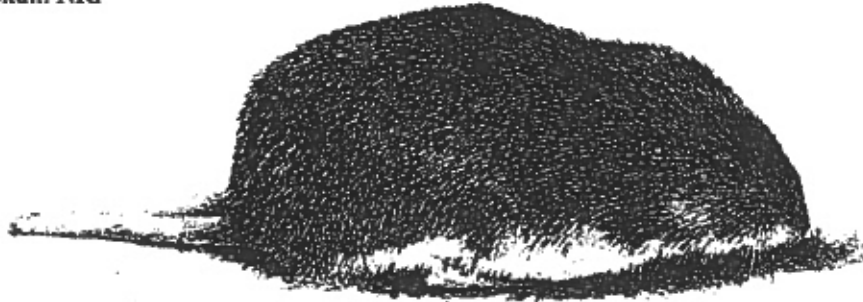


*Thomomys talpoides*  
Northern Pocket Gopher

Slide: NRF  
Specimen: RF  
Skull: NRF



**Diagnostic features**

- ◆ Chipmunk sized, thickset body, short legs, generally brown in overall colour
- ◆ External cheek pouches that are fur lined
- ◆ Short naked tail
- ◆ Small round ears, blunt face
- ◆ Long front claws

*Glaucomys sabrinus*  
Northern Flying Squirrel

Slide: RF  
Specimen: RF  
Skull: NRF



**Diagnostic features**

- ◆ A medium-sized squirrel with a broad flat tail
- ◆ Large dark eyes that are bordered by a black ring
- ◆ Fold of skin that forms a gliding membrane extending along the sides between the wrist and ankle
- ◆ Soft silky dorsal pelage varies from grey-brown to rich brown
- ◆ Undersides are separated from the dorsal fur by a distinct dark lateral line

**CLASS MAMMALIA – LARGE MAMMALS: LAB #9: YOU ARE RESPONSIBLE FOR 46 SPECIES**

**Order Carnivora: Carnivores**

**Family Ursidae: Bears**

|                     |              |                         |            |
|---------------------|--------------|-------------------------|------------|
| <i>Ursus arctos</i> | Grizzly Bear | <i>Ursus americanus</i> | Black Bear |
|---------------------|--------------|-------------------------|------------|

**Family Procyonidae: Raccoons**

|                      |         |  |  |
|----------------------|---------|--|--|
| <i>Procyon lotor</i> | Raccoon |  |  |
|----------------------|---------|--|--|

**Family Mustelidae: Weasels, Skunks and Allies**

|                           |                 |                          |               |
|---------------------------|-----------------|--------------------------|---------------|
| <i>Martes americana</i>   | American Marten | <i>Martes pennanti</i>   | Fisher        |
| <i>Mustela vison</i>      | Mink            | <i>Lutra canadensis</i>  | River Otter   |
| <i>Enhydra lutris</i>     | Sea Otter       | <i>Gulo gulo</i>         | Wolverine     |
| <i>Taxidea taxus</i>      | Badger          | <i>Mephitis mephitis</i> | Striped Skunk |
| <i>Spilogale putorius</i> | Spotted Skunk   |                          |               |

**Family Canidae: Wolves, Coyotes, Foxes**

|                      |           |                      |        |
|----------------------|-----------|----------------------|--------|
| <i>Canis lupus</i>   | Grey Wolf | <i>Canis latrans</i> | Coyote |
| <i>Vulpes vulpes</i> | Red Fox   |                      |        |

**Family Felidae: Cats**

|                      |             |                        |      |
|----------------------|-------------|------------------------|------|
| <i>Puma concolor</i> | Cougar etc. | <i>Lynx canadensis</i> | Lynx |
| <i>Lynx rufus</i>    | Bobcat      |                        |      |

**Order Artiodactyla: Hoofed mammals**

**Family Cervidae: True Deer**

|                              |                   |                            |                 |
|------------------------------|-------------------|----------------------------|-----------------|
| <i>Cervus elaphus</i>        | Elk               | <i>Cervus dama</i>         | Fallow Deer (I) |
| <i>Odocoileus virginiana</i> | White-tailed Deer | <i>Odocoileus hemionus</i> | Mule Deer       |
| <i>Alces alces</i>           | Moose             | <i>Rangifer tarandus</i>   | Caribou         |

**Family Bovidae: Oxen, Sheep, Goats, Bison**

|                        |                     |                            |               |
|------------------------|---------------------|----------------------------|---------------|
| <i>Bos bison</i>       | Bison               | <i>Oreamnos americanus</i> | Mountain Goat |
| <i>Ovis canadensis</i> | Mountain Sheep etc. | <i>Ovis dalli</i>          | Dall's Sheep  |

**Family Otariidae: Eared Seals**

|                               |                     |                           |                    |
|-------------------------------|---------------------|---------------------------|--------------------|
| <i>Callorhinus ursinus</i>    | Northern Fur Seal   | <i>Eumetopias jubatus</i> | Stellar's Sea Lion |
| <i>Zalophus californianus</i> | California Sea Lion |                           |                    |

**Family Phocidae: Earless Seals**

|                                |                        |  |  |
|--------------------------------|------------------------|--|--|
| <i>Phoca vitulina</i>          | Harbour Seal           |  |  |
| <i>Mirounga angustirostris</i> | Northern Elephant Seal |  |  |

**Order Cetacea: Dolphins, Whales**

|                                   |                             |
|-----------------------------------|-----------------------------|
| <i>Eubalaena glacialis</i>        | Right Whale                 |
| <i>Balaenoptera acutorostrata</i> | Minke Whale                 |
| <i>Balaenoptera borealis</i>      | Sei Whale                   |
| <i>Balaenoptera musculus</i>      | Blue Whale                  |
| <i>Balaenoptera physalus</i>      | Fin Whale                   |
| <i>Megaptera novaeangliae</i>     | Humpback Whale              |
| <i>Delphinus delphis</i>          | Common Dolphin              |
| <i>Lagenorhynchus obliquidens</i> | Pacific White-sided Dolphin |
| <i>Orcinus orca</i>               | Killer Whale                |
| <i>Eschrichtius robustus</i>      | Gray Whale                  |
| <i>Phocoena phocoena</i>          | Harbor Porpoise             |
| <i>Phocoenoides dalli</i>         | Dall's Porpoise             |
| <i>Physeter macrocephalus</i>     | Sperm Whale                 |

Order Carnivora: Carnivores  
Family Ursidae: Bears  
*Ursus arctos*  
Grizzly Bear

Slide: RF  
Specimen: NRF  
Skull: RF

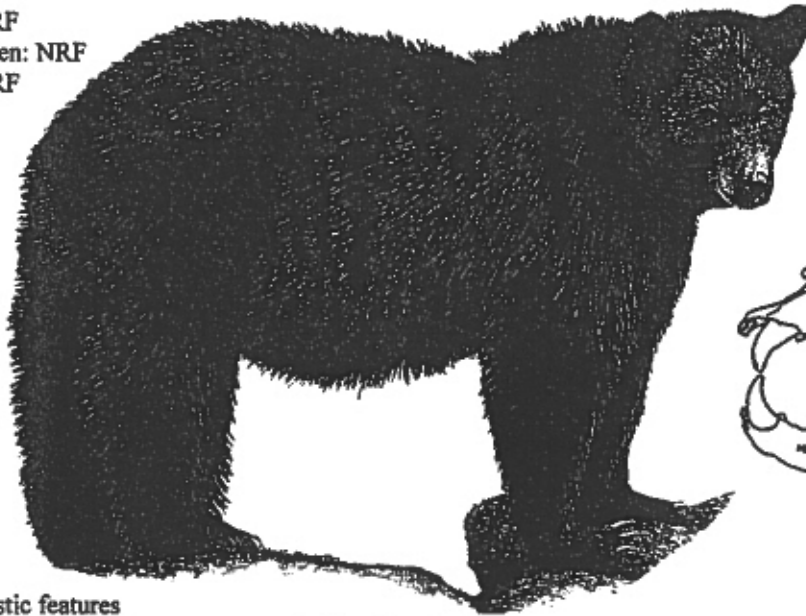


**Diagnostic features**

- ◆ Large size, humped shoulders, long claws, often stands upright, range of colors-usually brownish, guard hairs are often white tipped = grizzly appearance
- ◆ Face is concave in profile
- ◆ Forequarters appear higher than the rear

*Ursus americanus*  
Black Bear

Slide: RF  
Specimen: NRF  
Skull: RF

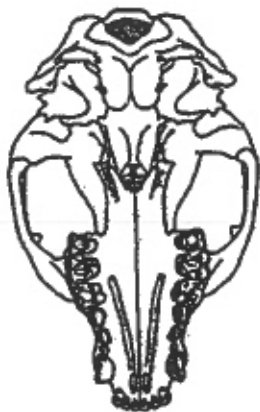
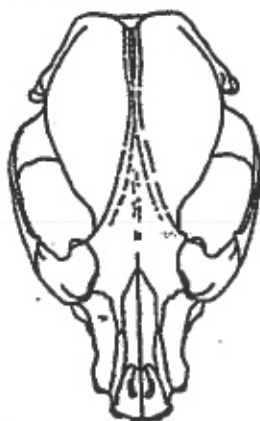


**Diagnostic features**

- ◆ Smaller than *U. arctos*, generally black in color but there many exceptions (ie. Spirit Bear)
- ◆ Head is large and straight in profile
- ◆ Do not have humped shoulders, do not appear 'frosted'

Family Procyonidae  
*Procyon lotor*  
Raccoon

Slide: RF  
Specimen: RF  
Skull: RF

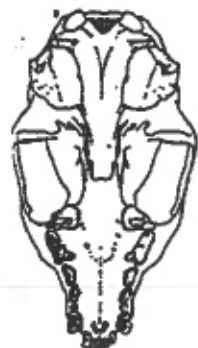
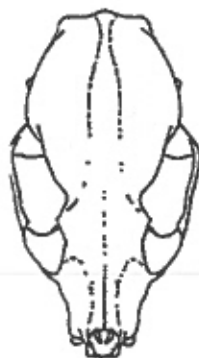


**Diagnostic features**

- ◆ Medium sized, five toes on each foot with nonretractile claws
- ◆ Tail has distinct rings, black mask over eyes
- ◆ Dorsal skull shape is rounded

Family Mustelidae  
*Martes americana*  
American marten

Slide: RF  
Specimen: RF  
Skull: RF

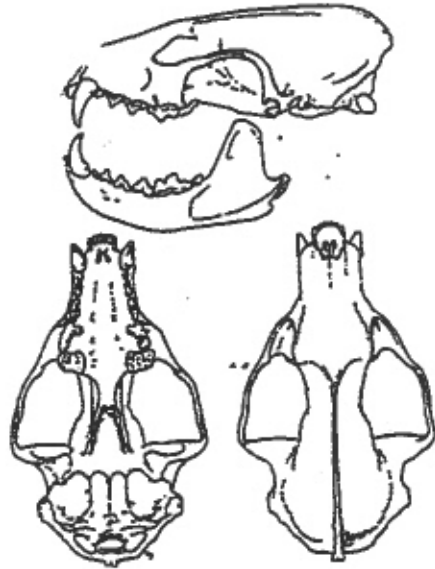
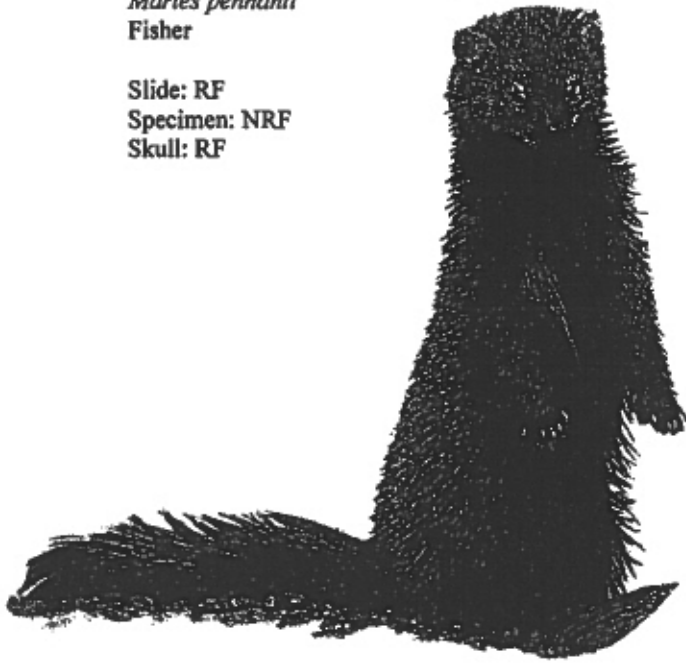


**Diagnostic features**

- ◆ Small carnivore, long fluffy pelage, bushy tail, prominent ears
- ◆ Upper parts are usually dark brown
- ◆ Under parts usually have a distinct orange or yellow patch on the throat and breast

*Martes pennanti*  
Fisher

Slide: RF  
Specimen: NRF  
Skull: RF

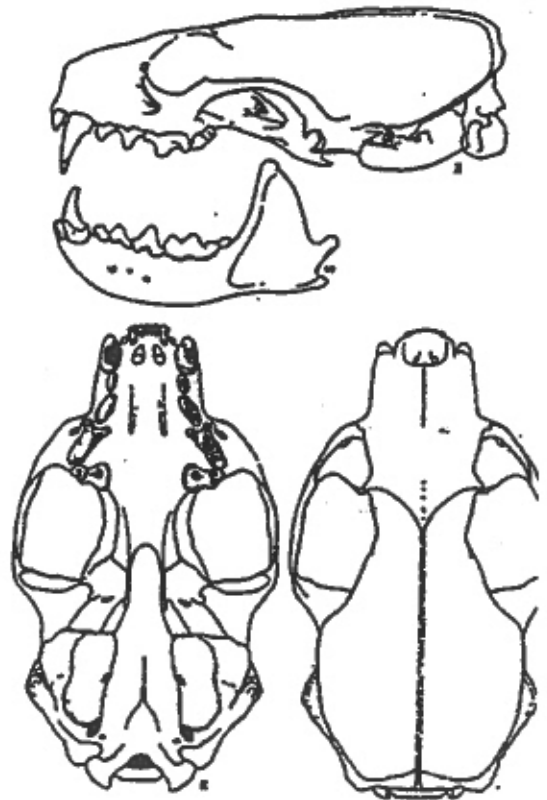
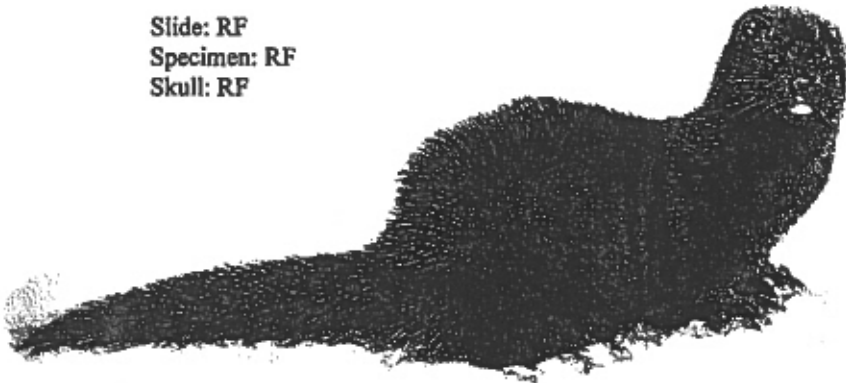


Diagnostic features

- ◆ Larger weasel, fur is dark brown to black, often with white tips on upper parts
- ◆ Head is wide in appearance
- ◆ Throat patch is small and white or absent

*Mustela vison*  
Mink

Slide: RF  
Specimen: RF  
Skull: RF

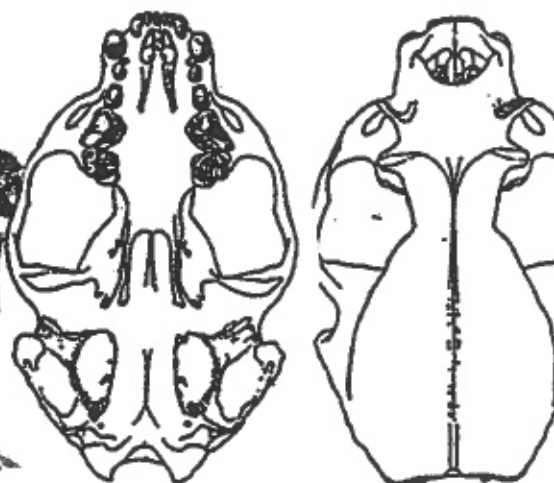
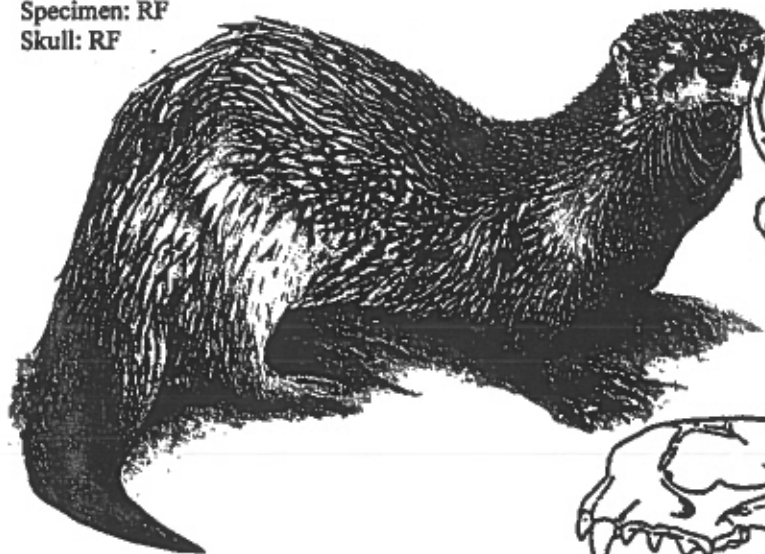


Diagnostic features

- ◆ Overall dark brown in color
- ◆ Short legs, head appears flat and triangular, short nose, prominent eyes
- ◆ Pelage often has irregular patches of white on the throat

*Lutra canadensis*  
River Otter

Slide: RF  
Specimen: RF  
Skull: RF



**Diagnostic features**

- ◆ Long, slim bodied with a tapered muscular tail
- ◆ Head is broad and flat with small ears and eyes
- ◆ Feet are webbed
- ◆ Usually an overall dark brown pelage color, lighter below

*Enhydra lutris*  
Sea Otter

Slide: RF  
Specimen: NRF  
Skull: NRF

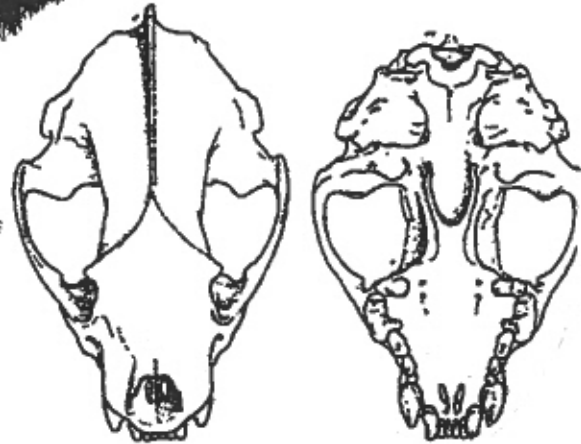


**Diagnostic features**

- ◆ Large marine otter
- ◆ Tail is short and thick, head is broad and flat
- ◆ Whiskers are prominent
- ◆ Hind feet are fully webbed, more flipper-like – Significantly larger than *L. canadensis*
- ◆ Pelage is dense with light-colored guard hairs giving a grizzled appearance

*Gulo gulo*  
Wolverine

Slide: RF  
Specimen: NRF  
Skull: RF

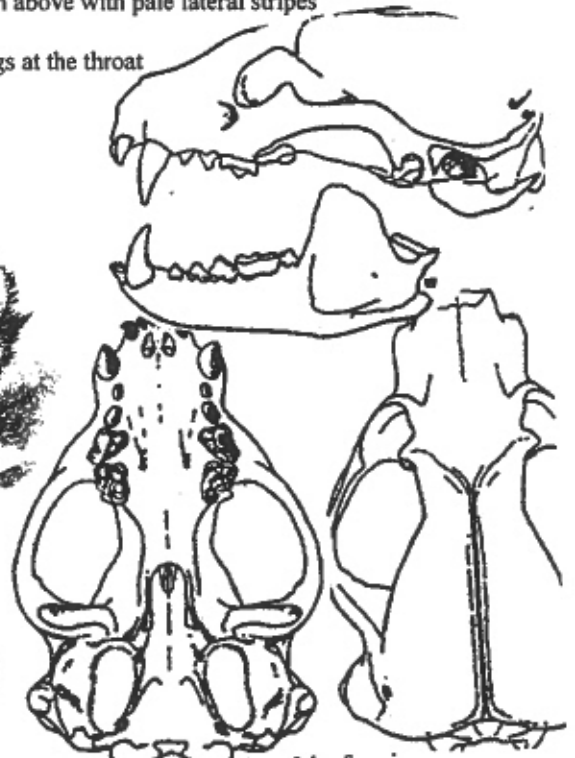


**Diagnostic features**

- ◆ Powerful, long haired mustelid
- ◆ Head is broad, short-snout, tail is short and bushy
- ◆ Pelage is short and thick, varies in color but is usually dark brown above with pale lateral stripes running from the shoulder to the rump, extending down tail
- ◆ Under parts are often dark with irregular white or orange markings at the throat

*Taxidea taxus*  
Badger

Slide: RF  
Specimen: RF  
Skull: RF



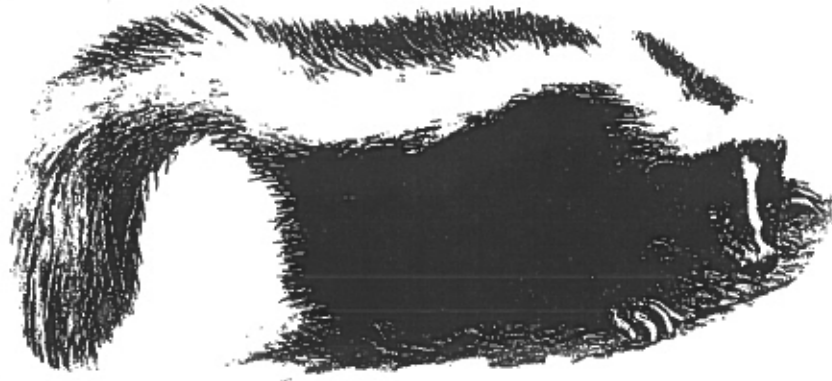
**Diagnostic features**

- ◆ Pelage is long and yellowish, silvery – grey above, lighter below
- ◆ Head is small and triangular in shape with prominent round ears
- ◆ Tail is short and bushy
- ◆ A narrow white stripe runs from the muzzle to the shoulder
- ◆ White crescent-shaped markings are present below the eye and ahead of the ear, remainder of the face is dark, forefeet with long claws, overall body is somewhat laterally compressed



*Mephitis mephitis*  
Striped Skunk

Slide: RF  
Specimen: RF  
Skull: NRF

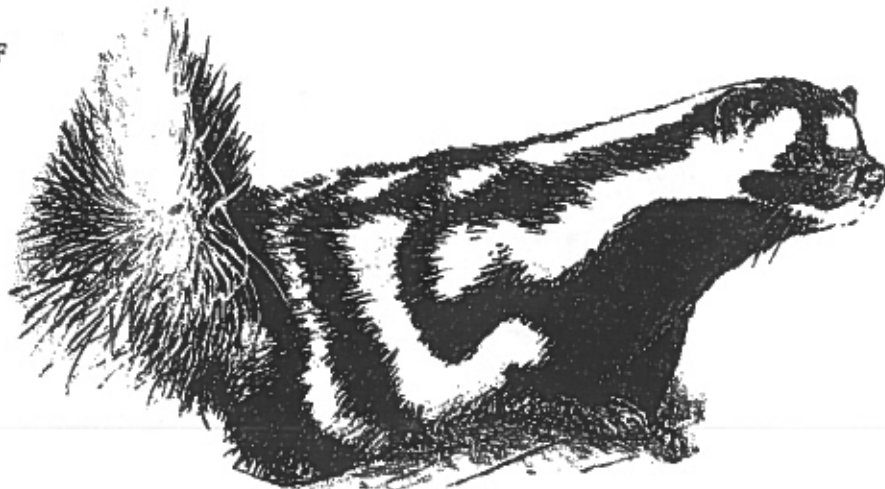


**Diagnostic features**

- ◆ Black and white striped mustelid, head is sharply pointed with small ears
- ◆ Legs are short, forefeet with long claws
- ◆ Pelage is long and silky, black in colour with a white stripe on the face, a broad stripe from nape to shoulder, forking at shoulder to form two stripes that extend to the hind quarters

*Spilogale putorius*  
Spotted Skunk

Slide: RF  
Specimen: RF  
Skull: NRF



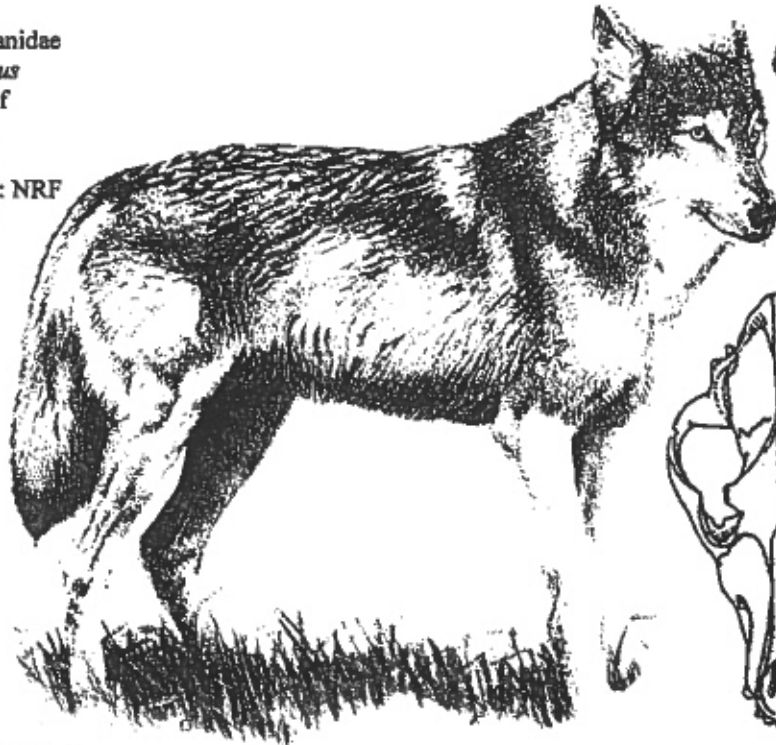
**Diagnostic features**

- ◆ Black and white mustelid, body fur is short and fine
- ◆ Tail hairs are long
- ◆ Pelage is overall black in colour with a pattern of white lines, spots and irregular markings along the back from the head to the tail



Family Canidae  
*Canis lupus*  
Grey Wolf

Slide: RF  
Specimen: NRF  
Skull: RF

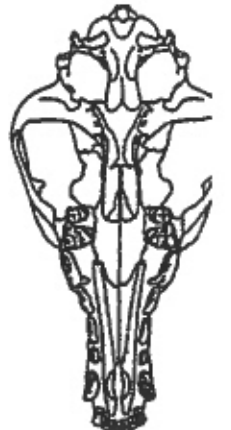
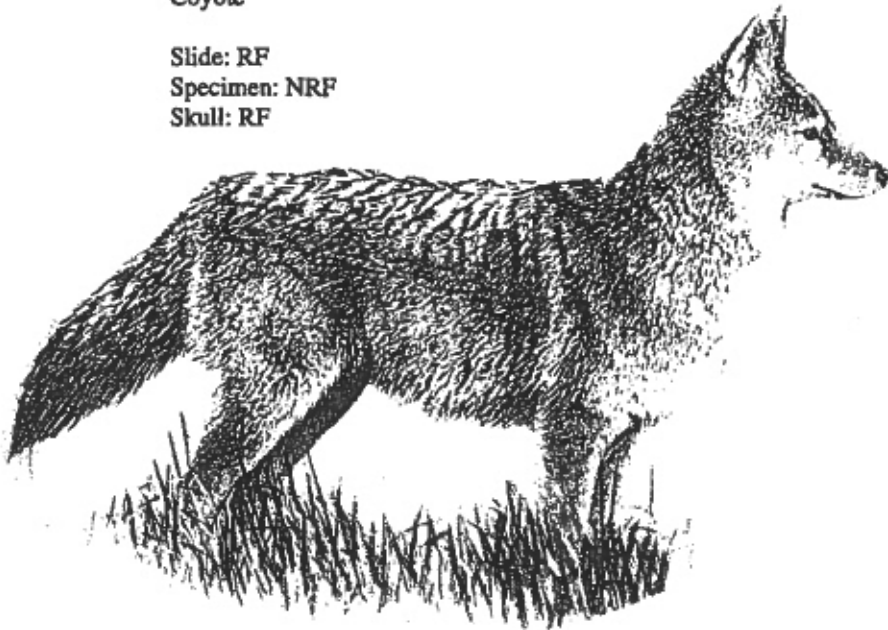


**Diagnostic features**

- ◆ Largest of the wild canids – color is highly variable- looks like a large German Sheppard
- ◆ Long legs and large paws, bushy tail

*Canis latrans*  
Coyote

Slide: RF  
Specimen: NRF  
Skull: RF

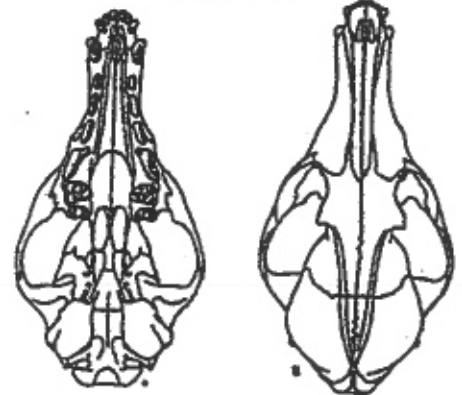


**Diagnostic features**

- ◆ Medium sized, dog-like, usually grey or reddish grey in overall color
- ◆ Legs are often rusty color, feet ears and throat are whitish
- ◆ Nose is pointed, tail is bushy with a black tip, usually a grey patch between the eyes

*Vulpes vulpes*  
Red fox

Slide: RF  
Specimen: NRF  
Skull: RF

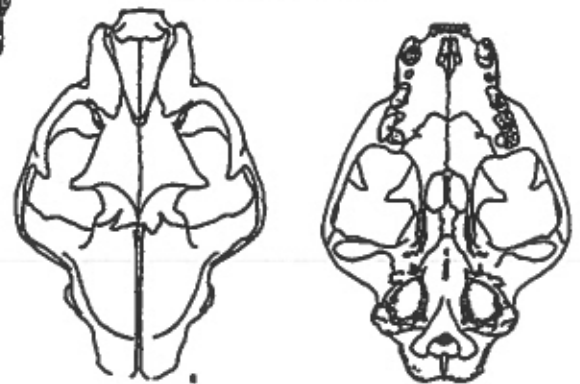
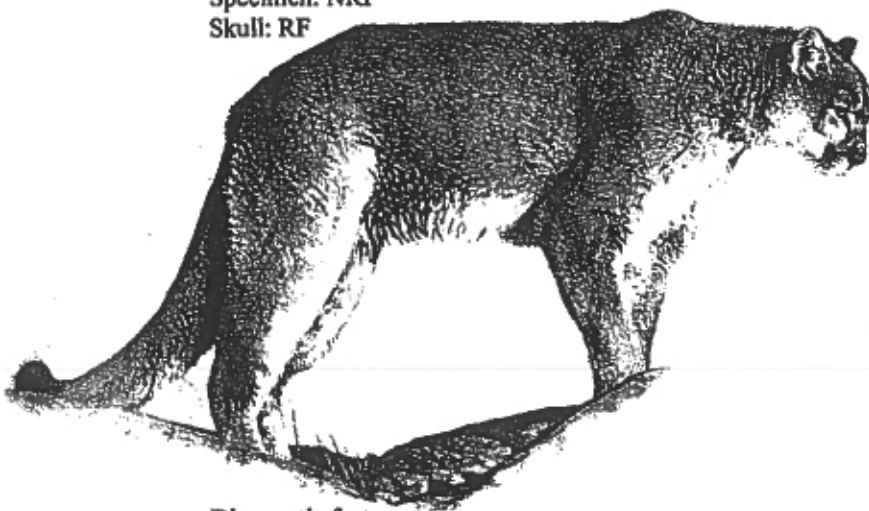


**Diagnostic features**

- ◆ Small in size, normally reddish yellow in overall colour
- ◆ Darkest on back, belly is white, tail is bushy and long, with black guard hairs tipped with white, end of tail can be white.
- ◆ Legs and feet are black, back of ears tend to be black

*Puma concolor*  
Cougar

Slide: RF  
Specimen: NRF  
Skull: RF

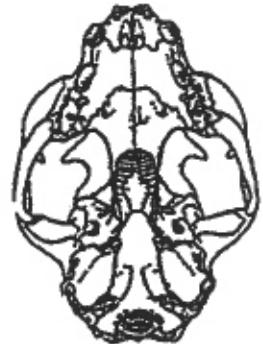
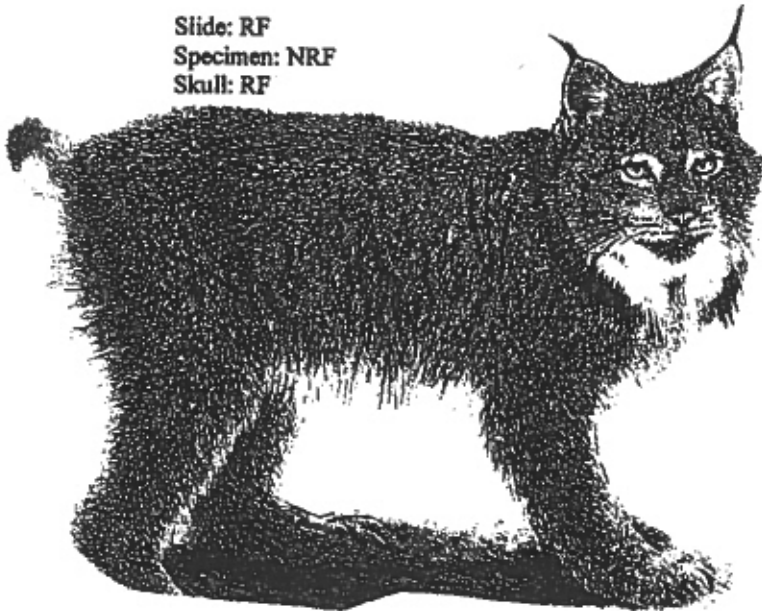


**Diagnostic features**

- ◆ Large, unspotted cat, short fur – red and gray phase occurs, most individuals are in the gray phase
- ◆ Body is long, head and ears are small
- ◆ Long powerful legs
- ◆ Long cylindrical tail has a dark tip

*Lynx canadensis*  
Lynx

Slide: RF  
Specimen: NRF  
Skull: RF

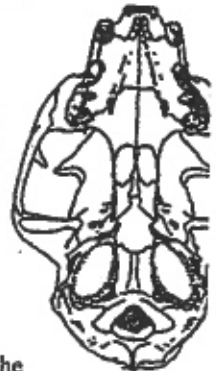


**Diagnostic features**

- ◆ Long silvery-grey fur, ears have long black tufts, backs of ears are grey, edged in black
- ◆ Long hair on the side of the lower face form a characteristic facial disk
- ◆ Legs without spots or bars, entire tip of tail is black
- ◆ Skull without the lower jaw, and with upper canines in place, usually rests on canines and condyles with bullae elevated

*Lynx rufus*  
Bobcat

Slide: RF  
Specimen: NRF  
Skull: RF

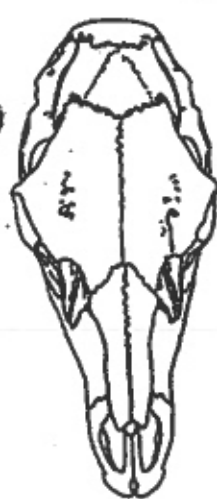
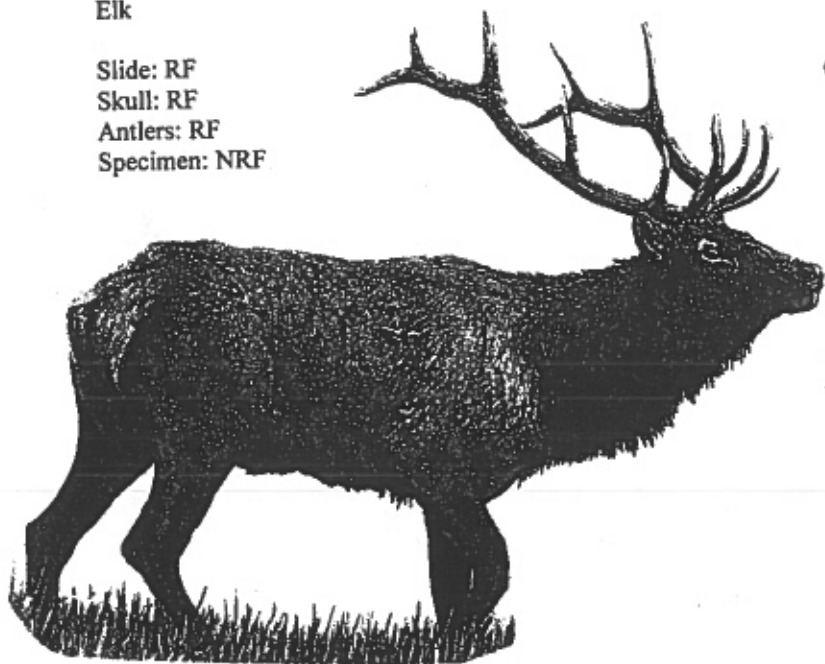


**Diagnostic features**

- ◆ Smaller than *L. canadensis*, shorter hair and more prominent markings
- ◆ Tip of tail is black on top but light on bottom and preceded by black bars
- ◆ Ear tufts are short, general body color is grey with an indistinct dark central line and spotting on the sides and down the legs, under parts are light, head without facial disk, usually with dark bars on cheek
- ◆ Skull without lower jaw, and with upper canines in place, usually rests on canines and bullae

Family Cervidae  
*Cervus elaphus*  
Elk

Slide: RF  
Skull: RF  
Antlers: RF  
Specimen: NRF



Diagnostic features

- ◆ Variable body color, generally yellowish/brown, head and neck are darker than body
- ◆ Rump bears a heart-shaped patch which is pale in color
- ◆ Large spreading antlers on males, upper canines present

*Cervus dama*  
Fallow Deer (I)

Slide: RF  
Skull: NRF  
Antlers: RF  
Specimen: NRF



Diagnostic features

- ◆ Color is variable however typical summer pelage is reddish/brown with numerous white spots
- ◆ Winter color is uniform greyish/brown
- ◆ Tail is long, brown above, black at tip

*Odocoileus hemionus*  
Mule Deer

Slide: RF  
Skull: RF  
Antlers: RF  
Specimen: NRF

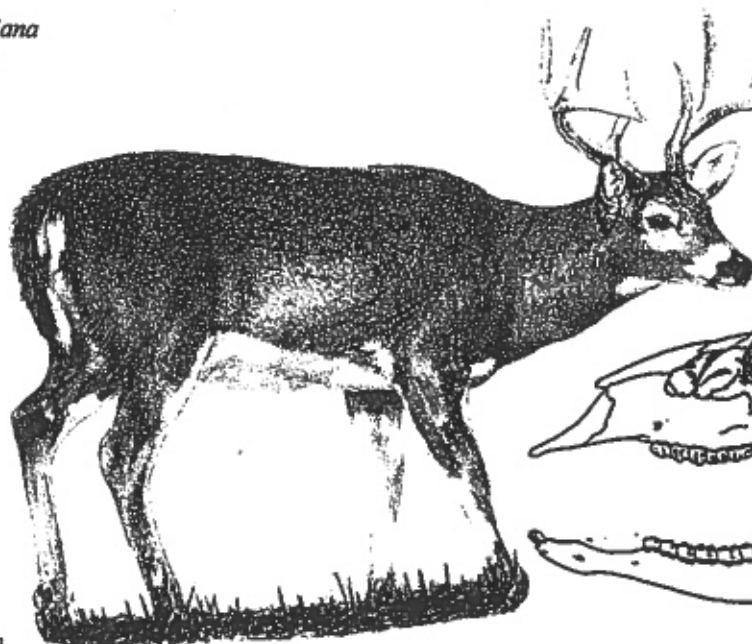


Diagnostic features

- ◆ Large mule-like ears, large whitish rump patch that is divided by a short black-tipped tail
- ◆ Tan in summer, greyish in winter, dark spot on either side of the nose
- ◆ Throat and inside of the legs are white all year round
- ◆ Antlers branch into two and then each branch into two again (dichotomous branching)
- ◆ Skull – the lacrimal pit is greater than 9 mm in depth

*Odocoileus virginiana*  
White-tailed Deer

Slide: RF  
Skull: RF  
Antlers: RF  
Specimen: NRF

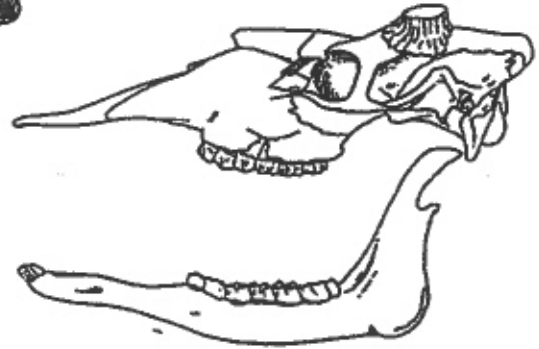
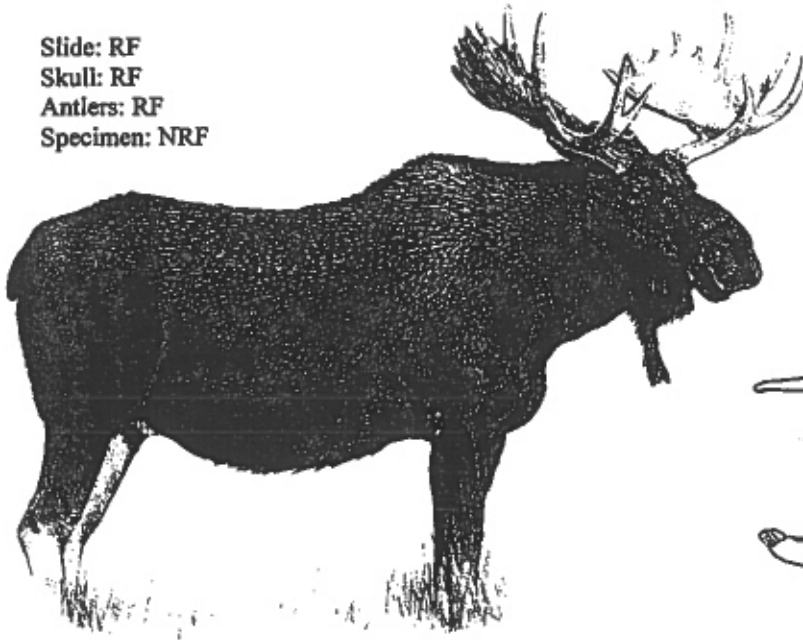


Diagnostic features

- ◆ Upper parts are red/brown in summer, grey/brown in winter
- ◆ Belly, throat, chin, and underside of tail are white all year round
- ◆ Antlers do not have dichotomous branching – all tines arise of the main branch
- ◆ Skull- the lacrimal pit is not deep, less than 9 mm in depth

*Alces alces*  
Moose

Slide: RF  
Skull: RF  
Antlers: RF  
Specimen: NRF

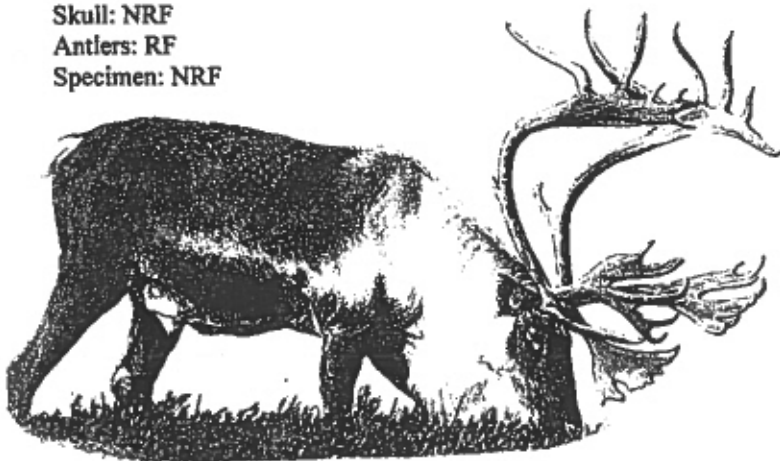


Diagnostic features

- ◆ Largest deer, generally blackish/brown in color, long legs and high shoulders
- ◆ Long pendulous, slightly inflated muzzle and throat appendage ('bell')
- ◆ Antlers are broadly palmate, extending laterally from the head
- ◆ Only males have antlers

*Rangifer tarandus*  
Caribou

Slide: RF  
Skull: NRF  
Antlers: RF  
Specimen: NRF



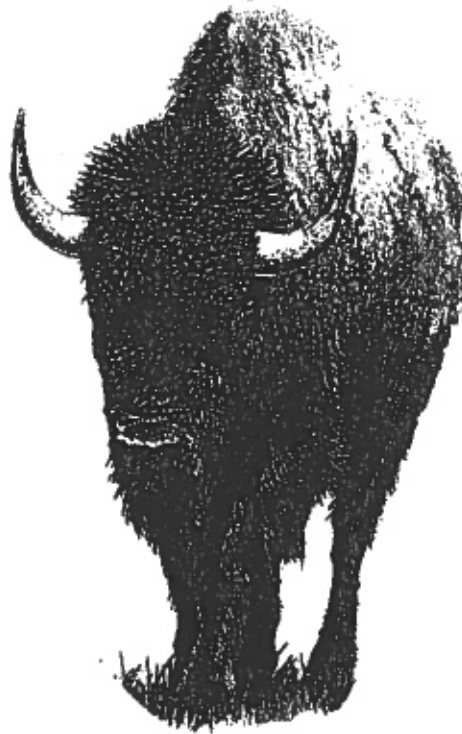
Diagnostic features

- ◆ Large-sized deer, somewhat cylindrical in shape, head is carried low
- ◆ Body colour is some shade of dull brown, tail is short, hoofs are large
- ◆ Antlers occur in both sexes, erect and spreading and semipalmate, generally with a long, flat tine that projects over the nose ('plough')



Family Bovidae  
*Bos bison*  
Bison

Slide: RF  
Skull: NRF  
Horns: RF  
Specimen: RF (head mount)



**Diagnostic features**

- ◆ Dark brown in color, high shoulders, shaggy mane over forequarters, disproportionately large head
- ◆ Short black horns curving out, forward and then inward
- ◆ Long tasseled tail

*Oreamnos americanus*  
Mountain Goat

Slide: RF  
Skull: NRF  
Horns: RF  
Specimen: NRF



**Diagnostic features**

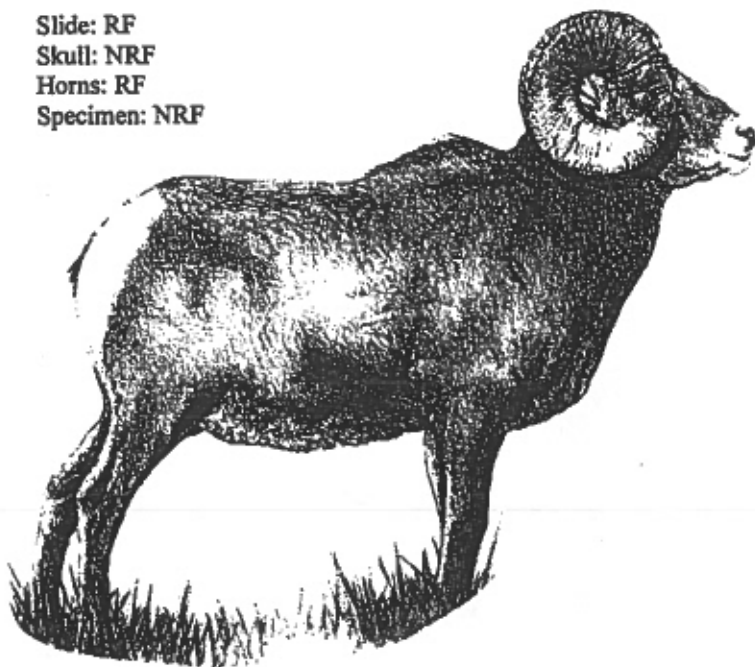
- ◆ Stocky, hump-shouldered white in color
- ◆ Lips, nose, eyes and hooves are black
- ◆ Both sexes may have a noticeable 'beard'
- ◆ Short tail, long ears, both sexes have narrow black horns



*Ovis canadensis*

Mountain sheep – Bighorn sheep etc.

Slide: RF  
Skull: NRF  
Horns: RF  
Specimen: NRF



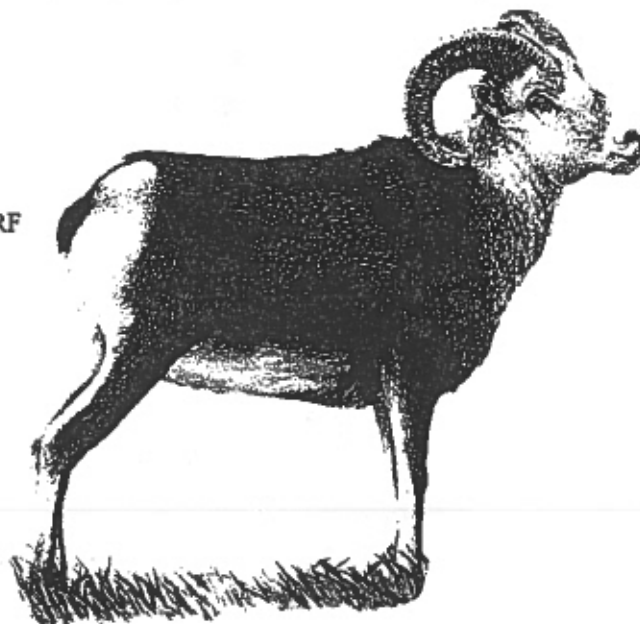
Diagnostic features

- ◆ Robust brownish sheep – has a bobbed tail and a large white rump patch
- ◆ Belly, insides of legs, and end of muzzle are white
- ◆ Horns are curved with heavy cross ridges, both sexes have horns
- ◆ Horns curve upward, back, downward and forward in a spiral, horns are brown in color

*Ovis dalli*

Dall's Sheep

Slide: RF  
Skull: NRF  
Horns: RF  
Specimen: NRF



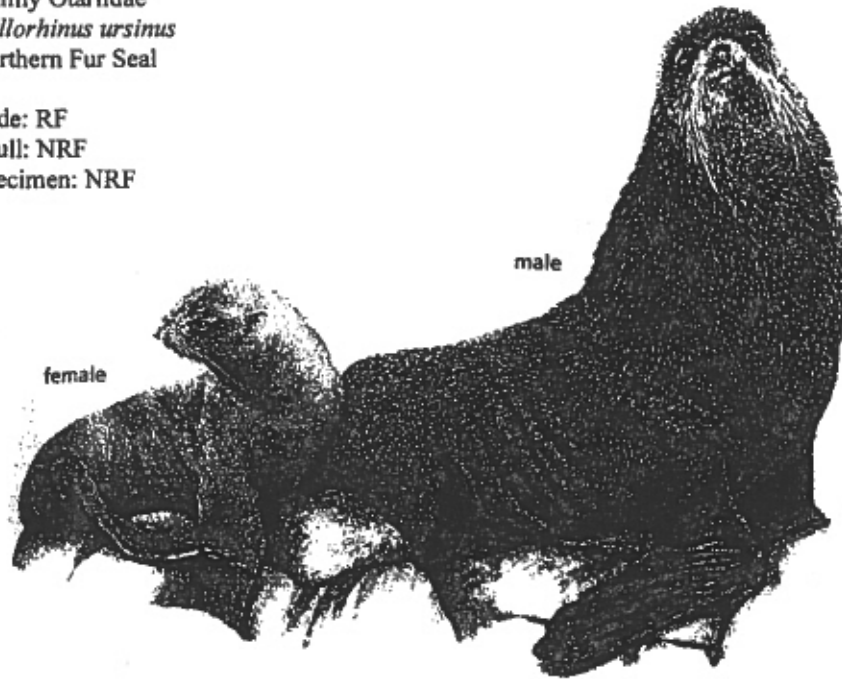
Diagnostic features

- ◆ Medium sized sheep, slender horns which are much more open and spreading in spiral than *O. canadensis*
- ◆ Horns usually have the angle over the eye elevated into a prominent ridge
- ◆ Pelage color is variable – from rich brown to white

- ◆ Horns usually have the angle over the eye elevated into a prominent ridge
- ◆ Pelage color is variable – from rich brown to white

Family Otariidae  
*Callorhinus ursinus*  
 Northern Fur Seal

Slide: RF  
 Skull: NRF  
 Specimen: NRF

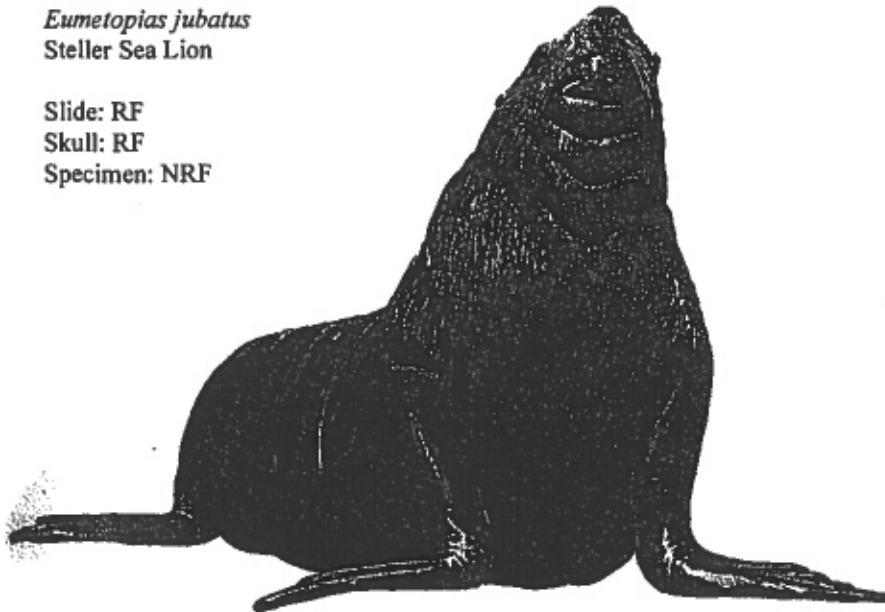


Diagnostic features

- ◆ Small head, long whiskers
- ◆ Small ears, large eyes with a short pointed nose
- ◆ Short tail, large front flippers
- ◆ Pelage is dark brown in males, silvery grey in females

*Eumetopias jubatus*  
 Steller Sea Lion

Slide: RF  
 Skull: RF  
 Specimen: NRF



Diagnostic features

- ◆ Largest of the eared seals, large paddle shaped flippers, hind flippers extend beyond the tail
- ◆ Body is cylindrical, streamlined, brown to red in color

*Zalophus californianus*  
California Sea Lion

Slide: RF  
Skull: RF  
Specimen: NRF



Diagnostic features

- ◆ Slender elongate body with a blunt snout and a short but distinct tail
- ◆ Overall brown in body colour
- ◆ Male has crest on head ('raised forehead')
- ◆ Front flippers are long and bear claws

Family Phocidae  
*Phoca vitulina*  
Harbour Seal

Slide: RF  
Skull: RF  
Specimen: NRF

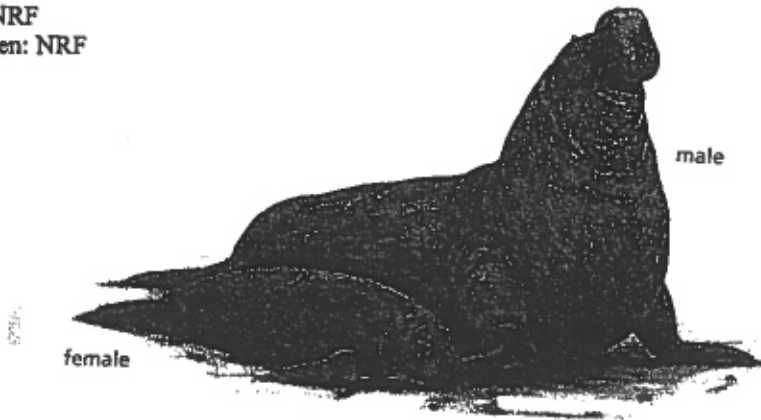


Diagnostic features

- ◆ Stubby fusiform-shaped seal, head is smooth and round, lack external ear pinna
- ◆ Large eyes situated high on the head, nostrils are high on the snout
- ◆ Pelage is coarse and varies in color from almost white to dark grey, usually heavily marbled and blotched

*Mirounga angustirostris*  
Northern Elephant Seal

Slide: RF  
Skull: NRF  
Specimen: NRF



Diagnostic features

- ◆ Large size, male has long inflatable snout, in older males skin around neck and chest appears cracked
- ◆ In both sexes nose extends past the mouth
- ◆ External ear pinna are lacking
- ◆ Overall color is grey/brown, hindflippers appear to be lobed on either side

ORDER CETACEA  
SEE ATTACHED BC MARINE MAMMAL SIGHTING PROGRAM HANDOUT  
CONCENTRATE ON SLIDES

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# B.C. MARINE MAMMAL SIGHTING PROGRAM

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Marine Mammal Research Group, P.O. Box 6244, Victoria, B.C. V8P 5L5. Phone (604) 380-1925, Fax 380-1206  
Toll-Free Whale Sighting and Stranding Reporting Line (B.C.) 1-800-665-5939

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## REPORT SIGHTINGS ON ATTACHED RECORD CARDS OR TOLL-FREE TO 1-800-665-5939

Cetaceans (whales, dolphins and porpoises) are not easy to identify at sea, especially as they are typically seen - a distant blow, a splash, or a silhouette against the horizon. Even when they are seen quite closely, many species are subtly marked and similar to one or several other species; so even specialists must take care not to make quick judgements but rather to be attentive throughout each encounter to details which can confirm identity of the species involved.

The purpose of this program is to collect sightings of all species of cetaceans in British Columbian waters. Although drawings of elephant seals and fur seals are not included in this version of this booklet, records of these species are also requested. Since sighting effort is not being recorded these sightings will not allow for absolute determination of numbers of different species, but they will provide important information on the relative numbers of different species in B.C. waters, and will also provide important records of rare or accidental species.

We encourage all participants in the sighting program to study in detail the available information on how to identify local cetaceans (found in this package and in publications such as *The Whale Watcher's Handbook* (E. Hoyt, 1984, Penguin Books), the *Sierra Club Handbook of Whales and Dolphins* (S. Leatherwood and R.R. Reeves, 1983, Sierra Club Books), and *A Guide to Marine Mammals of Greater Puget Sound* (R. Osborne, J. Calambokidis and E.M. Dorsey, 1988, Island Publishers), and to develop good habits for observing cetaceans and reporting on cetacean sightings. This latter includes (a) logging each sighting with sufficient detail to allow a reviewer to confirm the identifications and (b) photographing animals whenever possible and including photographs with the sighting reports.

As detailed field guides will not always be readily available to observers, we provide here a guide to the cetaceans of the temperate eastern North Pacific, modified from Leatherwood et al. (1987) "*Cetaceans of the Channel Islands National Marine Sanctuary*". If any dead whales, porpoises or dolphins are found, please phone the toll-free number as soon as possible. Collecting photographs, tissue samples or the entire carcass is extremely valuable. If you would like more information please phone or write Robin Baird at the number/address above.

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## GUIDE TO THE CETACEANS OF THE EASTERN NORTH PACIFIC

To use this guide: (1) first estimate the animal's size and determine whether or not it has a dorsal fin (2) note also any distinctive features of body shape and coloration and observe its general behaviour, including swimming, blowing and diving characteristics (3) make sketches of the animal's appearance and note on sketches the most distinctive visible features (4) photograph animals whenever possible (5) consult the guide sections to make a tentative identification and (6) upon return to a library containing detailed field guides confirm the tentative field identification.

This guide will work best if in advance of attempting to use it the reader will familiarize him/herself with the species, by reference to more detailed guides, and school him/herself to ask a series of questions about the animal(s) seen:

- (1) How large was it?
- (2) Did it have a fin? If so, what was its size, shape and position on the animal's back?
- (3) Was the animal's blow visible; if so how tall did it appear? What was its shape? How frequently did it blow?
- (4) What was the animal's colour and colour pattern?
- (5) Did it have any highly distinctive markings?
- (6) If it was a large or a medium-sized animal, did it show its flukes when it began its dive?
- (7) If it was a medium sized or a small animal, did it approach, avoid or ignore the vessel? Did it bow ride?
- (8) What was its behaviour? Did it breach? Was such breach graceful, with a headfirst re-entry, or characterized by a loud or splashing re-entry?

One characteristic is rarely sufficient by itself and the greater the amount of information the observer can obtain and record, the greater the likelihood he/she or some more qualified reviewer can make a correct identification.

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### LARGE WHALES (12-26 meters maximum length)

#### WITH A DORSAL FIN

There are five species of large whales with a dorsal fin in the temperate eastern North Pacific. Four of them belong to the same major baleen whale group, the balaenopterid whales or rorquals, and the fifth is the largest of the toothed whales, the sperm whale.

All the rorquals have a series of ventral pleats, usually visible on stranded specimens. The length and