubon Society is to conserve the natural ecosystems of Southeast Alaska, focusing on birds, other wildlife and their habitats for the benefit and enjoyment of current and future generations.

<http://www.juneau-audubon-society.org>



## ALASKA DEPARTMENT OF FISH AND GAME DIVISION OF WILDLIFE CONSERVATION

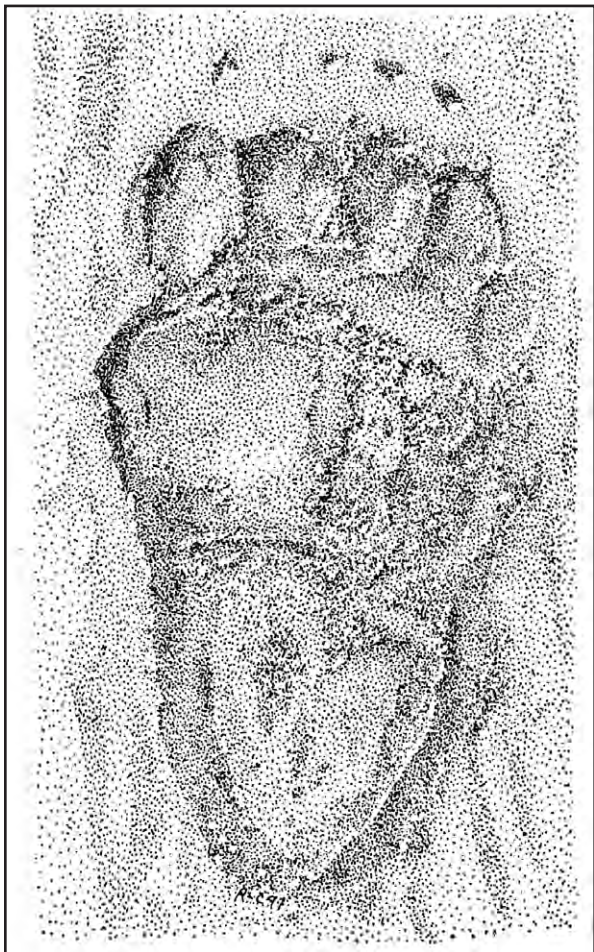
The mission of the ADF&G's Division of Wildlife Conservation is to conserve and enhance Alaska's wildlife and habitats and provide for a wide range of public uses and benefits.

ADF&G's Wildlife Conservation offers a wealth of resources to help educators bring wildlife topics to life in classrooms throughout the state. We recognize that educators come in many forms and classrooms aren't just in schools. If you work with a youth group, teach at a culture camp, volunteer with an outdoor or conservation organization, are a parent, grandparent or caregiver, you are an educator too!

To learn more about the resources we have available, go to the ADF&G website at [www.adfg.alaska.gov](http://www.adfg.alaska.gov). Search the main categories to learn about our many offerings including workshops for teachers, educational and informational materials, camps and skills clinics for youth and adults. Before heading out to go tracking, be sure to check out the species pages. You'll learn about all of your favorite species in Alaska, and much more.

For more information about wildlife education resources, please contact your regional education specialist, Tennie Bentz by email at [tennie.bentz@alaska.gov](mailto:tennie.bentz@alaska.gov) or by phone at 907-465-4292.





## PREFACE TO THE THIRD EDITION

2013

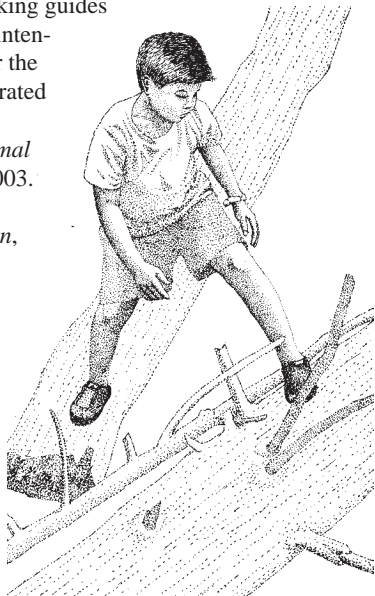
Tracking and sign interpretation are the core field activities for Discovery Southeast's winter semester Nature Studies Program. Annually we take hundreds of elementary school students into Juneau's great outdoors to learn about their wild neighbors from stories written in snow and mud.

This booklet originated in 1991 as a field guide for Juneau teachers who took their students outdoors in winter. I wrote it in preparation for Discovery's teacher workshops in tracking and sign interpretation. Since then, it's become clear that interest in tracking is widespread and by no means limited either to school classes or to the Juneau area.

In the past 2 decades many tracking guides have been written, and we have no intention of competing with them. By far the most comprehensive and well-illustrated tracking guide for North America is Mark Elbroch's encyclopedic *Mammal Tracks & Sign*, Stackpole Books, 2003. A companion guide by Elbroch & Eleanor Marks is *Bird Tracks & Sign*, 2001. For more on Elbroch's work, visit [www.audubonmagazine.org/articles/living/beaten-path?](http://www.audubonmagazine.org/articles/living/beaten-path?)

Used in conjunction with the Elbroch, this Southeast Alaska booklet will help narrow your

**Opposite:** Left hind foot of brown bear in riverside silt. Unlike a human foot, the largest toe is on the outside. See following species descriptions for tips on distinguishing brown from black bear tracks.



range of choices, just as a regional bird checklist becomes an indispensable companion to a North American bird guide. A clear 5-toed front footprint, 1.5 inches across, on a muddy stream bank near Sitka can only be a mink; you can reach this conclusion fairly quickly by perusing the booklet's distribution and habitat tables, and the track drawings.

Southeast Alaska's mammal diversity is concentrated on the northern mainland. All 32 of the species shown on the distribution table (p 54 & 55) occur there. The lowest mammal diversity is on the "ABC Islands" (Admiralty, Baranof and Chichagof), except of course for very small islands with low habitat diversity. You can avoid many a false turn in the track identification process by beginning with this table.

As with previous versions of this booklet, the species selection and recommended field sites have a "Juneau bias." Partly that's because Juneau is home to Discovery Southeast, and the area I know best. But

there are other reasons for using Juneau as a case-in-point for the study of Southeast Alaskan mammals.

Evidence of virtually every common terrestrial mammal of the region can be found near the Juneau road system (or within short boat trips: *e.g.* moose in Berner's Bay to the north). And many visitors to Southeast see their first animal tracks on Juneau's trail system, by far the most extensive in the region. Tips on what-to-see-where around Juneau can be extrapolated to similar sites around Southeast Alaska; consult the distribution table to see which species present in Juneau are missing in your chosen location.

One of the beauties of tracking is that its finest hour comes at a time of year unsuitable for fairweather activities. With snow on the ground, even civilized

*Raven track. Southeast's most ubiquitous bird, raven's footprints are found from mountain summits to beaches. Almost indistinguishable in shape from crow prints, ravens are larger—around 5.5 inches long.*





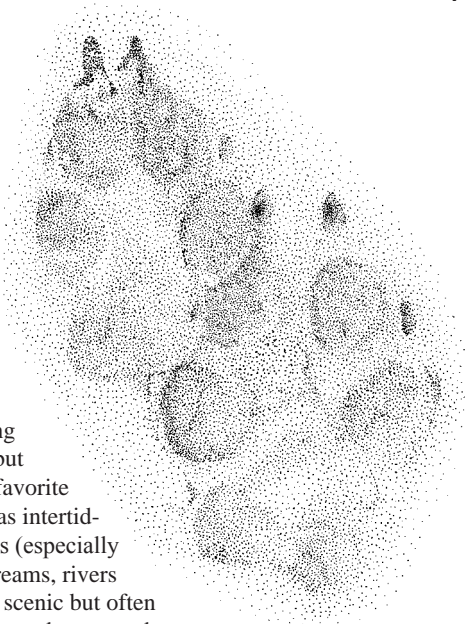
*Wolf tracks. The larger, wider front foot has been overprinted by the narrower hind foot.*

places abound in tracks of ravens, gulls and squirrels. The ultimate tracking conditions are after a light snowfall that leaves a thin sheet of powder on a firm base. Then you can sometimes even see individual toe-prints of mice!

Lacking snow, tracking sites are more restricted, but still include many of our favorite hiking destinations, such as intertidal sand and mudflats, trails (especially muddy ones), banks of streams, rivers and ponds, as well as less scenic but often track-filled disturbed areas such as gravel pits, vacant lots and roadsides.

Nearly all mammals whose tracks are seen close to Juneau's road system are illustrated in this guide. Mammals common elsewhere (or accessible to more adventurous Juneau hikers) are mentioned in *Other mammals*. Most of these additional mammals leave tracks resembling those of related species in this guide.

Only 4 birds are described. Many more species leave tracks on sand or mud beaches, or on snow. But bird tracks are less variable than those of mammals from species to species; the 4 examples—crow, gull, sandpiper and eagle—represent most of the basic avian foot types. Some common groups and species not illustrated are mentioned in *Other birds*,



along with tracking notes.

Only one Southeast amphibian—the western toad—commonly leaves tracks in mud near ponds. A description for this species follows the bird section.

For each animal track illustrated, size of an average adult is given, usually as width across forefoot. Track size varies considerably in some species. Also, as tracks age and weather, they get larger, especially in snow. Most animals use several different gaits, but only the most common for each species is shown. Refer to the *Gaits* section for illustrations of these secondary movement patterns.



*Wolf scat with marmot hair, claw and toe bone on moss heather and worm lichen.*

## Four questions

Try not to jump to conclusions about the maker of a track.<sup>1</sup> Take your time, and ask these 4 basic questions:

**1) Toes** How many toes show in the track? Beware prints of weasel family, in which fifth (inner) toe often fails to show. Look for clearest track before counting.

**2) Claws** Do claws show in track? At forward edge of toe, or well beyond?

**3) Size** Use scale on back cover of this guide to measure width of foot, stride length, etc. Compare with illustrations.

**4) Gait** How did the animal move? Did it walk, trot, hop, bound, lope, stot or gallop?

If you can confidently answer all of these questions, you can usually identify the maker of your track. But identification is only the first step. Now comes the fun part! What can you learn about this animal by following its tracks?

We like to hear about your tracking adventures, and would appreciate any questions or comments you might have concerning information in this guide. Contact the Discovery Southeast office at 463-1500, or reach us by email at [info@discoverysoutheast.org](mailto:info@discoverysoutheast.org). Check for more tracking articles and resources on our website: [www.discoverysoutheast.org](http://www.discoverysoutheast.org).



*Richard Carstensen*

*Naturalist, Discovery Southeast*

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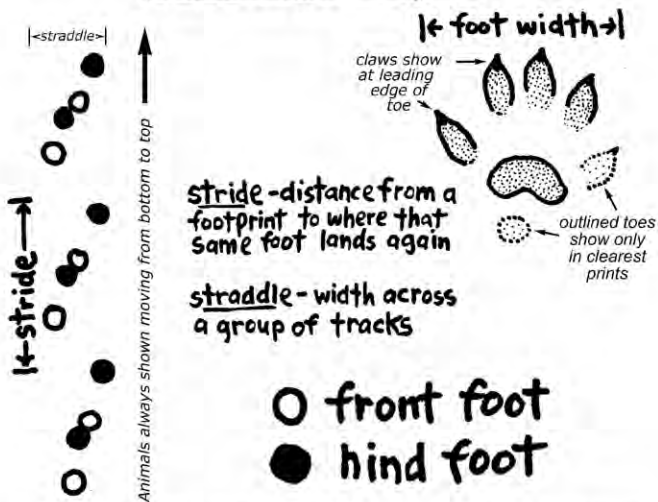
<sup>1</sup> Cultivating this patient, methodical approach is especially recommended when tracking with young students. It provides a memorable introduction to the art of deductive reasoning. What questions would Sherlock Holmes add to this list?



## TRACKING BASICS: LINGO, GAITS

In this section we look at some of the terminology of tracking, as well as the gaits, or patterns left by mammal footprints. Mammalian orders *tend* to have shared foot shape and gait patterns, as indicated on the inside back cover.

### Measurements and Symbols\*



\* Average adult foot width and most common gait are shown. Other gaits are only mentioned.

# Gaits \*

## Walk

hind  
overstepping  
front

hind  
landing  
on front



## Trot

hind landing on  
or overstepping  
front



*Increasing stride means increasing speed.*

*For a given animal, trotting stride is longer than walking stride, but straddle is often narrower when trotting.*

\* Gallops are complex and variable, not illustrated in this guide.



*Wolf tracks in sand*

### Paired front-feet hop\*

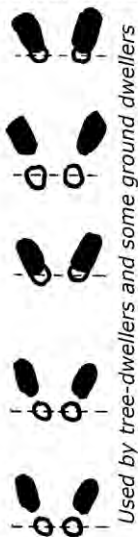
Hoppers & bounders often have large hind feet.  
As speed decreases, front & hind tracks merge.  
Hoppers: front feet ahead. Bounders: hind feet ahead.



### Diagonal front-feet bound\*



### Paired front-feet bound



\* Since previous editions, I've modified gait terms (hop vs bound, etc.) to follow Elbroch (2003). Exception is in lope categories, following, which retain simpler names (2x, 4x.) used by Halfpenny's Field guide to tracking in western North America, (1986).

deer mouse with tail drag



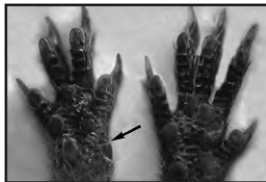
5-inch comb

hind feet larger  
land out ahead  
of front feet

center 3 toes  
close together



**typical  
bounding  
track of  
rodent**



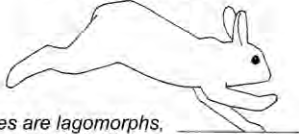
Front (left) & hind (right)  
feet of bog lemming. Arrow  
indicates vestigial thumb.  
You can also see it on the  
squirrel below.



tiny thumb only shows  
in clearest tracks



squirrel's front  
feet usually  
side by side



(Hares are lagomorphs,  
not rodents. Similar  
gaits are an example  
of convergent evolution.)

hare's  
front feet  
on diagonal



## 2x Lope

pronounced  
"two-by"

Hind feet land exactly in front prints



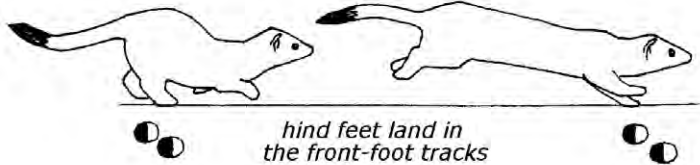
Common in members of weasel family

## 4x Lope and 1-2-1x Lope

pronounced "4-by"  
and "1-2-1-by"

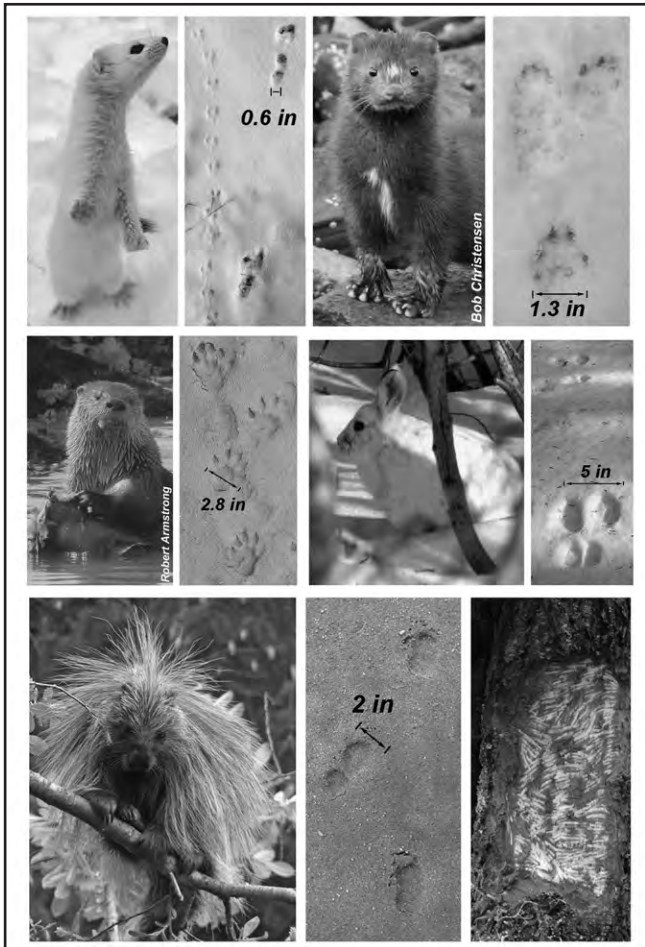


1-2-1x is faster than 4x; mink & otter  
use both



hind feet land in  
the front-foot tracks





**Preceding page, top row:** short tailed weasel; loping track of weasel beside smaller bounding prints of long-tailed vole; mink & tracks. •

**Middle row:** river otter & tracks; snowshoe hare & bounding tracks, similar to red squirrel but much larger. • **Bottom row:** porcupine & waddling track; porky-chewed hemlock trunk.

## SCIENTIFIC NAMES

Below are technical names of Southeast mammals, grouped by order. Comments are specific to the Juneau area.

scientific name	common name	comments
<b>rodentia</b>	<b>large rodents</b>	
<i>Glaucomys sabrinus</i>	northern flying squirrel	common but nocturnal
<i>Marmota caligata</i>	hoary marmot	subalpine but also on beaches
<i>Tamiasciurus hudsonicus</i>	red squirrel	our most conspicuous mammal
<i>Castor canadensis</i>	beaver	keystone species
<i>Ondatra zibethicus</i>	muskrat	appears to be declining
<i>Erethizon dorsatum</i>	porcupine	commonly seen
<b>rodentia</b>	<b>small rodents</b>	
<i>Microtus longicaudus</i>	long-tailed vole	beach meadows
<i>Myodes rutilus</i>	northern red-backed vole	forests and subalpine
<i>Peromyscus keeni</i>	keen's (deer) mouse	edges, brushy places, buildings
<i>Synaptomys borealis</i>	northern bog lemming	wet places
<b>lagomorpha</b>	<b>hares</b>	
<i>Lepus americanus</i>	snowshoe hare	introduced in mining days
<b>soricomorpha</b>	<b>shrews</b>	
<i>Sorex monticolus</i>	dusky shrew	widespread, sometimes diurnal
<i>Sorex cinereus</i>	masked shrew	widespread, sometimes diurnal
<i>Sorex palustris</i>	water shrew	poorly known, seen on Gold Creek
<b>chiroptera</b>	<b>bats</b>	
<i>Myotis lucifugus</i>	little brown myotis	often seen at dusk

scientific name	common name	comments
<b>artiodactyla</b>	<b>hooved mammals</b>	
<i>Odocoileus hemionus</i>	sitka black-tailed deer	increasing over past few decades
<i>Oreamnos americanus</i>	mountain goat	on most subalpine ridges
<i>Alces alces</i>	moose	Taku, Berners, rare strays elsewhere
<b>carnivora</b>	<b>carnivores</b>	
<i>Lynx canadensis</i>	lynx	rare, probably strays, not resident
<i>Canis latrans</i>	coyote	uncommon, populations vary
<i>Canis lupus</i>	wolf	regular, concentrations near moose
<i>Vulpes vulpes</i>	red fox	rare, probably strays, not resident
<i>Ursus americanus</i>	black bear	exceptional density
<i>Ursus arctos</i>	brown bear	remote valleys far from trails
<i>Gulo gulo</i>	wolverine	alpine ridges, glacier snouts
<i>Lontra canadensis</i>	river otter	ubiquitous on streams
<i>Martes americana</i> *	american marten	common but nocturnal
<i>Martes pennanti</i>	fisher	rare, Bessie Creek specimen
<i>Mustela erminea</i>	short-tailed weasel	common, easily tracked on snow
<i>Neovison vison</i>	mink	ubiquitous on streams

\*A second species of marten has recently been documented on Admiralty and Kuiu Islands: *M. caurina*. Tracks are indistinguishable from *M. americana*.



river otter

## MAMMAL TRACK DESCRIPTIONS

Following are illustrations of front and hind-foot tracks, the most common gait, and for many species a range map showing distribution in Southeast Alaska. Descriptions include only common mammals that often leave tracks in snow or on bare, unvegetated surfaces. Other species whose tracks are less commonly seen—or restricted to habitats less visited by humans—are covered in a later section.



*Black bear trails criss-cross through tidal sedge meadows in Traitor's Cove on Revillagigedo Island.*

$\leftarrow \frac{1}{4}'' \rightarrow$ 

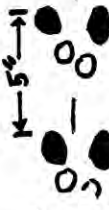

front



hind

 $\leftarrow \frac{1}{2}'' \rightarrow$ 


-diagonal or paired-  
front-feet hop or bound



-occasionally walks

-sometimes tail drags

## Mice and Voles

Keen's (deer) mouse, jumping mice (spp), & long-tailed voles often show tail drag in snow, lacking in shorter-tailed species such as tundra (root) vole, red-backed vole, and bog lemming.



long-tailed  
vole



red-backed  
vole



Keen's  
mouse

←  $3\frac{1}{4}$  →



front

hind

←  $3\frac{1}{2}$  →



• paired-front-foot bound (sometimes diagonal)

• drag marks in deep snow

red

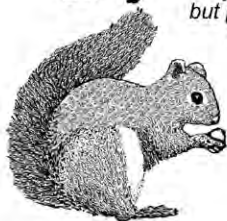
flying



↑  $1\frac{1}{2}$  ↓

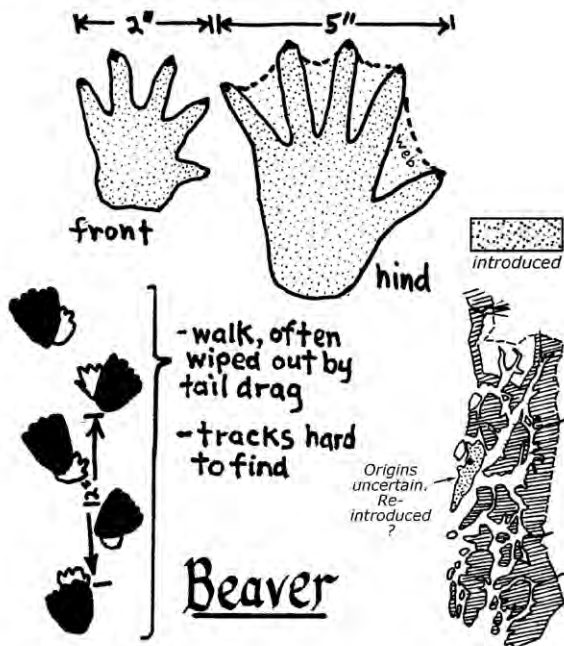
## Red Squirrel

*Flying squirrel tracks similar but present only on mainland & Prince of Wales Island*

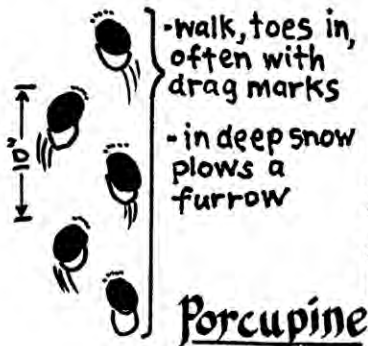
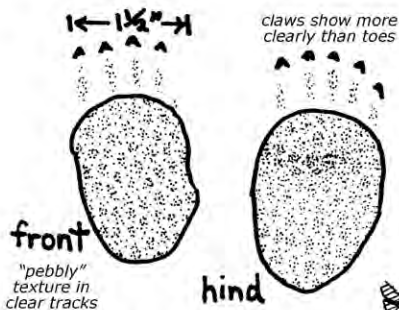




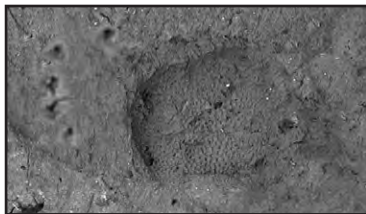
Front and hind tracks in muddy slough near Haines.







Porcupine



On fine mud the pebbly texture of porky feet shows clearly.

←  $\frac{3}{16}$  " →



front



hind

individual toes  
rarely show



- paired-front-  
feet hop or bound  
(sometimes  
diagonal)



- tail sometimes  
drags



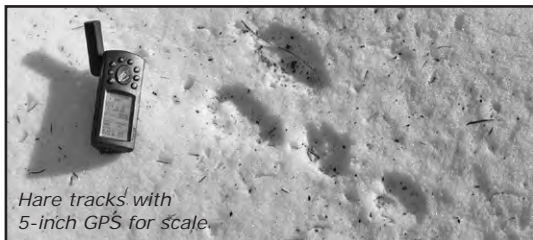
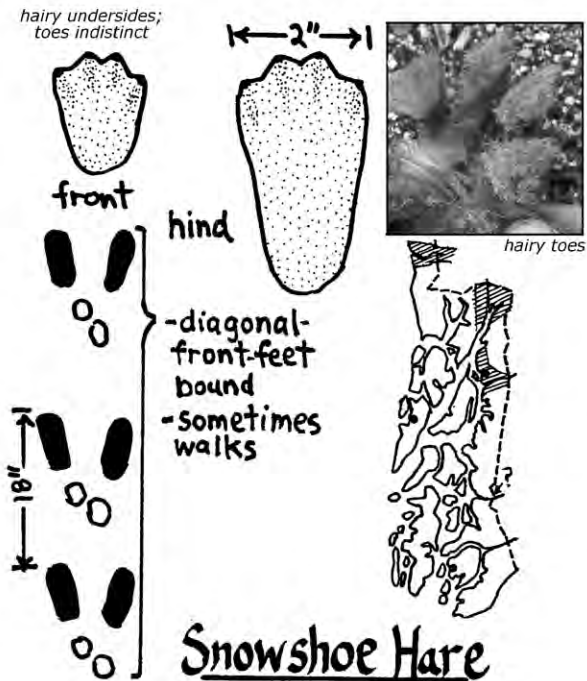
←  $\frac{3}{8}$  " →



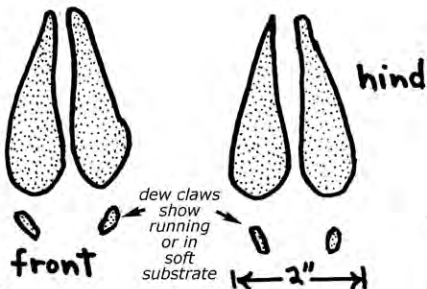
## Masked Shrew



Three shrew species occur in Southeast: masked (*Sorex cinereus*); dusky (*S. monticolus*) & water shrew (*S. palustris*). They're difficult to distinguish from tracks except that the rare water shrew is much larger.



toes  
spread  
when  
running  
or in  
deep  
snow or  
mud



-walk, hind may  
overstep front if  
speeding up

-also gallops, and  
"stots" (jumps w/  
4 feet together)

## Sitka Black-tailed Deer

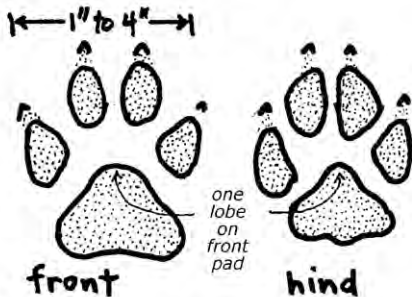
moose and  
elk tracks  
much larger

goat tracks  
"blockier"



Tracks of doe and tiny June fawn. Six inch  
pencil for scale

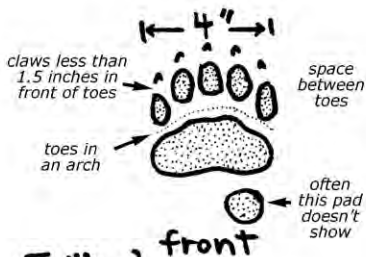




## Domestic Dog



*Wolf and coyote tracks resemble dog tracks. Follow the trail and examine behavior for clues.*



hind



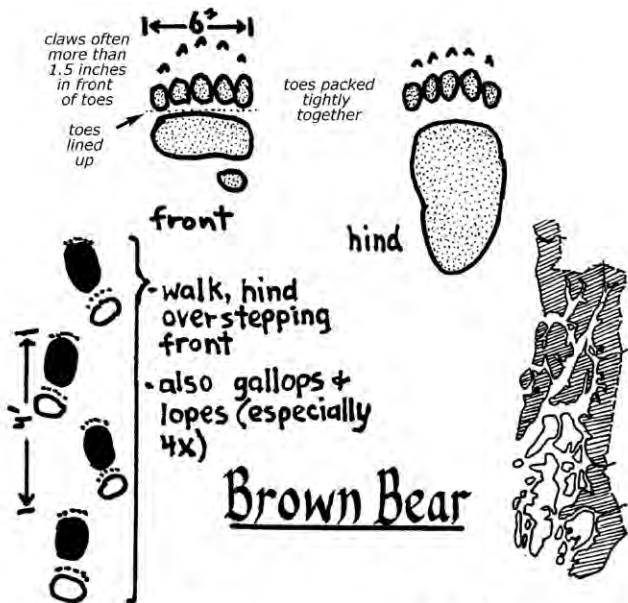
- walk, hind overstepping front
- also gallops and lopes (especially 4x)

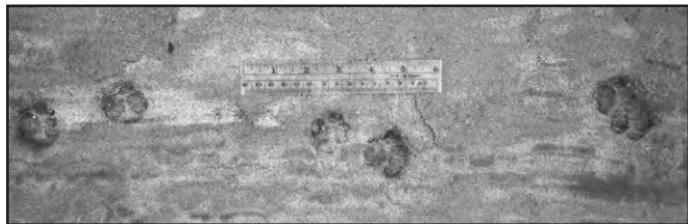
## Black Bear



front foot:  
compare to  
brown bear  
on facing  
page

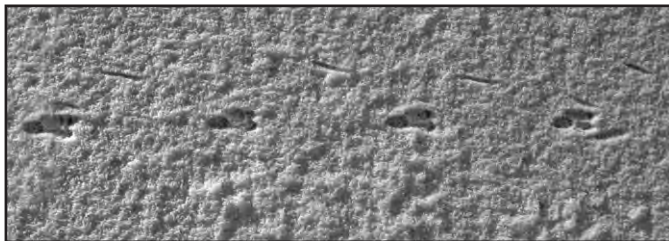
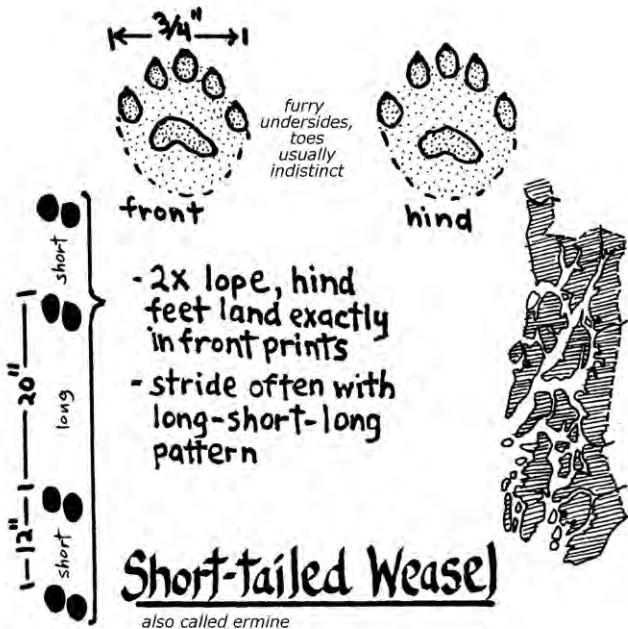




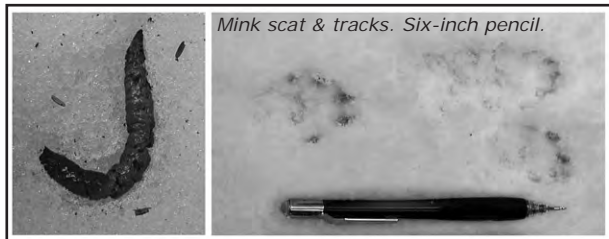
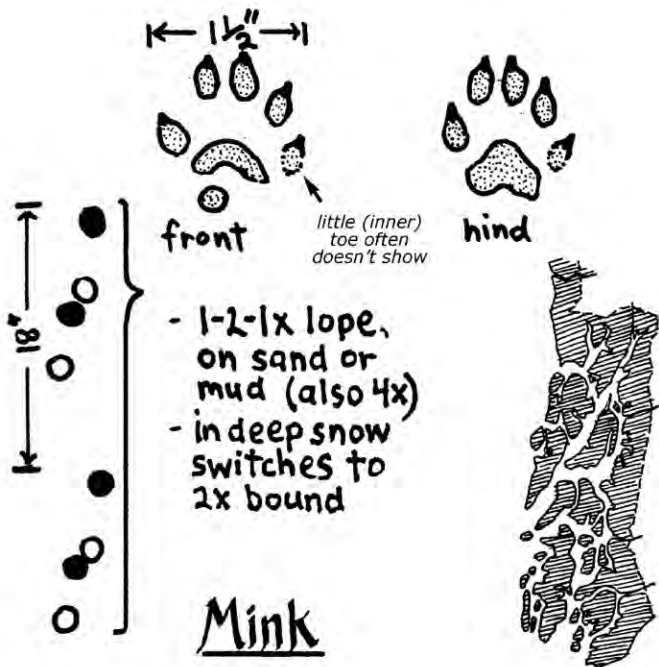


House cats are tidy walkers whose hind feet often directly overprint the front. Six-inch rule.





Weasel moving left to right, carrying mouse or vole whose tail was tapping snow to left of track.



← 2" →



front

*furry  
undersides,  
toes  
rarely  
show*

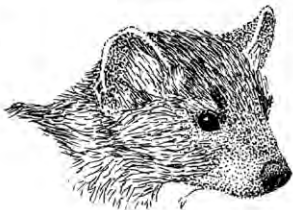


hind

- 2x lope in snow,  
so light-footed  
it rarely leaves  
tracks on ground
- also uses 1-2-1  
and 4x lopes

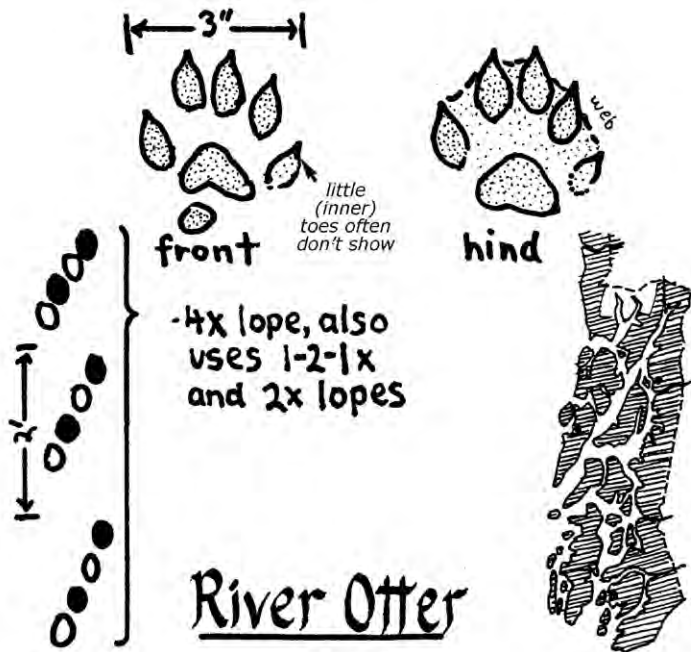


## Marten



*Unlike related members  
of the weasel family  
(mustelids), marten  
scats often contain  
remains of berries.*





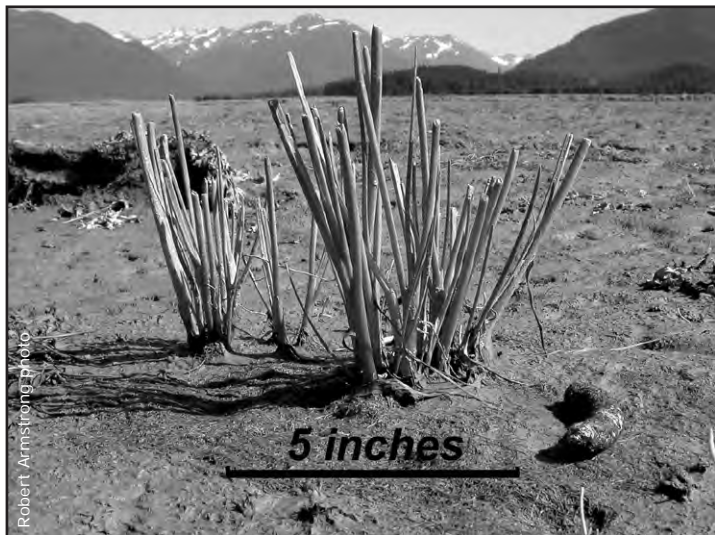
Otter tracks in river sand. Note webbed front foot in photo on right.



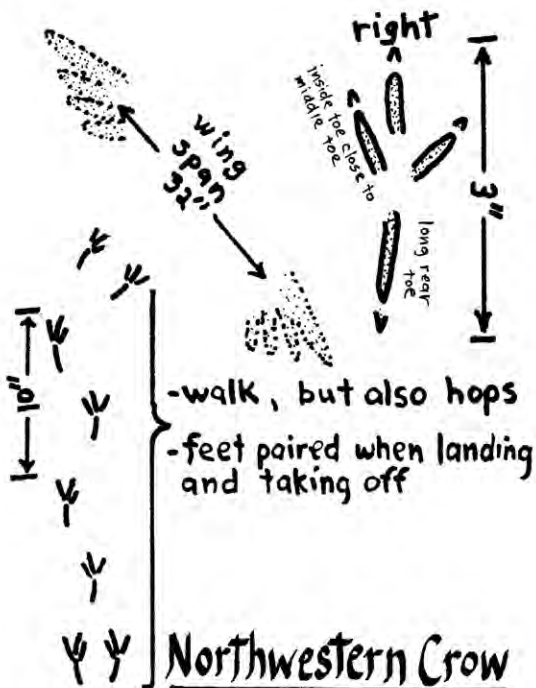
## BIRD TRACK DESCRIPTIONS

As with mammals, the tracks and gaits of birds within related families and orders tend to be very similar. Only 4 species are illustrated here, as representatives of the most common track patterns:

- 1) Northwestern crow (perching birds—long rear toe)
- 2) Glaucous-winged gull (swimming birds—webbed feet)
- 3) Spotted sandpiper (shorebirds—short rear toe)
- 4) Bald eagle (raptors—thick-toed with talons)

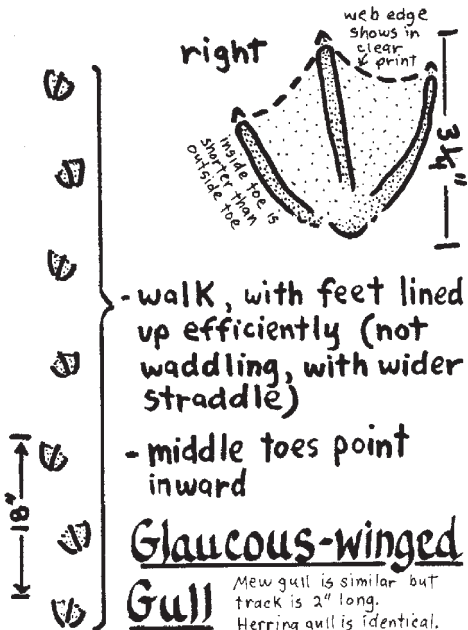


A Vancouver Canada goose nipped the tips of these arrowgrass clusters (*Triglochin maritima*) and left a curved dropping in lower right.



Raven similar but track is 5" long  
 See page 6





- walk, with feet lined up efficiently (not waddling, with wider straddle)

- middle toes point inward

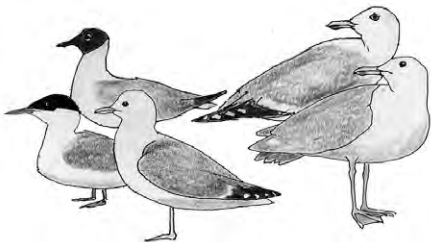
## Glaucous-winged

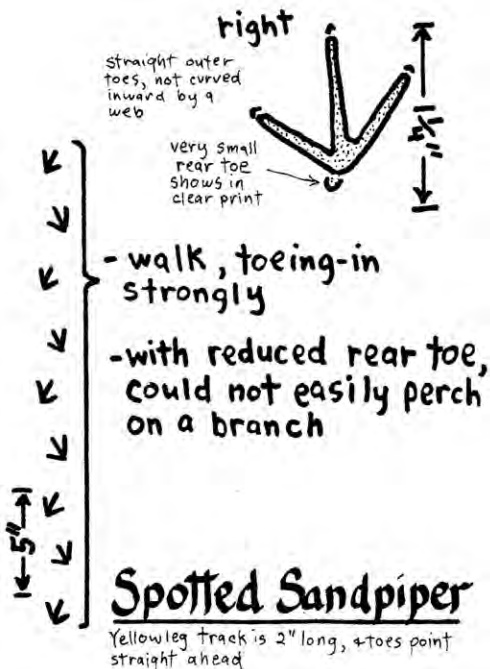
### Gull

Mew gull is similar but track is 2" long.  
Herring gull is identical.

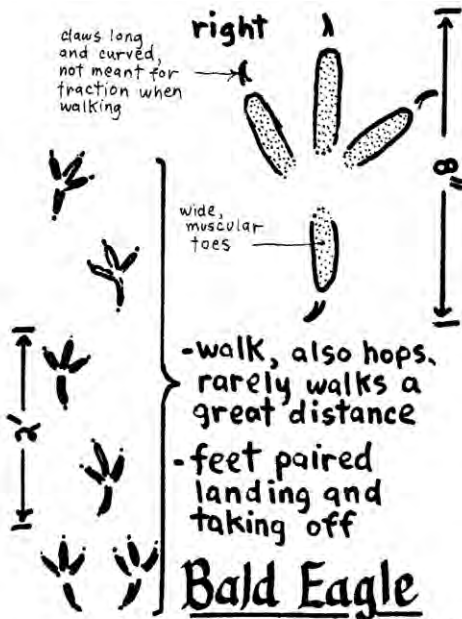
Ducks and geese similar, but wider straddle; tracks not lined-up.

*Clockwise from left: arctic tern, Bonaparte's gull, herring, glaucous-winged & mew gull*

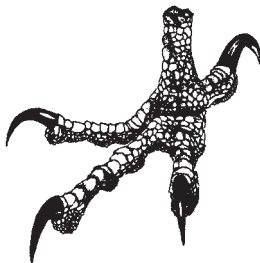






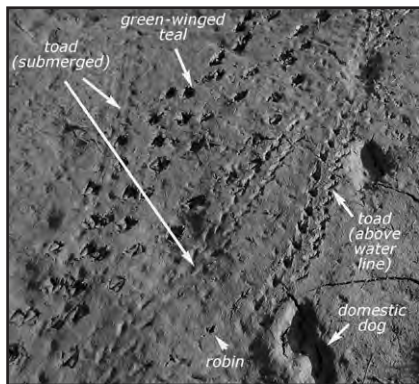
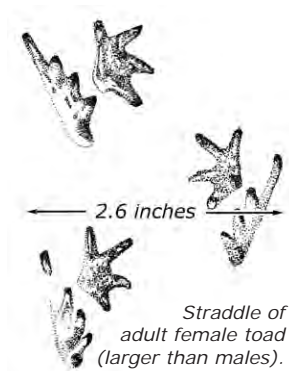
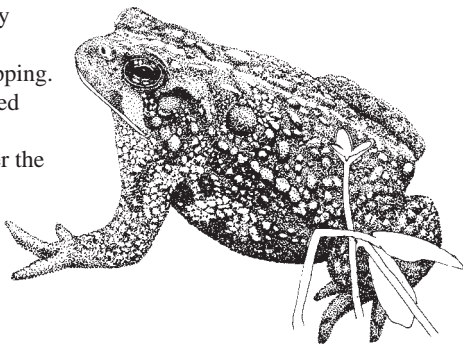


Heron is similar, but narrow toes, shorter claws, and 6" long



## 40 AMPHIBIANS

Southeast Alaska has only 6 species of native amphibians: 1 toad, 2 frogs, a newt, and 2 salamanders. Of these, only the western toad (*Bufo boreas*) and rough-skinned newt (*Taricha granulosa*) are widespread; the others are restricted to mouths of transboundary rivers. Since newts rarely traverse good tracking surfaces, only western toads frequently leave tracks. Search shores of muddy ponds, especially during summer dry spells when water levels are dropping. Western toads have declined precipitously across their North American range over the past 3 decades; familiarity with their tracks may help survey teams detect this once-ubiquitous animal.



## OTHER MAMMALS

Several common Southeast Alaskan mammals were not illustrated in this guide. Here are a few suggestions on best places to look for their sign, as well as notes on Juneau-area distribution. Start with the Southeast distribution tables to see where they occur. For more details on tracks and sign, consult the Elbroch guide. For details on natural history of common Southeast mammals, see *The Nature of Southeast Alaska*. 2014, Carstensen & Armstrong. Alaska Northwest Books (3rd edition in preparation).

**Hoary Marmot** These large rodents abound in subalpine meadows of the mainland, from about 2000 to 3500 feet. In early summer look for dirt-stained tunnel entries in the snowpack, and large hopping tracks nearby. Marmots descend to sea level in Glacier Bay and around Juneau, where some reside along highways and marine beaches.



**Flying Squirrel** These are common in many places, but nocturnal and rarely seen. Tracks are similar to red squirrel. In snow, look for landing marks far from trees. Prince of Wales Island has only flying squirrel and is the only large island in Southeast Alaska lacking red squirrels. (Reds are rapidly colonizing Admiralty.)



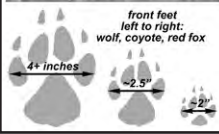
*Compared to a red squirrel track, straddle of front feet tends to be wider with flying squirrels. Note also drag marks of skin flap.*

**Wolf** Tracks are common in snow in all wild places of Southeast except ABC Islands (Admiralty, Baranof and Chichagof). Near Juneau check



*Wolf and Canada goose tracks on mudflat, Kuiu Island.*

Berner's Bay and Taku Inlet, and all alpine ridge tops. Also expect wolf tracks in snow on Herbert and Eagle Glacier trails.



front feet  
left to right:  
wolf, coyote, red fox

**Coyote** The wolf and the coyote often “seesaw” in Southeast Alaska; when one goes up, the other goes down. Coyotes have been seen and tracked in lower Glacier Bay, and since 2010 have been increasing around Juneau.

**Red Fox** Rare and sporadic. This is basically a boreal interior species that occasionally wanders into Southeast via the big river systems. Also found on open sand beaches around Yakutat.

**Lynx** Interior species like fox, but more likely to establish temporary populations, especially if hares reside in willow/cottonwood thickets near glaciers or big rivers. Haines is your best bet. Discovery naturalists find tracks of less than one individual per year in the Juneau area.

**Wolverine** Mostly an alpine animal in Southeast, but (like everything else!) sometimes hunts



the beaches, especially in wilder regions. As with lynx and marten, these critters are so light-footed that only softest mud shows clear footprints. Best tracks are in snow, most commonly on ridgetops. Occasional in lowlands near salmon streams or glacier snouts, hunting hare, beaver and ptarmigan.



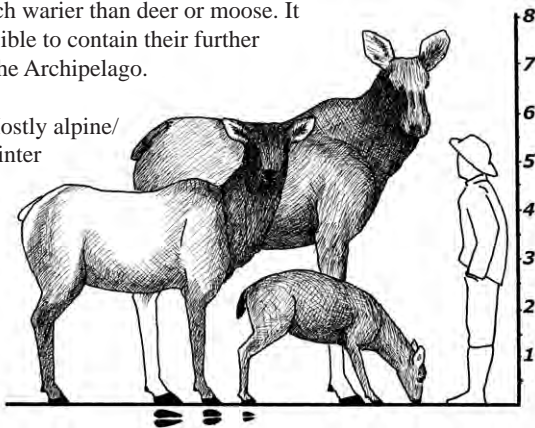
**Moose** Centered on willow-cottonwood habitat of Southeast's major river systems, and in post-glacial deciduous scrub of Glacier Bay. Secondary populations are establishing in heavily clearcut areas like Kuiu Island. How long they'll persist into post-logging succession remains to be seen. Near Juneau they reside only in Berner's Bay and Taku Inlet. You can't mistake a moose track for anything except an elk.

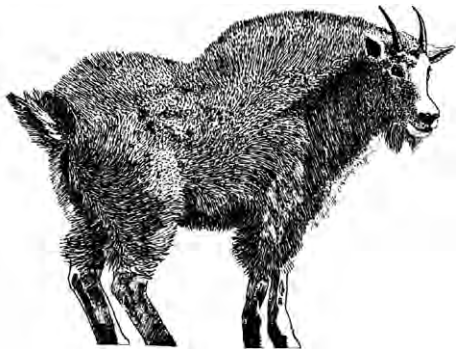
**Elk** Roosevelt and rocky mountain elk were introduced on Etolin Island in 1986, and have since spread to Prince of Wales and other nearby islands. Elk are much warier than deer or moose. It may now be impossible to contain their further spread throughout the Archipelago.

**Mountain Goat** Mostly alpine/subalpine. In late winter

*Above: Wolverine tracks on Gold Creek near Juneau.*

*Right: Adult female moose, elk, black-tailed deer and their relative track size. Scale in feet.*





they descend to lowlands in Glacier Bay, Tracy Arm, and in Juneau near snouts of Herbert, Eagle and Mendenhall glaciers. Goat tracks are blockier and less elegantly pointed than deer tracks, but this is subtle, and you should gather additional clues.

Mountain goats also move into steep subalpine forest for cover during snow storms. Months later, their soft white hair can still be found entangled in brush, marking these critical winter refuges.



*Mountain goat and rock ptarmigan tracks on wind-crusting snow, Mount McGinnis, Juneau.*

## OTHER BIRDS

Because tracks of closely related birds are usually quite similar, only a representative track for each of 4 different bird families has been illustrated. Several bird families and a few individual species which commonly leave tracks are described here.

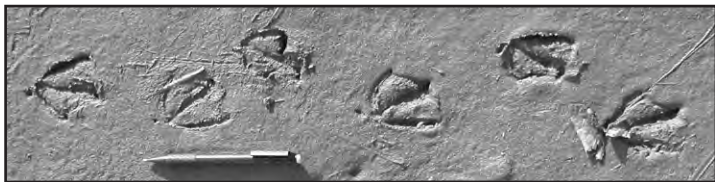


**Corvids** Ravens (5"), crows (3"), magpies (2") and jays (1.7") are large perching birds with long rear toes. They're drawn to human garbage, and tracks are easily studied in snow, often immediately outside school buildings.

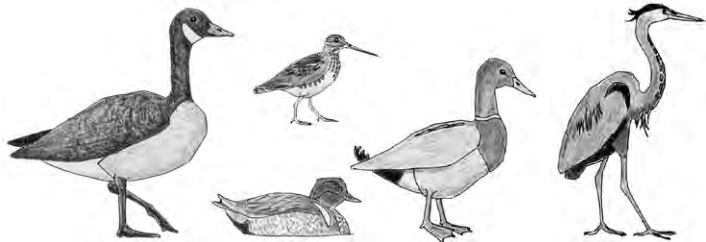
**Gulls** We have 2 common large gulls and 2 common small gulls in Southeast. The large gulls—glaucous-winged and herring—have 3-inch-long tracks. Mew gull tracks are 2 inches, and Bonaparte's gulls are about 1.5 inches. Tracks of all are abundant on beaches. Glaucous-wings often join pigeons and crows in civilized locations (waterfowl notes below explain track distinctions).



**Waterfowl** Ducks, geese and swans have feet almost identical to those of gulls. All are webbed, with curved outer toes, the inner slightly shorter than the outside one. Both gulls and waterfowl toe in. But waterfowl are wider bodied, so track patterns show wider



*Top to bottom: Stellar's jay, • Glaucous-winged gull track, • Wide-straddled, toe-in waddle of a green-winged teal. Six-inch pencil for scale.*



**Left to right:** Likeliest to leave tracks are: Canada Goose; green-winged teal; common snipe; mallard; great blue heron. **Below left:** Dunlin and surfbird. **Below right:** Sandhill cranes have short rear toes.

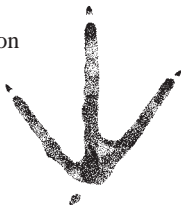
straddle: Swan tracks, 7 inches; Canada geese, 4 inches; mallards 3 inches; teal 2 inches.



**Shorebirds** For birds that rarely perch in trees, a long rear (4th) toe is more trouble than it's worth. Sandpiper and plover tracks show only 3 toes, with an occasional slight impression from a reduced rear toe. Most shorebirds toe inward, but yellowlegs and whimbrels toe straight ahead.

**Raptors** Few raptors except eagles commonly leave tracks in Southeast Alaska. Pounce marks of owls are sometimes found. Look for the "X" shaped tracks (2 toes in front, 2 behind), and brushings of wingtips on the snow.

**Heron, crane, grouse & ptarmigan** The great blue heron track is common in mudflats and on pond margins, confusable with eagle tracks, except it's more slender and lacks the long talons. Herons perch in trees and have long rear toes. Sandhill cranes, who rarely perch, have reduced rear toes. Sooty grouse and our 3 species





**Top to bottom:** Sooty grouse has thick digits and reduced rear toe. • The ground-foraging American pipit (above), like the horned lark, it has an exceptionally long claw on the rear toe. • American robins are more versatile—skilled runners who also perch routinely.



of ptarmigan do perch but have reduced 4th toes. Tracks are common on snow: grouse, 2+ inches; rock ptarmigan, 1.5 inches.

**Songbirds** All have long rear toes; tracks are difficult to distinguish except by size. Ground-dwellers such as pipits run, placing one foot directly ahead of the other. Tree dwellers such as juncos usually hop, leaving side-by-side tracks. Generalists such as robins use both hopping and running tracks.



**Clockwise from upper left:** Nests of rock ptarmigan, common snipe, Oregon junco, American pipit, orange-crowned warbler, hermit thrush.

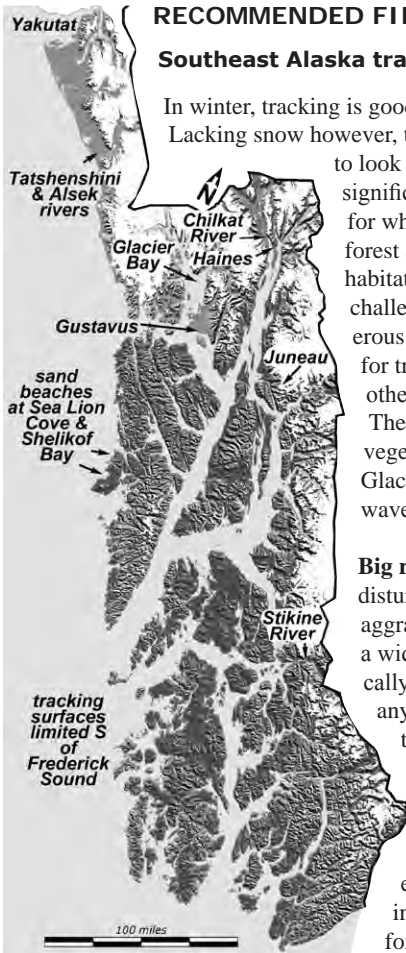
## RECOMMENDED FIELD SITES

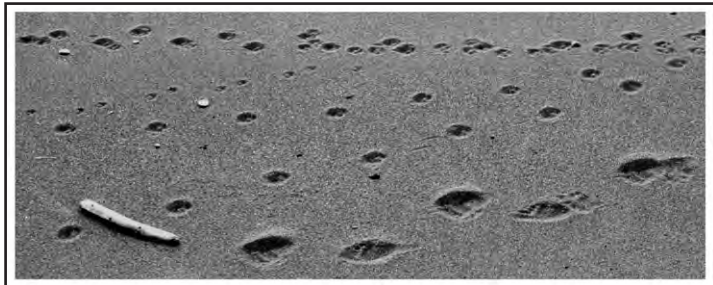
### Southeast Alaska tracking hotspots

In winter, tracking is good pretty much everywhere. Lacking snow however, the best places in Southeast

to look for tracks are those that offer significant *exceptions* to the habitats for which the region is famous: rain-forest and peatland. There are few habitats where tracking is more challenging than the verdant coniferous understory. What we need for tracking is *disturbance* to the otherwise moss-muffled landscape. The disturbance should replace vegetation with bare sand or mud. Glaciers, bulldozers, rivers, ocean waves and wind all do this.

**Big rivers** The most exquisite disturbance for tracking is a large aggrading river (actively building a wide flood plain) that periodically spreads fine sediment over any mosses ambitious enough to invade its banks. For this reason, float trips down a big mainland river such as the Tatshenshini-Alsek or Stikine are peerless tracking experiences. They also feature interior mammals such as lynx, fox, ground squirrel and sheep,





**Top to bottom:** Wolf, red fox & brown bear tracks on surf-exposed beaches southeast of Yakutat. On these broad sand beaches, slow-running mink and otter are vulnerable to wolves. The more nimble fox fills the niche of small predator-scavenger more successfully here.

rare elsewhere in Southeast Alaska. Of Southeast's larger communities, Haines gets my vote for likeliest-to-produce tracks, thanks to easy road access to the Chilkat and associated rivers.

**Ocean beaches and estuaries** A kayak trip into Glacier Bay is another world-class tracking adventure. In fact, some beaches have *too much* sign! An overabundance of bear tracks, or footprints of strident, easily annoyed beach-nesting oystercatchers may convince us to camp elsewhere, for their sake and ours.

Sand beaches stretching southeastward from Yakutat provide fantastic tracking surfaces combined with high species diversity. This is also one of the few places in Southeast where wind creates large sand dunes.

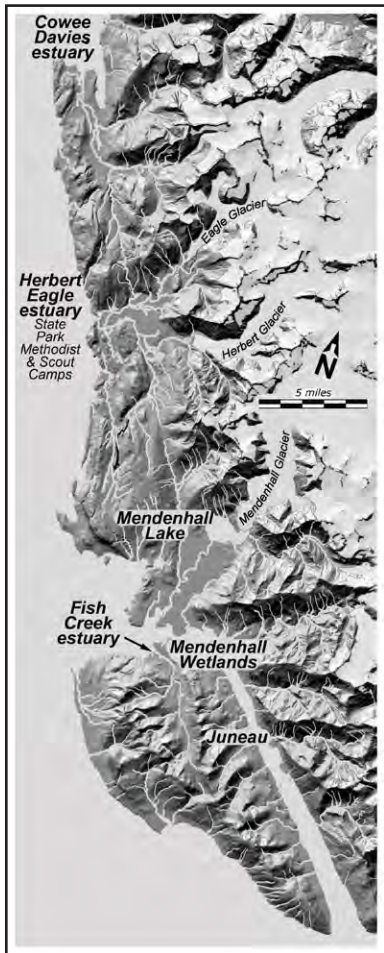
But any location in Southeast Alaska can offer good tracking on beaches and streamsides, provided the sediments are fine and soft. If beaches are mostly rocky, try mouths of larger streams, where mudflats often form. Remember, however, that these great estuarine tracking places are also the *most critical habitat* for bears, geese, wolves, eagles, and all members of the weasel family, including even the ultra-spooky wolverine. Enjoy their sign by day, but consider camping somewhere else, leaving our estuaries to their wild inhabitants by night.

## Juneau tracking hotspots

**Cowee Creek estuary** Best place accessible from the road system for sign of some of our wilder neighbors, such as wolf and wolverine. Active beaver workings. Banks of the merged Cowee and Davies Creeks have the best tracking surfaces.

**Herbert and Eagle Trails** Our largest rivers, aside from the tamer Mendenhall. Skiers often cross wolf tracks (but beware thin ice!). In summer, check muddy river banks.

**Methodist Camp & State Park beaches** Great tracking field trip site for school or other groups in any season. Cross-country skiing and tracking make a great combination. Typically we find tracks of squirrel, mouse, vole, shrew, porcupine, snowshoe hare, weasel, mink & otter. The beaver dam on Saturday Creek, though usually inactive, offers a look at beaver habitat and sign. Bear sign is common in spring, and the confluence of Saturday



Creek with Eagle River is becoming a popular bear-viewing site, second only to the Steep Creek boardwalk in reliability.

**Eagle Beach Scout Camp** Permission required for overnights, or use of camp facilities, but the outer sand beach is open to the hiking public. Has all the attractions of the Methodist Camp, plus extensive clean sand beaches, a great tracking surface throughout the year for mustelids, porcupine and birds. Less accessible though. Plan 3 hours for the round trip hike, plus time to enjoy the animal sign.

**Mendenhall Recreation Area** The moraine ecology trail near the Visitor Center, the Dredge Lakes area and the shores of Mendenhall Lake and River often have snowshoe hare, beaver, squirrel, porcupine, voles, weasel, mink and otter. Watch for occasional wolf and lynx sign.

**Jordan Creek behind Glacier Valley School** Jordan Creek and the beaver-flooded wetlands downstream are good wildlife habitat. For over 20 years, elementary students have learned tracking here from master naturalist Steve Merli: squirrel, porcupine, beaver, muskrat, deer, black bear.

**Mendenhall Wetlands Refuge** Juneau's most extensive wetlands are unfortunately little used by mammals because encircling roads and development block access. Great for bird tracking though.

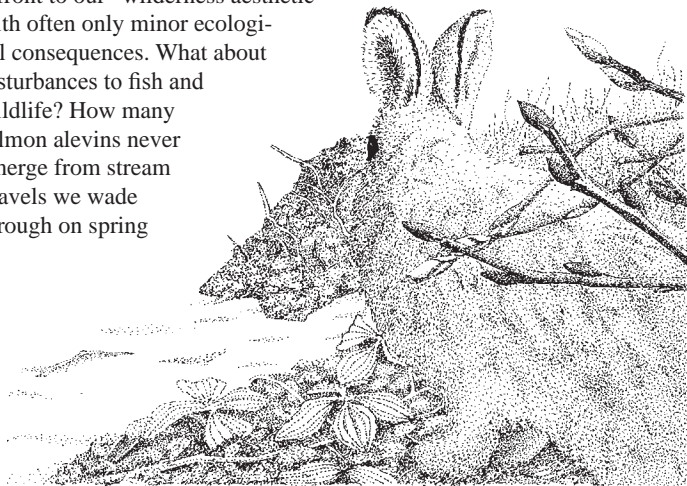
**Fish Creek estuary** Thousands of elementary school students have learned tracking skills here since Discovery Southeast began its Nature Studies Program in 1989.

**Other favorite Discovery Southeast field trip sites** Switzer Creek, Brotherhood Park, Auke Bay School nature trail, Bear Creek peatlands behind Gastineau School.

## THROUGH THE EYES OF CRITTERS

Ecotourism brings ever more visitors into Alaskan wilderness. Around Juneau, partly through the efforts of Discovery Southeast, it's commonplace to see public school classes on Southeast Alaskan trails, beaches, and even on off-trail bushwacks. Of course, that increasing presence in wild places has persistent, hard-to-measure impacts. But getting people outside and learning about the needs of wildlife is crucial. Televised and internet wildlife is not enough. Our challenge is to build a communal, hands-on appreciation of nature, while minimizing injury to the very wildness that attracted so many of us to Alaska.

Compared to a clearcut or a tailings pond, impacts of ecotourism and field-based nature studies may seem minor. But every time we humans walk through the woods, an invisible wake of disturbance precedes and follows us. It's easy to notice some kinds of impacts, such as litter and trampled vegetation. But those disturbances are largely cosmetic—an affront to our “wilderness aesthetic” with often only minor ecological consequences. What about disturbances to fish and wildlife? How many salmon alevins never emerge from stream gravels we wade through on spring



field trips? How many goose and oystercatcher eggs go unhatched when campers keep brooding parents away from their nests? How many bears become fatally attracted to odors and tastes of human foods?

Even through binoculars or telescopes, observation of wildlife often involves some degree of disturbance. The bear or otter may not betray alarm or even awareness of our presence, but it rarely fails to eventually catch our scent. Will it return to forage in that place again?<sup>1</sup>

Given that contact with wild things is a basic human need, and that such contact is irritating to the recipients of our affection, tracking and sign interpretation can be the most respectful way to experience nature. Beginning trackers may dream of following a deer to its bed, but are soon distracted by the stories in the tracks themselves. Fluent trackers even use their tracking skills to politely *avoid* some wildlife encounters.

**Dogs and wildlife** For many wildlife species, the most stressful types of encounters are not with plodding, predictable, trail-bound humans, but with their excitable, wide-ranging predatory pets. Juneau's master trackers have long been aware of the *inverse relationship* between numbers of domestic dog and cat tracks, and numbers of tracks of almost every other wild creature. A hiker or camper with even a well-behaved dog displaces wildlife, simply by broadcasting canine odor. Responsible dog owners keep their pets under control. In addition, as they become more aware of the needs of wildlife, some dog owners leave their pets at home when visiting the most sensitive wildlife habitats—such as the preceding Juneau tracking hotspots. There are many less disruptive places for dogs to romp.

This booklet is offered in hopes that people and wild things can *share wild land*. I hope this booklet, through the window of animal sign, provides Southeast Alaskan residents and visitors with a greater appreciation for wildlife and wild places. RC, 2013




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<sup>1</sup> These concerns do not apply at dedicated bear-viewing facilities such as Mendenhall Visitor Center, where neutral habituation is cultivated by managers.

## DISTRIBUTION IN SOUTHEAST ALASKA

*Mammal biogeography reflects glacial history, mountainous barriers to colonization, access through transboundary rivers, and island size & isolation. Only 20,000 years ago, all but our highest summits were buried under a mile-deep sea of ice. Since then, mammals have entered the Alexander Archipelago from boreal habitats of Canada's interior, or worked their way up the B.C. coastline.*

*This distribution table can help in track identification, by narrowing the range of possibilities. Comparing total species counts, Juneau and the northern mainland have twice the mammalian diversity of Admiralty, Baranof or Chichagof.*

✓ = present    ♦ = introduced

	northern mainland	Admiralty	Baranof & Chichagof	S. mainl. inner isles	outer S. isles
keen's mouse	✓	✓	✓	✓	✓
house mouse	♦	✓	♦	♦	
red-backed vole	✓			✓	
long-tailed vole	✓	✓	✓	✓	✓
meadow vole	✓	✓		✓	
tundra (root) vole	✓		✓		
bog lemming	✓			✓	
jumping mice spp	✓			✓	✓
red squirrel	✓	♦	♦	✓	✓
flying squirrel	✓			✓	✓
muskrat	✓	✓		✓	
beaver	✓	✓	✓	✓	✓
hoary marmot	✓			✓	
porcupine	✓			✓	
shrews spp	✓	✓	✓	✓	✓



northern Baranof & S. mainl. outer  
mainland Admiralty Chichagof inner isles S. isles

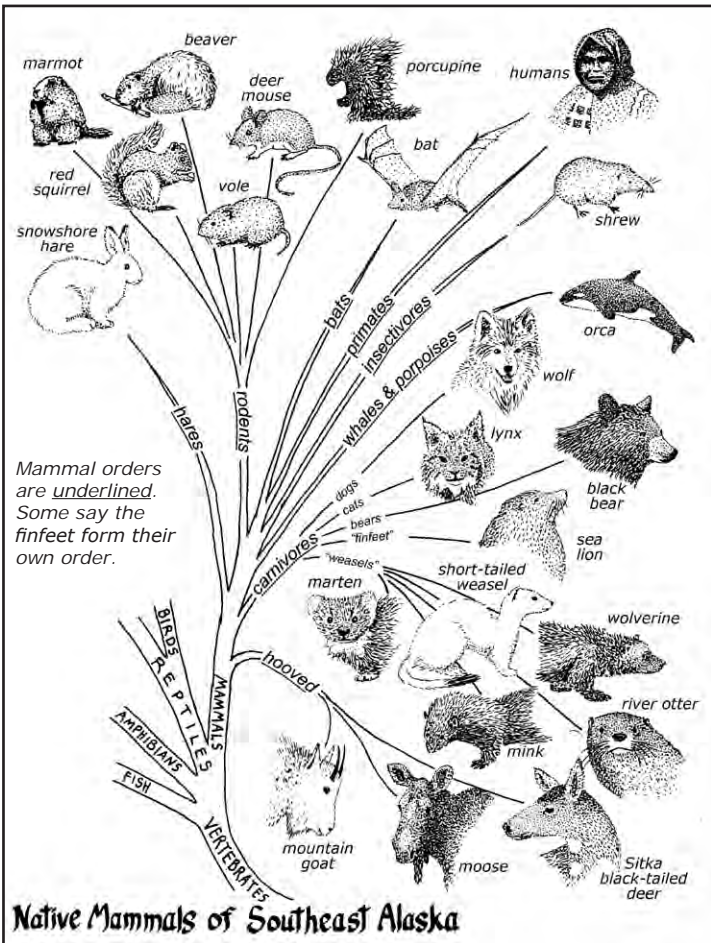
snowshoe hare	✓				
deer	✓	✓	✓	✓	✓
elk				◆	◆
moose	✓			✓	
mountain goat	✓		◆	✓	
domestic dog	◆	◆	◆	◆	◆
wolf	✓			✓	✓
coyote	✓			✓	
red fox	✓			✓	
house cat	◆	◆	◆	◆	◆
lynx	✓			✓	
black bear	✓			✓	✓
brown bear	✓	✓	✓	✓	
short-t. weasel	✓	✓	✓	✓	✓
mink	✓	✓	✓	✓	✓
marten	✓	✓	◆	✓	◆
river otter	✓	✓	✓	✓	✓
wolverine	✓			✓	✓
total	32	16	16	31	19

**Northern mainland:** Juneau north to Haines, and Glacier Bay to Yakutat.

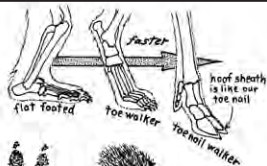
**Southern mainland & inner islands:** Stikine River to Portland Canal, Wrangell & Revillagigedo Islands.

**Outer southern islands:** Kuiu, Kupreanof, Mitkof, Prince of Wales & outlying islands.

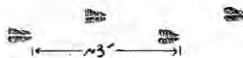
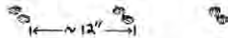
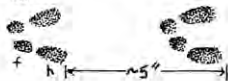
Any occurrence of a species within a unit is noted. This doesn't imply presence throughout that subdivision. More complete treatment is found in Cook & MacDonald's *Recent Mammals of Alaska*. U of Alaska Press, 2009.



# Footprints



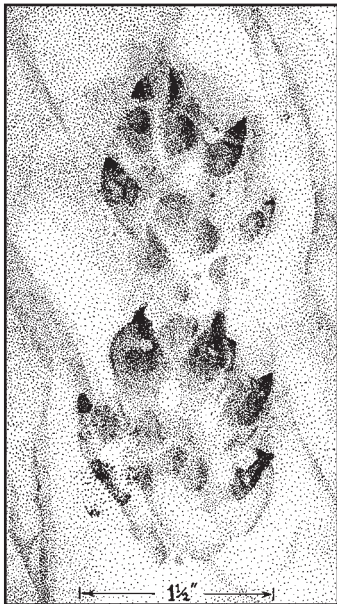
# Gaits





**Right:** Fresh tracks of  
mink in fine sand. Left  
hind above; left front  
below. Little (inner)  
toe doesn't always  
show; tracks confusable  
with 4-toed prints of dog  
family.

**Front cover** Left  
front foot of mink.  
Four leading toes are  
dog-like, but small 5th  
inner toe places this foot  
in weasel (mustelid)  
family. Also charac-  
teristic of the family is  
asymmetrical palm. In  
dogs & cats this palm is  
more symmetrical.



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